



WPI



Developing a Digital Management System for the SYDRC

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SYDRC Client Management Database

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Abstract

Non-profits often struggle with managing their resources as a result of underfunding. Our project attempts to address the SYDRC's growing clientele base by providing the staff with a new digital management system. We achieved this goal by analyzing potential cloud-based systems and determining the needs and requirements of the SYDRC. Our team then iteratively developed a software-based solution. To get the staff acclimated to the new system, we conducted in-person training sessions and put together a user manual that details how to use and maintain the system. Ultimately, we provided the centre with a new data management system and room booking web application that catered to the specific needs of the SYDRC while being both cost-effective and intuitive to use.

Acknowledgments

Our team would like to thank the various professors that provided assistance and guidance to us throughout the course of this project. In particular, we would like to thank Professor Melissa Butler for ensuring that we were prepared to embark on this project and arrive on-site to the sponsor ready to accomplish our goals and objectives. We would also like to acknowledge our on-site advisors, Professors John Orr and Paul Marrone, for their continual support, ideas, and motivation to fully investigate the potential of our project. It was with their leadership that our team was able to overcome a lot of the obstacles we experienced while working on the project.

We would like to thank our fellow students on the C-Term London IQP, whose feedback, support, and shared experiences inspired us to achieve greatness while exploring the city and creating lasting memories.

We would also like to express our gratitude to the staff at the SYDRC who welcomed us with open arms into their offices and provided us with the resources needed to complete our project. Our team also extends our thanks to those staff members who aided in the accomplishment of our objectives by participating in our survey and interviews.

Finally, we would like to give a special thank you to our project sponsor, Mr. Abdiwahab Ali, who provided crucial feedback on the development of our project and always made time to answer our questions and support our work in any way possible.

Executive Summary

All across the world, non-profit organizations provide assistance to disadvantaged communities while constantly combating the challenges of underfunding. Charities specifically located in the United Kingdom have lost more than £3.8 billion in grants from the government over the last decade (NCVO, 2019). As a result of economic challenges, many non-profits struggle to secure additional funding, which threatens their long-term viability.

One such organization facing financial challenges is the Somali Youth Development Resource Center (SYDRC), which is a social service non-profit that provides a platform of socialization and education to Somali young people. Typically, about 51% of the SYDRC's budget comes from local government grants, but this income has dropped by 26% in the past few years due to the state of austerity affecting the UK (Charity Commission, 2018). The organization is now feeling the consequences of its reduced budget and has eliminated resources that used to aid in the SYDRC's administrative tasks and its efforts to secure more funding (SYDRC, 2019). The SYDRC has resorted to a less technical solution to manage their data by utilizing Excel spreadsheets, which lack sufficient scalability and automation of funding reports.

Our team was tasked with easing the financial burden placed on the SYDRC by designing and implementing a new digital management system that would improve administrative efficiency and provide more detailed and accurate reports to their funders. By accomplishing this goal, our team delivered a customized data management application and a newly built room scheduling web application to the staff at the SYDRC. By leaving our sponsor with this more robust system, we were able to assist the SYDRC in its mission of maximizing the potential of Somali youth for years to come.

Methodology and Results

To achieve our goal, the team established a methodology that consisted of four key objectives:

- 1) To perform a comparison between various cloud-based systems in relation to the financial restrictions of the SYDRC.
- 2) To identify the needs and requirements of the SYDRC for a new data management system and room scheduler.
- 3) To iteratively develop a digital management solution that is intuitive to use.
- 4) To train the SYDRC staff in using and maintaining the digital management system.

Objective 1

The first objective focused on conducting a cost comparison between various cloud-based systems in relation to the financial restrictions of the SYDRC. The project sponsor could only allocate up to £100 per month on a data management system, so our team researched suitable

cloud systems from Microsoft Azure, Google Cloud, Amazon Web Services (AWS) and Substance Views (Figure 1).

	Microsoft Azure	Google Cloud	aws	views
	Azure CosmosDB	Firebase	AWS DynamoDB	Starter Tier Plus Tier
Storage	10 GB	2.5 GB	25GB	All inclusive
Write KB/ £1.00	222,700	1,200,000	3,520,000	↓
Read KB/ £1.00	222,700	1,600,000	17,500,000	↓
Total Cost Per Month	-£50	£19	-£7	£50 -£82

Figure 1: Results from Cost Analysis of Cloud Systems

From the findings shown in Figure 1, our team recommended the use of Views for the database system as it was a pre-built application that would only require customization by our team. Even though it was the more expensive alternative, it would result in the most professional and complete system. However, AWS was chosen to host the room scheduler our team built from the ground-up as its operation costs were minimal.

Objective 2

The second objective consisted of gathering data regarding the needs and requirements of the SYDRC for a new data management system and room scheduler application. This data was collected three-fold. First, our team held a one-on-one session with a staff member at the SYDRC to observe the current data collection process. Secondly, a survey was sent out to five of the key staff members that work at the SYDRC. This survey focused on inquiring about potential features and ease-of-use functionalities that could be in the two applications. After receiving all the responses, follow-up interviews were held to gain more in depth reasonings behind a survey response as well as gain data to help make final decisions on survey questions that had split responses. The responses from these two methods resulted in the creation of two lists of tasks and features that drove the development of the system.

Objective 3

The third objective was the development of the two applications. The sponsor provided our team with an administrative Views account which allowed us to customize the system. With this access, we completed the list of tasks which included restructuring data fields, adding security levels for different users, importing legacy data, creating questionnaires, and linking outcomes and objectives to specific sessions and groups. To build the iterations of the room scheduler, our team utilized the JavaScript platform and implemented the FullCalendar API to display an interactive booking system. The application was linked with Views so that all activities synced across both systems.

Objective 4

The final objective focused on training the staff on how to utilize and maintain the digital management system. Training sessions were held periodically throughout the project to teach the staff the new features at a manageable pace. To ensure that the staff had instructive materials after the project concluded, a user manual detailing the capabilities and administrative functionalities of both the Views system and the room scheduler was created. Certain aspects of the user manual were given more emphasis and detail based on which features the staff had trouble grasping during the training sessions.

Deliverables

Our team implemented a new software solution for the SYDRC's data management needs by providing three deliverables following the conclusion of our project.

1. A custom version of the Views data management system,
2. A web-hosted room scheduler application, and
3. A user manual for both application

Views

The final Views system provides the SYDRC with the ability to input participant, staff, and funder information and manage all their clientele data in a clean and efficient manner. The staff are also able to centralize attendance for all the sessions and activities that the organization holds. To adhere to privacy concerns, volunteers have restricted access to confidential data compared to admins. Custom questionnaires were added into the system and the SYDRC can now use them to gauge participant engagement which provides further data to be used in funding reports. The system is customized with the SYDRC's own outcomes and objectives and allows for easy generation of reports and demographic statistics to be used for filling out applications to funders and donors. Lastly, the main dashboard provides quick access to statistical graphs and allows the staff to easily obtain data on attendances and upcoming events (Figure 2).

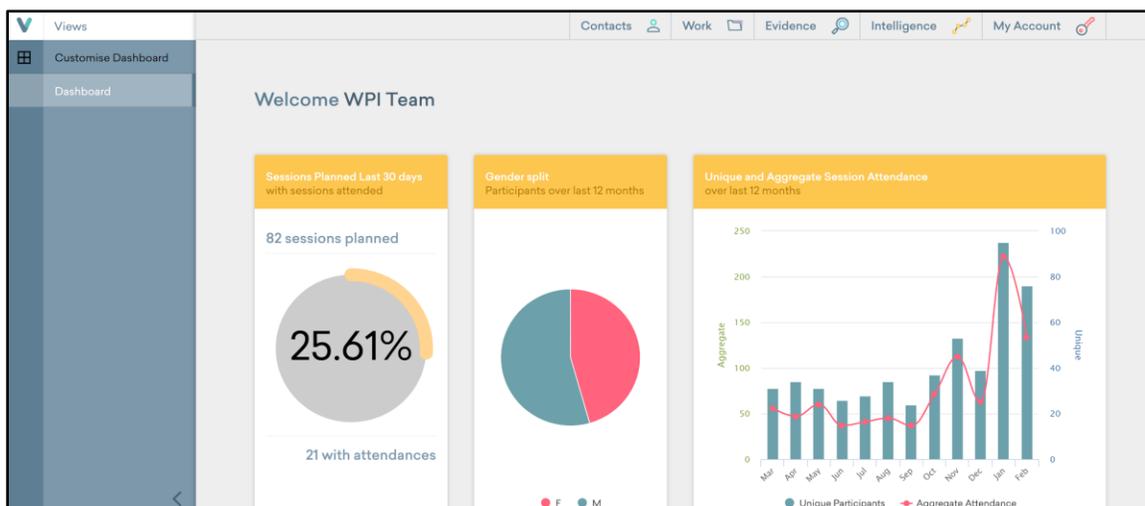


Figure 2: Customized Main Dashboard with Statistics in Views

Room Scheduler

The room scheduler web application has two main functionalities. The first allows external organizations or individuals to directly view the current room bookings. This side of the application allows users to view the sponsors weekly calendar and fill out a form to request a room. The form is sent directly to the director of the SYDRC who can then accept the request or reject the booking. The sponsor also has their own login account for the site that allows them to input a request into the system and have the booking event registered in both the scheduling site and the Views system calendar. The application also features dynamic date searching, a help menu, and detailed event descriptions with pictures of the bookable room for ease-of-use by both the staff and outside users.

User Manual

The last deliverable given to the SYDRC was the user manual. Split into two sections, it covers how to use and maintain both Views and the room scheduler. For Views, it details how to utilize the data input functionalities, such as adding and updating participants and staff, as well as creating recurring events that populate onto the calendar. It also heavily focuses on the administrative aspects of the system so that the sponsor can continue customizing the system. For the room scheduler, the manual provides information on how the request and booking functionalities operate. It details how to reboot the system on AWS if it ever crashes and explains how to access the code base if the sponsor wants to further customize the application.

Discussion and Conclusion

Our team's digital management system provides an efficient way to manage the large clientele base at the SYDRC and maintain accurate statistical reports. With less time being wasted on the overhead of the previous system, the staff are better equipped to devote their efforts to leading and improving the activities that benefit the Somali people engaged within the SYDRC. The easy access to statistical information improves our sponsors ability to fill out funding reports with impactful and detailed information. Lastly, with an integrated room booking system, our system allows the SYDRC to further their funding efforts so that they could continue empowering and inspiring Somali young people.

Authorship

The following report was written in a collaborative manner by all five group members: Gabriel Aponte (GA), Andrew Bonaventura (AB), Diego Gonzalez Villalobos (DGV), Paul Mara (PM) and Tyler Reiser (TR)

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Effects on Youth Public Services	GA	--	All
Current State of Non-profit Funding	TR	DGV	All
Funding Cuts in Non-profit	TR	DGV	All
Long Term Effects of Budget Cuts on Non-profits	TR	DGV	All
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The Starvation Cycle in Non-profit Funding	DGV	GA	All
Measuring Performance in Non-Profit Organizations	TR	GA	All
The SYDRC's Spending and Funding	PM	--	All
Technological Gap Affecting the SYDRC's Funding Efforts	PM	--	All
Data Management within Non-profit Organizations	AB	PM	All
Challenges with Implementing Technology in Non-profits	AB	--	All
Optimizing Existing Management Systems	AB	--	All
Utilizing Cloud Computing	AB	--	All
Cloud-Based Systems	AB	GA, TR	All
Microsoft Azure	AB	--	All
Google Cloud	AB	--	All
Amazon Web Services	TR	--	All

Substance Views	GA	--	All
Intuitive Database Design	AB	--	All
Effective User Interface Design	AB	--	All
Sustainability and Maintainability	AB	--	All
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Observations of the Current System	TR	--	All
Survey Design for Staff	DGV	--	All
Interview Protocols for Staff	DGV	--	All
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Customizing the Views Application	TR	PM	All
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Showcasing and Demoing the System	GA	--	All
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Results from the Interviews	All	GA, DGV	All

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Results of the Digital Management System	TR, PM	AB, GA	All
Customizing the Views Application	TR	--	All
Impacts of Sponsor Feedback on the Views System	GA	AB	All
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Appendix F: IRB Privacy and Consent Process	GA	All	All
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Appendix H: Detailed Schedule	GA	--	All
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1. Introduction

All across the world, non-profit organizations are responsible for enacting important social changes in their communities. These organizations provide assistance to disadvantaged communities while constantly combating the challenges of underfunding. During the fiscal year of 2019, it was estimated that about 46% of non-profit organizations around the globe have experienced some level of underfunding (501c, 2019). The BDO Institute for Nonprofit Excellence found that about three in five non-profits in the United States say rising overhead costs represents a moderate-to-high level challenge, and pressure to mitigate overhead is likely at the expense of investment in infrastructure (501c, 2019). Additionally, the UK Civil Society Almanac found that UK charities have lost more than £3.8 billion in grants from the government over the last decade, and predictions show funding will continue to decline in the future (NCVO, 2019). These funding cuts are in part due to the state of austerity that has been affecting the British nation over the last decade. When non-profit organizations cannot get access to all the resources they need, they become unable to fully accomplish their missions of addressing social issues surrounding society. As a result of economic challenges, many non-profits struggle to secure additional funding, which threatens their long-term viability.

One such example is the Somali Youth Development Resource Center (SYDRC), which is a social service non-profit organization located in the London Borough of Camden. The organization provides a platform for young people, especially those of the local Somali community, to help them socialize and integrate into the larger community of Camden. Most of the organization's income comes from public donations and grants such as the London Borough of Camden Grant which provides about 51% of the SYDRC's budget (Charity Commission, 2018). A recent report shows that the borough's government will suffer a deficit due to the pressure of rising costs and the demand for more public services (Camden's Financial Challenge, 2019). The SYDRC has been directly affected by this problem. They saw an all-time high for income in 2015, where they reported an income of £255,567, and after losing out on three major grants, their income dropped by 26% in 2016. The organization is now feeling the consequences of its budget issues and has had to eliminate technical resources that used to aid in the SYDRC's administrative tasks and its efforts to secure more funding (SYDRC, 2019).

Some of the resources that were cut included professional management software Lamplight and Apricot. These two solutions allowed the organization to efficiently manage their client base by providing them with quick access to stored clientele and program information. They also automatically generated statistical reports, which allowed the SYDRC to easily fill out funding and grant applications to potential donors. However, these systems proved too costly to maintain with their current lack of funding. In addition, these systems were hard to understand and not user-friendly for the staff. The SYDRC has now resorted to a less technical solution to manage their data by utilizing Excel spreadsheets. The spreadsheets lack sufficient scalability and make it more difficult to automate reports and program statistics. In order to implement an

effective management system for the SYDRC's unique organization, one must evaluate factors such as staff technical expertise, ease-of-use, and efficiency.

In the past, the clientele base of the organization was much smaller, so the Excel system was practical for their management needs. However, their membership rates began to exceed the limits of the system as they now have over five hundred clients. A new digital management system that allows for efficient processing of data would be extremely useful for the SYDRC because it would allow them to input new data much faster and analyze existing information in an automated fashion rather than manually computing statistics and reports. These advantages provided by a new system would alleviate a majority of the overhead that the SYDRC's current system produces and allow the organization to seek out additional funding for its operations.

The goal of this project was to design and implement a digital management system that would ease the financial burden placed on the Somali Youth Development Resource Centre so they could improve administrative efficiency and provide more detailed and accurate reports to their funders. We accomplished this goal by completing the following objectives;

- 1) To perform a comparison between various cloud-based systems in relation to the financial restrictions of the SYDRC.
- 2) To identify the needs and requirements of the SYDRC for a new data management system and room scheduler.
- 3) To iteratively develop a digital management solution that is intuitive to use.
- 4) To train the SYDRC staff in using and maintaining the digital management system.

By leaving the SYDRC with a more robust system, we assisted the SYDRC in its mission of maximizing the potential of Somali youth for years to come

2. Background

To place the significance of this project's software application development in a broad context, this chapter addresses seven topics. The first analyzes the challenges facing the United Kingdom due to increasing austerity over the past decade. The second topic details the funding processes experienced by non-profit organizations. The next section discusses how performance measurements and reporting metrics relate to non-profit fundraising. The fourth provides background information on our project sponsor, the Somali Youth Development Resource Centre, and how they are affected by lack of funding and a need for more technical infrastructure. The following section discusses the practices surrounding efficient data management within non-profit organizations such as SYDRC. The sixth topic lists four different cloud-based systems that could potentially be used as a solution for the SYDRC. The final section outlines the best practices for an application that utilizes an underlying database system. The rationale behind this documentation process is to allow others to replicate and improve upon our work in the future if need be. Additionally, this chapter will serve as a collection of our research and reasoning for the decisions made in our methodology.

2.1 Austerity within the United Kingdom

After the stock market crash of 2008, there was a global crisis in the credit and mortgage financial sectors that forced major governments, including that of the United Kingdom, to use taxpayer monies to bail out major banking companies (Kosakowski, 2019; BBC, 2013). In doing so, Britain spent more of its financial holdings than it could afford which caused the nation to enter a state of austerity that reduced the amount of spending in the public sector. By 2010, there was a 26% reduction in funds provided to local authorities (Fitzgerald & Lupton, 2014). One of the cities most affected by these cuts is London. As seen in Figure 1, the financial provisions allocated by the central government to London's thirty-three boroughs fell by about 63% (£4.3 billion) over the past decade (London Councils, 2019).

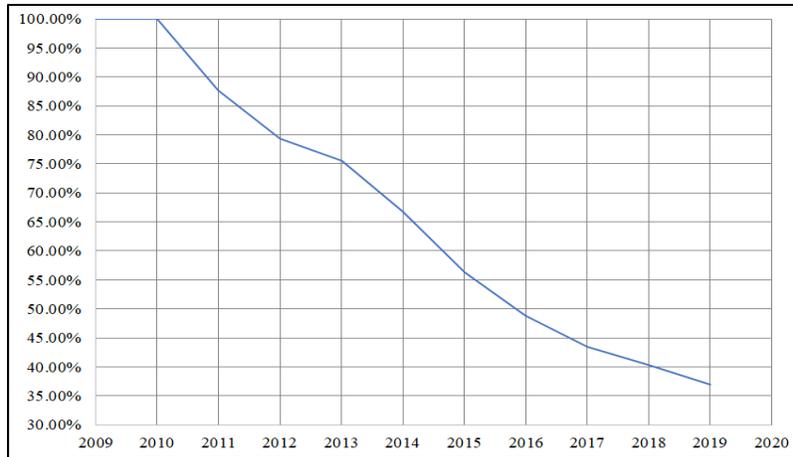


Figure 1: Cumulative Percentage Change in Central Government Funding for London from 2009 to 2019 (London Councils, 2019)

While the boroughs of London have other significant sources of revenue, they still needed to make up for this major reduction in income from the centralized government. The boroughs have resorted to greatly reducing their spending on various aspects of public services, especially non-profits, to limit the negative financial impacts and control the resulting deficits.

2.1.1 Financial Standing of the Borough of Camden

The regions that are most affected by the funding cuts are those of the “more deprived boroughs in Inner London with higher per capita spend” (Fitzgerald & Lupton, 2014). Of these inner boroughs, Camden has had the 5th highest reduction to its spending powers of all thirty-three London boroughs (Fitzgerald & Lupton, 2014). The austerity being enforced in the UK since 2010 has led to a dramatic decrease in income provided by the central government to the London Borough of Camden. In 2014, the reduction to funding was around 30%, and had risen to over 54% by 2018 (Camden's Financial Challenge, 2019). Every year since the cuts began, Camden has found itself in a significant deficit. Over the last eight years, the Council was forced to reduce its spending habits to make up for the lack of income. These reductions have resulted in Camden cutting back spending by £169 million. (Camden's Financial Challenge, 2019). Figure 2 outlines the evolution of Camden’s income reductions due to the cuts.

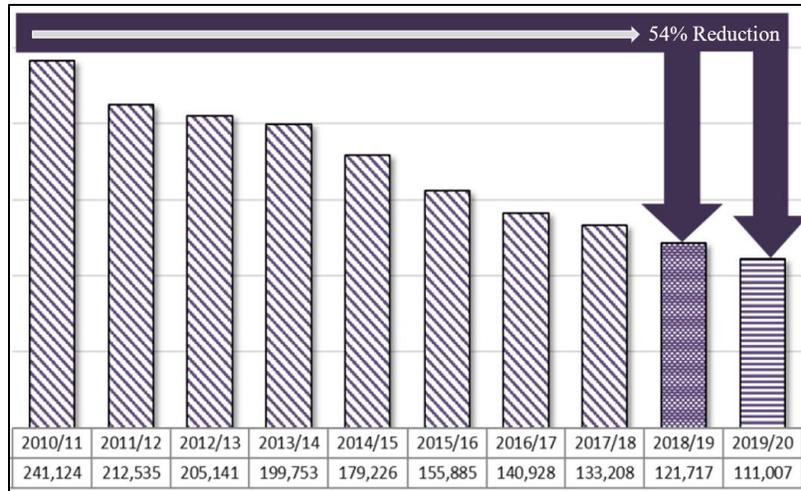


Figure 2: Camden's Change in Funding from the Centralized UK Government from 2010/11 to 2019/20 (Camden's Financial Challenge, 2019)

The Camden Council is expecting this reduction to increase in the 2020/21 fiscal year and is preparing for “a new budget deficit of between £35 million and £40 million” (Camden's Financial Challenge, 2019). The council will continue to make these savings by cutting the number of funds allocated to various public services provided in the borough.

2.1.2 Effects on Youth Public Services

One of Camden's public service sectors directly affected by the budget cuts is the Integrated Youth Service. This program deals with all the aspects of social services allocated to the youth of the borough ranging from safety, education, and support into adulthood. When the funding cuts began in 2010, the Integrated Youth Service had its budget reduced by £1.6 million over the first three years of Camden's initial plan to reduce spending (Fitzgerald & Lupton, 2014). Much of these savings were found by sharing resources among the council, voluntary, and private sector providers of youth care. These changes caused closures of some youth centres and forced young people to travel further away to access particular services that they originally had access to nearby (Fitzgerald & Lupton, 2014).

In recent years, the funding for these youth services was cut by an additional £500,000. To give it more perspective, the budget for Camden's youth services has shrunk by more than 25% in the past nine years (Barnett, 2018). On top of this, Camden will experience another cut by the 2021/22 fiscal year that is estimated at £129,600 (Camden's Financial Challenge, 2019). These new cuts will directly affect the initiatives that provide support for homeless kids, children with mental health issues, and young people's misuse of substances (Camden's Financial Challenge, 2019).

The effects of lack of funding tends to trickle down and affect all levels of the economy. In this case, a global financial crisis led to austerity by the UK centralized government which left

cities and their smaller districts in disarray. These financial setbacks lead local governments to reduce funding for public services and the people end up suffering the consequences. The lack of resources put into youth services is causing many non-profit organizations to struggle in sustaining their operations to combat juvenile crime, child poverty, and truancy.

2.2 Current State of Non-profit Funding

In order for the thousands of non-profit organizations located in the UK to conduct meaningful work in their local communities and across the nation, they need to have access to enough funding to support their missions. In 2011, a briefing by the National Council for Voluntary Organizations found that around half of all the funding for these organizations is provided by individual donations and self-made revenue, with the other 50% provided by statutory bodies in the government (NCVO, 2019). The majority of the funding, specifically from those executive bodies, comes from local governments and authorities. The remaining funds are provided mostly by the central government or the National Health Service (NHS), and only about 5% comes from the European Union (EU) or other international sources (NCVO, 2019). It was also noted that larger organizations are much more likely to receive state funding than smaller organizations, with 75% of voluntary organizations not receiving any funding from the state at all. Funding from the government is often given out to organizations that aid the communities that require the most assistance. However, with the undeniable trend of funding cuts to these organizations, it is becoming more evident than ever that these communities may lose the only meaningful support they receive.

2.2.1 Funding Cuts in Non-profits

The challenges faced by the larger national government and the NHS have caused funding to shrink or get cut altogether for many local organizations. On top of this, studies have shown the snowballing effect that an economic recession has on private and individual donations. The total amount from individual donations reduced up to 10% in low economic output years, and at the same time, the need for these organizations reached an all-time high as people became less financially stable (Bawden, 2016). On top of all this, these charity sector organizations need to take caution to ensure they do not fall into the state of continuous cuts to funding that many non-profits face. Individual and state funders alike will not want to donate to a cause unless the money they give goes directly to fixing the problem, meaning these organizations have very little resources to devote to building an infrastructure to ensure they can receive funding for the years to come. As Adam Cole, the co-leader of the BDO's Non-profit & Education Practice has stated, "investment in new technology, which has the potential to streamline operations and reduce costs over time, is often the first cut" when a non-profit seeks to find savings (501c, 2019). These sudden cuts in government funding are often what dooms social service organizations in the long term.

2.2.2 Long Term Effects of Budget Cuts on Non-profits

The outreach provided by non-profits has become even more limited as a result of insufficient funding from the private and public sectors. One study conducted with data from the British Centre for Analysis of Social Exclusion found a direct correlation between reduced state funding for non-profit organizations and the effectiveness of the organization, specifically located in districts with high levels of poverty and social inequality (Fitzgerald, Lupton & Brady, 2014). The report found that when funding was cut, the services provided by these organizations are forced to run on fewer staff members and with reduced budgets. Unfortunately, this results in fewer community activities with less community engagement (Cheng & Yang, 2017). This is just the immediate effect that cuts have on these organizations, as the long-term effects look much grimmer. About 3 in 5 non-profits say the pressure to reduce spending comes at the expense of investment in infrastructure for the organization in the long-term (501c, 2019). With no long-standing plan or investment resources, many local service managers stated they have doubts about the future of their services (501c, 2019). Years of economic downturn are often especially difficult for non-profit organizations, as reduced funding the central and local sectors of government puts pressure on organizations. At the same time, recessions cause disadvantaged communities to need even more assistance from social service organizations which places even more strain on non-profits.

2.3 Funding Process for Non-Profit Organizations

When non-profits experience financial struggles caused by government funding reductions, they are left to seek out funding in other forms. There are numerous ways that non-profits can find additional funding such as through bequests, loans, investments, tax revenue, personal donations, and foundation grants (Candid, 2020). In order to receive any funding from private foundations, non-profits are required to fill out applications that entail reporting member engagement, impact of work done, and operational costs (SYDRC, 2019). These applications can be lengthy and strenuous to complete if the non-profit does not have easy access to statistical information to back up their claims. Without proper analytic evidence, funders and donors will be reluctant to continue to invest in non-profits and will place them into the “starvation cycle”.

2.3.1 The Starvation Cycle in Non-profit Funding

Lack of funding for non-profits often puts them at risk to fall into a cycle known as the “starvation cycle”. This cycle begins with pressure from limited funding on non-profits to do two things:

1. Do or say anything possible to keep their current donors or funders, and

2. Cut overhead (updates for the organization) spending and eliminate extra expenditure (small everyday expenses such as food, entertainment or activities) to try and maximize their reduced budget.

By repeatedly acting on these efforts to keep their funding, non-profits slowly get themselves into this “starvation cycle” (Gregory & Howard, 2009).

The cycle can begin at different points for each non-profit: there is no real constant starting point. But in order to analyze the cycle, it is easiest to start at the funder’s unrealistic expectations of the cost required to run a non-profit. These expectations normally come from misreporting from the non-profits (another step in the cycle) and simple lack of knowledge/interest from the funders (Gregory & Howard, 2009). Being misinformed then leads to donors reducing the amount of funds provided to the non-profit, since they believe the non-profit doesn’t require as much money as they are currently being given. And thus the cycle restarts, since cutting funds puts non-profits in an uncomfortable position.

After getting their funds reduced, non-profits then feel pressured to keep the funders happy, and attempt to operate on the reduced budget by reacting in two ways:

1. They start spending less money on overhead (updates for the organization), and
2. They underreport their expenditures on fundraising applications.

Spending less money on overhead appears to be a simple solution to a reduced budget, but this is a repeated mistake and can often be a dooming one (Gregory & Howard, 2009). Not spending money on overhead halts the development of the non-profit, and in many cases makes the non-profit less attractive to new funders. But the biggest mistake non-profits make is underreporting their running costs to the funders. In a study done about non-profits in the U.S. it was found that more than 220,000 non-profit organizations reported no fundraising costs whatsoever in the organizations’ financial statements, while one in eight reported no management and general expenses. Further scrutiny found that 75 percent to 85 percent of these organizations were incorrectly reporting the costs associated with grants (Gregory & Howard, 2009). Misreporting is a way for non-profits to attract funders, since it appears that they’re cheap to run and still produce results, so more funders will be interested in giving them money (Gregory & Howard, 2009).

Through these reactions, non-profits manage to run with their new reduced budget and keep their donors somewhat happy. Unfortunately, the funders see the non-profit’s successive reports, and this feeds the funder’s bias of how much money it requires to run the organization so they will be inclined to reduce their funding again, and the cycle repeats (Gregory & Howard, 2009).

Getting locked in the “starvation cycle” is deadly for non-profits. They will continue to underreport and have their budget cut until they get to the point where they can’t continue to operate on a full scale anymore. The non-profit also won’t be able to update their installations and materials anymore which halts growth as they are not offering any new services. The longer

they are locked in the cycle, the harder it is to get out of it for this same reason (Gregory & Howard, 2009). Members will no longer see their services as helpful or necessary and thus the non-profit starts failing to reach its goals and fulfill its mission. This lack of progress speeds up the process of starvation and can potentially kill the non-profit entirely (Gregory & Howard, 2009).

2.3.2 Measuring Performance in Non-Profit Organizations

In order to prevent organizations from falling into this cycle, it is important that they accurately report results to their funders in a way that will give them the strongest likelihood of receiving enough financial support. Funding organizations and donors want to measure the impact their money is having, and ensure it is being spent in a responsible way. According to the Foundation Reporting Study conducted by Social Solutions, 98% of questioned funders put measurable impact in their top three most important factors when determining who gets funding (Social Solutions, 2017). However, not every funder is the same, which puts non-profits in the difficult position of tailoring the reports to the kind of data that is most relevant to each of their independent funders. One funder interested in gender disparity might focus on the ratio of boys to girls in events, while another might be focused more on the ethnicity breakdown amongst the participants. This puts even more pressure on organizations to not only record as much information as possible, while also creating new metrics to measure growth by amongst a wide range of timelines, as each funder has their own expectations and deadlines.

2.3.3 The SYDRC's Spending and Funding

One such non-profit experiencing an increased focus on performance measurement is the Somali Youth Development Resource Centre (SYDRC), established in 2000, which provides critical resources and support to the Somali people in the Camden community ([Appendix B](#)). Based in the recently redeveloped Kings Cross region of Camden, the SYDRC works to tackle social issues that affect Somali Youth such as educational underachievement, social exclusion, and violence. The SYDRC is located at the NIC Centre in a fairly small section of the building with a handful of conference rooms, a tech room, and office space. The SYDRC envisions “a society where Somali young people can realize their full potential” (SYDRC, 2019).

The SYDRC is an example of a small charity that operates on a tight budget comprised of donations to do the most impactful work it can. The total income of the SYDRC in March 2017-March 2018 was about £219,900 and spending totaled £219,700 (Charity Commission, 2018). Some of the main funders include John Lyons, a charity foundation, and the London Borough of Camden, which has donated over half of all of the funds used by the SYDRC. The main areas that the SYDRC spends funds on are wages for their seven paid employees, improvements to their space in the NIC building, and programs. In times where spending is tight, it is vital that the SYDRC has a good record of attendance and success of its programs in order to track which

programs are effective and solicit additional donations. For additional organizational information about the SYDRC, refer to [Appendix A](#).

2.3.4 Technological Gap Affecting the SYDRC's Funding Efforts

The technological problem that is affecting the SYDRC is measuring the impact on those that come to the center. In a personal conversation with the SYDRC's director on November 13th, 2019, he estimated attendance of about 30-50 adults, 50-100 young people, and 10-30 kids under age 5, for an overall range of 90-180 people per week. Measuring the impact on these people with the limited staff hours is the problem facing the SYDRC.

The current method for logging attendance and information about these programs at the SYDRC is a paper sign-in sheet coupled with an Excel spreadsheet. It takes employee time to record the attendances into the spreadsheets. Previously, the SYDRC implemented the professional database management systems of Lamplight and Apricot. These systems were cut for various reasons; Lamplight was a cost-effective system but was not user-friendly, while Apricot was a better system with an unsustainable cost. The SYDRC also rents out rooms to clients in the NIC Centre. The current process for reservations requires clients to call the director of the SYDRC directly, who then confirms the booking using the Microsoft Bookings system. This room rental solution has also been determined to not perform to the needs of the SYDRC due to staff accessibility issues. The Excel spreadsheets are not an efficient method of data entry and do not provide high-level overviews or statistics. The manual analysis of all the SYDRC's operations slows down funding request forms and processes that would help the organization win more grants and gain additional funding. Most importantly, the lack of efficiency comes from multiple excel sheets being used concurrently; there is no central system uniting everything the organization does. The director of the SYDRC has expressed the need for such a unified system, preferably in cloud computing.

2.4 Data Management within Non-profit Organizations

Non-profit organizations are generally required to pass certain performance measurements in order to continually receive funding from the government and other private foundation sources to prove that their services are efficient and effective. These performance measurements typically come from the reports and statistics outlined in earlier sections and are built using the data gathered from events and participants. The use of a data management system that is able to efficiently keep track of event and participant data can allow non-profit organizations to spend their time on other resources and processes. A data management system that can also automate the generation of reports further bolsters the flow of information to funders and increases efficiency. However, the initial implementation and setup of data management software in a non-profit can prove difficult for these organizations that may have limited monetary and personnel resources.

2.4.1 Challenges with Implementing Technology within Non-profits

Most non-profit organizations face three main challenges when working with technology resources: “(a) the role of staff and processes in an effective client data system, (b) underutilization of the systems, and (c) lack of system integration, including the development of ‘work-around’ systems” (Carnochan et al., 2014). These challenges highlight that many organizations do have some kinds of technological resources, but they are not working with them to their full potential either by not devoting the time needed to fully understand how to use the resource, or using it in a way that it was not intended for. This unintended use can lead to the creation of ‘work-around systems’ in which businesses may make temporary fixes to their processes that generally lack efficiency for long term use. Effective use of technology and data systems can improve the performance of non-profits thus increasing funding.

However, the initial investment in technologies that do not immediately bring financial benefit can pose a challenge. A study conducted on a set of non-profit organizations geared towards serving women and girls, called the Women’s Technology Consortium (WTC), found that the biggest barrier in technology to non-profits both in 1999 and more recently in 2007 was that of the funding required (Saigal, 2008). Figure 3 outlines all of the barriers examined in Saigal’s study.

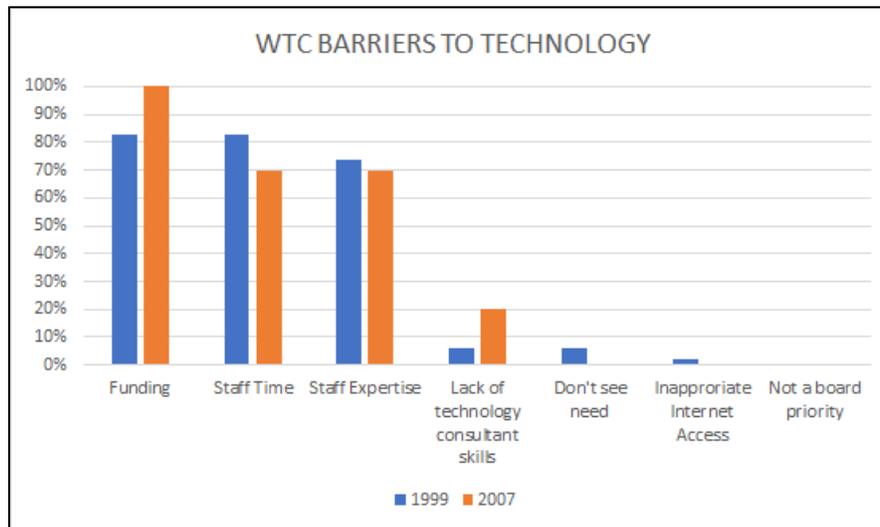


Figure 3: Barriers to Technology that Non-profit Organizations Face (Saigal, 2008)

Funding for developing new technology infrastructure requires a significant amount of strategic planning that goes into depth on how to use the resource (Saigal, 2008). Non-profit organizations must consider the long-term investment of the resource they are attempting to adopt in order to ensure that it will not increase the deficit of their already diminished funding. Saigal also found that staff time and expertise are significant barriers to technological additions in non-profits. However, both of these topics are mitigated by creating a strategic plan to adopt new technological resources. If successful, new technology has the potential to dramatically

reduce the time needed to work out problems and its consistent usage can increase staff expertise.

2.4.2 Optimizing Existing Management Systems

In order to plan efficiently for funding technological development of a data storage resource, non-profits must take care of other responsibilities more efficiently. One such responsibility was examined during a study about prototyping an effective room booking application. The results highlighted three attributes that were central to the system:

- Search: Finding a free room within the parameters of place, size, equipment, and free time. Finding existing bookings based on user or description.
- Booking management: Booking a room for a duration of time/time slot, finding own/others' bookings and canceling such bookings
- Easy access: Most lookup functions are available without logging into the system, thereby speeding up access and not limiting the user base to only those with an account. (Jonasson et al., 2007)

Designing a room booking application focusing on these three attributes will create an effective way to work with new reservations and allow more time for planning out new technological ventures with the limited funding that non-profits like the SYDRC have. The SYDRC currently utilizes Microsoft Bookings to manage all of the conference rooms in the NIC Centre that they rent out. However, there is no internal tool used to identify when a room is available in an efficient manner. There is also no automated way for the SYDRC to share this information with other staff or organizations, but the adoption of a cloud-based system could solve these issues.

2.4.3 Utilizing Cloud Computing

One important technological planning consideration is the adoption of cloud computing services rather than local servers. Cloud computing services are able to mitigate costs because they do not require any physical hardware and provide a more flexible payment option by allowing for charges per hour rather than all at once (Strickland et al., 2010). These services allow non-profit organizations to move away from local servers which require maintenance from someone in an IT role. The services also eliminate the need for any 'homebrew databases' that could have been created by workers in an effort to simulate the features of a professional database. These 'homebrew databases' are generally either paper based, which have issues in searchability as client information is possibly stored across multiple documents, or some kind of personal office application that cannot share the data across departments within the organization efficiently. The personal application also creates issues in scalability as they fail to scale along the three dimensions of: number of users, number of records, and dimensions of data (Volda et al., 2011).

2.5 Cloud-Based Systems

Some potential cloud-based systems that can store the information needed by a non-profit organization are Microsoft Azure, Google Cloud, Amazon Web Services, and Substance Views. All of these services exhibit similar characteristics such as the ability to offer on-demand usage and low-cost, scalable data storage that requires little maintenance by the consumer. These systems also allow users to access their stored information from various devices and locations as long as they have an internet connection. By utilizing this global networking infrastructure, users can work simultaneously to update information in real time and increase overall productivity. However, each system provides somewhat different features and benefits at differing prices in order to keep the market for cloud computing competitive. The following sections will include details on what each system's key features are.

2.5.1 Microsoft Azure

Microsoft Azure is a cloud service provider that offers a number of cloud-based applications and products. All of the Azure frameworks place a high emphasis on being “future-ready”, which means they are constantly updated and enhanced. Azure also holds “datacenters in more regions than any other cloud provider,” which allows them to provide most organizations with very low latency services (Microsoft, 2019). All of their applications also allow the use of any open-source operating system, language, or tool which creates incredible flexibility in how their applications behave. The database management systems offered within Azure are called the Azure SQL Database and the Azure Cosmos DB. The database that will provide a more efficient option is the Azure Cosmos DB which uses NoSQL. NoSQL stands for Not Only Structured Query Language which is to say that it still uses some structures from the traditional SQL format but also takes advantage of the fact that computers in the modern age are significantly faster. NoSQL utilizes this speed to organize data into simpler formatting such as tying data chunks together by storing them in key-value pairs. For example, it allows systems to tie a date value to a specific key such as an object name. The Azure Cosmos DB also draws heavily on globally located datacenters within the Azure architecture in order to provide quick transfers of data across the world.

2.5.2 Google Cloud

Google Cloud is also a cloud service provider that presents similar applications to that of Microsoft Azure, but it places a heavier importance on data analytics and the use of machine learning strategies (Google, 2019). It also offers online and offline transfer solutions as well as systems for managing big data. Big data is an extremely large set of data analyzed computationally to find patterns and trends usually related to human behavior and interactions. The main database management systems associated with Google Cloud are a part of another service provider called Firebase. The two databases that Firebase holds are called Cloud

Firestore and Realtime Database. The developers of Firebase recommend using Cloud Firestore as it, “offers additional functionality, performance, and scalability on an infrastructure designed to support more powerful features in future releases” (Firebase Documentation, 2019). Both of the databases that Firebase provides take the more modern computing approach and make use of the NoSQL format explained earlier.

2.5.3 Amazon Web Services

Another cloud service provider is Amazon Web Services. AWS is the largest cloud computing service provider in the world and has a large variety of database implementations for our team to choose from (AWS, 2019). Two of AWS’ options that tailor the most towards data management are DynamoDB and DocumentDB as they both use the NoSQL format and provide better flexibility and data persistent features than the other aforementioned cloud systems. The main difference between the systems is in scale, DynamoDB works best with simple databases with minimal information about each person, while DocumentDB is for databases on a much larger scale. These systems are designed with redundancy in mind, so there are multiple backups of the databases in the event of system failures. Additionally, AWS is deployed globally and Amazon has a large data center in London, meaning organizations within London do not need to worry about unstable connections to the servers.

2.5.4 Substance Views

The Substance Views cloud-based management system is geared specifically towards helping “charities, non-profits and social purpose companies organise and analyse data in a single platform” (Substance., 2018). Views’ main advantage is that their product provides a prebuilt application to be customized by the consumer rather than simply being a backend service that requires integration into a custom built application like Azure, Google Cloud, and AWS. The application is broken down into four core functionalities: contacts, work, evidence, and intelligence (Substance., 2018). The ‘contacts’ functionality allows users to easily store personnel data and identify people as clients, staff, volunteers, and stakeholders. The ‘work’ aspect deals with the ability to organize and store information about events, projects, and sessions that the organization conducts. It also allows the organization to maintain a live calendar of all its sessions, events and activities. As for ‘evidence’, this deals with the ability to store media files and case study information. Lastly, the ‘intelligence’ core function is used to generate statistics and reports based on the unique information stored in the system. It also allows organizations to keep track of their unique objectives and outcomes and monitor how their participants are achieving those goals. All of these functionalities are implemented through various modules that are dynamically added into a specific organization’s dashboard in order to create a professional application that caters to each unique user. In addition, administrative users are given access to special tools that allow organizations to customize the four functionalities to their specific needs.

2.6 Intuitive Database Design

Once the possible options for a cloud-based system are laid out, there are additional questions to consider to design an effective database system. It is important to look at the systems from a business perspective and consider what benefits they actually provide for the organization as was done in the sections above, but it is equally important to consider the actual users of the database and how well they are able to use the system. The most effective way to ensure that users are well represented in the design is to place great importance on creating an intuitive user interface.

2.6.1 Effective User Interface Design

The current demand for intuitive user interfaces is quite high due to software applications becoming more complex and users' limited time for learning how to use a system (Löffler et al., 2013). That being said, there is no single clear definition for developing intuitive software interfaces. Löffler and his colleagues provide an overarching definition that “designing intuitive-to-use interfaces means achieving a match between the user interface and the mental model of the user” (Löffler et al., 2013). Paying careful attention to how a user subconsciously believes a visual element should behave is vital to the creation of an intuitive user interface for a database. For example, if an element requires incrementation, such as the number of hours worked, it makes sense to give the user some kind of representation of the concept of ‘up’ such as an up-facing arrow or allowing the user to visually move an item higher. This will make the user feel like they are directly manipulating the data rather than working through a tool, which is important in generating positive emotions in the user. As Ralich and his group mates found in their study on the creation of a database for a non-profit organization, “The most well designed and technologically advanced solution means nothing if it is not adopted and embraced by those who will be using it” (Ralich et al., 2005).

2.6.2 Sustainability and Maintainability

In order for the database to create a lasting impact on the organization it must have some kind of support framework for when there are issues long after the initial designers have completed it. Non-profit organizations are likely to shift their workforce as they mainly rely on volunteers, so it is important that there is some way for new users to learn how to utilize new software to its full effectiveness. There are many examples of ways to train users such as simple instruction manuals on various features or even a video showcasing the processes that the system can handle, but the most effective way to train users is through hands on approaches (Ralich et al., 2005). Users should have the ability to provide direct feedback on training sessions between the user and the creator so that issues are worked out on both ends. This feedback also helps the creation of more physical articles such as the manuals and videos mentioned earlier, as they can

directly comment on anything that was repeatedly brought up in the hands-on sessions conducted.

2.7 Conclusion

Our background chapter provides the context for our project by defining the current financial situation for non-profit organizations in the London Borough of Camden that stems from austerity within the United Kingdom. We then described how non-profits struggle to record performance measurements through data collection in order to support their applications for additional funding from various types of donors. We also define how a technical solution can support many non-profits, especially the SYDRC, by improving administrative efficiency and creating more detailed statistics that enhance funding applications. Lastly, we detailed the effective modern practices for implementing efficient digital management solutions, such as utilizing one of several different cloud-based systems. The information gathered in this chapter informed the decisions made in our methodology section that follows.

3. Methodology and Implementation

The goal of this project was to design and implement a digital management system that would ease the financial burden placed on the Somali Youth Development Resource Centre so they could improve administrative efficiency and provide more detailed and accurate reports to their funders.

Our measurable objectives were:

- 1) To perform a comparison between various cloud-based systems in relation to the financial restrictions of the SYDRC.
- 2) To identify the needs and requirements of the SYDRC for a new data management system and room scheduler.
- 3) To iteratively develop a digital management system that is intuitive to use.
- 4) To train the SYDRC staff in using and maintaining the digital management system.

To accomplish these objectives, our team worked directly with the SYDRC for a seven-week period that began on January 18th, 2020 and ended on March 6th, 2020. The project work was conducted on-site at the SYDRC headquarters inside the NIC Centre located in the heart of the King's Cross region of the London Borough of Camden. The data management solution we integrated into the SYDRC's routine focused on their need to efficiently manage client information and room booking data. The methods described below outline the exact process that was followed in order to achieve the goal and objectives.

3.1 Comparing Cloud Systems to the SYDRC's Budget

During our initial teleconference meetings with the director of the SYDRC, Mr. Abdiwahab "Abdi" Ali, he requested that our team develop a database system that utilizes a cloud-based back-end framework. Before presenting him with an informed list of possible cloud systems that could be implemented, a price comparison was performed on Microsoft Azure, Google Cloud, Amazon Web Services (AWS) and Substance Views. The comparison took place in November of 2019, before our team arrived in London. These four platforms were chosen as options since they all offered cloud services that could store the needed database and all of its contents. Each of these cloud services has its own system for determining the pricing for their services by calculating how many times a user is reading data from the database (read units) and how many times a user is writing data to the database (write units). Views is an exception here, as it is already a prebuilt application and does not limit reading and writing costs. Our analysis heavily prioritized the financial restriction our sponsor had given us, and we attempted to see how much each system could provide within that restriction. In previous years, the SYDRC paid close to £250 per month for professional cloud-based database systems. This became too costly and the systems were dropped. In preliminary conversations with our sponsor, it was made

known that the SYDRC is now only able to allocate up to £100 per month on management software and that they would need up to 10 GB of storage space for all of their data. The cost analysis described below details the various systems our team believed would best fit the SYDRC's budget and storage needs. For a summary of the cost analysis, refer to [Figure 4](#).

3.1.1 Cost Analysis Among Cloud Systems

Microsoft Azure

Microsoft Azure uses different criteria for pricing each database solution that they offer. The Microsoft Azure Cosmos DB uses the maximum data storage and throughput to determine pricing. Based on initial calculations, we priced out a Cosmos DB instance option for what our team determined would be a reasonable estimate for the maximum amount of data being stored in the database (10GB), as well as the computing power required to view and edit the database from up to five users at a time. For around £50 per month, the Cosmos DB instance would hold a database with a maximum data capacity of the 10 GB needed. Additionally, each staff member would have the ability to view 60,000 words per second on the database and write up to 10,000 words of data per second. This results in a combined final cost of 222,700 KB per £1.00 for both reads and writes. However, this estimation could fluctuate to allow for higher total storage capacity at the expense of reads and writes per second.

Google Cloud

Google Cloud offers the cloud computing suite known as Firebase, which offers a variety of services under a flat monthly fee of £19 per month. This plan includes a storage capacity for a database of 2.5GB, and 250,000 reads and 200,000 writes per day, which translates to a cost of 1.6 million KB per £1.00 of reads and 1.2 million KB per £1.00 of writes. Google Cloud also provides a pay as you go plan, similar to the alternative providers, that would offer the database features at a more competitive price. However, Google Cloud was not competitive enough to outmatch the alternatives listed in this section especially in terms of storage.

Amazon Web Services

The team determined that Amazon Web Services' (AWS) DynamoDB was the best solution from Amazon. The pricing model for AWS is extremely flexible and allows for a scalable solution. One advantage of DynamoDB is that the storage aspect is effectively free of cost since there is a free plan that allows for 25GB of storage. DynamoDB prices the data throughput of the system for the number of reads and writes at £1.00 per 3.52 million KB for writes and £1.00 per 17.55 million KB for reads. Another good feature of AWS is that there is a backup feature built-in. For an estimated additional £2.29 per month, users can store two complete backups of their system. For similar requirements to both Microsoft Azure and Google Cloud, the scaled cost for DynamoDB comes out to about £7 pounds per month, which is the most cost-effective of the cloud computing options examined.

Substance Views

Substance Views is available in two packages, the starter tier and the plus tier, each costing £600 and £980 per year respectively. This price is all-inclusive in terms of software and storage. Both tiers include all modules of View’s four core functionalities, but the plus tier expands upon them by integrating more advanced systems such as email and questionnaire correspondence. The cost of the starter tier is £50 when broken down into monthly payments, which is within SYDRC’s budget. The cost of the plus tier is about £82 when paid in monthly installments. This is on the higher end of what the SYDRC can afford but still falls within their budget. While this solution is the most expensive of the possible options, it would allow us to implement the most professional system since we would focus on customizing existing software rather than building our own application from the ground up.

	 Microsoft Azure	 Google Cloud	 AWS	 views
	Azure CosmosDB	Firebase	AWS DynamoDB	Starter Tier Plus Tier
Storage	10 GB	2.5 GB	25GB	All inclusive
Write KB/ £1.00	222,700	1,200,000	3,520,000	↓
Read KB/ £1.00	222,700	1,600,000	17,500,000	↓
Total Cost Per Month	~£50	£19	~£7	£50 ~£82

Figure 4: Results from Cost Analysis of Cloud Systems

Conclusion

Based on the calculations that were completed in the cost comparison, two possible solutions were selected to present to our sponsor for the new database application. These cloud solutions were divided into two categories:

1. Computing services with a database framework to be built upon, and
2. Pre-built web applications that can be customized

Since both categories run in the cloud, no local server or storage would be required. For the first category, Amazon Web Services turned out to be the most feasible solution, over Microsoft Azure and Google Cloud, due to its low-cost monthly commitment. Our team also decided to provide Views as the pre-built option to our sponsor. While Views was more expensive than the other options, it had the advantage of being a pre-built web application by a professional software company. Also, Views was potentially the stronger solution in the long run, if the SYDRC could afford it, since it has professional technical support for the application.

3.2 Identifying the SYDRC's Needs and Requirements

Before beginning development of a replacement solution, we needed to understand how the current Excel system worked and why the SYDRC was looking for a new solution. A conversation with a staff member at the SYDRC was held to gather this information and it detailed the process of utilizing the Excel system. It was also necessary to determine what the SYDRC needed from a new system in terms of functionalities for the database, analytic tools, and the room scheduler. This information was gathered through the mediums of surveying and interviewing willing staff members at the SYDRC who would be utilizing the new system.

3.2.1 Observations of the Current System

Originally, our team planned on observing the current Excel system by conducting direct observations of how the staff used the spreadsheets on a daily basis. However, upon arrival to the SYDRC this method was found to be unnecessary due to how simplistic the system was and impractical since that system was not used at regular times each day. The use of the Excel sheet varies by need so it wasn't viable to pick a time and date to conduct such an observation. The observation was reworked by sending one of our team members to directly speak to one of the main staff members and have them show us the process of recording session and attendance data into the Excel system. Since the SYDRC Excel system is a simplistic one compared to all the possible features of Excel, the one-on-one session provided all the data needed. The second way the observations of the system were completed was by having hands-on interactions with the Excel spreadsheets. After approaching Abdi and asking for access to the system, he openly agreed and emailed us the most recent version of their Excel data sheet. Our team spent about thirty minutes using the system ourselves and figuring out how the data was inputted, organized, and outputted. This first-hand view of the system allowed us to figure out exactly what the SYDRC needed in terms of data storage and privacy inside the new system we would develop for them.

3.2.2 Survey Design for Staff

In order to identify the wants and needs of the SYDRC in relation to the new database and room scheduler, data about the preferences and requirements that the staff in the centre had for a new system was collected. To gather this information, our team sent out a Qualtrics survey to five of the seven paid staff at the SYDRC that had access to the Excel system that the SYDRC used as a database ([Appendix D](#)). This sample was drawn from the SYDRC population utilizing the purposive method. This means that each person surveyed had a reason for being chosen. Subjects were chosen for the survey if they had any interaction with the database and/or room scheduler.

Upon arrival in London, we sent Abdi an email with the link to the survey and a privacy notice of consent ([Appendix F](#)). He then personally contacted each of the five paid staff

members, asked them to participate and informed them of our privacy policies. The survey included a set of quantitative questions that provided us with information about the general wants and needs the SYDRC staff had for the database and room scheduler ([Appendix C](#)). The survey was broken up into four sections of questions. The first section was short and asked simple demographic questions and general questions about technical expertise. The second section contained various questions surrounding potential features for a new database system. The third section focused on asking the respondent for their preferences on potential layouts for the room scheduling application. The last section focused on gathering data on what types of UI features and ease-of-use functionality were important to the staff. These questions provided us enough data to determine which features were of the highest priority to have in the new system. For a detailed analysis of the survey responses, refer to section [4.3.1](#) of this report.

3.2.3 Interview Protocols for Staff

After gathering all participant data from the survey, follow-up interviews were conducted with four of the staff members that answered the questionnaire. Our team had access to identifiable information, as Abdi has given us permission to record the names of his staff that responded to the survey under the condition that all personal information be deleted after the interviews were conducted. This process is detailed in the privacy notice of consent ([Appendix E](#)). By drawing upon responses from the survey, our interviews utilized a semi-standardized structure. This method allowed us to ask more dynamic questions and obtain detailed responses that were specific to the current interviewee. The sampling method used for these interviews was also purposive since the only data needed would be from the users who would primarily work with the new system on a daily basis. Out of the population of staff at the SYDRC, this made our sample only that of the paid staff who filled out the questionnaire. The four interviews were held on January 22nd, 2020 and were conducted by two of our team members. Gabriel was the primary interviewer and Diego provided additional support while also taking notes. All of our interviewees agreed to having their responses recorded. To do this, two of our personal cell phones were used to record the audio of the sessions. On the next day of work, our team listened to the recordings and typed transcriptions of all four interviews ([Appendix J](#)). Once the transcriptions were completed, the audio recordings were deleted to uphold our privacy policies.

