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Abstract

This report is an overview my vacation work completed at the University of Kwa-Zulu Natal (UKZN), Howard College, for the duration of 14 weeks starting from 05 January 2018 until 25 May 2018. The task was to create a web based Design Project Management System (DPMS), which will help the discipline of Electronic and Computer engineering make the selection of design projects an easier and more efficient process.

This website allows students to select project topics and allow lecturers to assign and manage project topics in a much better and faster way as compared to the current methods. Lecturers can list a set of projects available to students. Each student can then set a preference on the projects that they want and thereafter, the system will allow the administrator to allocate projects to students based on these preferences and motivation.

Having no prior knowledge in web development, my first task was to research and learn the basics and complexities of web development. The research included the learning of HTML, CSS, JavaScript, PHP and database interactions.

I worked under the supervision of Dr. N. Pillay, a senior lecturer at UKZN Howard College. Progress of the project was handled by Dr. N. Pillay.

1. Introduction

This report entails the vacation work carried out during the first semester of 2018. Having not been able to register in the first semester, I worked under the supervision of Dr. N. Pillay at the University of Kwa-Zulu Natal, Howard College, during this time from 05 January until 25 May 2018.

Dr. N. Pillay had employed me to create a web based Design Project Management System (DPMS), which will help the discipline of Electronic and Computer engineering make the project selection of final year design students an easier and more efficient process. This website will allow students to select project topics and allow lecturers to assign and manage project topics in a more efficient way.

This report includes research, methods and calculations used in the creation of the system. The project was developed using HTML, CSS, PHP, JavaScript and MySQL.

2. Prerequisite Knowledge

Having no prior knowledge in web development, I decided to register for three online courses on web development through Udemy, which is a global marketplace for learning and teaching online, and to research and learn the basics and complexities of the languages used in web development.

The main goal of the system to be designed is that it should be easily accessible by both students and lecturers, and it should make the project allocation process more efficient. Creating this system as a web based system meets these requirements as it is easily accessible at any time of the day and it will provide lecturers and students with real-time feedback.

Webpages and web applications are developed using many different types of languages. In this project, four types of languages were used; a markup language called Hypertext Markup Language (HTML), Cascading Style Sheet (CSS), JavaScript and Hypertext Preprocessor (PHP).

Since a large amount of data needed to be stored securely for this system, the use of databases was also required.

2.1. Hypertext Markup Language (HTML)

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. It describes the structure of Web pages using markup. HTML uses elements are the building blocks of HTML pages, these HTML elements are represented by tags.

`<tagname>content goes here...</tagname>`

These tags label pieces of content such as "heading", "paragraph", "table", and so on. Web browsers do not display the HTML tags, but use them to render the content of the page.

An example of an HTML document is as follows:

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

- The **<!DOCTYPE html>** declaration defines this document to be HTML5 and helps the browser to display the content correctly.
- The **<html>** element is the root element of an HTML page
- The **<head>** element contains meta information about the document
- The **<title>** element specifies a title for the document
- The **<body>** element contains the visible page content
- The **<h1>** element defines a large heading
- The **<p>** element defines a paragraph

2.2. Cascading Style Sheets (CSS)

CSS describes how HTML elements are to be displayed on screen, paper, or in other media. CSS files are used to define many attributes of an element in a webpage; these attributes include: font, size, color, spacing, border, margins and positioning of the element. CSS saves a lot of work as it can control the layout of multiple web pages all at once.

CSS conforms to the following structure:

```
selector { property_1: value; property_2: value }
```

There are three selectors available, namely an element, id or a class.

Style Sheets can be defined either internally, externally or in line with an element. For internal style sheets, they are defined within the `<style>` element, inside the `<head>` section of the webpage.

For external stylesheets, the stylesheets are linked in the `<head>` section of the webpage using the following syntax:

```
<link rel="stylesheet" type="text/css" href="stylesheet_name.css">
```

Inline styles are defined inside the start tag of the element. For example, to specify the color of a heading element `h1`, the markup code for the element would be:

```
<h1 style = "color: #0000FF"> The heading </h1>
```

2.3. JavaScript

JavaScript is a high-level, interpreted programming language that allows you to implement complex actions on webpages. Generally, webpages display information statically without interaction with the user. JavaScript allows the user to interact with the webpage to perform various tasks or applications. JavaScript is executed by the JavaScript engine of the user's web browser after the HTML and CSS have been processed. This makes JavaScript a client-side script. The JavaScript is defined within the `<script>...</script>` tags in an HTML document.

JavaScript can be used to change the content, style or hide and show an element. This is accomplished by using the element's id as identification. For example, to change the text of an element with the id "txtBox", the following code is used:

```
document.getElementById(txtBox).value = "The new value";
```

JavaScript also offers the use of creating and using functions. A function is described as:

```
Function function_name() {  
    /* Code goes here */  
}
```

2.4. Hypertext Preprocessor (PHP)

PHP is a server-side scripting language designed for Web development, but also used as a general-purpose programming language. It is used in conjunction with HTML to provide complex applications to web development. The advantage of server-side scripting is that the user is unable to see the code but only able to view the resulting HTML produced by the PHP code.

The PHP code is enclosed in PHP tags `<?php` and `?>`. This allows you to switch between PHP and HTML efficiently. Pages that contain PHP code in them have the file extension ".php" to indicate to the server that this page needs PHP processing.

2.5. MySQL

MySQL is an open-source relational database management system (RDBMS). The database system runs on a server and uses standard Structured Query Language (SQL). MySQL is cross-platform with PHP thus providing easy development of the system.

3. Outline of project

3.1. Brief description of tools employed in the work

The tools used were:

- A web server, the server used was XAMPP, this is an Apache distribution which allowed me to create a local web server for the testing and deployment processes.

- phpMyAdmin was used to handle the administration of MySQL over the Web to create the database used in the project.
- The code editor used for this project was Brackets, this code editor allowed me to code in all the above-mentioned languages.

The project given was to develop a web based system which performs the following:

3.2. Phase 1

In phase 1, the task performed was creating webpages, which advertises all the topics available for the final year design students in their respective majors (Computer/Electronic/Electrical). The webpage allows the student to select four topics in the order of their preference with motivation and to then submit these choices. Once this is submitted, the next step is for the system to let the system administrator to view the preferences of the students if there are students with the same project choices and assign projects depending on the motivation given by each student. If a student chooses a topic that no other student has chosen, then the system automatically assigns that topic to the student.

3.3. Phase 2

In phase 2, the task performed was creating webpages, which displays a grid of time-slots. This was created to allow the system administrator (course coordinator) to select time slots in which examiners are available and allow the user to enter an examination venue for each examiner. Using this information, the system should be able to allocate projects to available time-slots for each examiner. The system should optimize the venue allocation, such that an examiner/supervisor would not need to move erratically around the building - so the system should minimize movement. The system has to check for a fair number of projects across all examiners/supervisors and generate a loading table of exactly how many projects were supervised and examined for each examiner/supervisor.

