
Booking System Investigation – Under Construction

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Introduction

I have decided to make a booking system for this project. The booking system is to be catered for a community centre which hosts musician's rehearsal rooms. At the moment, the booking system in place is very primitive. The secretary takes booking requests by email, then writes down the booking details. A booking system would make this a lot more efficient – the company should be able to leave booking to the artist and therefore free up their employees. The new system will be usable by customers and employees (Separating the two through the use of a login screen). Customers will be able to manage everything to do with their bookings, while employees will be able to overview the activity and change aspects of every booking in place.

The Company's Purpose

Under Construction is a company that owns 2 musician's practice rooms in central Cathays. The practice rooms are hosted by the Cathays & Central Youth & Community Project (CCYCP). These rooms are possibly the most popular musician practice locations in Cardiff due to the low prices and appropriate equipment set-up. The practice rooms can be hired for a number of hours by any number of people, of any age, at any time – however each of these factors will influence the price. The venue also offers gig hosting and studio recording. The company also offers a youth music club on a Saturday, in which there are reduced rates and guidance for under-18s.

The Stages of Analysing the Current System and Creating the New System

Studying the current system will allow me to analyse how the employees are used to working, as well as pointing out any flaws of the current system that I can strive to improve in the development of the new system. It will be important to carry out a feasibility study also, in order to ensure that the new system is worthwhile and that the company won't waste valuable time and money by implementing the system.

I will create and interview and a questionnaire so that I can gather both qualitative and quantitative information to analyse – this way I will be able to find out what features are needed at a glance, as well as collecting additional detailed data on what the employees personally desire the most out of the new system. A questionnaire will allow me to use scales and create graphs. They will also allow me to give them out to many employees and 5 employees can probably all complete the questionnaire in the time it takes to do one interview. On the other hand, an interview will give me the in-depth and personal data I need to create a system that is perfectly

tailored to the needs of a seasoned user of the system, as well as providing a dynamic data-flow and an opportunity to receive comments I had not thought of.

The questions I need answered:

- What is the biggest issue with the current system?
- What features are essential for the new system?
- Are there any issues that could foreseeably happen in the new system?
- Is there a loyalty scheme?
- How much of a benefit would a computerised system be?

There are also many considerations I will have to take into account when building the system so that it is intuitive and user-friendly. I aim to present users with a simplistic and minimalist design in which the contents are laid out with large words and pictures, self-explanatory directions and helpful tooltips in-case someone does get confused. Every element of the system will be large and will be an eye-catching colour so that people are naturally drawn to where they need to go in order to navigate the system. Additionally, there will be user instructions for the system in the documentation, which should be readily available and shipped with the software digitally.

In order to create this system, I will be using Visual Basic Access (VBA). This will allow me to seamlessly link forms with the database tables as well as create invoices in the form of reports without needing any additional software, aside from Microsoft Access. The system code will include pointers to different parts of the system, different functions and commands to add/delete/modify users in the database and there will also be Structured Query Language (SQL) used to create invoices.

Testing will be important and a necessary step before release of the system to make sure that there are no issues with the system. Firstly, testing will be used to make sure the system works and that no unintentional errors are returned to the user when a process is attempted. After the system is verified as working to its full capacity, some maintenance testing will be done to make sure that the system is as efficient as possible and that nothing can be improved to conserve memory or improve the user-friendliness. Lastly, general usage testing will be done which will let me know if any small, non-vital improvements could be made, e.g. adding keyboard shortcuts.

Observation Planning

An observation on the system and its usage would be useful as this would show me if I missed any faults in the system. If any of these faults were to arise, I would be able to modify the program and release an update to Under Construction, and an update

could be carried out on the system. In order to do this, all of the data would be backed up and the new & updated system would be transferred onto the office computers. A notice could be placed on the Under Construction website warning users of a scheduled maintenance period, followed by the email address for any urgent bookings that need to be taken.

My observation will need to get an overall view on the system, its usage and the staff's opinions. This will be obtained by:

- Conducting an **interview** with the manager of the company to find out their opinions and requirements for the system and how it is integrating into the business.
- Creating **questionnaires** which can be given to the employees to fill in and return.
- Create **Data Flow Diagrams** so I can analyse how data should be flowing through the system and compare this to how the system is actually functioning.
- Conducting a 7-hour **observation** into the system being used, simply by watching it in action and making notes of any problems that arise.

After all of this data has been collected, I will write a conclusion which will guide me on how to modify the system in order to make it as close to perfection as possible.

Detailed Interview

I am conducting an interview with the manager of the community centre and the host of the Under Construction practice rooms, Jay Marsh. An interview will allow me to receive a fresh perspective from someone who has been working with the current system for years and is experienced with the company. Jay will also have the best intentions for the business, so I will get a view from someone that has the same end goal as I do.

I will need to gather information on areas such as:

- What the current system is like.
- If there are any problems with how the business runs.
- What the staff think of the current system.
- If there is a need for a new system.
- What the staff are capable of doing in terms of security and backups.
- Whether the company can support a new system.

Interview

Referencing myself as 'JB' and Jay Marsh as 'JM'

JB: Good afternoon, Mr Marsh. Thank you very much for agreeing to take part in this interview, I'm sure it will be extremely helpful for both of us and will be a great aid in putting the new system into practice. So, please introduce yourself and describe the company.

JM: Good afternoon, it's no problem. My name is Jay Marsh I'm the manager of Under Construction and I started this business so that young people in Cardiff could get active in the music scene and dedicate themselves to something productive rather than being on the streets.

JB: Great. As far as I'm aware, the current booking system for Under Construction is paper based and this sometimes causes issues, would you agree?

JM: Yes, I definitely agree. With the current system there have been countless double bookings or mistakes made, especially since different staff work in the community centre each day – it's so easy for a small piece of paper to be misplaced.

JB: I can imagine that would be difficult to keep track of. Are there any problems that you personally experience with how the company booking is being run?

JM: Well, as a manager I think it would be very useful to have reports on how the company is doing monetarily, however with the way things are being run right now it just doesn't seem possible. The community centre till isn't separate from the Under Construction till, so it's not a case of just looking at the money log. With our variable rates I always often worry that visitors are either overcharged or undercharged, as the cost of booking is affected by many factors.

JB: Could you elaborate on how your staff work with the system? Do they ever voice any concerns?

JM: Definitely! I have been asked by my staff if there was a possibility of getting our own computers or bank accounts and even separate offices, however we just don't have the money in our budget.

