KULLIYAH INFORMATION, COMMUNICATION & TECHNOLOGY

FINAL PROJECT

Course Code : **INFO 3305**

Course Name : **WEB APPLICATION DEVELOPMENT**

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Section : **2**

Group Name : **B A L I**

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1. INTRODUCTION

Sports as claimed, can be very effective in maintaining a healthy body. The longer, harder and more often you exercise, the greater the health benefits, including reducing the risk of diseases such as cancer and diabetes, according to the recommendations, which were based on a decade of scientific research. Studies have shown that people who engage in the amount of exercise recommended by the doctor live an average of three to seven years longer than couch potatoes.

Therefore, we decided to develop an application where it helps people in getting the sports equipment. It is “Sports Equipment Rental System. This application would make data storing and data retrieval easier for the records. It is a complete system where it provides an easy way to deal with customers. This system will be provided with a lot of features that are crucial such as the list of customers and the equipment that they have rented with a date and more.

1.1. PROBLEM DESCRIPTION

1.1.1. BACKGROUND OF THE PROJECT

The environment in which we are planning to develop the application is using web applications. The target users that will use the system are the customers and owner. Generally, a common problem with the current processes that some shops are facing is that they use a traditional database whereby they keep all the customers’ records in a log book. Whenever the customers visit the shop to rent equipment, the customers will have to wait for a long time in order to be served . This traditional system is also not reliable since they use papers and inks in which it could fade away and the words can no longer be seen. Therefore, in order to improve the system, we came up with a system that could lead to a better management style.

1.1.2. PROBLEM STATEMENT

The deficiencies of handling the customers data can lead to error, loss and damage to the equipment. The specific problems with the existing system are:

- Longer time taken to search for customers’ records
- Lots of paper usage
- Inks on the papers turn out fade
- Papers can be misplaced without having other alternative

- No backup to restore data and information
- No security system

Thus, below are the processes that we are considering to automate or enhance through our proposed application:

- Set a usable system for the users to access it quick
- Simple and interactive interface
- No paper and ink required
- Store data and information safely
- Secured system

2. PROJECT OBJECTIVE

Our main objective for this project is to make it easier for the customers and owner to go through the process of renting. So we provide this website and try to make it useful and friendly to our users. Beside that, it is our target to give a chance to all and provide great facilities for them to enjoy sports.We will produce documentation on this project at the end of the development phases to report on the completion and progress flow. The business operation for sport equipments rental that will be automated upon project completion are as follows:-

- Web-based application that can be utilised with internet connection.
- Easy storage by making use of database technology.
- Business records are automatically processed and managed by a server based on records stored in the database.

3. FEATURES AND FUNCTIONALITIES

3.1. BOOKING AND RENTING

This feature allows users to self-service, create and cancel bookings at the sports facilities according to what is available whether it is court or equipment. This feature allows users to book courts such as futsal court, badminton court, squash court and many other facilities. Next, equipment also available for renting. There are many items that can be rented by the user. For example, racket, football,basketball and many other items. The user gets full control over who can book, whether it's the general public, invited users, users with a particular tag, or only admins.

3.2. CALCULATION AND PAYMENT

This system calculates the fees for the reservation of the court by hours that it was booked earlier. The calculation is per hour. For example, a user booked a badminton court for 2 hours. So that user needs to pay the amount for 2 hours whether that user used that court or not. Before proceeding with booking, the user needs to settle with the payment first or some deposit to avoid any last minute cancellation. The user also can pay by cash to the person at the counter at each court or the user can call the admin to cash on delivery.