4. Design and Implementation

4.1. Database structure

The database for the system was chosen to be implemented using MySQL. This offers the standard SQL statements as well as efficient management of the database. The database is made up of three entities namely; Students, Projects and Staff.

The database is defined as follows:

Attributes of a Student entity:

- Student Number
- Surname
- First Name
- Initials
- Discipline

- First Preference
- Second Preference
- Third Preference
- Fourth Preference
- Motivation
- Allocated Project

Implementing the Student entity in a table called ***student_details***:

Name	Type	Null	Default
StudentNo (PK)	varchar(15)	No	None
Surname	varchar(30)	No	None
FirstName	varchar(30)	No	None
Initials	varchar(15)	No	None
Discipline	varchar(15)	No	None
FirstChoice	varchar(5)	No	None
SecondChoice	varchar(5)	No	None
ThirdChoice	varchar(5)	No	None
FourthChoice	varchar(5)	No	None
Motivation	text	No	None
Submitted	varchar(5)	No	None
AssignedTopic	int(3)	No	None

Attributes of a Project entity:

- Student Number
- Surname
- First Name
- Initials
- Project Number
- Project Name
- Project Description
- Project Supervisor/ Lecturer
- Project Examiner
- Day
- Time
- Venue

The Project entity was implemented in 2 tables called *project_allocation* and *project_list*

***project_allocation* Table:**

Name	Type	Null	Default
StudentNo	varchar(20)	No	None
Surname	varchar(50)	No	None
FirstName	varchar(50)	No	None
Initials	varchar(5)	No	None
TopicNumber (PK)	int(3)	No	None
Topic	varchar(500)	No	None
Description	varchar(500)	No	None
Supervisor	varchar(50)	No	None

SupervisorId	int(5)	No	None
Examiner	varchar(50)	No	None
ExaminerId	int(5)	No	None
Day	varchar(15)	No	None
Time	time	No	None
TimeId	int(5)	No	None
Venue	varchar(200)	No	None
Edited	varchar(5)	No	None

project_list Table:

Name	Type	Null	Default	Extra
TopicNumber (PK)	int(3)	No	None	AUTO_INCREMENT
Topic	varchar(500)	No	None	
Description	varchar(2000)	No	None	
Supervisor	varchar(20)	No	None	
SupervisorId	int(5)	No	None	
Discipline	varchar(15)	No	None	
Available	varchar(5)	No	None	

The relation between these two entities is that one project may contain one or more students.

Attributes of the Staff entity:

- Staff ID
- Last Name
- Initials
- Number of Projects Supervising
- Number of Projects Examining
- Number of Projects Supervising and Examining
- Project Supervisor/ Lecturer
- Room
- Status
- Day
- Times Unavailable

The Staff entity was implemented in 3 tables called *staff_details*, *lecturer_schedule* and *time*

Staff_details Table:

Name	Type	Null	Default	Extra
StaffID (PK)	int(11)	No	None	AUTO_INCREMENT
StaffName	varchar(50)	No	None	
Initials	varchar(5)	No	None	
Supervising	int(11)	No	None	
Examining	int(11)	No	None	
Total	int(5)	No	None	

Lecturer_schedule Table:

Name	Type	Null	Default	Extra
------	------	------	---------	-------

Sched_id (PK)	int(11)	No	None	AUTO_INCREMENT
Time_id	int(11)	No	None	
Day	varchar(50)	No	None	
Staff_id	int(11)	No	None	
Status	varchar(20)	No	None	
room	varchar(50)	No	None	

time Table:

Name	Type	Null	Default	Extra
TimeId (PK)	int(11)	No	None	AUTO_INCREMENT
StartTime	time	No	None	
EndTime	time	No	None	
Days	varchar(15)	No	None	

4.2. Database Connection

Opening a connection to a database requires four parameters, these are the server name, the username, password and the database name. The following code is used to open a connection in PHP:

```
<?php

ob_start();

$db['db_host'] = "localhost";
$db['db_user'] = "root";
$db['db_pass'] = "";
$db['db_name'] = "dpms_database";

foreach($db as $key => $value){
    define(strtoupper($key), $value);
}

$connection = mysqli_connect(DB_HOST, DB_USER,DB_PASS,DB_NAME);
$query = "SET NAMES utf8";
mysqli_query($connection,$query);
?>
```

Basic database querying is needed in the system. To read records from the database, the SELECT statement was used as follows:

- For all records and all data fields:
`SELECT * FROM 'table_name';`
- For all records and all data fields that have a specific value in a specific field:
`SELECT * FROM 'table_name' WHERE 'field_1' = 'value';`
- For all records and specific data fields:
`SELECT 'field_1', 'field_2' FROM 'table_name';`

To update records in the database, the UPDATE statement is used as follows:

- For updating all records:
`UPDATE 'table_name' SET 'field_1' = 'value';`

- For updating specific records:

```
UPDATE `table_name` SET `field_1` = `value` WHERE `field_2` =
`value`;
```

To insert records in the database, the INSERT statement is used as follows:

```
INSERT INTO `table_name` (`field_1`,`field_2`) VALUES (`value_1`,
`value_2`);
```

To delete records in the database, the DELETE statement is used as follows:

```
DELETE FROM `table_name` WHERE `field_1` = `value`;
```

4.3. Webpage Design

Custom CSS and Bootstrap 4 was used in the design of all the webpages in this project. Bootstrap is a free front-end framework for faster and easier web development. It includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins. It also gives you the ability to easily create responsive designs. Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phone screens to large desktop monitors.

The advantage of using Bootstrap in this project is that, it has a Mobile-first approach, in Bootstrap 4, mobile-first styles are part of the core framework. Bootstrap is also compatible with all modern browsers (Chrome, Firefox, Internet Explorer 10+, Edge, Safari, and Opera).

4.4. Project Selection

Project Selection is required do the following:

- Display the projects from the database,
- Allow students to select 4 topics in order of their preference,
- Allow students to provide their motivation for the choices made.

Three webpages are used in Project Selection, namely; index.html (this is the homepage), Project_Selection_Page.php and Save_choices.php.

In order for the list of available projects to be displayed, the student has to enter their student number on the homepage. The code used for this is contained in the index.html page:

```
<form class="form-control" method="post" action="Project_Selection_Page.php">
<div class="form-group">
<label for="stdno">Student Number: </label>
<input type="text" class="form-control" name="stdno" >
</div>
<div>
<button type="submit" class="btn btn-info" name="getStdno">Ok</button>
</div>
</form>
```

A form, of method “post”, containing an input element of type “text” and a button of type “submit” with the name “getStdno” is used to obtain the input of the student number. When clicked, the button takes the student to the Project_Selection_Page.php page if a student number of a registered student is entered.

On the Project_Selection_Page.php page, the student's details and a list containing projects from the respective discipline is then displayed. If the student number is not of a registered student, an error message will be displayed.