JB: So, do you believe I'd be right in saying that a new system is definitely required?

JM: Yes, a new system is needed. However, we would have to make sure that the introduction procedure was seamless. Even though we don't get many customers, the ones that do come to us are very loyal and it would be a shame if we let them down any more than we already have.

JB: Ok, so assuming the new system was to come into use, what would the staff be capable of doing in terms of security and backups?

JM: I'm sure the staff would be happy to receive training for anything they needed to learn. They are all very computer savvy as they are quite young, so I'm sure they will be able to pick up anything quickly. As for backups, I will easily be able to make space in my schedule to take restore points from the system and store them in an off-site safe, on a hard drive disk.

Questionnaire

I will also create a questionnaire for the staff to fill out. This will allow me to gauge the thoughts of the people who will be using the system most of the time.

Staff Questionnaire on the Under Construction Booking System

Please fill in this questionnaire which will allow data to be collected in order for the new booking system to be implemented.

What is your job title?

How would you rate the current booking system?

(Awful) 1 2 3 4 5 6 7 8 9 10 (Amazing)

Would you like to continue using the current booking system?

Yes No

Could you detail any major issues with the current booking system?

Do you think that Under Construction could benefit from a new booking system?

Yes No

Are there any specific features you think the new booking system should have?

Are you confident using a computer?

Yes No

Would you be open to partaking in a morning training session for the new booking system?

Yes No

Can you think of any specific problems that could arise from using a computer-based system?

Do you think a new system will improve the efficiency of Under Construction?

Yes No

Would you be interested in a follow-up training session 2 weeks after implementation?

Yes No

I have also taken one questionnaire that has been filled in by a staff member to demonstrate the questionnaire in use.

Staff Questionnaire on the Under Construction Booking System

Please fill in this questionnaire which will allow data to be collected in order for the new booking system to be implemented.

What is your job title?

Secretary at Cathays Community Centre

How would you rate the current booking system?

(Awful) 1 2 3 ☒ 4 5 6 7 8 9 10 (Amazing)

Would you like to continue using the current booking system?

Yes ☒ No

Could you detail any major issues with the current booking system?

Some staff's handwriting are illegible, making bookings hard to process on shift changes.

Do you think that Under Construction could benefit from a new booking system?

☒ Yes No

Are there any specific features you think the new booking system should have?

An invoicing system

Are you confident using a computer?

☒ Yes No

Would you be open to partaking in a morning training session for the new booking system?

☒ Yes No

Can you think of any specific problems that could arise from using a computer-based system?

The internet might cut out, causing us to lose business

Do you think a new system will improve the efficiency of Under Construction?

☒ Yes No

Would you be interested in a follow-up training session 2 weeks after implementation?

☒ Yes No

The results from this questionnaire were generally unanimous. The current booking system had an average rating of 3, with no one rating it higher than 5. It is clear that the staff agree that the current system is inefficient. There was a resounding 100% vote for 'No' when I asked if the users would like to continue using the current system. This is expected, considering the current system is time-consuming and difficult to use.

There were multiple different responses in relation to major issues with the current booking system. It seems that the system isn't too bad when operated by a single person in a day, however work becomes hectic when multiple people are using the current system in a day or week. A huge problem is that a lot of the written information becomes degraded or is illegible. Old notes are impossible to locate or simply too damaged to read. Some staff members forget to make a note of all of the required information as there isn't even a template for writing purchase information.

There was a resounding 'Yes' to the question about the company benefitting from a new booking system. It seems that every staff member is ready for a change. There was a variety of features that staff wanted to see. An invoicing system which produced receipts by printing was highly requested. Many staff wanted to see an ability for users to make their own bookings, which will take some work off of the staff and allow them to perform other tasks in the youth centre. Lastly, one staff member suggested a log is added so that the company can archive all of the bookings made to find trends in data and market the system better.






I found that 80% of the staff members were confident using a computer. The system is planned to be laid out with big text and easy navigation options, so struggling users should be able to work out how to use the system. However, it is planned for staff members to receive training on how to use and manipulate both the artist side of the system and the staff side. This allows them to teach any users how to use the system or to simply make booking for users. This leads into the next question – 100% of staff members agreed to partaking in a morning training system.

As for specific issues that staff could foresee arising, there was little variation. Most staff members were concerned about the main computer crashing or the internet being cut out – this can easily be combatted if they spent a small amount per year on external server hosting – this comes with its own risks, however they are significantly minimised.

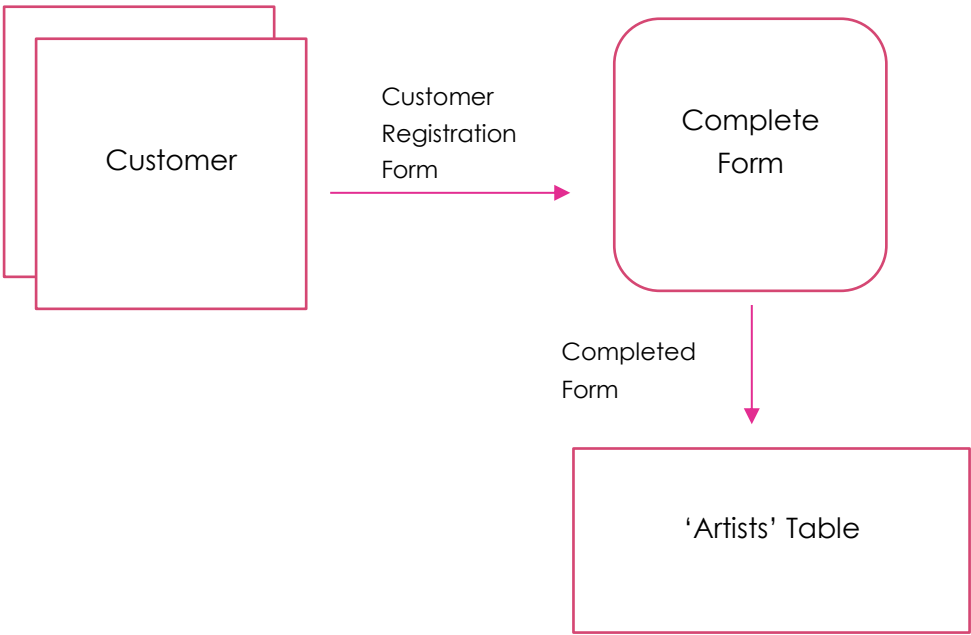
100% of staff members believed that a new system would improve company efficiency. This makes it clear that my system would be welcomed. Only 60% wanted a follow up training session, which is indicative that nearly half of staff members would rather email me if they run into problems with the system.