3.3. NOTIFICATION

Each venue likely has special terms, policies and rules to which users must adhere. This system can automate these so that you can open up your venue to self-service bookings and save time. Customize how far in advance users can book with booking-window rules. Customize how late people can cancel with a cancellation policy. Customize overall booking allowances with quota rules. Customize strict blocks and duration constraints with booking conditions, and customize fixed and variable pricing by day, time, space, duration and user

3.4. SECURITY

This system calculates the fees for the reservation of the court by hours that it was booked earlier. The calculation is per hour. For example, a user booked a badminton court for 2 hours. So that user needs to pay the amount for 2 hours whether that user used that court or not. Before proceeding with booking, the user needs to settle with the payment first or some deposit to avoid any last minute cancellation. The user also can pay by cash to the person at the counter at each court or the user can call the admin to cash on delivery. Internet security is becoming an ever-increasing issue and the same applies for your app. With many applications storing personal and sensitive information or credit and debit card details, security is an absolute must.

Hackers may attempt to:

- Place malware into apps and onto devices where it can access data and steal screen lock passcodes
- Intercept sensitive information traveling over the network
- Steal customer data for identity theft or fraud.

Because this system asks users to put their biodata details.

4.0 PROJECT SCOPE

4.1 SCOPE

The scope of this project is to allow students, staff or lecturers of IIUM to use IIUM sport facilities whether it is court or sports equipment. By using Sports Equipment Rental System as a platform to ease their bookings for courts and equipment. The user just needs to book their desired court and date without having to go to the actual court itself.

4.2 Targeted Users

-IIUM community
IIUM community includes all staff, lecturers and students who want to use courts or sports equipment.

4.3 SPECIFIC PLATFORM

Name of Components	Specifications
Operating System	Windows 10
Programming Language	JSP, HTML, CSS, JavaScript, Java, JDBC
Java Application	Java Eclipse EE
Database	MySQL
Web Server	Tomcat 9.0

4. MVC

4.1. MODEL

The Model component corresponds to all the data-related logic that the user works with. This can represent either the data that is being transferred between the View and Controller components or any other business logic-related data. For example, in our booking of sports facilities, if the user needs to change the number of court booked, a Customer object will retrieve the customer information from the database, manipulate it and update it data back to the database or use it to render data.

