LCD BOOKING USING BARCODE SCANNER IN KUIS

MUHAMMAD ARIF BIN ABD HAMID

BACHELOR IN INFORMATION TECHNOLOGY (NETWORKING)

INTERNATIONAL ISLAMIC UNIVERSITY COLLEGE SELANGOR (KUIS)

SESSION I 2019/2020

LCD BOOKING USING BARCODE SCANNER IN KUIS

MUHAMMAD ARIF BIN ABD HAMID

Report submitted in partial fulfillment of the requirements

for the award of the Bachelor

in Information Technology (Networking)

Faculty of Science and Information Technology

INTERNATIONAL ISLAMIC UNIVERSITY COLLEGE SELANGOR (KUIS)

SESSION I 2019/2020

FAKULTI SAINS & TEKNOLOGI MAKLUMAT (FSTM), KOLEJ UNIVERSITI ISLAM ANTARABANGSA SELANGOR (KUIS)

DECLARATION OF THESIS AND COPYRIGHT

Author's Full Name	:	MUHAMMAD ARIF BIN ABD HAMID
Identification Card No	:	970307-10-5091
Title	:	LCD BOOKING USING BARCODE SCANNER IN KUIS
Academic Session	:	SESSION I 2019/2020

I declare that this thesis is classified as:

☐ **OPEN ACCESS** — I agree that my thesis to be published as online open access (Full text)

I acknowledge that FSTM, KUIS reserve the right as follows:

1. The thesis and final prototype is the Property of FSTM, KUIS.
2. The library of KUIS has the right to make copies for the purpose of research only.
3. The library has the right to make copies of the thesis for academic exchange.

Certified by:

_____ (Author's Signature)

_____

Date: _____

_____ (Supervisor's Signature)

Name of Supervisor

Date: _____

ABSTRACT

With the swift increasing technology in this era, this project can improve the old system. Since various bar codes have been used for decades as a very effective means in many systems, today people are looking for innovative solutions to use bar codes. Since student's matric card in KUIS have a bar code in it, why do we not use it to the fullest. Bar code is a simple yet useful technology that we can get many benefits from it. Soon, maybe it can replace most of the system in this institution such as parking, examination pass maybe even entry pass to KUIS.

ABSTRAK

Dengan peningkatan teknologi yang pantas pada era kini, projek ini dapat menambah baik system yang sedia ada. Memandangkan teknologi kod bar telah lama digunakan dan memberi kesan, kebanyakan masalah pada masa kini dapat diselesaikan. Kod bar di kad matrik pelajar KUIS akan digunakan sepenuhnya didalam projek ini. Teknologi yang ringkas ini dapat memberi manfaat pada pengurusan institusi ini. Pada masa depan mungkin konsep projek ini dapat digunakan untuk pas kemasukan pelajar ke dewan peperiksaan atau lebih baik lagi kebenaran membawa masuk kenderaan ke dalam kolej.

ACKNOWLEDGEMENTS

I am grateful and would like to express my sincere gratitude to my supervisor Sir Che Samsul Bahri bin Che Wan Ahmad for guided and supervised me with my project from start to end.

My sincere thanks go to our coordinator Puan Siti Noor binti Ahmad and all my friends who helps me with this project especially Ahmad Fareed Fauzi, Muhammad Al'Imran, Ahmad Shifa and Muhammad Nazren.

I acknowledge my gratitude for my parents Abd Hamid bin Sahan and Siti Anjar binti Rajulan who believes in me and continuously support me to finish this project.

TABLE OF CONTENT

List of table

List of figure

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION OF THE CHAPTER

This chapter will explain the surface of the project. We will discuss about the project, LCD Booking using Bar Code Scanner in KUIS. This chapter is divided into five sections. The first section in the general preview of this chapter whereas will be explaining the whole concept of this project. The second one is the problem statement that has been constructed by summarize the current problem. As for section three is all about defining the objective of this project. In this section, the objectives will meet the solution for the problem statement as mentioned before. While in section five will be explaining about the target audience of the project. The final section for this chapter will state a conclusion of the organization.

1.1 PROJECT INTRODUCTION

Bar code scanner is a technology that we not using it to the fullest. You can get many information in a single bar code such as price, manufacturer and product code.

In this project we will gain information of student from the bar code. Bar code works when light is applied to the bar code and it count the amount of light received in the scanner. All students matric card has a bar code that will show their identification card number. This number can be used to get their information from KUIS database. In order to gain this information, we have to use a bar code scanner.

A bar code scanner is placed in counter and student just have to scan their bar code to login the system. The form in a web-based application that will be shown at BTM counter. After that student will have to click the LCD and proceed with the booking.

This project will save time of filling form in the thick book. It also will save the consumption of papers and ink. This is another step to go green. Besides that, with using of matric card, it will encourage student to always bring their matric card as we see many of them only using it during examination.

This feature allows students to not rushing to class and class will be started on time with the reservation. Student also will not worry about the availability of the things that they want to reserve. Time and energy can be saved with this feature.

Besides that, staff can easily detect students that not return back the items they reserve. This can be done by looking in the log that have been recorded in the database. So, they would not have to search in thick book that have around 1000 students name.

1.2 PROBLEM STATEMENT

A web-based application that allow student to fill their detail with just a matric card that have bar code is totally helpful. Students can make reservation with just a click. Papers and pens also not required during this process. Besides, staff can track easily who take the responsible for their items in case something happens.

1.2.1 Traditional way is time consuming.

1.2.2 Staff must search in the thick book to identify a lost device.

1.2.3 Too many ink and paper used can affect environment.

1.3 PROJECT OBJECTIVE

The objective of this project is to develop a web-based application of LCD Reservation using Bar Code Scanner in KUIS that able to:

1.3.1 To make booking of items easier and faster.

1.3.2 Make identification of lost devices easier.

1.3.3 To enable students to make online booking.

1.4 PROJECT SCOPES

This project will be developed in web-based application to enable access by student and staff. Databases from KUIS that contain student's information is needed. This project used English as a language medium. The prototype will be able to scan matric card bar code and gain student's identification card number. The number will used to gain student's information in KUIS database.

1.5 LIMITATION

1.5.1 User must create account to make online booking.

1.5.2 Required internet connection from users

1.5.3 Required matric card in order to book the items.

1.6 PROJECT CONTRIBUTION

1.6.1 Time saving.

User do not have to go to BTM to make reservation and fill the form during the process of reservation

1.6.2 Easy to access

System enables the process to go smooth and easy

1.6.3 Easy searching for lost devices.

Staff can easily search in the log to find people who take responsible for the lost devices.

1.7 CONCLUSION

The target audiences for this project is students and staff of KUIS. This will change student's perception of importance of matric card. It also optimize the function of bar code at the back of the matric card. Improvisation in staff efficiency can be seen with this project by the use of feature. Fake details filling will be prevented. Besides, recorded log will ease staff work in order to find lost items.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION OF CHAPTER

This chapter describes the literature review from recent issue and gives a brief review about the past project and explain about the review of the journal reading. Literature review is a process to collect information in identifying problem that exists in the previous project. In addition, literature review can be referred by the internet, journal and books.

This chapter will emphasize on the research carried, the review from previous research that is related to LCD Reservation using Bar Code Scanner and the discussion about the definition of every element to develop this project. Objective for this reading is to know the advantages and disadvantages about system that have been build. After that, we will build a better system.

2.2 DOMAIN STUDIES

This project is under the study of Internet of Thing. It has bar code that allow the connection with the web application of the system. The bar code scanner is device that can communicate with other device to processing data. This project is developed because IoT is a rapid growing technology in world nowadays. I quote statement that define IoT.

"Hence, from a technology perspective, the IoT is being defined as smart machines interacting and communicating with other machines, objects, environments and infrastructures, resulting in volumes of data generated and processing of that data into useful actions that can "command and control" things and make life much easier for human beings … similar to the world envisioned in the 1970s cartoon The Jetsons, only better."Kaiwan Karimi-2013.