The following PHP and HTML code is used to get check if a valid student number has been entered and to get the student's details from the database:

```
<?php

$discipline = "";
$studentNo = "";
$firstName = "";
$surname = "";

if (isset($_POST['getStdno']))
{
    $discipline = "";
    $_SESSION['std'] = $_REQUEST['stdno'];

    if( $_SESSION['std'] != "")
    {
        $query = "SELECT StudentNo, FirstName, Surname, Discipline FROM student_details
        WHERE StudentNo = '".mysqli_real_escape_string($connection,
        $_REQUEST['stdno'])."'";

        $result = $connection->query($query);
        if (!$result) die($connection->error);

        while($row = mysqli_fetch_assoc($result))
        {
            $discipline = $row['Discipline'];
            $studentNo = $row['StudentNo'];
            $firstName = $row['FirstName'];
            $surname = $row['Surname'];
        }
        if($studentNo != ""){
            ?>

            Student Number: <?php echo $studentNo;?><br>
            Name: <?php echo $firstName;?><br>
            Surname: <?php echo $surname;?><br>
            Discipline: <?php echo $discipline; ?> Engineering<br>

        <?php

        }
        if($discipline == "")
        {
            echo "Error could not find student details. <br> Only students registered in this
            module can view topics.";
        }
    }
}
```

The following PHP and HTML code is used to display a list of topics and topic details from the database:

```
$query = "SELECT TopicNumber, Topic, Description, Supervisor FROM project_list
WHERE Available != 'No' AND Discipline = '".mysqli_real_escape_string($connection,
$discipline)."' OR Discipline = 'Both'";

$result = $connection->query($query);
if (!$result) die($connection->error);
?>

<div><h2 class="font-weight-light text-center"> <?php echo $discipline;?>
Engineering Design Project Topics</h2><br></div>
<?php
```

```

while($row = mysqli_fetch_assoc($result))
{
    $topicNumber = $row['TopicNumber'];
    $topic = $row['Topic'];
    $supervisor = $row['Supervisor'];
    $description = $row['Description'];

    ?>
    <br><b>Topic <?php echo $topicNumber." : " . $topic;?></b><br>
    <br>Supervisor: <?php echo $supervisor;?><br>
    <br>Description: <?php echo $description;?><br>

    <?php

```

Four dropdown lists, in a form, are used for a student to select one project for each of their four preferences. The dropdown lists are named as *choice1*, *choice2*, *choice3*, *choice4*. The dropdown lists are populated with the projects when loaded. This information is obtained from the *project_list* table. Once a student has made their choices, their preferences are added to the *student_details* table. The following PHP & HTML code is used to display the choices in the dropdown lists:

```

<form method="post" action="Save_choices.php">
.
.
.
<div class="form-group">
<label>1st Choice</label>
<select class="form-control" name="choice1" id="choice1">

<?php
$result = $connection->query($query);
if (!$result) die($connection->error);
while($row = mysqli_fetch_assoc($result))
{
    $topicNumber = $row['TopicNumber'];
    $topic = $row['Topic'];

    ?>
    <option value="<?php echo $topicNumber; ?>"> Topic <?php echo
    $topicNumber." : " . $topic;?></option>

    <?php
    }
    ?>

    <option value="" disabled selected hidden>Choose...</option>
</select>
<br>

```

A button, *preferenceSubmit*, is used to take the student the *Save_choices.php* page that displays the student's selection for confirmation.

```

<form method="post" action="Save_choices.php">
.
.
.

<div class="form-group">
<button class="btn btn-success" name="preferenceSubmit"
type="submit">Submit</button>
</div>

```

The `Save_choices.php` page uses a button, `preferenceSave`, which saves the preference list to the `student_details` table in the database. A check is executed to see if any other student has chosen the current student's first choice, if not then the current student is allocated that topic. The following PHP code is used:

```
if(isset($_POST['preferenceSave']))
{
    $c1 = $_SESSION['choice1'];
    $c2 = $_SESSION['choice2'];
    $c3 = $_SESSION['choice3'];
    $c4 = $_SESSION['choice4'];
    $m = $_SESSION['motive'];

    $query = "UPDATE student_details SET FirstChoice = '$c1', SecondChoice =
    '$c2', ThirdChoice = '$c3', FourthChoice = '$c4', Motivation = '$m',
    Submitted = 'Yes', AssignedTopic = '$c1' WHERE StudentNo = '$stdno'";

    $result = $connection->query($query);
    if (!$result) die($connection->error);

    $query2 = "SELECT AssignedTopic FROM student_details WHERE AssignedTopic
    = '$c1'";
    $result2 = $connection->query($query2);
    if (!$result2) die($connection->error);

    $rowcount=mysqli_num_rows($result2);
    if($rowcount > 1)
    {
        $query3 = "UPDATE student_details SET AssignedTopic = '0' WHERE
        AssignedTopic = '$c1'";

        $result3 = $connection->query($query3);
        if (!$result3) die($connection->error);
    }
    echo "Your choices have been saved<br>";
    ?>
```

If the student has already submitted his/her preferences, then their list of chosen preferences will be displayed instead.

4.5. Project Allocation

Project Allocation contains three webpages, namely; `Project_Allocation_Page.php`, `Project_Allocation_Page_admin.php` and `Student_Preferences_Page.php`. The `Project_Allocation_Page.php` and `Project_Allocation_Page_admin.php` webpages display the project allocation for all students. It obtains the information for the `project_allocation` table in the database. It displays the student's details, allocated topic, topic supervisor, topic examiner, day, time and venue.

The following PHP and HTML code is used:

```
<table class="table table-bordered table-hover table-striped">
<thead>
<tr>
<th>Student Number</th>
<th>Surname</th>
<th>Name</th>
<th>Topic</th>
<th>Supervisor</th>
```

```

<th>Examiner</th>
<th>Day & Time</th>
<th>Venue</th>
</tr>
</thead>
<?php

$query = "SELECT * FROM project_allocation ORDER BY TopicNumber";
$result = $connection->query($query);
if (!$result) die($connection->error);

while($row = mysqli_fetch_assoc($result))
{
    $studentNo = $row['StudentNo'];
    $firstName = $row['FirstName'];
    $surname = $row['Surname'];
    $initials = $row['Initials'];
    $topicNumber = $row['TopicNumber'];
    $topic = $row['Topic'];
    $supervisor = $row['Supervisor'];
    $description = $row['Description'];
    $examiner = $row['Examiner'];
    $day = $row['Day'];
    $time=date("H:i ",strtotime($row['Time']));
    $venue = $row['Venue'];
    ?>

    <tr>
    <td> <?php echo $studentNo;?></td>
    <td> <?php echo $surname;?></td>
    <td> <?php echo $firstName;?></td>
    <td> <?php echo "Topic ".$topicNumber.".": ". $topic;?></td>
    <td> <?php echo $supervisor;?></td>
    <td> <?php echo $examiner;?></td>
    <td> <?php echo $day." ".$time;?></td>
    <td> <?php echo $venue;?></td>
    </tr>
    <?php
    }
    ?>
</table>

```

The Student_Preferences_Page.php page is used by the administrator to view the preferences of the students and assign a topic each student, depending on the motivation given by each student, if there are students with the same project choices.