Our interview focused on two main topics each containing multiple questions ([Appendix E](#)). The first topic surrounded the technical expertise of the interviewee. These questions allowed us to gather open-ended data on how the interviewee used technology and why they thought the SYDRC needed a new system. The second topic focused on features and ease-of-use functionality that the new system would potentially have. This section had a bulk of its questions restructured during the interview sessions based on the survey answers provided by the current interviewee. All of these interview questions allowed us to gather specific information on features and ideas that helped us cater the new systems to the unique aspects of the SYDRC and its staff. The interviews also provided us with the means to gather any concerns that the staff had

about a new system, as well as gain knowledge about past issues they had with the current system. For a detailed analysis of the interview responses, refer to section [4.3.2](#) of this report.

3.3 Iteratively Developing a Software Solution

Once development began, our team had to build the new system in a manner that allowed the director of the SYDRC to provide frequent feedback. In order to maintain this collaborative development, we planned out the development practices to utilize in terms of customizing Views and programming the room scheduler. Also, team management methodologies and work reviewing techniques were implemented, which allowed for a successful dynamic production cycle.

3.3.1 Customizing the Views Application

Abdi chose to use Views after presenting him with our two potential database options from the first objective. Once the SYDRC purchased a license to use Views, our team was provided with a special development login account in order to access the system and customize it to the needs of the SYDRC. This account provided access to admin specific tools that gave us the ability to reorganize how the system collected and displayed data. The ‘Flexible Fields’ and ‘Value Lists’ functions allowed us to restructure and add informational fields into the database for various data types such as participants, staff, and volunteers. It was also possible to manipulate the Views calendar system through the ‘Session’ functionality. The ‘Import Data’ feature provided us with the ability to bulk upload data into the system and get the Views application ready to use by the staff. The ‘Dashboard’ system in Views was also customizable and used the built-in tools to display statistical information important to the SYDRC. In addition, through the administrative tools given to us, the ‘Questionnaires’ functionality was utilized to create templates for the SYDRC to use for gathering participant responses to their activities and sessions. The last main functionality utilized was ‘Security’, which enabled us to add privacy and security restrictions for non-admin level users.

The individual tasks our team completed to customize the Views system were based on the results of the survey and interview process. An analysis of these results can be found in sections [4.3.1](#) and [4.3.2](#) of this document. Table 1 outlines the list of tasks completed in order to customize the Views system.

Tasks	Brief Description
Adding and Updating Data Fields	Organized the flexible fields used to collect data for individuals, staff members, funders and sessions. Ex. Forename, Surname, Emergency Contact, Post Code, Organization Name, etc.

Creating Value Lists	Created dropdown lists to easily input data with multiple options such as rating scales for questionnaires and ethnicity options for staff and participants.
Legacy Data Transferal	Bulk uploaded the Excel spreadsheets used previously into the Views System. This data was comprised of over 500 of the SYDRC's participants.
Venue Creation	Added in locations and rooms in the NIC Centre where activities are held.
Staff Assignment	Created staff profiles with relevant information and assigned each staff member to sessions they are in charge of.
Activity Creation	Added in the SYDRC's weekly activities, linked them to their specific venues, and formatted them to collect attendance information and workshop type.
Individual Session Creation and Calendar Population	Created recurring instances of the SYDRC's sessions to have the Views calendar display the weekly sessions held at the NIC Centre.
Duplication Handling	Used the admin tools to find, merge, and separate duplicate data inputs for staff and participants in the Views Database
Statistical Summaries Creation	Created statistical breakdowns that would pull from participant and session data between a given timeframe and create reports on information such as Attendance, Engagement hours, Demographics, Ethnicity, Social outreach, and Postcode.
Added Remaining Statistics	Created relevant statistics for any additional information not available in the statistical summaries.
Dashboard Customization	Adding relevant statistics and reports to the 'dashboard' which is the first page that appears when logging into the Views system.
Questionnaire Creation	Created questionnaires for sessions that could be emailed to participants to gather feedback on the session.
Security Level Assignment	Added 'user groups' that separate system users based on restriction levels to information. Ex: Users in the Volunteer user group do not get access to participant data.
Updated Locales	Changed menu names to reflect their purpose in the SYDRC
Correspondence Customization	Enabled and customized email correspondence to set up automated review questionnaires to participants.
Outcomes & Objectives Creation	Created a complete list of possible outcomes from sessions and assigned them to proper objectives and session types for statistical gathering.

Grouped Activities	Created groupings for each age range and assigned individual activities to the target age group for statistical collection purposes.
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Table 1: List of Tasks Completed to Customize the Views System

3.3.2 Software Development Practices for the Room Scheduler

The completion of the room scheduler web application involved the use of various software development practices and tools. The overall application required multiple facets of development from being able to host the application online to communicating with other online resources that the SYDRC is using. There are three main tools that were used to complete the application:

1. JavaScript, which was used to interface with all of the other tools and build the application through code,
2. Views API, which allowed us to communicate with the Substance Views database, and
3. Amazon Web Services (AWS), which provided a place to host the room scheduler web application.

In addition, all of the application files were hosted on GitHub to allow the entire team to edit code and handle any versioning issues that arose.

JavaScript

Providing a room scheduling system to our sponsor required the use of a programming language framework to serve as the foundation of the web application. JavaScript was the framework our team utilized as it allowed for easy manipulation of user interface elements through the use of Hypertext Markup Language (HTML), supported by many online web applications. An additional formatting template for HTML called Pug was also utilized as it makes HTML formatting cleaner. In addition, the Node.js framework was used as it is a package manager for JavaScript that allows for easier client-server interactions and provided the ability to add in other additional software resources. Our team also drew upon the ‘Express’, ‘Webpack’, and ‘Full-calendar’ APIs for Node.js to streamline the server-client connection process, and to provide a modular calendar view where sessions could be added and displayed. The application also used JavaScript to communicate with the Views system through an API provided by the software company that built Views.

Views API

The Views software comes with access to the Views Representational State Transfer (REST) API. The REST protocol is a carefully designed system for handling client requests to a server. There are six design constraints that make up a REST API (Fielding, 2000). Luckily for our team, the design constraints have been set up by the team at Views, and only required us to make Hypertext Transfer Protocol (HTTP) requests to ask for specific data within the Views system. An HTTP request is comprised of several sections: a header, body, and method. The

header of the HTTP request contains authorization credentials for the system. When creating a session for the room scheduler, the session details would go within the body. The methods are what type of action we are trying to perform in the request; we used the GET method to read information from the system and the POST method to create or modify records.

Amazon Web Services (AWS)

During preliminary development on the room scheduler, the application was hosted on a local server running from our individual computers. In order to ensure that the application could be accessible to the sponsor at any time via the internet after the project was completed, the application was uploaded to Amazon Web Services. AWS allowed us to take the locally created application and upload all of its files to the cloud by bundling up the package into an instance. AWS then takes that instance and combines it with any underlying software, like an operating system, and makes the instance accessible from a web domain URL. AWS is also very customizable, and our team was able to configure the software, security, scale, and capacity of our web application to the sponsor’s needs. Our team found that because the web application was going to run on a very small scale with minimal storage needs, the free-tier available with AWS was suitable for hosting. Therefore, the sponsor did not have to pay out of pocket for the room scheduler service.

The individual features our team implemented in order to build the room scheduler were based on the results of the survey and interview process. An analysis of these results can be found in sections [4.3.1](#) and [4.3.2](#) of this document. Table 2 outlines the list of features implemented to build the booking system.

Feature	Brief Description
Web Hosting	Application is publicly available on the internet through AWS and can be accessed on the NIC Centre website
Weekly Calendar View	Sessions on the calendar appear in a weekly view.
Extended Session Description	When hovering over a session on the calendar, a more detailed description appears on the right hand sidebar.
Session Caching	Sessions load into the calendar as you change weeks and stay loaded until exiting the page.
Room Request	Users outside SYDRC are able to input their information and request a room which will send an email to SYDRC administration.
Administration Log in	A separate page can be accessed through an administrative log in that provides the ability to book rooms.
Room Booking	Room information can be inputted and then will appear on both the room scheduler application and Views system.

Help Pop-up	Help button brings up information for site visitors with instructions on how to use the application to request a room and booking instructions for admins.
Select Date Button	Select Date button brings up a popup that allows a user to jump to a desired date rather than scrolling between weeks.
Field Checking	When a user submits a request, fields are checked to make sure the input is valid, a popup is displayed if they are not. Ex: Must include a phone or email to request a room.

Table 2: List of Features Implemented for the Room Scheduler Web Application

3.3.3 Team Organization and Management

Team organization and management were needed in order to maintain a successful iterative development process to complete tasks necessary to fully finish the digital management system on time. Originally, our team planned to do this by utilizing Agile Management and Scrum methodologies. These techniques allow development teams to build upon iterations of their work by incorporating feedback into the development cycle. While this aspect of Agile and Scrum was very important to us, it was best to follow our own management style since Agile and Scrum are more meant for larger programming teams where it is hard to communicate fine details effectively. Also, since our sponsor wanted us to customize the Views database application for him, the first half of the project consisted of working through user interfaces rather than through code which helped us develop a management style more tailored to the work we needed to complete. These are the steps and tools used to manage development in an iterative fashion throughout the project.

1. **Project Planning:** After completing survey and interviews, our team held a planning session to create two lists of all the features and functionalities that the SYDRC needed and wanted. The first list focused on views while the second focused on the room scheduler. The lists were organized and maintained with the Trello software. Priority of task completion was determined by the difficulty of the task, needs of the staff members, and direct requests from Abdi.
2. **Daily Planning:** At the beginning of each workday, our team discussed what tasks should be completed that day and team members were assigned to the associated feature on Trello to keep track of progress. After these short planning sessions, work for the current day began and team members collaborated as needed, especially on the technical endeavors.
3. **End of Week Feedback:** After each week, our team gathered feedback from our sponsor about the progress made on the system in order to get his input and collaboration during the development cycle.

4. Update Project Planning: At the beginning of each subsequent week, we updated our backlog lists created at the start of the project. This included removing tasks that were no longer deemed necessary, marking tasks as complete and adding new tasks based on feedback from Abdi.

By following these steps throughout the project, our team went through five, weeklong development cycles that produced a new iteration at the end of each week. These iterations were a working prototype of the application that was built off of the previous weeks' iteration. This iterative process allowed us to quickly test the new features implemented and get detailed feedback from the sponsor on the current state of the applications during each iteration cycle.

3.3.4 Showcasing and Demoing the System

One aspect of our management process that directly influenced our ability to create a system that adhered to the needs of the SYDRC was the weekly feedback sessions held with Abdi. These reviews consisted of showcasing our latest iteration of the system every Thursday to him. During these meetings, Abdi was given a run through of the new features and any major design changes that had been made to the system in the past week. Next, our team demoed the latest version of the applications to him in person so that he could get a feel for how to navigate and utilize the software. Following the demo, Abdi was then allowed to experiment with the system himself and gather information on how easy or hard certain aspects of the system were for him to grasp. These showcases allowed Abdi to guide us throughout the development cycle and have a constructive role in the development of the SYDRC's new system by providing us feedback on changes and additions he wanted us to make to the system. The feedback sessions allowed us to deliver a product that was acceptable and adhered to the wants and needs of the SYDRC.

3.4 Training Staff to Use and Maintain the System

The only way for us to fully implement the new system as a primary administrative tool was by teaching staff at the SYDRC how to use and maintain the system properly. To do this, we held multiple training sessions to teach the staff all the ways to utilize the system efficiently. Lastly, a user manual was created that detailed every aspect of the application.

3.4.1 Training Sessions

Before our team could complete this project, the staff at the SYDRC needed to know how to properly utilize all the tools of the new system built for them over the seven week period. Originally, only one all-encompassing training session was planned for the final week of the project. However, after discussions with Abdi, we came to the consensus that it would be best to periodically hold smaller training sessions. This moderation allowed the staff to learn how to utilize the system throughout the development cycle rather than trying to teach them everything

at the very end. The training sessions were held inside the conference room at the NIC Centre and lasted about twenty minutes. The first half of each session consisted of a demo from the team that introduced the new features and tools added into the system and how to use them to their fullest extent. The second half focused on allowing the staff to use the system themselves and get hands-on practice with the new aspects while our team provided guidance. Tyler was our lead facilitator and ran through the demos on the large screen that detailed how to access and use the new features. While he was presenting, the rest of our group would add in any specific details on tools and features that they personally worked on customizing for the system. Also, all team members were all responsible for answering any questions that arose during the demo. After the demo, our team helped guide the staff in their efforts to use the new tools and features on their own computers that were running the system. This allowed us to quickly answer any other questions they had and walk them through the uses of the system whenever they ran into issues trying to use the new additions. These training sessions were held on:

- January 29th, 2020
- February 5th, 2020
- February 27th, 2020
- March 4th, 2020
- March 5th, 2020

3.4.2 Creating a User Manual

To ensure the long-term sustainability of the digital management system, our team created a user instruction manual that the staff at the SYDRC could consult if any problems or questions arise. Although the training sessions were useful for initially training the staff on how to use the system, the user manual added an additional layer of training to help new staff learn how to use the system after we left London. In addition, the current staff members could use the user manual as a great refresher on how to work with the analytic tools provided by the system. This booklet was constructed using Google Docs. The manual was broken down into two major sections. The first section focused on how to use the Views database system. This section was organized into subsections that dealt with initial setup and information, the four main functionalities of the system (contacts, work, evidence and intelligence) and administrative tools. The second main section dealt with the room scheduler application and was organized into small sections that focused on logging in, navigating the calendar, managing room bookings, and restoring the system if problems arose. Every section consisted of text instructions coupled with in-system screenshots that detail exactly how to use all the functionalities of the system. Additionally, a quick reference Q&A section was included that links readers to the corresponding section. These questions were handcrafted by our team based on features that were found to be complex to use and observations from our training sessions in terms of what features the staff had trouble understanding. This manual was given to Abdi in both physical and digital form so that his staff could have the means to access the booklet through any medium.

4. Results and Analysis

This chapter contains five sections that outline the results of implementing the methodology as described in the previous section. The first details a conversation held with the project sponsor that resulted in the choice of the specific cloud-based software used for developing the digital management system. The second contains an analysis of the takeaways from the observations of the current system, and how they shaped the project deliverables. The next section synthesizes the responses from our Qualtrics survey and interviews and discusses the analysis of those results to produce a list of tasks and features to be completed for the new system. The fourth component details the development of the digital management applications and how our team's work was impacted by the sponsor's feedback. The last section provides the results from each of the training sessions and details how the creation of the user manual was impacted by those sessions.

4.1 Selecting the Cloud Systems

After arriving in London, the team met with the sponsor, Mr. Abdiwahab "Abdi" Ali, to finalize the choice of system for the software management system. Our team presented Abdi with the options of AWS and Views and described the cost difference between them. It was then made evident that by choosing the less expensive option of AWS, our team would be responsible for building the management system from the ground up. Whereas by choosing the more expensive option of Views, our team would be customizing a pre-built database system and only building the room scheduler from the ground-up. Through our discussion with Abdi, it was determined the database system needed to be very reliable, and that our team would not be able to provide any technical support after leaving London should anything go wrong. In addition, our team explained that only having seven work weeks to build a full management application with AWS would likely result in a less complete system than the pre-built option of Views. The features listed on the Views website matched what Abdi said was needed for a new system. In addition, the software also has dedicated technical support, so the team recommended Views over AWS for the database solution.

A demo of the software was requested by our team in order to finalize the decision, so Abdi scheduled and completed a phone call with a member of the Views team who showed him basic features and explained pricing. Abdi was then given a demo account that provided our team with access to use the system. After a day of using the system, we further recommended Views since it was easy to use and very customizable. Abdi then determined that the plus version of the Views database would provide sufficient value to the SYDRC at £980 per year due to the additional questionnaires and automated email systems provided by the higher tier. On Friday January 24th, 2020, Abdi acquired a license to Views Plus Tier and gave our team administrative access to work on the system. Abdi mentioned that two of the main benefits our team provides for implementing this database are circumventing the additional setup cost associated with Views

and being in close communication with the staff so that the system can be customized to each staff member's needs. Despite the drawback of Views being a higher cost compared to AWS, as indicated in our research, Abdi determined that the provided service was a good investment for the SYDRC.

While Views proved to be the best option for the database system, it did not provide room booking functionality. That system still needed to be built from the ground-up by our team, so we presented Abdi with the option of building the room scheduler as a web application hosted on AWS. The choice of AWS was based on the information gathered in the cost analysis. Our web application would be able to run on the free tier of AWS due to minimal storage requirements and low throughput. Also, Views gives its customers access to the Views API. By utilizing this framework our team would be able to link the room scheduler application built on AWS with the calendar in Views. Due to the essentially free cost of AWS and our ability to integrate the room scheduler with Views, Abdi agreed with the decision to utilize AWS for his room booking needs.

4.2 Takeaways from the Observation of Current System

The one-on-one session we held to complete our direct observations of the system was conducted by Tyler on Friday January 31st, 2020. He spoke in person with the Youth Service Manager (YSM) and reviewed the method used by the SYDRC to record participant data for sessions at the NIC Centre. The process was completed two-fold. First, attendees signed-in at the front desk by filling out a paper form that had a table of cells with multiple columns. The first required attendees to record their first and last name, followed by the second column asking for their age, and finally a column requesting their post code. The YSM explained that after each person filled out the form, periodically throughout the day a staff member would need to hand-type the information into an excel chart that was specifically designed to keep track of all attendees to the NIC Centre. For the second part of this system, the attendees would have to sign-in again with the staff member that is leading the specific session they are attending. This process is relatively the same in the sense that the leading staff member records the participants' data on paper, and then transfers it to a session specific Excel sheet later on.

Through this conversation, we also collected information regarding how the Excel data is shared throughout the organization. Once a staff member updated one of the spreadsheets, it would be sent in an email to the rest of the organization. In addition, the director of the SYDRC, Abdi, had later mentioned that this method of data sharing was very ineffective and made it hard for staff members to always have access to the most up to date information. Our team quickly realized this process could be optimized and we made it a priority to provide an all-inclusive system that makes data sharing and collection more efficient. After implementing such a system by customizing Views and building a room scheduler that is connected to the Views system, the overhead the staff experienced with the Excel system was eliminated.

4.3 Synthesis and Analysis of Survey and Interview Responses

Gathering information about the needs and requirements for the two new applications via surveys and interviews was completed before our team began developing both the Views database system and the room scheduler web application. A synthesis and analysis of the responses recorded is detailed below which details how the results influenced the tasks and features our team completed during the development of the new digital management system.

4.3.1 Results from the Qualtrics Survey

The Qualtrics survey was distributed to five of the key personnel working at the SYDRC. It took three days for four of the five staff members to respond. Abdi informed us that the fifth respondent was unable to respond due to time commitments, so we proceeded to end the survey after the first week to stay on schedule. However, due to the even number of participants, a few of the quantitative questions were split down the middle and required gathering more in depth data on certain topics during the interviews. The following key results from the collected survey data ([Appendix I](#)) impacted how the digital management system was built to tailor to the SYDRC's specific needs.

The beginning of the survey gathered data specifically about the staff members' roles at the SYDRC and how they gauge their own technical experience on a scale of one to five. The first interesting finding was how the staff members rated themselves with an average of 4.25/5 for technical expertise, with no response lower than 3/5 (Figure 5). This means that the staff are fairly confident with their technological capabilities and our team determined that holding training sessions and creating a user manual would be sufficient for getting the staff acclimated to the new system we planned to implement.

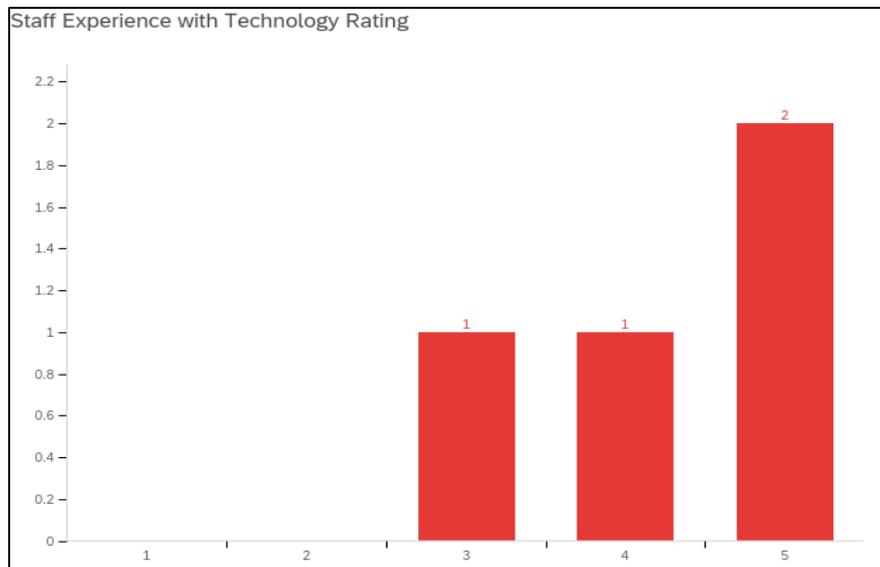


Figure 5: Breakdown of the Staff's Experience with Technology Survey Data

Our survey also identified how long each of these staff members spent using the Excel system each day. On average they spent approximately one hour logging info into the Excel sheets each day. For a system only being used to input text data into a table, it was clear to see that time was being wasted due to the overhead of Excel. The staff needed a process that could streamline data input to the point where it only takes a few minutes to input clientele information and organize the collective data efficiently.

On the topic of privacy and security concerns, the survey inquired if the staff believed there should be different levels of functionality based on a user’s level of authority (ex. administration, staff and volunteers). Each staff member responded by either agreeing or strongly agreeing with the need for data protection. Our team then made security levels a high priority and further explored how the different levels of functionality should be implemented within the interviews.

The survey also gathered information on what types of filtering options the staff would need to view data stored in the systems (Figure 6). The corresponding question asked each respondent to choose three filtering options that they deemed most important. The most popular filters chosen by the staff were age, outcomes achieved, and work done, so it became a priority to include those filters as options in the final system. For example, since age received the most votes, we customized Views to make age a required field in the database so that all participants could be sorted by age. The next most requested filter options were ethnicity, emergency details, case studies and staff and those options were also slated for implementation. Lastly, the filters for media, stakeholders, volunteers, and medical information were not selected by any respondents, so those options were not prioritized while customizing the Views system.

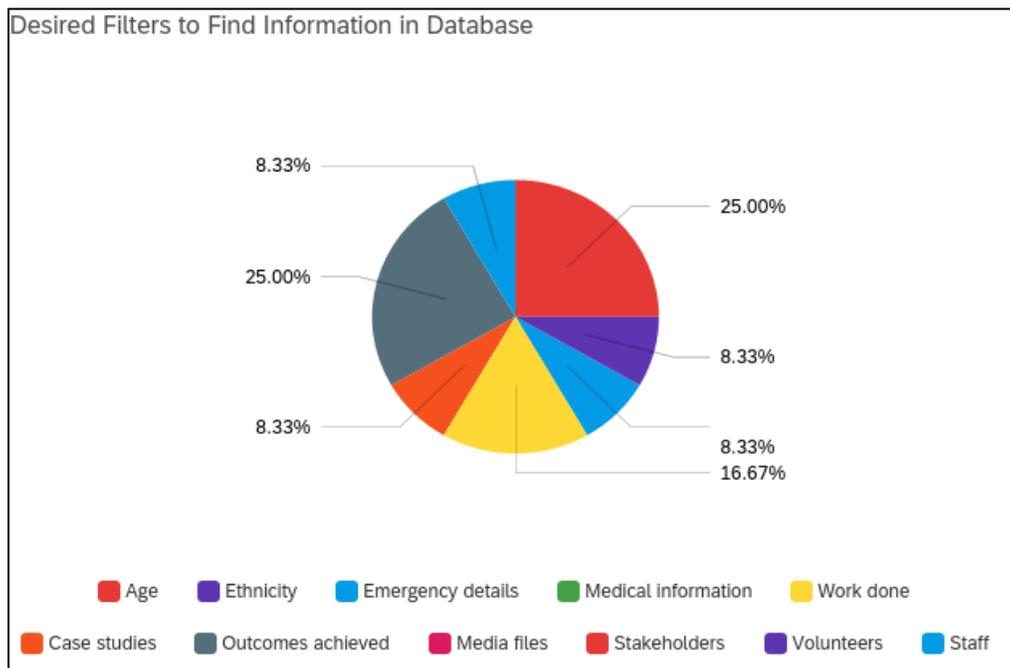


Figure 6: Breakdown of Potential Data Filters Survey Data

The survey also provided us preferences on how the staff wanted the room scheduler to function. An even split occurred on the question regarding two possible layouts of the web application (Figure 7). Half of the respondents requested “a calendar that shows the availability of rooms on a monthly, weekly, and daily basis, while the other half preferred an interactive floor plan that allows the user to visually see what rooms are available or booked for a given date and time. This question was extremely important in determining how to go about developing the room booking side of the system for the SYDRC, so we needed to seek additional information on the reasoning behind these responses during the interview sessions before making a final decision.

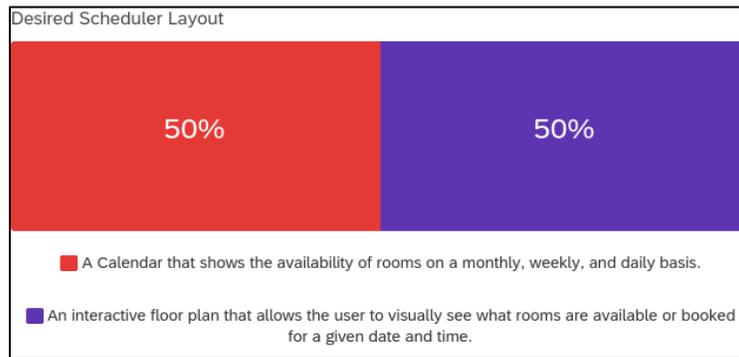


Figure 7: Breakdown of Room Scheduler Design Preferences Survey Data

Another question on the topic of the room scheduler inquired on how important it was to the staff for the web application to remember past organization’s or people’s information. By saving this information, users who book rooms at the NIC Centre often would save time and have a more seamless experience with inputting their information into the system. Three out of the four of the staff members rated it the importance of this feature as a three or a four on a five point scale (Figure 8). However, one of the respondents felt this feature was unnecessary so, our team decided to only implement this feature if there was extra time after completing the basic functionalities necessary to create room booking software and polishing the UI.

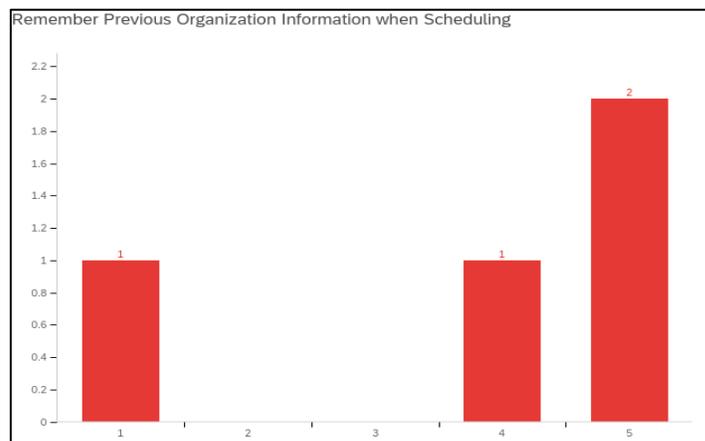


Figure 8: Breakdown of Saving Previous User’s Information Survey Data

The final section of the survey focused on questions that were general to both the database system and the room scheduler. One of these questions gathered information on possible accessibility options within the digital management system. All four of the staff expressed the want for a help menu, and 75% of them also requested pop-up tips and a search bar functionality (Figure 9). Since the sponsor chose Views for the database side of the system, the staff are already provided with all these accessibility features to some extent. However our team still needed to provide accessibility features in the room scheduler, so we prioritized the implementation of a help menu above all else. The team also considered implementing pop-up tips and a search bar feature later on in the development of the application if time permitted.

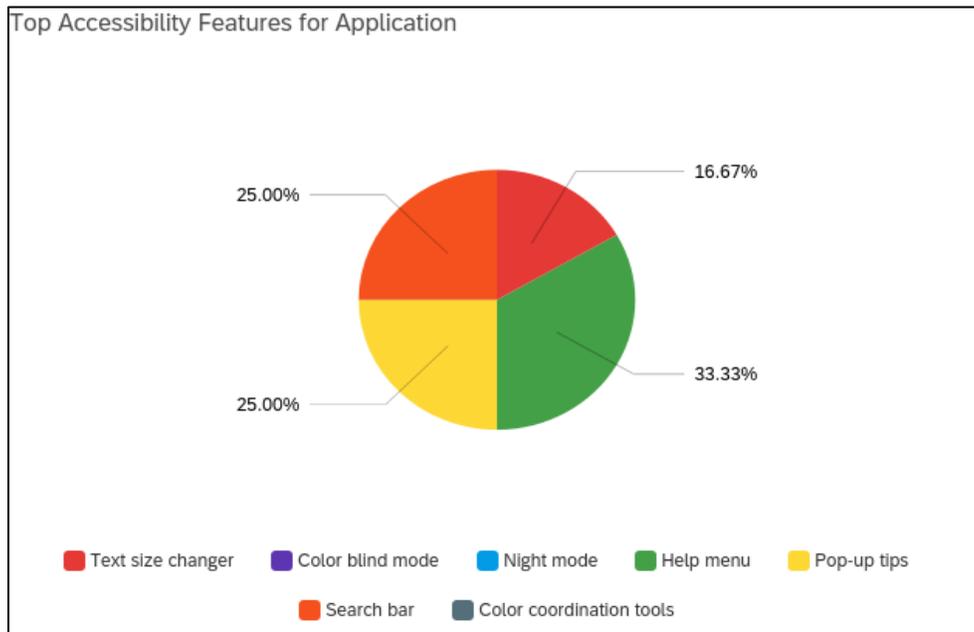


Figure 9: Breakdown of Potential Accessibility Features Survey Data

The last question on the survey that proved influential focused on the user interface for the digital management system. Our team needed to know what type of visual set up the staff preferred for their new system. This question presented them with two options; having more pages with fewer elements on each page, or the opposite with fewer pages and more elements on each page. The answer ended up being split down the middle with each of the options receiving half of the responses (Figure 10). Since Views was prebuilt and had no way of customizing the backend setup of the application, the UI for the database system was no longer a concern. However, further emphasis was placed on this question during the interviews in order to make a final decision on how to design the UI for the room scheduler web application.

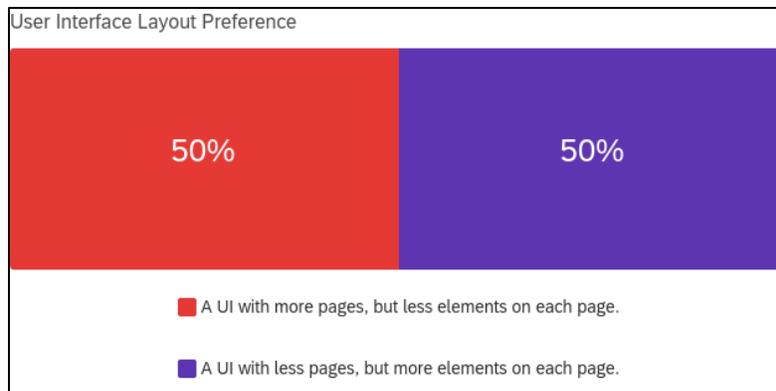


Figure 10: Breakdown of the UI Layout Preference Survey Data

4.3.2 Results from the Interviews

Insights on the Previous Systems

The first topic discussed with the interviewees concerned their thoughts about the old and current systems used for storing information. In interview one, the interviewee made it clear that the current system they are using can be complicated to use, which sometimes slows down workflow (Appendix J; Interview [1](#)). Similar sentiments were seen in interviews two and four where both the interviewees expressed that using the Excel spreadsheet to track information was frustrating. (Appendix J; Interview [2](#), [4](#)). This was in part due to how much time they had to spend emailing data around the organization. Also, attempting to share the Excel system in such a way led to data inaccuracies and inconsistencies, which made writing reports to funders more difficult. The other systems that were used in the past for cataloguing information, Lamplight and Apricot, both took frustratingly long to set up as seen by interviewees two and four (Appendix J; Interview [2](#), [4](#)). In addition, interviewee four stated that they thought Lamplight was too simple and un-customizable for what they needed, and Apricot was quite customizable, but it required regular updates and communications with the support team to sufficiently maintain (Appendix J, Interview [4](#)). These responses further backed up our sponsors decision to use Views as it was customizable and, as determined from demoing the system, not overwhelming to use.

Potential Features for a New System

The interviewees were also asked if they had any suggestions for the features of a new system. Interviewees one, three, and four expressed they thought making attendance easier to log and get reports from should have high importance (Appendix J; Interview [1](#), [3](#), [4](#)). Interviewees one, two, and four would also like some sort of statistical tool that can generate reports and outcomes (Appendix J; Interview [1](#), [2](#), [4](#)). Interviewee two specifically detailed that they would like reports to be generated monthly as opposed to annually or bi-annually (Appendix J; Interview [2](#)). There was also high importance placed on the new system allowing real time editing and being completely stored online as indicated by interviewees two and three (Appendix J; Interview [2](#), [3](#)). Each interviewee also mentioned that the use of graphs to display

demographic and other forms of data should be expected for the system. It was also noted by interviewees two and three that backups and support for the database should be available for when issues occur (Appendix J; Interview [2](#), [3](#)). The main functionalities of attendance logging, reporting, and statistical tools to generate reports and outcomes were all built into Views, so our team prioritized customizing those features to the specific wants the staff mentioned during the interviews.

Security Needs

Privacy concerns were very similar across all interviews. Interviewee one mentioned specifically that case studies should always be kept within the centre and should be very private (Appendix J; Interview [1](#)). All other interviewees mentioned that only those with the right access should be able to view any personal information. To go into more detail, interviewees one, three, and four talked about how the management system should have different roles and accounts within it that would provide different levels of access (Appendix J; Interview [1](#), [3](#), [4](#)). The main consensus was that volunteers should not view personal data but can log individual data as it comes, and admins would have access to the whole application. Interviewee three mentioned that the forms that could be accessed should be different across departments to avoid clutter and keep processes efficient (Appendix J; Interview [3](#)). Interviewee four also noted that people should not be able to input large unnecessary files into the database to similarly avoid clutter in the system (Appendix J; Interview [4](#)). This information provided further clarity to the survey question regarding levels of user authority and our team decided to implement restrictions to the volunteer account within Views and also created an admin login feature for the room scheduler so that only the administrative staff could book sessions into the system.

Room Scheduler Layouts

The last topic discussed with our interviewees concerned questions about the layout of the room scheduler application. Interviewees one and two both agreed that the floorplan layout for the room scheduler was better over the calendar layout because it would provide a more visual interaction for people and could help those with disabilities or difficulties (Appendix J; Interview [1](#), [2](#)). The other two interviewees believed that a calendar layout would be better for the room scheduler because it would be simpler and more standardized (Appendix J; Interview [3](#), [4](#)). Interviewee four specifically expressed that the calendar layout should load quickly (Appendix J; Interview [4](#)). Our team presented Abdi with these findings and we collectively decided to implement the calendar layout as it would be simple to use, load fast and take less time to implement. By cutting down the time required to create the layout of the booking system, our team focused on polishing the web application and delivered a complete system.

4.3.3 Finalizing the Task and Feature Lists

Through the analysis of our survey and interview responses, our team created two backlogs. The first was of the tasks necessary for customizing the Views application to the needs of the SYDRC. The second was a list of features the team needed to implement in order to build

the room scheduler application while also adhering to the requirements of the staff. Although the survey and interviews provided a wide reaching list of tasks and features that the staff would like within a data management system, the list required trimming down as some of the suggested features were deemed to be unfeasible with the time and resources available to us throughout the project. For the final list of completed tasks for customizing Views, refer to [Table 1](#). For the final list of completed features to build the room scheduler, refer to [Table 2](#).

4.4 Results of the Digital Management System

The sections below detail the resulting digital management system our team delivered to the SYDRC. Our team's solution included a customized version of the Views application, a newly built room scheduling web application and integrations between the two applications.

4.4.1 Customizing the Views Application

Our team customized the Views application to fit our sponsor's needs for each of the four core functionalities in Views as described in the background chapter (contacts, work, evidence, and intelligence). Below are the final results of our customization and alteration of the Views system.

The first category is 'Contacts' and focuses on functionalities pertaining to staff members and participants. This section has been customized to record the information the SYDRC deems necessary for reporting and administrative tasks. Each new participant has customized fields to track name, date of birth, Employment Status, Gender, Ethnicity and much more. This information is all recorded to help the SYDRC track the identity, membership type, demographic, address, medical information, and contact information for each participant (Figure 11). The system was further customized to make certain vital fields mandatory, these included name and date of birth. Alternatively, certain information such as nicknames and secondary addresses are optional for each participant. In addition to participants, the list of all staff members and volunteers are also tracked under the 'Contacts' section of Views. The list of fields with information for each staff member was customized similar to participants, with a few extra fields for scheduling and identification.

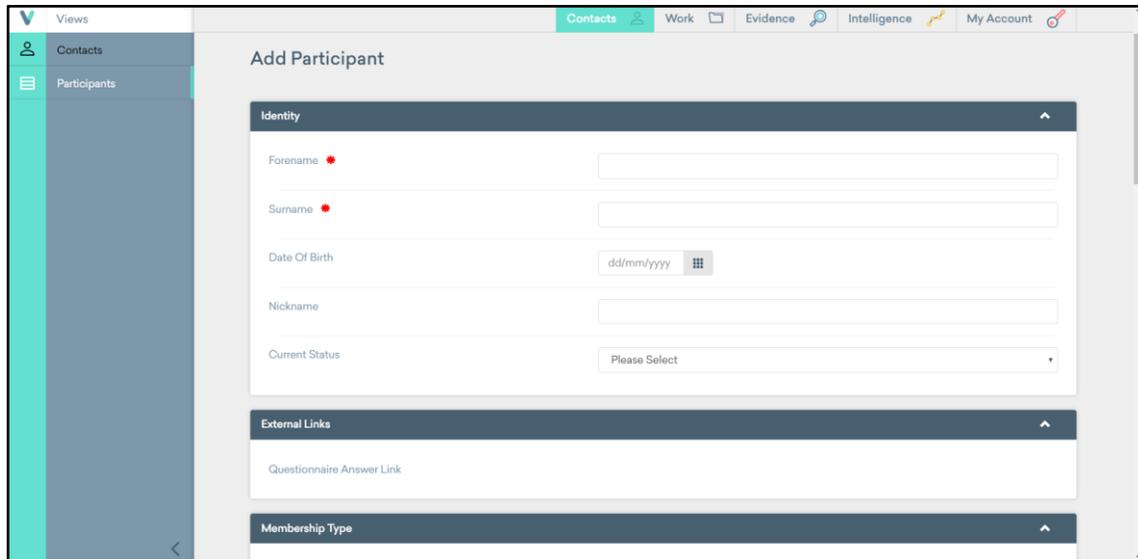


Figure 11: Adding a Participant Page in Views

Now that Views had the setup required to add new participants, our team took all of the legacy Excel data given to us by our sponsor and formatted it into the template to allow the Views system to be able to read the information. This process took a lot of time, as there were many inconsistencies and some missing fields in the data provided to us. Once the data was formatted, it was uploaded to the Views system in the import data section and when completed there were now over 500 newly added participants in the system (Figure 12).

Forename	Surname	Gender	Post Code	Telephone Number	Actions
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[View] [Edit] [Delete] [Add]

Figure 12: Participants Page with the SYDRC's Membership Data (identifiable information redacted for privacy)

The next functionality in Views is 'Work', which begins with the 'Activities' category. Here a staff member can view a list of all currently registered activities taking place in the NIC Centre, and which staff member is leading each activity. If you click on the activity, more

detailed information is presented about the type, title, and date of each individual session for the activity. Because each activity needs a specific place, we created venues for each of the different locations in which activities take place. Once each activity was established, the recurring session dates for those sessions were added, and each activity was also placed in a group for each of the different age ranges the SYDRC needed to track for funding reports. With each session date now established, the ‘Calendar’ tab could display a weekly view of all the sessions for the staff to view or plan future sessions around. This calendar view also has a filtering ability to narrow the search by specific venues and age groups (Figure 13).

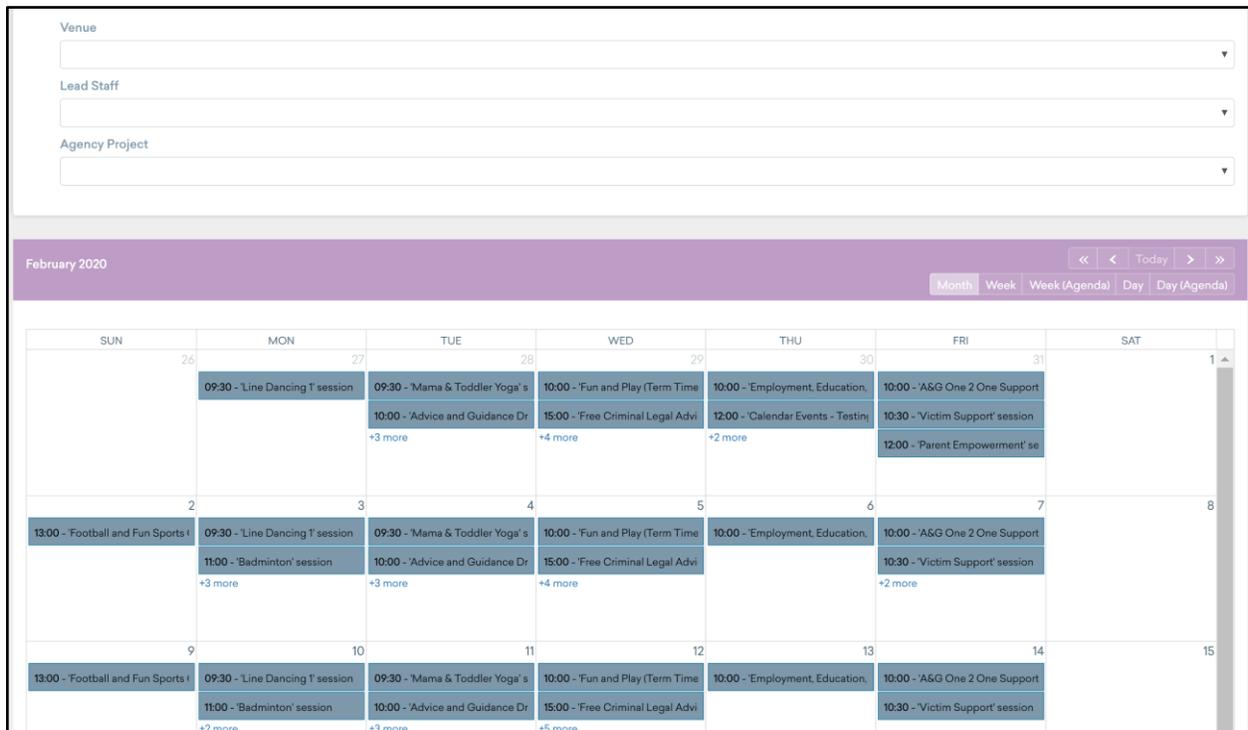


Figure 13: Calendar Page Populated with the SYDRC’s Scheduled Sessions in Views

The third category, ‘Evidence’, was mostly built by Views already. The main area of work that we completed was in the questionnaires tab of Evidence. There are new forms for participants to fill out that will help provide quantitative evidence of how the SYDRC’s programs are affecting those that attend them. These questionnaires can be emailed out or filled out in a browser using the correspondence feature our team customized.

After all of the participants, activities, staff, and questionnaires were entered into the database, our team could create statistical summaries to interpret the data the SYDRC was collecting. Located under the ‘Intelligence’ section, there is a category for summaries, where our team created four different session generalized reports that allow the SYDRC staff to collect specific or generalized statistical data about the activities, attendance, participants, or activity outcomes. These reports have been made to show a wide range of individual statistics and display the information in easy to understand graphs and tables (Figure 14). Along with the generalized

reports, there is also a report created for one of the age groups that tracks the attendance and identity statistics amongst the age group. This is a feature Abdi has specifically requested and allows him to create necessary funding reports in a fraction of the time compared to before the Views system. In addition to large summaries, there are also custom statistics that highlight specific important information that is not covered in the large statistical summaries under the ‘Statistics’ tab in intelligence.

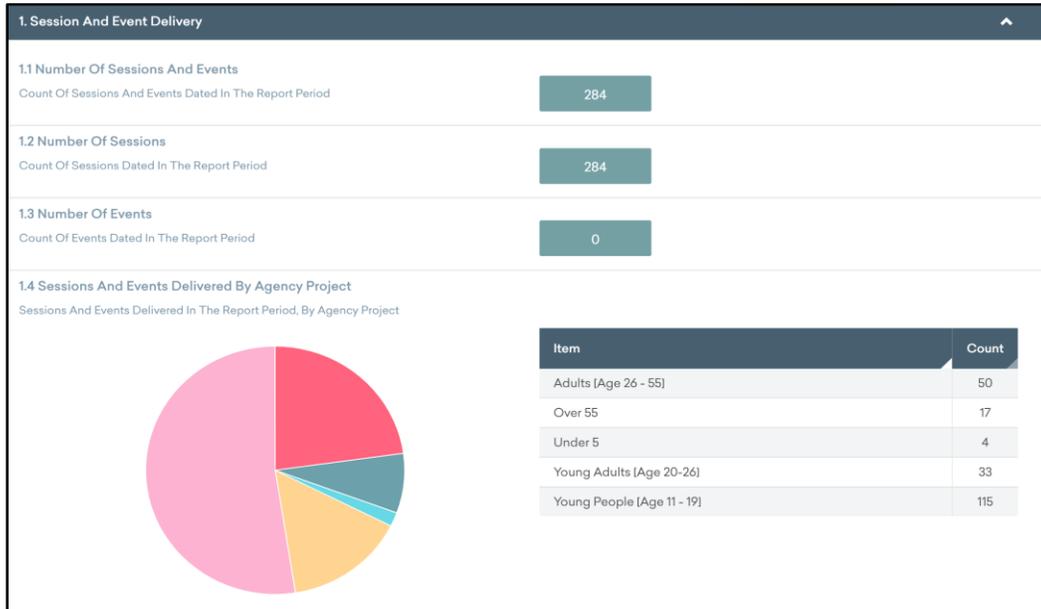


Figure 14: Snippet of a Statistical Summary in Views

These report statistics are also displayed on colorful and customizable dashboards, that allow the staff to quickly get an idea of the effectiveness of certain sessions, and how critical statistics are currently reflected (Figure 15).

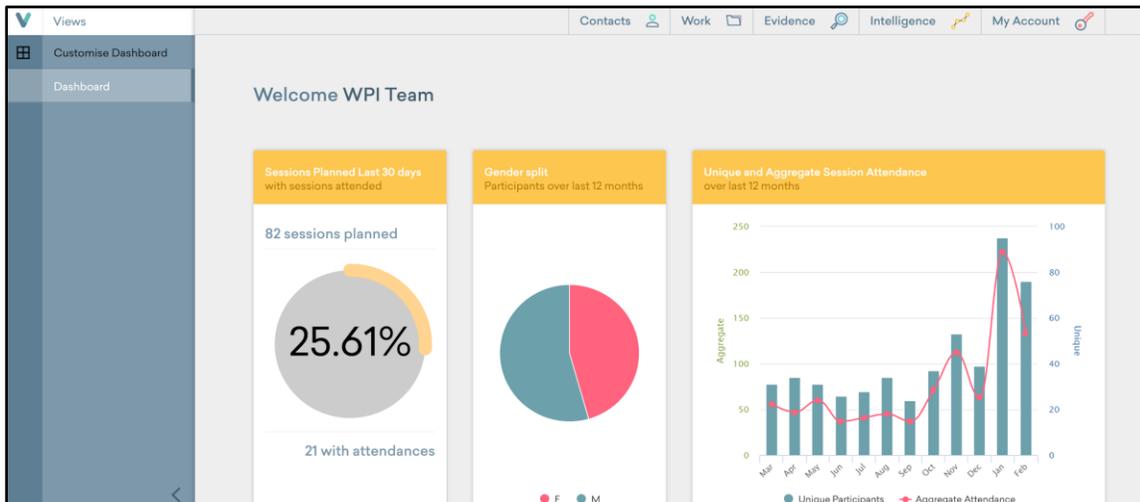


Figure 15: Customized Main Dashboard in Views

Our team made a large collection of small changes in the administrative side of Views to improve the SYDRC’s ability to use Views effectively. There was a need for different clearance levels between volunteers and staff members, so we created security levels so the volunteers could not edit or access sensitive personal information of staff and participants. Lastly, we were also able to create a list of outcomes from a given activity session and assigned each outcome to a larger objective that the SYDRC can use to measure the impact of any activity (Figure 16).

Agency Objectives	
Objective	Actions
Accessing other Services and EET	
Accreditations & Learning	
Advice and Advocacy	
Arts and Culture	
Combating Isolation	
Community Cohesion and Integration	
Developing Existing Skills	
Developing Inter-personal Relationships	
Developing new Skills	
Education, Employment and Training	
Health and Well-being	

Figure 16: Objectives Page with the SYDRC’s Data in Views

4.4.2 Impacts of Sponsor Feedback on the Views System

Our team set up meetings with Abdi at the end of each week to relay to him what was done on our side for the Views management system. The first of these meetings took place on Wednesday January 22nd, 2020, and additional meetings were held every subsequent Thursday. Initial impressions from the demo on both sides were that the Views system seemed to fulfill all of the requirements that Abdi set up in his initial project description and that it was similar to the Apricot system they had used previously. However, Abdi really liked how the Views system was pre-built which avoided the long ramp up time needed to set up the Apricot system. Abdi also liked how Views would still have an external support base if there is some problem like Apricot did. This meeting also resulted in the decision for which customization options Abdi would need from our team, detailed in section [4.4.1](#).

In the subsequent meetings, the team was provided with requests to format additional information within the system. This information included participant, staff, volunteer, and funder fields that needed to be set up so that the actual information could be uploaded or inputted. This feedback was also important because it gave us a better idea of how the organization was run and

what kinds of information they store. After the initial fields were set up, data was required to be inputted into the system before our team could proceed with customizations. To gather this information our team presented Abdi with a list of the data needed each week and any additional questions our team had on how he expected the system to operate. The main topics in these lists included volunteer access, session staff leaders, participant master list, report templates, questionnaires, and case studies/projects. Abdi's feedback and responses to these lists further shaped and the list of tasks necessary to complete the customization of Views. For example, Abdi was able to provide us with the objectives and outcomes that the SYDRC focuses on. With this information, our team was able to add the organization's specific goals into the system and link them with correlation sessions and participant groupings. Further feedback from Abdi presented our team with additional needs of the SYDRC from the views system and tasks dealing with setting up specific questionnaires rather than templates and fixing duplicate records were added to the list. For the final list of completed tasks for customizing Views, refer to [Table 1](#).

4.4.3 Iteratively Developing the Room Scheduler

The development of the room scheduler was broken into a number of version points with individual requirements. Each version point became the iteration of the web application that was showcased to Abdi at the end of each development week.

Room Scheduler v1.0: Minimal Client Facing Application and Development Results

The first version of the room scheduler served one specific purpose: allow outside organizations to see the availability of the NIC Centre and to send an email booking request to Abdi. As can be seen in Figure 18, this was an extremely rough version with nothing to make it look nice. The main area of the screen is populated by every session in the Views calendar. To get additional details about each session, the right sidebar was added, where additional session information is displayed along with the room booking request form.

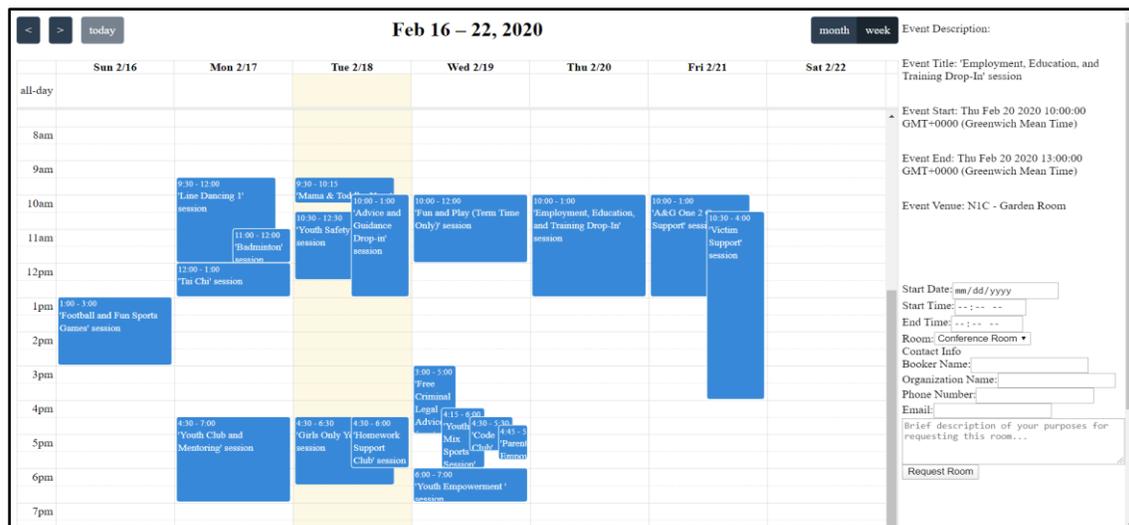


Figure 17: v1.0 of the Room Scheduler Web Application

Even to get to this point, many development roadblocks got in the way. One of the primary ones that affected all of the development was the amount of time it took to retrieve sessions from the Views API. It took on average 22 seconds to load one month of sessions into the calendar. This time was reduced to 5 seconds after using the weekly view and a cache that kept track of data that had been loaded. Another developmental roadblock that occurred was the integration of the FullCalendar API. In order for FullCalendar to work, it required some server-side only functions to be available to the client side of the application. The use of Webpack mitigated this issue by creating a minimal JavaScript file from server-side commands that can be passed to the client and loaded.

Room Scheduler v2.0: Added Requesting and Administrative Booking Features

The second major version of the room scheduler included feature upgrades and visual enhancements. The main feature added was the ability to log in with Views credentials and actually create a booking. Other features added in v2.0 were a help popup and the ability to select a date to move the calendar to directly. The right sidebar was given CSS style sheets, and a photo of the room where a session takes place was added.