Data Flow Diagrams

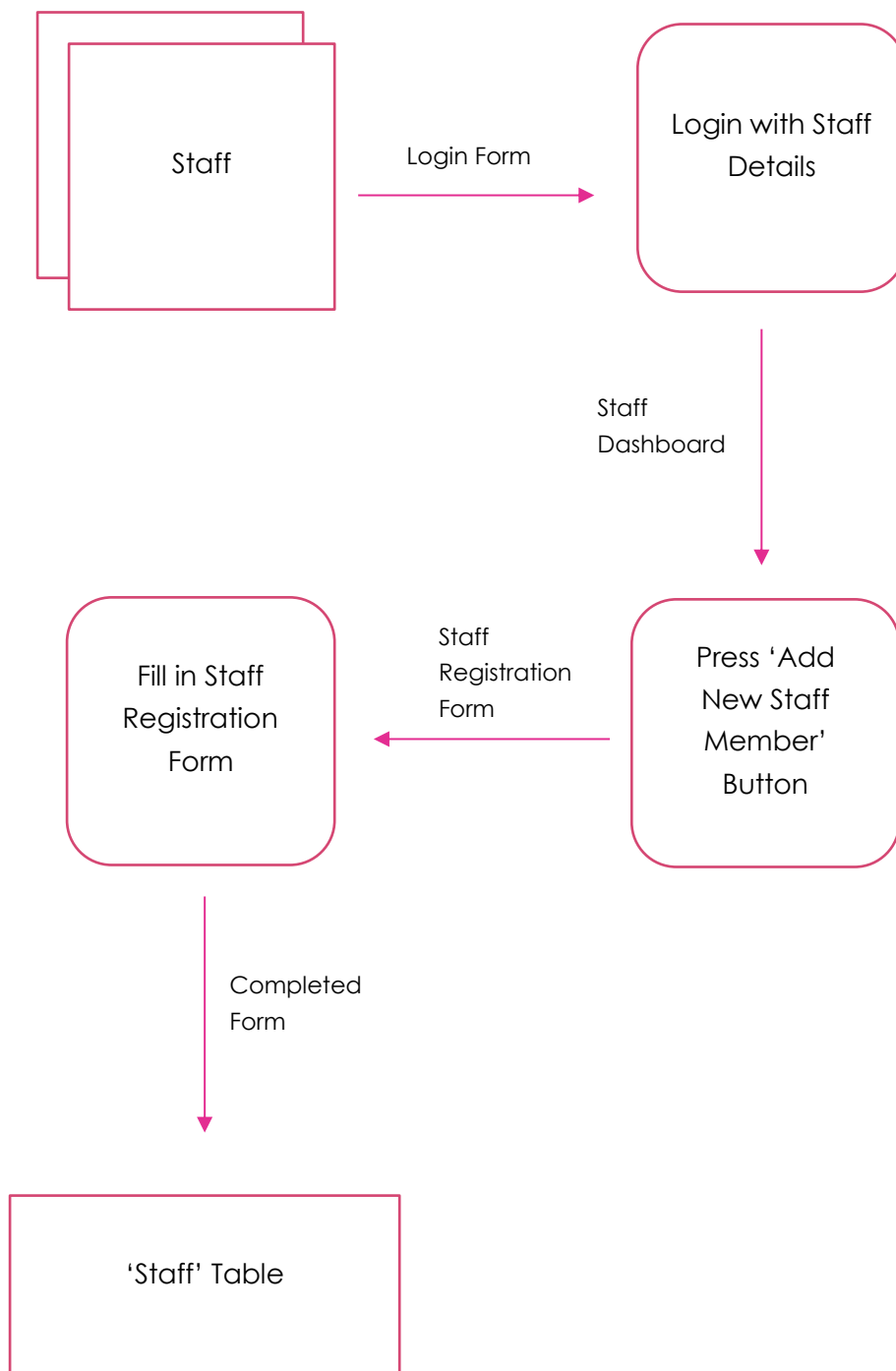
Data flow diagrams will be used to help plan the development of the system, and will act as an instructional on how data will flow through the system. This will be very useful for development and debugging. They will be placed in the documentation to give technical workers an idea of how the main features of the system work.

External Entity	Data Flow Direction	Process	Storage	Output
				

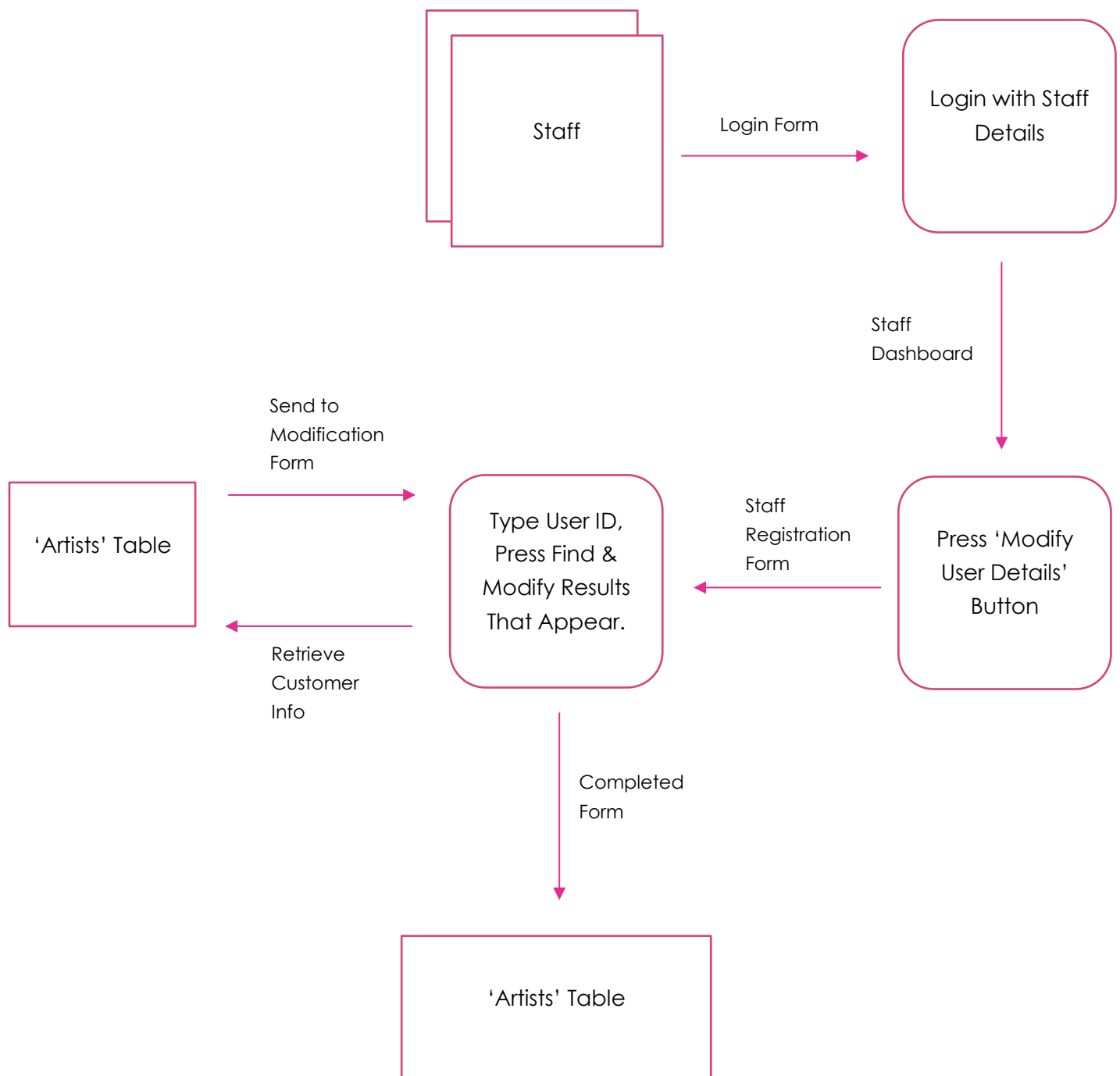
Adding a New User (Customer)



