

5 – Post Prototype Refinement of Design

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5.1 Feedback

5.1.1 Approach to Feedback

To obtain my feedback I decided to do it in two ways. For my tutor I decided to present it to him explaining and showing how the system works. After doing this he asked me questions regarding my system to see if works as it should, as well as any suggestions for improvement of the system. For my peers I decided to allow each of them to use my system independently without any explanation of the system to gain unbiased feedback. I had them record any likes and dislike of the system along with suggestions for improvement.

Name of Respondent	Relationship	Level of Competency
Sonia Parmar	Peer	2 nd A-level Computer Science Student
Kamran Patel	Peer	2 nd A-level Computer Science Student
Amit Bhudia	Peer	2 nd A-level Computer Science Student
Phil Jackson	Tutor	A-level Computer Science Tutor

5.12 Consideration of Feedback

Aspect	Feedback & Consideration	Accept /Reject	Implications for Redesign
Login Screen	<p>Password text field is before username text field, unusual.</p> <p>This is a sensible piece of feedback as it will make the system have a more general feel like others, allowing the user to effectively navigate the system.</p>		The text field for the username and password input will be reordered, to its correct order.
Menu Screen	<p>There is a lot of wasted space on the screen, for only menu buttons, therefore try to make the screen smaller or add more features.</p> <p>I have considered this and decided to not change the design as the prototype did not include the house style my system, which would result in a more utilised screen.</p>		-
Add Bookings Screen	<p>Change name of text fields and drop-down menu.</p> <p>Although this would be useful, I have decided to all together remove the text fields names from within the text fields and instead create a label for each.</p>		-
General	<p>Add labels instead of name within the text field.</p> <p>This is a sensible improvement as it will make the text fields clearer as well as allow the user to enter data easier, as they won't have to remove the pre-written label.</p>		I will create labels for all text fields which require input, besides each text field.
Add Bookings Screen	<p>Clear text fields after button has been pressed to show data has been used. (output)</p> <p>This suggestion is useful as it will help provide an output to the user once they have confirmed the booking, making the system feel a bit smoother.</p>		This would require me to create a method to clear text fields once a confirmation has been made.
Add Bookings Screen	<p>Text fields are also too short for data inputted.</p> <p>This feedback would be quite useful to the user as it would allow them to see the whole input.</p>		I will create larger text fields more suitable for the data to be entered.
Add Bookings Screen	<p>Allow the user to input the duration of booking as well as start time</p> <p>Although this would help to keep track of the length of the booking, I have instead decided to implement time slots for the user to choose from, which is a better implantation.</p>		-
Add Bookings Screen	<p>Could have two separate text fields for the customer's name. e.g. Forename and Surname, rather than just name</p>		I will include two separate text fields for first name and surname.

	This is a useful idea as it can be quite vague for users on whether to include both first and surnames. This will help provide clarity on that.		
Search Bookings Screen	<p>Change the names of the searches. Keep names of searches simple eg "Search by ..." rather than "linear search"</p> <p>This is a suitable idea as it is unnecessary to include technical names for search as this may be seen as not user friendly.</p>		The buttons for the searches will not contain the type of search performed instead a suitable name for the search depending on its search value will be used.
Search Bookings Screen	<p>Colour scheme is inconsistent buttons don't match buttons on other pages.</p> <p>This is a suitable suggestion as the system should be consistent in its design and style.</p>		I will implement the same colour of buttons for all screens within the system.
Search Bookings Screen	<p>There are multiple searches but there is only one search box. There should be multiple text fields for each search rather than one doing many.</p> <p>This suggestion is useful as again can be quite vague for users as to which search is being run. This would help make it clear to the user the purpose of each search. This would also help for the programming side of this process as they can be separated rather than occurring together.</p>		I will implement multiple text fields for search input each of which will clearly state their purpose.
General	Could make the button sizes larger on all the screens so that it is clearer to the user. Also, some labels don't fit on the buttons.	-	-
General	The screens are simple and easy to understand the purpose of the system.	-	-
General	The booking table updates as soon as a new booking table is added	-	-
General	<p>"Is there a way for the system to calculate profits made by the bookings on a daily or weekly basis.?"</p> <p>This could be a useful feature as it can allow managing staff to see the total amount of revenue generated from the bookings in a day. This however would only be a staff feature.</p>		I will implement a new screen in which a table can be displayed to the staff user with details regarding the business's revenue made for each day.
Add bookings screen	<p>"No mention of activities that the user is making the booking for."</p> <p>This is useful feedback as it would be quite confusing the user on what they were booking.</p>		I will implement an input for the user to choose the activity they are making the booking for. This attribute will also be included within the records for the bookings to be stored into the booking file.
Add bookings screen	Why is there only one input for the time of bookings? There should be two inputs (start and end times)		-