This technology rapidly growing is because the benefits it offers. Some of it gives much improvement in our daily lives. Even in business aspect, it improves business value. According a journal, the benefits is:-

"Eco Friendly Solution. Looking for a parking space leads to carbon emission that has major impact on environment. Saves Paper. In 2011, Chicago alone recorded 33.1 million meter receipts and about 54.5 tons of waste. Since the parking tickets will be digital, Need for human supervisor will be eliminated. Valuable data generated by the sensors, camera and customer interaction can be used to gain business advantage and insights. Providing offers with promotions through mail or mobile app can attract customers."Parminder Singh Sethi,Jatin Kinra,Vaibhav Hans-2015. These benefits sums up the goals of technology. To conserve mother earth and improve mankind. By this step applied we can ensure the bright future of the incoming generations.

2.3 TECHNOLOGY STUDIES

This project involved few technologies in my field to meet the requirement. The technology that will be discussed is bar code and web-based application.

2.3.1 Bar code technology

Bar code is often use in supermarket even hypermarket to put price in their goods. That is the general function of it. In this project it used to store the primary key to gain the information of the students in KUIS database. This is why it is already implemented in student's matric card. It will improve the function of the matric card beside for student's identification and for examination. This project also will encourage student to always bring their matric card wherever they go.

"Bar codes are used widely because bar code code technology and processing provide a fast and accurate tool to enter data without keyboard data entry. The research for storing more data in bar codes led to the development of 2D bar codes that can store large amount of data in a small area to support information distribution and detection without accessing a database. But 2D bar codes require sophisticated devices for decoding, which was a challenge until recently." Jerry Zeyu Gao, Lekshmi Prakash, and Rajini Jagatesan,2007.

According to study above, this project enables to scan 2D bar code for data entry. This feature saves user's time and energy. With just a simple scanning, it will record user activity. In addition, staff can track the user reservation using the log recorded.

2.3.2 Web-based application

Web-based application is used for this project in order to suits the requirement of the online Reservation feature. A responsive web-based application is needed to deliver maximum satisfaction to user when communicating with the interface. There is a study that shows a responsive web-based application can accomplish the task.

“The goal of responsive web design is to make a web page look equally good regardless of the screen size of a device.” Bohyun Kim-2013.

These characteristics allow user to comfortably use the web application in any device. Hence, this will increase the productivity and any activity can be completed smoothly. In addition, it can also improve user communication experience with the interface of the web application.

2.4 SOFTWARE SPECIFICATION

2.4.1 Xampp

Xampp is local development environment. In this project, this software function as a server. The server can store, retrieve and send data and computer files to another computer through the network.

2.4.2 Notepad++

This project needs a lot of PHP coding development to succeed. Notepad++ can completed this job successfully. This software is similar to Sublime text writer. Unlike the default Notepad software, you can build your own workspace by Notepad++.

2.4.3 phpMyAdmin

phpMyAdmin used to handle the administration over the Web. Operations like managing databases, tables, columns, relations, indexes, users, permissions and else can be done by this software.

2.5 HARDWARE SPECIFICATION

2.5.1 Bar code

Bar code functions as a tag that contain student's ID. It will be scanned by the scanner and student's details can be gained through the KUIS database.

2.5.2 Bar code scanner.

Bar code scanner is device that capture the amount of laser ray deflected by the bar code. By doing this student's ID that stored in the bar code can be gained. In this project, we use external USB barcode scanner.

2.5.3 Laptop

Laptop is used to run the software above in order to develop the project. Also, it will be used in making report and doing research for this project.

2.6 PROJECT COMPARISON

Table 1 Comparison between different technologies

PROJECT / ASPECT	RFID	MANUAL SYSTEM	KIOSK	BAR CODE SCANNER	BLUE TOOTH
IMPLEMENTATION	HARD	EASY	HARD	MEDIUM	HARD
MAINTENANCE	MEDIUM	HARD	HARD	EASY	MEDIUM
TIME EFFICIENT	YES	NO	YES	YES	MODERATE
ECO FRIENDLY	YES	NO	YES	YES	YES
COSTING	LOW	MEDIUM	HIGH	LOW	LOW

2.7 CONCLUSION OF CHAPTER

As a conclusion, this chapter shows the study of the technology used. Many academic articles have done study about the technology in this project. As a result, it makes my research for this project easier. Software and hardware needed also have been discussed in this chapter. It will make my planning for this project keep in track and done in perfect sequence.

CHAPTER 3

METHODOLOGY

3.0 INTRODUCTION

In this chapter, will be discussing about the general definition of methodology and the exact method used in order to develop this project. After making several of considerations, it is recommended that the model that suits for this project is the System Development Life Cycle (SDLC). Through the process of SDLC, these models enable developer to produce a more systematic way of project management schedule or in other term refers as Gantt chart which will be shown within this chapter. LCD Reservation using Bar Code Scanner development is a software project. For the software part, it discusses the development of system's program and how it works. This chapter also explains about how Reservation of items can be done online and what can be done if Reservation is being cancel.

3.1 DEFINITION OF METHODOLOGY

In general, methodology often refers as research methodology. This kind of method usually prevents people from being out of track in resolving the issues. There are variety types of methodology provided for people in order to solve the problem that had occurred. Mostly each methodology has the same goal and that is to aim for searching the answer to questions through a procedure. Each methodology may have different features than one another. This is because it is based on different situation. Not all problems or issues are using the same method. It depends on the environment of the surrounding.

3.2 SYSTEM DEVELOPMENT

System Development Life Cycle (SDLC) is a series of five main phases to create a hardware system only, a software system only or a combination of both to meet or exceed customer's expectations. The five step is planning, analyze, design, implement and testing the system. It is important when we want to develop the system.

A system is a set of interacting or interdependent components forming an integrated whole it's a term that can be used in different industries, therefore Software Development Life Cycle is a limited term that explains the phases of creating a software component that integrates with other software components to create the whole system.

In the figure below (refer Figure 1) is sequence methodology which will be used in this project. This project will use System Development Life Cycle (Roebuck, 2011) methodology as a main methodology.

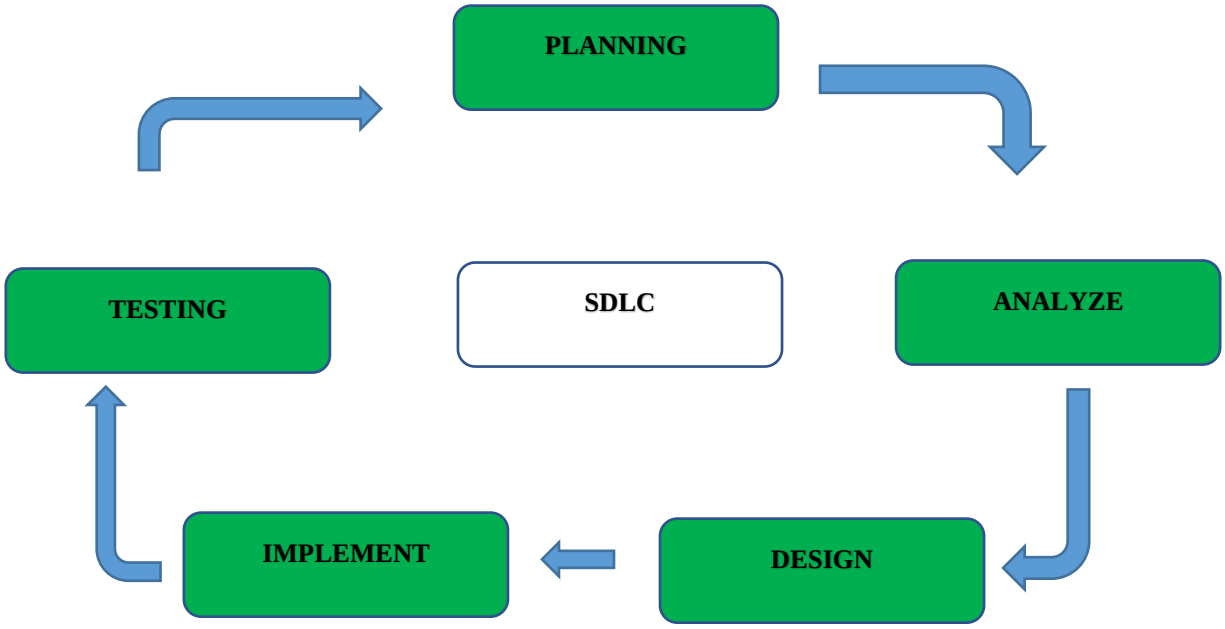


Figure 1 System Development Life Cycle

3.2.1 PLANNING PHASE

First step done is planning phase. This phase defines project goals into defined functions and operation of the intended application. After tittle approval, this step is conducted. The idea of the project is to develop a web-based application that offers online reservation feature in counter using matric card only.