A button, viewconflicts, when clicked, displays a table showing a list of students that have chosen the same topics as others in their preferences.

The following query is used to determine if there are students with the same topics:

```

$query = "SELECT StudentNo, Surname, FirstName, Discipline, FirstChoice,
SecondChoice, ThirdChoice, FourthChoice, Motivation, AssignedTopic FROM
student_details WHERE FirstChoice IN (select FirstChoice from student_details group
by FirstChoice having count(*) > 1 and FirstChoice != '' and AssignedTopic = 0) OR
SecondChoice IN (select SecondChoice from student_details group by SecondChoice
having count(*) > 1 and SecondChoice != '' and AssignedTopic = 0) OR ThirdChoice IN
(select ThirdChoice from student_details group by ThirdChoice having count(*) > 1
and ThirdChoice != '' and AssignedTopic = 0) OR FourthChoice IN (select

```



```
FourthChoice from student_details group by FourthChoice having count(*) > 1 and
FourthChoice != '' and AssignedTopic = 0) ";
```

Once the conflicts are showed, the administrator then chooses a topic from a list of preferences in a dropdown list for that student. A button, assign, then sets that topic as the assigned topic for the student.

The following code is used to display the dropdown list and button:

```
<select name='assigned' id='assignedtopic' class="form-control">
<option value="<?php echo $choice1; ?>"> Topic <?php echo $choice1; ?></option>
<option value="<?php echo $choice2; ?>"> Topic <?php echo $choice2; ?></option>
<option value="<?php echo $choice3; ?>"> Topic <?php echo $choice3; ?></option>
<option value="<?php echo $choice4; ?>"> Topic <?php echo $choice4; ?></option>
<option value=' ' disabled selected hidden>Assign...</option>
</select>
<td>
<input type= hidden name= indexkey value="<?php echo $stdno; ?>">
<button class="btn btn-success btn-sm" name="assign" type="submit">OK</button>
```

The following code is used to assign the selected topic to the student:

```
if(isset($_POST['assign']))
{
$stdno = $_REQUEST['indexkey'];
$choice = $_REQUEST['assigned'];

$query2 = "UPDATE student_details SET AssignedTopic = '$choice' WHERE StudentNo =
'$stdno'";
$result2 = $connection->query($query2);
if (!$result2) die($connection->error);

$query3 = "UPDATE project_list SET Available = 'No' WHERE TopicNumber = '$choice'";
$result3 = $connection->query($query3);
if (!$result3) die($connection->error);
```

Once the administrator is satisfied with the topics assigned, a button, confirmtopics is used to save the list of assigned topics into the database.

The following code is used:

```
if(isset($_POST['confirmtopics']))
{
$query = "SELECT StudentNo, Surname, FirstName, Initials, AssignedTopic FROM
student_details WHERE AssignedTopic != 0";

$result = $connection->query($query);
if (!$result) die($connection->error);

while($row = mysqli_fetch_assoc($result))
{
$topic = $row['AssignedTopic'];
$stdno = $row['StudentNo'];
$surname = $row['Surname'];
$name = $row['FirstName'];
$initial = $row['Initials'];

$query2 = "UPDATE project_list SET Available = 'No' WHERE TopicNumber = '$topic'";
$result2 = $connection->query($query2);
```

```

if (!$result2) die($connection->error);

$query3 = "UPDATE project_allocation SET StudentNo = '$stdno', Surname =
'$surname', FirstName = '$name', Initials = '$initial' WHERE TopicNumber =
'$topic'";

$result3 = $connection->query($query3);
if (!$result3) die($connection->error);
}
header("Location: Project_Allocation_Page.php");

```

4.6. Examiner Allocation

Examiner Allocation is required to do the following:

- Display a list of time-slots,
- allow the user to select time slots in which examiners are unavailable,
- allow the user to enter a venue for each examiner.
- Use the information of the lecturer's schedule by obtaining the data from the lecturer_schedule table in the database,
- the system should be able to allocate projects to available time-slots for each lecturer (examiner).
- The system should optimize the venue allocation, i.e. if you take an examiner/supervisor they should not need to move erratically around the building -so the system should minimize movement.
- The system has to check for a fair number of projects across all examiners/supervisors and generate a loading table of exactly how many projects were supervised and examined for each supervisor.

Examiner Allocation is made up of three webpages, namely; Examiner_allocation.php, Lecturer_Schedule.php and loading_table.php.

The adding of lecturer schedules is done on the Lecturer_Schedule.php page. Time slots are displayed in a table form using checkboxes. The administrator chooses the time unavailable by ticking the corresponding checkbox. The administrator must then choose the lecturer for which this schedule is related to from a dropdown list and enter a venue for that lecturer in a textbox.

The following code is used to display the time slots:

```

<th>Time</th>
<th><input id= "selectAllMon" type="checkbox" > Monday</th>
</tr>
</thead>
<?php
$query = "SELECT TimeId, StartTime, EndTime FROM time WHERE Days = 'Mon' ORDER BY
StartTime";

$result = $connection->query($query);
if (!$result) die($connection->error);
while ($row=mysqli_fetch_array($result)){
    $id=$row['TimeId'];
    $start=date("H:i ",strtotime($row['StartTime']));
}
?>

```

```

<tr >
<td><?php echo $start;?></td>
<td><input type="checkbox" class="checkMon" id="check" name="M[]" value="<?php echo
$id;?>"></td>

```

The following code is used to populate and display a dropdown list of lecturers:

```

<select class="form-control" name="lecturer">
<?php

$query = "SELECT * FROM staff_details";
$result = $connection->query($query);
if (!$result) die($connection->error);

while($row=mysqli_fetch_array($result)){
?>
<option value="<?php echo $row['StaffID'];?>"><?php echo
$row['StaffName'];?></option>
<option value="" disabled selected hidden>Choose...</option>
<?php }
?>
</select>

```

Looking at the code above, in order to display the time slots and the list of lecturers from the database, the *SELECT* SQL statement is used to read all the data records from the *time* and *staff_details* tables. The result is stored in a 2-D array called *row*. Thereafter, a while loop is used to traverse through each record in the array. Inside the while loop, a mixture of PHP and HTML code is used. The data from the *row* array is displayed using PHP and appropriately formatted using HTML.