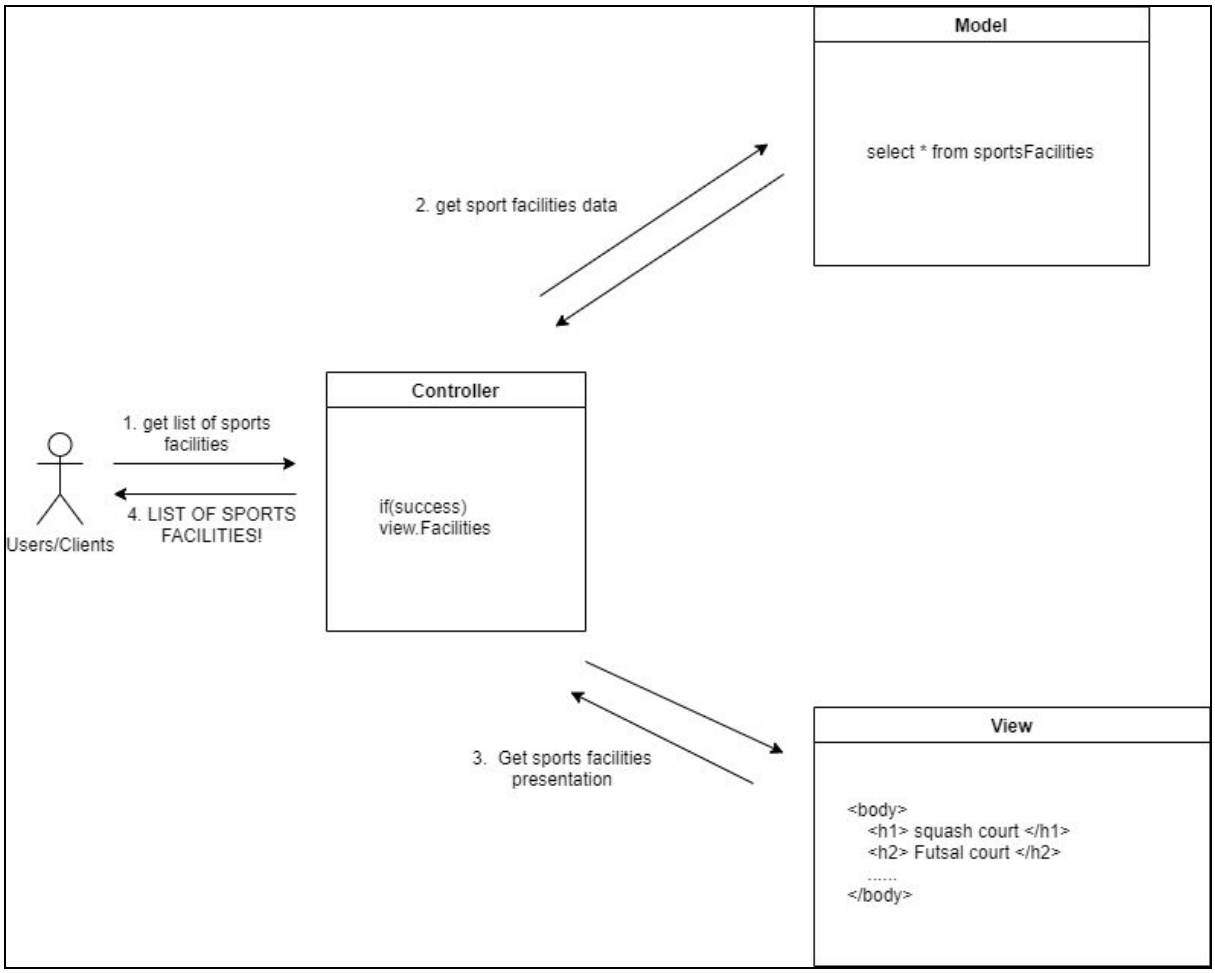
4.2. VIEW

In this view, this is the only thing that users see. This part contains the html and the css, which display the interface of our web applications. For example, in our application, the user will be able to see the textbox for them to enter their name, the dropdown and the booking button that the user will interact with during the booking process.