Firstly, I search about bar code scanner and web-based application in internet, books and journal. This technology is related in my field. After a discussion with my supervisor, the title is approved. The project should have limitation by creating the scope of this project and divide the technology use is to complete our first phase with is planning.

Secondly, I find out the algorithm to gain information in bar code and how bar code scanner works. Also focuses on gathering information like problem statements, project scope, the objectives, literature review and other resources such as the hardware or software that might be used for the upcoming development.

3.2.2 ANALYSIS PHASE

This phase required the knowledge on planning phase to be structured and discuss. Information gathering is done in this chapter. This phase also including Chapter 2 report which is Literature review. Current system is studied, user needs and requirement and the solution needed. During planning phase, this phase specifies the data collected in the previous phase like the problem statements, the scopes and the objectives in details. In order to understand completely about this project, several literature reviews have been analyzed through books, journal and web sites.

From this phase I find solution to improve the old system using new technology. Therefore, a detail research for all the problems are important to be understand, especially the flow of the algorithm of the programming must be structured well based on the objective of the application.

At this stage there are some important things that must be highlighted to continue the phases until it well structured. There are needed for me to research the algorithm or coding in programming on how the information is gained in bar code, what information stored in student matric card and how bar code scanner works. The planning is to create a system that can use matric card for items reservation.

Students must bring matric card to be scanned. Bar code scanner will scan student's bar code to gain their id number and used as primary key to find student's details in KUIS database. After student's details is filled, real-time log record will automatically be recorded otherwise student have to key in time and date. Management will only have to scan the bar code in student's matric card.

3.2.3 DESIGN PHASE

The objective of the design phase is to create a design that satisfies the application requirements. I start with integration of bar code scanner with the web application. This step is implemented by using the specified tools. The web application will allow user to scan a bar code that contain student's ID number. Connection with database allow the system to find student's details like name, and matric number. The details will automatically fill in the web application. Time and date user can type manually.

3.2.4 IMPLEMENTATION PHASE

By implement this system into one of the server room for testing stage is important. This phase comes after a complete understanding of system requirements and specifications made in design phase. It is the actual construction process. From testing stage this system can get feedback from user themselves. If it suitable for them this system can continue last stage which is install to the Bilik Teknologi Maklumat (BTM) in KUIS.

In this phase there will be described about how the ID number is gained through bar code. This phase will include the information which is the algorithm will be coded and tested. The implementation part also Xampp as a server and phpMyAdmin to connect to database. This system will be implemented using a pHp script which contain every coding to save user activity to database.

All will be done with laptop that connected with a bar code scanner. Notepad++ is used to write all the coding needed. This eases the project even better.

3.2.5 Testing Phase

In this phase, the system will test. Normally, programs are written as a series of individual modules, this subject to separate and detailed test. The system is then tested as a complete system. While the error can be detecting in this stage, it is a good way to know how this project will be done successfully and the web application also can be improved.

This program will be tested first to the programmer to ensure their coding run successfully. System will be test gradually to improve the maintenance of the system, maintenance is related to the testing phase because of this project is not a big system but this is the application that needs an interaction between users with the system. This phase will be resulting the bar code that are loaded information to gain the detail in KUIS database and automatically filled in the web application.

3.3 PROJECT DESIGN

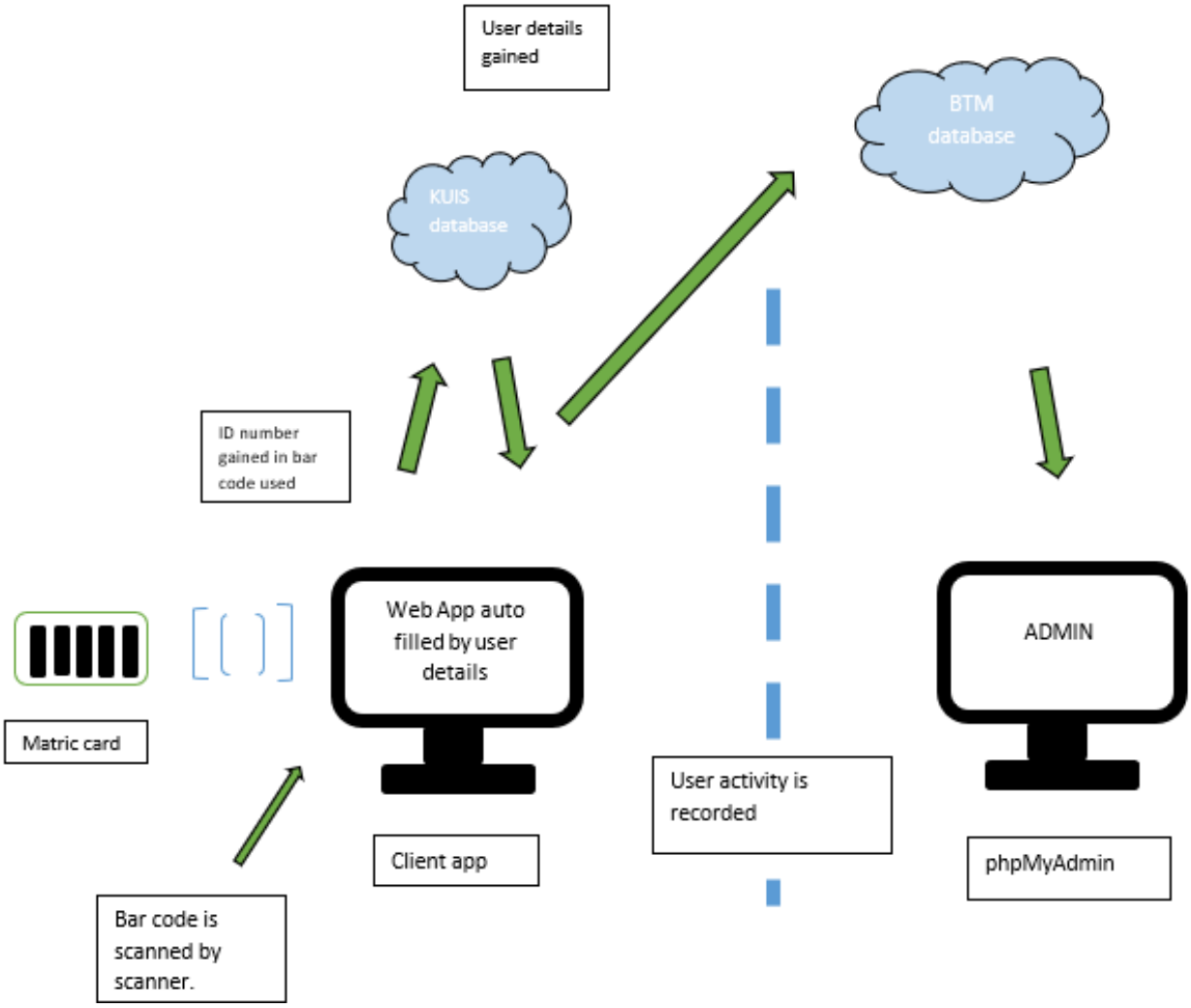


Figure 2 Network design.