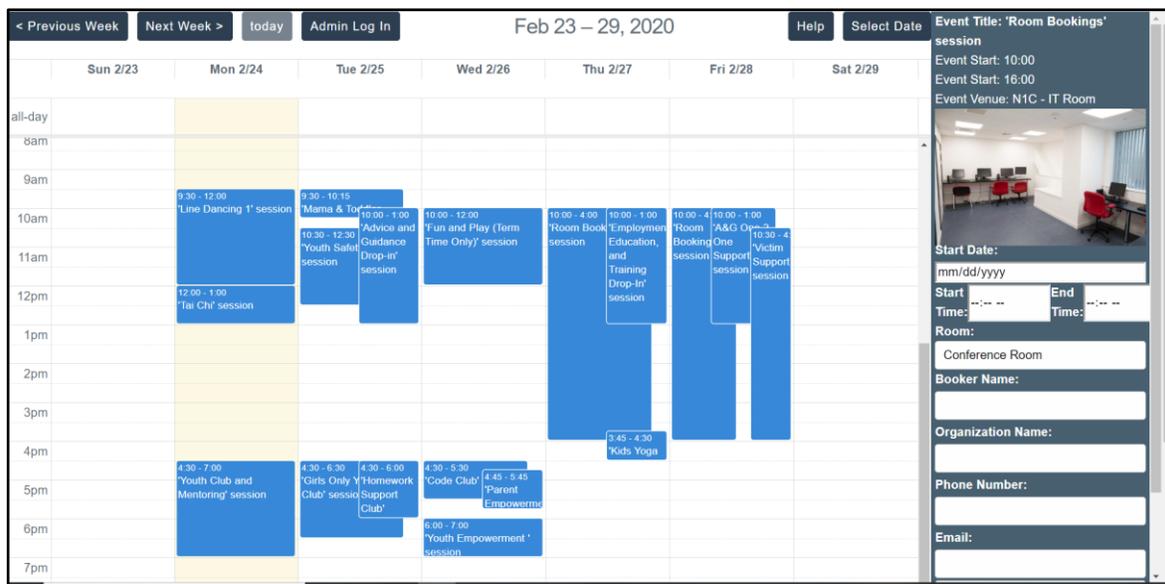


Figure 18: v2.0 of the Room Scheduler Web Application

Room Scheduler v2.1: Error Handling, Bug Fixes, Testing

While version 2.0 was complete, the user could misuse the application if information was not input properly. For example, the “Request Room” button would send along whatever data was in the fields, even if some of them were blank. A popup and error handling was added to alert the user on improperly inputted data.

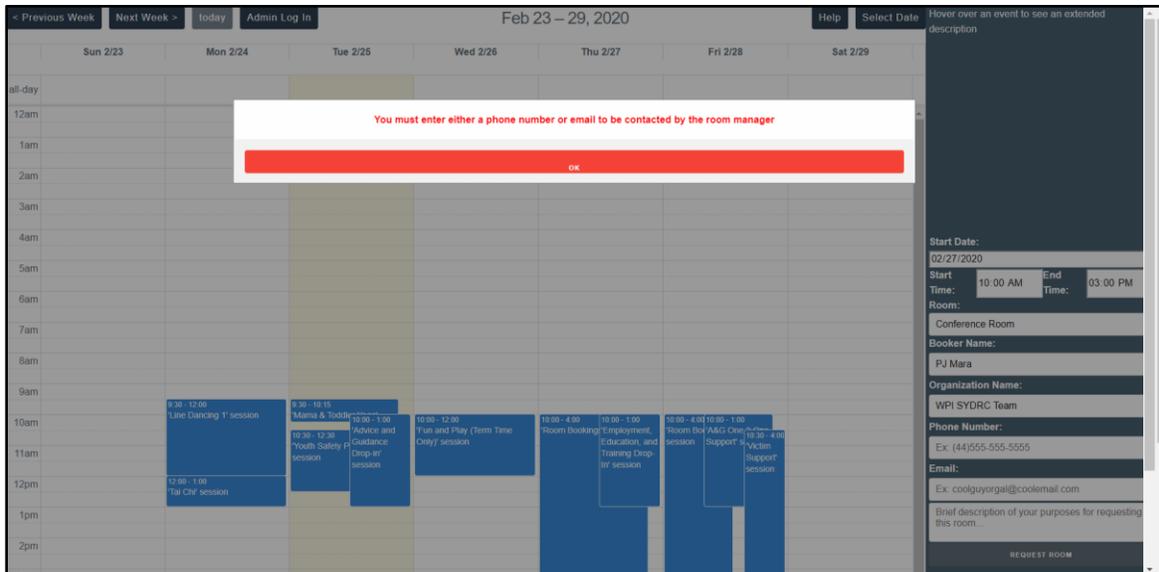


Figure 19: v2.1 of the Room Scheduler with Error Popup

4.5 Impact of the Training Sessions

To ensure the system we built will continue to be used after our project was completed, our team held training sessions during our time at the SYDRC. These sessions ranged from one-on-one sessions for specific features, all the way up to large crowd sessions that covered a whole range of features. During our first session, each staff member was able to successfully add participants and track attendance. This was important to have early on in the process, as tracking attendance was a main priority for Abdi, and an early session allowed the staff to get familiar with the basics of the system. However, our team was required to dump a lot of information on the staff at once, and we feared that staff would forget or get lost trying to access some of the features in the system. One example of staff needing more time was a one-on-one session with the youth service manager covering the feature of uploading Excel data into the system. It was clear after showing the staff member the end-to-end process that they would need to repeat this process multiple times before mastering how to do it on their own. As a result, our team heavily invested in the user manual, as it would allow the staff to learn all the features within Views at their own pace in addition to providing images and diagrams of certain functionalities. In subsequent sessions, our team observed that staff had trouble understanding five main functionalities in views:

1. Creating recurring sessions and adding them into the calendar,
2. Taking attendance for each session,
3. Adding new statistical summaries and creating demographic reports,
4. Associating objectives and outcomes with participants, and
5. Utilizing the administrative tools to organize fields in the system

Our team emphasized these aspects of the system in the user manual by providing detailed step-by-step procedures for each functionality. By doing this, we were able to ensure that all the current and future staff would not have trouble attempting to figure out and use these functionalities. As for the room scheduler, the basic functionalities were easily understandable to the staff, so our team simply focused on providing a guide on how to use the system and reboot the web-application should anything ever go wrong. To see the resulting User Manual for Views and the Room Scheduler, refer to Appendices [M](#) and [N](#).

5. Recommendations and Conclusion

After developing the new digital management system for the SYDRC by fully customizing views and building a room scheduler web application, we developed a list of recommendations that we believe would allow the SYDRC to continue to efficiently manage their clientele data. The recommendations focus on how the SYDRC can maintain the Views application and the room scheduler after we leave London. Moreover, we also provide recommendations for how the organization can potentially switch from our system to another management system in the future.

5.1 Sustaining the Digital Management System

All software, no matter how robust, requires maintenance and reorganization, or it risks becoming degraded. Since our team will not always be around to help the SYDRC with technological assistance for the applications we provided to them, we needed to recommend ways that the organization could maintain the digital management system on its own.

Views is a pre-built application that our team has no access to in terms of being able to directly change the formatting of it. As a result, if any issues arise with the software itself, our team strongly recommends contacting the Substance Views support team. However, anything outside of the formatting is not something that the Substance Views team should need to help out with. In order to maintain the system so that accurate reports can continually be generated, careful attention should be paid to data entry. If a volunteer or staff member has trouble deciphering the functionality of something they need to work with in Views, we recommend making use of the training manual that we are providing.

The team recommends that once a month, an administrator reviews the value list section of Views, as users of the system can add their own items to dropdown menus. This list can become overwhelming in length and may contain near duplicate entries which will throw off statistical reports.

As for maintaining and updating the room scheduler, the SYDRC should consult the section of the user manual dealing with the web application. From there, the staff can find instructions detailing how to reboot the system on AWS if it ever crashes, and how to access the code base to further customize the application ([Appendix N](#)).

5.2 Future Data Management at SYDRC

On Wednesday, February 12th, the Camden Council (SYDRC's top sponsor) mentioned that they had purchased software for non-profits that report to them. This software, called Time to Spare, has features that allow the Council to more closely track statistics about all of the organizations it funds, so the SYDRC would no longer have to provide reports to them. This is

attractive to both organizations. The software is still in early development, and while many of the features are great, the usability and overall feature set was somewhat lacking. The Camden Council agreed that for the time being quarterly uploads of the data would be sufficient markers, but a transition from Views to Time to Spare may be required at a future date.

There are many factors to consider when possibly changing between Views and Time to Spare. The first is making sure that staff feel comfortable using the software. The goal of these data management systems is to accurately represent all of the work done at the SYDRC, and so all staff need to feel comfortable accessing the system. Staff input on the two user interfaces and which one they like more is very important. The room scheduler that our team built uses the Views API heavily, meaning that application would no longer function using a Time to Spare management system. Another important consideration is the speed of each system. Lastly, the ability to customize the system to match what is desired is important. The team recommends staying with this new Views system for the year that it was purchased and then reassess the choice of system at the beginning of the next year.

5.3 Conclusion

To accomplish our goal of delivering a new digital management system to the SYDRC, our team successfully completed four objectives. The first was performing a cost analysis on several cloud-based systems and choosing two potential options to present to the project sponsor. Once the cloud options were chosen, the next step was to carry out a carefully designed survey to gather data on the expertise and needs of the staff and volunteers. Based on the results of our survey, interviews were conducted with select staff members to further clarify the scope and needs of the system our team planned to design. Once this information was collected, the creation of a new solution began, and our team utilized an iterative process to incorporate the sponsors' feedback into the applications. The last completed objective focused on training the SYDRC staff to use and maintain the new solution. Through these methods, our team delivered an intuitive and sustainable digital management system to the SYDRC to allow them to further their funding efforts so that they could continue empowering and inspiring Somali young people.

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Appendix A: Sponsor Description

The Somali Youth Development Resource Centre (SYDRC) is a social services non-profit charity organization located in the London Borough of Camden. The SYDRC works with Somali young people and their families to help them achieve their full potential by providing them the opportunity to partake in events and activities that focus on their well-being and education. The organization's mission is to “empower and inspire Somali young people to achieve their true potential by equipping them with the tools for tomorrow, to enable them to take responsibility for their lives and develop as individuals and make the successful transition to adulthood” (SYDRC, 2019). By fostering a safe community for Somali youngsters, they are able to improve the social status of their members under a unified goal. The SYDRC strives to create opportunities for these children who are easily looked over by society.

Being a non-profit, the SYDRC relies partially on funding from the local government of Camden and partially on donations from its members and partners (Charity Commission, 2018). Most of the funding the organization does receive is funneled into its membership by upholding and expanding on the programs it offers to the youth participants. Only a portion of the funding is used to financially support SYDRC’s small roster of paid staff. The organization has one full-time director, Abdiwahab “Abdi” Ali, who oversees the work of all the staff to ensure outputs, outcomes, and milestones of the projects are met and monitored according to project plans. Additionally, SYDRC has one full-time youth worker and three seasonal workers to provide support based on a beneficiary caseload management support approach (Charity Commission, 2018). The rest of its staffing power comes from unpaid volunteers that take roles such as coaches and mentors within the program.

In order to fulfill their mission, the SYDRC allocates its resources into putting on programs that support their members. Some of these programs are fun in nature such as the mixed sports sessions, football games, and dancing sessions (SYDRC, 2019). These types of programs help the youth expand their socialization skills as well as giving them opportunities to express themselves. The SYDRC also conducts educational programs such as their coding club, homework support club, and educational advice sessions (SYDRC, 2019). Through activities such as these, the SYDRC instills the importance of schooling within its youth members and helps expand upon their intellectual skills. The last major aspect of the SYDRC’s programs deal with guidance. The organization provides many informational and advising sessions that allow both the youth members and their parents to seek out any social help that they need, free of cost. (SYDRC, 2019).

The SYDRC is located in the heart of the King’s Cross region of the Camden Borough. The organization caters to over two hundred members of the community every week when they meet for group activities, social support, sports and fitness, public information, and other purposes. The majority of the programs that the SYDRC puts on are located within the NIC Centre, which is a multipurpose community facility. This centre is used by a variety of other

community-based organizations and the management of the building's assets is led by the SYDRC's director. Much like the SYDRC, the N1C Centre's mission is to give a voice to residents and encourages civic participation to build local social capital and bridges different groups (N1C Centre, 2019). N1C is the entity currently in charge of the room-rental system that our IQP project plans to address to bring additional revenue to the organizations. Our hope is to gain an insight into how each group operates, so we can create a system that meets the needs of each group in one integrated solution.

One closely related organization to the SYDRC is the Covent Garden Dragon Hall Trust, which is also located inside the N1C Centre. This community support organization focuses on providing opportunities for social, educational and recreational activities developed for members of the diverse Camden community (CGDHT, 2019). Because this organization is located in the same community center at the SYDRC, it allows both organizations to work collaboratively on larger scale programs for the community. Much like the SYDRC, Dragonhall provides social centered programs for people of all ages to build a sense of community in the region and work to provide a supportive and safe environment where each individual is encouraged to develop their talents, passions, and abilities (CGDHT, 2019). As with the SYDRC, Dragonhall offers a wide range of social, educational, and recreational activities, and it is working to develop more partnerships with other organizations and local people in the Camden Borough.

Appendix B: The Camden Somali Community

The Somali Community in Camden

The Somali community in London is one of the groups most affected by the budget cuts on the charity sector, especially since they depend on organizations like the SYDRC to help the community develop through programs and services. The Somali are an immigrant/refugee community in London, and most of them are trying to move away from the instability in their home country. As a result, most of them leave with just some personal items (Oxford Analytica Daily Brief, 2017). Over 2800 Somalis have settled in Camden making the borough one of the top ten regions of London with the largest Somali population and a hub for refugees (Open Society Foundations, 2014). In Camden, Somalis form 1.3 % of the population, with at least 5% of the borough's population speaking Somali (London Borough of Camden, 2019). In this way, Camden has established itself as a common destination among the migrating Somali looking for refuge.

The Camden Borough has struggled economically, and this has hindered the ability for Somali people to transition into the City of London. Fewer resources are being placed into community services and maintenance for low-income communities. In a focus group of 91 Somali residents in Camden, all of them mentioned the lack of social services available and the rough state of their homes (Open Society Foundations, 2014). This is only one of the several challenges facing the Somali community. By understanding the obstacles that the Somali have to overcome in Camden, a realistic picture is generated of what the Somali community is facing throughout London and other parts of the world.

Racial Discrimination Against Somalis in Camden

One of the biggest challenges the Somali face is that of racial discrimination. The prejudice they deal with leads to a lack of identity for their community. People in London give them several different labels as a result of their unique background. Their identity is now an intersection of several others, which include Black, Muslim, African, and even British. This combination of identities increases the potential of racial discrimination and blurs the image of what their actual identity is (Open Society Foundations, 2014). Somali people feel their new identity is the reason why their life fails to improve in the new country. For example, in a focus group of 143 Somali immigrants living in Camden, 90% of them stated they were unemployed, and racial discrimination was one of the reasons given as to why they failed to get jobs (Warfa et al., 2012). Not only this, but 27% of these people also claimed they were depressed (Warfa et al., 2012). Due to a strong lack of belonging, coupled with discrimination, Somali refugees are struggling to settle into their new home.

Academic Inequality of Somalis in Camden

Another challenge that is heavily prevalent within the Somali community is that of academic inequality, which leads to high truancy rates for Somali youth. Each year, around 11,000 youths (between ages 5 and 18) leave Somalia by themselves and the children who end up settling in Camden are subjected to an attainment gap in their new education system (Oxford Analytica Daily Brief, 2017). This gap is noticeable from recent test scores on the General Certificate of Secondary Education (GCSE). The GCSE is a test within the UK that measures pupil's knowledge and it is generally accepted as a record of achievement at age 16. In Camden circa 1999, 47.7 % of students received 5 scores in the passing range in the tests (C - A* or A+ in other systems), whereas only 3.1% of Somali students achieved passing scores (SYDRC, 2019). Due to subpar scores, many Somali youngsters fail to receive a secondary education which heavily impacts their ability to find well-paying jobs when they grow up. As a result, British-Somalis have the lowest employment rates of all migrants in the United Kingdom (Open Society Foundations, 2014). Part of the reason why these students are failing in school is that Somali parents lack the resources to afford a better education. Also, Somali parents typically can't get involved in their child's education because a lot of them have little to no education themselves (Open Society Foundations, 2014). Without aid from social service resources, such as the SYDRC, the Somali people in London will continue struggling to settle in and develop as a community.

Appendix C: Survey Design for Paid Staff

Introduction:

Hello! We are a team of college students from Worcester Polytechnic Institute in the United States. We will be working with the Somali Youth Development Resource Centre to develop a new Client Management Database system in hopes to improve efficiency. This survey will ask a variety of questions that deal with potential features and ease-of-use functionality that you, the staff at the SYDRC, would like to see in the new system. Your responses will help shape the final product we deliver before we head back to the United States. We will ask 17 questions that will take approximately 10 minutes to complete.

Your participation is voluntary. If you decide to take the survey and at any point wish to withdraw, you are able to do so. You may also skip any questions that you do not want to answer. Your survey answers will be confidential and are strictly for research purposes. All information recorded in the survey will only be shared with the administration at the SYDRC and not with any outside parties.

The first question we will ask is for your full name. The reason we are asking for your name is simply so that we can create a pool of possible interviewees for the next stage of the project. If you then agree to be interviewed, your specific responses to this survey will be used to cater unique interview questions for you. After the interview, your personal identifying information will be deleted from our data. If you want your survey responses to be completely anonymous, you can choose not to include your name and you will also not be considered as an interview candidate.

If you have any questions or concerns about this survey, you may contact the researchers at gr-lonc20-sydrc@wpi.edu or the project advisors John Orr (orr@wpi.edu) and Paul Marrone (pamarrone@wpi.edu). Any questions about human rights issues should be directed to Worcester Polytechnic Institute's Institutional Review Board at irb@wpi.edu.

Thank you for your time and support in our project!

General Questions:

1. What is your full name? (Open-ended)
2. Pick one of the following that best represents your role at the SYDRC
 - a. Volunteer
 - b. Paid Staff
 - c. Administrative Staff
3. What is your title and/or role at the SYDRC? (Open-ended)
4. Relative to others your age, how would you rate your experience with technology on a scale of 1-5 with 1 being least experienced and 5 being most experienced?

5. How long do you spend every day logging activities/people into the excel spreadsheet currently used as the database?
 - a. < 1 hour
 - b. 1-2 hours
 - c. 2-3 hours
 - d. > 4 hours

Database Questions:

1. To what extent do you agree with the statement: A new management system should have different levels of functionalities specific to the user's level of authority. (i.e a volunteer, a paid staff member and an administrator).
 - a. Strongly Disagree
 - b. Disagree
 - c. Neither Agree nor Disagree
 - d. Agree
 - e. Strongly Agree
2. To what extent do you agree with the statement: A database for a non-profit organization should allow multiple users to access and modify it concurrently?
 - a. Strongly Disagree
 - b. Disagree
 - c. Neither Agree nor Disagree
 - d. Agree
 - e. Strongly Agree
3. Select the top 3 filters you believe would be most useful for finding information in the database.
 - a. Age
 - b. Ethnicity
 - c. Emergency details
 - d. Medical information
 - e. Work done
 - f. Case studies
 - g. Outcomes achieved
 - h. Media
 - i. Stakeholders
4. On a scale of 1-5, with five being the most, how important it is to store large media files such as videos or other forms of media?
5. To what extent do you agree with the statement: It should be very easy to manipulate data in the database such as editing or removing multiple records simultaneously.
 - a. Strongly Disagree
 - b. Disagree

- c. Neither Agree nor Disagree
- d. Agree
- e. Strongly Agree

Room Scheduler Questions

1. Choose which layout would be most preferable for a room scheduling application.
 - a. A Calendar that shows the availability of rooms on a monthly, weekly, and daily basis.
 - b. An interactive floor plan that allows the user to visually see what rooms are available or booked for a given date and time.
2. On a scale of 1-5, with five being the most, how high do you rank the importance of a feature that remembers your previous organization information so you do not have to reenter it every time you request a room?

User Interface Questions

1. On a scale of 1-5, with five being the most, how would you rate the importance of a feature where the application will let you know what is going on in the backend when something is taking a long time to load?
2. On a scale of 1-5, with five being the most, how would you rate the importance of a feature that remembers what you had written on a page so that those comments/data are restored when you return to that page.
3. Select the top 3 ease-of-use functionalities you would want to see in the application.
 - a. Text size changer
 - b. Color blind mode
 - c. Night mode
 - d. Help menu
 - e. Pop-up tips
 - f. Search bar
 - g. Color coordination tools
4. Pick one of the following user interface (UI) layouts that you'd prefer to interact with.
 - a. A UI with more pages, but less elements on each page.
 - b. A UI with less pages, but more elements on each page.
5. On a scale of 1-5, with five being the most, how would you rate the importance of a feature where the application will allow you to redo or undo some edits if you decide that you do still want the original or accidentally make a mistake?

Appendix D: Qualtrics Survey



WPI

Intro.

Hello! We are a team of college students from Worcester Polytechnic Institute in the United States. We will be working with the Somali Youth Development Resource Centre to develop a new Client Management Database system in hopes to improve efficiency. This survey will ask a variety of questions that deal with potential features and ease of use functionalities that you, the staff at the SYDRC, would like to see in the new system. Your responses will help shape the final product we deliver before we head back to the United States. We will ask 17 questions that will take approximately 10 minutes to complete.

Your participation is voluntary. If you decide to take the survey and at any point wish to withdraw, you are able to do so. You may also skip any questions that you do not want to answer. Your survey answers will be confidential and are strictly for research purposes. All information recorded in the survey will only be shared with the administration at the SYDRC and not with any outside parties.

The first question we will ask is for your full name. The reason we are asking for your name is simply so that we can create a pool of possible interviewees for the next stage of the project. If you then agree to be interviewed, your specific responses to this survey will be used to cater unique interview questions for you. After the interview, your personal identifying information will be deleted from our data. If you want your survey responses to be completely anonymous, you can choose not to include your name and you will also not be considered as an interview candidate.

If you have any questions or concerns about this survey, you may contact the researchers at gr-lonc20-sydr@wpi.edu or the project advisors John Orr (orr@wpi.edu) and Paul Marrone (pamarrone@wpi.edu). Any questions about human rights issues should be directed to Worcester Polytechnic Institute's Institutional Review Board at irb@wpi.edu.

Thank you for your time and support in our project!





WPI

Q1. What is your full name?

(If you wish to remain anonymous, you may skip this question)



WPI

Q2. Pick one of the following that best represents your role at the SYDRC.

- Volunteer
- Paid Staff
- Administrative Staff

Q3. What is your title and/or role at the SYDRC?

Q4. How would you rate your experience with technology on a scale of 1-5 with 1 being least experienced and 5 being most experienced?

- | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 |
| <input type="radio"/> |

Q5. How long do you typical spend each day logging activities/people into the excel spreadsheet system currently being used?

- < 1 hour
- 1-2 hours
- 2-3 hours
- > 4 hours





Q6.

To what extent do you agree with the statement: A new management system should have different levels of functionalities specific to the user's level of authority. (i.e a volunteer, a paid staff member and an administrator).

Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7.

To what extent do you agree with the statement: A database for a non-profit organization should allow multiple users to access and modify it concurrently.

Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8. Select the top 3 filters you believe would be most useful for finding information in the database.

- Age
 - Ethnicity
 - Emergency details
 - Medical information
 - Work done
 - Case studies
 - Outcomes achieved
 - Media files
 - Stakeholders
 - Volunteers
 - Staff
-

Q9.

On a scale of 1-5, with five being the most, how important it is to store large media files such as videos or other forms of media?

1	2	3	4	5
<input type="radio"/>				

Q10.

To what extent do you agree with this statement: It should be very easy to manipulate data in the database such as editing or removing multiple records simultaneously.

Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



WPI

Q11. Choose which layout would be most preferable for a room scheduling application.

- A Calendar that shows the availability of rooms on a monthly, weekly, and daily basis.
- An interactive floor plan that allows the user to visually see what rooms are available or booked for a given date and time.

Q12.

On a scale of 1-5, with five being the most, how high do you rank the importance of a feature that remembers your previous organization information so you do not have to reenter it every time you request a room?

1

2

3

4

5





Q13.

On a scale of 1-5, with five being the most, how would you rate the importance of a feature where the application will let you know what is going on in the backend when something is taking a long time to load?

1	2	3	4	5
<input type="radio"/>				

Q14. On a scale of 1-5, with five being the most, how would you rate the importance of a feature that remembers what you had written on a page so that those comments/data are restored when you return to that page.

1	2	3	4	5
<input type="radio"/>				

Q15.

Select the top 3 ease of use functionalities you would want to see in the application.

- Text size changer
- Color blind mode
- Night mode
- Help menu
- Pop-up tips
- Search bar
- Color coordination tools

Q16.

Pick one of the following user interface (UI) layouts that you'd prefer to interact with.

- A UI with more pages, but less elements on each page.
- A UI with less pages, but more elements on each page.

Q17.

On a scale of 1-5, with five being the most, how would you rate the importance of a feature where the application will allow you to redo or undo some edits if you decide that you do still want the original or accidentally make a mistake?

1	2	3	4	5
<input type="radio"/>				





WPI

We thank you for your time spent taking this survey.
Your response has been recorded.

Appendix E: Interview Script for Paid Staff

Introduction:

Hi, my name is [insert name of interviewer here]! Thank you for taking time out of your day to speak with me. I'm part of a team of college students from Worcester Polytechnic Institute in the United States. We will be working with the SYDRC for the next six weeks to develop a new Client Management Database system in hopes to improve efficiency. This interview stems off of the survey you answered not too long ago. I'll be asking you some follow up questions based on your responses from the survey as well as some broader questions regarding your technical expertise and wants from a new management system. Your responses will help shape the final product we deliver before we head back to the United States. This session will take anywhere between 15-20 minutes to complete.

All the following questions are optional, just let me know if you would like to skip a question. You may also leave whenever you would like if you so choose. Your answers will be kept anonymous and no personal data will be recorded or shared outside of the SYDRC. Is it alright if I create an audio recording of this conversation?

Alright, let's get started!

Technical Expertise Questions:

1. What type of phone do you use? Why do you like it?
 - This question serves as a way to break the ice and is also a good way to gauge how the interviewee understands and interacts with technology in a general sense
2. How would you describe the technology needs of the SYDRC at the moment?
3. What frustrates you about the applications you use on your computer right now?
4. Please describe your technical expertise.
5. Please describe the process of implementing the apricot and lamplight database solutions...
 - Go into detail about the most difficult parts of the installation process
 - How much customization options were provided with the system?
6. How often would you use this database and for what purposes (be specific)?

Features Questions:

1. What kind of features would you want to use on a daily basis that isn't currently implemented in the database?
2. What kind of analysis tools would you like to see added to the system?
3. What feature or tool do you use the most on a daily basis in the current system?
4. Are there any features that you have seen in any software that you thought could be a useful feature for a database/room scheduler application?
5. What level of privacy do you expect out of this client management application?

6. Would you prefer the application be fast with only the bare minimum amount of information stored or slower but provide more information generated from other pieces of information?
7. You choose X on the question regarding your preferred layout for a room scheduler. Why do you find X more useful than Y?
8. In relation to the previous database solutions you implemented, what was the most useful feature provided by the paid solution?
9. In relation to the previous database solutions you implemented, what would you say was the most frustrating or aggravating part of the system?
10. In relation to the previous database solutions you implemented, what other services, besides the actual system did they provide (I.E. tech support, data storage, data recovery)?
11. If the new system was to provide a way of generating reports by analyzing the current data, what types of reports would you like generated and why? (i.e. charts, graphs, statistics)
 - What type of information would you want to be getting from these reports and why?
12. If Interviewee agreed with the statement on the survey: A new management system should have different levels of functionalities specific to the users' level of authority. (i.e a volunteer, a paid staff member and an administrator).
 - What do you believe should be the difference in functionality for these levels of users?
 - Should there be restrictions placed on some levels of users rather than others? Explain.

If the interviewee disagreed;

- Why do you feel that all levels of users should have equal access to the functionalities provided in the new system?

Conclusion:

Give an in the moment, personal thank you to the interviewee.

Appendix F: IRB Privacy and Consent Process

1. Our team will provide the link to the Qualtrics Survey and a Privacy note to our project sponsor Abdiwahab “Abdi” Ali. (He is the Director at the SYDRC)
 - a. Privacy Note: The attached survey will ask for your full name. Providing your name will allow for the team of students to create a pool of possible interviewees for the next stage of the project. If you then agree to be interviewed, your specific responses to the survey will be used to cater unique interview questions for you. After the interview, your personal identifying information will be deleted from their data. If you want your survey responses to be completely anonymous, you can choose not to include your name and you will also not be considered as an interview candidate.
2. Abdi will then personally send the link to the Qualtrics Survey and explain our privacy regulations to his team of staff at the SYDRC.
3. The intro to the Qualtrics Survey will reiterate the privacy regulations we have set in place to any staff members that choose to open the link.
 - a. On the next two pages are screenshots of the first two pages of the survey.



WPI

Intro.

Hello! We are a team of college students from Worcester Polytechnic Institute in the United States. We will be working with the Somali Youth Development Resource Centre to develop a new Client Management Database system in hopes to improve efficiency. This survey will ask a variety of questions that deal with potential features and ease of use functionalities that you, the staff at the SYDRC, would like to see in the new system. Your responses will help shape the final product we deliver before we head back to the United States. We will ask 17 questions that will take approximately 10 minutes to complete.

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The first question we will ask is for your full name. The reason we are asking for your name is simply so that we can create a pool of possible interviewees for the next stage of the project. If you then agree to be interviewed, your specific responses to this survey will be used to cater unique interview questions for you. After the interview, your personal identifying information will be deleted from our data. If you want your survey responses to be completely anonymous, you can choose not to include your name and you will also not be considered as an interview candidate.

If you have any questions or concerns about this survey, you may contact the researchers at gr-lonc20-sydc@wpi.edu or the project advisors John Orr (orr@wpi.edu) and Paul Marrone (pamarrone@wpi.edu). Any questions about human rights issues should be directed to Worcester Polytechnic Institute's Institutional Review Board at irb@wpi.edu.

Thank you for your time and support in our project!





WPI

Q1. What is your full name?

(If you wish to remain anonymous, you may skip this question)



Appendix G: IRB Approval Letter

WORCESTER POLYTECHNIC INSTITUTE

100 INSTITUTE ROAD, WORCESTER MA 01609 USA

Institutional Review Board

FWA #00015024 - HHS #00007374

Notification of IRB Approval

Date: 16-Jan-2020
PI: Orr, John A
Protocol Number: IRB-20-0275
Protocol Title: SYDRC Client Management Database

Approved Study Personnel: Aponte, Gabriel~Butler, Melissa~Orr, John A~Marrone, Paul A~Mara, Paul~Bonaventura, Andrew~Reiser, Tyler~Gonzalez Villalobos, Diego~

Effective Date: 16-Jan-2020

Exemption Category: 2, 3

Sponsor*:

The WPI Institutional Review Board (IRB) has reviewed the materials submitted with regard to the above-mentioned protocol. We have determined that this research is exempt from further IRB review under 45 CFR § 46.104 (d). For a detailed description of the categories of exempt research, please refer to the [IRB website](#).

The study is approved indefinitely unless terminated sooner (in writing) by yourself or the WPI IRB. Amendments or changes to the research that might alter this specific approval must be submitted to the WPI IRB for review and may require a full IRB application in order for the research to continue. You are also required to report any adverse events with regard to your study subjects or their data.

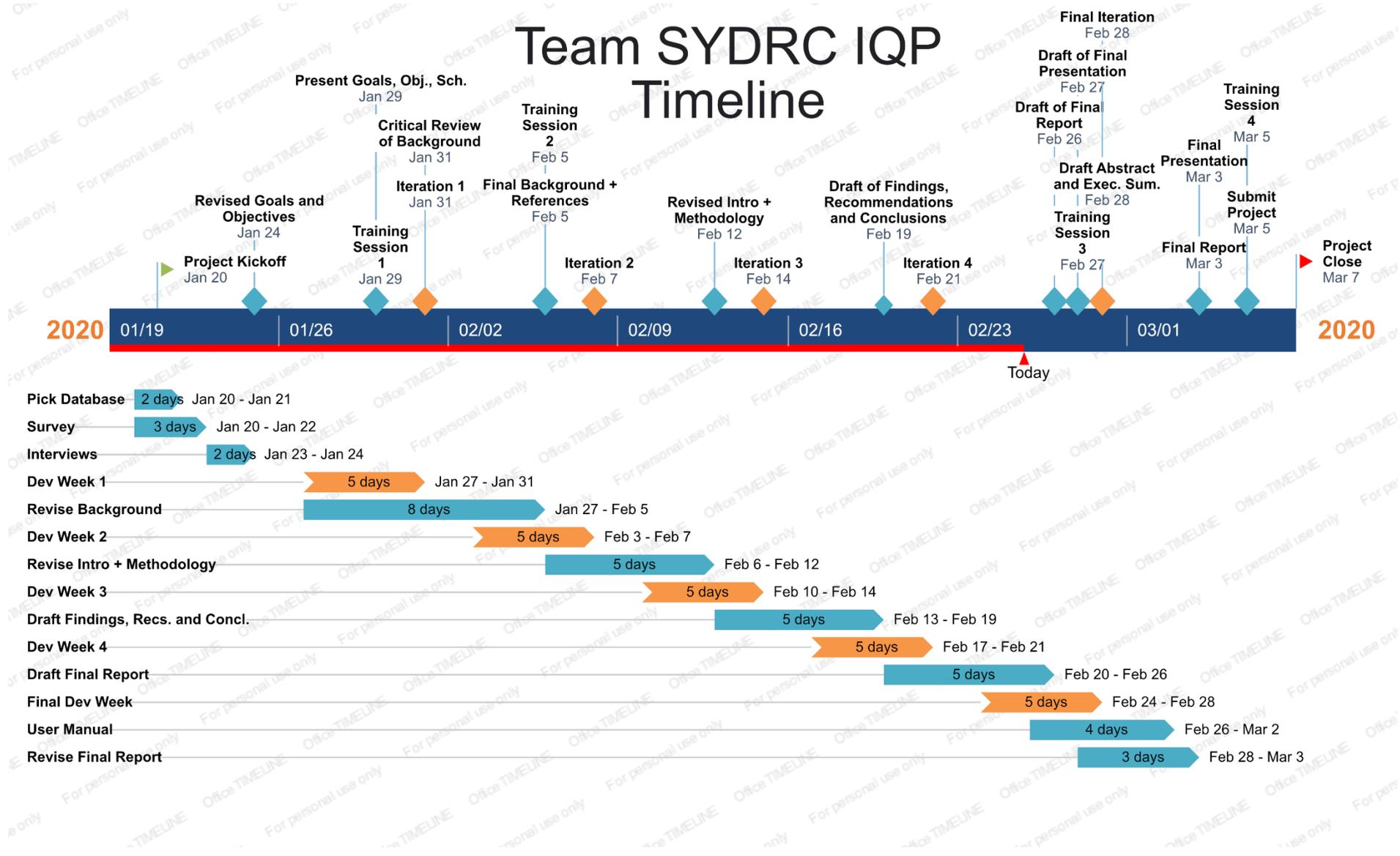
Changes to the research which might affect its exempt status must be submitted to the WPI IRB for review and approval before such changes are put into practice. A full IRB application may be required in order for the research to continue.

Please contact the IRB at irb@wpi.edu if you have any questions.

*if blank, the IRB has not reviewed any funding proposal for this protocol

Appendix H: Detailed Schedule

Team SYDRC IQP Timeline



Break Down of Schedule Tasks

Pre-Development (Jan 20 - 24)

Pick Database

- Review cost-benefit analysis with the sponsor (Jan 20, All)
- Based on background research and final talks with the sponsor, make the final decision of which cloud system to utilize in the new database system. (Jan 21, All)

Technical Familiarity + Project Management

- Setup new Trello boards, organize google drive, begin the skeleton for the final report document and start the detailed schedule (Jan 21-23, Gabe)
- Setup Amazon Web Services account for the team (Jan 21st, Tyler)
- Play around with AWS and get familiar with services and monetary restrictions (Jan 21-22, Tyler, Diego, PJ, Andrew)
- Get the Views Demo Software from Abdi and get familiar with its features (Jan 22-24, All)
- Submit Revised Goal, Objectives Document (Jan 24th, Gabe + Tyler)

Survey

- Test out and revise Qualtrics survey (Jan 20, All)
- Give Qualtrics link to Abdi, the director of the SYDRC, and have him send it out to the staff and volunteers (Jan 20, Gabe)
- Allow two days to gather responses from the staff and volunteers
- Begin to analyze data as it comes in and create a priority list for features and ease-of-use functionality (Jan 21 - 22, All)

Interviews

- Schedule interviews with any of the seven paid staff members who responded to the survey as soon as their results from Qualtrics are analyzed (Jan 23rd, Gabe + Diego)
- Utilize the interview script and conduct interviews on Wednesday of the first week (Jan 22, Gabe + Diego)
- Type up interview transcripts (All, Jan 22 -24)

Dev Week 1 (Jan 27 - 31)

Preliminary Development

- Create Product Backlog of all features (both required and extras) based off data from survey responses and interviews (Jan 27 - 28, All)
- Transfer legacy Excel data into the Views program (Jan 27, Andrew, Tyler, Gabe)
- Customize the Views dashboard (Jan 27 - 29, PJ)
- Create mock-ups for the UI design of the room scheduler (Jan 29, Diego)
- Create initial report features based on survey and interview data (Jan 28 - 31, All)
- Research Views API Integration (Jan 31st, Tyler)

- End the week with a preliminary setup of the Views application and present it to Abdi for his feedback (Jan 30, All)

Background Revisions

- Begin Critical Review of the Background based on revisions to the project scope, goals and objectives (Jan 28, All)
- Create an outline of revisions to be made based on the critical review and submit it on slack (Jan 29 - 30, Gabe + Tyler)

Dev Week 2 (Feb 3 - 7)

Database Development

- Polish the dashboard based on Abdi's feedback (Feb 3, PJ)
- Add in the rest of the report and statistical features (Feb 3 -5, All)
- Present to Abdi the final version of the Views Application (Feb 6, All)

Room Scheduler Development

- Utilize AWS to create a prototype of the backend of the web application (Feb 6 - 7, Andrew + Tyler)
- Use the UI mockups to begin creating the front end of the web application (Feb 6 - 7, PJ, Gabe, Diego)
- Present initial prototype to Abdi and collect feedback (Feb 6, All)

Revising Proposal Chapters

- Use critical review to modify the background chapter and submit revisions (Feb 3 - 5, Tyler + Gabe)
- Begin modifying the Methodology based on what has been completed so far and moving everything into past tense (Feb 6 - 7, Diego + Andrew)
- Begin to modify intro based on revisions to project scope, goals, and objectives (Feb 7, PJ)

Dev Week 3 (Feb 10 - 13)

Database Development

- Make final polishes based on Abdi's feedback (Feb 10, All)

Room Scheduler Development

- Integrate AWS application into SYDRC/N1C Websites (Feb 10-13, All)
 - Web development (Diego + Gabe)
 - JSON data transferring (Tyler, PJ, Andrew)
- Present web prototype to Abdi and collect feedback (Feb 13, All)

Final Report Progression

- Complete Introduction revisions and submit (Feb 10 - 12, PJ + Tyler)
- Complete Methodology revisions and move the rest to past tense (Feb 10 - 12, Diego, Andrew)

- Begin drafting Findings, Conclusions and Recommendations chapter (Feb 10 -12, Gabe)

Dev Week 4 (Feb 18 - 21)

Room Scheduler Development

- Apply adjustments to room scheduler based on Abdi's feedback from the last sprint (Feb 18, All)
- Implement any remaining backlog features or new suggested features into room scheduler (Feb 19-21, All)
 - Implement ease-of-use features for the room scheduler(Andrew, Tyler, Diego)
 - Implement UI designs into the room scheduler (PJ, Gabe)
- Present next iteration to Abdi and collect feedback (Feb 20, All)

Final Report Progression

- Complete Findings draft (Feb 18 -19, Gabe, Tyler, PJ)
- Complete Conclusions and Recommendations draft (Feb 18 - 19, Andrew + Diego)

Dev Week 5 (Feb 24 -28)

Room Scheduler Development

- Apply final polish to all database management tools presented to the SYDRC and integrate any remaining features (Feb 25 - 28, All)

Final Report Progression

- Final Report draft (Feb 24 - 26, All)
 - Table of Contents, Authorship, Appendices (Gabe)
 - Findings (Andrew + Tyler)
 - Conclusions and recommendations (Diego + PJ)
- Draft final presentation slides (Feb 25 - 27, All)
- Draft Abstract + Exec Summary (Feb 26 - 28, Gabe + PJ)

Final Dev Week (Mar 2 - 6)

- Present final report to IQP group as well Abdi (Mar 3, All)
- Create the user manual and give physical and digital copies to the sponsor(Mar 3 - 4, All)
 - Views Support and Guide (Tyler, Diego)
 - Room Scheduler Support and Guide (PJ, Andrew, Gabe)
- Perform staff training and demo software to entire SYDRC staff (Mar 4, All)
- Update IQP Website information (Mar 5, All)
- Revise and finalize the final report document based on feedback (Mar 4 - 5, All)
- Submit the Final Report Document (Mar 5, All)

Appendix I: Raw Survey Data

1. What is your full name? [Answers redacted to protect anonymity]
2. Pick one of the following that best represents your role at the SYDRC.
 - a. Volunteer (0)
 - b. Paid Staff (4)
 - c. Administrative Staff (0)
3. What is your title and/or role at the SYDRC? (Open Response)
 - a. Development Worker (1)
 - b. Youth Service Manager (1)
 - c. Information and employment advisor (1)
 - d. Director (1)
4. How would you rate your experience with technology on a scale of 1-5 with 1 being least experienced and 5 being most experienced?
 - a. 1 (0)
 - b. 2 (0)
 - c. 3 (1)
 - d. 4 (1)
 - e. 5 (2)
5. How long do you typically spend each day logging activities/people into the excel spreadsheet system currently being used?
 - a. < 1 Hour (2)
 - b. 1-2 Hours (2)
 - c. 2-3 Hours (0)
 - d. > 4 Hours (0)
6. To what extent do you agree with the statement: A new management system should have different levels of functionalities specific to the user's level of authority. (i.e a volunteer, a paid staff member and an administrator).
 - a. Strongly agree (2)
 - b. Somewhat agree (2)
 - c. Neither agree nor disagree (0)
 - d. Somewhat disagree (0)
 - e. Strongly disagree (0)
7. To what extent do you agree with the statement: A database for a non-profit organization should allow multiple users to access and modify it concurrently.
 - a. Strongly agree
 - b. Somewhat agree (3)
 - c. Neither agree nor disagree (0)

- d. Somewhat disagree (0)
 - e. Strongly disagree (0)
8. Select the top 3 filters you believe would be useful for finding information in the database
- a. Age (3)
 - b. Ethnicity (1)
 - c. Emergency Details (1)
 - d. Medical Information (0)
 - e. Work done (2)
 - f. Case studies (1)
 - g. Outcomes achieved (3)
 - h. Media files (0)
 - i. Stakeholders (0)
 - j. Volunteers (0)
 - k. Staff (1)
 - l. Strongly disagree (0)
9. On a scale of 1-5, with five being the most, how important is it to store large media files such as videos or other forms of media?
- a. 1 (0)
 - b. 2 (1)
 - c. 3 (1)
 - d. 4 (1)
 - e. 5 (1)
10. To what extent do you agree with this statement should be very easy to manipulate data in the database such as editing or removing multiple records simultaneously.
- a. Strongly agree (2)
 - b. Somewhat agree (0)
 - c. Neither agree nor disagree (1)
 - d. Somewhat disagree (0)
 - e. Strongly disagree (1)
11. Choose which layout would be most preferable for a room scheduling application.
- a. A Calendar that shows the availability of rooms on a monthly, weekly, and daily basis. (2)
 - b. An interactive floor plan that allows the user to visually see what rooms are available or booked for a given date and time (2)
12. On a scale of 1-5, with five being the most, how high do you rank the importance of a feature that remembers your previous organization information so you do not have to reenter it every time you request a room?
- a. 1 (1)
 - b. 2 (0)

- c. 3 (0)
 - d. 4 (1)
 - e. 5 (2)
13. On a scale of 1-5, with five being the most, how would you rate the importance of a feature where the application will let you know what is going on in the backend when something is taking a long time to load?
- a. 1 (0)
 - b. 2 (0)
 - c. 3 (2)
 - d. 4 (2)
 - e. 5 (0)
14. On a scale of 1-5, with five being the most, how would you rate the importance of a feature that remembers what you had written on a page so that those comments/data are restored when you return to that page.
- a. 1 (1)
 - b. 2 (0)
 - c. 3 (0)
 - d. 4 (1)
 - e. 5 (2)
15. Select the top 3 ease-of-use functionalities you would want to see in the application.
- a. Text size changer (2)
 - b. Color-blind mode (0)
 - c. Night mode (0)
 - d. Help menu (4)
 - e. Pop-up tips (3)
 - f. Search Bar (3)
 - g. Color coordination tools (0)
16. Pick one of the following user interface (UI) layouts that you'd prefer to interact with.
- a. A UI with more pages, but less elements on each page. (2)
 - b. A UI with less pages, but more elements on each page. (2)
17. On a scale of 1-5, with five being the most, how would you rate the importance of a feature where the application will allow you to redo or undo some edits if you decide that you do still want the original or accidentally make a mistake?
- a. 1 (1)
 - b. 2 (0)
 - c. 3 (0)
 - d. 4 (1)
 - e. 5 (2)

Appendix J: Interview Transcripts

SYDRC Paid Staff Interview #1

[Gabe] - Ok, so kind of like a simple question; do you have a cell phone?

[Interviewee] - Yes

[Gabe] - What kind of phone do you use?

[Interviewee] - uh, Android

[Gabe] - Android, ok, uh Why do you particularly enjoy that phone?

[Interviewee] - Cuz you can, i think its more it has better battery life

[Gabe] - Better battery life ok

[Interviewee] - And um, I can use like word documents, and stuff like that and I think it's slightly than the iPhone I've had for many years and now I've converted to android and I prefer it, it's much better I think personally. But that's my opinion, sorry

[Gabe] - How would you describe the current technology needs here at the SYDRC?

[Interviewee] - Um, like in terms of sessions you mean or like in general?

[Gabe] - Just in general, what's lacking what not lacking?

[Interviewee] - I think it's the reception in this area is its that's not that great, like the internet connections and phones are not that great, but apart from that that its fairly good, the internet is fast, so it helps, and um so yeah.

[Gabe] - Do you feel like the technology that you guys use to run your programs you use and whatnot is up to par or?

[Interviewee] - I think everything, everything in life needs improvement sometimes so definitely, cuz your using like excel and with excel sometimes you can get like, you have to ya know like gets like complicated basically

[Gabe] - ok so, that kinda leads into the next question which is what frustrates you about the current excel system that you guys use?

[Interviewee] - um, uhh, lots of like, you have to write every, ok so like your using different columns and you write the person's name and it's a bit frustrating that you can't, even though it has a thing where it might pick a name already you have on the system, but if you like you have

to do everything manually like and it's difficult cause you have to do it with most of the sessions cuz there's always new people coming and stuff so it's a bit, it does get frustrating

[Gabe] - I can imagine

[Deigo] - Um, do you work a lot with the spreadsheet?

[Interviewee] - Um, yeah so when I'm doing my reports yeah I'll use the spreadsheet, yea, but what I, the sessions, if I'm doing a sessions recording i'll use a separate thing which is like word. That's what we used with the session or what you call it, and yeah the sessions recordings our time table and yeah stuff like that, and then excel is basically for the whole data when your collecting the data and you want to send it as a report to my manager and stuff so

[Gabe] - Would you rather not use two separate applications for those things or would you

[Interviewee] - Of course, yeah, definitely it makes life easier and you can cuz like I always like to keep up to date on what I'm doing and how the sessions is going but, sometimes it's difficult because um, you might miss a participant, like if they have the same name, the same surname or like, it does get confusing going back and forth, back and forth, back and forth, so that's why I would rather do it just once every month.

[Gabe] - So do you typically do all that work when your here and are you able to access these things at home?

[Interviewee] - Um I like to do the work here the majority of the time, but it would be good if I could access it at home, or like on the train or something, and you can't do that all the time, it's a bit difficult.

[Gabe] - Previously the SYDRC had used the systems of Apricot and Lamplight for their database solutions, do you?

[Interviewee] - Not really no

[Gabe] - Ok, so we will just skip over that one, um and the last technical question on just your technical expertise, is just how would you describe your technical expertise

[Interviewee] - Um, OK, I did OK on my GCCs, but like I like to learn about tech and so it's stuff like that so slowly, like HTML stuff like that udeimi is good for stuff like that like small demos and stuff

[Deigo] - yeah it is pretty good

[Interviewee] - So i do like javascript , I do for my own personal cuz AI is going to take over the world and stuff like that and robots, so might as well get to know robots and in the future,

[Interviewee] - That's a joke, by the way, recording, it's not true. No, but you know that. Yeah. I always find it so fascinating because, you know, in like places like Africa already they use like

technology, like there's a system where like even in Somalia, where its so remote you can send someone like virtual money for your phone. And then they get in the other side of like rural part where there's hardly any Internet, which is i find so weird. And then they can pay for like food, anything basically in that little village.

[Gabe] - Thats crazy

[Deigo] - Thats insane That's pretty cool.

[Interviewee] - Yea. So it's really is that world remit. They're really good as well.

[Gabe] - So we're going to move on to more talking about the types of features we might be able to have into the new database system as well the room scheduler.

[Interviewee] - OK.

[Gabe] - So The first one is, What kind of features would you want to be using on a daily basis inside of your excel sheet that currently, you can't do or aren't there

[Interviewee] - Um, register so like regular if you have like an attendance sheet instead you can just click like ddddd. Like doc

[Deigo] - Yeah.

[Interviewee] - That person in a doc then

[Deigo] - it just kind of like be like this here this here.

[Interviewee] - Yeah, exactly. You know how like scores like they say when you've got the sessional like can have it still as a format like this. We have a sign in sheet so they can sign in but regularly, if you can say that person attended dddd. So then we have like a log of their progress as well yeah. And then I can like the case studies as well. So then if you work particularly with them about what their future goals then you can, or, if you help them this like see me right or wherever it might be.

[Gabe] - How do you currently maintain case studies?

[Interviewee] - So, yeah, we have a case like again word, you have to go through word and then write down I spoke with ddd. We have a case study file.

[Deigo] - yea, you probably don't get a lot of statistics from it either.

[Interviewee] - No, you won't, because theres like individual as well. So you won't know how many people you've done case studies with until later on, you have to go back to the drawing board. So it's sometimes you might again, lose might lose people because

[Gabe] - is there any sort of analysis tool or reporting or statistical type tool that you would want in a system that currently you don't have?

[Interviewee] - Yeah, maybe um. You know, like how Google Analytics like to tell you, how many people read the website, or this and that, you know, like just maybe something similar to that, how many people attended? What were the outcome like? You have five outcomes, two outcomes, just the generic small mini report that can gather from like multiple and stuff.

[Gabe] - So on the current Excel system, is there a specific feature tool that you tend to use the most over anything else?

[Interviewee] - Feature as in? not really other. I don't, It's just, you know, excel it's not very . Yeah. If it doesn't have alive, it's just there, im joking, it's good for like calculating how much you earn, or you know, or like your budget for the month.

[Deigo] - Yeah. Quick math.

[Interviewee] - Because yea, quick maths yea. It's good for accountants I guess.

[Deigo] - For Accounting yeah.

[Interviewee] - Fantastic

[Deigo] - But to keep track of people, its rough

[Interviewee] - Yeah. People it's difficult.

[Deigo] - It's not a lot you can do,

[Interviewee] - yeah it really is difficult.

[Gabe] - ok, um Are there any features that you may have seen in other types of software that you think would be relevant to building a new application?

[Interviewee] -Not really. Like I said, Google Analytics gives you that kind of feedback, but that's more like technical, I don't know for websites and businesses and stuff, but if you could have stuff like for your services, it would be great because then you can review it, like what happened, you know, like month by month. You know how businesses showcase their performances.

[Deigo] - yea, they just have like something you can show, like an image you show?

[Interviewee] - yea, exactly or like something that like kinda will happened.

[Deigo] - Yeah.

[Interviewee] -You know what?

[Deigo] - We want growth!

[Interviewee] - yea, exactly so its kinda at least for you it's like going back to the drawing board stuff. Yeah.

[Deigo] - see what's going on

[Interviewee] - So it'd be good. Something similar to that. Be great.

[Gabe] - Do you have a certain level of privacy that you would expect out of a new client management system?

[Interviewee] - Data protection? That's like huge. Because some of the case case studies that you work with, can't just have it public, you know, like any you might not want to share it with. It might be very private. So only you and your manager might know so it might be. So just if you have that person has the login information, then they keep it and they don't share or they don't say ah log into my. That kind of privacy is very important for me. data protection.

[Gabe] - So on the survey, when we asked for the preferred layout of the rooms, scheduler, I believe you answered that you would rather an interactive floorplan over a calendar layout.

[Interviewee] - Yeah.

[Gabe] - So we're just wondering how come you chose that over the calendar layout?

[Interviewee] - I think because, uh, maybe I was put if this is for if someone wants to book a room, right?

[Deigo] - Yes.

[Interviewee] - And I think maybe because um someone has like a disability, or, you know, some one can like or it's just gonna be accessible. can see the room and then they can make it more, is visual. I think visual visual concepts for me are really important. So I can always see like how can I plan it I don't know? That's just my opinion.

[Deigo] - no yea, it's easier if they can see a picture of it and then like, they can see if like it works for them.

[Interviewee] - Exactly yeah. Especially like if you were hiring it for a kids party in the hall or if you, then you could see like how many people can attend.

[Deigo] - Yeah.

[Interviewee] -Instead of just, or a conference. what is there.

[Gabe] - So we've sort of touched on this topic a little bit, but so, if our new system is going to provide a way of generating reports in other types of statistical information, whether it be like a pie charts or graphs or line charts, what type of information would you want to be in these different types of reports?

[Interviewee] - Like information as in?

[Gabe] - Really just anything, any type of data that you're hoping could be more visualized that currently isn't.

[Deigo] - Like how we spoke about, you know, your chart. like would you like to see attendance, or like amount of people that showed up.

[Interviewee] - Yeah, maybe attendance is good. um, age bracket as well, like

[Deigo] - age?

[Interviewee] - So you can have yeah. So, you know, like you can maybe recruit more. Yeah. Yeah. 10 to like 15 year olds. instead of maybe you might have like eight to ten so age is good as well. Yeah, just that chart, I think charts are good, cause then it, I think it's always because then you can see what works and what didn't work and feedback as well from participants like young people. Because then they can say, oh, we like this session, but this session you need to improve on x y and z.

[Gabe] - So on the survey we ask a question about whether the new management system should have different levels of functionality based on the user's level of authority, whether that be a volunteer or paid staff or an administrator. You answered that you pretty much agree with that. So our question was for you would be, What do you think should be the difference in like how much access a volunteer gets over a staff member or an administrator

[Interviewee] - I think administrator and staff is like because they sign a contract and like there binding. whereas volunteers are more, there doing it out of their free will. So like, you don't want that data or information to be passed on to third parties because they don't have that level of commitment. like we don't sign like non-disclosures. Cause like because someone can actually get ideas and just take it all? ya know, So it would be good to have volunteers can. But then with supervision, I think

[Diego] - Or maybe volunteers can only log in information here, not access it?

[Interviewee] - Exactly. yeah that's what happens as well. Like most of the time, like volunteers won't have access to maybe personal data, but they kind of like login children and stuff

[Gabe] - Do the volunteers ever have access to Excel spreadsheet that is currently used?

[Interviewee] - No. Not that I'm aware of. No, I don't. Yeah, I don't let them see. how everyone, but no no the volunteers don't.

[Gabe] - Um, so I think that's all that's all the questions I had, Diego is there anything you want to ask?

[Deigo] - Um no, nothing thing stood out. Thank you so much!

[Gabe] - Well, thank you for your time.