	<p>This is a valid issue with my system as the user may be confused on what the necessary input would be required for this field. Although it would be more effective to have two input fields, I have decided to replace the text field input with a drop-down menu instead. This will not only clear up any confusion for the user but also make the input much easier to validate, as the user would only have to select an option.</p>		
Add bookings screen	<p>Is there any validation for double bookings?</p> <p>Although I have not included validation within my prototype, this can be an additional process to implement in the system to ensure bookings do not overlap</p>		I will create a drop-down menu for choosing the option of dates and times, with some being blocked out if they are full to prevent double books being made.
General	<p>The title says, 'booking system', yet does not specify what they are booking.</p> <p>This is a simple design fix that would provide clarity for users unfamiliar that are with the system, helping new users navigate effectively</p>		Rename the title of each screen to provide a clear description of the system. E.g. 'Sports hall Booking System'
General	<p>Validation all user inputs</p> <p>For my prototype I decided to not include any validation as the primary focus was on the functionality of the systems key features, adding, viewing bookings.</p>		-
Add bookings screen	<p>There is no way of cancelling a booking after the user has spotted a mistake in the details entered</p> <p>This is a useful idea as it will reduce the number of bookings that are booked incorrectly that may be, legal to enter, and may pass validation.</p>		I will create a button on the payment page which will allow bookings to be cancelled and will therefore not write to the booking file. The data will only be written to the database once the payment has been confirmed.

5.2 Input and Output




5.2.1 Consideration

After the feedback gained from my peers and tutor there are a few screen designs which I have decided to change. I have considered what is most suitable for the system and also efficient for the users, making the human computer interaction more effective. I also considered feedback that would result in fewer processes for my system to run whilst still being able to achieve the same functionality as before. Below is a list of my actions being applied to my screen design which is followed by a detailed description of the planned implementations.


Input/Output Facility	New / Existing?	Actions Needed
Home Screen – adding a table	Existing	For my home screen I decided to include a table to display the opening times of the business to the user. I will do this as I do not want to repeat this data on two separate screens for staff and customer which will make the system inefficient therefore it will be placed on the home screen where it will only be displayed once, meaning process would not need to be repeated twice.
Staff Login Screen – removing a table	Existing	For both of my login screens I will remove the opening times table from them and instead make the size of the text fields and buttons larger in order to make the logins page simpler and easier to understand the purpose of the screen.
Customer Login Screen – removing a table	Existing	
Add Bookings Screen – labels and outputs	Existing	For the add bookings screen I have decided to remove the labels from within the text fields instead putting them next each text field . I have done this as it won't be necessary for the user to remove the text each time before entering their input, which will help the user use the system more smoothly and effectively.
Search Bookings Screen – text fields	Existing	After considering my feedback I decided to create separate text fields for each of my searches. This will allow the user to easily understand the search that they are performing as well as the data that they should search for.
All Screens - Titles and clearing text fields	Existing	For all the screens I will change the main title which was displayed alongside the house style branding. This is to make it clearer to the user on what the purpose of the system is and therefore this would make it slightly more user friendly for new users who may not be familiar with the system, who could be both staff or customers. I will also include a method to clear the text fields once the user presses a button after entering data, which will act as an output to the user.

5.22 Changes to Input/Output

Home Screen

Sports Hall Booking System

 **University of Bolton**
Teaching Intensive, Research Informed

Staff Login

Customer Login







▼ Centre Opening Times:

Day	Time
Monday - Friday	06:30 – 22:00
Saturday	08:00 – 18:00
Sunday	08:00 – 22:00
Bank Holiday Times	09:00 - 15:00

Consideration

I have decided to remove this table from the login screens as they are the same table therefore displaying them twice is inefficient to do so, this will remove one process from my system making it smoother to use for the user. Instead I will display it once on the home screen, where it can still be viewed by both staff and customer.

Staff/Customer Login Screen

Staff Login	Customer Login
<div></div> <div><p>Teaching Intensive, Research Informative</p></div> <div><p>Username: <input type="text"/></p><p>Password: <input type="password"/></p><p><input type="button" value="Enter"/></p></div>	<div></div> <div><p>Teaching Intensive, Research Informative</p></div> <div><p>Username: <input type="text"/></p><p>Password: <input type="password"/></p><p><input type="button" value="Enter"/></p></div>

Consideration

As I decided to include the table from both on the home screen, I **removed the table from each of these screens as it is more efficient to do so**. Also, this allows the login screens appear **clearer with larger buttons and text fields** whilst not distracting the user with a table for the opening times. I have also included **labels beside each text field** rather than within the text fields. This will make the system **much efficient as the user** will no longer have to remove text first before entering their details.