3.4 FLOWCHART OF THE PROJECT

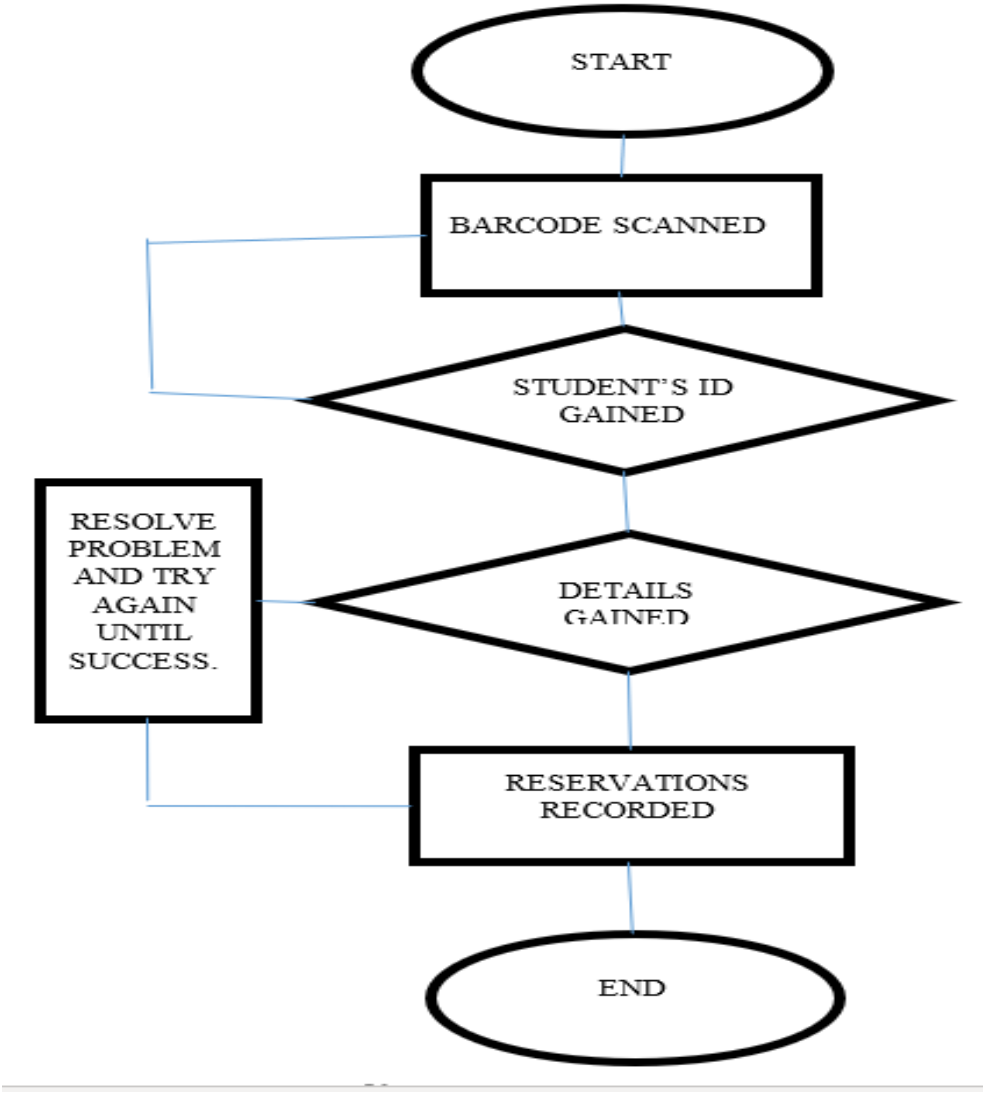


Figure 3 Flowchart of Project

3.5 PROJECT TIMEPLAN

Table 2 Gant Chart for the project.

TASK NAME	NOV	DEC	JAN	FEB	MAR	APR	JUN	JUL
PLANNING PHASE Discussion with SV regarding the title of the project, problem statement, objectives and scope of project.								
ANALYSIS PHASE Discussion with SV regarding the domain study, technology study & observe the existing and similar project system.								
DESIGN PHASE Preparing FYP1 presentation.								
IMPLEMANTATION PHASE Preparing chapter 4 FYP 2 draft. Start doing prototype of the project.								
TESTING PHASE Preparing chapter 5 FYP 2 draft. Testing the prototype and preparing for presentation FYP 2.								

3.6 CONCLUSION

This chapter explains all the activities involved in each phase of selected methodology of SDLC. System Development Life Cycle (SDLC) methodology is choose in order for the project to be created and maintained in the best way. Every stage of the methodology has its own purpose which is very vital and should never be skipped. This methodology is unique because it able user to keep maintain the project so that the system will always in a good condition for daily operation.

This chapter will summarize all the technique that must be implemented from the first phase to the end of the phase with System Development Life Cycle (SDLC) as a reference to guide the flow of the process working continuously. This chapter also described the method that has been use such as, internet, book, and discussion with supervisor, for the current application that already implemented by other researches will be guidance for me to improve the application. Therefore, at this chapter also important to show the task given and what given and what time to start and complete the phase. This chapter will help me about what to do after next step finish.

CHAPTER 4

PROJECT IMPLEMENTATION

4.1 INTRODUCTION

In this chapter, each flow of project development will be explained and described step by step. The part that will be covered are USB scanner setup, local server setup, database setup and scripting for the web application. Other than that, as for the project's final phase, there will be a test and assessment that will include several samples through the system's screenshot.

4.2 PROJECT IMPLEMENTATION

4.2.1 USB scanner setup.

USB barcode scanner act like keyboard but simple and faster with barcode. Plug it in the laptop and it is ready to scan the barcode contains input needed. In this project we input in the barcode is student ID number.

4.2.2 Local server setup.

In this project we use Xampp as local server. This allow us to connect with the server and to make connection with the database. Firstly, install Xampp and start Apache module and MySql module to provide connection with phpMyAdmin.

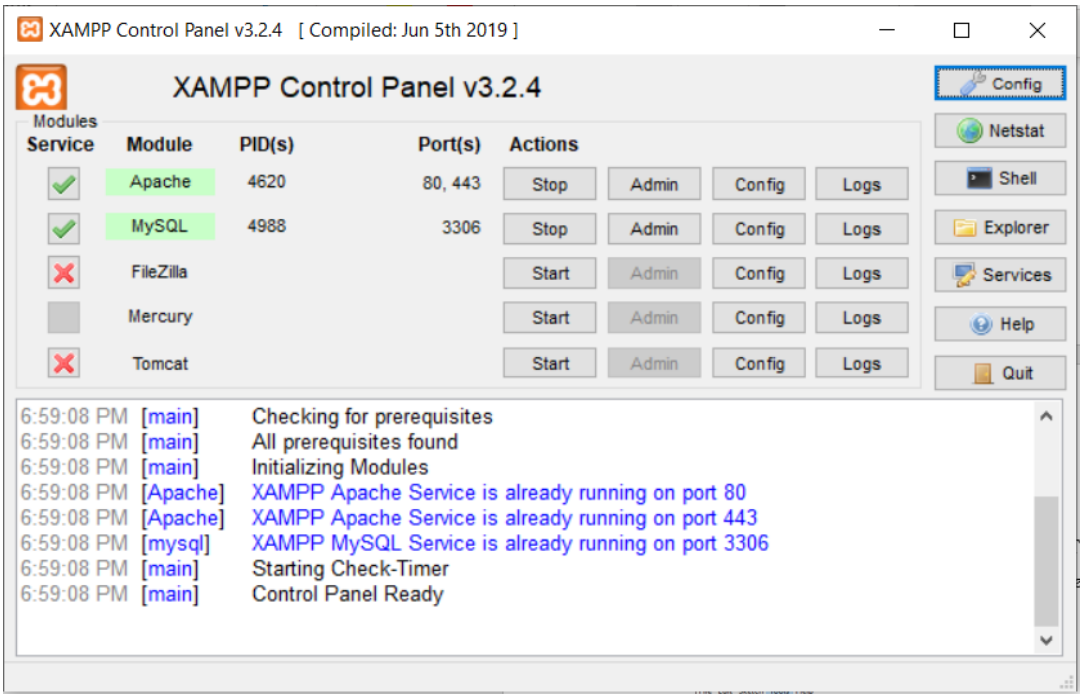


Figure 4 Services can be controlled in Xampp control panel.

4.2.3 Database setup.

After that, proceed to database development. Database named fyp_project is created. The database contains 4 tables. Table admin and student used to store student and admin login data. Table client stores booking request by student and table lcd is used to store inventory data. The database name and table are important in php during development.