Once the details have been entered, a button, save is used to store the information in the *lecturer_schedule* table of the database. The following code is used:

```

if($_POST)
{
//Monday
if (isset($_POST['M']) && strlen(trim($_POST['venue'])) &&
isset($_POST['lecturer'])) {
$m = $_POST['M'];
foreach($m as $daym) {

$query = "INSERT INTO lecturer_schedule(time_id,day,staff_id, status, room)
VALUES ('$daym','Mon','$member','unavailable','".mysqli_real_escape_string($connecti
on, $room)."'");
$result = $connection->query($query);
if (!$result) die($connection->error);

```

The *Examiner_allocation.php* page allocates examiners to projects and assigns the time and venue. The allocation of examiners is done as follows; first the list of times and days from the time table in the database is read and stored in an array called *\$arrayTimeId[]*.

```

$queryTime = "SELECT TimeID, StartTime, Days FROM time";
$resultTime = $connection->query($queryTime);
if (!$resultTime) die($connection->error);

while($rowTime = mysqli_fetch_assoc($resultTime))
{
    $arrayTimeId[] = $rowTime['TimeID'];
}

```

Next, the maximum number of projects assigned to each staff member needs to be determined. This is done by counting the total number of topics in the database and dividing this total by the total number of staff members. This result is then multiplied by two to get the maximum number of projects for each staff member.

```
$queryStaff = "SELECT StaffID, StaffName FROM staff_details";
$resultStaff = $connection->query($queryStaff);
if (!$resultStaff) die($connection->error);

$countNumStaff = mysqli_num_rows($resultStaff);

$queryTopics = "SELECT TopicNumber FROM project_allocation WHERE Edited = ''";
$resultTopics = $connection->query($queryTopics);
if (!$resultTopics) die($connection->error);

$countNumTopics = mysqli_num_rows($resultTopics);

$numMax = ceil(($countNumTopics/$countNumStaff)*2);
```

A loop is used to traverse through each topic in the database. The supervisor for each topic is then read and the number of topics for that supervisor is counted.

```
$querySupervisor = "SELECT SupervisorId FROM project_list WHERE TopicNumber = '$topicNumber'";
$resultSupervisor = $connection->query($querySupervisor);
if (!$resultSupervisor) die($connection->error);

while($rowSupervisor = mysqli_fetch_assoc($resultSupervisor))
{
    $supervisorId = $rowSupervisor['SupervisorId'];
}

$querySupervisorTopics = "SELECT TopicNumber FROM project_list WHERE SupervisorId = '$supervisorId'";
$resultSupervisorTopics = $connection->query($querySupervisorTopics);
if (!$resultSupervisorTopics) die($connection->error);

$countSupervisorTopics = mysqli_num_rows($resultSupervisorTopics);
```

The times at which the supervisor is available needs to be determined next. This is done by reading the times at which the supervisor is unavailable from the lecturer_schedule table and storing the times in an array, \$arrayTemp[]. The two arrays, \$arrayTemp[] and \$arrayTimeId[] is then compared and the times at which the lecturer is available is determined by removing the times stored in \$arrayTemp[] from \$arrayTimeId[]. The list of available times is then stored in an array, \$arrayTimeIdSupervisorAvail.

```
$queryTimeSupervisorUnavail = "SELECT time_id FROM lecturer_schedule WHERE staff_id = '$supervisorId'";
$resultTimeSupervisorUnavail = $connection->query($queryTimeSupervisorUnavail);
if (!$resultTimeSupervisorUnavail) die($connection->error);

while($rowTimeSupervisorUnavail = mysqli_fetch_assoc($resultTimeSupervisorUnavail))
{
    $arrayTemp[] = $rowTimeSupervisorUnavail['time_id'];
}
```

```

    $intersect = array_intersect($arrayTimeId, $arrayTemp);
    $arrayTimeIdSupervisorAvail = array_merge(array_diff($arrayTimeId, $intersect),
array_diff($arrayTemp, $intersect));

```

The next step is to get a list of possible examiners. This is done by reading all staff members from the staff_details table which is not the current supervisor.

```

$queryExaminers = "SELECT StaffID, StaffName FROM staff_details WHERE StaffID !=
'$supervisorId'";

```

Thereafter, the times at which the examiners are available needs to be determined. The same method used to determine when the supervisor is available is used for the examiners.

```

$queryExaminerTimeUnavail = "SELECT time_id, room FROM lecturer_schedule WHERE
staff_id = '$examinerId'";

$resultExaminerTimeUnavail = $connection->query($queryExaminerTimeUnavail);
if (!$resultExaminerTimeUnavail) die($connection->error);

while($row = mysqli_fetch_assoc($resultExaminerTimeUnavail))
{

    $arrayExaminerTimeId[] = $row['time_id'];
    $room = $row['room'];

}

$intersect = array_intersect($arrayTimeId, $arrayExaminerTimeId);
$arrayTimeIdy = array_merge(array_diff($arrayTimeId, $intersect),
array_diff($arrayExaminerTimeId, $intersect));

```

In order to allocate an examiner, the supervisor and examiner needs to be available at the same time. Therefore, the two arrays, \$arrayTimeIdSupervisorAvail and \$arrayTimeIdy is compared to determine which values are the same. This corresponds to the time at which both the supervisor and examiner is available.

```

$arrayTimeAvailId = array_merge(array_intersect($arrayTimeIdSupervisorAvail,
$arrayTimeIdy));

```

A check is done to determine if the array \$arrayTimeAvailId is empty or not. If it is not, then this is a possible examiner.

```

if(count($arrayTimeAvailId) != 0)

```

Every time an examiner is assigned, a count is done to check if the max number of topics for the current has been reached, if so, the code moves on to the next examiner. The code updates the project_allocation table in the database.

```

$querycountExamining = "SELECT ExaminerId FROM project_allocation where ExaminerId =
'$examinerId'";
$resultcountExamining = $connection->query($querycountExamining);
if (!$resultcountExamining) die($connection->error);

$countExamining = mysqli_num_rows($resultcountExamining);

```

```

        $querycountSupervising = "SELECT SupervisorId FROM project_allocation
where SupervisorId = '$examinerId'";
        $resultcountSupervising = $connection->query($querycountSupervising);
        if (!$resultcountSupervising) die($connection->error);

        $countSupervising = mysqli_num_rows($resultcountSupervising);

        $total = $countSupervising + $countExamining;

        if($countExamining < count($arrayTimeIdy))
        {
            if($total <= $numMax)
            {

                $sid = @$arrayTimeAvailId[$countExamining];
                $queryDay = "SELECT Days FROM time WHERE TimeId = '$sid'";
                $resultDay = $connection->query($queryDay);
                if (!$resultDay) die($connection->error);

                while($row = mysqli_fetch_assoc($resultDay)){

                    $day = $row['Days'];
                }

                $time = @$arrayTime[$countExamining];
                $timeid = @$arrayTimeAvailId[$countExamining];
                $queryUpdateProjectAlloc = "UPDATE project_allocation SET
ExaminerId = '$examinerId', Examiner = '$examinerName', Day = '$day', Time=
'$time', TimeId = '$timeid', Venue = '$room' WHERE TopicNumber = '$topicNumber'";

                $resultUpdateProjectAlloc = $connection-
>query($queryUpdateProjectAlloc);
                if (!$resultUpdateProjectAlloc) die($connection->error);

                $total = $countSupervising + $countExamining;
                $countExamining++;
            }
        }
    }
}