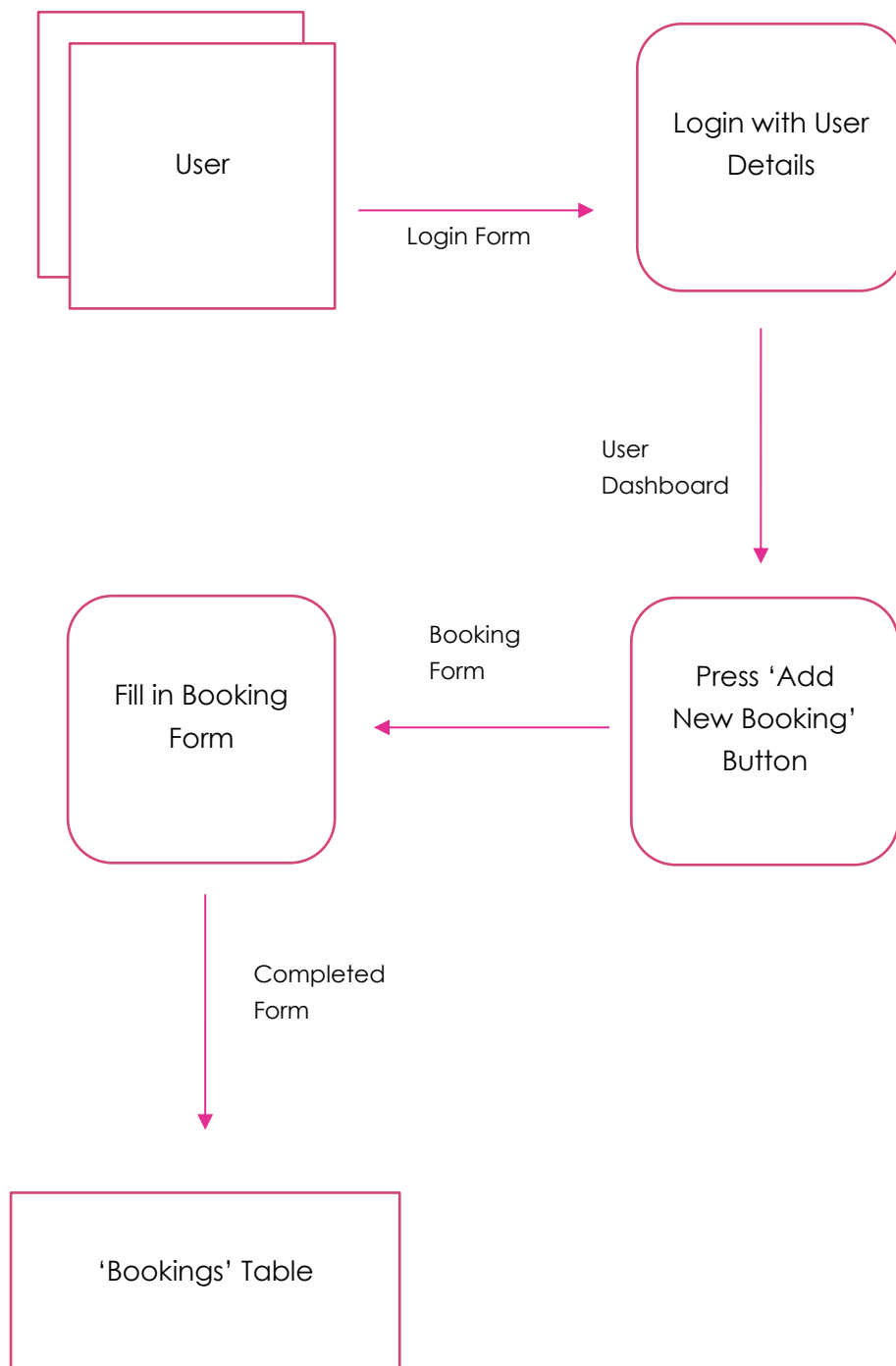
Adding a New User (Staff)