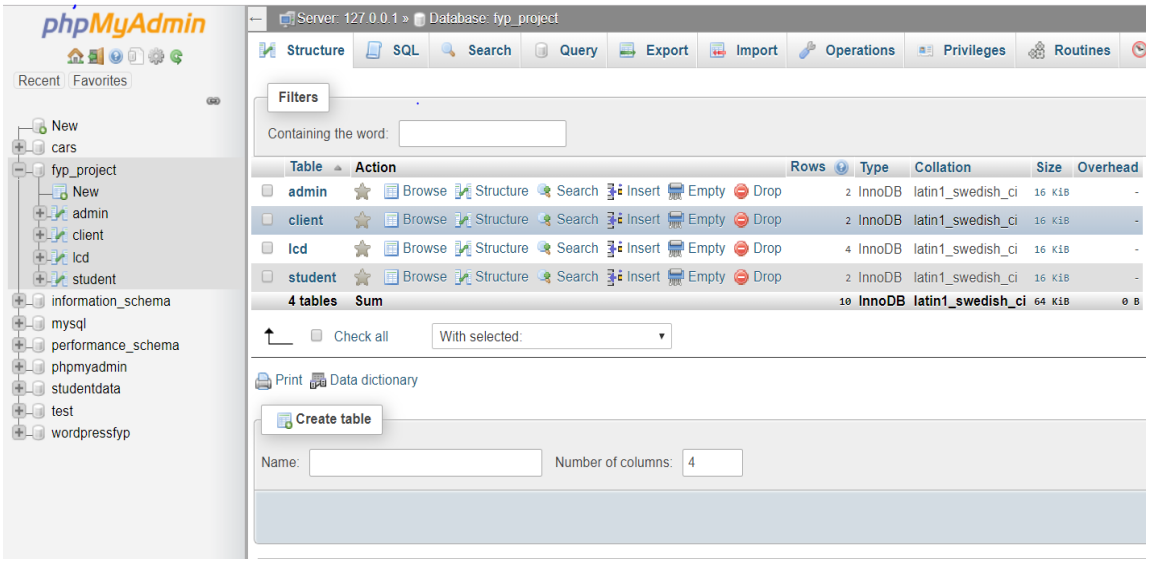


Figure 5 Database fyp_project that contains table admin, client, lcd and student.

4.2.4 Scripting for web application.

This step is the development phase for our web application pages. Address is determined by the location of the php script located in computer. All files related to the web is stored in C:/xampp/htdocs. This is the default virtual host by the server.

First step is scripting for config and header. This will be stored in includes folder to make connection between page and database easier. File config.php function as connection to database.

config.php

```php
<?php
    $host = "localhost";
    $user = "root";
    $pass = "";
    $db = "fyp_project";

    $conn = new mysqli($host, $user, $pass, $db);
    if($conn->connect_error){
        echo "Failed:" . $conn->connect_error;
    }
?>
```

Figure 6 Contain host, user and password of phpMyAdmin and name of database.

Header php file is created to allow includes in various page.

```php
    <section class="">
        <?php
            include 'header.php';
        ?>

            <section class="caption">
                <h2 class="caption" style="text-align: center">LCD Booking System</h2>

            </section>
    </section><!--  end hero section  -->
```

Figure 7 Line that redirect to user side of header.

4.2.4.1 User side.

Homepage is created and saved under name index. This page contains login for admin and student. For student to make a booking, login is required. For admin side, button is provided in this page.

Figure 8 This page communicated with table lcd where available projector is shown.

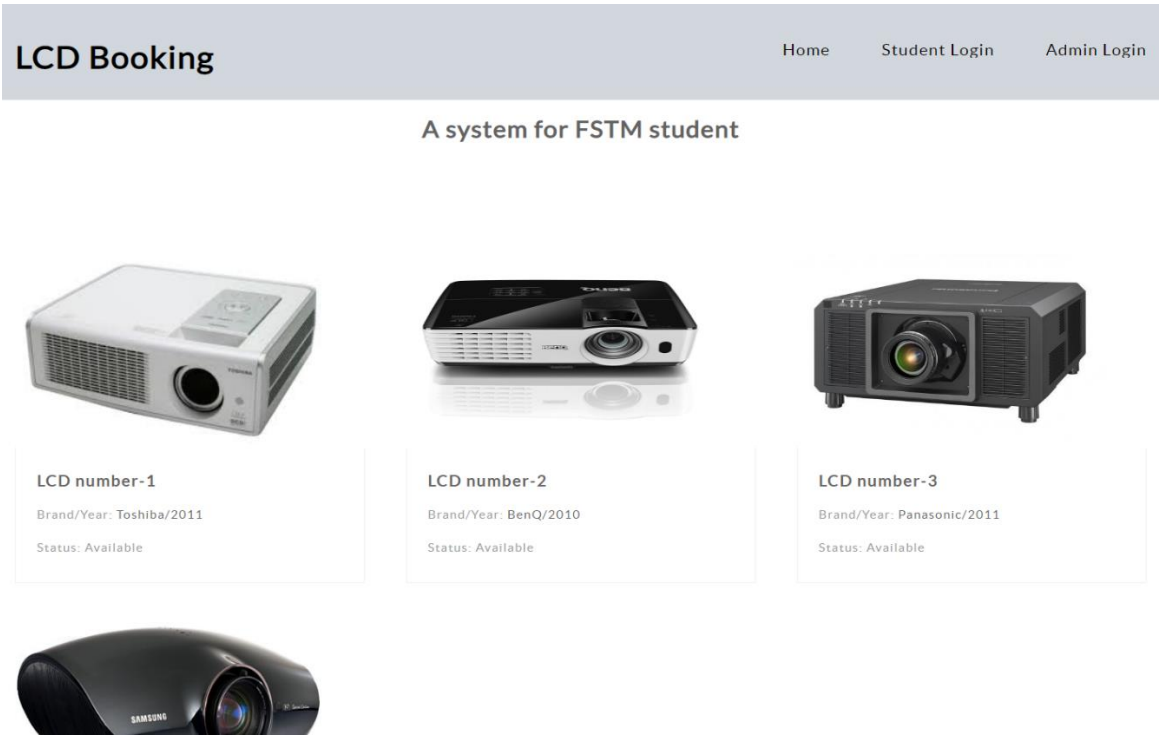


Figure 9 Result for the file index.php.

Before booking is made, login is required from student. $_POST variable is used to collect values from HTML form using method post. This allow the system to get user session. If all the variables are true, you will have a successful login and vice versa. This page can be accessed by clicking student login in homepage. This file is named account.php.

delete_lcd.php | account.php | index.php | book_lcd.php | signup.php | client_requests.php | add_lcd.php | menu.php | delete.php | login.php

```
26      <div class="wrapper">
27      <div id="fom">
28          <form method="post">
29          <h2 style="text-align:center;  color: #000099; font-weight:bold; ">Student Login</h2>
30              <table height="100" align="center">
31                  <tr>
32                      <td>Matric Number:</td>
33                      <td><input type="text" name="matric" placeholder="Scan here" required></td>
34                  </tr>
35
36                  <tr>
37                      <td><input type="submit" name="log" value="Login"></td>
38                      <td style="text-align:right;"><a href="signup.php">Sign-up here </a></td>
39                  </tr>
40              </table>
41          </form>
42          <?php
43              if(isset($_POST['log'])){
44                  include 'includes/config.php';
45
46                  $matric = $_POST['matric'];
47
48
49                  $qy = "SELECT * FROM student WHERE matric = '$matric'";
50                  $log = $conn->query($qy);
51                  $num = $log->num_rows;
52                  $row = $log->fetch_assoc();
53                  if($num > 0){
54                      session_start();
55                      $_SESSION['matric'] = $row['matric'];
56
57                      echo "<script type = \"text/javascript\">
58                              alert(\"Login Successful\");
59                              window.location = (\"index.php\")
60                              </script>";
61                  } else{
62                      echo "<script type = \"text/javascript\">
63                              alert(\"Login Failed. Try Again\");
64                              window.location = (\"account.php\")
65                              </script>";
66                  }
```

Figure 10 Shows matric number is scanned here for login. Sign-up button is provided.

.