SYDRC Paid Staff Interview #2

[Gabe] - Umm so, today we're going to talk a little about your survey responses and get some more information on your technical expertise, as well as your wants and needs from the new management system that we are making you, all of our questions are optional if you don't want to answer them just say so, I'll skip it, you can also leave whenever you'd like if you would like to and your answers will be anonymous in our data and nothing will be shared outside of this organization. So yeah might as well get started. So our first question is kind of just like an easy one, what kind of phone do you use?

[Interviewee] - An iPhone.

[Gabe] - Yeah, why do you use an iPhone?

[Interviewee] - Probably the first smartphone I've gotten so I've just kind of stuck with it, not an android fan so I've just stuck with apple.

[Gabe] - Ok, how would you describe the technological needs here at the SYDRC?

[Interviewee] - Theirs needs or their wants? So, their actual needs?

[Gabe] - Needs and wants, how about that?

[Interviewee] - Fairly standard, I think umm, It's become more forward thinking and more umm something really to make our life easy in terms of technology used to make our lives easier and our work easier so for example capturing the data, recording information, and when it comes down to the bulk of the monetary evaluating to have something that's, a tool that's easy to use to actually capture that and obviously represent that, so umm i think we're fairly basic at the moment, but hopefully we will get to something a bit more steady.

[Gabe] - So currently you are using an excel system for your data management needs, what frustrates you about that?

[Interviewee] - It frustrates me because its not online, it's not all connected together everyone's got their one drive that they just keep updating and sending around and I keep personally myself and my other colleague need to look around and see which one's the latest one and then say ahh what date was it sent or look at the last created aspect of it and when I'm opening something and looking at it to report on some of my views on it as well as updating it at the same time so again it's not simultaneously, it's not updated all together online.

[Gabe] - So you take the ability for multiple people to work on it at the same time without issues is a very big need.

[Interviewee] - Definitely.

[Diego] - Yeah and at the same time it is updating, when you are working with it.

[Interviewee] - Yeah in real time yeah.

[Gabe] - How would you describe your own technical expertise?

[Interviewee] - Soso, can use a few programs here and there to navigate the computer or what I need to do my work with, but ehmm probably make mistakes so updating the website is the most advanced I probably give myself, however, I'm open to learning and I think I can learn and I think its just the needs that I need are obviously the basic element for what I need to do my job well.

[Gabe] - So you guys used Apricot and Lamplight services in the past, how would you say the installation process or setup of those like how'd that go?

[Interviewee] - It took ages to just setup and there are all these attachments to it so for example, Lamplight you need to go on a five, so you have to have five stages or something or you need to have a weekly conference call with one of their tech guys and understand your needs and then after that you know they'll build your system for you and then you work through a worksheet and then in that time in as well you need to attend their training session and then a month later and then about between two to three months you'd get the system up and running and so there's a lot of legwork initially, Apricot likewise as well you just go on a training session, understand the system, work on it, and then you're sent away to design it and when you are happy with it within two to three months and you think you are ready to go live you send it back to them and then they'll see your live to go and then you can always change it and edit it at the backend of the database, but there's always recurring themes, changes and different things that might come into play plus cost effective, it wasn't cost effective so the fees that we were supposed to pay for that if you look at it in terms of just what I've seen from Views its chalk and cheese.

[Gabe] - And how much customization options were these other programs giving you?

[Interviewee] - Lamplight: minimal, so that's why the whole workbook and the first five stages and having that conference call with their technical guys to try and understand your needs and then they would present that as best as possible in terms of how they represented the information so that was a little bit, Apricot as well just your in terms of your own pace of when you think you've got a final product.

[Diego] - Apricot you said that the biggest thing you didn't like is that it wasn't cost effective, but what would you say was it that didn't work out with lamplight?

[Interviewee] - Lamplight, oh, lamplight was really much more basic, and in terms of when your needs change you can't really capture that and it can't really produce reports that was another thing as well so you'd put all the information in there and it would capture that but then you need to kind of do your own reporting from that data and obviously analyze yourself.

[Gabe] - So for your new system, how often would you be using it and what purposes would you be using it for?

[Interviewee] - I will probably be using it daily, one to make sure that everything has been updated, two the systems I'm responsible for, inputting that and also looking at it from a quarterly reporting point of view which will make my life easier compared to what I'm doing at the moment which is bi-annually or yearly which is again a lot of information to analyze and takes more time and is more time consuming.

[Gabe] - So we are going to move on to the next section which is more about the different types of features you could possibly want in it, so the first question is what kind of features do you want to use on a daily basis in a new system that you currently don't have in your excel system?

[Interviewee] - Just somewhere that can capture all the information so for example looking at it from the work that's been done, differences, impacts, outcomes or just having somewhere that you can physically look at the telephone call you need to make on somebody, you know, so having information that's available there rather than just looking at the excel sheet and going to the little search bar at the top or finding someone's name. So for me the information is important, so I can have that readily available.

[Gabe] - Is there any types of analysis tools or reporting type tools that you would want in the new system that you do not have currently?

[Interviewee] - Yeah so something like really to incorporate all of the information and represent that so that tool and Views for example intelligence looking at the aspect of its stats so, number of sessions, so as long as you put the ranges in between it will do that for you where as currently you need to do that yourself by counting physically or going back to the registers and so forth.

[Gabe] - Are there any particular types of reports that you want to see generated?

[Interviewee] - Yeah so the number of people accessing the centre, breakdowns in gender, age, post code, and you could say that post code once you physically put it in there it will differentiate between different wards so we've got localities that are from north east south west camden etc etc and it will kind of break down so you can understand where your service users are coming from and when you are reporting that back to your funders, especially the local authority they understand that information or its better represented where at the moment it's just given particular post codes and saying a number of these people are from x or y so who gain differences so, how many people that we assisted that were not in education, employment or training and then now that are, that would capture that feeling, where physically you're counting that now where as physically you are counting that now and you might miss information, and to be honest case studies is another one where there's a lot of work that's done and it nots always

represented and not shown and again highlighting and again the tool button on Views has that element where you can just say a case study so where we're doing case studies on one to two individuals we'll be doing it on multiple people because it's easier and it's a function that's there to actually use to add it to their personal names or so forth.

[Gabe] - How do you currently maintain case studies?

[Interviewee] - Success stories so for example everyone's got one or two stories from that person and that person and just you know type it up whatever which is selling yourself short because you've basically done that with ten people you have it represented there, so if you can obviously represent that the data obviously there for you to analyze and you can pick and choose so right now everyone picks out a few handful prints of x and y cases and that's it.

[Gabe] - And where do you store those cases?

[Interviewee] - Again just a generic Microsoft Word document.

[Gabe] - So are there any features in other types of softwares that are either similar to either Lamplight, Apricot, or Views that you would want to see inside of Views?

[Interviewee] - There was one function that we had in Apricot that we built yourself so what we do annually we do something called an education achievement event and that's obviously celebrating young people's achievement so we request data from all the second schools in Camden and then they will send it over, so they will send a list of ten or twenty students that are eligible blah blah blah and what we need to do is identify how many people, so we import everyone's data firstly so for example AAs got five B-Cs in english, math, science, drama, blah blah blah but then we are looking for people that have achieved 5 A-Cs if that could be a function that we could do in Views where we can record all that information and because we don't need those people's addresses, telephone numbers, emails because the school just sends their name and their grades, so somewhere we could store that possibly and if we do store we can analyze this person's got five A-Cs or whatever they change it now to points so they do it from 1 to 9 or something, I'm just thinking about how much we need that or we can just continue doing it, capturing that information the way we did historically.

[Gabe] - What level of privacy do you expect out of your new management system?

[Interviewee] - Very, very private so 100% so for example only those who have access to views are able to use it so we've got different levels, so for example you've got the five people you interviewed and there's another two staff members, one of them you have met on Monday which was, there's another young lady that's in there now so she's our most newest staff and then you do have a few sessional workers that do the under 5 project or the over 55 project etc etc, they just normally just present that information, so we'll just say a high need for privacy.

[Gabe] - On the survey when we asked you the question about the preferred layout for the room scheduler you chose an interactive floorplan over the idea of a calendar type system so we are kind of wondering why you found the floorplan was better.

[Interviewee] - The option was available, but it's not the be all end all as I said, just because the option was available to be honest that's the only reason, I do not necessarily have a preference but I mean the option was presented to me so I felt why not and pressed the button.

[Gabe] - So in relation to Apricot and Lamplight what other services besides the actual software did they provide whether it be like tech support or data storage or data recovery, anything like that?

[Interviewee] - Yeah so they provide all that so I'm hoping Views has that as well so for example that backup system that they have somewhere that we can always readily download ourselves as well but in a nutshell so I hope whatever database that we do go for and I hope its Views can cover that.

[Gabe] - So our last question kind of revolves around a question on the survey we asked if you if the new management system was going to have different types of functionality for specific users whether it be volunteers, paid staff, or administrator would you want that, and you answered that you would so our question to you would be what do you believe the differences in that functionality should be for these different people?.

[Interviewee] - So someone who has overall admin capabilities and those who have limited aspects so someone who can just input data and can't really view other people's information whereas those with admin rights can do everything and anything and I think between that someone that can view and record data and sessions and so forth because I think we do have a few dedicated volunteers they don't have any access apart from the sign in sheet which is who came in blah blah blah but in an ideal world I'd love to have, give them a volunteer account where they can just input data but they can't view other members or other participants it's just what they are inputting from that application form if its a new member they can just input that.

[Diego] - We asked in the other interview about charts, and we spoke about how important charts with growth were, do you have any types of information that you think is really important to show in a specific way like in bar charts or in graphs like is there anything that comes to mind?

[Interviewee] - Not necessarily but I think Views does give you that function so that was once again another good selling point.

[Gabe] - Alright well thanks for your time we appreciate it.

[Diego] - Thank you so much.

[Interviewee] - Thank you.

SYDRC Paid Staff Interview #3

[Gabe] - Alright, so the first question is pretty easy. What kind of phone do you use?

[Interviewee] - Uh, I use the iPhone.

[Gabe] - How come you like that?

[Interviewee] - To be honest I've just changed over to the New iPhone from Samsung, and two things. I think just because of the battery life at the moment. I think, I got sick of the Samsung and charging it twice a day. And plus also the simplicity of using the phone. I think that's one of the things that appeals to everybody when they use the iPhone. But, it's just minimalistic in terms of the user interface so I kind of thought I would go back and switch back to that. It's just perfect.

[Gabe] - How would you describe the technological needs or wants here at the SYDRC currently?

[Interviewee] - Definitely, it's something that's growing, in terms of, because the organization itself is also growing and also it's changing, I think everywhere because we are recognizing the needs of the service users and also the public who actually interact with us in this place, so we always constantly trying to find ways to improve efficiency, so definitely having things or tools, any tech that can help us in doing our jobs is going to make things much easier.

[Gabe] - Do you use the Excel system that's currently used for tracking any of the members here?

[Interviewee] - The ones that they use yeah? Yeah Yeah yeah. Actually, no, I would say no because I'm kind of different to them. I basically, I run two projects. I support them with 2 days a week for the information, guidance. So when people drop in and they need help with different things like housing, employment, so I kind of provide like face to face support and help them with form filling and things like that. That's more with adults, and also young people as well, in terms of younger adults, so anyone over 18 as well. But with them, they tend to interact more with the younger adults, the younger children, so they are basically constantly doing that through different projects so I don't use some of their forms and what they use, I have my own stuff that I use that I kind of find easier. Because I come from a- I used to work in another organization before here, that did similar things to the projects I'm doing now where we had databases, where we had you know, we meet with somebody, you fill in things straight away, and at the end of the quarter you kind of measure those outputs, based on what's requirements to do the reportings. So for example how many people did I support in that period of time? How many of those people are now self sufficient to support themselves, so you know measuring those kinds of outputs is what I got used to so I kind of used things that I picked up from there from my own thing, it won't work for them, because they are doing different things because the age groups are different, the kind of outputs I'm looking for are different to theirs. So, ideally I think maybe when we have a database, then you know, those would kind of be in line in some ways but they would mean different things. You can have the same questions but they would have a different meaning to me or to their projects.

[Diego] - So you use a separate thing from the Excel sheets?

[Interviewee] - yeah, yeah. It's more word, it's just a table.

[Diego] - It's a word table

[Interviewee] - It's just a word table that I just basically have. Maybe five different things. So, one is the area they required support. It could be housing, it could be benefits, it could be employment. So, then I'll just take that on there, and also they will have another box to say the age range, and basically, a bit of the outcomes they are looking for and what sort of support they required from me, and then afterward what the outcome was.

[Gabe] - So is there anything about the way you currently log that information that frustrates you? Do you feel like that works well?

[Interviewee] - No, it doesn't. Because I'm using word, it's got to be saved onto a desktop, and then it would be nice to have something standardized, where I don't need to require, I could login from home or whatever, or if I'm out with a client to an appointment, then rather than coming back here to input the data, I can actually do it right there and then, it doesn't require much time when I get back I could get on with other things. So, it would be perfect to have something that you can just login and everything is there, and also its secure as well. Having something in the cloud that basically just requires a login detail is much safer. One of the things you might have noticed is we are kind of short on space in this area and also sometimes we have to use each other's laptops because different people work different days so it's just there. Sometimes they might require, we might need to share a laptop so it would be important to have some sort of privacy as well.

[Gabe] - How would you describe your technical expertise?

[Interviewee] - I think I'm ok, yeah. I learn quite quickly, and for my other role, I run a care agency, so what I do is I have a number of different databases and systems I use already from there, and that also requires inputting data into that and having access anywhere I go. I'm kind of already used to that, I think I'm confident enough to actually use it.

[Gabe] - Have you ever heard of the previous solutions they have used here? Apricot and Lamplight?

[Interviewee] - No

[Gabe] - So currently you say you use word. Are there any features you would want in a database system that word doesn't offer that would help you in your um, jobs

[Interviewee] - Just the fact that you can have something central, you can just have Views all the time, and a database gives you that. Maybe something to input, in case we need to get consent forms signed from people and they need to scan that in and then maybe upload that to the system, that would be important to have a tool or something where you can load up documents that are not part of the database. If i need to print off a consent form and I need to share that with external agencies then I can just print it out there directly.

[Gabe] - Thats cool. Are there any types of analysis or statistical tools that you would like the database to have?

[Interviewee] - Yeah I think the common ones are like the number of people you work with. And then I think it would have to have some sort of outcomes that are already in there, so you know I can kind of measure those later on you know like this number of people received training, this many people sought housing advice, this many people received the outcome they wanted. So kind of measuring the positives and negatives as well.

[Gabe] - So currently on word are there any tools you use to help you or is it strictly just text?

[Interviewee] - It's just text and numbers that's it yeah, very straightforward to be honest, nothing complicated about it.

[Gabe] - SO you said you've worked with other organizations that have used databases and what not are there any features from their applications that you liked and you wanted to see here?

[Interviewee] - Yeah, I mean So with those ones for example you created a file for a new client, and I'm sure this will have it as well, we talked about it. Because we all work different projects, having an area where you can input notes in there so that if I worked with somebody I can just put in a note for this client for this project. So if I needed to access and see if this person is known to say [name] for mentoring, then I can actually see and see what's notes hes done. So having an area where we can put notes in against each project would be good.

[Gabe] - WHat level of privacy do you expect to have from a database system?

[Interviewee] - I think what's based on what's important for now is that we are transparent to the clients about what level of privacy they will receive from us. FOr example, a volunteer shouldn't have the same write access as somebody.. a paid staff. If they need help they can see read only stuff so information that is basic like name and whether they are known to use that's it, they really shouldn't be able to see what work we've done with them and so but I think it just depends on the different projects you're working and how sensitive it is. For example if there is an FGM project, only works with constraints? To do and girls, than someone like Maya, who is working with somebody else, whose ... Cause I'm not working on that project there's nothing really I need to see in there. I think it just depends on what level of access is required from the other projects based on who they are working with, just kind of assess it from there.

[Gabe] - On the survey, we asked you about a question a preferred layout for a room scheduler. Either an interactive floor plan or calendar based system. You chose calendar based system, how come you chose that over say an interactive floor plan

[Interviewee] - When you said, the way I thought you meant an interactive floor plan, I didn't really understand it that well, I just thought maybe some sort of like a 3d pan or something where you can just click on different rooms based on the look of this building or something, but no I just want something simple to be honest, that's not going to require a lot of loading, that's just

basically simple to use, so I can clearly see what calendar, and based on each room what's available. Sometimes simplicity is best.

[Gabe] - We like simple things. When you worked at these organizations, and they had more professional database solutions, were there any other services that you had access to through them, whether that be like tech support, data storage, or data recovery?

[Interviewee] - Yeah, because it was built like exactly like its been built now when I was there, we did have input on how it was going to look, there were a lot of teething problems at the time, for example what is really annoying is say I was writing a piece of information and sometimes I might get distracted and like after 10 minutes I still haven't completed it. If I come back to it and then I try to save it, it was getting lost. It was kind of timing out. So what we had to do which was time consuming, was actually make sure we copied it and saved it onto a word document, and then if it got lost again, it wouldn't be lost, I'd just paste it back in, so I would not really like to see something like that, it would be nice to have something that would be recoverable and we are not going to lose data, writing up all that data back up was kind of time consuming. We did have tech support as well, however we didn't have tech support directly. We would have to log it with a manager like 'this keeps happening to me' and they would just log different reports and then send it off to the people that built the... because it was a simple basic database it didn't require a lot of training, and we had each other as well, so we could ask each other anything required. And you could see who was working on what projects as well, it was on the dashboard.

[Gabe] - That's good. So for our new system is to create and generate reports and statistics in the form of charts or graphs or line graphs, what types of information would you want to see visualized in these senses?

[Interviewee] - I think uh... for my project its a different area I'm working on, the different area people receive help in, and the number of people who get help for that service, and also maybe some sort of measuring tool to what would be really good is after I complete something with that person there is some kind of questionnaire I can ask them at the end just to say based on the level of the support you received today how likely are you to sort this problem out yourself later on where you don't need to come back again and then kind of measure and say this person is now quite self sufficient to help themselves so they are kind of empowered so that next time they can actually do the job themselves so that they don't need to come back here, and so yeah something just to say this number of people are now able to help themselves next time rather than coming here.

[Gabe] - So the last question you sort of touched on a little bit, we kind of touched on it so we are just going to try and get a deeper answer on it. One of the questions you were asked on the survey was if there should be a different levels of functionality based on the users authority, whether it be a volunteer, a staff member, or an administrator, so what kind of differences would you want to see in the functionalities between these different people?

[Interviewee] - Yeah just the level of access they have to seeing information , so again like a volunteer shouldnt be able to see personal information about somebody or what help they are seeing or what project they are accessing just I think information wise just to stop duplications

and people being recorded more than once, so this person can actually check that they are known to us, and then that way they can direct them to the right services, maybe to me or somebody else, or maybe booking appointments they know who to address it to, even if that person themselves doesn't know who they are gonna come and see or when that project is running on.

[Diego] - I just have one last question. You said that what you work with is a different tool to what the rest of the staff works with, I was just curious if you wanted some [leveraty?] to create your own forms for example or maybe have pre-built forms built for what you do.

[Interviewee] - I can give you some stuff to see what I use, something different from the rest. I can give that to you guys like the advice and guidance, just see like what forms, or even if there is gonna be drop down menus,

[Diego] - Specifically tailored

[Interviewee] - Yeah even there is a section that I use to say if I referred them to outside agencies as well, so I have and record those numbers as well, I can give you those as well.

[Gabe] - Alright that's everything. Thank you so much.

SYDRC Paid Staff Interview #4

[Gabe] - So, the first question is pretty easy, what type of phone do you use?

[Interviewee] - iPhone

[Gabe] - Yeah, how come you use an iPhone?

[Interviewee] - Very simple, I think it gives me all the... it's weird. I got an iPhone, I think it is of one of the first 3 years of the latter, and since then I've just found it quite easy. People have always found, you know moved, between phones, but I've never changed, I've always had an iPhone. I have an iPad. Maybe it's just the whole... the ecosystem of apple. The whole bunch of apple products. I just, I find it easier to navigate, and use the services, and apps, and stuff like that.

[Gabe] - How would you describe the technological needs here at the SYDRC currently?

[Interviewee] - Quite big. Obviously we moved from an office to a building, which has its own issues. But also, in terms of managing data, and managing services, has opened us to a lot more work. So, the IT infrastructure, the management system, if it is quite innovative, if it is quite easy to use, it would make the process simpler. So, I don't think any system at the moment, you know where, we use quite a basic system. We used to have a database, now we are using just excel and just packages off of microsoft. So we don't have anything sophisticated, but we hope to have a system which is quite intuitive, but quite easy to use across all services and activities as well.

[Gabe] - Um, So you mentioned you are using an excel system right now, what frustrates you about that?

[Interviewee] - It's not online for one thing. You can't share it. Secondly, it's quite manual, it's not filling itself automatic wise, it feels quite you know, quite repetitive. Having to enter the same data and again and again. There's no system to recognize certain words, certain phrases or whatever it is. So, the workload is a lot more basic

[Gabe] - How would you describe your own technical expertise?

[Interviewee] - I would say I'm somewhere in the middle. I would like to think I'm ok, but yeah, I could be better. I'd say I tend to try things, try to learn certain softwares and certain packages and I'd say I'm in the middle. I wouldn't say I'm an expert, I wouldn't say I'm an obviously.

[Gabe] - So have you had experience with using the past systems of Apricot and Lamplight?

[Interviewee] - Yeah, yeah.

[Gabe] - Can you give us a little bit of detail about how easy or difficult it was to set those up?

[Interviewee] - Lamplight was quite basic, because it captured just enough data for funders and services and stuff like that. It wasn't quite, it wasn't sophisticated, it didn't capture a lot of data. It captured the basic things like name, date, address, date of birth, stuff like that. It had a lot of little boxes full of data and stuff like that. Where as Lamplight is a system that we built. So I did the training also, so we built it from the ground up basically with the trainers. It was quite a good system, but I think it was quite expensive. Also, in terms of just changing certain functions, we thought it required a limited net capacity. There are certain aspects of Apricot that are quite difficult to undo, so we had to... the first couple of months we are using it, we had a lot of duplicate stuff. Duplication was always a massive issue, and the system wasn't smart enough to kind of filter multiple duplications and sometimes you'd be entering data... so somebody just created a specific file and there is another duplication. And you'd be using... so I'll be entering data on that file and then somebody else...

[Diego] - And someone else was working on the duplicate.

[Interviewee] - So the system wasn't quite clever enough to understand that these are duplications, and... I forget... we ended up having a lot of duplications, and deleting them. It was a good system but we thought like you know, we... once you've created it, you had to continue keep creating stuff. It wasn't a system that you created and then again you'd reason, and then again edit and stuff, certain aspects of it. It felt like you constantly had to certain aspects, you had to constantly tweak here and there. It felt like a software update, where constantly updating the software as a manual update, so changing certain aspects of it and it didn't catch or it wasn't smart enough to filter certain aspects from the system. And I think that was some limitations to it.

[Gabe] - And how much customization options do these two systems provide you?

[Interviewee] - Lamplight, not as much. Lamplight was very basic. I think Lamplight didn't actually allow you to make any customization apart from boxes of interval data to case files and stuff like that. Where as Apricot, was quite customizable. The caveat to that is, as I said earlier, you constantly had to update it, and change several aspects of it and the system wouldn't help you, so there was no way of knowing if I created a certain files or certain box, boxes where in each of the sections, that if they were incorrect or if they were quite similar. And then the system, it was very customizable, but it was nothing in the sense that support behind the scene wasn't as thorough, basically.

[Gabe] - So, for the new system that we are gonna be implementing, how often do you think you are you gonna be using it and for what purposes?

[Interviewee] - Pretty much every day, and over the week 3-4...4-5 times a week I mean. So we'll say 4 times, 5 times a week. For a range of services, from the coding club, we are gonna capture data on that, the sport sessions, the mentoring. The more case work that we do. The over 55, just a snapshot of all the services that happened here and some additional data of um saying, you know what differences is actually made, I think they're capturing who these participants are, where they come from, and what value is in the work that we do at all would be quite important.

[Gabe] - So the next section is just going focus more on different types of features that could possibly be in the new system. So first question on that is what kind of features would you want to be using a new system that you currently don't have at all with the current excel system

[Interviewee] - Such sort of systems. So where a quick search button of clients, um search of the services, activities, And yeah just linking it. So if I created a specific service or way of linking or drop-down of adding clients to that service would be an easy sort of system.

[Deigo] - Kind of like, let's say you already have a client registered for a certain activity, but if you want to sign them up for another one, you can just connect it quickly?

[Interviewee] - Yeah, so if i've essentially stored all of our membership into a system and then on the back of that i've created actual services or a way of just saying, you know, John has gone to that service. So yeah as opposed to having to manually add that would be quite good, but also a system that allows feedback so the question is which are always important from clients so it has the service help, so stuff like that in terms of feedback, also group text files basically, so wednesday sports football or whatever session I've created a couple of boxes, obviously slightly different headings of what happened, when did it happen and what were the outcomes so stuff like that. Captured the outputs in terms of numbers and the outcomes as well, what did we achieve from these services or activities would be quite important as well. And also some media stuff so adding maybe images or small video files, stuff like that is always useful also finally, if I'm allowed, I'm not asking too much hopefully, a way of getting like a pie chart, so a simple pie chart of we had 50 sports sessions throughout the year, how many people attended, where were they from, in terms of post codes, or destination and what were their backgrounds. Not necessarily I don't think we need to capture backgrounds but ages and where did they live in terms of locations so some sort of a chart to show you sort of...

[Diego] - A sort of pie chart to show you different backgrounds.

[Interviewee] - So a way of exporting directly from the data we have onto a pie chart basically, a system that allows that would be quite useful.

[Gabe] - We actually have a question for that down the line, so I guess I'll just ask that right now. If you were to have some sort of way to generate, whether it be pie charts or other types of charts, is there any other information you would want to generate?

[Diego] - Yeah other graphs you would like beside the pie chart?

[Interviewee] - What do you call them, you know those charts that measure a sort of destin..

[Diego] - Like growth?

[Interviewee] - Yeah a sort of growth chart yeah, that would be quite useful sometimes, that would be useful for attendance wise possibly, so if a specific client accessing services more in the summer, is he accessing more services in the winter would be quite useful because some of our clients are not locally based so if we are getting a higher of volume of clients over the summer when its warmer, it will tell a story in itself. The colder months, you know, what can we do to engage them locally.

[Gabe] - So in the current excel system, are there any tools you use to navigate other than just typing in information?

[Interviewee] - No, not really.

[Gabe] - From any precious software that you've seen or used, are there any features from there that you would like to see from there inside of the new system?

[Interviewee] - Um, maybe if... If we are working on specific case files, maybe sensitive cases, if somebody else is or has gone into that file and has done anything with that would be useful. If I'm working with a specific client and I haven't seen them for four or five days or I've been off work for holiday or whatever it is, if a colleague goes into that file and does work for them, some sort of I don't know, next time I log in.

[Diego] - Like notes?

[Interviewee] - Yeah, somebody has edited it, a little ping or something to show that... but that's more with the sensitive case files.

[Gabe] - What level of privacy do you expect from a client management system?

[Interviewee] - In terms of staff or generally?

[Gabe] - Generally

[Interviewee] - I would hope it has a good level of privacy for- adhere to our policy in terms of our privacy policy, but also for us, so that not just anybody can log in and go into that system. That's quite thorough in that sense.

[Gabe] - Uh so on the question on the survey regarding the preferred layout for a room scheduler, we asked you if you wanted either an interactive floor plan or calendar based system, and I believe you chose calendar?

[Interviewee] - Yeah.

[Gabe] - Is there a reason you chose that over the other system?

[Interviewee] - Calendar is quite straightforward, I find that when you see the days you can. I mean, you see that these automatic identify what is being used and what hasn't. The other system I haven't really looked at it, To be honest,

[Deigo] - It would be kind of like images ,the layout, that show the layout of the room or -

[Interviewee] - The room.

[Deigo] - And then kind of like with a right like a bar that shows time it would be available.

[Interviewee] - yea. I would, I would assume. That is more in depth. what ever you, Or give you more data but um, a calendar systems, probably a simpler system.

[Gabe] - So in relation to apricot and Lamplight, what was the most useful features that they provided to you?

[Interviewee] - Apricot. The fact that we had a lot of input in terms of designing it from the ground up. So there was a number of features that obviously. The aspect of designing the files to the data, but also the opportunity to edit it throughout the process. Apricot-lamplight, like the simplicity of it. We needed to capture data at the time in terms of the specific ya know. the general data of who these clients are where they're coming from, and what they're coming here for, and that allowed us to capture that.

[Gabe] - And what would you say was the most frustrating or aggravating part of those systems?

[Interviewee] - Lamplight, The fact that there wasn't much customized, it wasn't about cost. You couldn't customize it, Apricot support behind the scenes.

[Gabe] - So, for those systems, did they give you any other services, other than the software such as tech support, or data storage, or data recovery?

[Interviewee] - No apart from training, Obviously, the training aspect to it. Um, yeah. So that's about it.

[Gabe] - Alright, so our last question deals with just privacy in terms of user authority. So we ask a question on the survey that was do you agree or disagree with each statement that a new management system should have different levels of functionality specific to users levels of authority? I think you were kind of like in the middle on that one.

[Interviewee] - Yeah, I would obviously I would say for volunteers, their access would be have will have to be continually reviewed.

[Gabe] - Ok

[Interviewee] - Because you don't want to give all volunteers access to all parts of the system, because some volunteers are specifically volunteers for specific aspects of work. So a volunteer has no relation to certain services, probably wouldn't need access to sensitive files on people that are vulnerable, people that are involved in drugs or have been arrested and stuff like that. So I would say yea, depending on the level of, you know, staff or there has to be there has to be you have to differentiate between the staff, the volunteers. But also maybe the management communities or in terms of access to that service would have to be different.

[Gabe] - Are there any other restrictions you could think of that you would want to have placed on users?

[Interviewee] - Yea maybe not put in gigabyte files on there. I don't know, That's a really massive files.

[Gabe] - Thats fair, Yeah. Alright Well, thanks for your time. We appreciate it.

[Interviewee] - Thank you.

[Diego] - Good to see you.

[Gabe] - Thank you.



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User Instruction Manual



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Getting Started with Views

Logging In

To log into the Views web application, be sure to be connected to the internet and proceed to this link <http://www.viewsapp.net/>. In the top right hand corner of the site, click the **Login to Views** button to reach the login screen. From there, input your username and password into the correlating text boxes and then click the login button.

If this is your first time logging in, you will be asked to reset the temporary password that was used to create your account. You may use any password you'd like as long as they meet the requirements of having:

- At least one lowercase letter
- At least one symbol
- At least one capital letter
- At least one number
- At least 12 characters in length

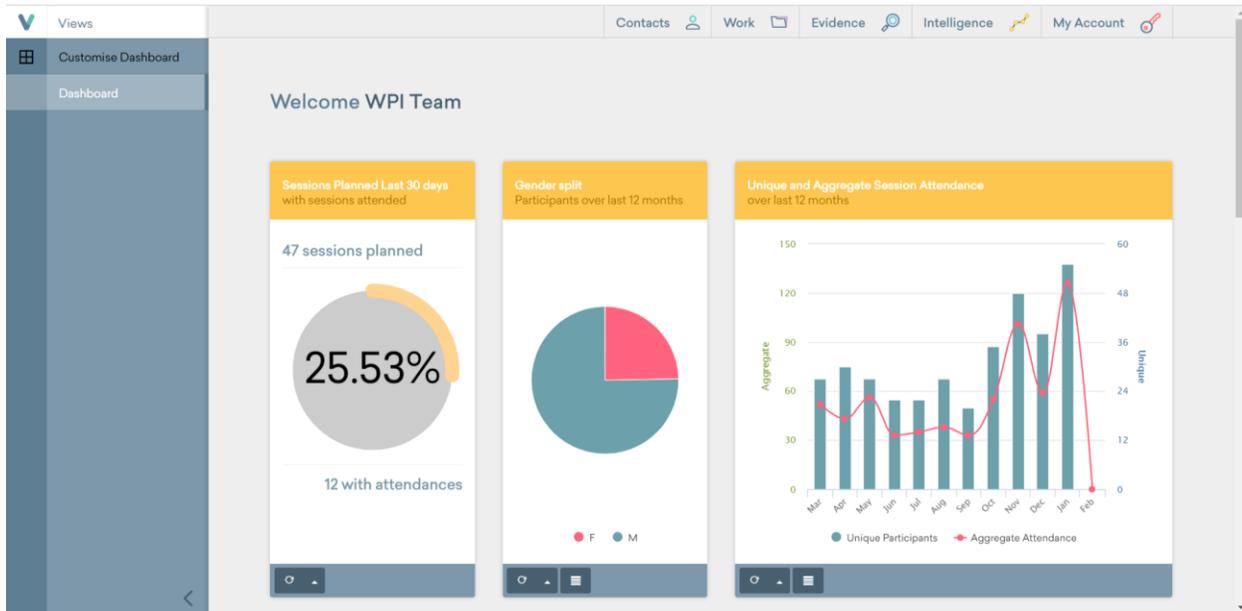
Dashboard

When logging into Views you may encounter your user specific Portal Dashboard. This dashboard simply displays basic information about your account and your computer details. To get to the main Views application, click on the “Views App” button in the left sidebar.



Portal Dashboard

You will then be brought to the main views dashboard that contains multiple widgets that display various information including graphical statistics, calendar events, last changes made to the system, and newly added participants to the system. This dashboard can be customized to show exactly what you want to see.

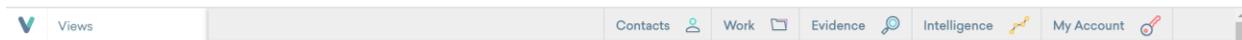


Main Dashboard

In order to navigate through the rest of the system, notice that within the above dashboard there is a toolbar that spans the entire top of the screen.

Toolbar Navigation

The toolbar is persistent on every single page at the top of the main views application. The only time you may not find it there is if you are currently in the **settings** or **administration** page. From the toolbar you can access every tool Views has to offer. There are five main tabs available, and each tab will allow you to access specialized tools for the different categories. Each main tab has several secondary tabs that give you access to other secondary tools/information.



Views Toolbar

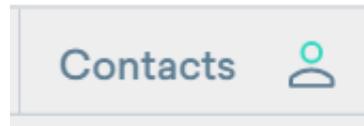
Starting from the left side, you will see the **Views Logo** button. Clicking on it will always bring you back to the Views Main Dashboard no matter where you are in the application.



Views Logo Button

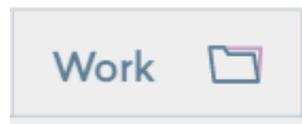
Next on the toolbar is the **Contacts** button. Hovering over this tab will reveal subsections associated with the contacts functionality and clicking on it will bring you to the associated contacts page. Contacts provides the ability to manage and track participants, staff, stakeholder,

volunteer, and funder data. Refer to the [Contacts](#) section for details on how to utilize these functionalities.



Contacts Button

Next on the toolbar is the **Work** button. Hovering over this tab will reveal subsections associated with the work functionality and clicking on it will bring you to the associated work page. Work provides the ability to manage and track activity sessions and project data as well as managing venues and calendar events. Refer to the [Work](#) section for details on how to utilize these functionalities.



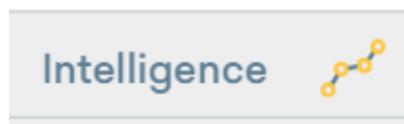
Work Button

Next on the toolbar is the **Evidence** button. Hovering over this tab will reveal subsections associated with the evidence functionality and clicking on it will bring you to the associated evidence page. Evidence provides the ability to manage media, questionnaire and case study data as well as being able to add a bulk of data into the system at once. Refer to the [Evidence](#) section for details on how to utilize these functionalities.



Evidence Button

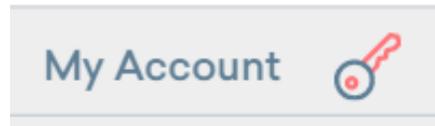
Next on the toolbar is the **Intelligence** button. This tab has subsections associated with Statistics, Targets, Reports, Exports and Contact Inactivity. From here you will be able to create your own statistics with different filters, create templates for different reports, and even create your own report accessing all the information available in the database. Refer to the [Intelligence](#) section for details on how to utilize these functionalities.



Intelligence Button

Last on the toolbar is the **My Account** button. This tab will give you access to all of the administrative settings, account settings, mail, alerts and support. From here you will be able to do things such as creating or switching fields, create new accounts, and even change your

password. Refer to the [Administration Tools](#) section for details on how to utilize these functionalities.



My Account Button

Action Buttons

Throughout the application, there are various buttons that repeat themselves and provide the same functionality. Since this manual will reference them often, here is a list of these buttons and a description of what you will use them for:

The **View** button provides detailed information of whatever element you are exploring. For example, if you click the view button when it's next to a contact, you will see all the detailed information of that contact. If you click it next to an activity, you will see the detailed information of the activity. All the information that is displayed when clicking the view button is the information that was inputted when the element was created.



View Button

The **Edit** button provides the ability to modify the information of the element you are working with. If you click it next to a specific statistic, you will be able to modify the name and information display. If you click it next to a contact, you will be able to modify the contact information.



Edit Button

The **Delete** button provides the ability to delete the current element selected. For example, if you click the delete button while viewing a specific contact or session, you will remove that piece of data and all associations it has. If this button is accidentally pressed, do not worry as a popup confirmation will appear before anything is removed from the system.



Delete Button

The **Register** button provides the ability to associate contacts with events, sessions and activities. By associating a contact, they will then appear as registered for whatever you assign them to which then allows for their attendance data and many other data types to be tracked.



Register Button

The **Archive** button provides the ability to remove an element from the active list and make it inactive. Basically, this will allow you to keep data in the system that is currently being used, but not actually delete it. For example, you can archive a participant and they will no longer show up in the list of active participants, but rather in a list of inactive participants. Archived participants' information will not be included in statistical summary or report data.



Archive Button

The **Restore** button provides the ability to unarchive an element that has been archived in the past. It will make a piece of data that was set as inactive back to active. For example, you can restore a participant that had previously been archived and they will be placed back into the list of active participants and their associated data will be used by the system again.



Restore Button

The **Mail Out** button allows you to email certain aspects of the system to contacts. For example, you can use this button to mail out a questionnaire to a participant.



Mail Out Button

The **Add** button provides the ability to add a new piece of data into the system. This can vary from participants, staff, volunteers, sessions, activities and much more. This button will be used whenever you need to input something in the system that does not already exist.



Add Button

The **Advanced Search** button allows you to perform a custom search. By pressing this button, you will be shown a filter pop-up that gives you multiple different ways to search the system for whatever you are looking for.



Advanced Search Button

Quick Reference Guide

How do I create a new session and add it to the calendar?

- If the session type already exists and you simply need to add more, refer to the [Session](#) section.
- If you are adding a whole new session type into the system, refer to the [Activities](#) section.

How do I register a new participant into the system?

- Refer to the [Registered Participants](#) session

How do I take attendance for a session?

- Refer to the [Session Attendance](#) section

How do I add a new objective or outcome into the system?

- Refer to the [Objectives and Outcomes](#) admin section

How do I keep track of participant progress on outcomes?

- Refer to the [Outcomes for Participants](#) section

How do I view existing statistics?

- For how to filter existing statistic refer to the [Viewing an Existing Statistic](#) section
- For a list of where to find specific statistical break down refer to [Table 1](#)

How do I create new statistics or statistical summaries?

- Refer to both the [Creating a New Statistic](#) and [Statistic Summaries](#) sections

How do I create, edit, organize or delete data fields throughout the system?

- Refer to the [Flexible Fields](#) admin section

How do I upload old Excel data into the system?

- Refer to the [Importing Data](#) admin section

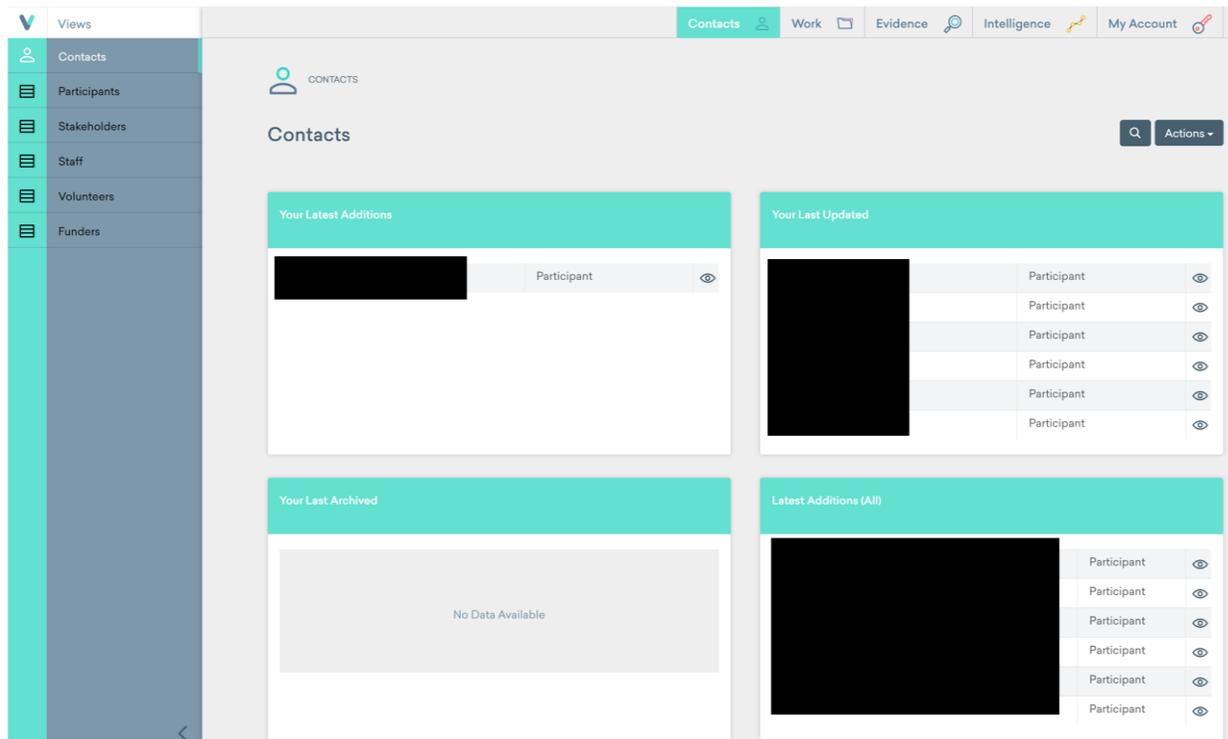
How do I download all the system data into a spreadsheet and create a backup?

- Refer to the [Flatpacks](#) admin section

Contacts

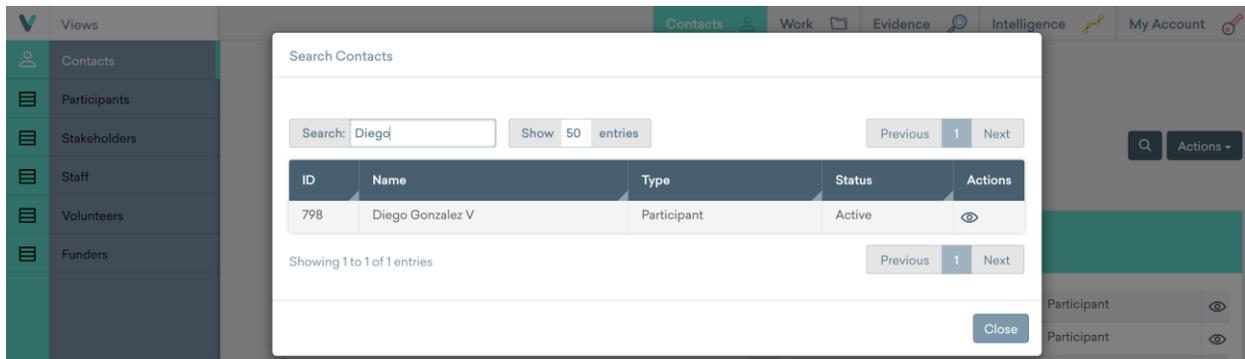
Contacts is the first main section in Views. Contacts provide the ability to store participant, staff, volunteer, stakeholder and funder data. You will mainly be using the participants section as that is where most of the tracked data is kept. In the participants section you can track progress on outcomes, view personal details, update case studies and much more.

When you select the **Contacts** tab from the main Views taskbar, you will be directed to the contacts main page. From this page you will be able to access all the contacts tools in the left side menu and see recent changes to the contacts system on the main screen.



Contacts Main Page

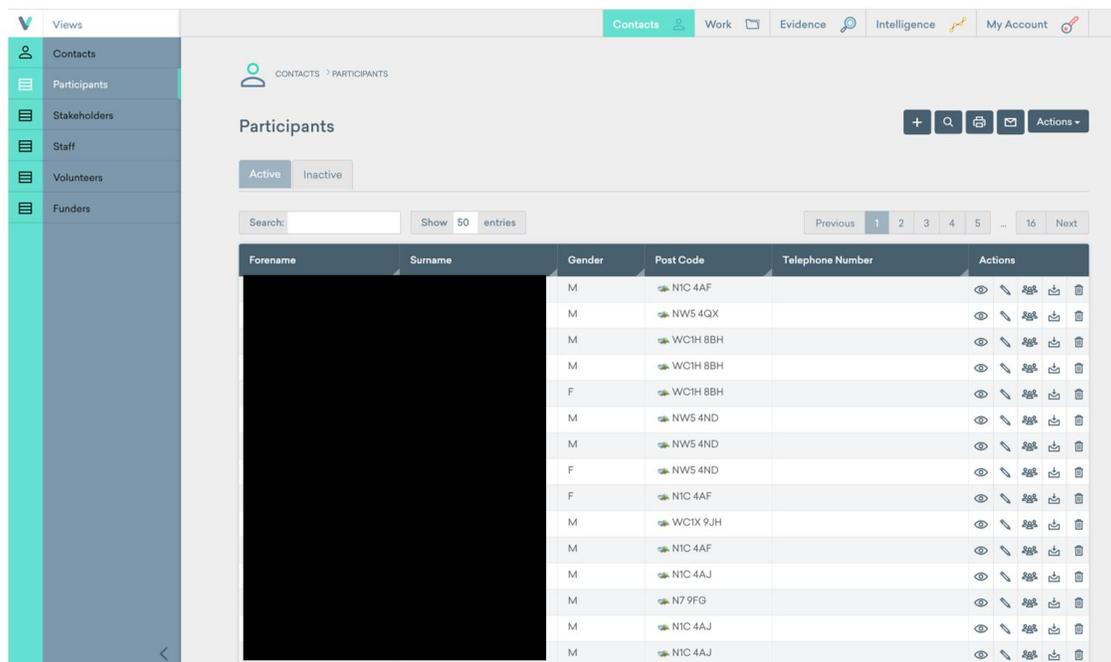
To quickly look up data on any person in the system, use the magnifying glass in the upper right hand corner and type the name of whomever you are looking for. The Views system has a smart search feature and will provide you possible results based on what you are typing so that you do not need to type the entire name of someone you are looking for.



Searching for Contact

Adding Participants

The main subsection of the contacts functionality is Participants. Navigate to this section by placing the mouse over **Contacts** in the toolbar and choosing **Participants**. Here is where you will be able to specifically view the participants in the system, add new participants into the system, edit and delete existing participants and much more.



Participants Main Page

To **Add a Participant**, click the **Add Button** . You are required to fill out every item with a red star next to it. Once you have inputted all necessary information, click **Save** and the participant will be added into the system.

If a participant is no longer active, the participant can be **archived** to keep the system clean. Use the **Archive Button**  on the participants main page to set a participant as inactive.

For more information on how to edit and delete participants and utilize associated features, visit the Views support documentation for [Contacts](#).

Outcomes for Participants

First, choose a participant you want to associate and outcome with. Search the list, or scroll to find them manually. Once you have found them, click on their name. Once you click on a participant, choose **Outcomes** from the left sidebar.

The image displays two screenshots of a web application interface. The top screenshot shows the 'Details' page for a participant named SAID SHARIF. The left sidebar is visible, with 'Outcomes' highlighted by a red arrow. The main content area shows the 'Details' section with fields for Identity, Person ID, Forename, Surname, Date Of Birth, Nickname, and Age. The bottom screenshot shows the 'Outcomes' page for a participant named DIEGO GONZALEZ V. The left sidebar is visible, with 'Outcomes' highlighted. The main content area shows the 'Outcomes' section with a 'Filters' dropdown set to 'All Activities', a search bar, and a table of outcomes. The table has columns for Date, Activity, Outcome, Updates, and Progress. The table shows two entries: one dated 27 / 02 / 2020 with activity 'Unassociated' and outcome 'Accepted a place at a college/university', and another dated 26 / 02 / 2020 with activity 'Unassociated' and outcome 'Literacy, Numeracy or Language Development'.

Date	Activity	Outcome	Updates	Progress
27 / 02 / 2020	Unassociated	Accepted a place at a college/university	1	3
26 / 02 / 2020	Unassociated	Literacy, Numeracy or Language Development	1	1

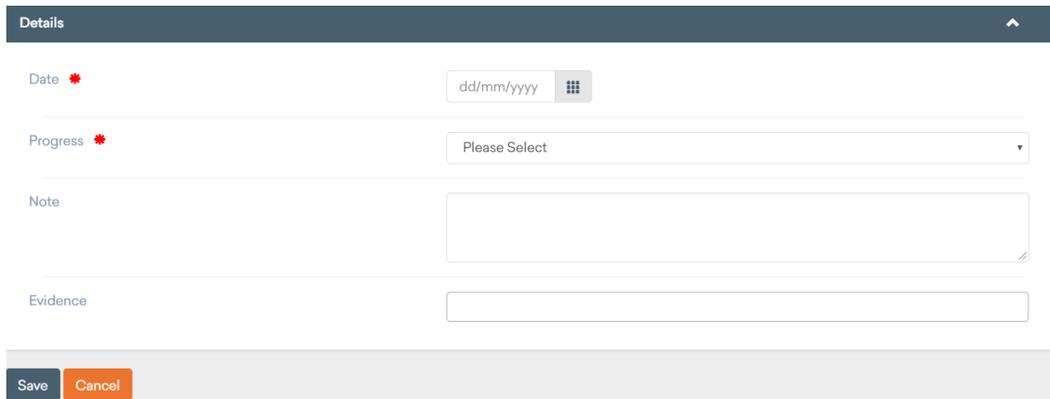
Participants Outcomes Page

Associating an Outcome to a Participant

The following steps detail how to link an outcome to a participant:

1. Click the Add Button 
2. On the first page, you can choose to associate the outcome with an Activity (session group). This is useful if they gained information they needed to achieve the outcome from attending a session.

****NOTE:** Only Activities that the participant has attended can be selected from the list.
3. Click Next.
4. On the next page, select the Outcome from the list, and click Next to arrive at this page:



Outcome Details Input Box

5. Enter the date that the Outcome was achieved on. For progress, select 1 if the participant has not ever achieved this outcome before. If the participant has achieved it before, select the next level up on the list. You can add a note elaborating on the outcome and associate a piece of evidence. Search the first few characters of the file desired for association. For information on how to upload Media into the system refer to the [Adding Media](#) section.
6. Click the Save Button and the outcome will be created for the specified participant.

Updating a Participant's Outcome Progress

To provide progress updates on an outcome for a specific participant, follow the same steps from above. Creating an outcome of the same type will add a new entry to a running list of updates on a participant's progress for that specific outcome.

Viewing a Participant's Outcome Progress

1. Find the desired outcome in the list of associated outcomes for a participant and then click the **View Button** 
2. The next page will show a running list of all the entries on progress updates.
3. To view the details for an entry listed, click the **View Button** 
4. To edit a previous entry, click the **Edit Button** 

Staff

For information on how to add, edit and delete staff and utilize associated features, visit the Views support documentation for [Contacts](#).

Volunteers

For information on how to add, edit and delete volunteers and utilize associated features, visit the Views support documentation for [Contacts](#).

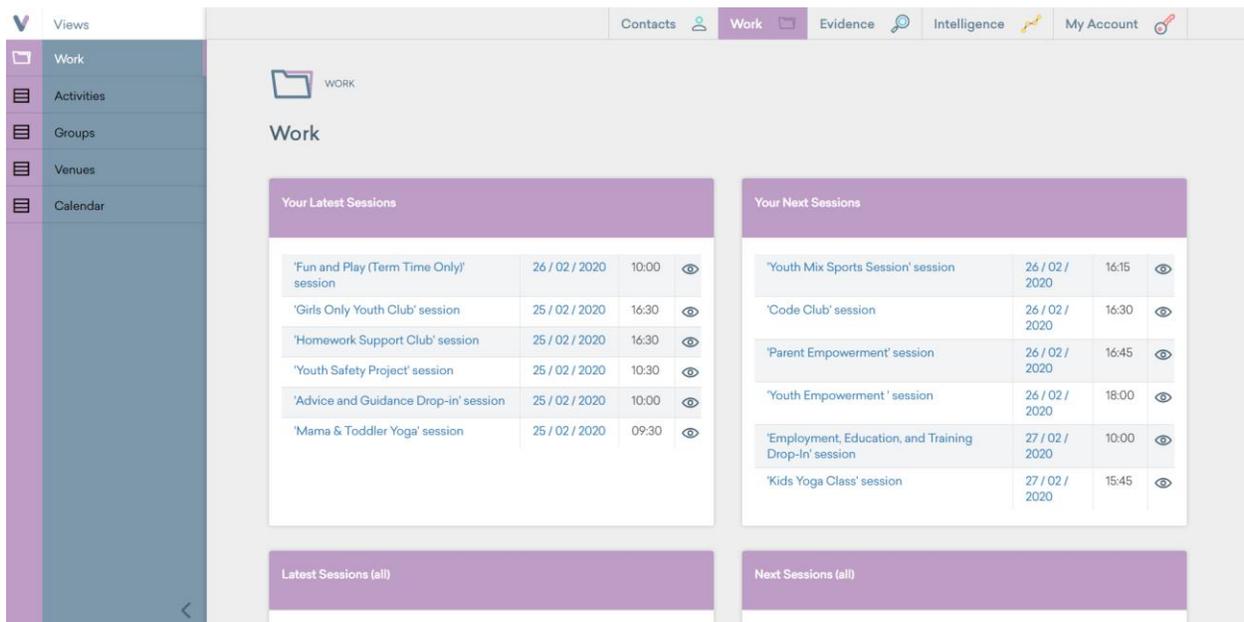
Work

Work is the next main section in Views. Work is used to organize all of the activities and schedule all of the individual sessions of each activity.

****NOTE:** There must be an overarching activity created before you can add multiple of the same session into the system.

From the sessions, you will be able to get outcomes and attendance. In the work section, you will also be able to create groups, and then put all of your registered participants into these groups. You can also create Venues, which is where the activities take place. Lastly, the calendar tab will allow you to see all of the created sessions and events.