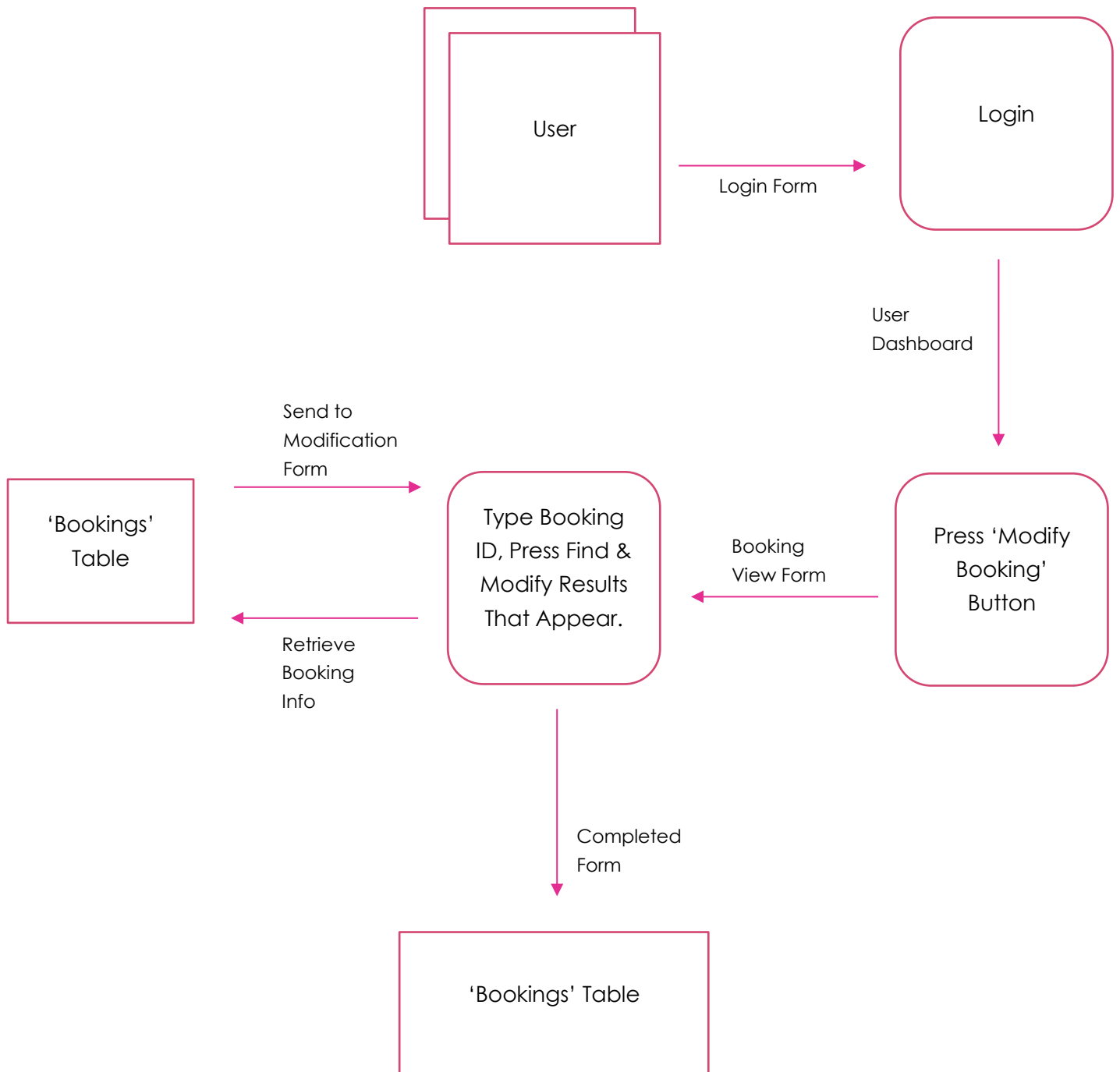
Amend Customer Details (Staff)



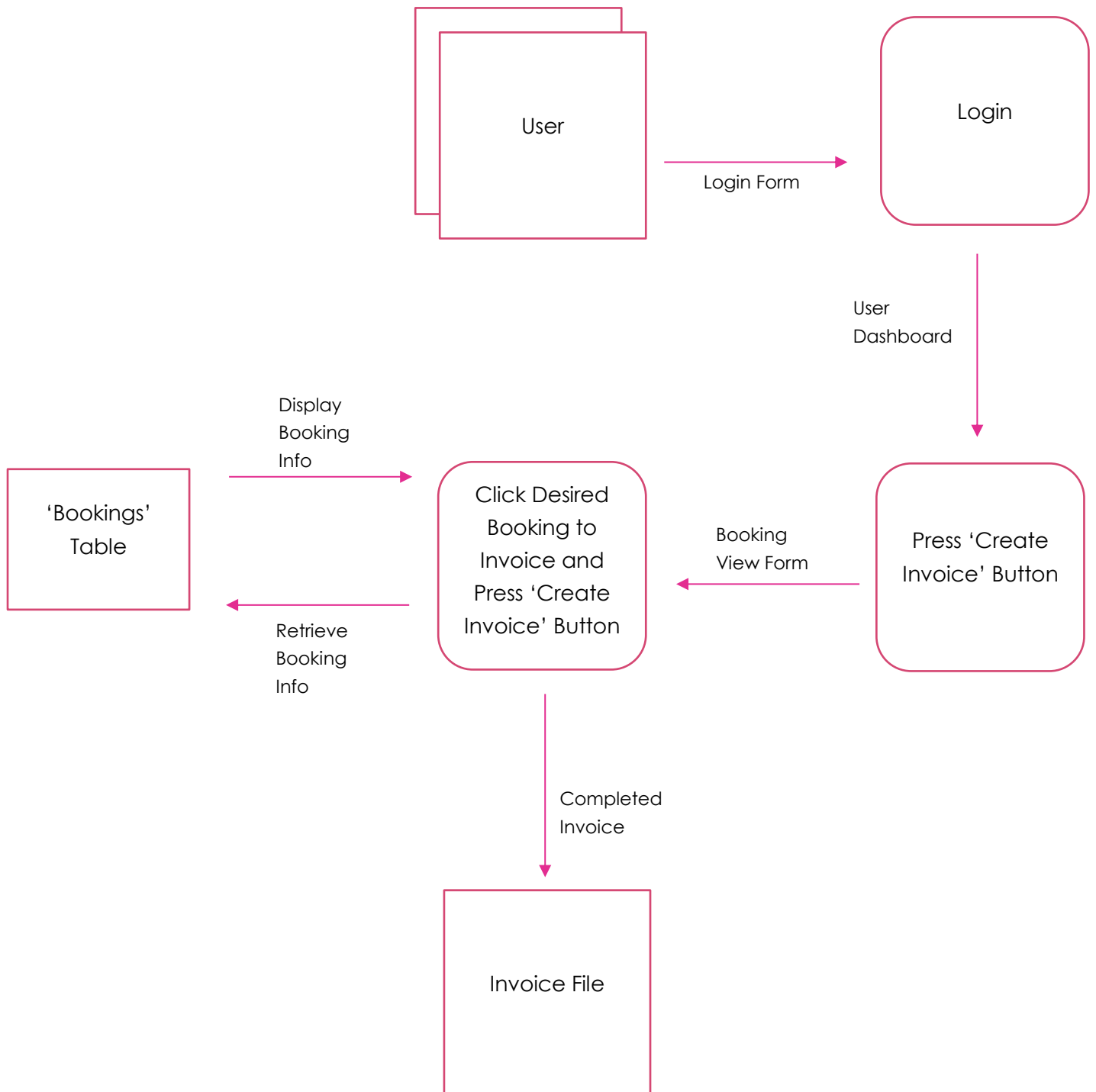
Add New Booking



Amend Booking (Staff/Customer)