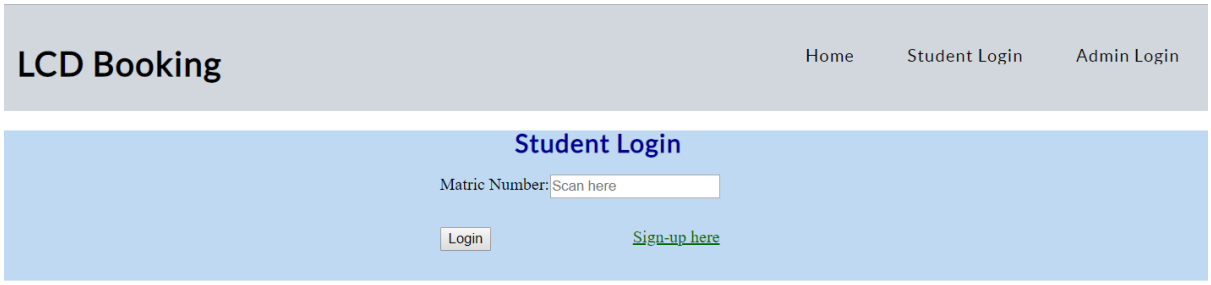


Figure 11 Result for account.php. Result for account.php

Next, we proceed with development for sign-up page. This file named signup.php. This page able to insert data of student full name, matric number and phone number. These data is stored in table student. After that student will be able to performing login.

```
<h3>Signup Here</h3>
<form method="post">
    <table>

        <tr>
            <td>Full Name:</td>
            <td><input type="text" name="fname" placeholder="Enter name" required></td>
        </tr>
        <tr>
            <td>Matric:</td>
            <td><input type="text" name="matric" placeholder="Enter matric number" required></td>
        </tr>
        <tr>
            <td>Phone:</td>
            <td><input type="int" name="phone" placeholder="Enter phone number" required></td>
        </tr>
            <td colspan="2" style="text-align:right"><input type="submit" name="save" value="Submit Details"></td>
        </tr>
    </table>
</form>
<?php
        if(isset($_POST['save'])){
            include 'includes/config.php';

            $fname = $_POST['fname'];
            $matric = $_POST['matric'];
            $phone = $_POST['phone'];


            $qry = "INSERT INTO student (fname,matric,phone)
            VALUES('$fname','$matric','$phone')";
            $result = $conn->query($qry);
            if($result == TRUE){
                echo "<script type = \"text/javascript\">
                            alert(\"Successfully Registered.\");
                            window.location = (\"account.php\")
                            </script>";
            } else{
                echo "<script type = \"text/javascript\">
                            alert(\"Registration Failed. Try Again\");
                            window.location = (\"signup.php\")
                            </script>";
```

Figure 12 Method POST is used for this page.

Figure 13 Result for signup.php. windows will pop-up for every successful registration.

Login for admin can be access from button Admin Login in account.php page. It will direct to admin side in login.php. This page allows login for admin side. Connection to table admin is provided for this page.

```php
<section class="search">
    <div class="wrapper">
    <div id="fom">
        <form method="post">
        <h2 style="text-align:center; color: #000099; font-weight:bold;">Admin Login</h2>
            <table height="100" align="center">
                <tr>
                    <td>Username:</td>
                    <td><input type="text" name="uname" placeholder="Enter Username" required></td>
                </tr>
                <tr>
                    <td>Password:</td>
                    <td><input type="password" name="pass" placeholder="Enter Password" required></td>
                </tr>
                <tr>
                    <td style="text-align:center"><input type="submit" name="login" value="Login"></td>
                </tr>
            </table>
        </form>
        <?php
            if(isset($_POST['login'])){
                include 'includes/config.php';

                $uname = $_POST['uname'];
                $pass = $_POST['pass'];

                $query = "SELECT * FROM admin WHERE uname = '$uname' AND pass = '$pass'";
                $rs = $conn->query($query);
                $num = $rs->num_rows;
                $rows = $rs->fetch_assoc();
                if($num > 0){
                    session_start();
                    $_SESSION['uname'] = $rows['uname'];
                    $_SESSION['pass'] = $rows['pass'];
                    echo "<script type = \"text/javascript\">
                                alert(\"Login Successful\");
                                window.location = (\"admin/index.php\")
                                </script>";
                } else{
                    echo "<script type = \"text/javascript\">
                                alert(\"Login Failed. Try Again\");
                                window.location = (\"login.php\")
```

Figure 14 Username and password required to login to admin side.

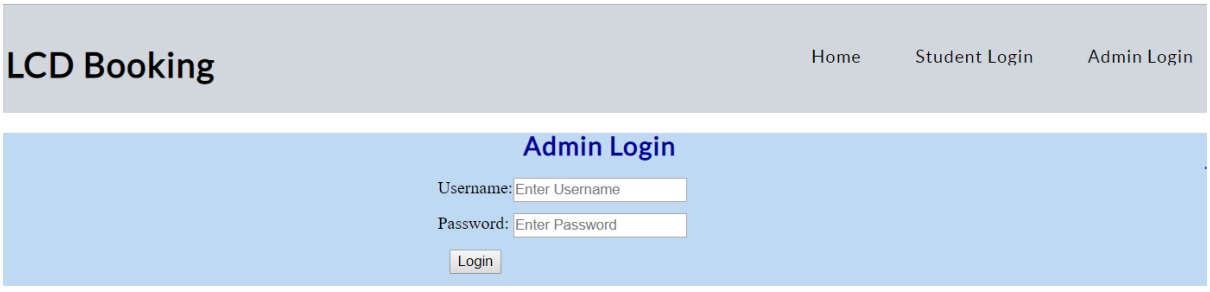


Figure 15 Result for login.php.

After login student side and booking is made, student can check and view their booking status. Only matric number is required and information in client table will be used to show booking status.

```
30
31      <section class="listings">
32          <div class="wrapper">
33          <h2 style="text-decoration:underline">Check your booking status</h2>
34              <ul class="properties_list">
35
36
37      <form method='POST'>
38      <h2>Please input your matric number:</h2>
39      <input type="text" name="input_matric">
40      <input type="submit" value="Submit Matric">
41      </form>
42
43      <br>
44      <br>
45      <br>
46      <br>
47      <br>
48
49
50      <?php
51      //Retrieve name from query string and store to a local variable
52      $fmatric = $_POST['input_matric'];
53
54      ?>
55              <?php
56              session_start();
57                          include 'includes/config.php';
58                          $sel = "SELECT status FROM client WHERE matric LIKE '$_POST[input_matric]'";
59                          $rs = $conn->query($sel);
60                          $rws = $rs->fetch_assoc();
61              ?>
62                  <li>
63                          <h2><span style="font-size:25px; color: #FF0000">Booking Status:</span> <span style="color:#003333;
64                          font-weight: bold; font-size: 25px;"><?php echo $rws['status'];?></span></h2>
65
66                  </li>
67              </ul>
68          </div>
69      </section>  <!--  end listing section  -->
70
71
```

Figure 16 Status is select in table client by matric.