```

A final count is done at the end to check the total number of topics being supervised and examined for each examiner and update the staff_details table in the database. This information is then used in the loading_ exactly how many projects were supervised and examined for each staff member.

```

$querycountExaminingNew = "SELECT ExaminerId FROM project_allocation where
ExaminerId = '$staffId'";

$resultcountExaminingNew = $connection->query($querycountExaminingNew);

if (!$resultcountExaminingNew) die($connection->error);

$countExaminingNew = mysqli_num_rows($resultcountExaminingNew);

$querycountSupervisingNew = "SELECT SupervisorId FROM project_allocation where
SupervisorId = '$staffId'";

$resultcountSupervisingNew = $connection->query($querycountSupervisingNew);

if (!$resultcountSupervisingNew) die($connection->error);

$countSupervisingNew = mysqli_num_rows($resultcountSupervisingNew);

$totalNew = $countSupervisingNew + $countExaminingNew;

```

```

$queryUpdateStaffDetails = "UPDATE staff_details SET Supervising =
'$countSupervisingNew', Examining = '$countExaminingNew', Total = '$totalNew' WHERE
StaffID = '$staffId'";

$resultUpdateStaffDetails = $connection->query($queryUpdateStaffDetails);

if (!$resultUpdateStaffDetails) die($connection->error);

```

4.7. Extra features

Extra pages such as projects.php, students.php, staff.php and schedule_grid.php were created to give the system the basic CRUD (Create, Read, Update, Delete) functionality. These pages allow the administrator to edit, add and delete information from the database using these specific pages. The basic CRUD is done using forms in bootstrap modals which is a dialog box/popup window.

Example of the code used to create the modal to add a new staff member:

```

<div class="modal fade" id="addnewstaff" tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden="true">
  <div class="modal-dialog">
    <div class="modal-content">
      <div class="modal-header">
        <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>
        <center><h5 class="modal-title" id="myModalLabel">Add New
Staff</h5></center>
      </div>
      <div class="modal-body">
        <div class="container-fluid">
          <form method="POST" action="addnewstaff.php">
            <div class="form-group">
              <label for="staffname">Last Name</label>
              <input type="text" placeholder="Last Name" class="form-
control" name="name">
            </div>

            <div class="form-group">
              <label for="initials">Initials</label>
              <input type="text" placeholder="Initials" class="form-
control" name="initials">
            </div>
            <div class="modal-footer">
              <button type="button" class="btn btn-default" data-
dismiss="modal"><span class="glyphicon glyphicon-remove"></span> Cancel</button>
              <button type="submit" class="btn btn-primary"><span
class="glyphicon glyphicon-floppy-disk"></span> Save</a>
            </div>
          </form>
        </div>
      </div>
    </div>
  </div>
</div>

```

Example of the code used to add the new staff details to the database:

```

<?php
include('database_connection.php');

if (isset($_POST['name']) && isset($_POST['initials'])) {

```

```

$name = mysqli_real_escape_string($connection, $_POST['name']);
$initial = mysqli_real_escape_string($connection, $_POST['initials']);

$query = "INSERT INTO staff_details(StaffName, Initials) VALUES('$name',
'$initial')";

$result = $connection->query($query);

if (!$result) die($connection->error);
}
header('location:staff.php');

?>

```

4.8. Security

SQL injection is a code injection technique that can destroy a database. It is one of the most common web hacking techniques. SQL injection is the placement of malicious code in SQL statements, via web page input. SQL injection usually occurs when you ask a user for input, like their username/userid, and instead of a name/id, the user gives you an SQL statement that you will unknowingly run on your database.

The PHP function, `mysqli_real_escape_string()` escapes special characters in a string for use in an SQL statement, taking into account the current charset of the connection.

```
mysqli_real_escape_string($connection, $_POST['studentno']);
```

This function is used whenever the system requires external input from the user. It escapes special characters in a string before sending a query to MySQL. This function was adopted to escape single quotes in strings and by the same occasion prevent SQL injection attacks.

5. Testing and Results


Phase 1:

Home page where the student needs to enter a student number



The screenshot shows the header of the University of KwaZulu-Natal website. The header includes the university's logo and name on the left, and navigation links 'Project Selection', 'Allocation', and 'Admin' on the right. Below the header is a form for entering a student number. The form has a label 'Student Number:' and a text input field. Below the input field is a blue 'Ok' button. At the bottom of the page, there is a copyright notice: 'Copyright © 2018 All rights reserved.'

Page displaying the list of available topics and the form which allows the student to choose their four preferences.



UNIVERSITY OF
KWAZULU-NATAL

INNOVATE
YAKWAZULU-NATALI

[Project Selection](#)
[Allocation](#)
[Admin](#)

Student Number: 213510010
Name: Lushen
Surname: Rajaruthnam
Discipline: Electronic Engineering

Electronic Engineering Design Project Topics

Topic 1: Home Automation and Monitoring System

Supervisor: Pillay

Description: The project allows for a mobile phone to remotely connect to a home network, allowing the automation and monitoring of devices within the network. The device should be able to turn ON/OFF devices in the home via an app (including voice control) and log sensor data.

Topic 2: Smart Anti-theft Vehicle Security System

Supervisor: Xu

Description: The system prevents the theft of cars on campus property. The system makes use of NFC tags and an NFC card reader which allows students to tap their NFC card on the card reader and requests for a four digit pin to allow access into university property. The information of each car entering and exiting the campus property will be sent to a server and alerts RMS if a pin has been entered incorrectly on the third time.

Topic 3: Smart energy saving systems in houses and offices

Supervisor: Jarvis

Description: "The project aims to develop an intelligent system with learning capabilities, and functionalities that monitors ambient light, either opens the curtains (if security allows it), and control intensity of light in a room. In addition, it should be able to do the following: - Learning users preference via a smart terminal (i.e. smartphone)."

Topic 4: Image enhancement based on differential histogram equalization

Supervisor: Xu

Selection

1st Choice

2nd Choice

3rd Choice

4th Choice

Motivation

Page showing student preferences. This page is used by the administrator to assign and finalize topic allocations.

DPMS Admin

[Home Site](#)

Projects

Students

Staff

Student Preferences

Student Number	Surname	Name	1st Choice	2nd Choice	3rd Choice	4th Choice	Motivation	Assigned Topic
204508912	Asray	Revaan	1	16	12	14	sasda	1
213513855	Gamede	Lindokuhle	2	5	8	16	vjhj	2

<

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Phase 2:

Page used to add a staff member's schedule

DPMS Admin

Home Site

Projects

Students

Staff

Schedule

Time	Monday
07:40	<input type="checkbox"/>
08:00	<input type="checkbox"/>
08:20	<input type="checkbox"/>
08:40	<input type="checkbox"/>
09:00	<input type="checkbox"/>
09:20	<input type="checkbox"/>
09:40	<input type="checkbox"/>
10:00	<input type="checkbox"/>
10:20	<input type="checkbox"/>
10:40	<input type="checkbox"/>
11:00	<input type="checkbox"/>

Time	Tuesday
15:00	<input type="checkbox"/>
15:20	<input type="checkbox"/>

Details

Lecturer

Choose...

Room

Enter Venue

Save

Uncheck All

Page used to allocate examiners, day, time and venue.