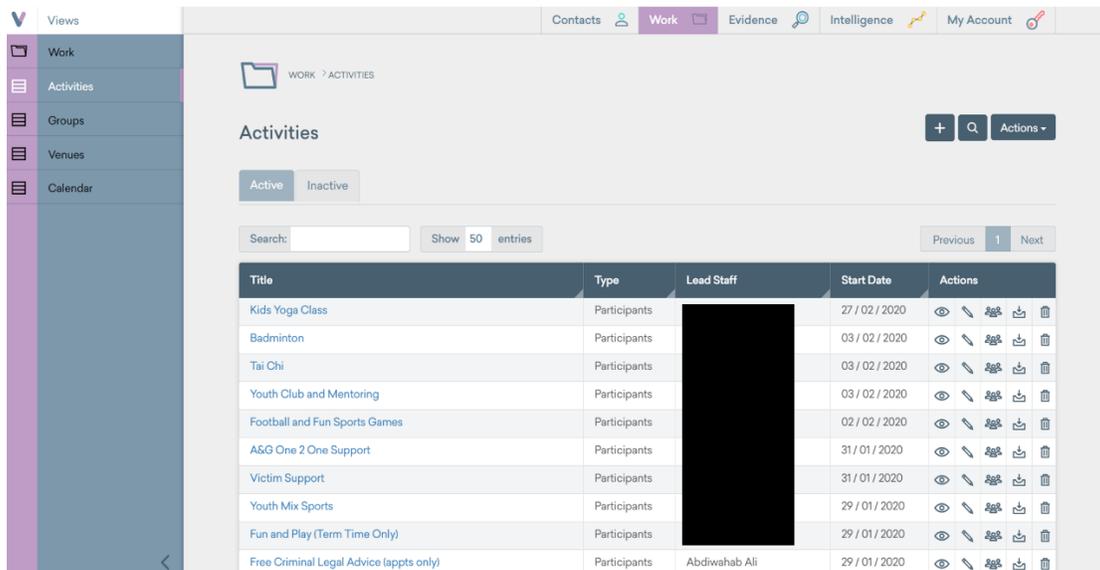
When you select the **Work** tab from the Views toolbar, you will be directed to the work main page. From this page you will be able to access all the work tools in the left sidebar and see recent changes to the work system on the main screen.



Work Main Page

Activities

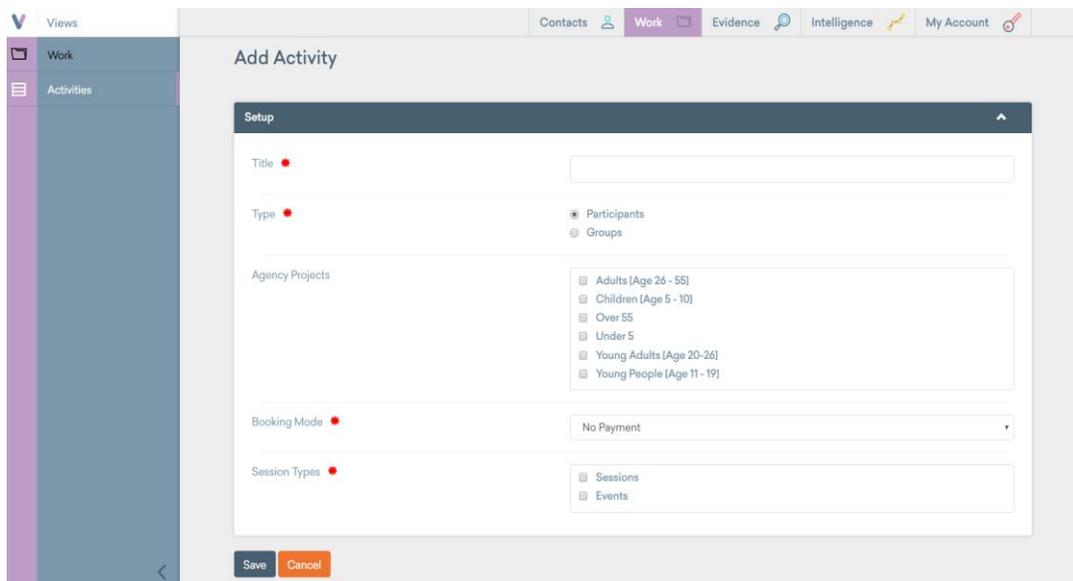
The activities subsection is where you do all of the activity and session planning for the entire Views system. When you click on the **Activities** subsection on the left sidebar, you get redirected to the activities main page. On this page, you are able to see all of the current activities.



Activities Main Page

To create an activity, you first need to get to the activities main page. Once there, click the **Add Button**  in the top right corner.

Once you have clicked the **Add Button** , you will be redirected to the creation page. The creation of an activity is pretty straight forward, just fill out the available fields.



Fields for Creating an Activity

- The Title field is the name for the activity.
- The Type field asks if you want to register individuals or groups to the given activity.

****NOTE:** ALWAYS choose **Participants** as the type as it is the only way to register every person individually to a session and take attendance.

- Agency Projects field allows you to register groups as well as individuals to an activity.
 - The current groups created are set up by age and you should choose all the age groups that will participate in the created activity.
 - Booking Mode field refers to the way payment will be handled in relation to the activity, simply choose the appropriate option for the activity.
 - Lastly, the Session Types field will let you choose between events and sessions,
- **NOTE: ALWAYS choose Sessions, as events will not allow you to track attendance for participants.**

Example of Filled Fields for Creating an Activity

After clicking save, you will be taken to a second page you need to fill out too. This one has a lot of fields, but there are only a couple of key points you should fill out first.

Activity Creation Page Continued

- Venues is the only required field, so you just have to choose the appropriate one for the activity from the dropdown list. For details on how to add additional venues, refer to the [Venue Creation](#) section.
- Lead staff is the person that will be in charge of leading/organizing the activity. The lead staff is not required, but you should still try and choose one because you need one to create a session later on.
- Unless the activity you are planning is an event or a onetime thing, there is no point of picking out a start and end date. Also, the planned sessions should also be left blank unless the activity does have a limited number of sessions.
- Age groups should be tried to fill out in order to get statistics from the activity. Number of places just relates to how many seats are available for the activity, should only be filled out in required.
- Questionnaires are one of the tools in Views, there will be a section further on explaining how to take advantage of them. In this case you should just select all the session questionnaires for both fields, that way you can have access to them later on.
 - A personal recommendation would be just to select every questionnaire, even if they are not activity/session related, just in case you actually need.

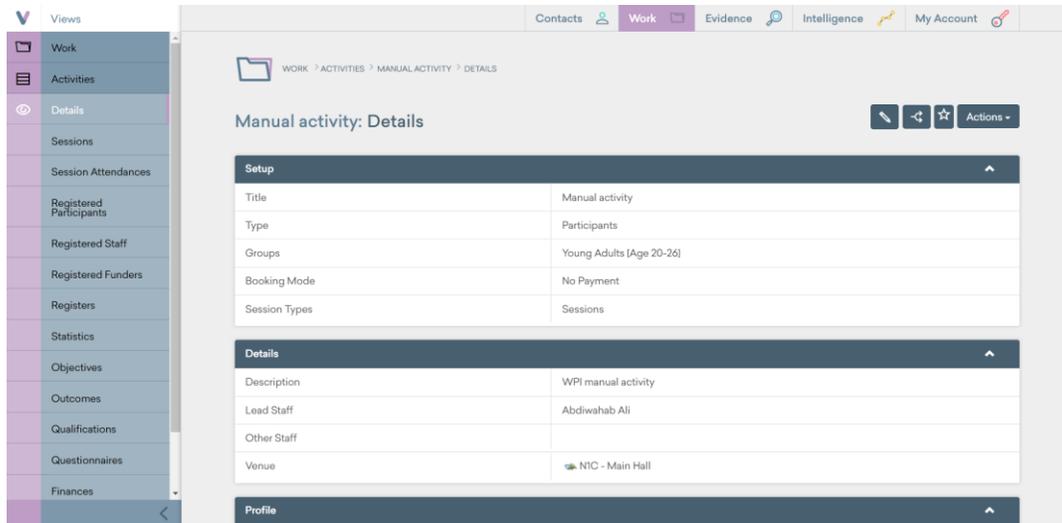
The screenshot shows a web interface for creating an activity. On the left is a navigation menu with 'Views', 'Work', and 'Activities'. The main area is a form with the following fields:

- Age Group To:** A dropdown menu with the value '28' selected.
- Number Of Places:** A text input field with the value 'A'.
- Participant Questionnaires:** A list of five questionnaires, each with a checked checkbox:
 - Feedback for Centre
 - Feedback for Learning Session
 - Feedback for Workshop
 - Generic Session Feedback
 - Goal Setting Form
 - Satisfaction Form
- Session Questionnaires:** A list of five questionnaires, each with a checked checkbox:
 - Feedback for Centre
 - Feedback for Learning Session
 - Feedback for Workshop
 - Generic Session Feedback
 - Goal Setting Form
 - Satisfaction Form

At the bottom of the form are two buttons: 'Save' (in a grey box) and 'Cancel' (in an orange box).

Questionnaire Selection in Activity Creation

After this, you simply click the **Save Button**, which will lead you to managing the record access. Unless there is sensitive information in the activity that not all people can see, there is no reason to restrict access. Click **Save** again and activity will be created. Once you have created your activity you will be able to see it in the activity main page.



Activity Details Page

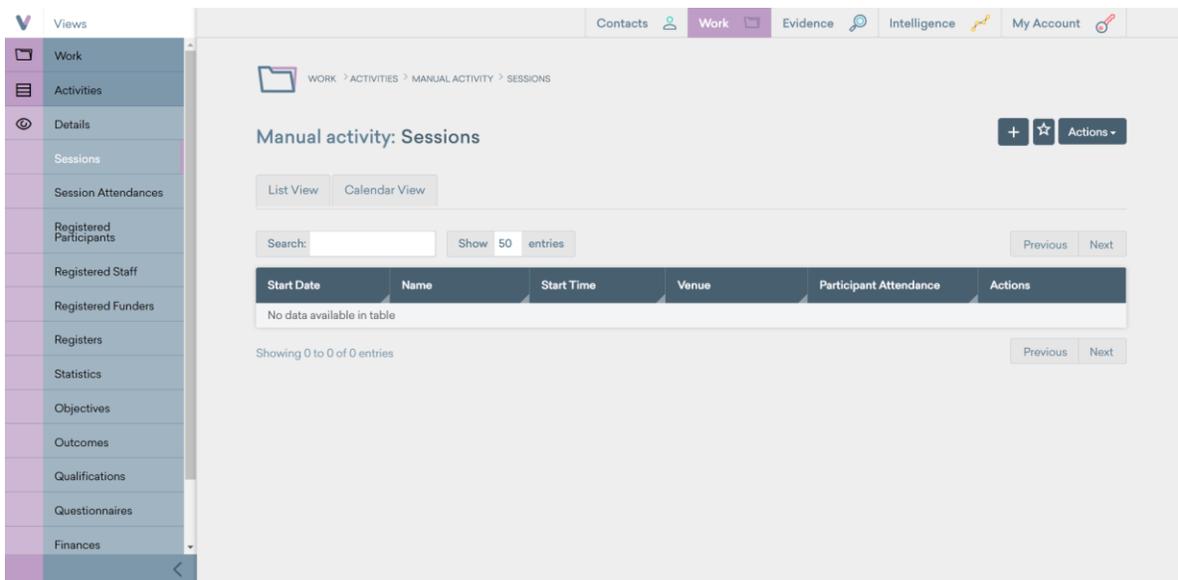
Sessions

In order to schedule and get attendance for an activity, you need to create sessions for the activity.

In order to create a session, you first select the activity you want to create sessions for. Select the activity from the main activities page by clicking on it.

****NOTE:** If the activity you want to make sessions for does not exist, refer to the Activities section for details on how to create a new activity first.

When you are redirected to the activity details page you want to click on the **Sessions** option in the left sidebar, this will take you to the sessions page for your activity.

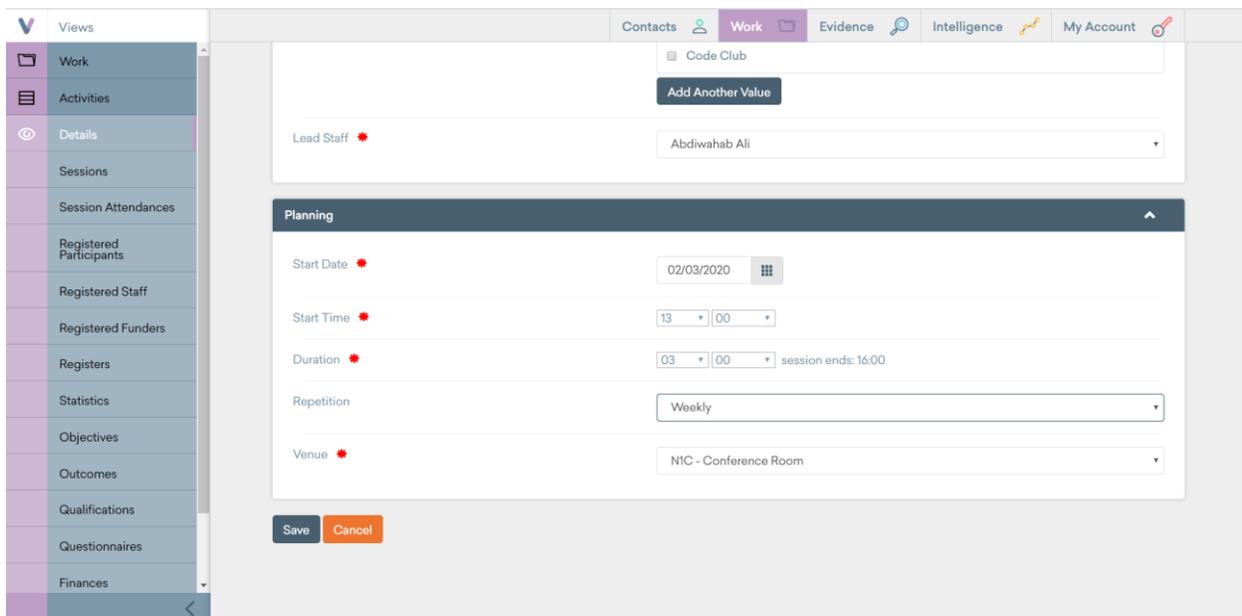


Sessions Main Page

Once on this page, you will click the **Add Button**  in the top right corner. This will take you to the session creation page. The creation of a session is very similar to the creation of an activity.

Activity type is asking what type of activity the session belongs to, just pick out a value if it relates to one of the options. You may create a new value for activity type if none of the values really fit your session.

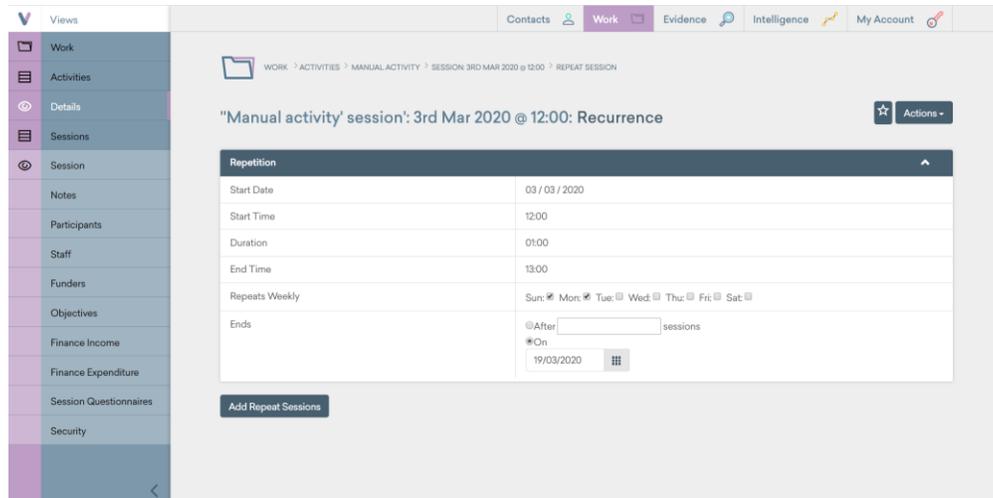
To set up the date, you select a date from the calendar in the start date field. Then you will select the time and length by selecting the start time and then selecting the duration of the session. A little message will appear next to the duration to tell you when the session will be ending according to the duration you chose. Then you should choose the venue of where the session is happening. Those are all the compulsory fields, which means you have to fill those out. Lastly, you have the repetition option. If your session will happen more than once in repeated intervals (monthly, weekly, daily) then you'll select the option. If the session repeats itself but no in constant intervals, you will just need to create several sessions.



The screenshot shows a web application interface for session creation. On the left is a vertical navigation menu with options: Views, Work, Activities, Details, Sessions, Session Attendances, Registered Participants, Registered Staff, Registered Funders, Registers, Statistics, Objectives, Outcomes, Qualifications, Questionnaires, and Finances. The main content area is titled 'Work' and contains a form for session planning. The form includes a dropdown for 'Code Club' with an 'Add Another Value' button, a 'Lead Staff' dropdown with 'Abdiwahab Ali' selected, a 'Planning' section with fields for 'Start Date' (02/03/2020), 'Start Time' (13:00), 'Duration' (03:00) with a note 'session ends: 16:00', 'Repetition' (Weekly), and 'Venue' (NIC - Conference Room). At the bottom of the form are 'Save' and 'Cancel' buttons.

Time & Date Details for Session Creation

Once you click **Save**, if your session does not repeat, it will be created. If it does repeat, you will be taken to a new page where you can set up how often and when your session repeats. This allows for easier customization of the sessions. In this page you select what days the session will repeat. Also, you can select the ending for the session if needed, you can make it end after a certain number of sessions or end on a certain date.



Recurring Sessions Page

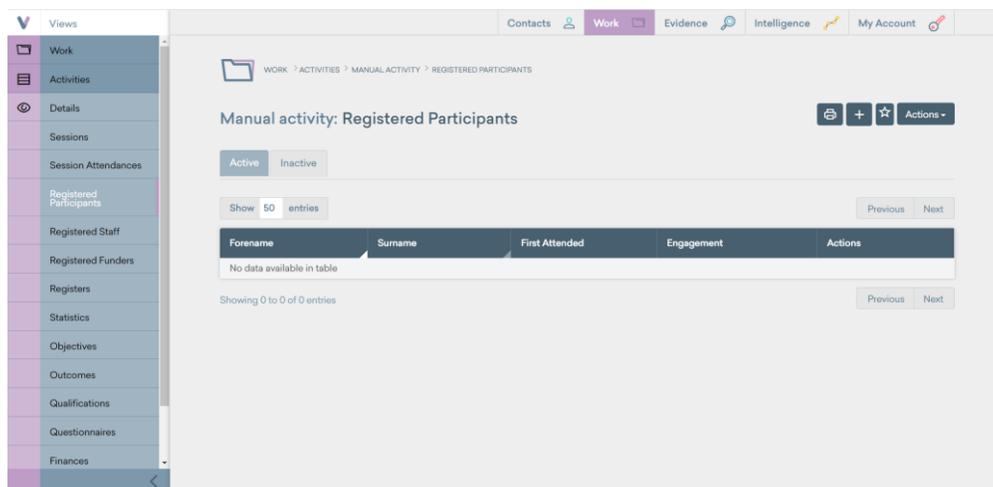
One thing to note is that this page changes slightly depending if you chose the monthly repetition or the weekly one. After that, it will give you a look at the sessions you are creating. It will ask you if they are correct if you need to edit them or change one of them. If everything looks correct click the **Confirm** button and the sessions will be created.

Registered Participants

Once you have set up the activity and the desired sessions, now you have to register participants to the activity. This is a required step in order to take attendance for the session. You will not be able to get good outcomes and statistics from your sessions if you do not register participants.

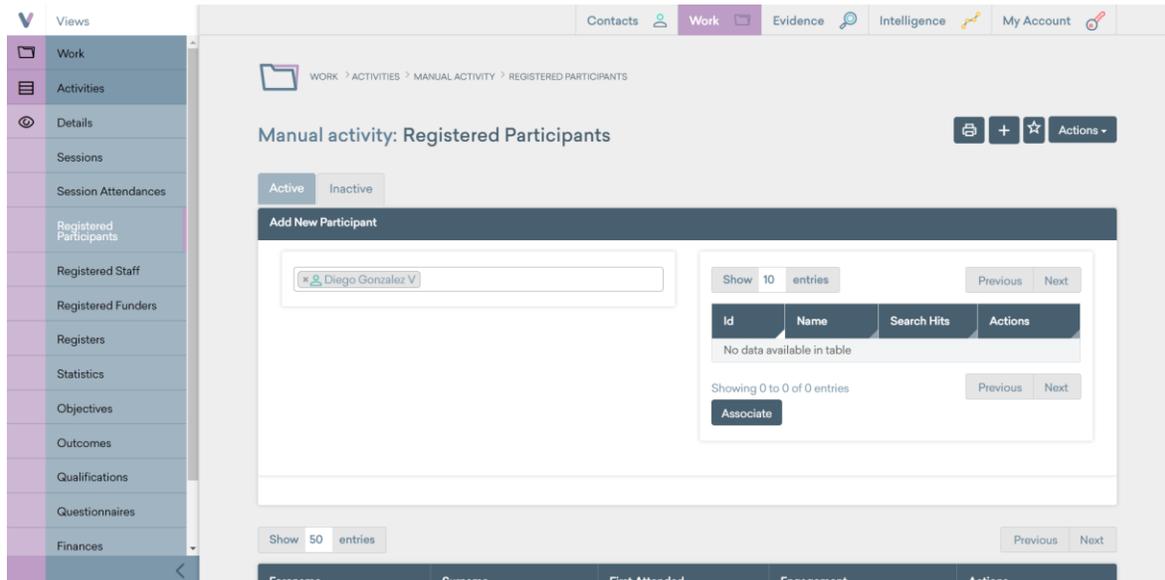
To register participants to an activity, click on the **Activities** in the left sidebar, then click on the **Registered Participants** button which will appear as a subsection also on the left sidebar.

In this page you will be able to see all the people already registered to the activity, these are the people that you will be able to take attendance for.



Registered Participants Page

In order to register a participant, you first have to click on the **Add Button**  while on the registered participants page. This will open a small menu that allows you to look up participants. Look for the participant you want to register and click on them. You may register several people at the same time by searching another name after the first one. Once you have selected all the people you'd like to register, click **Associate**.



Registering a Participant to an Activity

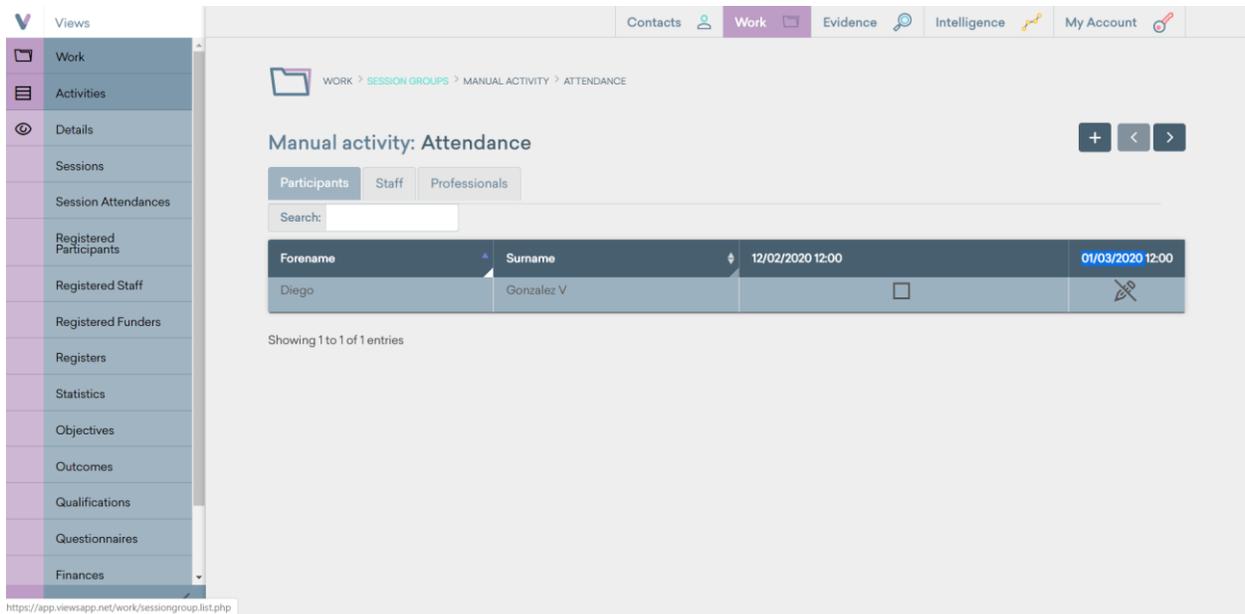
Once you have registered your participants, you will see them back in the registered participants main menu.

Session Attendance

You can take attendance for all of the sessions you have planned out for your activity. This is a really simple tool, yet really important to remember to use, since several statistics are taken from session attendances.

Once you have created your sessions, and you have registered participants to the activity it is possible to take attendance. Views will not allow you to take attendance of sessions that have not happened yet. But once the day and time of the session have come, you will be able to take attendance. To take attendance, you simply click the in the session attendances located in the activity's subsection.

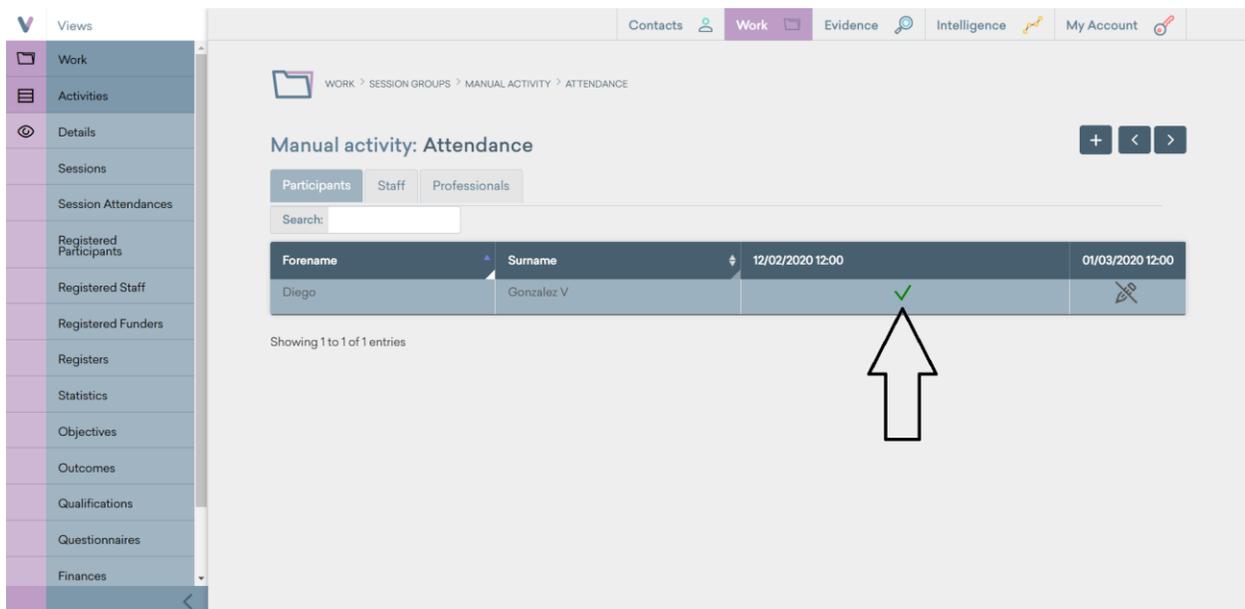
Once you're taken to the session attendance page, you will see a list of all the registered participants, and to the right of the names you will see their attendance for every created session.



Attendance Page for an Activity

On this page you will see either a small box under the session or a crossed out pencil. The box means you can take attendance for that session since it already happened. The crossed out pencil the session still hasn't happened, so you cannot take attendance yet.

To take an attendance, you simply click on the small box underneath in the session. If you click it once, you will get a check mark which means the person attended. If you click it twice, you will get a cross which means the person did not attend. If you click it one more time, the box will appear empty again.



Taken Attendance for an Activity

This way you will be able to take attendance for your sessions. Another quick tip is if you were to click on the statistics subsection in activity, you will be able to see how many sessions each participant has attended.

Forename	Surname	First Attended	Attended	Hours
Diego	Gonzalez V	12 / 02 / 2020	1	1:00

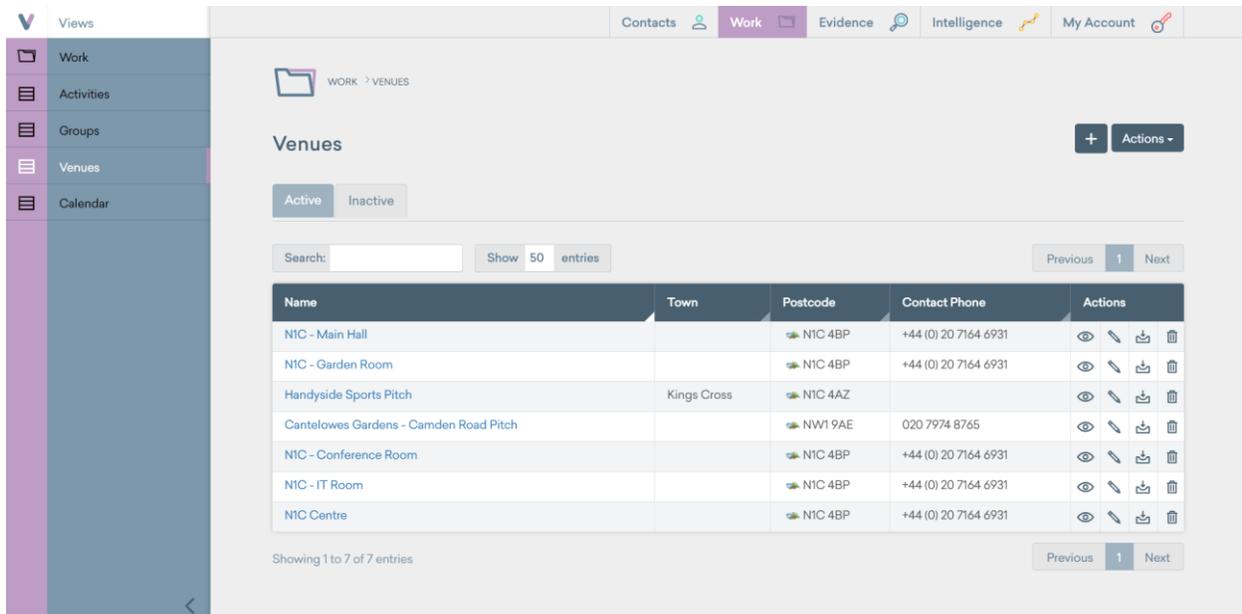
Statistics Page in Activities

Groups

The current groups in the system are set up by age. These groups can be associated with participants, activities and sessions and provide the ability for more statistical filters. This section of work shouldn't need more updating, but for information on how to utilize the Groups feature, visit the Views support documentation for [Work](#).

Venue Creation

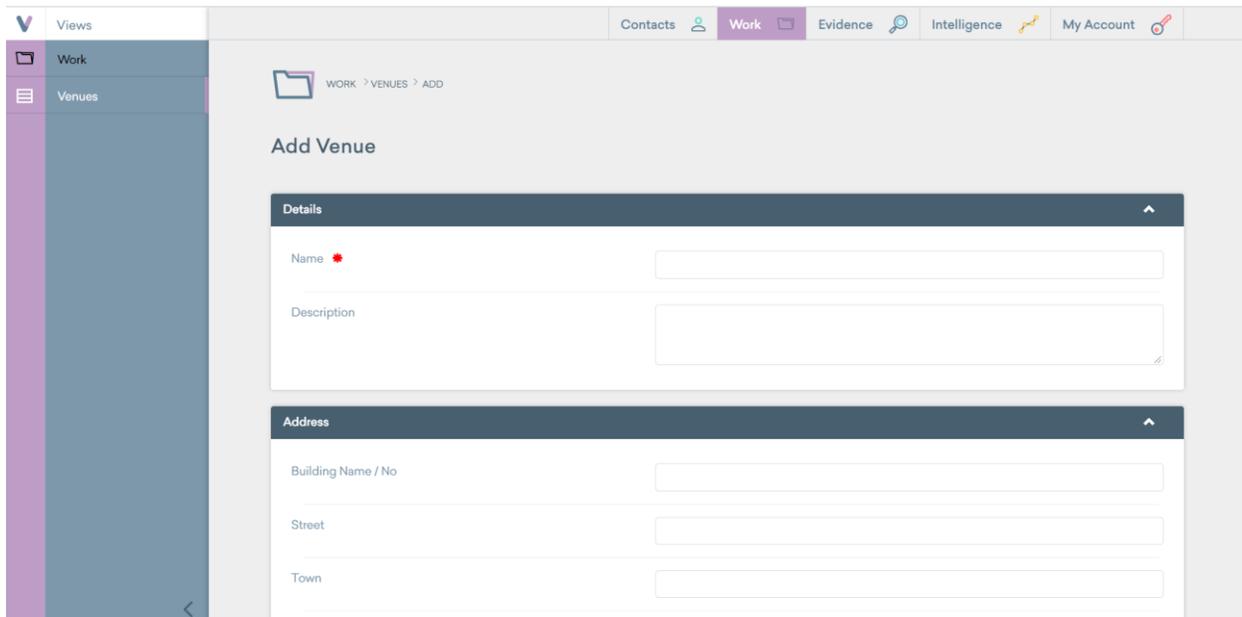
In the work section you will also be able to create the venues where the activities happen. In the main work page, click on the venues section in the toolbar. That will take you to the venues main page, where you will be able to see all the created venues.



Venues Main Page

In order to create a venue, you simply click on the **Add Button**  on the top right. The rest is pretty simple, you just fill out the details needed and then click save. All venues only require a name, but it is recommended to try and fill out all the contact information.

****NOTE:** If you are adding a new venue that is located inside the NIC Center use this format: NIC - [Venue Name]. This format is vital for the Online Room Scheduler tool linked to the NIC Centre website.



Venues Creation Page

Once you click **Save**, the venue will be created and will appear on the venues main page.

Calendar

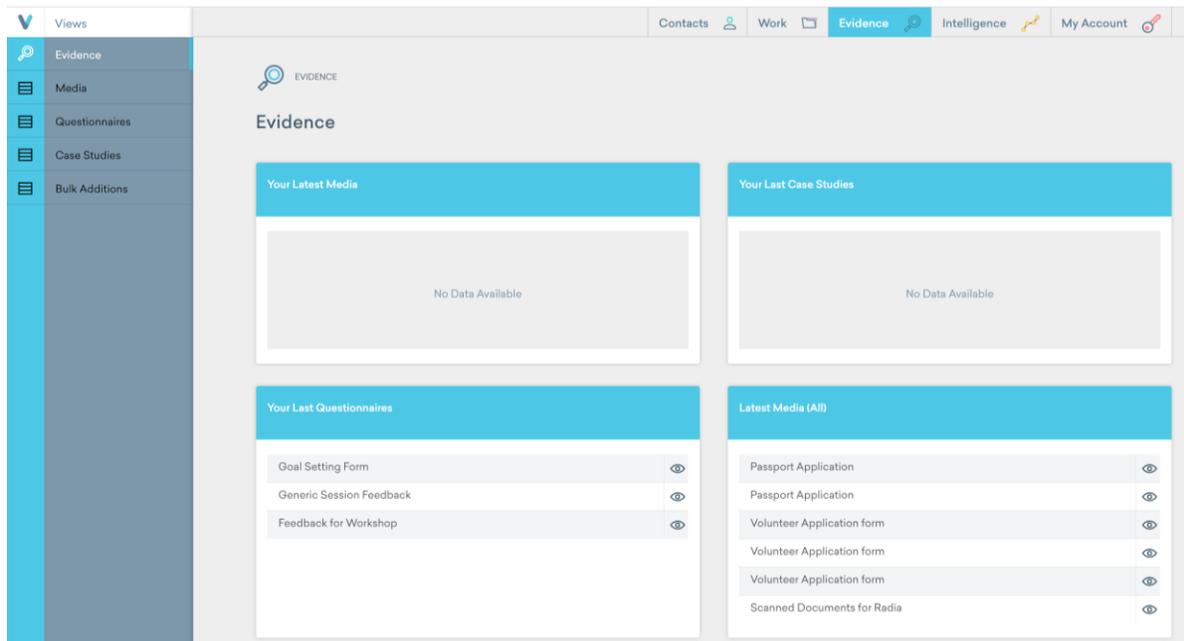
The calendar is the last accessible tab under the **Work** category. You can view all current sessions on the calendar, as well as filter the calendar by venue & session type.

For information on how to navigate the calendar, visit the Views support documentation for [Work](#).

Evidence

Evidence is the next main section in Views. Evidence is used to store and organize media, questionnaire responses, and case studies. It will also allow you to bulk upload things such as outcomes to multiple participants or sessions at a time.

When you select the **Evidence** tab from the main Views toolbar at the top, you will be directed to the evidence main page. From this page you will be able to access all the evidence tools in the left sidebar and see recent changes to the evidence system on the main screen.



Evidence Main Page

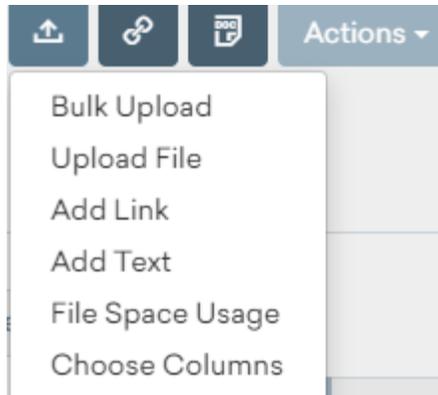
Media

Media is for storing various forms of media whether it be videos, images, or documents. This media can then be associated with a specific participant or work process. This section is broken into two subsections:

1. Adding media, and
2. Associating media

Adding Media

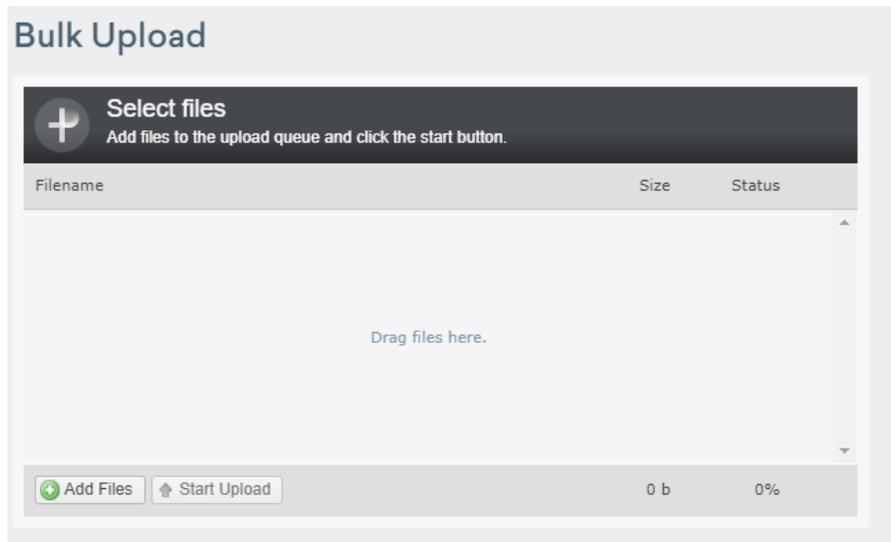
1. Navigate to **Evidence** → **Media**



2. Click the **Actions** menu button
3. From here, select any of the options given depending on which type of media you want to upload
4. These options will bring up field inputs similar to this:

Upload File Page

5. From here you can fill in the fields as desired and click browse to select a file you want to upload from your local computer
6. The bulk upload button is slightly different from the other options, as it brings you to the bulk upload screen shown below.

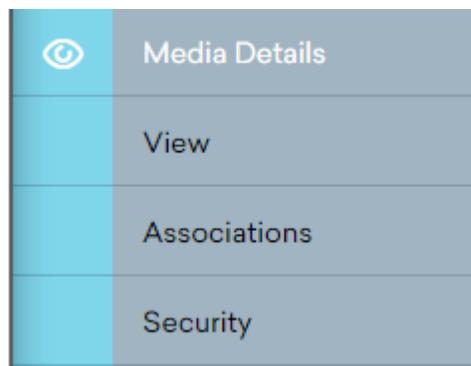


Bulk Upload Files Page

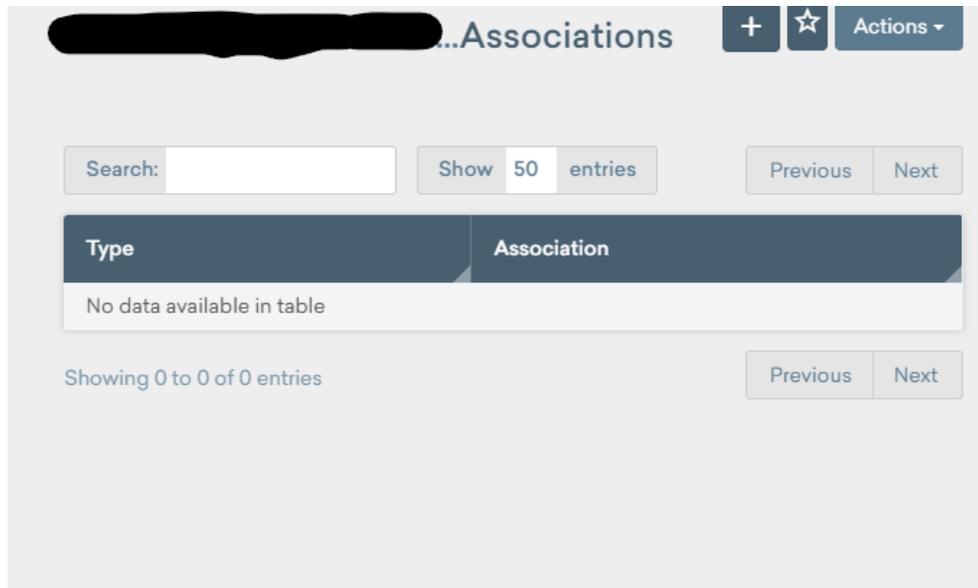
7. This feature works by adding multiple files into a queue using the **Add Files** button at the bottom left and then clicking **Start Upload** to actually add them to the system and remove them from the queue.

Associating Media

1. To associate media with something you need to first select the media or participant you want to associate media or participant with. This can be done through either the participant or media tab after selecting an entry.
2. After you select a piece of media you will see a sidebar like this:

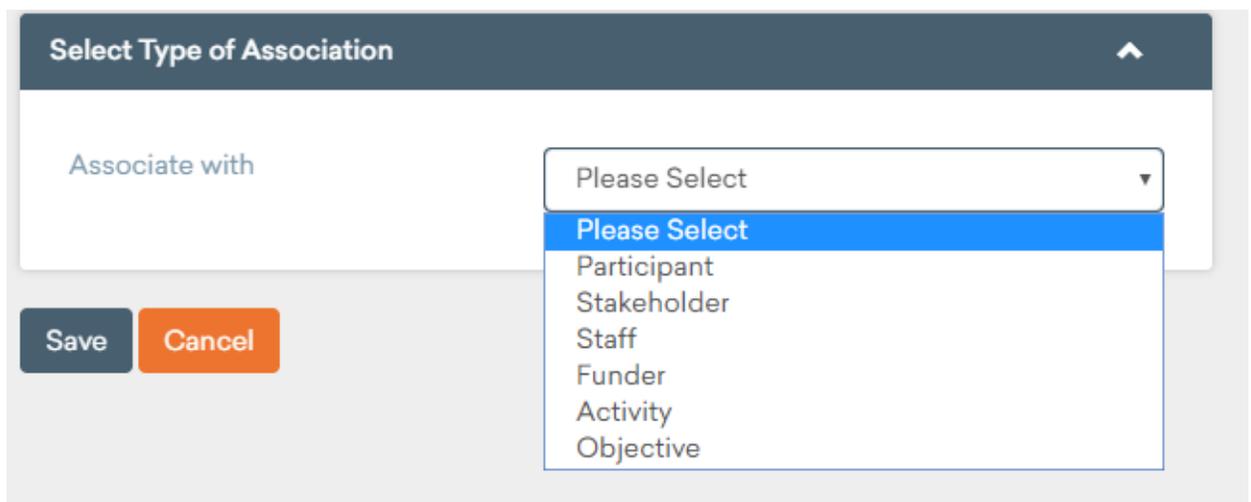


3. From here you can select **Associations** to get to the next page:



Add Associations Page

4. Here you can click the **Add Button**  to add an association and be redirected here:



Type of Association Dropdown

5. From here you can choose which element of the system to associate the media with.
6. After selecting an option and clicking **Save**, you will be greeted with search options to find the item you want to associate the media with:

The screenshot shows a web interface titled "Participants". At the top, there is a search section with two input fields and buttons. The first field is labeled "Find Participant" and contains the text "Diego", with a "Search" button to its right. The second field is labeled "Select Participants from" and contains a dropdown menu with "Session Group" selected, with a "Select" button to its right. Below this is a section titled "Search results (1)" containing a list box with one item: "Diego Gonzalez V". At the bottom left of the list box area is an "Add" button.

Add Association for Participant

7. After you have found the correct item through the two search options, their results will appear in a list and then you can just select one and press **Add** to create the association.

Questionnaires

Questionnaires are used to collect feedback for programs and measure how the SYDRC is doing in the eyes of the clients. This section is made two subsections:

1. Creating a questionnaire, and
2. Viewing questionnaire results

Creating a Questionnaire

1. Navigate to **Evidence** → **Questionnaires**
2. Click the **Add Button**  and you will then be presented with this screen:

The screenshot shows a 'Details' form for a questionnaire. It includes fields for 'Title' (with a red asterisk indicating a required field), 'Description', and 'Type'. The 'Type' field is a list of radio button options: 'General Agency' (selected), 'General Contact', 'General Session', 'End of Session', and 'End of 121 Session'. At the bottom of the form are 'Save' and 'Cancel' buttons.

Questionnaire Details

3. Fill in the **Title** and **Description** fields as appropriate.
4. The **Type** field is for organizational purposes.
 - If it is a questionnaire about session feedback, assign it as **End of Session**.
 - Choose **General Contact** if the questionnaire is for a Participant or Staff Member not relating to a specific session (Ex. Goal Setting form).
 - **General Session** can be general information not related to a specific session (generally unused)
 - **General Agency** is used for SYDRC/N1C Centre feedback (Ex. Facility Satisfaction)
 - **End of 121 Session** is unused in the current configuration of Views.
5. The next screen asks if you want to restrict access to this record. This is recommended to be left as **No**, but if only certain staff should be able to access it, choose **yes** and select the proper staff from the menu that appears. Then click **Save**.
6. The Questionnaire is now made but contains no questions. Use the **Questions** tab in the left sidebar and click **Add Button**  again to create a question.

Add Question Input Fields

- Input a question in the **Question** field as appropriate
- **Input Types** refer to the way the question will be answered
- The **Category** field will organize the questions in the questionnaire by what the question is about.

****NOTE:** When making a questionnaire about sessions, be sure to add a question which asks which session they attended. It will be used for statistics elsewhere in the system.

- Use **Dropdown: Single Selection or Text** input type, and on the Value Lists page, select **Activities** from the drop down.

7. **Distribution of Questionnaires:** When done populating questions, the questionnaire is ready for distribution.

- Use the **Mail Outs** tab on the left sidebar.
- Click the **Mail Button** . On the next screen, choose the type of contact to distribute to. Use the search bar to search for the people you want to send the Questionnaire to.
- Check the box next to their name to add them to the list of recipients.
- Click **Next** after you are done selecting all of the required recipients.

****NOTE:** Administrators must enable a questionnaire for mail out.

- In the administration tab, in the Questionnaire section, then the “External Answers” section, the questionnaire must be selected.

8. Finally, choose a **Correspondence Template**. Then click **Send** to send the email to everyone selected from step 7.

Viewing Questionnaire Results

1. Navigate to **Evidence** → **Questionnaires**

2. Choose the questionnaire you want to see the results from
3. Choose **Summaries** from the left sidebar
4. Click the **Add Button** , and write a name for the summary on the next page
5. Fill in the fields on the current page

Questions Answered..
^

🔍 After 

🔍 Before 

By ▼

Answer Sets Where...
^

🔍 The Question.. * ▼

🔍 ..has the Answer.. * ▼

If answered by the same entity (ie person) multiple times..
^

Only use the ▼

Questionnaire Summary Input Boxes

- Use the **Questions to Summarize field** to choose all the questions you wish to have summarized
 - The **After** and **Before** fields limit the summary to responses between the two selected dates.
 - The **By** field will either split the responses up by individual or leave it as an overall summary when left on ‘Please Select’
 - Use the **Answer Sets Where** section to filter an end of session questionnaire by the activity type.
 - Choose the question about which session this is for under “The Question” and select the session desired for analysis under “...has the answer”.
 - The last field, **Only Uses the**, is self-explanatory, but will use multiple answers from the same person if left on “Please Select”
6. Once the fields are all filled out, click **Save** and you will be back on the Summaries Page:

Name	Actions
<input type="checkbox"/> Summary	  

Use the **View Button**  to view the summary and the **Edit Button**  to edit it.

Case Studies

For information on how to add, edit, delete and print Case Studies and utilize associated features, visit the Views support documentation for [Evidence](#).

Bulk Additions

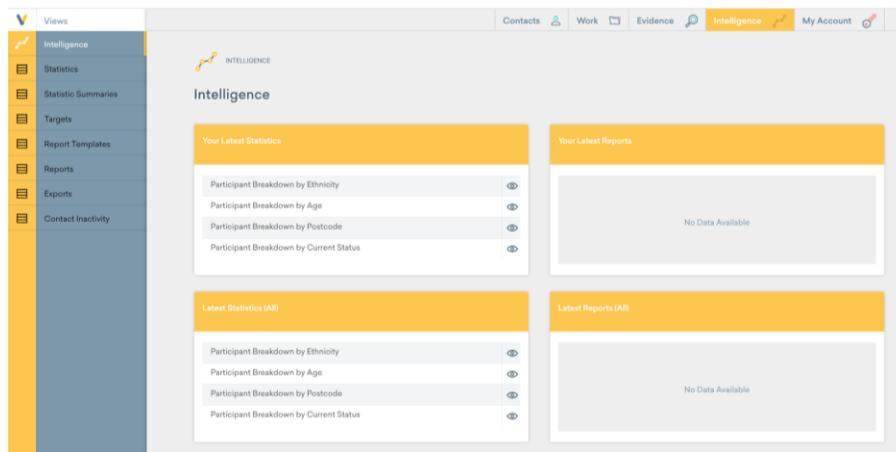
The bulk additions tab allows staff to set Outcomes, Levels of Engagement, & Qualifications for a large number of participants at once.

For detailed steps on how to utilize this feature, visit the Views support documentation for [Bulk Additions](#).

Intelligence

Intelligence is the last main section in Views. Intelligence provides the ability to view, create, and modify existing statistics and charts which can be used to gain a better insight into the effectiveness of certain activities. You will mainly be using this section to view prebuilt statistics and create your own customized statistics.

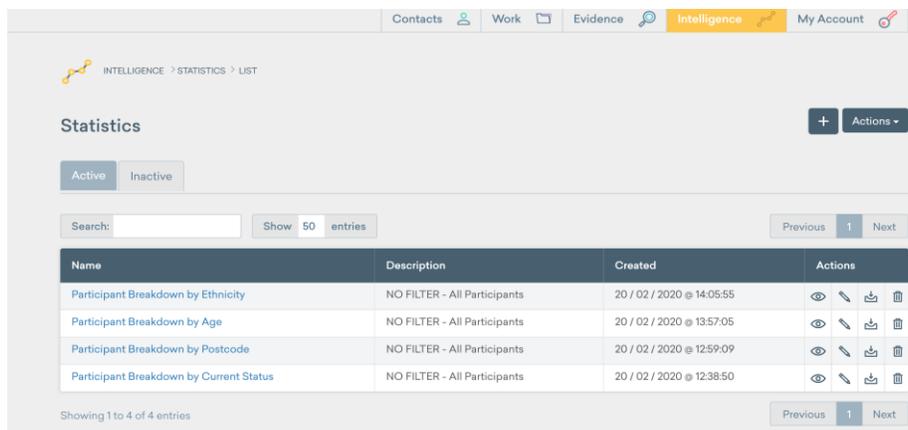
When you select the **Intelligence** tab from the main Views toolbar on the top, you will be directed to the intelligence main page. From this page you will be able to access all the intelligence tools in the left sidebar and see recent changes to the intelligence system on the main screen.



Intelligence Main Page

Statistics

The very first tab under the **Intelligence** category is the **Statistics** tab. This tab allows users to create and view individual statistics in the form of pie charts, bar graphs, or data tables. When you initially click the **Statistics** button, a list of all currently created statistics will appear.

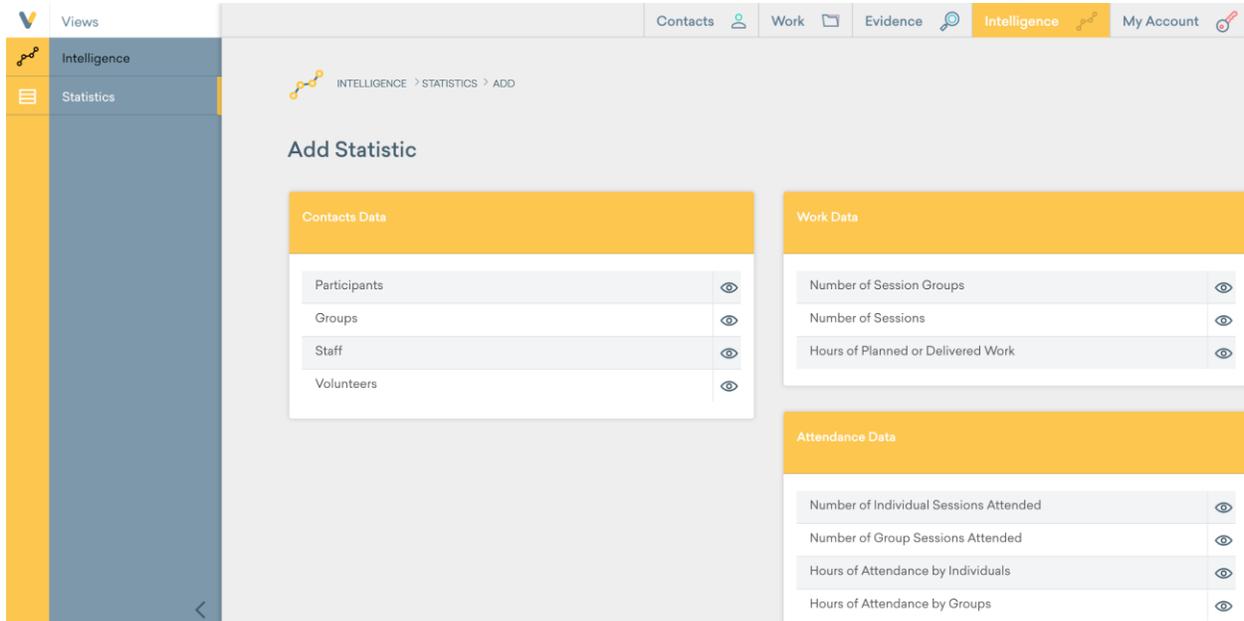


Active Statistics Page

Creating a New Statistic

If you are trying to create a new statistic, select the **Add Button**  near the upper right hand side of the page. If you are trying to view an already generated statistic refer to the [Viewing an Existing Statistic](#) section.