Create an Invoice (Customer)



Observation

I have decided to observe the current system in action, as this will allow me to obtain first-hand experience of any problems that happen and will allow me to catch the type of issues that I haven't thought of. The Jay Marsh has given me permission to sit in the main office of the centre from 10:30-6:00 and observe how the system is being used. Staff have been told to act normal and ignore my presence for the most part.

I arrived just as the centre was being opened. The staff were about to have a small planning meeting. During this, they discussed what was happening during the day and what areas of the centre would be busy. This allowed staff to be allocated appropriately. During this meeting I also found that the centre was a very busy place and that the staff would benefit from the boost in efficiency that the new system would provide.

The first band to come in were checked for a booking and sent to the practice rooms. One member came back to the reception desk twice to ask to borrow different equipment – this seemed to be a hassle for the secretary and the artist, as both had to waste time retrieving instruments. The band dealt had their session and took about 10 minutes to pay, since some were using cash and some were using card. There was also a conversation between the secretary and a person about rates, which was settled quickly but seemed concerning.

The second and third bands of the day came in and were quick to start similarly to the last band, however half an hour later another band came in and there was an issue with the scheduling – there was a double booking and no extra space that day until much later. The manager Jay Marsh had to come and talk to the band and personally apologise, and was visibly stressed – it was hard for him to figure out a way to make the situation right as the centre doesn't really make enough money to justify trying to afford to give away free sessions. Luckily, the band were understanding and walked away with half price off their next session.

The rest of the day went rather well, with the main notes being that people would often have to return to the reception to ask to borrow instruments and payment taking a longer time than it should. It was somewhat easy to see that the secretary was over encumbered with the amount of services the centre offered.

At the end of the day, the sheet of paper with the bookings on it were placed in a drawer under the desk that seemed very unorganised – it would be extremely difficult to search this drawer as you'd have to compare each date with the one you wanted to find manually. There was also no backup made – what if the drawer was to be lost or there was a fire? There would be no booking records left.

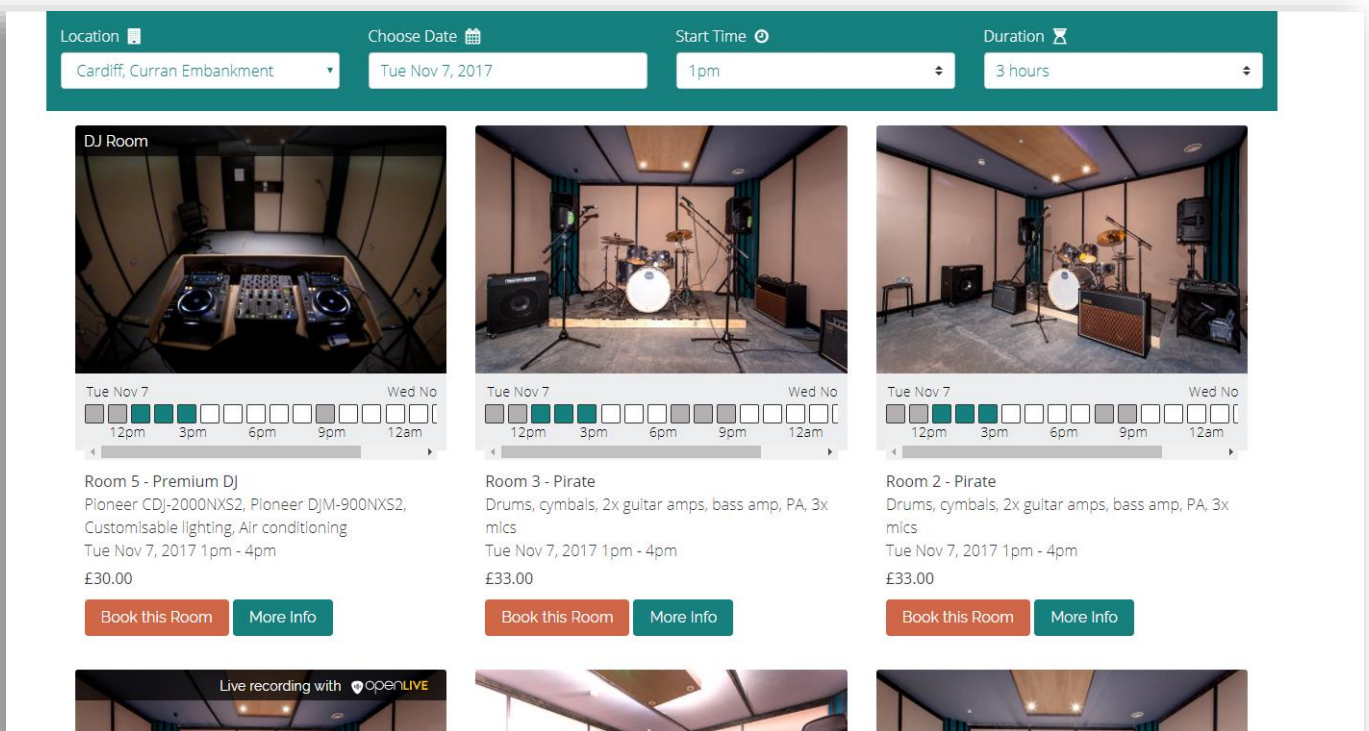
This leaves me to believe that a new, automated system would be a perfect fit for the business and would increase efficiency tenfold and reduce the chance of the secretary or the artists getting stressed or frustrated.

Desk Based Research

I have found a selection of common characteristics among the majority of online booking systems:

- A login and logout system.
- An internal calendar which can schedule date and times of a booking.
- An automatic block on the ability to buy bookings which are selected on already booked slots.
- The ability to make note of any additional requirements the customer may need.
- The ability to cancel or change bookings after they have been made (usually for a small fee).
- An output in the form of an email or text which confirms the status and details of the booking.
- An online payment method.
- A search feature so people can find the dates they wish to book on.