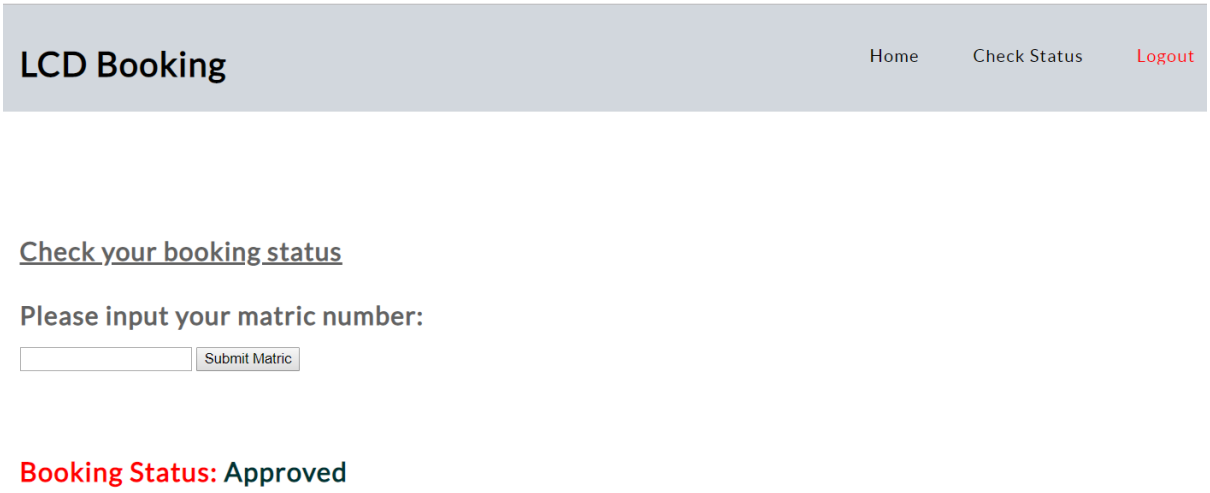
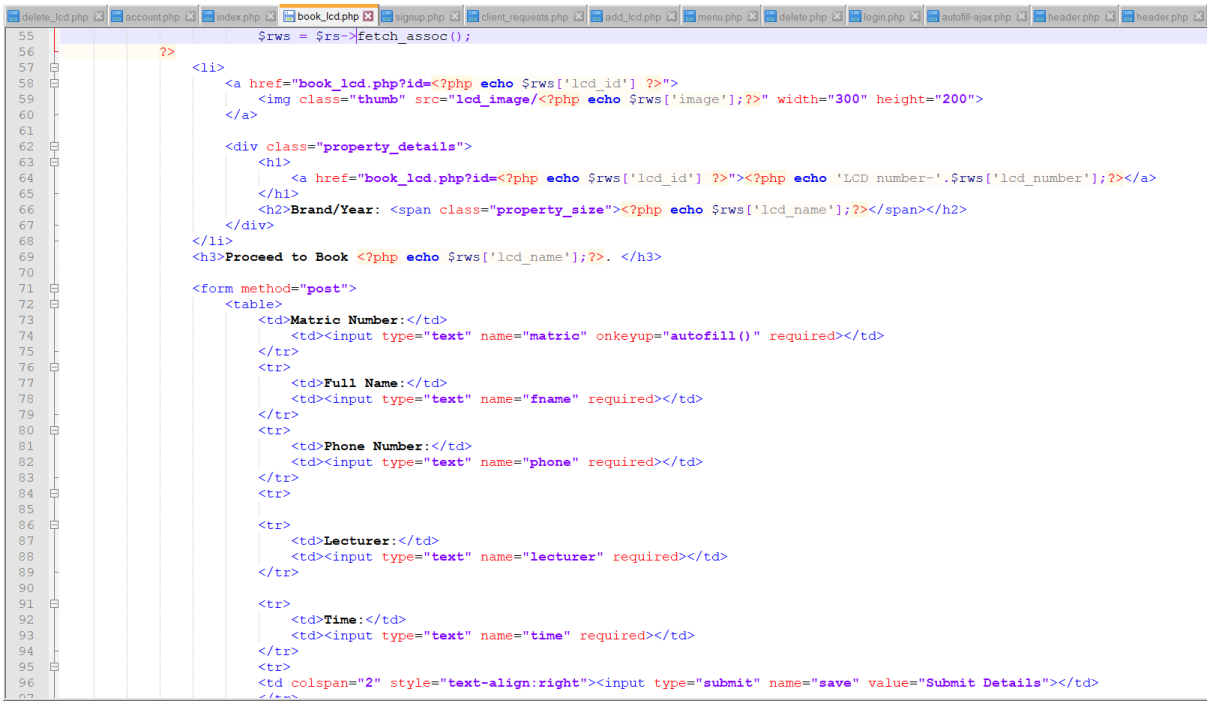


Figure 17 Result for status.php.

After login is settled, we can proceed with booking of LCD. This file will be saved as book_lcd.php. User have to input all information needed as lecturer name and period of booking. User information can be autofill from table student by scanned barcode in matric card.



```
                    $rws = $rs->fetch_assoc();
            ?>
                <li>
                    <a href="book_lcd.php?id=<?php echo $rws['lcd_id'] ?>">
                        <img class="thumb" src="lcd_image/<?php echo $rws['image'];?>" width="300" height="200">
                    </a>

                    <div class="property_details">
                        <h1>
                            <a href="book_lcd.php?id=<?php echo $rws['lcd_id'] ?>"><?php echo 'LCD number-'.$rws['lcd_number'];?></a>
                        </h1>
                        <h2>Brand/Year: <span class="property_size"><?php echo $rws['lcd_name'];?></span></h2>
                    </div>
                </li>
                <h3>Proceed to Book <?php echo $rws['lcd_name'];?>. </h3>

                <form method="post">
                    <table>
                        <td>Matric Number:</td>
                            <td><input type="text" name="matric" onkeyup="autofill()" required></td>
                        </tr>
                        <tr>
                            <td>Full Name:</td>
                            <td><input type="text" name="fname" required></td>
                        </tr>
                        <tr>
                            <td>Phone Number:</td>
                            <td><input type="text" name="phone" required></td>
                        </tr>
                        <tr>

                        <tr>
                            <td>Lecturer:</td>
                            <td><input type="text" name="lecturer" required></td>
                        </tr>

                        <tr>
                            <td>Time:</td>
                            <td><input type="text" name="time" required></td>
                        </tr>
                        <tr>
                        <td colspan="2" style="text-align:right"><input type="submit" name="save" value="Submit Details"></td>
```

Figure 18 Input is inserted by user and stored to database.

```
delete_lcd.php | account.php | index.php | book_lcd.php | signup.php | client_requests.php | add_lcd.php | menu.php | delete.php | login.php | autofill-ajax.php

101                 function autofill(){
102                     var matric = $("#matric").val();
103                     $.ajax({
104                         url : 'autofill-ajax.php',
105                         data : 'matric='+matric,
106                     }).success(function(data){
107                     var json = data,
108                     obj = JSON.parse(json);
109                     $("#fname").val(obj.fname);
110                     $("#phone").val(obj.phone);
111                     });
112                 }
113
114                     </script>
115             </form>
116
117
118
119             <?php
120                 if(isset($_POST['save'])){
121                     include 'includes/config.php';
122                     $fname = $_POST['fname'];
123                     $phone = $_POST['phone'];
124                     $matric = $_POST['matric'];
125                     $lecturer = $_POST['lecturer'];
126                     $time = $_POST['time'];
127
128                     $qry = "INSERT INTO client (fname,phone,matric,lecturer,time,lcd_id,status)
129                     VALUES('$fname','$phone','$matric','$lecturer','$time','$_GET[id]','Pending')";
130                     $result = $conn->query($qry);
131                     if($result == TRUE){
132                         echo "<script type = \"text/javascript\">
133                                 alert(\"Successfully Booked. Please wait to be approve by Admin\");
134                                 window.location = (\"index.php\")
135                                 </script>";
136                     } else{
137                         echo "<script type = \"text/javascript\">
138                                 alert(\"Booking Failed. Try Again\");
139                                 window.location = (\"book_lcd.php\")
140                                 </script>";
141                     }
142                 }
```

Figure 19 Shows function autofill to get data from table by matric card.

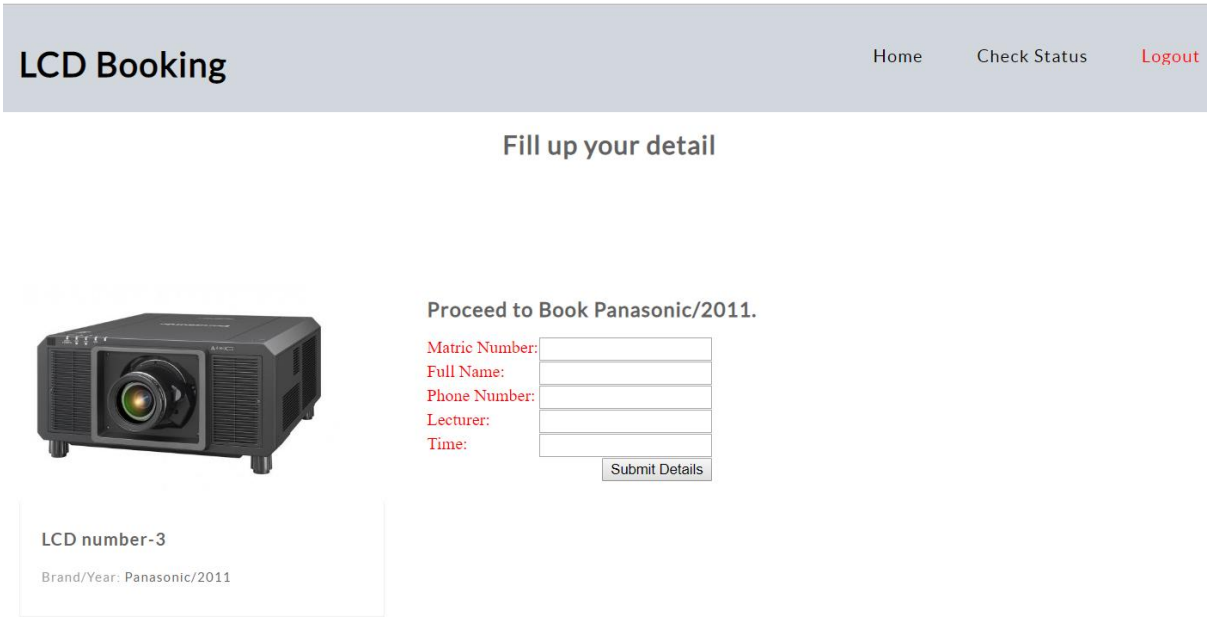


Figure 20 Result for book_lcd.php.