Add Bookings Screen



Add Bookings

First name:	<input type="text"/>	<input type="button" value="Confirm booking"/>
Surname:	<input type="text"/>	<input type="button" value="Menu"/>
Mobile Number:	<input type="text"/>	
Email Address:	<input type="text"/>	
Date:	<input type="text" value="Please Select"/>	
Time:	<input type="text" value="Please Select"/>	
Room:	<input type="text" value="Please Select"/>	
Activity:	<input type="text" value="Please Select"/>	

Consideration

I have decided to redo this whole screen and have **included an extra text field for the user to input both first name and second name**, separately, as what I had **previously designed could be quite vague to the user**. I have also decided to **replace the text fields for date and time with a dropdown menu** instead and a drop-down menu to **choose an activity**. This will allow for user to select dates and times but also allows them to see whether the options they choose are available, this will **therefore allow for reduced bookings being booked to the same slot**. Also, this will **require less validation** to be made on the fields reducing the processes my system has to make at once.

The **double-booking button** will also allow the user to make a booking over a two-hour slot if available rather than making two separate bookings back to back.



Sports Hall Booking System



University
of Bolton

Teaching Intensive, Research Informe

View Customer Bookings

Menu

Date ▼ Filter Delete Bookings

▼ Date	▼ Time	▼ Room	▼ Name	▼ Activity
01/01/18	19:00	Sports Hall 1	Shak Shah	Football
01/01/18	19:00	Sports Hall 2	Bob Bill	Basketball
01/01/18	20:00	Sports Hall 1	John Smith	Football
"	"	"	"	"
"	"	"	"	"

Consideration

For the bookings page I have decided to **include the activity** of each booking to be displayed along with the other details within the table. This will also help the user see the appropriate details for the booking as it is an important detail which I believe **is necessary to be displayed**. This change will feature in **both view bookings screens (Staff and customer booking screens)**



Bolton
Council

NHS Bolton

Sports Hall Booking System



University
of Bolton

Teaching Intensive, Research Informe

Search Bookings

Menu

ID:

Search by ID

Date:

Search by Date

Surname:

Search by Surname

Consideration

For my redesign of the search booking screen **I have separated the searches**, with each search having its own text field for input. This new design will provide **clarity to the users** as they will no longer have to use one field for multiple search criteria **which could be quite confusing for all** users, even if they are familiar with the system.

5.3 Data Structures & Files

5.31 Consideration

After receiving my feedback and making changes to my input and output designs, I have also had to restructure the data structures I had previously designed in order to include the necessary details that are required to be stored. Below is the changes to my data structure designs along with the consideration of the changes.

Data Structure	New / Existing?	Consideration for Additional Data
Booking.java	Existing	For the booking structure I have decided to include two new attributes as part of the record which are activity and price. This is so that each record of the booking data will contain all relevant details which will also be displayed in the system therefore must be included to maintain consistency of the system.

5.32 Changes to Data Structures

This colour box represents existing fields

This colour box represents additional fields

Booking.java

Field Name	Key Field	Data Type	Validation	Example Data
bookingID	PK	Integer	-	5
name	FK	String	Y	Shak Shah
phoneNum	-	String	Y	01204 553366
email	-	String	Y	Shak@gmail.com
room	-	String	Y	Room 1
time	-	String	Y	12:00
date	FK	String	Y	01/12/18
activity	-	String	Y	Football
price	-	Float	-	20.00

5.4 Processes

5.41 Consideration

Based on the feedback that I have gained I have reconsidered the processes that I have as part of my system. Below is a list of new processes for existing screens, with a detailed reasoning on why changes were implemented.

Entity	Process	New / Existing?	Consideration
Booking	Add to Bookings Array	Existing	After considering my feedback I decided to include two additional attributes as part of a booking record. Therefore, I will need to amend the process in which the booking array is created so that the two new attributes will be included.

5.42 Changes to Processes

```
// Revised: Objective 11 – Add Bookings to the bookings Array
START
    DECLARE bookingsArray as String Array
    DECLARE customerArray as String Array
    DECLARE file = "BookingData.txt"
    INPUT name as String
    INPUT phoneNumber as String
    INPUT email as String
    INPUT date as String
    INPUT time as String
    INPUT room as String
    INPUT Activity as String
    CALL calculations for price method //OBJ 16
    bookingsArray[nextFreePostion]=name+phoneNum+email+date+time+room+activity+price
    customerHistoryArray[nextFreePostion]= date+time+room
    customerArray[nextFreePostion]=name+phoneNum+email
END
```