An example of an online booking system with a similar purpose to mine is pirate studios.



Pirate studios show clearly the location, date and time of the bookings. They display prices, facilities and availability for each booking. The system is intuitive and anyone trying to book a room would know where to go instantly. An elaboration is available for each room if requested, which allows the site to be detailed but not cluttered.

Aside from Pirate Studios, I have found that a huge amount of similar systems do not have an automatic booking system. This is an issue as it means most booking systems are time consuming – two people have to correspond and both manually input booking information.

2 of these ask for an email while 2 contain a contact form. The email system seems very inconvenient and I'd rather keep my system functioning with as little clicks as possible. I can use the contact form idea for an emergency contact, however I would prefer the actual booking system to be fully automatic.



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PEAK TIME (6.00pm to 11.00pm Monday-Friday / 12.00 noon to 11.00pm Saturday-Sunday) **£10.00 per hour (or part hour)**

IMPORTANT NOTE: Our PA systems are for vocal microphone input only. Instruments such as keyboards, guitars and bass guitars must go through separate amplifiers or monitors.

Equipment Hire
 Hire of basic Drum Kit (excluding sticks, cymbals, bass drum pedal, and snare drum) £3 per session
 Hire of Combo Bass Amplifier (excluding leads) £3 per session
 Hire of Bass Amplifier Cabinet (600w @ 8ohms - excluding cables) £3 per session
 Hire of Guitar Amplifier (100w solid-state amplifier - excluding leads) £3 per session
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 Hire of Snare Drum £2 per session
 Hire of additional mic & stand £2 per session

Minimum Booking
 There is a minimum booking of 2 hours for a room. We prefer if you book more than 48 hours before your rehearsal. Sometimes we can squeeze you in last minute. To book please use the form on the **CONTACT US** page or message our **Facebook** page.

Cancellations
 We understand that sometimes things come up and you need to reschedule a rehearsal, but at the same time we want to make sure all the bands who need to practice can get a slot.
 Our cancellation policy is:

- Cancellation 72 hours or less before rehearsal start – £10 fee
- No show or cancellation 24 hours or less before rehearsal start – Full room rate payable
- Moving a session counts as cancellation.

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Terms

Provisional bookings must be confirmed within 72 hours or be lost.

At least 48 hours notice must be given for all cancellations, otherwise the full cost of the Room is payable.

Bookings/Enquiries

Phone: 07917 824804

Email: musicroomzcardiff@gmail.com

Or fill in the contact form below:

* indicates required field

Name:*

Email:*

Re-enter Email:*

Subject:*

Message:*

Legal Notice

Contact us

Contact Us:

Musicbox Studios
Unit 7 Tollgate Close
Cardiff
CF11 8TN

(+44) 029 20 37 37 07
musicboxstudios@gmail.com

Musicbox Studios
Unit 7 Tollgate Close
Cardiff
CF11 8TN

Phone: (+44) 029 20 37 37 07
E-mail: musicboxstudios@gmail.com


If it's an emergency then call Bernie on 07766 763963 or Mark on 07976 724786

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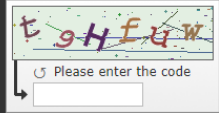
Name: *

E-mail address: *

Telephone/fax:

Message: *

Captcha (spam protection code): *



Please enter the code

Time	Price
Evenings and weekends	£11 /hour*
Weekday daytimes (9-6)	£8/hour - with free use of all gear

**Special Weekend Price - just £8/hr for sessions of 3hrs or more, any time on Saturdays and Sundays*

Whole and Half Day Deals

- 6 hours on a weekend: £44 including all gear
- 10 hours on a weekend: £64 including all gear
- 9-5 on a weekday: £44 including all gear

Equipment Included

PA/ Mics	free
Amp heads/ Combos	free
Cabs	free
Drum kit shells/ stands	free
Kick pedal/ snare	free
Cymbals set	£3 per session (free on weekday daytimes)

Please note that any rehearsals cancelled with less than 48 hour notice must be paid for in full.

Weekly Rehearsal Rates

We specialise in excellent value deals for bands that use the same session on a weekly basis. Our prices vary according to the time of day of the session, but the majority of slots work out at less than £5 per hour when booked as a regular weekly rehearsal. Regular bands are given their own keycard and are also able to store their equipment in a secure walk-in cupboard in their room.

We offer a 20% discount for instrumental teachers on weekly off peak slots (weekday daytimes).

To find out about the availability of various time slots and the specific price for the session that you're interested in please send us an email at info@thecardiffarches.com or call 07823 775765.



Conclusion of Current System

How is the business information currently stored?

Currently, the system is paper-based. This means the business information is stored on sheets of paper which are stored in a drawer in the reception area. Backups of the information are not currently made. The system has managed to hold up until now, but with the centre getting more and more business, the system is becoming obsolete. It currently clutters the office and leads to issues such as double bookings or payment disputes. The drawer just seems like a stack of sheets of paper, when really, it is the company's only record of how business is doing and its financial records.

Information on staff is stored in a separate cabinet under lock and key. The data is still written on paper, which are forms that staff filled in when they were employed. For each staff member there are two forms – one which the new employee filled in and one which the manager filled in. I will go onto further details on the data contained soon. Customers currently do not have their own information stored as the service is 'on-demand' and there are no benefits to storing customer details currently.

Strengths and Weaknesses

The strengths of the current system:

- All records in one easily locatable place. Staff don't have to exert much energy in finding where the records are and can keep track of them.
- Doesn't require and specialist skills to operate. Staff can easily pick up the job with little training, increasing business time.
- Always likely to be someone on-site who can explain a record. Even if a record is illegible, it's likely that at least one staff member on site can understand and explain it.
- Easy to train people how to use. People typically know how to write down what they heard
- Doesn't require many tools or electricity to operate – just a pen and paper.

The weaknesses of the current system:

- One fire accident could cause the company to lose all business records.
- Employees who switch shifts may find records to be illegible.
- Extremely tedious to back up as the records would need to be copied by hand.
- There is a huge lack of security – anyone could access business records or even pose as a new staff member.

- It is extremely time consuming for staff to create a new record by hand for each booking and each new employee.

Administration of Staff

The staff information is currently stored under lock and key in a cabinet which is located in the reception office. Each employee has a folder with their own information from a form they filled in, as well as a form that the manager filled in when the employee joined the company. If info was needed on a staff member, these items would be treated as one. The two sheets are stapled together.