4.2.4.2 Admin side development

Admin can perform task that student cannot accomplished. In this project, admin can add and delete LCD, approve and delete student booking requests and view LCD in system.

Admin can perform add and delete of LCD in admin index page. Every LCD registered have delete button in their row while add button is put under the table in index page.

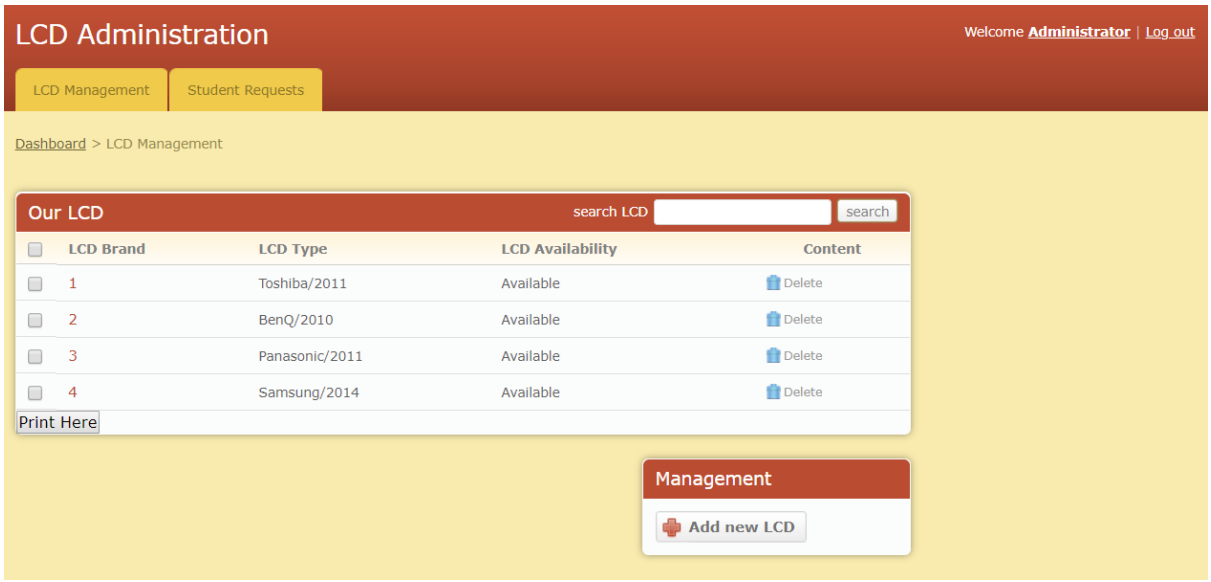


Figure 21 Shows homepage for admin that have add and delete function.

As for student requests, admin can approve and delete their booking request. After being approved by admin, student booking status will change from pending to approved. After the LCD being returned by student, admin have to delete their request to remove their booking from system. This will be done after LCD inspected and checked by staff.

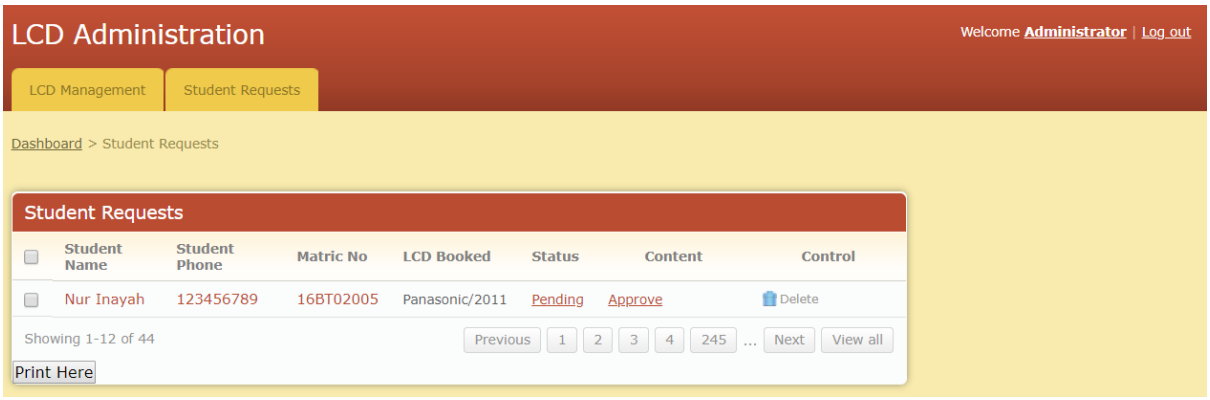


Figure 22 Shows booking made by student.

4.3 CONCLUSION OF CHAPTER

In this implementation chapter development of skill can be obtained. Scripting for php and javascript is a valuable skill. After this implementation, system is being tested for future improvement. Student can make booking by scanning their matric card allow us to save precious time. Staff also can manage their inventory easier and faster.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.0 INTRODUCTION

This chapter is as a conclusion for Final Year Project 1. It contains lesson learned, new technology discovered and experienced gained during Final Year Project 1. Also, there will be a recommendation for future project that may lead mankind to the better future and resulting in better generation.

5.1 LESSON LEARNED

Major lesson learned is time management. My time management skills are improved by having Gantt chart as my project time plan. Other than that, I have learned stress management which I found it is very useful as I am living a hectic life as a student. Communication skills is also improved when I need to search for resources. This is one of the most important skill an individual should have. Other than that, my communication and manners with higher ranked people is getting better.

I have also explored and discover new technology that I never know existed such as Xampp. My skills with software like phpMyAdmin also improved and getting better day after day.

5.3 RECOMMENDATION FOR FUTURE PROJECT CONTINUATION

My recommendation for future project to develop an online reservation and reservation using bar code scanner in matric card. Student can make online reservation without going to BTM and staff can receive their reservation online. This way, student just has to come to BTM just to pick up their reservation. Barcode in matric card can be scanned by camera device to allow user access anywhere and anytime.

5.4 CONCLUSION

This project is developed to solve the problem in KUIS. Scope is narrowed to booking system in BTM for LCD projector and another item. The major problem is the traditional system is time consuming and not eco-friendly. This project offers the solution by booking using bar code scanner that will scan the bar code in student's matric card. Database is required in this project. As a result, pen and paper will not be used and we are step away to eco-friendly environment. Tracking of lost device also can be made easier by browsing to the record log in order to find the student who responsible with the booking.

5.5 CONCLUSION OF CHAPTER

As a summary for this chapter, this project taught me a lot of skills for future use. Some of them is time management, stress management and communication skills. I found out that lesson learned in this project prepared me for industry world in some point. This project also can be improved in future in order to maximize the full function of bar code in KUIS student's matric card.

References

1. Barkan Jerry, Barcode Scanning. http://www.scholarpedia.org/article/Bar_code_scanning

2. Four Types of Barcode Scanner. https://www.thomasnet.com/articles/automation-electronics/barcode-scanner-types/

3. Chris Gelino, how does barcode works? http://ldwarf.ipac.caltech.edu/jpgraph-3.5.0b1/docs/chunkhtml/ch24s02.html

4. Shuai Chen. Evaluation of Two-Dimensional Codes for Digital Information Security in Physical Documents Masters Theses May 2014-current. Paper 186. ScholarWorks@UMass Amherst.

5. 2D Barcode Information and Guidelines. California StatesUniversity.

6. Dr.Galluzo. Math for Liberal Studies. Section 3.4:Bar Codes.