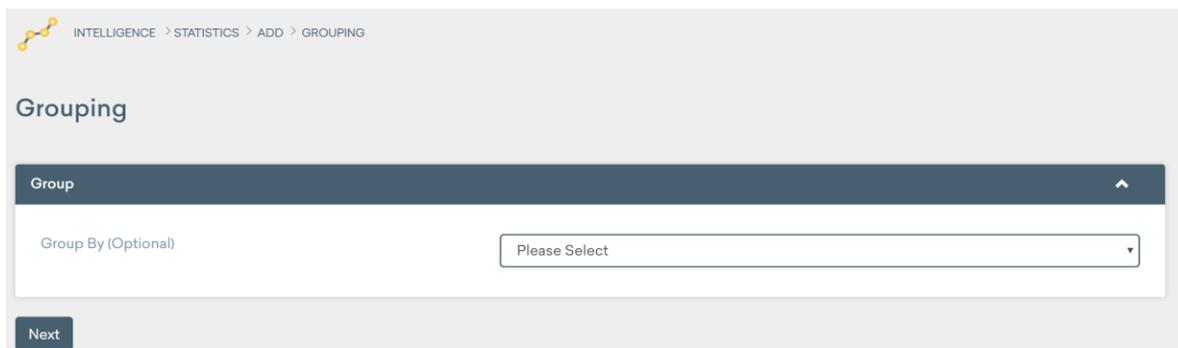
After clicking add, the page will load into the screen shown below and ask what category of information your new statistics will fall under.



Add Statistics Page

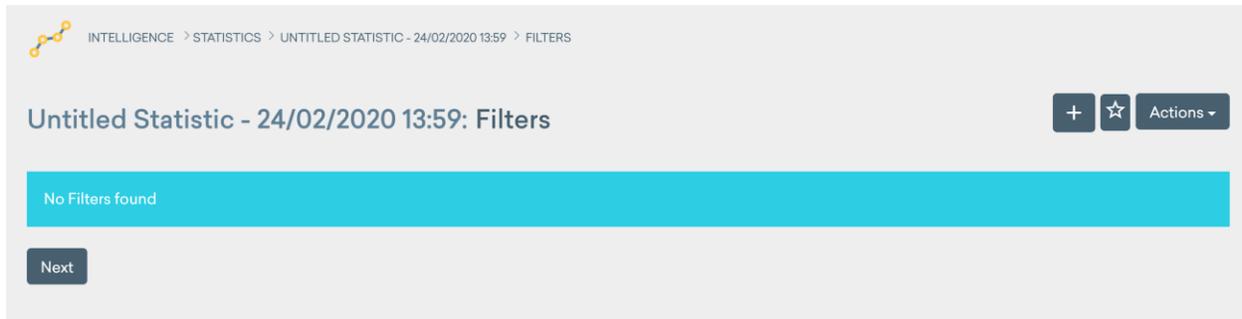
If, for instance, you wish to create a statistic about your staff activity, you would select the **View Button**  next to the **Staff** tab.

Once you select a category, you will be presented with a drop down menu that lists what your statistics will be displaying. For example, if you wanted to see a chart displaying the gender ratio of your staff members, you would select gender for the **Group By** field, and click the **Next** button.



Grouping Dropdown

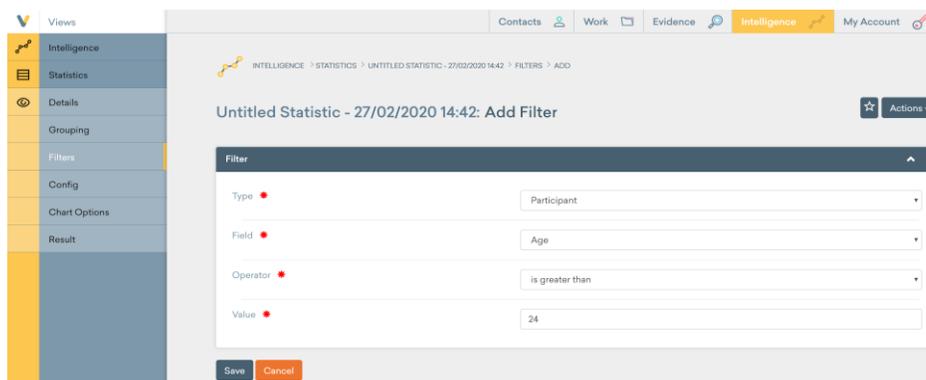
Now that we have selected what type of information we want the statistics to display, the next menu will ask about what participants or groups you would like to filter in your statistics. This is helpful if you want to narrow your statistics down to a certain group of people.



Statistic Filter

To do this, select the **Add Button**  in the top left corner, and fill in the four information fields for the data you want to filter.

If you do not want any filters, leave this field blank and click **Next**. If you do, follow the steps below.



Add Filter Input Fields

As seen in the picture above, if you wanted to display the gender of ONLY the participant members with an age of 25 or above, creating that filter would remove everyone with an age of below 25.

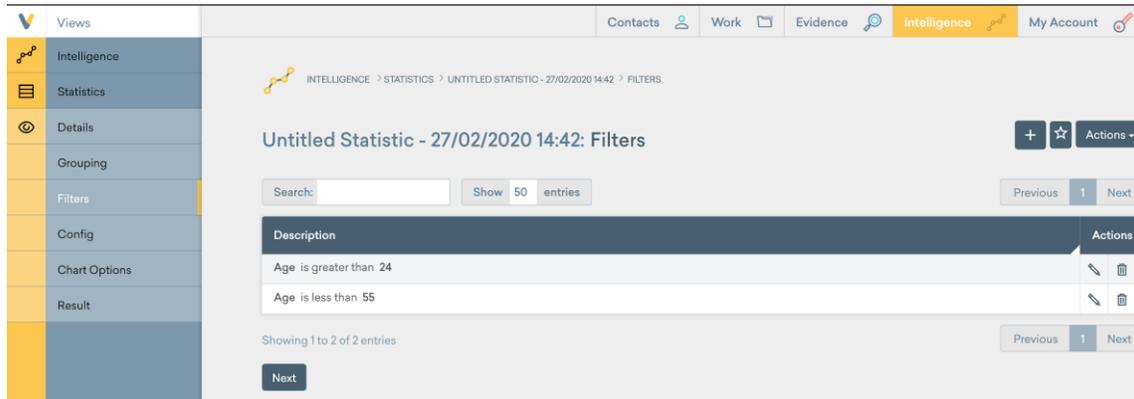
- For this example, the **Type** is what category of information do you want to filter by, so we want to choose participants.
- Once the type is selected, the **Field** selector will change to allow you to choose any of the information fields specific to your type. So, in this example age was chosen.
- Next is the **Operator**, this is used to narrow the filter by either including or excluding the selectors from above. In this example, we want the statistic to show only the people with the age above 25, so the filter is set to people whose age ‘is greater than’.
- The last field is the **Value**. For this example, the value is set to 24, so that the filter will show everyone with an age of 25 or higher.

Once you have filled out all the fields, click the **Save** button to create the filter.

You can also add more than one filter if you need to narrow your search to more than one field.

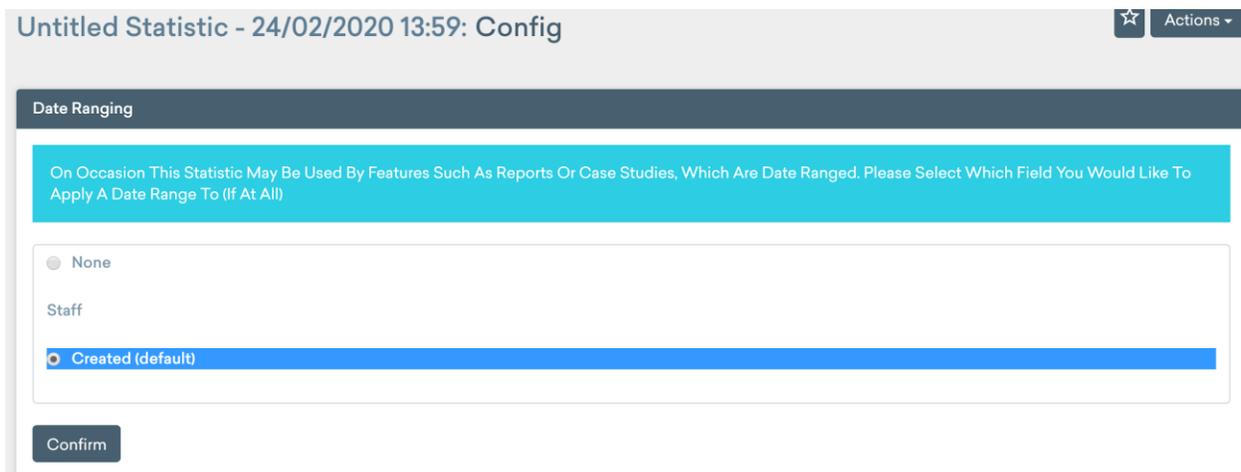
- For example, to filter people with an age range of 25-55, we would also add a filter to include only people with an age of less than 55.

Once you are done adding filters click the **Next** button.



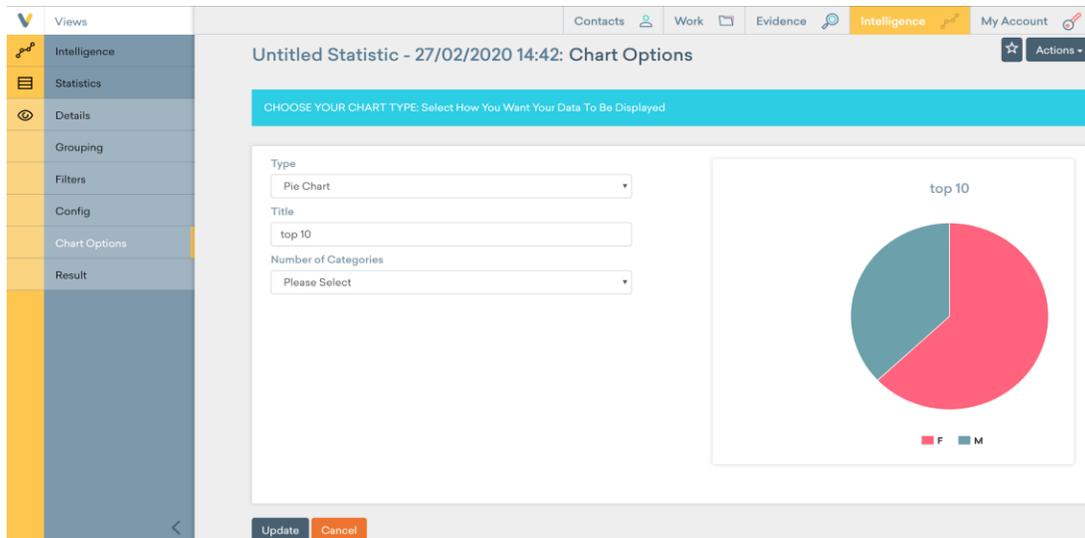
Created Filters Page

The configure page should remain in the default option, you can skip this and click through using the **Confirm** button.



Statistics Config Page

The last step before completing a statistic is the **Chart Options**, here you can modify what your final statistic will look like by changing the type of the chart between different graphing options, and the title of the graph.



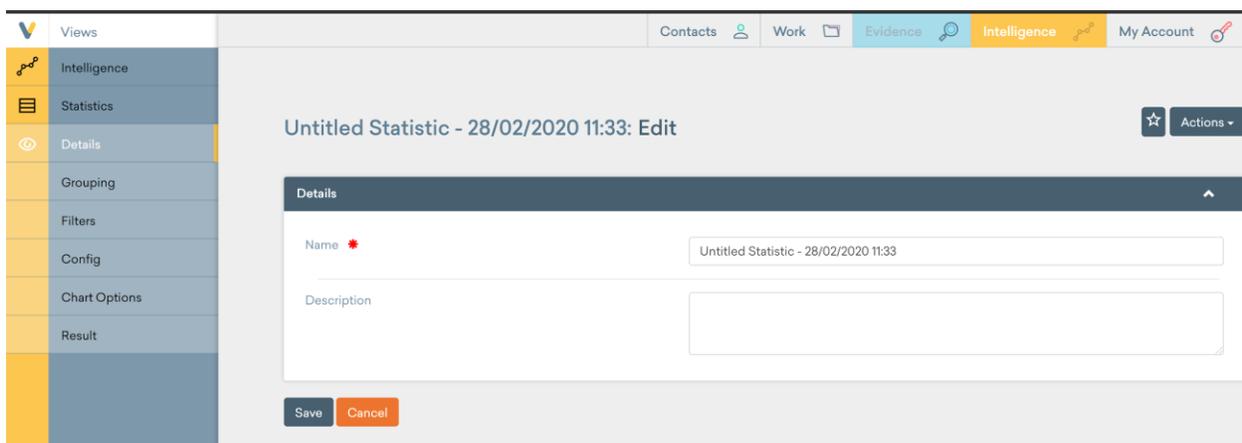
Statistic Chart Options

The last option is **Number of Categories** and you can use this option to limit the amount of answers to the given number.

- This would be helpful if you are creating a table for either postcodes or names and want to limit the results to the top 5 to 10 most common answers and not list everything in the system.
- If you do not want to limit the number of responses, make sure you leave the option on 'please select'.

Once you have finished updating the look of the statistics, click the **Update** button, which will bring you to the **Result** tab that shows the finalized look of the new statistic you have created.

The last step is to click back to the **Details** tab on the left side menu and click the **Edit Button**  on the top right side of the page to give a name and description to the statistic you just created so that it is not left as 'Untitled'.

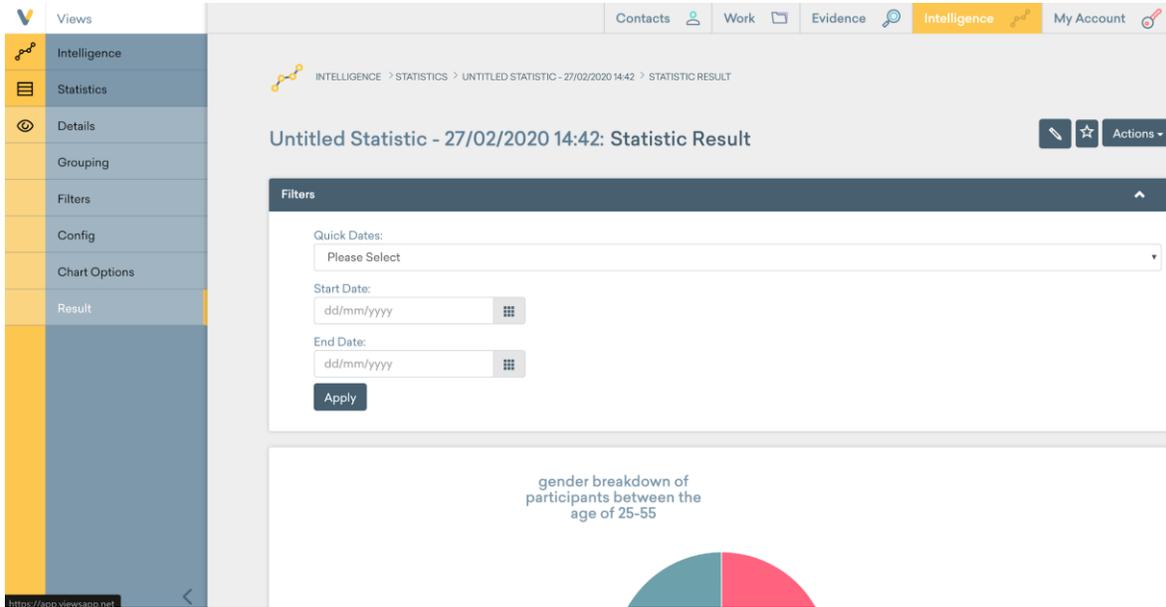


Edit Statistics Input Box

Viewing an Existing Statistic

If you want to just view a given statistic, click on the name of the statistic you want from the list of all statistics, and on the left side menu, select the **Result** tab for data of a completed statistic.

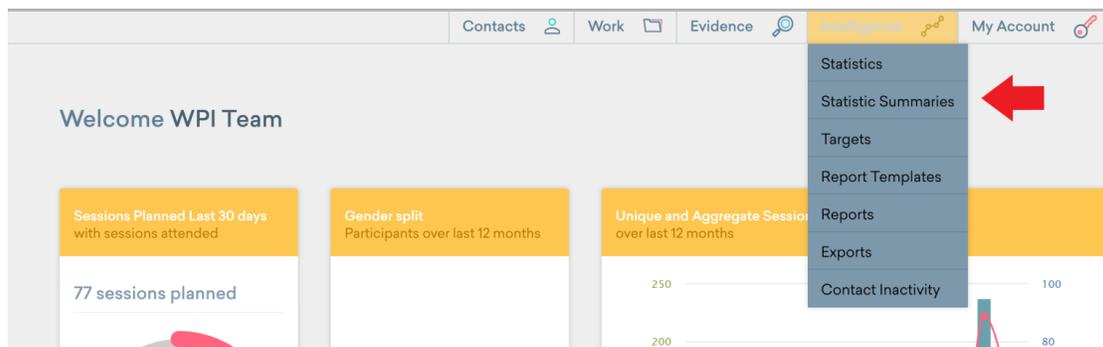
On this **Result** page, you can specify the statistics to only show data for a given time range. To do so, select the **down-arrow** in the right hand side of the Filters tab. It expands the filter menu and gives you the option to input a start and end data. Once you select a date and click apply, the statistic will automatically update to show you the information for the relevant time range.



Statistic Result

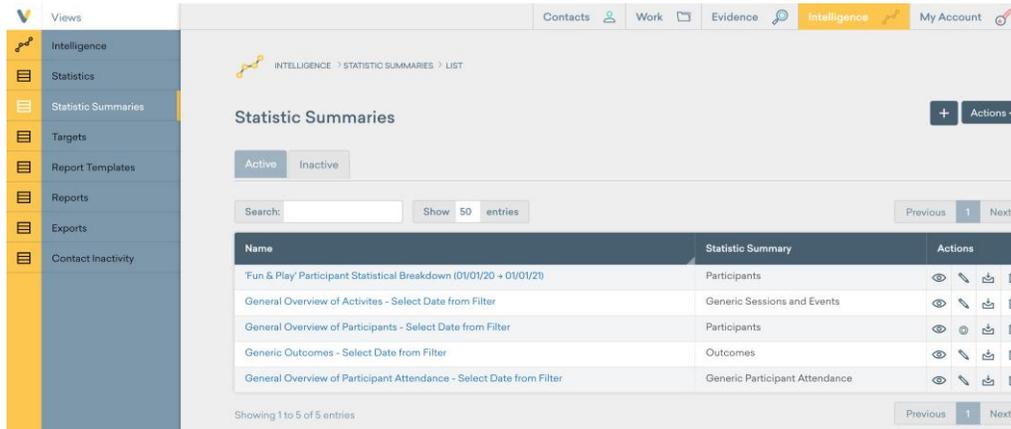
Statistic Summaries

If you are trying to view a large collection of statistics at once, use Statistical Summaries. These are automatically generated lists of statistics that take a time period and filter all the data fields based on the activity that occurred within those dates.



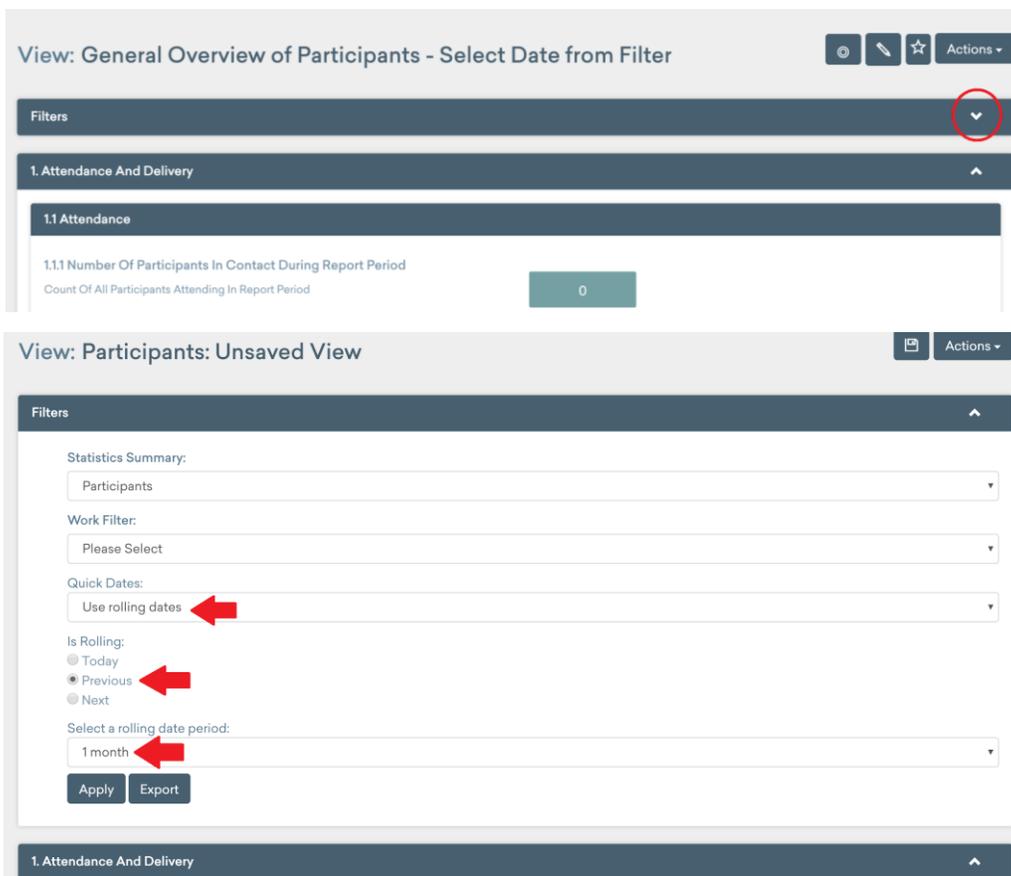
Statistic Summaries in Dropdown

When you first open the statistical summaries page, a list of all the general reports is shown. All of these reports have different statistics that can be viewed.



Statistic Summaries Main Page

When you initially open a statistical summary, you must first choose a time period to create statistics for. First start off by selecting the down arrow next to the filters tab.



Participant Statistic Summary Filter Options

These filters allow the user to specify the data outputted in the statistical summary:

- The field **Statistics Summary** allows you to choose to filter by element type. Most of the time you will want to choose **Participants**.
- The field **Work Filter** allows you to only output data for a specific age group or activity.
 - Leaving this as 'Please Select' will output data for everyone in the system
- Filter by a length of time by;
 - selecting **Use rolling dates** under the Quick Dates menu
 - Selecting the **Previous** button under Is Rolling
 - Finally, select the length of time you wish to collect statistics over under Select a Rolling Date Period

Once done, click the **Apply** button and you should then be able to scroll through the list of statistics below detailing the information.

****NOTE:** These statistics will only contain information on participants that attended sessions, if you add a participant, but don't add them to a session, they will not show up under this filtered statistical summary.

Below is a list of certain statistical breakdowns requested by the Director of the SYDRC and where they can be found in Views

Statistical Breakdown	Location in Views
Number of activities: e.g. Youth club	General Overview of Activities - Section 1.5
Number of Workshops	General Overview of Activities - Section 1.8
Number benefiting from "A" activity	General Overview of Activities - Section 3.3
Breakdown by Age	General Overview of Participants - Section 2.2
Breakdown by Ethnicity	General Overview of Participants - Section 2.3
Breakdown by Religion	General Overview of Participants - Section 2.4
Breakdown by Current Status	General Overview of Participants - Section 2.5.2
Breakdown by Postcode	Under Individual Statistic for Postcode
Number Participating per session	This cannot be done with statistics, check individual attendance for sessions.

Table 1: Location of Specific Statistics

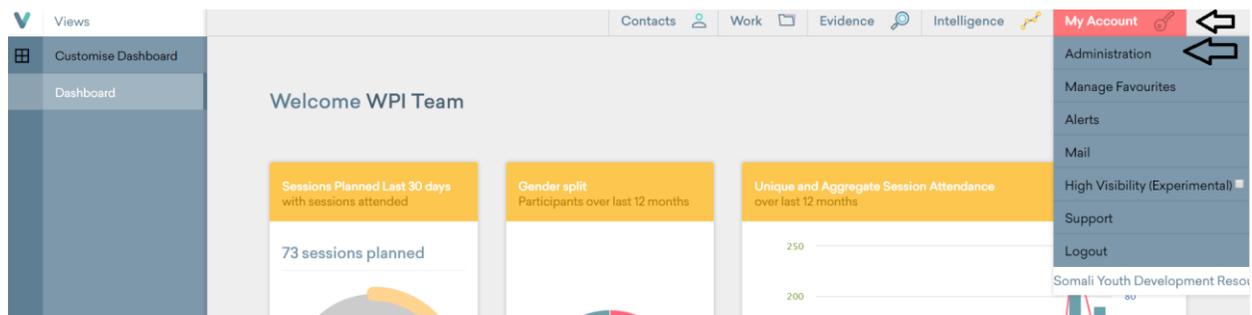
Additional Intelligence Features

For information on the rest of the features included in the intelligence section, including targets, report templates, and exports, visit the Views support documentation for [Intelligence](#).

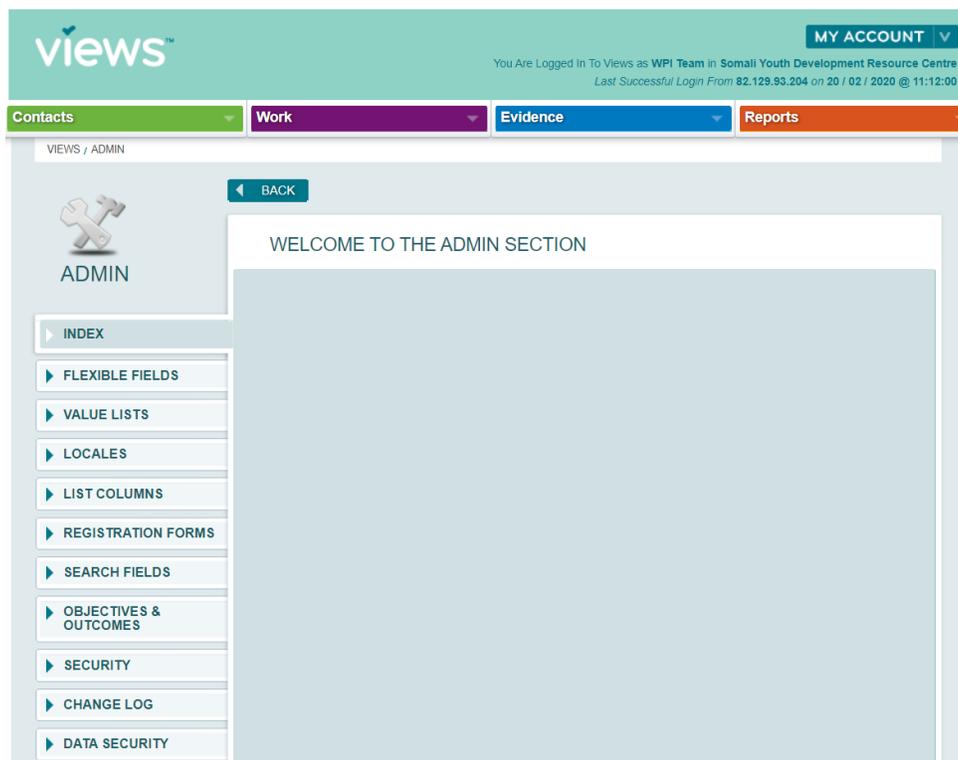
Administration Tools

Administration (admin) tools is a tab which is only accessible by admins. In order to customize Views, load large amounts of data, and manage security of the application, you will need to use the admin tools.

In order to access the Admin tools session, you want to hover over the button in the upper right corner of the main View page that says **My Account**. From there a dropdown menu will extend, and you will want to click on the button that says **Administration**. That will take you to the admin page, from there you will be able to access all the necessary tools.



Buttons to Access the Administration Page



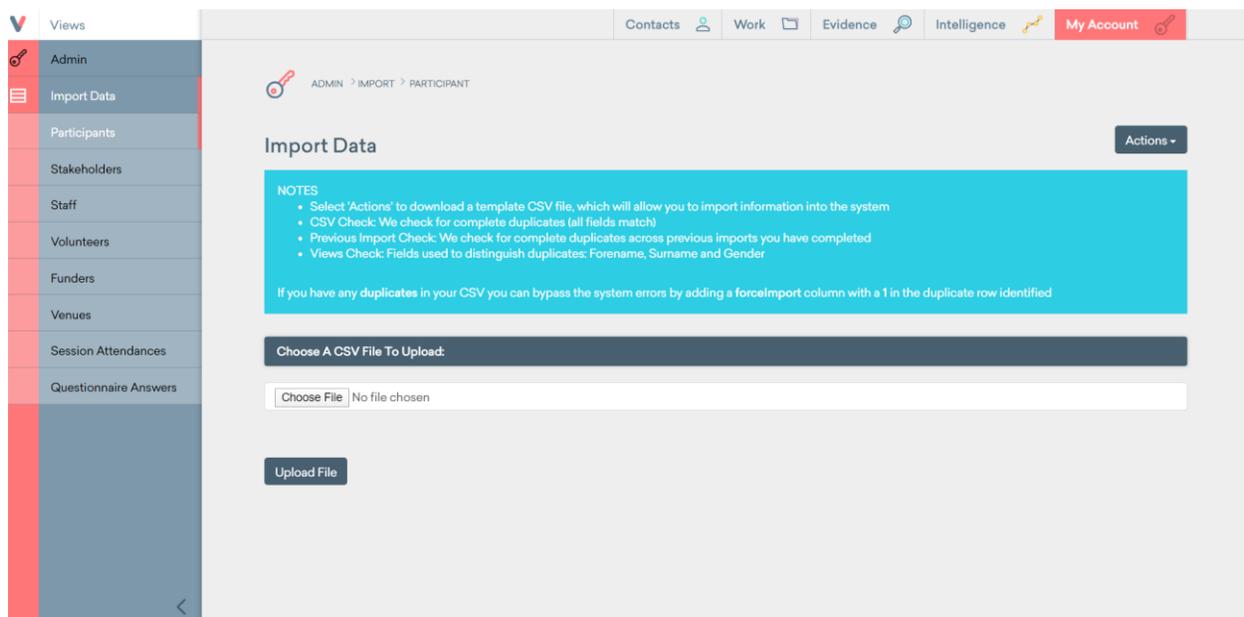
Admin Main Page

Inside of the admin page you will immediately notice this page looks different from the rest of the application. From the left sidebar you will be able to access all of the administration tools that will be mentioned ahead. For some of them you will just have to scroll down to find.

Importing Data

The first tool that is important to learn how to utilize is the Import Data tool. Using this tool, you will be able to import large amounts of data at once from almost any other database application.

In order to access this tool, you first need to click the **Import Data** button on the admin left sidebar. This will redirect you to the importing data page.



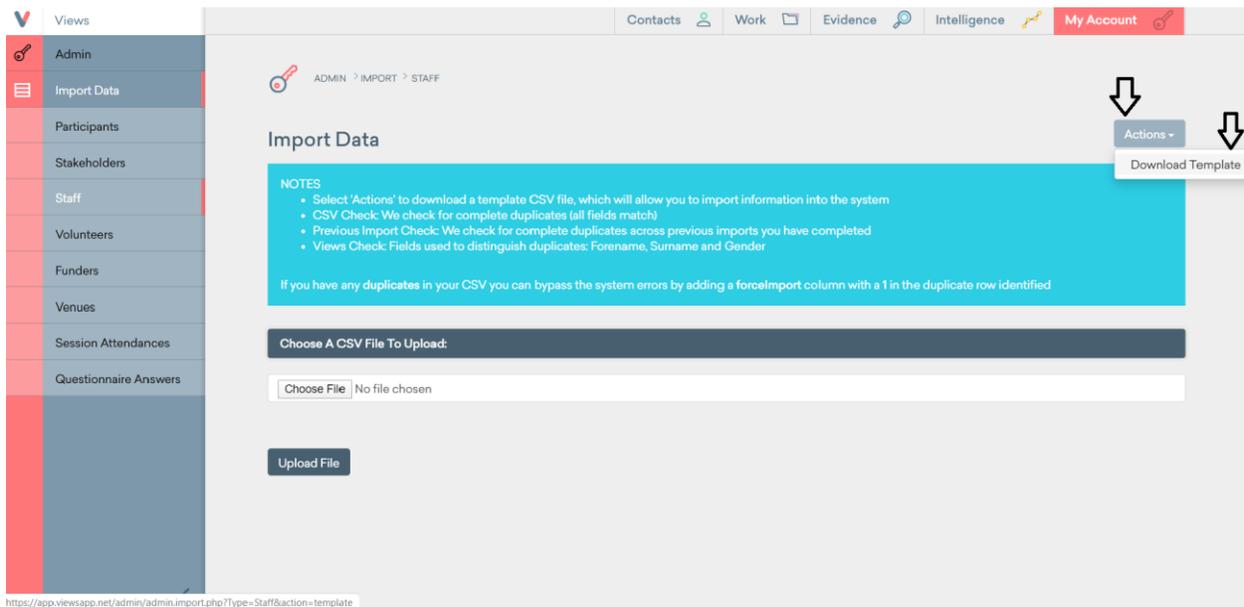
Import Data Main Page

From this page you can choose where to upload the data you have. You can import data to every subsection you see in the left sidebar. It is important you choose the correct subsection, the process will not work unless you do, and you also run the risk of having data placed on the wrong sections of the database.

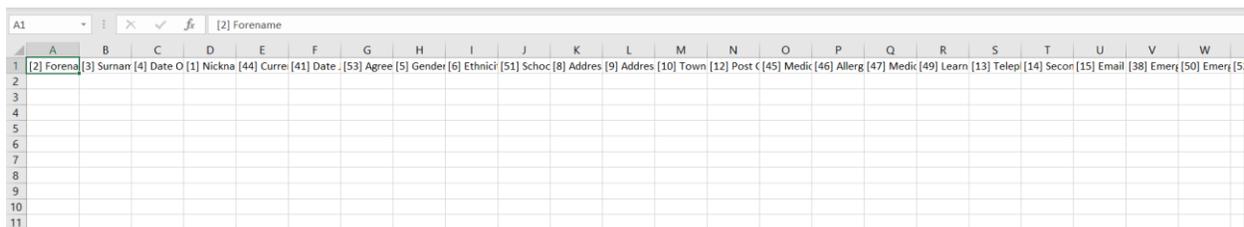
Once you have accessed the “Import Data” page and you have chosen the correct subsection, you can start with the uploading process. To upload the data, it has to be formatted in a very specific way in order for Views to be able to read and upload it into the system. First, the data has to be in a Comma Separated Value (CSV) file. A CSV file is a type of file that stores data, and Views reads through it in order to find the information it needs. A CSV file can be created and edited through several applications, but it is recommended to use a spreadsheet editor like Excel or google sheets. You just have to make sure that the file is saved as a CSV file. A way to see if a file is a CSV is by looking at its name, it will be formatted like “name_of_file.csv”, the .csv at the end is the tell to know if you have the correct type of file.

Besides having the file as a CSV, the information inside the file has to be formatted correctly in order for the upload to work. By using a spreadsheet editing application, like Excel, you can modify the data inside of the CSV. In order for the data to be uploaded, you need to have the correct fields for each one of the individual components (participant, event, volunteer, etc.) you are uploading.

The required fields in the file are the same fields that appear when you are creating an individual component in Views. When you create an individual component, like a participant, you need to fill out several fields, this is the same concept, but you are doing it for several participants at the same time. The best way to organize the data is by downloading the premade template Views offers.



Buttons to Download the Data Template



Spreadsheet (CSV) Template

Whatever data you have, you need to format it the same way as the template. The top fields need to have the same names. It is not necessary for them to be in the same order, but it is important for them to have the number they have next to their names. For example, the [2] next to Forename, has to be in the forename field of your own file.

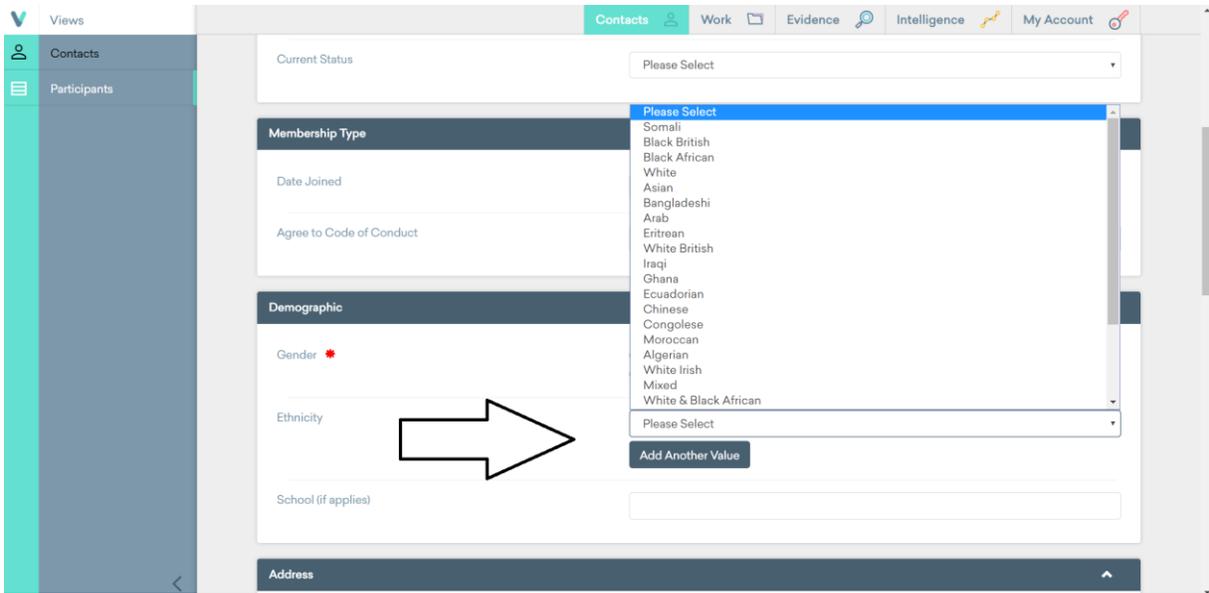
[2] Forena	[3] Surnam	[4] Date O	[1] Nickna	[44] Curre	[41] Date	[53] Agree	[5] Gender	[6] Ethnici	[51] Schoc	[8] Address	[9] Address	[10] Town	[12] Post C	[45] Medic	[46] Allerg	[47] Medic	[49] Learn	[13] Telepi	[14] Secon	[15] Email	[38] Emerg	[50] Emerg
Diego	Gonzalez	26/09/1998					M	Hispanic / Latino		4-7 Crawford Passage												
Gabriel	Aponte						M			4-7 Crawford Passage												
Paul	Mara						M			4-7 Crawford Passage												

Example of a Filled Out Template

The figure above is an example of a filled out template. You do NOT need to fill out every single field in order for the upload to work. You only need to fill out the compulsory fields. In order to know if the field is compulsory, you can always go and create a regular unit inside of Views. When you are creating the unit, the compulsory fields will have a red star next to them.

Example of Compulsory Fields in the Participant Section

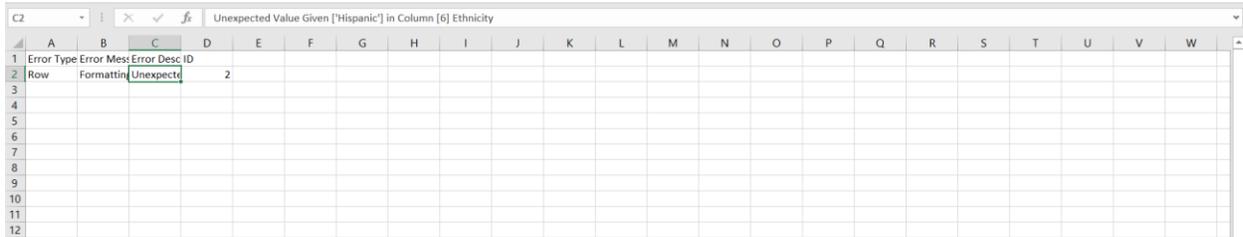
Another detail you have to pay attention to is that certain fields need to be filled in a specific way. Dates need to follow the dd/mm/yyyy format correctly. Some fields are a dropdown menu in Views, meaning there are a limited number of options that can be inputted. In this case, in the spreadsheet, the field needs to match one of the options that appear in the dropdown menu. If it is not one of the options or if there is a spelling mistake, the upload will not work. Look at the Example of Drop Down Menu figure below, in this case you need to type in one of the options that menu gives for ethnicity. If you fill out one of these fields incorrectly, the upload will not work.



Example of a Drop Down Menu

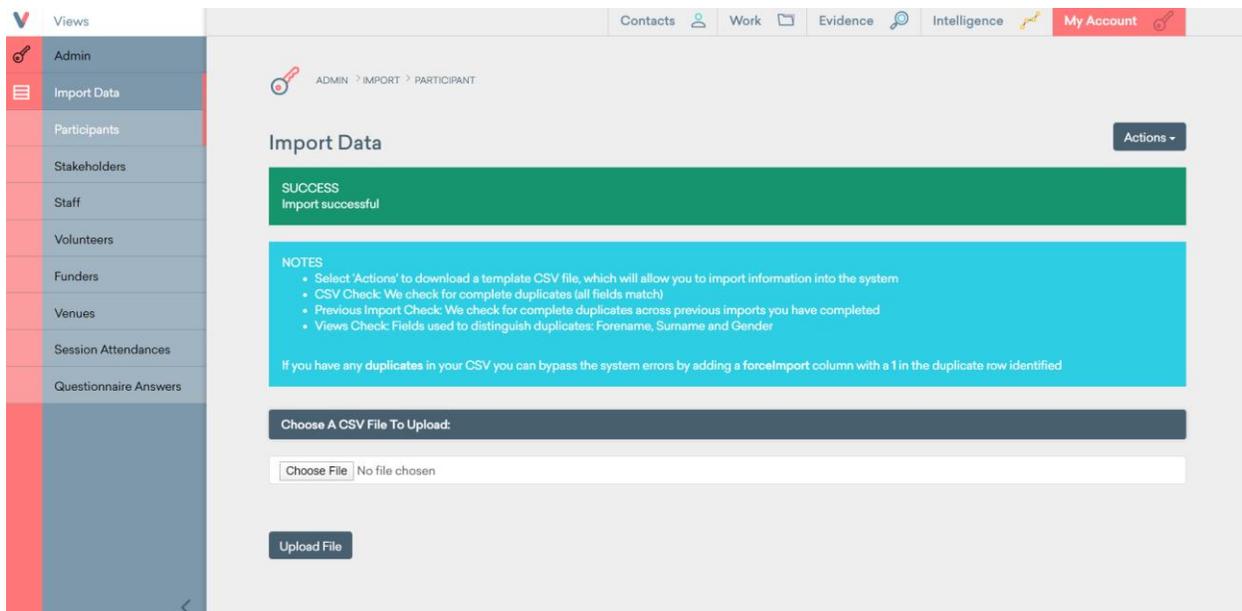
Once you have filled out all of the fields in the spreadsheet with the desired information, you can complete the upload. Go back to the **Import Data** page, select the correct subsection, and click on the button that says select file. Select the correct file from your computer, again make sure it is a CSV file, and lastly click the **Upload File** button.

If there are mistakes on your spreadsheet, like a date in the wrong format or a wrong input in a dropdown menu, your computer will automatically download a new CSV file. This CSV file will contain in it all the mistakes Views found. Use this as a guide to reformat your CSV file and be able to upload it successfully.



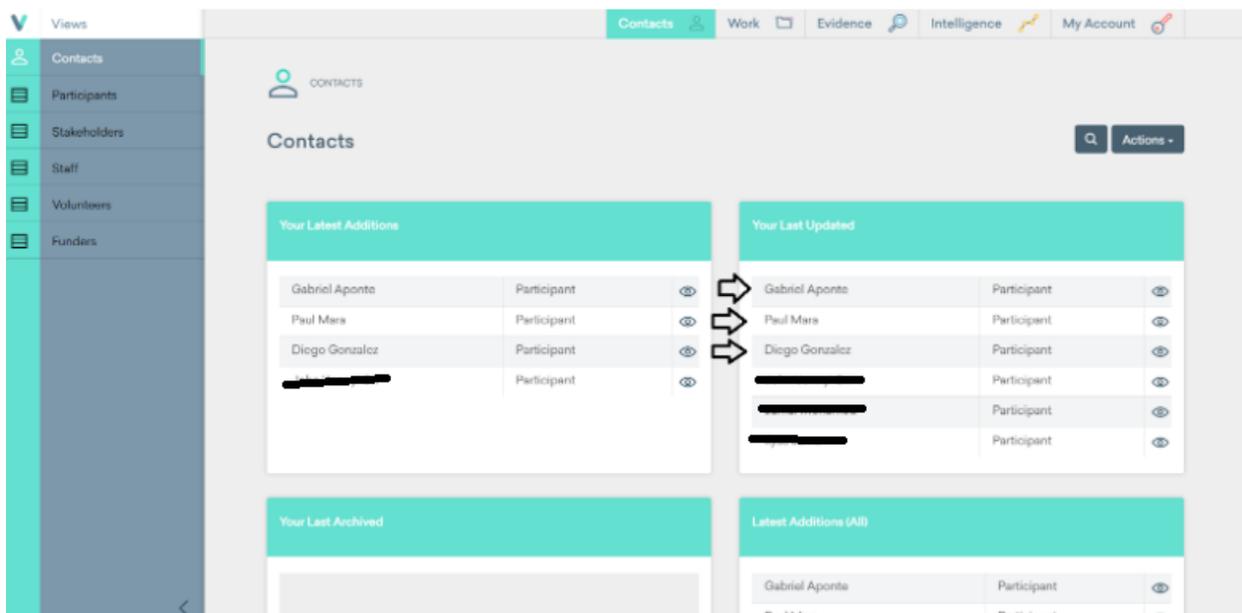
Example of Views Failed to Upload CSV File

Once you have formatted the file correctly, and then uploaded the document as described below, you will get a success message on the import data main page.



Example of Success Message

Once you have uploaded the file correctly, you may go to whatever subsection you submitted it to and you will find all of your new data in it.



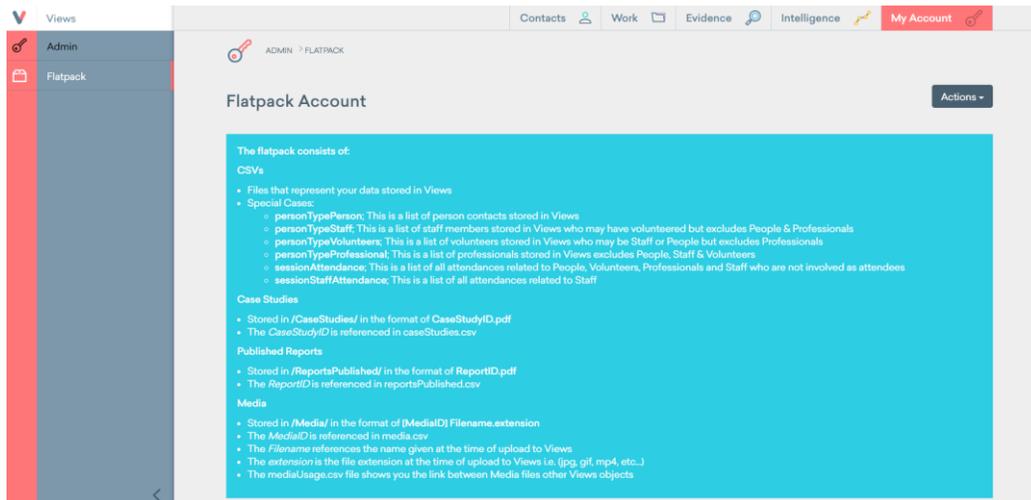
Example of Submitted Data Through a CSV File

Although the process seems complicated, this is the fastest way to upload large amounts of data into the Views system. By learning to format data correctly, you can save a lot of time, instead of uploading single items one by one, you can upload all the data at the same time.

Flatpacks (Entire System Backup)

The next tool that is important to understand is the Flatpack tool. Flatpack allows you to back up all the data currently stored in Views.

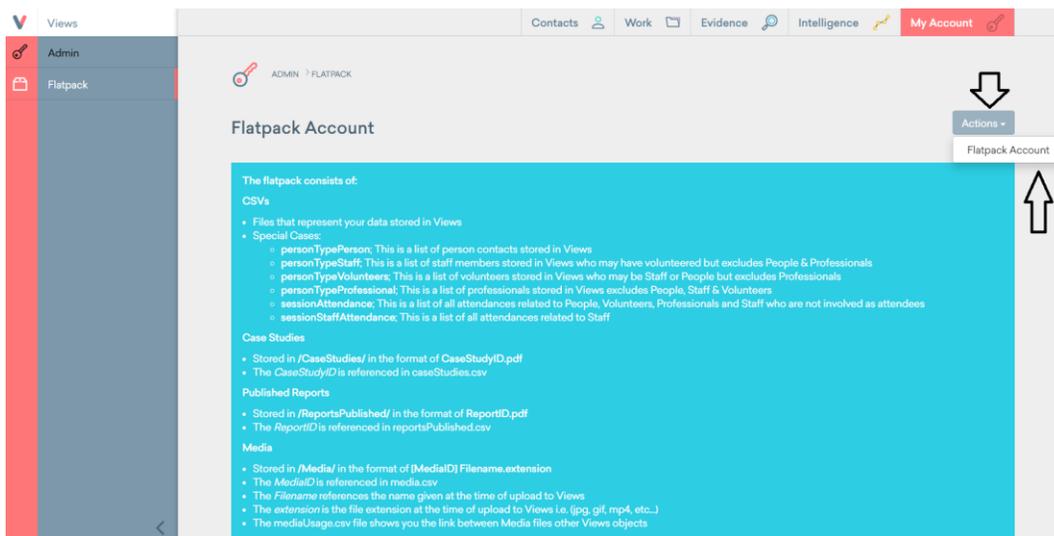
In order to access Flatpack you just need to click on the **Flatpack** subsection in the admin page.



Flatpack Main Page

What a Flatpack does is compress all the data in the database into several small files and then put it into a single zip folder. You can download this folder and keep all of the newest information outside of Views. This is a good way to protect the data from mistakes in the database or get ready to move to another database if it is ever necessary.

In order to get the Flatpack data you need to follow a simple procedure. First, you need to actually Flatpack all of the data. To do this, click the **Actions** button and then click the **Flatpack Account** button.



Buttons to Flatpack Information

Once you click on the **Flatpack Account Button**, it is going to ask you if you are sure if you want to do it. Once you click ok, you will have to wait for a little while. This process takes some time, and it might seem that the system froze, but it is just working it out. Once it is done, you will be able to see your newest Flatpack at the bottom of the page. You can download all your zipped information by clicking the download button.



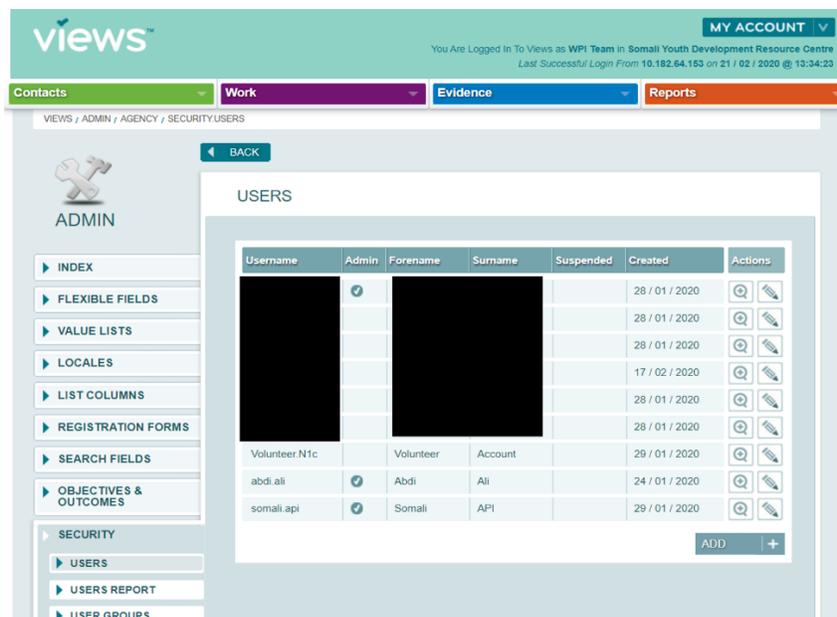
Example of Zipped File and Download Button

The file will contain in it all the data in views formatted as several CSV files. You can navigate the folder and find any of the information that was inputted in Views, except it is in a spreadsheet instead of the way usually Views arranges it.

Security

The next tool in the admin left sidebar is that of security. The security tool is used to create new users and manage the accessibility each of these users has. From this tool you can also group users according to their permissions and be able to see how many edits each of the users has done.

To start, in order to access the security tool, you just need to click on the **Security** button on the admin left sidebar.



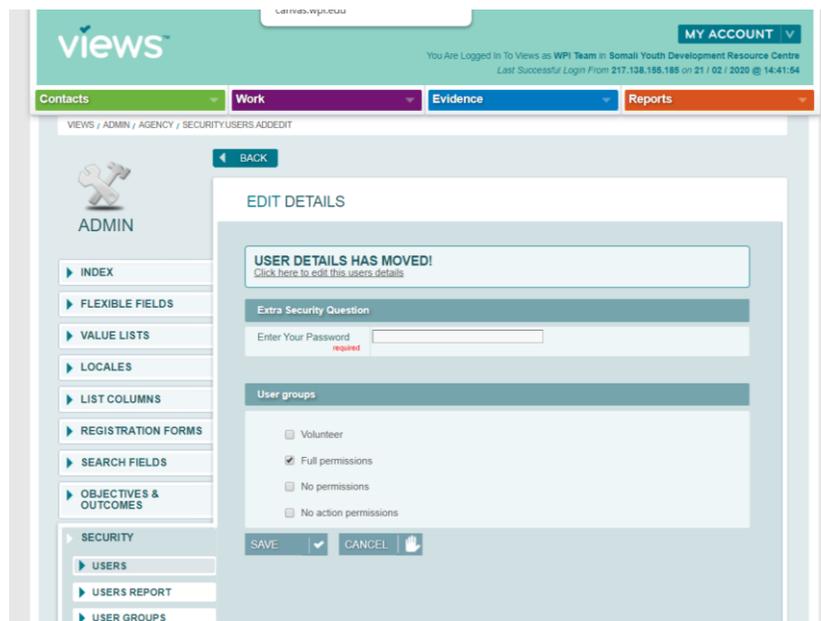
Security Admin Page

The most important feature from the security tool is the ability to manage users. From here you can create, delete and edit the current system users.

In order to create a user, you simply click on the **Add** button that says. Once you click on that button you will be taken to a page where you need to input the data for the new user. You will have to give them a name, a username, an email and a temporary password. The last thing it will ask you is labeled as an **Extra Security Question**. Input YOUR OWN password here as the system needs to check that you have administrative privileges to create a new user.

****NOTE:** The password you first give them is immediately going to be changed by them when they log into Views for the first time.