Adding a Staff Member

Adding staff requires the manager Jay Marsh to fill in a form and pair it with a form filled in by the new employee. This allows the business to have a suitable amount of information for each staff member

Data currently required:

- Full Name
- Date of Birth
- Mobile Number
- Address
- Hourly Salary
- Emergency Contact Number
- Extra Info (Allergies or Medical Procedures)

Viewing Staff Info

Only the manager, Jay Marsh has access to the staff information – he carries one key on a keychain and leaves one backup key at home. If he wished to access the files, he would unlock the cabinet and have to manually search for the folder of the staff member he is looking for.

Modifying Staff Info

In order to modify staff info, the forms would have to be manually re-done and re-stored. The old forms would then have to be destroyed. Even though this is time consuming, it is the only option available to the company while using a paper-based system.

Administration of Bookings

The bookings are currently stored in a drawer within the reception office. Each booking is stored on a slip of paper that has been ripped from a notepad. There is no sorting or filtering applied, so the drawer is very disorganised.

Adding a New Booking

To add a new booking, staff would write the booking details on the paper and pin it to a board in the office until the booking is completed.

Data currently required:

- Booking Time
- Booking Duration
- Booking Date
- Name of Person Booking

As we can see, there is very little in place in terms of security procedures. The centre is happy for people to request additional equipment and pay when they reach the centre.

Viewing a Booking

An uncompleted booking will be easy to view by looking at the pin board, as the company does not currently get enough business for this to be a problem. However, this is not sustainable. In order to view old bookings, staff will have to search through the drawer manually, and this would be incredibly time consuming as the old bookings are not sorted.

Modifying a Booking

To modify a booking, the staff have to search for the slip of paper and either re-write it (to amend) or bin it (to delete).

Problem Definition

With the current system fully investigated, I will now be able to lay out a clear plan of action by detailing the problems I'm facing, my aims for my own system and the limitations I will have to deal with.

Problems with the current system

Observing and interacting with the system has shown me that the current system is very time consuming to use and is prone to many complications. I will detail each of these obstacles and will attempt to solve them in terms of my own system. This will improve the efficiency of the company as a whole and make the system easy for the employees at Cathay's Community Centre to use.

One issue with the current system is the way that all the data is scattered around the office as well as being very temperamental. This is somewhat dangerous for the company as they could easily lose lots of information or financial records in a fire. The nature of storage of the data will also make it extremely difficult to search for specific records. Backing up the company data would require staff to manually copy the data onto a different storage medium such as onto a computer or more paper – however paper will come with the same problems as discussed.

Another issue is security. The drawer which contains the booking information is not even locked, so anyone could walk into the office and take them with ease. Even the more sensitive information is at risk – the locked cabinet could be stolen then the data on individual staff members that is inside could be accessed illegally by breaking into the cabinet. The computerised system will have

The workload created by the current system is also huge. With a new system, a few clicks of a button would lead to the booking being added or modified, however currently the staff have to search for and amend the bookings manually. The centre is very busy, and having to worry about the music room booking system is a huge disadvantage to the business. A computerised system will allow for daily automatic backups and will allow customers to book the rooms for themselves, so the staff won't even have to look at the system unless there is an issue or the artists wishes to pay by cash.

The current system is also disorganised and leads to both double bookings and price disputes. The staff regularly switch shifts, and if the writing of the previous employee is illegible or damaged or the data can't be found, then there may be an argument over how much the band needs to pay. A staff member may also book a slot without checking if there is a piece of paper with that time on already – this could easily lead to double or even triple bookings in the most unfortunate circumstances and the reputation of the company would be at risk. The new system will have a built-in calculator to make sure the

same slot is not booked twice and that all prices are calculated based on the conditions of the booking. This will also be present in an invoice which could act as a form of proof if there is a dispute.

Aims

My aim is to create a system that is intuitive and efficient so that staff are able to quickly perform every task that is needed in a small, portable system. Users should also be able to utilise the system in order to lessen the workload of the staff. Both staff and users should be greeted with an intuitive User Interface which will point out every function of the program in an obvious manner.

Staff will be allowed to view bookings, create invoices, add or remove staff or users and add or remove bookings. Users will be able to add or remove bookings, calculate a price for booking, register themselves onto the system and also modify or delete their own accounts.

The system will need to be intuitive and easy to use. I will use a bright and welcoming colour scheme, as well as large buttons which are clearly labelled. I shall also create tooltips – there will be an option to open a text description of each page's function. The menus will be easy to navigate and will have clear pointers to the next or previous form.

I will also need to stop the system from accepting double bookings. I will do this using the internal calendar which will check that no bookings are made before a booking takes place. If there is a booking already in place, the system will default to offering a different practice room. If both practice rooms are booked, an error message will be displayed asking the user to pick a different time slot. The user will have a chance to view the calendar before booking.

The system will contain graphics and will not contain any slang or swearing. Every message shown will be formally written. This will maintain the reputation of the community centre as a professional and serious environment.

Limitations of the System

As I am using VBA to code this system, I expect there to be limitations due to the simplicity of the language.

Holding a login session to keep data encrypted may be difficult due to the lack of cross-system modular programming that can be done. I will have to think of an extravagant way to do this, which may reduce efficiency on the computer's end or even security of my system.

Furthermore, the system includes card details and passwords. Access does not have the capability to perform complex encryption techniques, therefore the lack of encryption is

a threat to security in the case that the tables are viewed by unauthorised users. Staff should keep the computer locked by a password.

Staff will need to be trained to use the system and this may be costly. The system is designed to be intuitive so as little time as possible should be spent on training.

If a bug is found in the system or something happens to it, an expert would need to be called to fix this. The expert's time could be costly, so the system should be thoroughly tested before being shipped out.

Objectives

After thorough review of the current system and planning of the new system, I can list what the new system needs to be able to do:

- Allow the user to add or modify bookings
- Allow new users to register themselves
- Allow staff or users to log in
- Allow staff to register new staff members
- Allow staff to add or modify bookings for any user
- Allow staff to create an invoice of any specific booking
- Prevent double bookings from happening
- Be intuitive and efficient so it is fit for usage by anyone
- Prevent users from accessing other people's data
- Allow staff to modify users' account data
- Be much quicker to use than the paper system
- Be much safer and securer than the paper system
- Give users and staff a pleasant experience while dealing with the system
- Allow users to receive an invoice of their booking