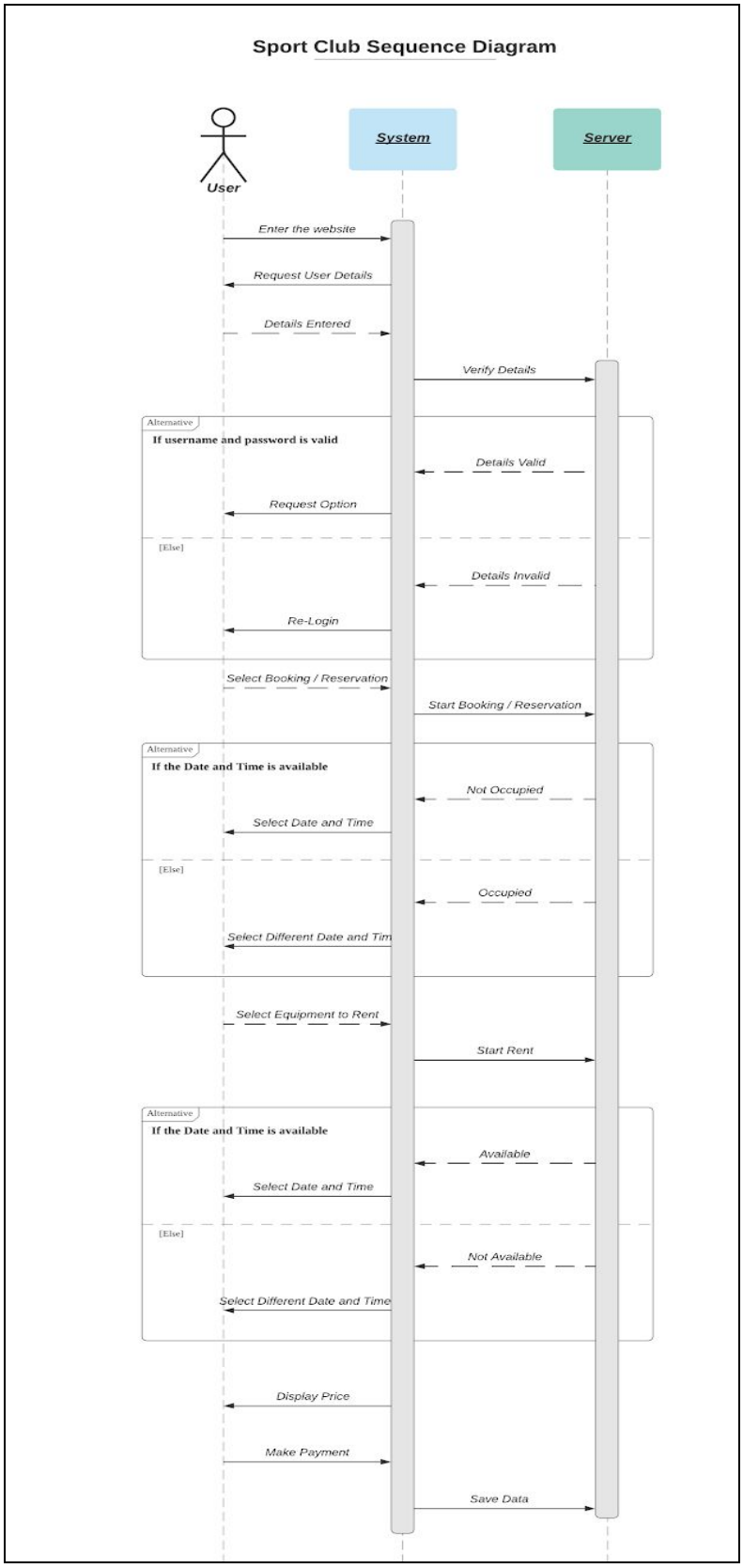
4.3. CONTROL

Controllers are the interface between Model and View components. Users/clients will never know how the controller functions. The controller handles all the requests from the client. All of the client requests will be sent to the controller and if the request from the clients/users needs to get any data inside the database, this controller will interact with the model so the client/users get the response for their request. For example, in our booking application, if users enter their name for the booking purpose, the controller will handle this input and the controller also will send a request to the model to update the database.

4.5. MVC DIAGRAM



5. SEQUENCE DIAGRAM



6.0 Project Accomplishment

a. Arena.jsp
   -HTML
   -CSS
b. Arena.java
   -Java
c. connectDB.java
   -MySQL
   -JDBC
   -Java
d. Connection.jsp
   -MySQL
   -JDBC
   -Java
e. equipment.jsp
   -HTML
   -CSS
f. header.jsp
   -HTML
   -CSS
g. main.jsp
   -HTML
   -CSS
h. payment.jsp
   -HTML
   -CSS
i. signin.jsp
   -HTML
   -CSS
j. Signup.jsp
   -HTML
   -CSS
k. Users.java
   -Java
   -MySQL
l. Validate.jsp
   -MySQL -Java
   -JSP