DPMS Admin

Home Site

Projects

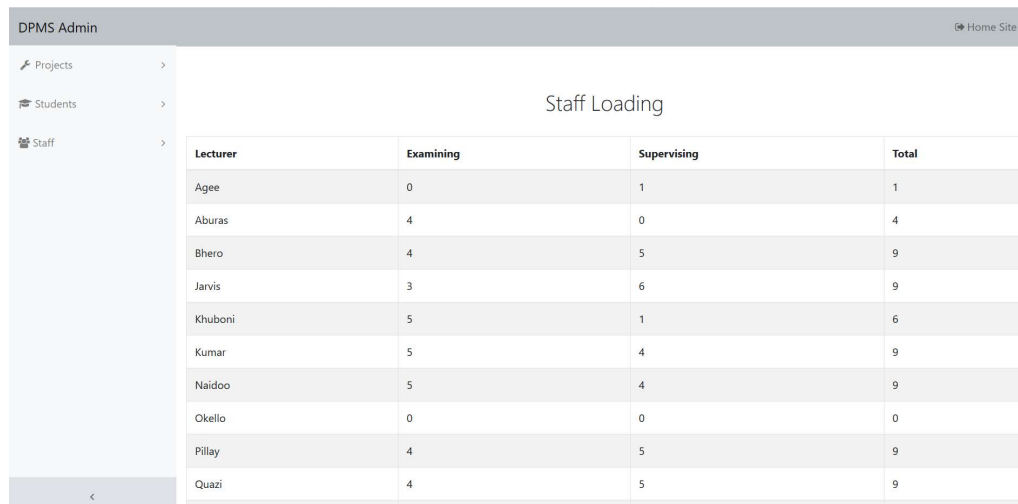
Students

Staff

Allocation

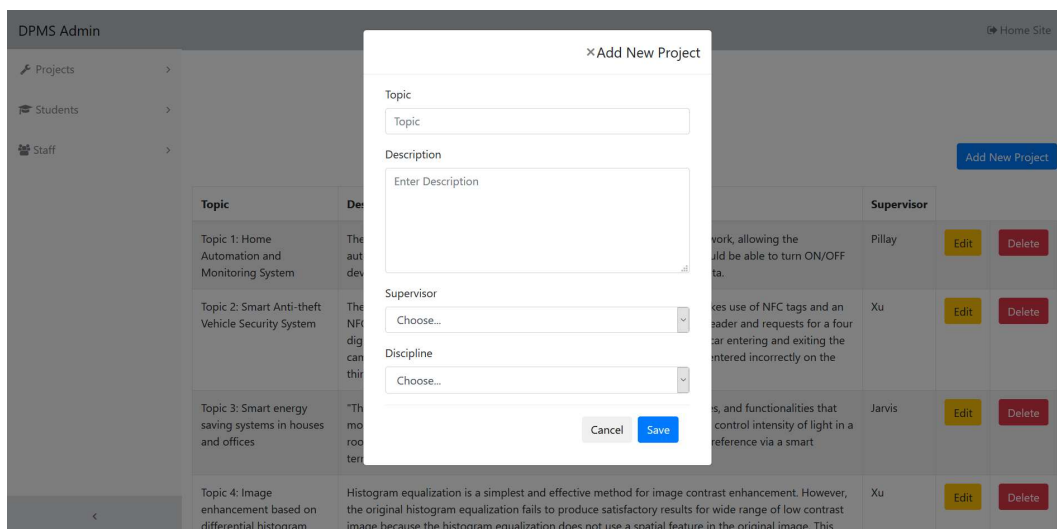
Topic	Supervisor	Examiner	Day & Time	Venue	
Topic 1: Home Automation and Monitoring System	Pillay	Xu	Mon 08:40	3-06	Edit
Topic 2: Smart Anti-theft Vehicle Security System	Xu	Walingo	Mon 08:40	3-04	Edit
Topic 3: Smart energy saving systems in houses and offices	Jarvis	Xu	Mon 11:00	3-06	Edit
Topic 4: Image enhancement based on differential histogram equalization	Xu	Walingo	Mon 08:40	3-04	Edit
Topic 5: 24/7 Renewable Electricity Power Source	Jarvis	Xu	Mon 11:00	3-06	Edit
Topic 6: Greenhouse Chamber	Walingo	Tapamo	Mon 09:20	4-04	Edit
Topic 7: Acoustic authentication system	Rezenom	Walingo	Mon 08:40	3-04	Edit
Topic 8: Smart Restaurant System based on WiFi and Internet	Xu	Tapamo	Mon 09:20	4-04	Edit

Page showing the project loading for each staff member.



Lecturer	Examining	Supervising	Total
Agee	0	1	1
Aburas	4	0	4
Bhero	4	5	9
Jarvis	3	6	9
Khuboni	5	1	6
Kumar	5	4	9
Naidoo	5	4	9
Okello	0	0	0
Pillay	4	5	9
Quazi	4	5	9

Example of a modal used to add a new project topic



×Add New Project

Topic

Description

Supervisor

Discipline

Cancel Save

Topic	Description	Supervisor
Topic 1: Home Automation and Monitoring System	The aut dev	Pillay
Topic 2: Smart Anti-theft Vehicle Security System	The NFI dig can thi	Xu
Topic 3: Smart energy saving systems in houses and offices	"Th mo roo ter	Jarvis
Topic 4: Image enhancement based on differential histogram	Histogram equalization is a simplest and effective method for image contrast enhancement. However, the original histogram equalization fails to produce satisfactory results for wide range of low contrast image because the histogram equalization does not use a spatial feature in the original image. This	Xu

6. Analysis and Discussion

The aim of phase 1 was to implement a web based system which is able to allow lecturers to be able to list a set of projects to students. Each student should be allowed to set a preference on all the projects and thereafter, the system should allow the administrator to allocate projects to students based on these preferences. The project was able to allow lecturers to manage projects on a database and view the students' allocated projects. The students are able to select four projects from the list in a preference order and the administrator is able to allocate projects to the students according to the preference list.

The aim of phase 2 was to create webpages, which displays a grid of time-slots which allows the system administrator (course coordinator) to select time slots in which examiners are unavailable and allow

the user to enter an examination venue for each examiner. Using this information, the system should be able to allocate projects to available time-slots for each examiner. The system should optimize the venue allocation, such that an examiner/supervisor would not need to move erratically around the building - so the system should minimize movement. The system has to check for a fair number of projects across all examiners/supervisors and generate a loading table of exactly how many projects were supervised and examined for each examiner/supervisor. The system was able to perform most of the tasks mentioned in phase 2 except for time allocation to a certain extent. Some projects have a clash in the time due to the counter used in the code. Due to time constraints, this was not corrected however, the administrator can manually correct these clashes.

7. Conclusion

This project helped me gain a greater insight on how things work in the web and software development environment and how concepts learnt in certain modules at university are interlinked with the development of software and websites. It provided an opportunity to work with new programming and markup languages, which increased my knowledge base. A vast amount of knowledge was gained during the vacation work. This project has also improved my overall coding and software development skills.