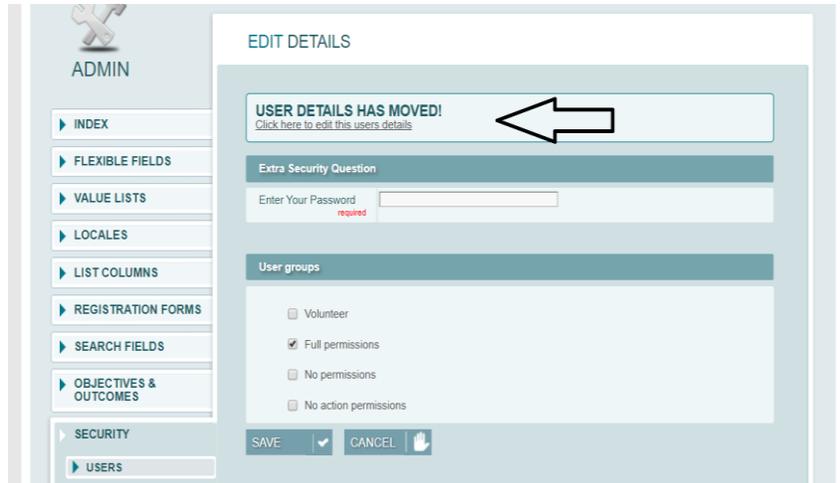
Once the profile is created, you may give them admin privileges. This just means whether they may or may not use all the admin tools. To do this you just have to click the **Edit Button**  next to their name. This will take you to the user edit page.



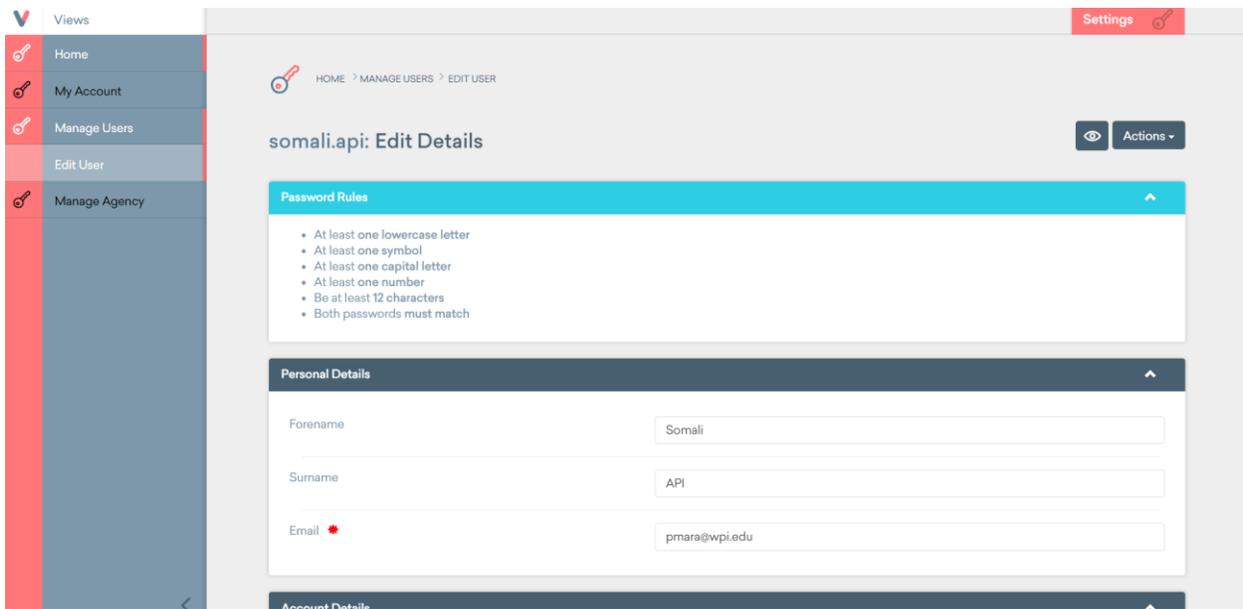
Edit User Detail Page

Due to changes in the application, you have to click an extra link to access the details. But in this first page you can change the permission group (more on user groups later) the user belongs to. It will also again ask you an **Extra Security Question**. Input YOUR OWN password here as the system needs to check that you have administrative privileges to edit a user.

In order to access the other editable edits, you have to click the link below where it says **User Details Has Moved**.



Button to Other Editable Details for Users



User Edit Detail Page

From this second page you can change the username, email, password and even add a two factor authentication process.

Next on the security features is the users report. The users report isn't meant to be an editing tool, instead it is a tool that allows you to see how much editing has been done by each individual user.

To access it you simply click on the **Security Button**, and then click the **Users Report Button** below it and it will take you to the users report page. Here you will see what every user has edited so far.

User	Last Login	Number of person records created	Number of session groups created	Number of sessions created	Number of media created	Number of case studies created	Number of outcomes created	Number of qualifications created
abdiali	20 / 02 / 2020 @ 17:06:21	2	0	64	23	0	0	0
[REDACTED]	14 / 02 / 2020 @ 16:58:23	36	0	1	0	0	0	0
[REDACTED]	20 / 02 / 2020 @ 16:21:53	33	1	50	2	0	0	0
[REDACTED]	12 / 02 / 2020 @ 15:16:02	0	0	17	0	0	0	0
[REDACTED]	17 / 02 / 2020 @ 15:15:20	4	0	0	3	0	0	0
[REDACTED]	24 / 02 / 2020 @ 09:14:23	70	0	38	0	0	0	0
[REDACTED]	12 / 02 / 2020 @ 13:27:35	28	0	13	0	0	0	0
somali.api	24 / 02 / 2020 @ 10:25:18	0	0	7	0	0	1	0

Users Report Page

As you see in the users report page, Views keeps track of all the changes each user has made.

Next on the security features, we have user groups. This is the best way of managing user permissions in Views. You can create groups for users, and then edit what type of permissions the users in that group will have. This way you do not have to manage each person's accessibility individually.

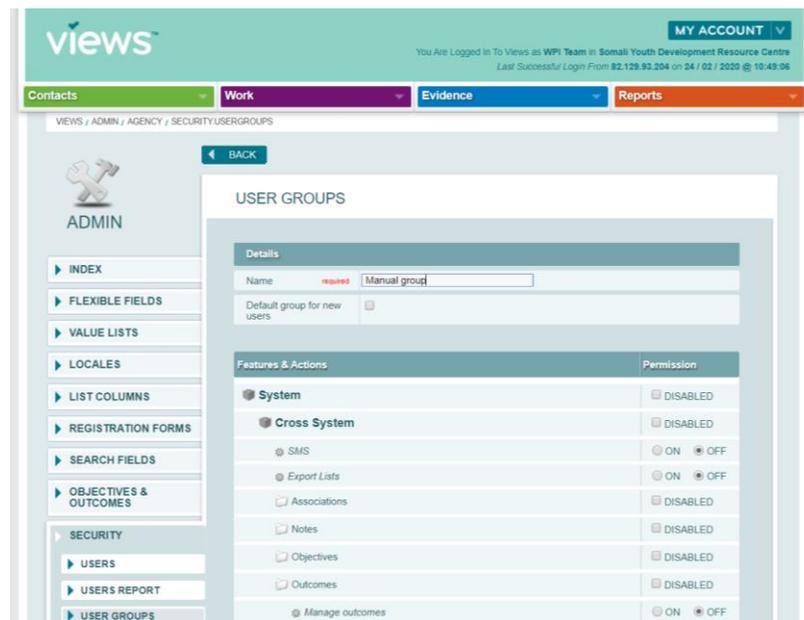
When you access the user groups (access the same way as users report but click on user groups instead) you will be able to see all of your already created groups.

Name	Created	Actions
Full permissions (DEFAULT)	09 / 02 / 2012	[Icons]
No action permissions	09 / 02 / 2012	[Icons]
No permissions	09 / 02 / 2012	[Icons]
Volunteer	29 / 01 / 2020	[Icons]

User Groups Page

From this page you will also be able to edit your already created groups or create a new one. To edit an already created group, you just click on the Edit Button . To add a new group, you click on the **Add Button** . Once you have clicked either button, the process is the same.

You will get directed to a new page (the user groups page) where you can do all the necessary editing. You can name/rename the group and then you will see a long list of editing tools and features with either an **On/Off** button or a **Disabled Button**. From here you simply disable or turn on/off whatever tool or feature you do not want the members of this group to access, anything left blank or on will be accessible by the people in this group.



User Group Permission Editing Page

Once you have created a group with its permissions, whenever you create a new user, you can just add it to the group. Even already created users can be moved to different groups. To do this, you just edit the user.

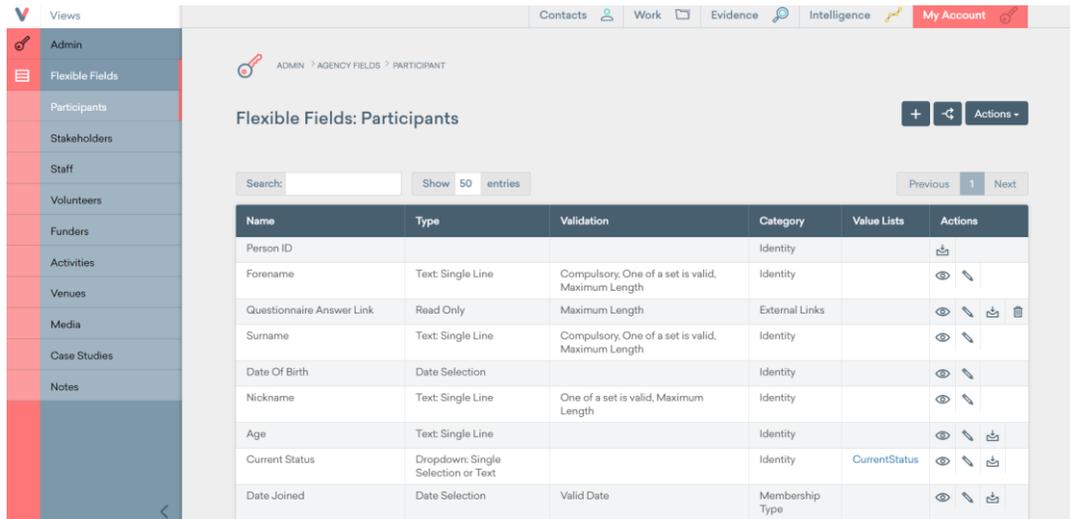
Lastly in the security section, there is a button named **Feature Config**, which currently when you click on it, it will just redirect you to the main admin page.

Flexible Fields

With the use of this tool you can customize the required information in order to create your contacts, events, venues, media, case studies and notes.

Information is stored as fields in Views. For example, when creating a participant, their surname, address and email are fields. You can add, remove and change fields for all the listed subsections in the fields page.

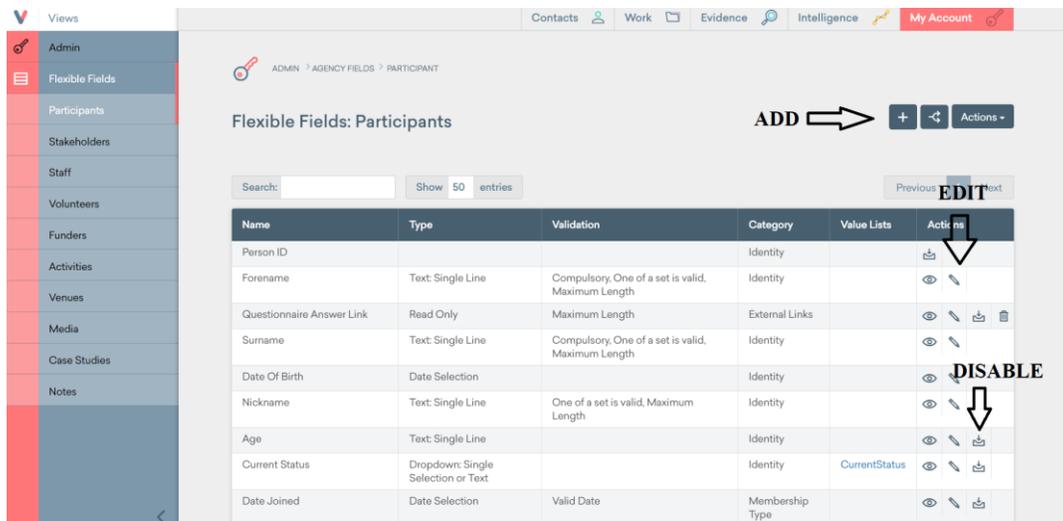
In order to access the flexible fields page, you simply click on **Flexible Fields** in the admin left sidebar.



Flexible Fields Page

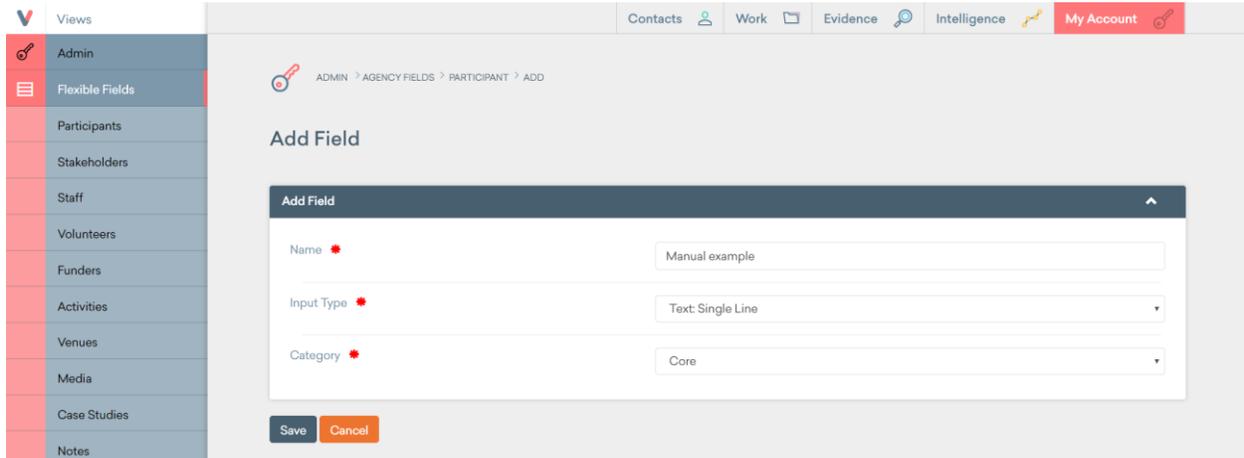
On the left side of the page you can see the subsections that you are able to change the fields for. In the main page you can see all the current fields that exist for the subsection you have selected.

To add a field, you simply click on the **Add Button**  on the top right corner. If you want to edit a field, you click on the **Edit Button**  next to the field. And then to delete a field, you simply click on the **Delete Button** . Fields cannot be deleted if they are being used in any of your contacts/events. If you want a field to stop showing up, but you cannot delete it, you may disable it with the **Archive Button** .



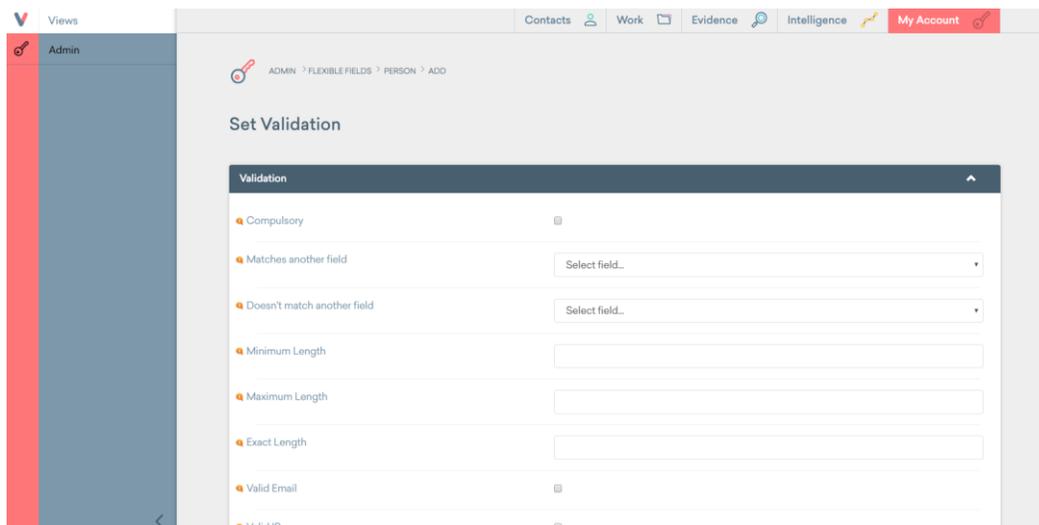
Flexible Fields Showing the Add, Edit and Disable Buttons

Once you click either the **Add Button**  or **Edit Button** , it will take you to the field customization page. In the customization page you will select the **Name** of this new field, the **Type** of field and what **Category** it falls under. By “type of field” it means what type of response you would like for the field: an open text, a selection of specific answers (dropdown menu or checkbox list), a date, and several other options. By category you just select what type of information should this field give you, this is important for filtering and organizing data.



Add Field Page

On the next page (set validation) you will be able edit more information about the field. You may make the field **compulsory** (meaning is it mandatory to fill out or not), make it so that the response follows a specific format (like a date), make sure the answer given is a valid phone number or email address and much more. If you select a drop down menu or checkbox list type of field, you can select the values that will be available as answers for the field. For information on how to add new value lists into the system see the [Value Lists](#) section. Afterwards, you click the **Commit Button** at the bottom of the page and your new field will be created.



Field Set Validation Page

Lastly, you can organize the way the older of the for the selected subsection. In the main page, click the **Order Fields Button**.

ADMIN > AGENCY FIELDS > PARTICIPANT

Flexible Fields: Participants

Search: Show 50 entries Previous 1 Next

Name	Type	Validation	Category	Value Lists	Actions
Person ID			Identity		
Forename	Text: Single Line	Compulsory, One of a set is valid, Maximum Length	Identity		
Questionnaire Answer Link	Read Only	Maximum Length	External Links		
Surname	Text: Single Line	Compulsory, One of a set is valid, Maximum Length	Identity		
Date Of Birth	Date Selection		Identity		
Nickname	Text: Single Line	One of a set is valid, Maximum Length	Identity		
Age	Text: Single Line		Identity		
Current Status	Dropdown: Single Selection or Text		Identity	CurrentStatus	
Date Joined	Date Selection	Valid Date	Membership Type		

Points out the Order Fields Button

ADMIN > AGENCY FIELDS > ORDER

Order Fields: Participant

Identity

- Forename
- Surname
- Date Of Birth
- Nickname
- Age
- Current Status

External Links

- Questionnaire Answer Link

Order Fields Page

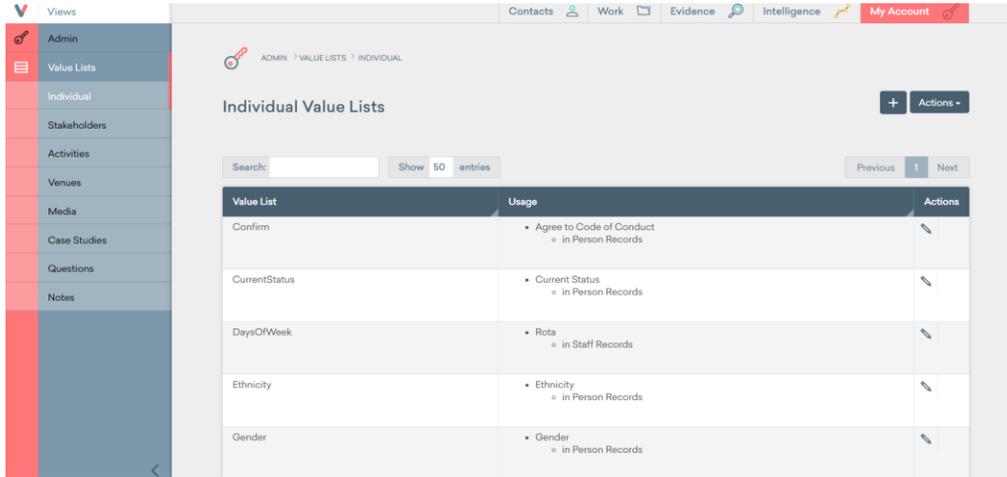
The fields are organized by categories, and you chose what category the field belongs to when you created it. The big sections in the order fields page are the categories, the smaller rows are the fields. You can drag them around to reorganize in what order the fields will show up when creating a new item.

This is how you create new fields. And as said before you can create new fields for several different types of units. Not only contacts, but venues and activities too!

Value Lists

When you set a field to be a drop down menu or a check box, you need to select a value list that contains your desired answers. With the value list tool, you can create the value groups for those options.

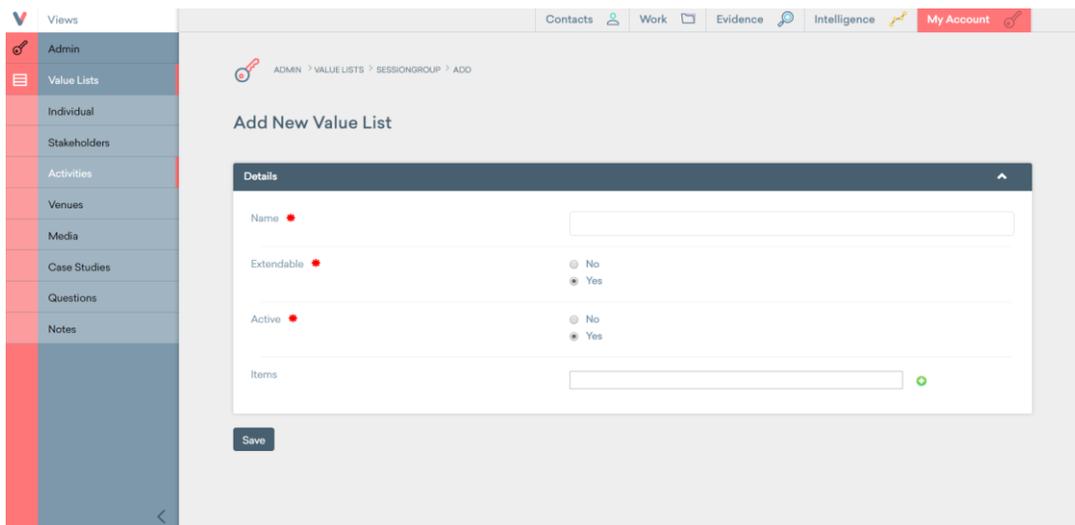
You first go to the Value list page by clicking on the **Value Lists Button**.



Value Lists Page

In the value lists page you will see several already added value lists. Several of them were created specifically for the SYDRC needs, for example ethnicity covers all of the ethnicities that are currently present in the SYDRC participants.

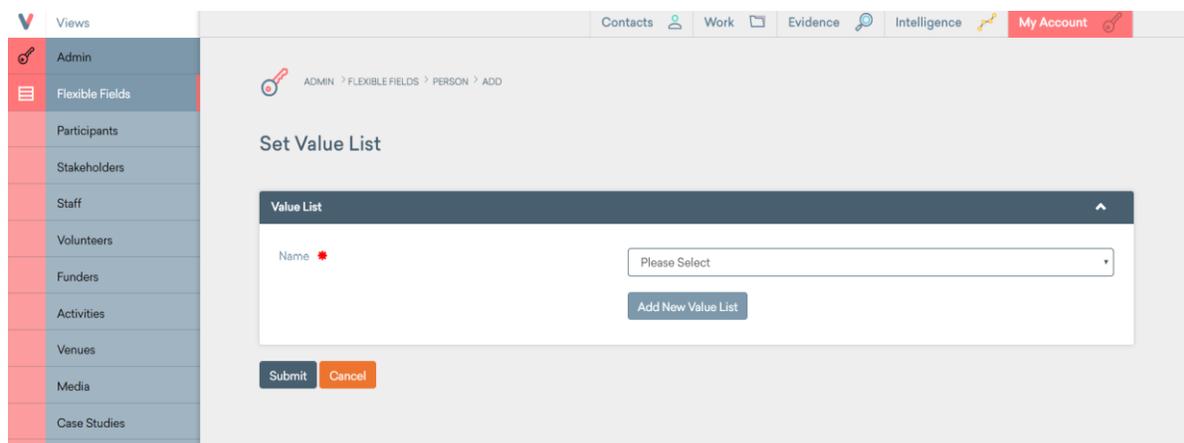
If you need to create a new value list you simply click the **Add Button** , and if you need to edit an already existent value list, you click the **Edit Button** . Editing a value list will allow you to change its name, edit the values, add values, and delete values.



Value Lists Editing Page

In the value lists editing page you will be able to name the value list, make it extendable, make it active and add the items for the list. Making a value list extendable means that you may add values to the list if it's missing any when you are filling it out; it is like an "Other:" field on the form. Let's say you are filling out the ethnicity dropdown in participants, and you don't have the desired ethnicity on the options, if the value list is extendable, you will be able to add the missing ethnicity. Also making a value list active means that it is usable by the fields.

To set a value list to a field you first need to create or edit an existing field. Then the input type has to be set to either be a dropdown menu or checkbox. Further on they will ask you to choose what value list you want to use for the new field. That is where you can choose your desired value list. In this menu you can also create a new value list, which is a nice trick, that way you do not have to worry about creating lists before making a field. You cannot edit the lists from here, but you may add items if the list is extendable.



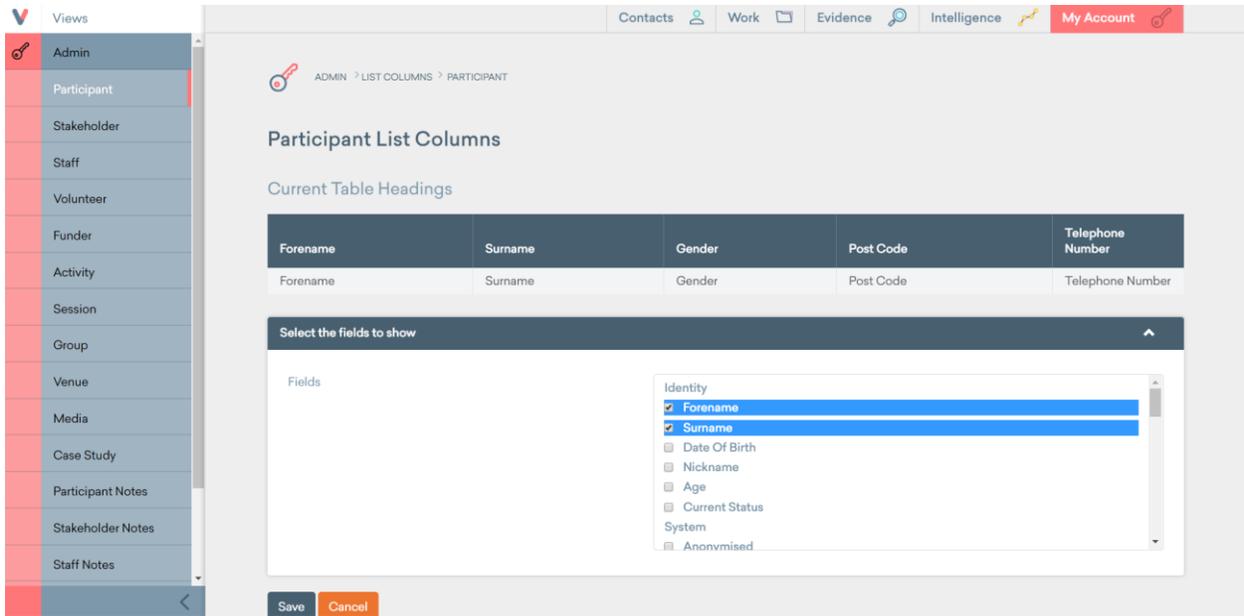
Setting a Value List on the Fields Page

Lastly, as you can see from the value lists page, you can create lists for different sections of Views. You need to create specific lists for each section. The lists in participants for example are not accessible by fields in activities.

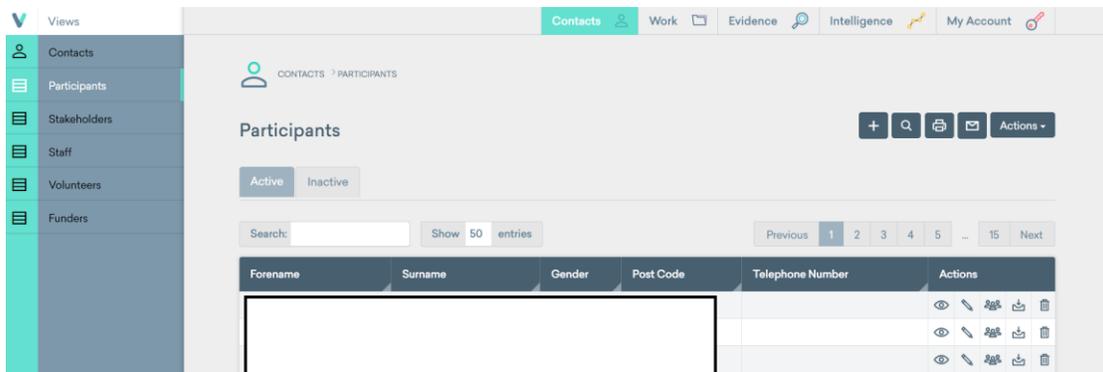
List Columns

List columns is also a very simple tool, it is meant to edit what information is displayed for each individual unit in the regular dashboards. For example you may change what columns of information are displayed for each activity in the regular activity dashboard.

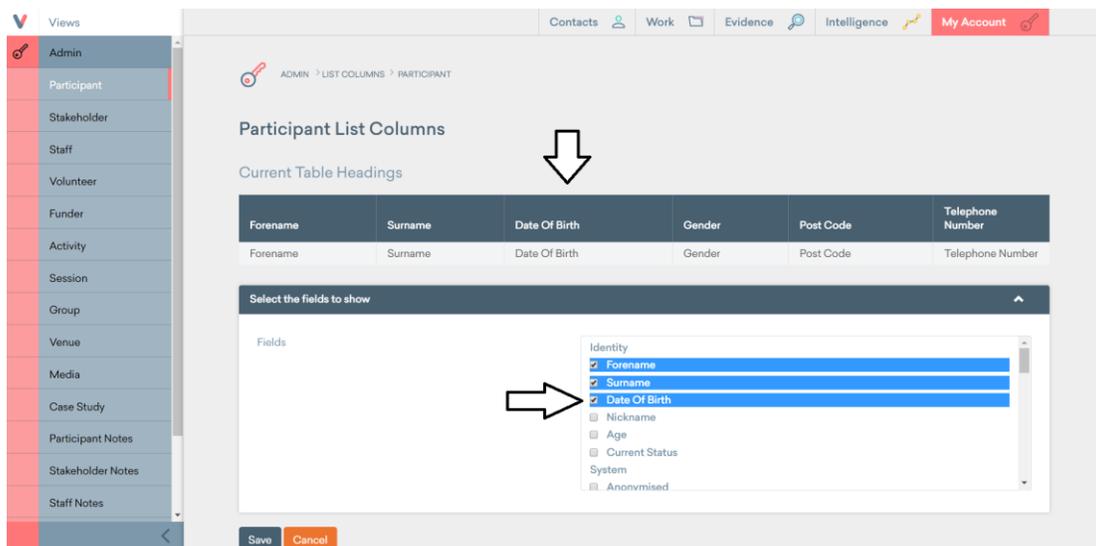
You access the list columns page from the regular admin left sidebar. Once in the list columns page, on the left side you will see all of the items you can edit the columns for. On the main page you can see all of the fields that exist for the unit. You simply click on the fields that you want to be displayed as columns in the dashboards. Make sure you save so that the edits work.



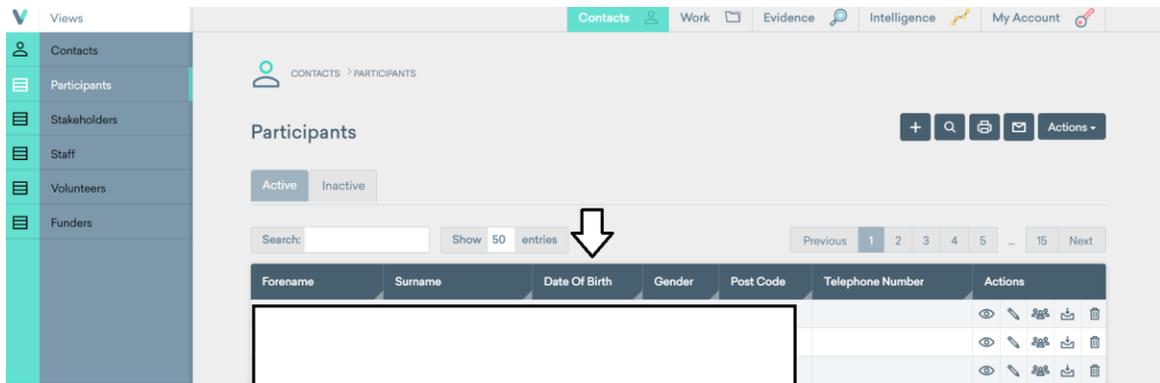
List Columns Page, with Current Default Settings



Default List Columns for Participants



New List Columns with "Date of Birth" Added

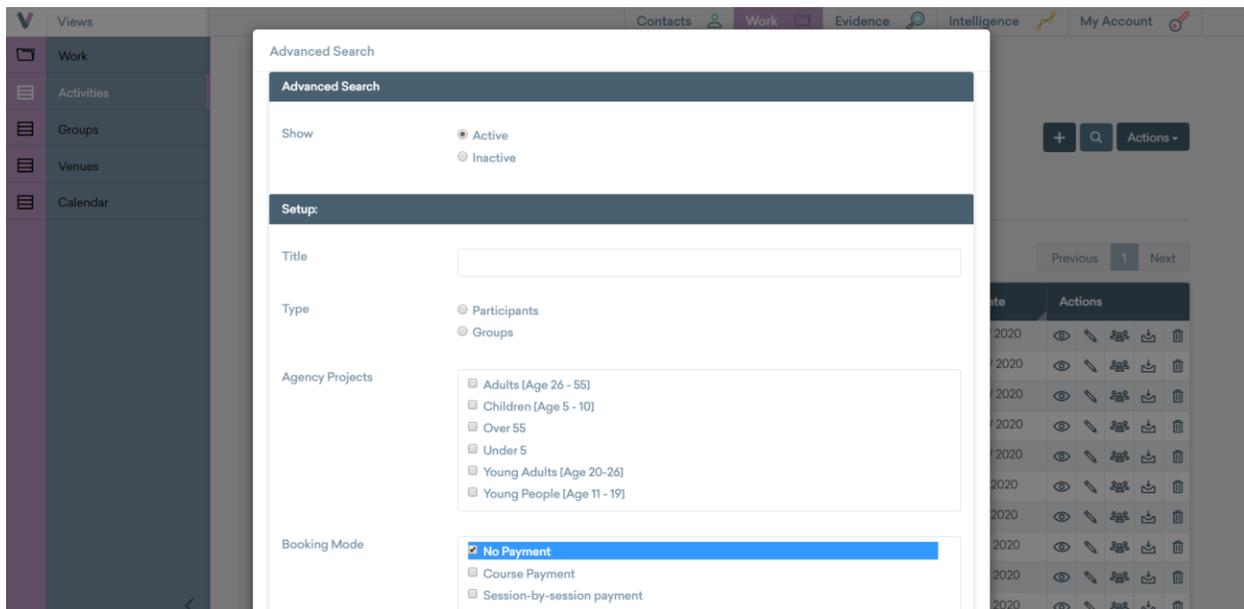


Updated List Columns for Participants

In the photos Above you will be able to see the standard procedure of editing a list column. In this case we added the “Date of Birth” column to the participants columns.

Search Fields

Another quick to learn tool is search fields, this one is meant to help the user search and filter through information to find specific individuals. If you go to any of the contacts subsections or go to the activities page and click on the search button you will see there are several filters you are able to choose from to find what item you are looking for.

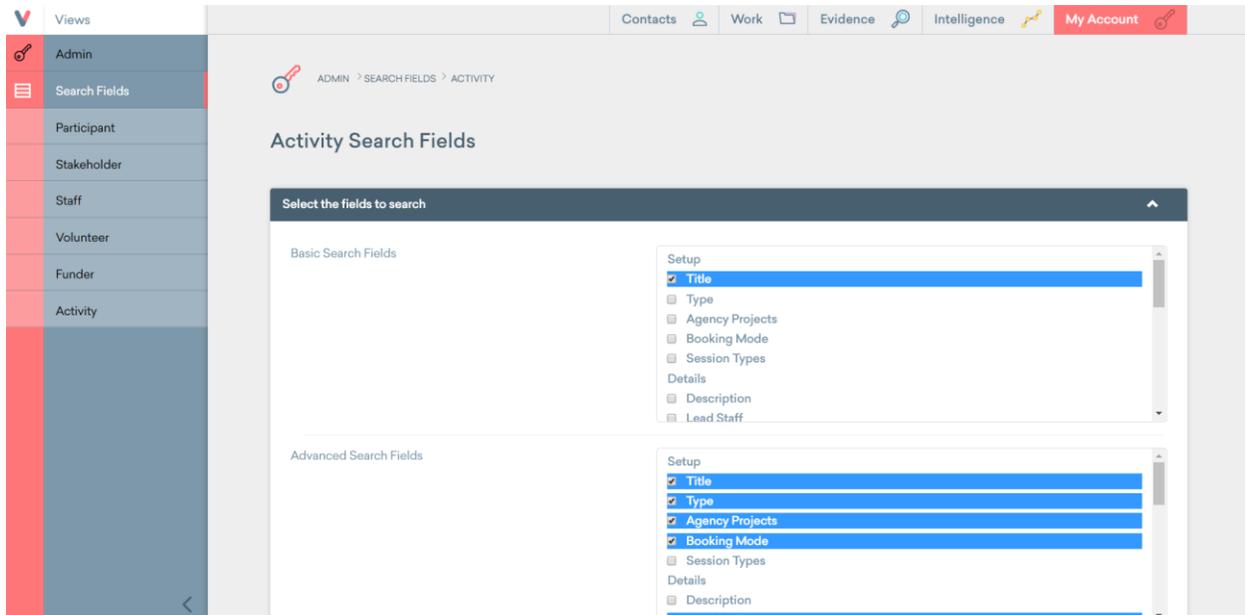


Shows the Activities Search Page

With search fields you are able to add filters to this search menu in order to run through whatever information you want.

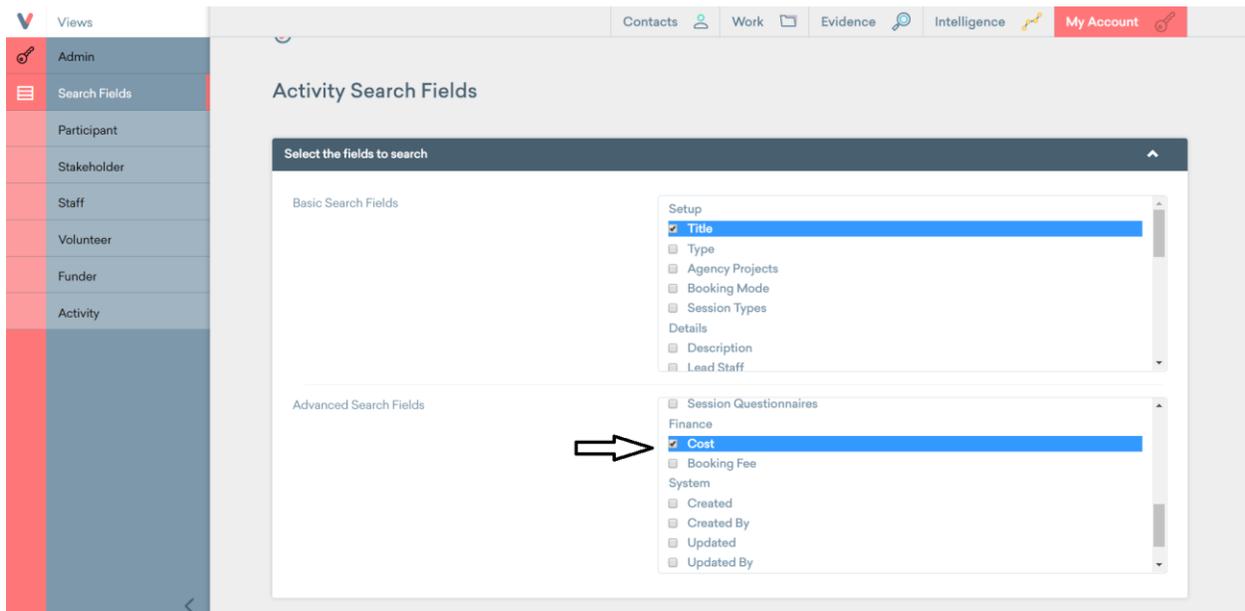
First you simply access the search fields page through the admin task bar. Once there you will see on the left all of the subsections you may edit the search fields for. On the main page you can

see all the fields you can set as filters for the search. You simply click on the ones you would like to add to your search tool. Again, make sure you save your changes in order for them to appear.

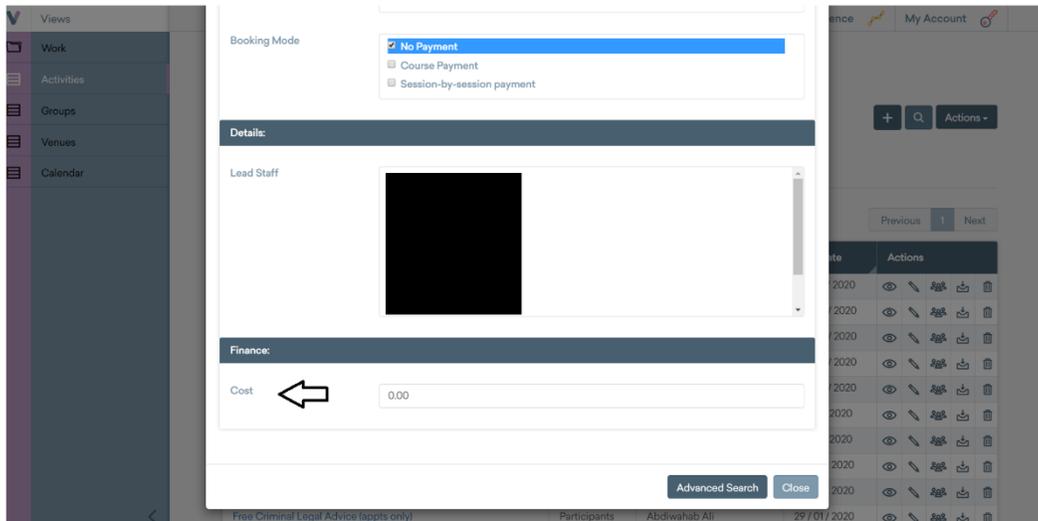


Search Fields Main Page

In activities, for example, we would like to add a cost filter for the activity search, we simply click it, save the page and then we will be able to see it back at the search tool in the activity's subsection.



Adding the Cost Filter for Activity Search

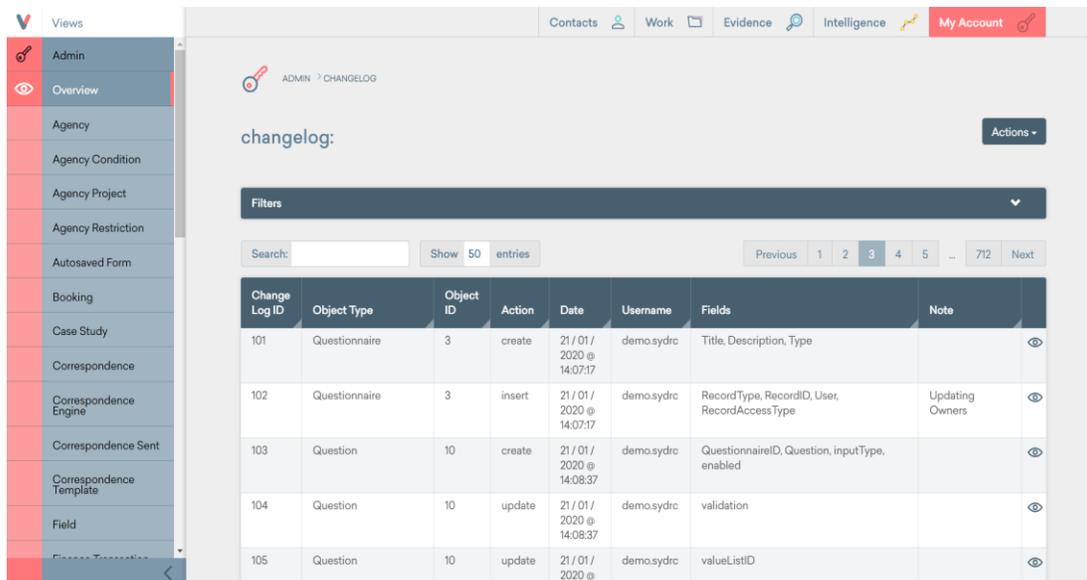


Cost Added to the Activities Search

Change Log

The change log is a tool meant to keep track of the changes that have been done to the system. Views keeps track of every change made to the system. When you access the change log page, through the admin task bar, you will see on the left side of the table all the different types of changes that can happen in Views. The overview shows you the most recent changes done to Views. You can click on any specific type of changes, like participants for example, and see all the changes done of that type.

The columns give you the basic information of the change done. The most important to keep track of are object type, action, username and fields.



Change Log Main Page

Object type tell you what item the change belongs to. The action tells you what type of edit was done. Username tells you the person that made the change. And fields tell you exactly what were the fields that were edited. The note column will sometimes have important commentary of the change done.

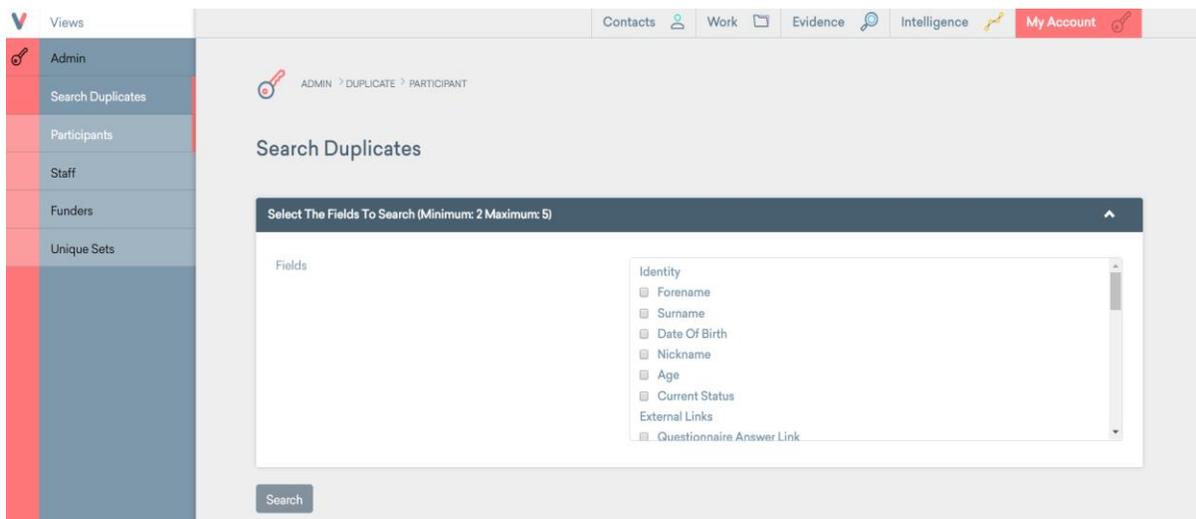
The change log has no real editing capabilities, but it is a good way to keep track of what changes have happened. You may also track down mistakes through this too, or understand changes done to the system.

Lastly, if you click the **View Button**  you will be redirected to all the changes done to the object type by the user that appears on the row. This will help you go through information quicker if you are looking for a specific event.

Search Duplicates

The search duplicates tool is the best tool to keep data ordered. With this tool you may go through your entire list of contacts and find if any of your contacts is repeated.

In the main page you will see a checkbox menu with all the available fields you can filter through. You need to choose a minimum of two fields and a maximum of five in order to search through the contacts. Once you have chosen the fields you would like to filter with, you simply click search. Then you will see all the contacts that have matching fields of all the fields you chose for the search.



Search Duplicates Field

Objectives and Outcomes

The objectives and outcomes features, as of the writing of this guide, seem to be under construction inside the Views system. Currently, there are no analytic tools for Objectives. Participants can make progress or achieve Outcomes, but cannot directly achieve any objective.

Inside the Administration Page Objectives and Outcomes, you can create new Objectives and Outcomes, and link different Outcomes to corresponding objectives.

Creating an Objective

1. Choose the “Agency Objectives” option from the toolbar and click the **Add Button** .
2. Choose a title and associate it with National Objective if you need to. You don’t have to select any of the options on the list. When done, scroll to the bottom and click the **Submit Button**.

Creating and Linking Outcomes

1. Choose the “Agency Outcomes” option from the toolbar and click the **Add Button** .
2. Choose a title and associate it with Agency Objectives if you need to. You don’t have to select any of the options on the list. When done, scroll to the bottom and click the **Submit Button**.

Additional Admin Tools

For information on the rest of the tools given to administrative users, visit the Views support documentation for [Administration](#).

N1C Centre Room Scheduler



User Instruction Manual



WPI

Created by the WPI IQP Group Consisting of;
Gabriel Aponte, Andrew Bonaventura,
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Last Updated: March 6th, 2020

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Getting Started with the Room Scheduler

For 'Quick Start' instructions on how to use the application, press the help button **Help** in the upper righthand corner of the application.

Understanding the Display

The main display of the application is made up of three parts:

1. An Upper Toolbar with **Action Buttons** to navigate the calendar,
2. A **Side Menu** for viewing event details and requesting/booking a room, and
3. A **Central Calendar** that populates with sessions from Views and any booked room sessions

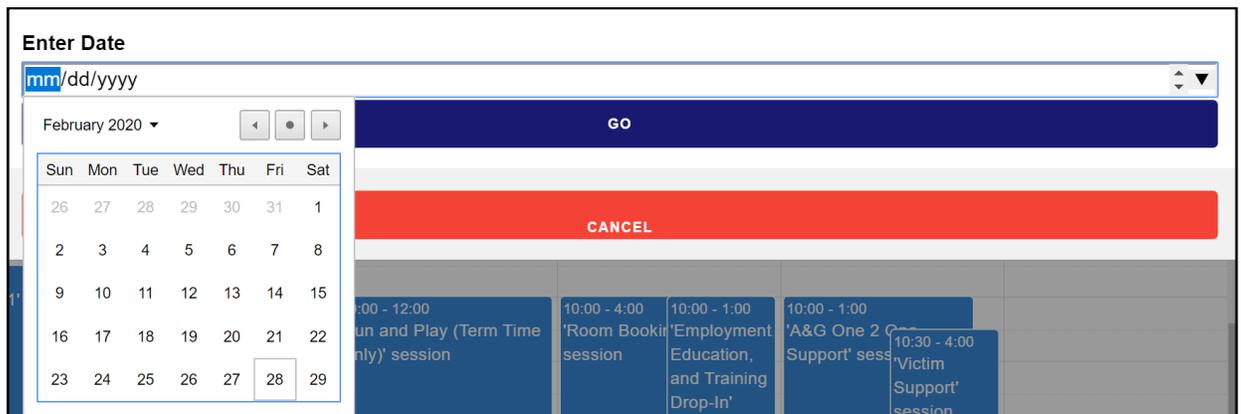
The screenshot displays the Room Scheduler application interface for the week of March 1-7, 2020. The interface includes a top toolbar with navigation buttons (< Previous Week, today, Next Week >), a date range (Mar 1 - 7, 2020), and utility buttons (Admin Log In, Help, Select Date). The main calendar area shows a grid of days (Sun 3/1 to Sat 3/7) and time slots (5am to 10pm). Various sessions are booked, such as 'Line Dancing 1' session, 'Tai Chi' session, 'Manual activity' session, 'Youth Safety Project', 'Mama', 'Advice and Guidance Drop-in', 'Fun and Play (Term Time Only) session', 'Room Booking', 'Employment, Education, and Training Drop-In' session, 'A&G One 2 On session', 'Victim Support' session, 'Manual activity', 'Free Criminal Legal Advice (appls only)', 'Youth Club and Mentoring' session, 'Girls Only Youth session', 'Homework Support Club' session, 'Code Club', 'Parent Empowerment', and 'Kids Yoga'. A right-hand sidebar provides details for the selected event, including Start Date, Start Time, End Time, Room (Conference Room), Booker Name, Organization Name, Phone Number, and Email. A 'REQUEST ROOM' button is visible at the bottom of the sidebar.

Action Buttons

This application has a set of action buttons located in the upper toolbar. These will be used to navigate the calendar and gain access to administrative tools.



- The **Previous Week** button will load the calendar with the last week's sessions and room bookings.
- The **Next Week** button will load the calendar with the next week's sessions and room bookings.
- The **Today** button will load sessions and room bookings from the current week that has today's date.
- Use the **Admin Login** button to book rooms as an administrator. To login, use valid credentials from a Views account. This button will change to log out after successfully logging in.
- The **Select Date** button will bring up a window allowing faster navigation to a specific date. On the window that appears, hit the down arrow on the right side of the text field for a calendar view.



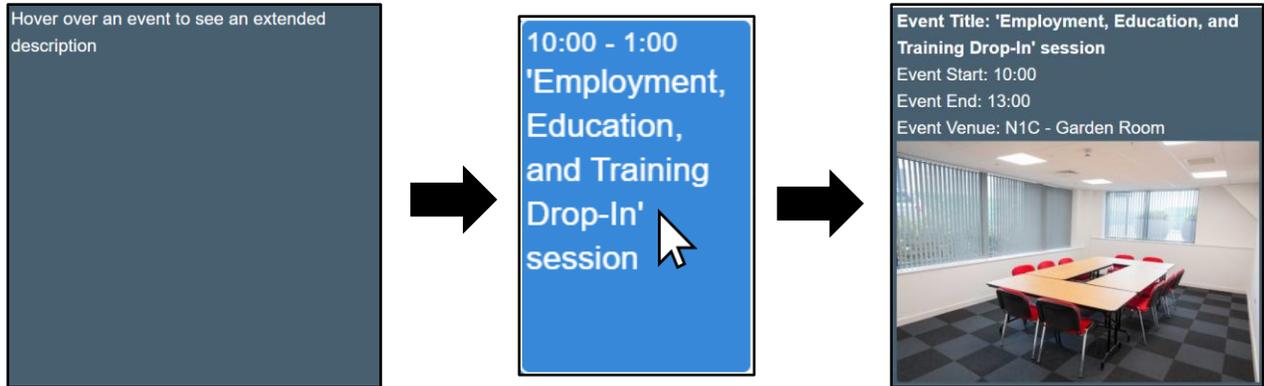
After choosing the date you would like, press the **Go** button and the calendar will load sessions and room bookings from the week that has the imputed date.

Side Menu

The right side menu has three main functionalities:

1. Display details about sessions and room bookings
2. Allows public user to fill out a form to request a room, and
3. Allows administrative users to create room booking sessions and update the calendar system.

Displaying **Detailed Information** on a session is located on the upper half of the side menu. To use this functionality, hover the mouse cursor over any session on the calendar. This will populate that upper half with details such as the name of the session, start and end time and a picture of the venue that the session is located in.