7.0 System Interfaces

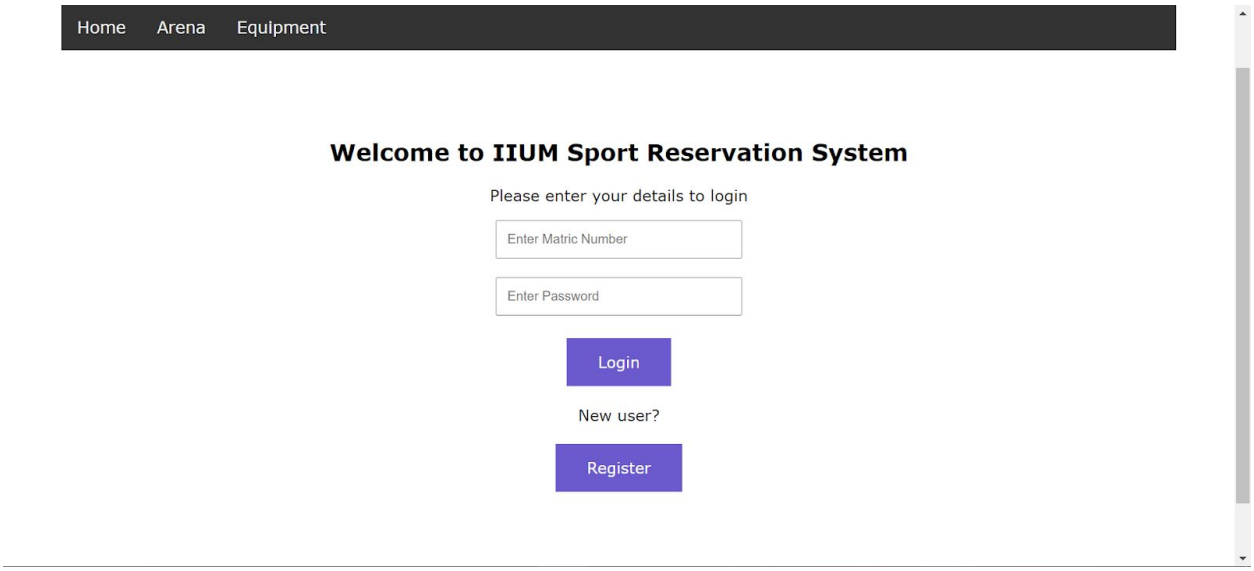


Figure 1: Home Page for IIUM Sport Reservation System

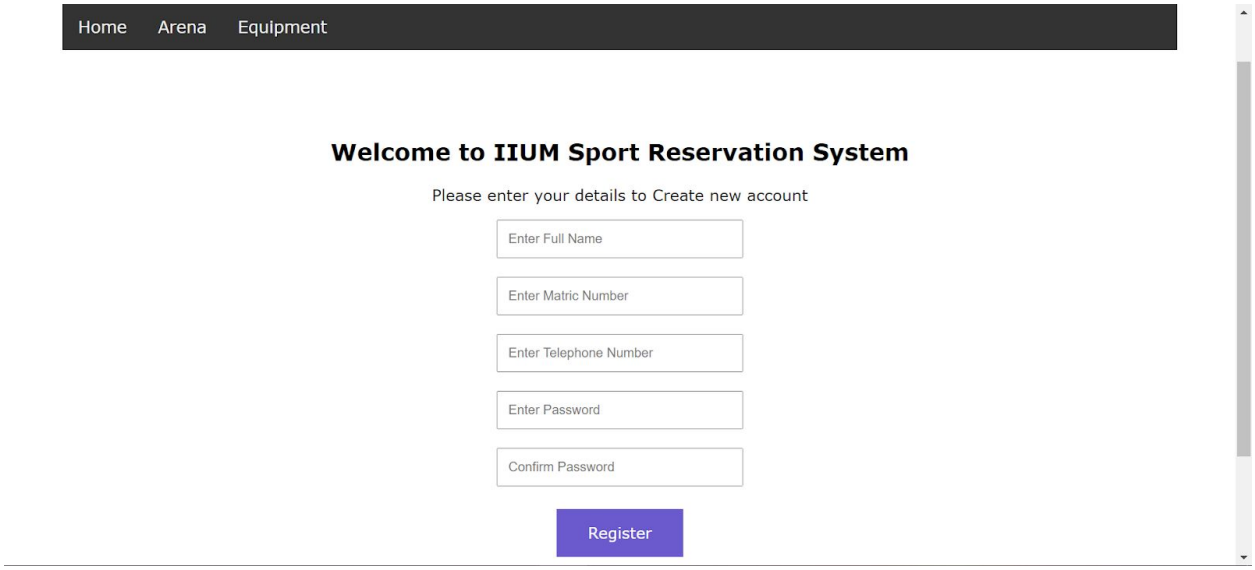


Figure 2 :Username and Password Registration Page

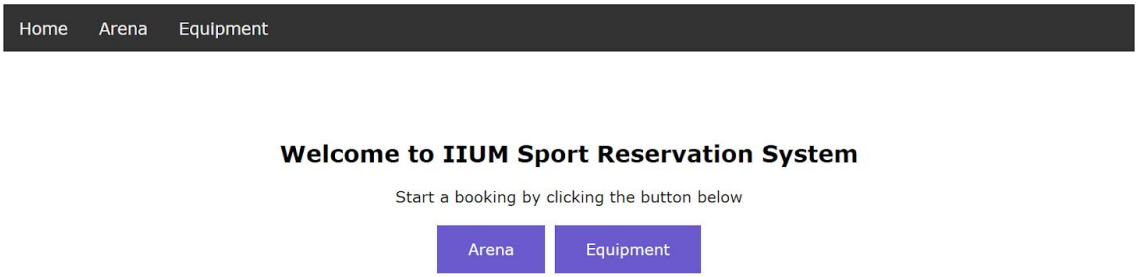


Figure 3: After Login Page: Choose either Arena or Equipment

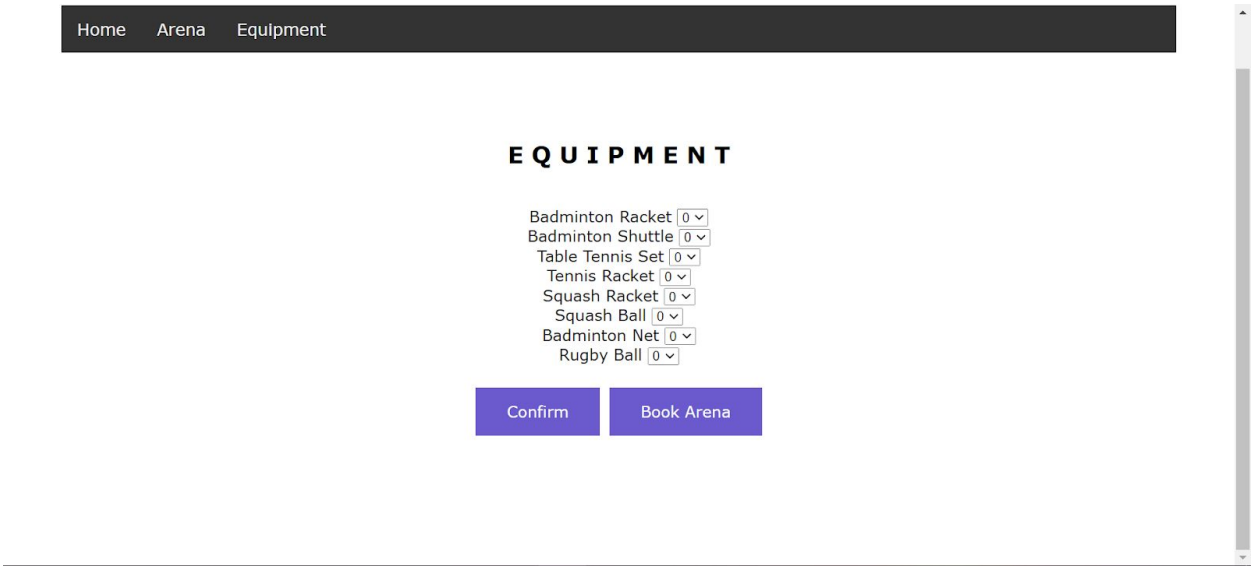


Figure 4: Equipment Rental Page

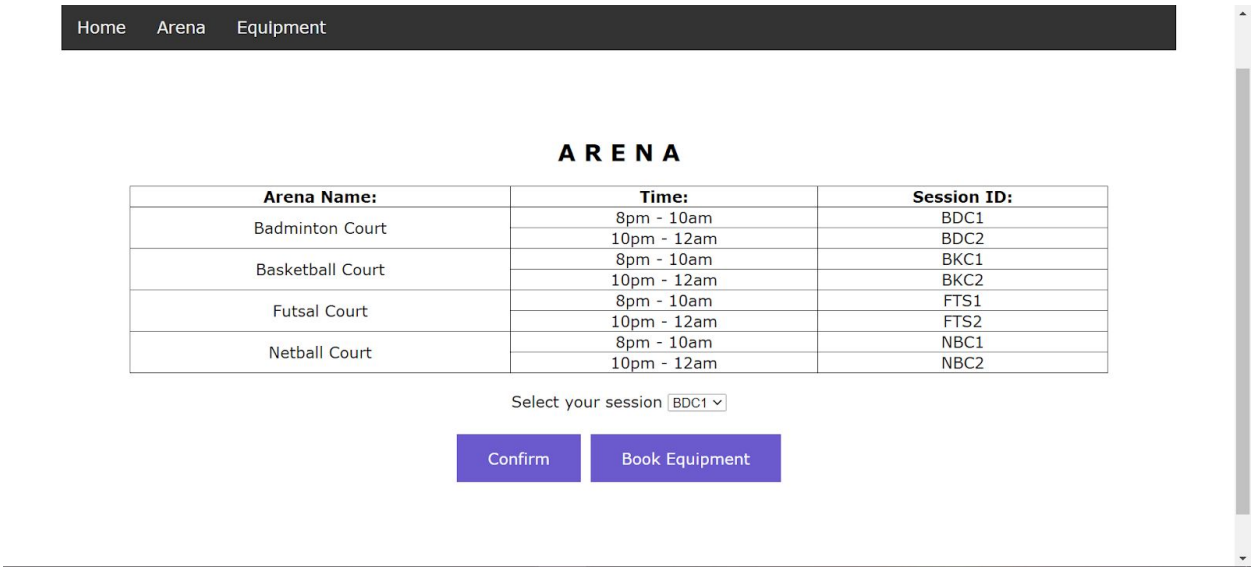