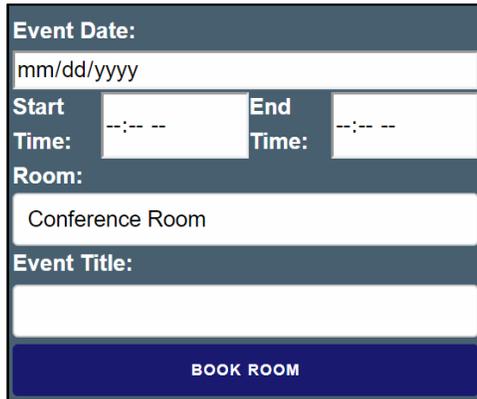
To **Request a Room**, a user must fill in the form located in the bottom half of the side menu. They must fill in the required fields correctly in order for a request to be made, which are:

- Must input a booker name
- Must input either a valid email *or* phone number for a system administrator to contact
- Must Input a Start Time and an End Time
 - The End Time must be after the Start Time
- Must Input a Start Date
 - The Start Date must be in the future

Start Date:	
<input type="text" value="mm/dd/yyyy"/>	
Start Time:	End Time:
<input type="text" value="--:--"/>	<input type="text" value="--:--"/>
Room:	
<input type="text" value="Conference Room"/>	
Booker Name:	
<input type="text"/>	
Organization Name:	
<input type="text"/>	
Phone Number:	
<input type="text" value="Ex: (44)555-555-5555"/>	
Email:	
<input type="text" value="Ex: coolguyorgal@coolemail.com"/>	
<input type="text" value="Brief description of your purposes for requesting this room..."/>	
REQUEST ROOM	

Once these fields are properly filled in, the user then presses the 'Request Room' button and an email with all the field information is sent to the NIC Bookings gmail account. If any field is missing or improperly filled out, the user will be notified of the error and asked to try again.

To **Book a Room**, an admin user must log into the system with valid Views credentials. Once logged in, the form fields will change.



The image shows a web form for booking a room. It has a dark blue header and footer. The form fields are as follows:

- Event Date:** A text input field with the placeholder "mm/dd/yyyy".
- Start Time:** A time selection field with the placeholder "--:-- --".
- End Time:** A time selection field with the placeholder "--:-- --".
- Room:** A text input field with the value "Conference Room".
- Event Title:** A large empty text input field.
- BOOK ROOM:** A dark blue button with white text.

The administrator must fill out ALL of these fields and then press the **Book Room** button. The room booking will then appear on the calendar for the specified date and will also be added into the Views system calendar with Abdiwahab listed as the lead staff. These room bookings are allowed to be inputted for past dates if the administrative user so chooses.

Maintenance of the Application

This section will entail what to do if the website goes down. If this is the case, the website will probably give you a 404 or 500 error when you try to access it. When this happens, you will need to start at the Utilizing AWS section to fix it by recreating the environment that is running the website.

If the website is loading, but any of the functionalities detailed above in the ‘Getting Started With the Room Scheduler’ section are not working properly, there may be a more complicated problem. If this is the case then you would need someone who understands code, and specifically JavaScript, to go into the GitHub codebase to identify and fix the problem and then complete the same steps to recreate the environment detailed in the ‘Utilizing AWS’ section.

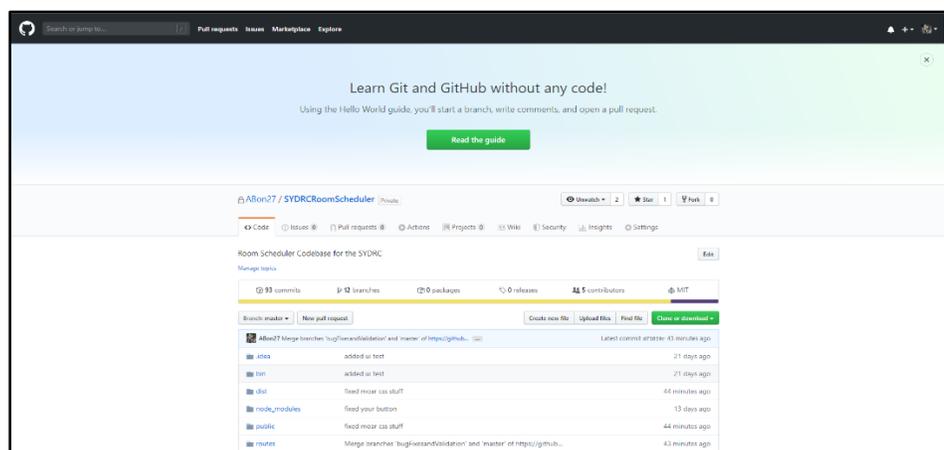
Utilizing AWS

The room scheduler is a web application that is hosted on Amazon Web Services (AWS). This means that it can be made available on the internet for anyone to see, provided they have the correct link. The set-up for this process is detailed below:

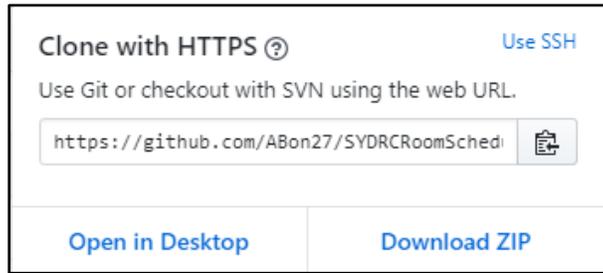
Creating a .zip of App Files

The first thing you are going to want to do is get the zip file for the application that you want to run, ie: the code for the room scheduler. This can be found on a GitHub page through this link: <https://github.com/SYDRCDdev/RoomScheduler>. Note you will need the correct GitHub credentials to get permission.

****EDIT:** There is now a pre-zipped file located here [SYDRCRoomScheduler-master.zip](#) This file can be downloaded instead of creating the zip file yourself. If you use this, please skip down to the ‘Uploading the App to AWS’ section. However, if you made modifications to the code base, you will need to make a new .zip, so follow the instructions listed in the rest of this section.



This should bring you to a page similar to the one above. From here you will want to click the green button that says **Clone or download** which will show the pop-up below.

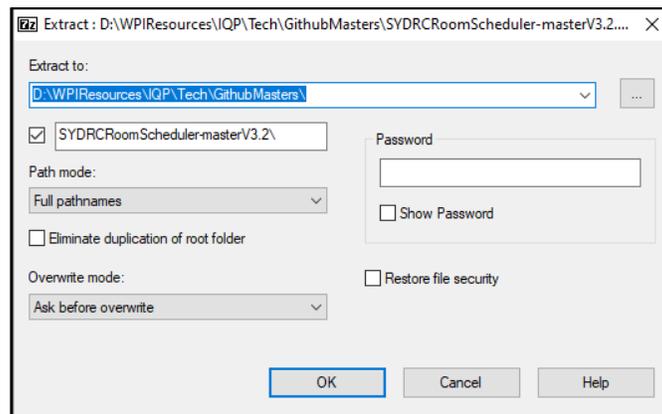


To get the .zip file, click **Download ZIP** and save the file it gives you to somewhere on your computer where you will know how to find it.

Now there is still one more step to get the .zip file formatted properly. You will need to download some kind of file managing program like 7zip or winRAR. In this manual we will show how to use 7zip. After you have installed 7zip, navigate to where you saved the .zip file using the file directory bar and folder-up arrow located in the top left of the screen.

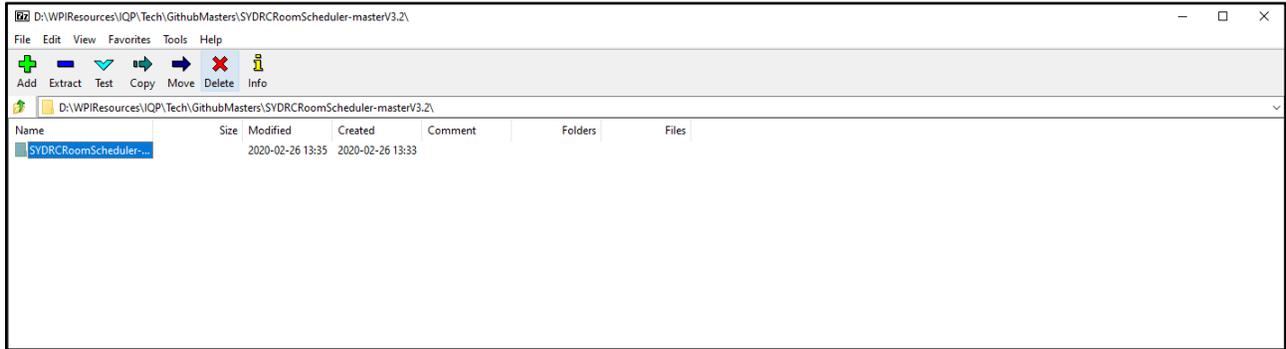


You should see a screen similar to the one above. From here you will want to select the zip file and then click the extract button in the top left. This will bring up the following dialog box.

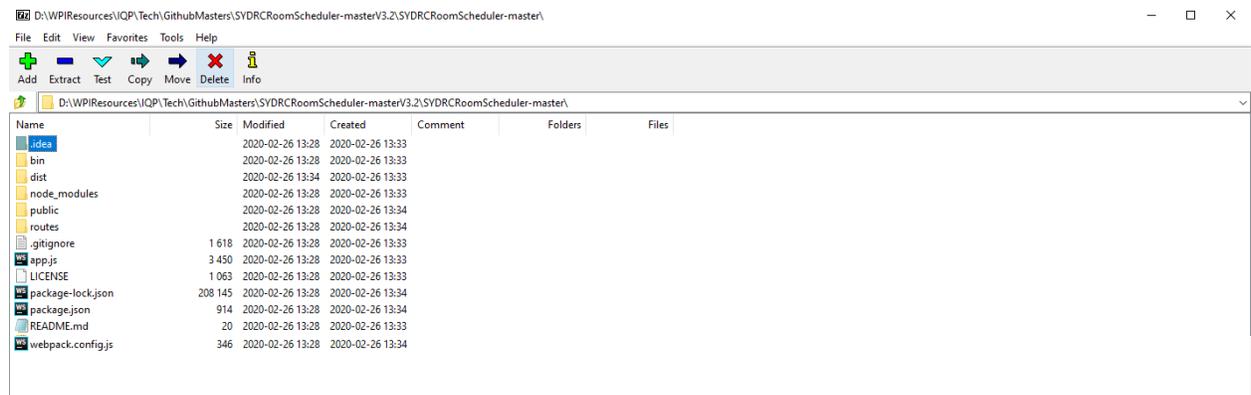


There should be no need to touch any of the extra options, so click the **OK** button. The program will then start a process of unloading all of the files in the .zip so it may take a minute or two.

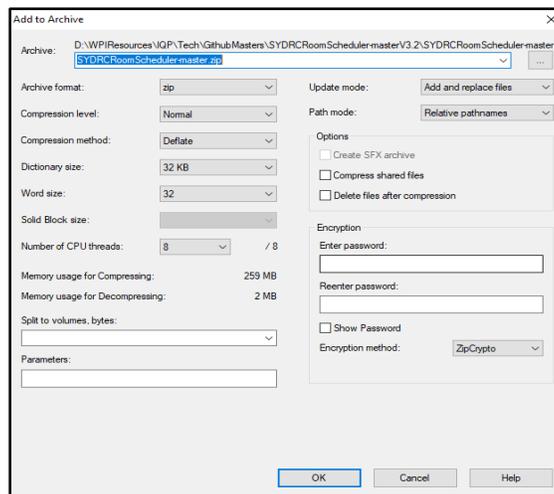
After it is done you should see a new folder appear with the same name as the .zip file. You will want to double click on this new folder to open it and bring you to the picture below.



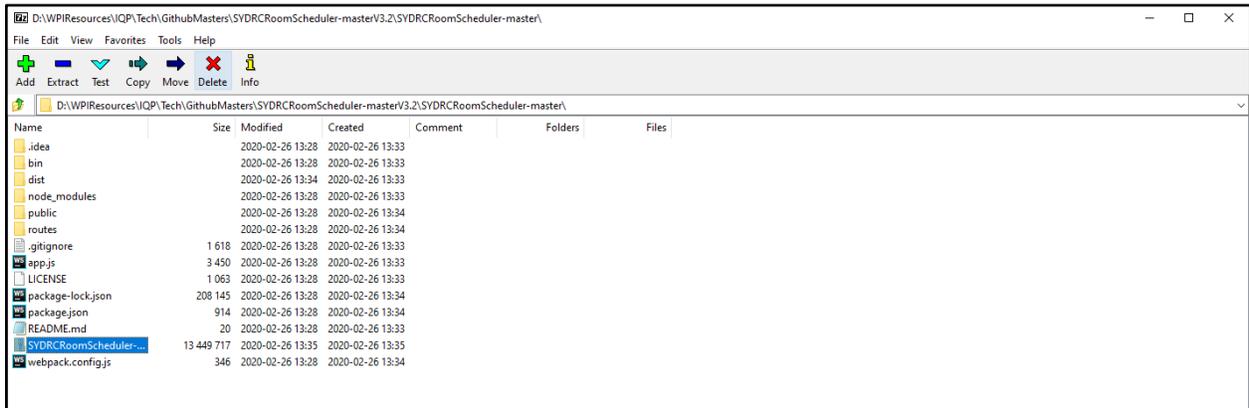
You then want to double click onto that folder one more time to get to the next picture.



From here is where you will create the new .zip folder to be uploaded to AWS. First highlight all of the files here so that they appear in blue like the first file in the picture above. This can be done by first single-clicking on the first file and then holding shift on your keyboard and clicking the bottommost file at the same time. After you have highlighted all the files, you will want to click the **Add** button in the top left which will bring up the following dialog box.



Once again there is no need to mess with any of the options here, so you can click the OK button. This will create the .zip file highlighted in blue in the next picture.

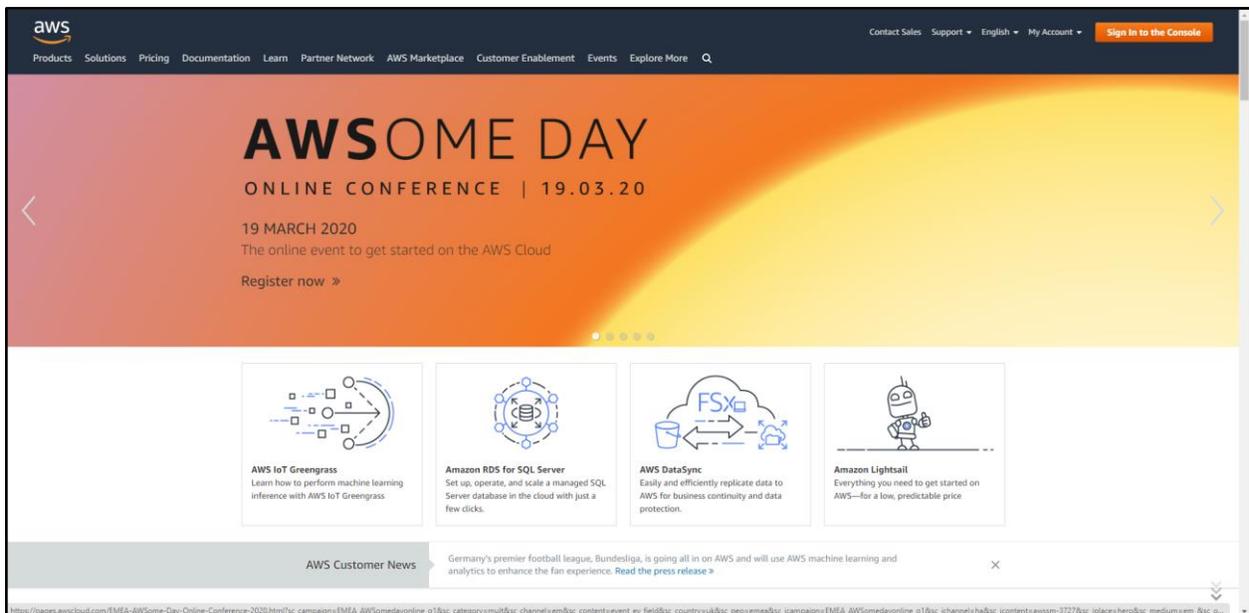


This the file you will want to upload to AWS so make sure that you know where it is.

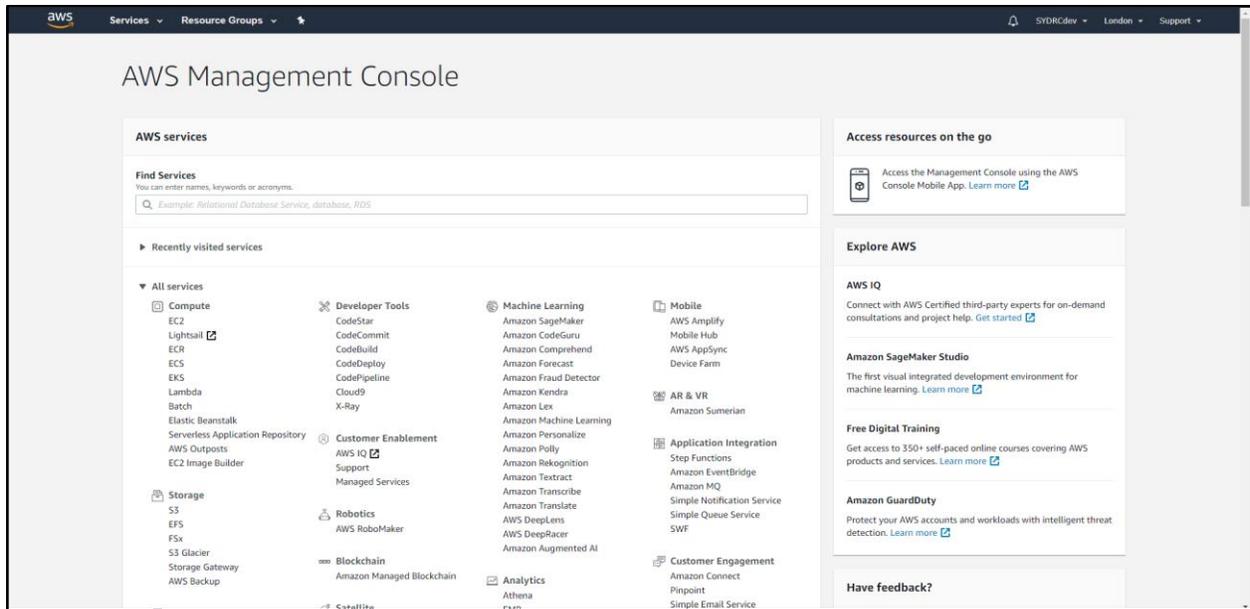
****NOTE:** Once you have this .zip file, you will not need to go through the above process again unless you make changes to the original code.

Uploading the App to AWS

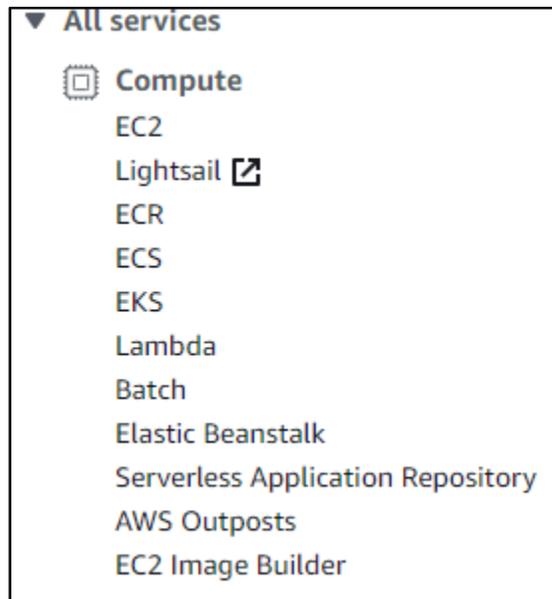
Now that you have the .zip file containing the application code you are able to connect it to AWS. You can start by going to this link to get to the AWS website: <https://aws.amazon.com/>



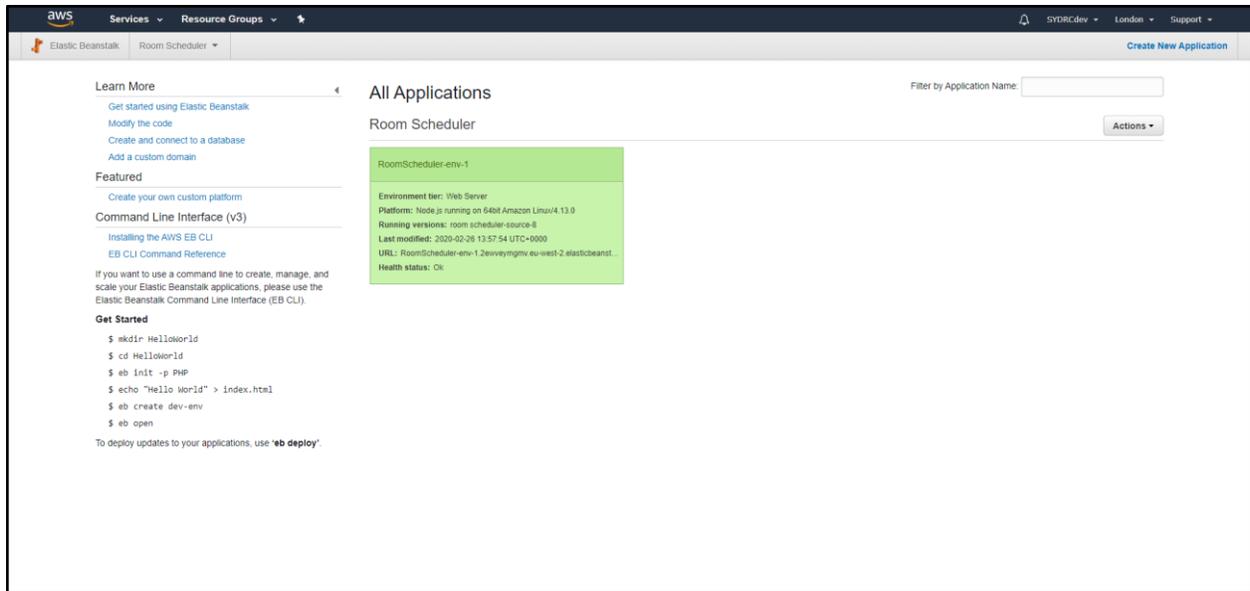
It should look like the picture above. From here you will want to click the **Sign in to the Console** button in the top right. This will take you to a login page where you should fill in the credentials provided to the SYDRC director. After logging into the console, you should see a page that looks like this.



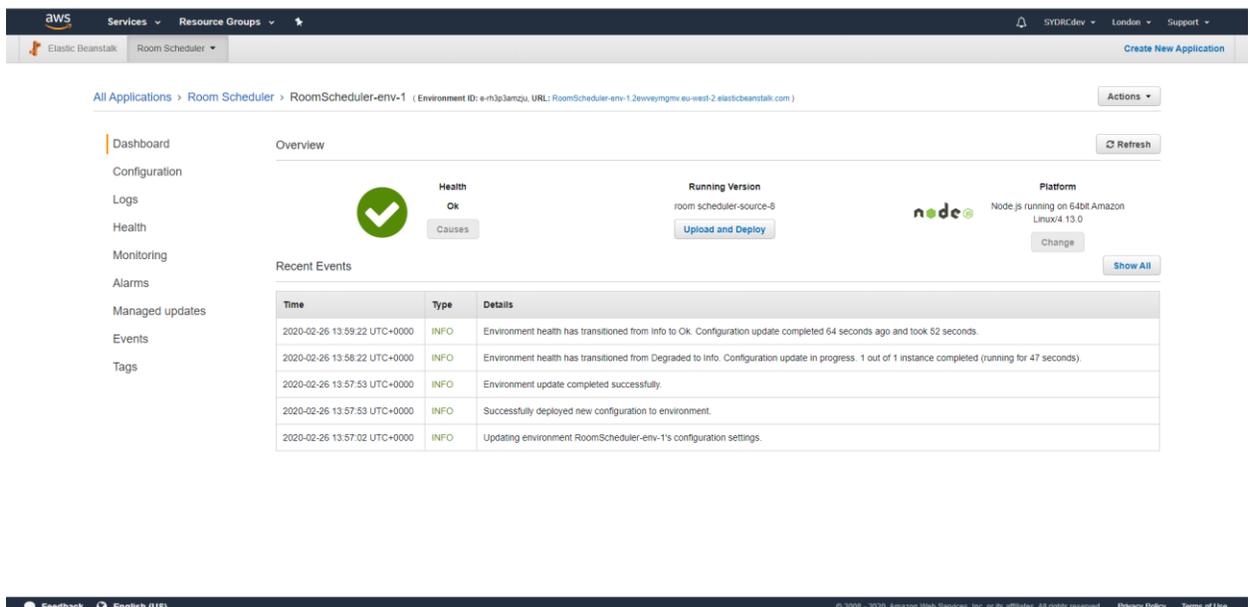
You only need to focus on the 'Compute' section under 'All services' and then click on **Elastic Beanstalk**.



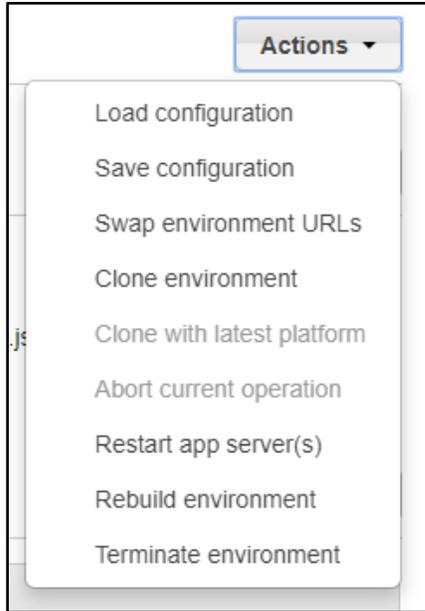
You should now see a page that looks like this:



Here you can see all environments that are currently set up. Environments are essentially instances of the application that are running on AWS's servers. If the box is white or grey that means the environment is not running or active. If the box is red that means that the health of the environment has degraded which means there was a serious error. If the box is green like it is in the picture above, that means that the environment is healthy and running. If you click on the box you will see a page that shows more information about the environment and options to configure it:



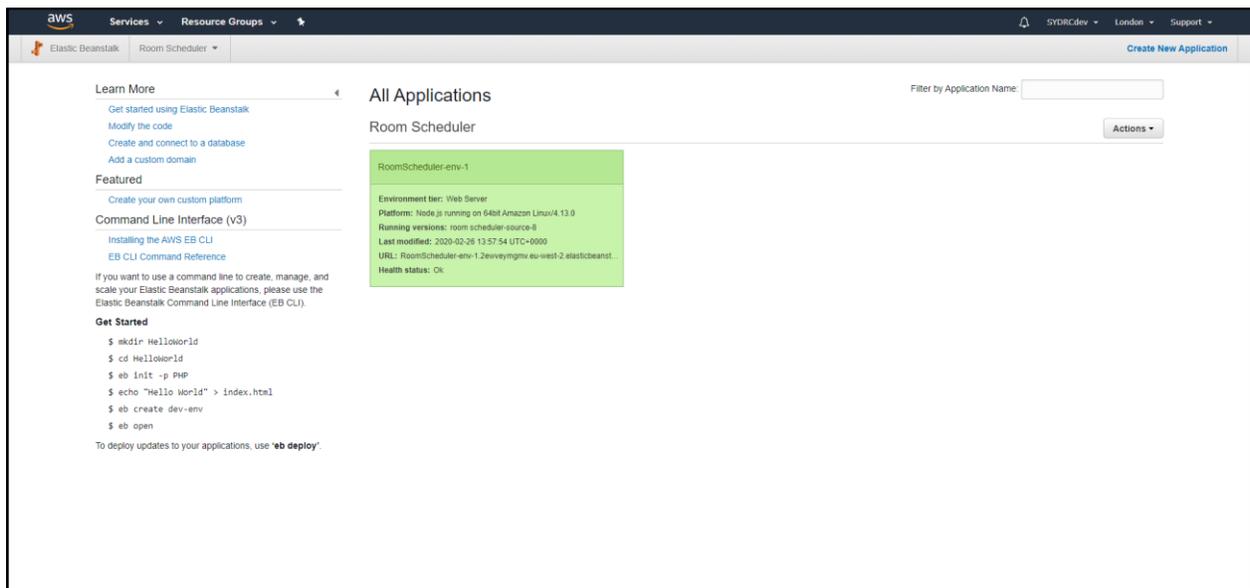
Located here is an Actions dropdown menu where you can terminate the environment if you no longer want it running or need to create a new one.



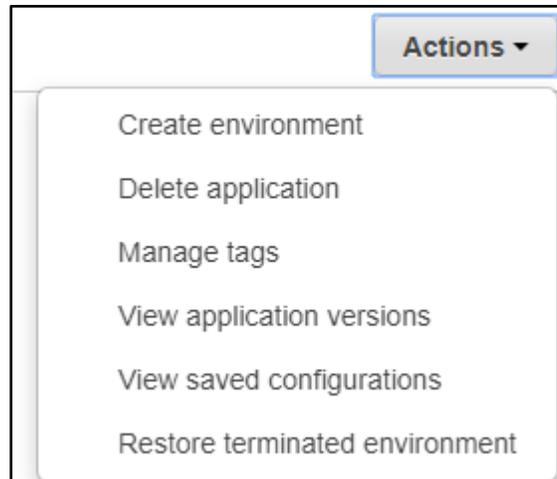
****NOTE:** You should only terminate if the room scheduler is no longer needed or you need to make a new environment due to making changes to the code, the website crashing and no longer loading properly or any other major issues.

In the case you do need to recreate the environment first terminate the old environment(s) because you should not have more than three environments running at the same time.

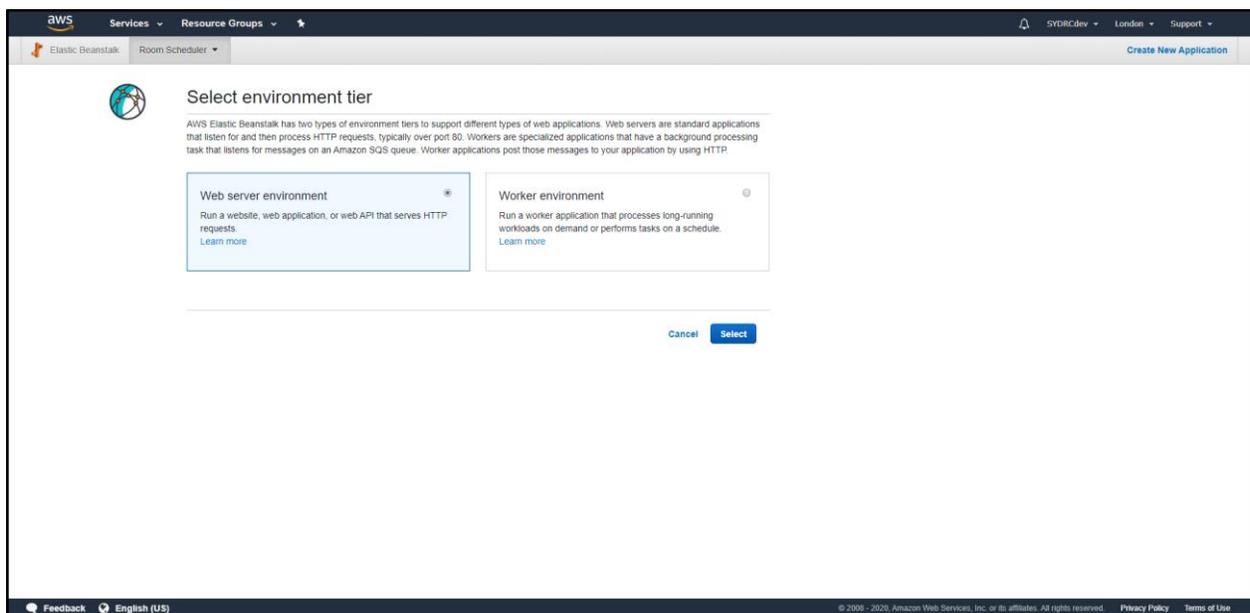
To start the recreation process, start by going back to this page:



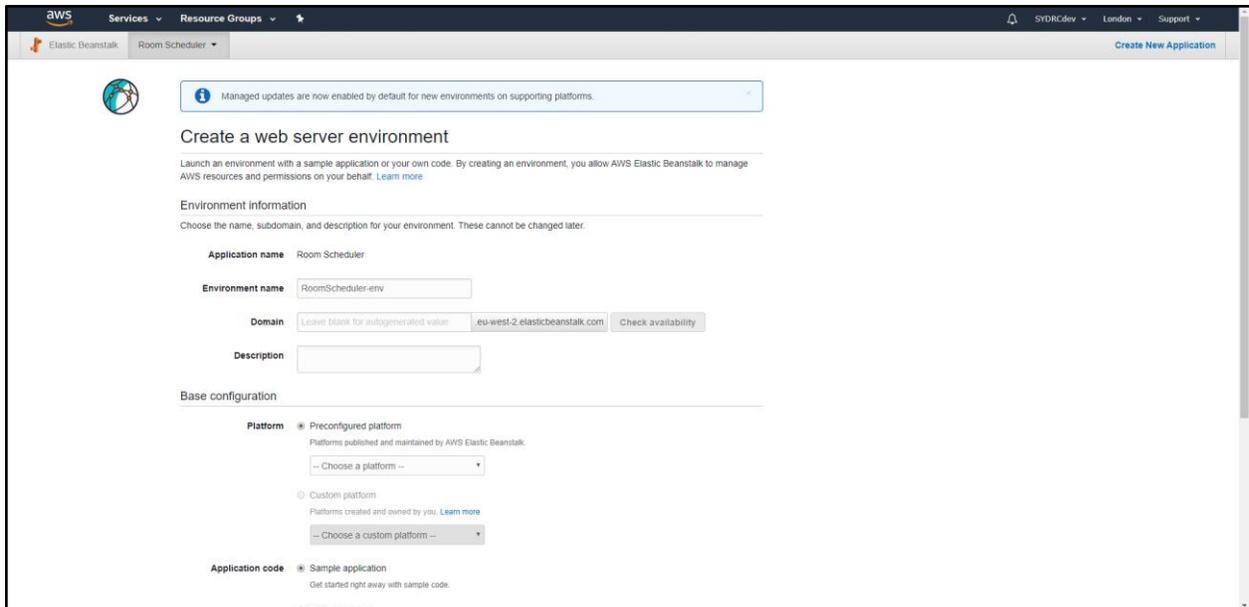
From here click on **Actions** in the top right and then click **Create environment**.



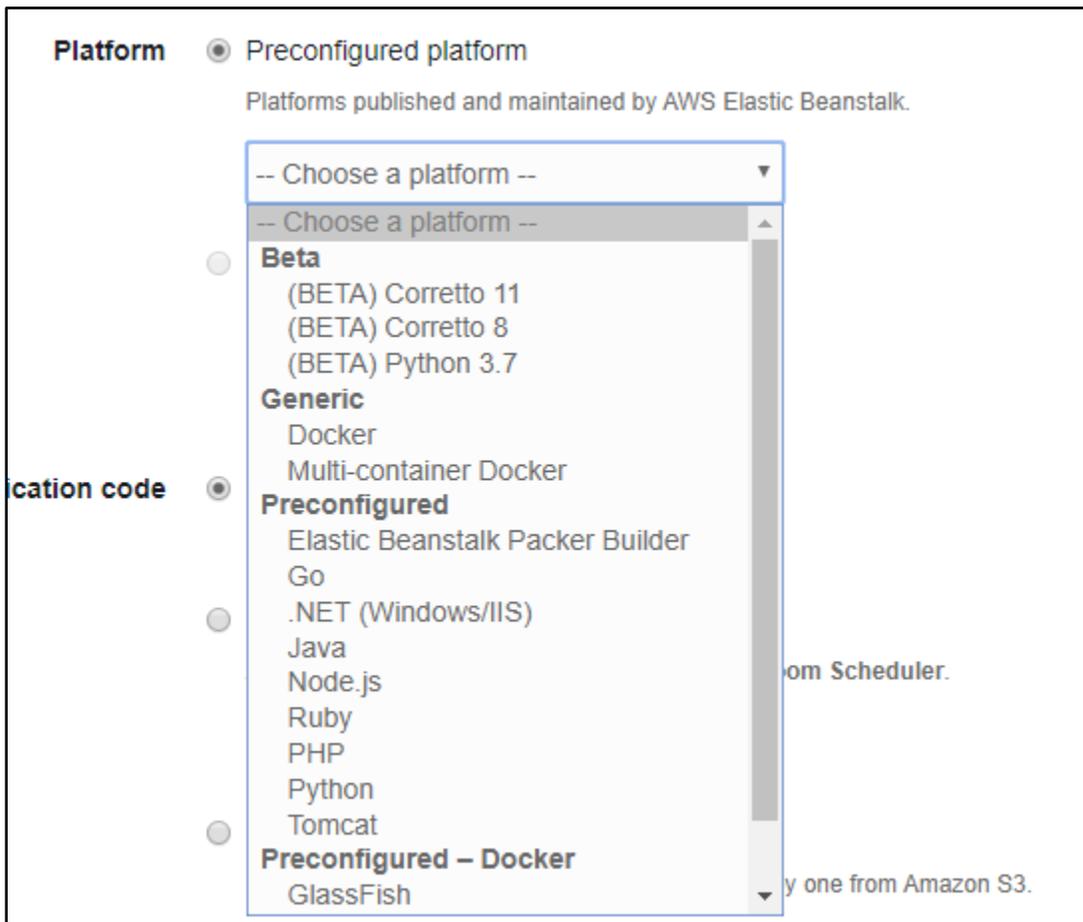
****NOTE:** You can also restore a terminated environment from this menu if you decide you actually need it.



After clicking 'create environment' you should see a page like this. Make sure **Web Server Environment** is selected and then click the blue **Select** button.

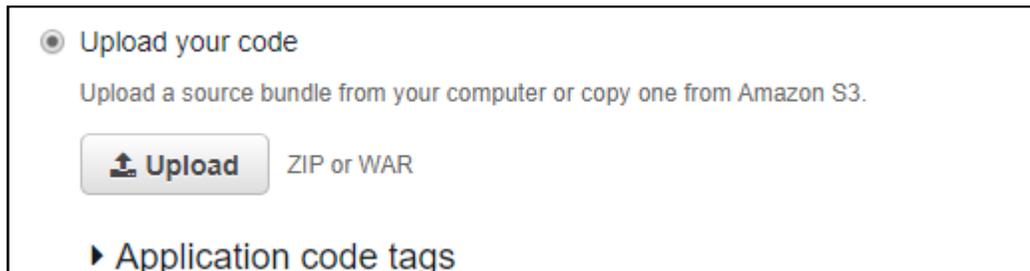


You should then see a page like this. You will not need to mess with most of the settings on this page but there are a few things you need to set. First, start off by moving down the page to the platform heading.



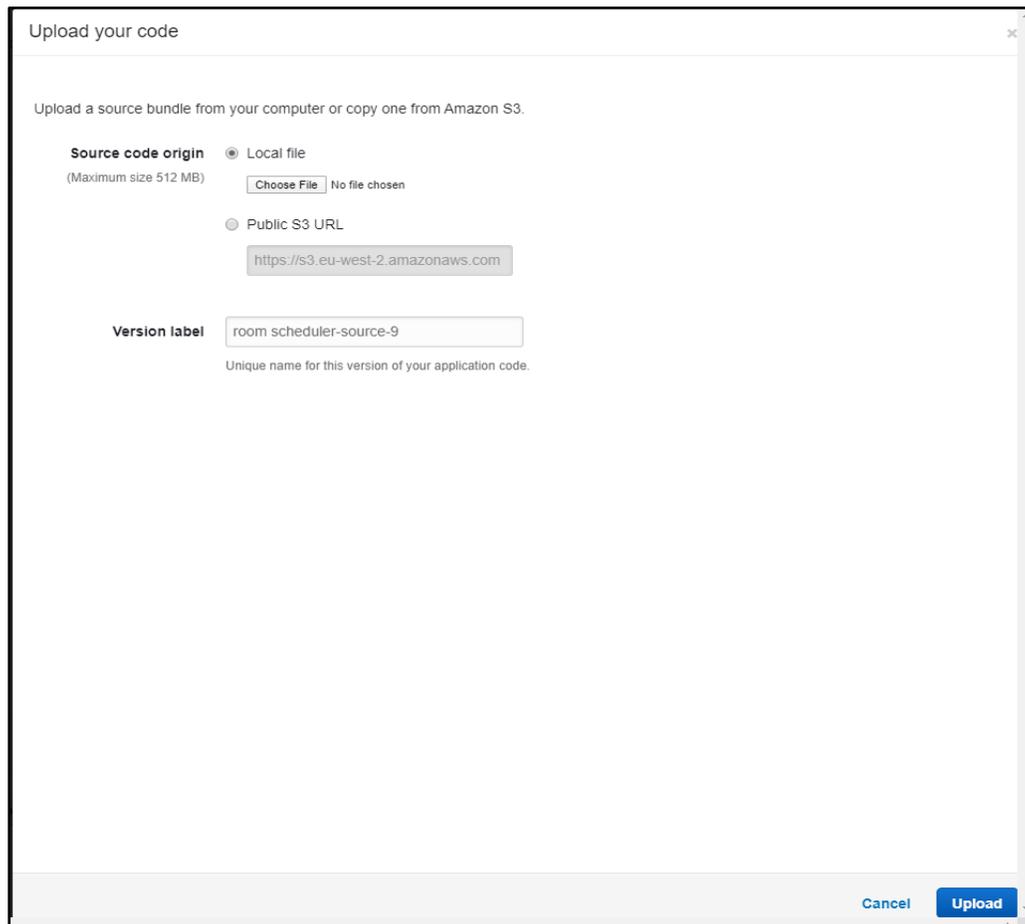
Make sure the **Preconfigured platform** radio button is selected and then from the associated dropdown select **Node.js**.

Next you need to upload the application code. This is the .zip file that we created earlier from 7zip. To upload it navigate down the page to the Application Code section and select the **Upload Your Code** radio button.



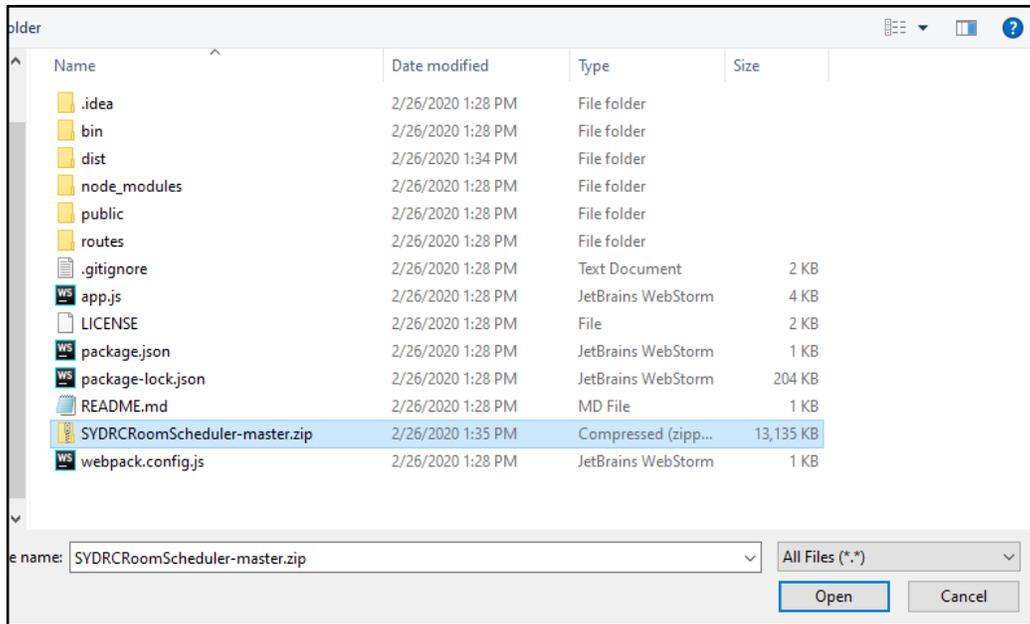
The screenshot shows a section titled "Upload your code" with a radio button selected. Below the title is the instruction "Upload a source bundle from your computer or copy one from Amazon S3." There is a button labeled "Upload" with an upward arrow icon and the text "ZIP or WAR" next to it. At the bottom of the section is a link "Application code tags" with a right-pointing arrow.

Now, click the **Upload** button to see the next page.



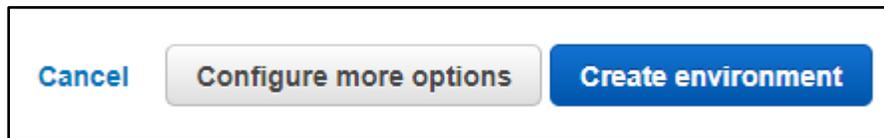
The screenshot shows a dialog box titled "Upload your code" with a close button in the top right corner. The main text says "Upload a source bundle from your computer or copy one from Amazon S3." Under "Source code origin", there are two radio buttons: "Local file" (selected) and "Public S3 URL". The "Local file" option has a "Choose File" button and the text "No file chosen". The "Public S3 URL" option has a text input field containing "https://s3.eu-west-2.amazonaws.com". Below this is a "Version label" text input field containing "room scheduler-source-9" and the text "Unique name for this version of your application code." At the bottom right, there are "Cancel" and "Upload" buttons.

Select **Local File** as the source code origin and then click the **Choose File** button that shows up. Now navigate to where you saved the .zip created earlier.

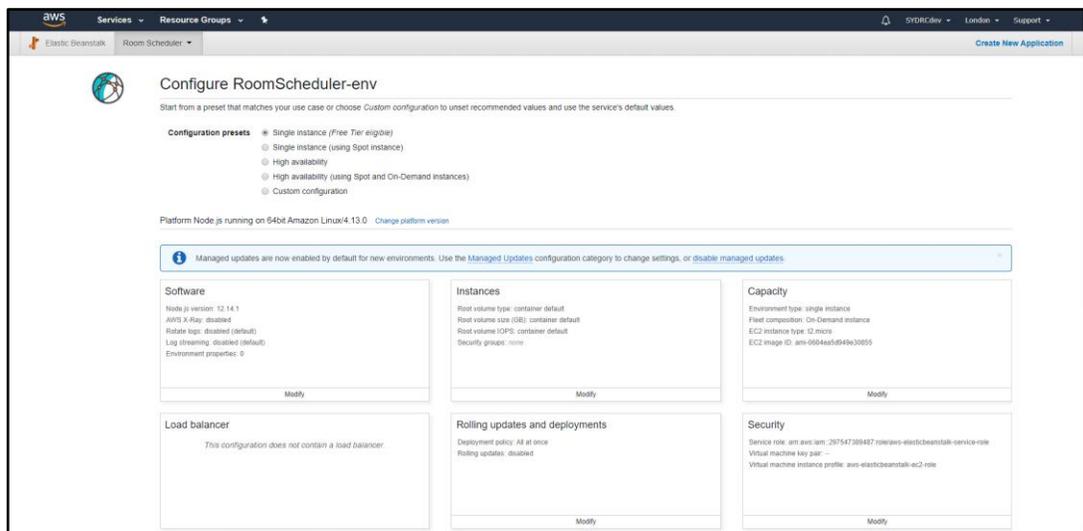


Once the .zip is selected, click **Open** to get back to the previous page and then click the blue **Upload** button in the bottom right.

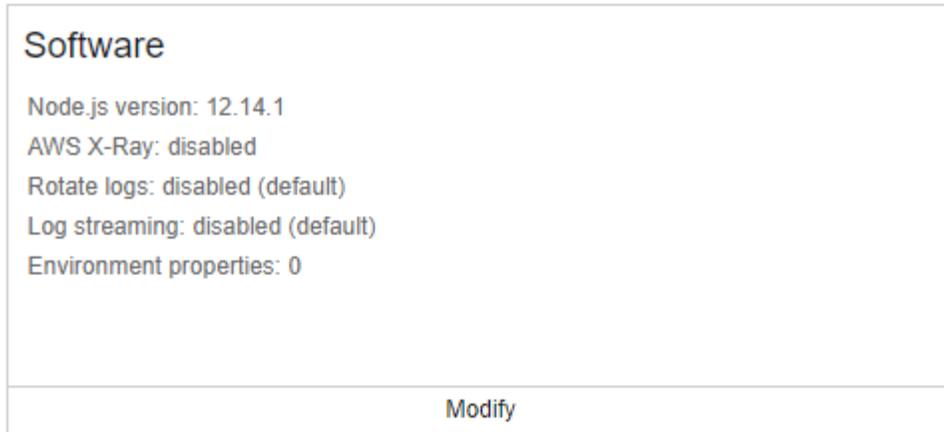
You should now be back on the environment set up page. The last step is to click the **Configure more options** button.



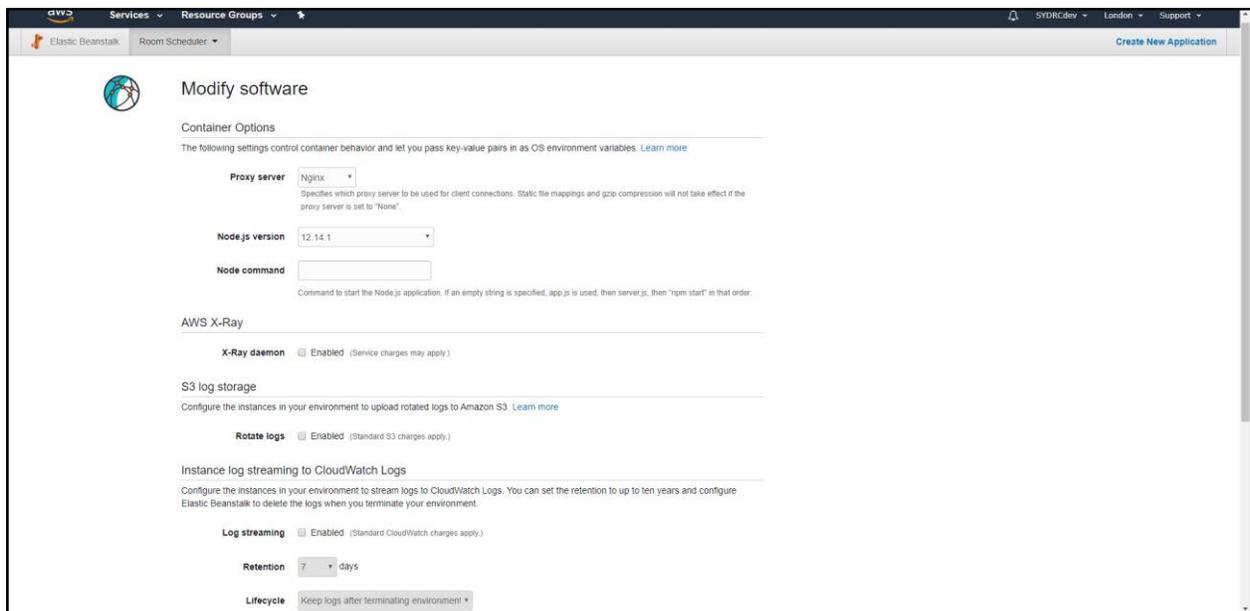
This will bring up the next page:



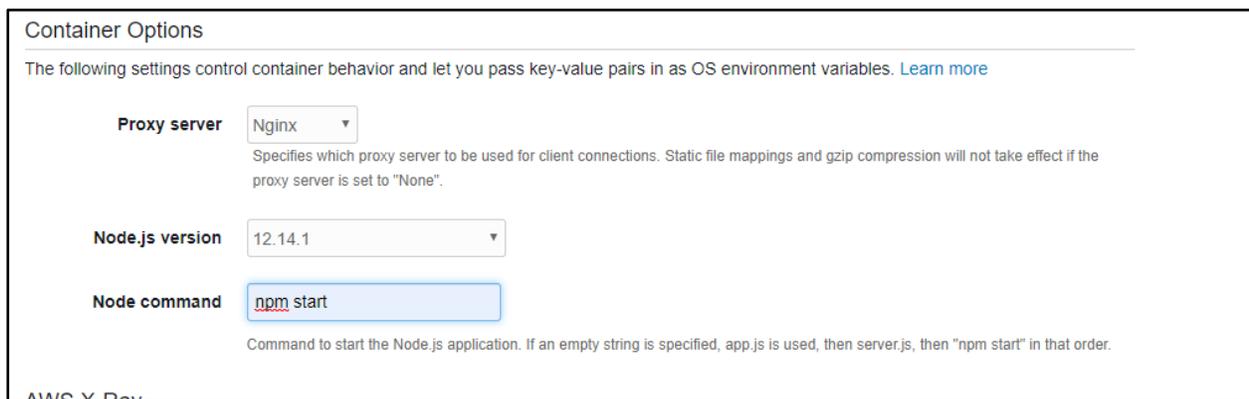
The only menu you need to focus on is the **Software** menu:



Click the **Modify** button to be redirected to this page:



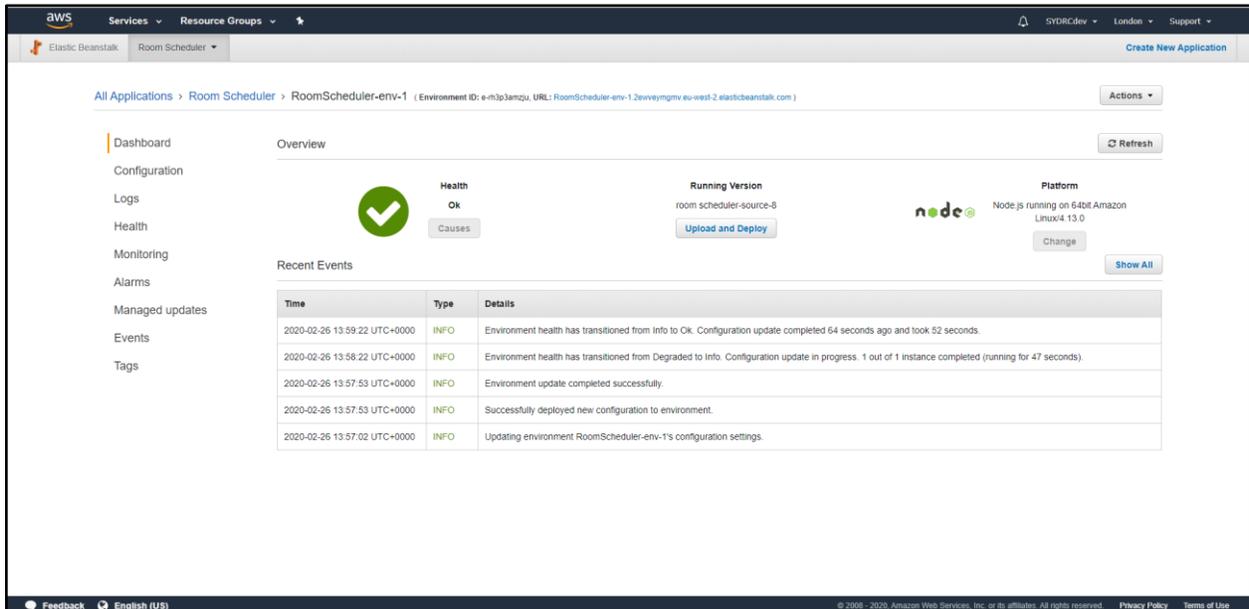
The only thing you need to do on this page is go to the node command text box and input “npm start”:



After doing this, click the blue **Save** button at the bottom of the page to be redirected back to the initial configuration page.

From here you should be able to navigate to the bottom of the current page and click the blue **Create environment** button. Now there should be a black box that appears on the screen that will start loading some processes. You will have to wait for a couple of minutes for the application server to properly start up.

After that loading is done, if everything went correctly, you should see the same environment page that was showed earlier:



At this point the environment is completely set up and ready to be used. Note that creating a new environment will give it a new URL:

(Environment ID: e-rh3p3amzju, URL: RoomScheduler-env-1.2ewveymgm.eu-west-2.elasticbeanstalk.com)

The last thing to do is update the N1C Centre website so that the **Book A Room** is set to open the new URL which properly loads the new room scheduler environment.