Figure 5: Arena Court Booking Page

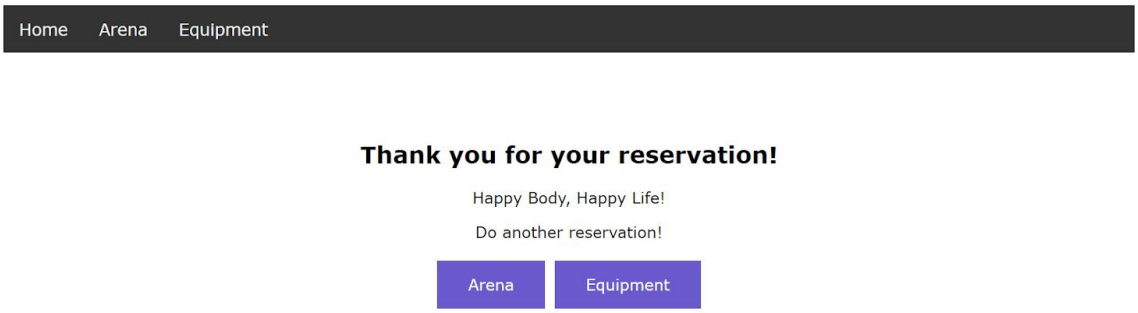


Figure 6: After Booking and Rental Page

8.0 CONCLUSION

In conclusion, our system is basically to help the users to book court in IIUM and rent sports equipment based on their preferences.Besides, we also learned to use a different method in developing a web for business purposes such as applying the concept of web application like JSP, JDBC and many other elements. Next, we also provide up-to-date information about the status of the reservation as the user's references. They also can check the court availability before booking to ensure no clashing happens. By having this system, it somehow helps us to increase our business revenue and save physical booking time.

9.0 REFERENCES

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IX. https://drive.google.com/file/d/1TSwcvJAtJK_45W5oYDnOZz4A5jdIPHp0/view