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Appendix 1 -database_connection.php Code

```
<?php ob_start();

$db['db_host'] = "localhost";
$db['db_user'] = "root";
$db['db_pass'] = "";
$db['db_name'] = "dpms_database";

foreach($db as $key => $value){
    define(strtoupper($key), $value);
}

$connection = mysqli_connect(DB_HOST, DB_USER,DB_PASS,DB_NAME);

$query = "SET NAMES utf8";
mysqli_query($connection,$query);

?>
```

Appendix 2 – header.php Code

```
<?php session_start(); ?>
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <meta name="description" content="">
        <meta name="author" content="">

        <!-- Bootstrap Core CSS -->
        <link rel ="stylesheet" type="text/css" href="vendor/css/bootstrap.min.css">

        <!-- Custom CSS -->
        <link rel ="stylesheet" type="text/css" href="css/Style.css">

        <title>Design Project Management System</title>
    </head>
```

Appendix 3 - admin_header.php Code

```
<?php session_start(); ?>
<!DOCTYPE html>
<html lang="en">

    <head>
        <meta charset="utf-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <meta name="description" content="">
        <meta name="author" content="">
        <title>Admin - Design Project Management System</title>
        <!-- Bootstrap core CSS-->
        <link href="vendor/css/bootstrap.min.css" rel="stylesheet">
        <!-- Custom fonts for this template-->
        <link href="vendor/font-awesome/css/font-awesome.min.css" rel="stylesheet"
type="text/css">
        <!-- Page level plugin CSS-->

        <!-- Custom styles for this template-->
```

```

    <link href="vendor/css/sb-admin.css" rel="stylesheet">
    <link href="css/style_admin.css" rel="stylesheet">
</head>

```

Appendix 4 – index.html Code

```

<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta name="description" content="">
    <meta name="author" content="">

    <!-- Bootstrap Core CSS -->
    <link rel="stylesheet" type="text/css" href="vendor/css/bootstrap.min.css">

    <!-- Custom CSS -->
    <link rel="stylesheet" type="text/css" href="css/Style.css">

    <title>Design Project Management System</title>
  </head>
  <body>
    <!-- Navigation -->
    <nav class="navbar navbar-expand-sm navbar-light fixed-top">
      <div class="container">
        <a></a>
        <button class="navbar-toggler" type="button" data-toggle="collapse" data-
target="#navbarResponsive" aria-controls="navbarResponsive" aria-expanded="false" aria-
label="Toggle navigation">
          <span class="navbar-toggler-icon"></span>
        </button>
        <div class="collapse navbar-collapse" id="navbarResponsive">
          <ul class="navbar-nav ml-auto">
            <li class="nav-item">
              <a class="nav-link" href="index.html">Project Selection</a>
            </li>
            <li class="nav-item">
              <a class="nav-link"
href="Project_Allocation_Page.php">Allocation</a>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="Lecturer_Schedule.php">Admin</a>
            </li>
          </ul>
        </div>
      </div>
    </nav>

    <div class="container-fluid">
      <div class="row">

        <div class="col-lg-4">
          </div>

        <div class="col-lg-4">
          <h1 class="mt-5"></h1>
          <form class="form-control" method="post"
action="Project_Selection_Page.php">

            <div class="form-group">
              <label for="stdno">Student Number: </label>
              <input type="text" class="form-control" name="stdno" >
            </div>
          </div>

```

```

                                <button type="submit" class="btn btn-info"
name="getStdno">Ok</button>
                                </div>
                                </form>
                                </div>

                                <div class="col-lg-4">
                                </div>

                                </div>
                                </div>

                                <footer>
                                <div class="container">
                                <div class="text-center">
                                <small><strong>Copyright &copy; 2018</strong> All rights reserved.</small>
                                </div>
                                </div>
                                </footer>

                                <script src="vendor/js/jquery.min.js"></script>
                                <script src="vendor/js/bootstrap.bundle.min.js"></script>
                                <script src="vendor/js/bootstrap.min.js"></script>
                                </body>
                                </html>

```

Appendix 5 - Project_Selection_Page.php Code

```

<?php include "header.php"; ?>
<?php include "database_connection.php"; ?>

<body>

    <!-- Navigation -->
    <?php include "navigation.php"; ?>

    <!-- Page Content -->
    <br>
    <div class="container">

        <div class="row">

            <?php
            $discipline = "";
            $studentNo = "";
            $firstName = "";
            $surname = "";

            if (isset($_POST['getStdno']))
            {

                $discipline = "";
                $_SESSION['std'] = $_REQUEST['stdno'];
                if( $_SESSION['std'] != "")
                {

                    $query = "SELECT StudentNo, FirstName, Surname, Discipline FROM
student_details WHERE StudentNo = '".mysqli_real_escape_string($connection,
$_REQUEST['stdno'])."'";

                    $result = $connection->query($query);
                    if (!$result) die($connection->error);

                    while($row = mysqli_fetch_assoc($result))
                    {

```



```

        $discipline = $row['Discipline'];
        $studentNo = $row['StudentNo'];
        $firstName = $row['FirstName'];
        $surname = $row['Surname'];
    }
    if($studentNo != ""){
?>

Student Number: <?php echo $studentNo;?><br>
Name: <?php echo $firstName;?><br>
Surname: <?php echo $surname;?><br>
Discipline: <?php echo $discipline; ?> Engineering<br>

<?php

    }
    if($discipline == "")
    {
        echo "Error could not find student details. <br> Only students
registered in this module can view topics.";
    }

    else
    {
?>
</div>

<section>

    <div class="row">
        <div class="col-lg-7">
            <div class="box">

                <div class="row">
                    <div class="col-lg-12">

                        <?php
                            $query = "SELECT TopicNumber, Topic, Description, Supervisor FROM
project_list WHERE Available != 'No' AND Discipline =
'".mysqli_real_escape_string($connection, $discipline)."' OR Discipline = 'Both'";

                            $result = $connection->query($query);

                            if (!$result) die($connection->error);

                            ?>

                                <div><h2 class="font-weight-light text-center"> <?php echo
$discipline;?> Engineering Design Project Topics</h2><br></div>

                                <?php

                                    while($row = mysqli_fetch_assoc($result))
                                    {
                                        $topicNumber = $row['TopicNumber'];
                                        $topic = $row['Topic'];
                                        $supervisor = $row['Supervisor'];
                                        $description = $row['Description'];

                                        ?>
                                        <br><b>Topic <?php echo $topicNumber."<br>Supervisor: <?php echo $supervisor;?><br>
                                        <br>Description: <?php echo $description;?><br>

                                        <?php

                                    }
                                }
                            }
                        }
                    }
                }
            }
        }
    }
}
else{

```

```

        header("Location: index.html");
    }
}

?>

<?php

if (isset($_POST['stdno']))
{
    $assignedTopic= "";

    $query = "SELECT AssignedTopic FROM student_details WHERE
StudentNo = '".mysqli_real_escape_string($connection, $_REQUEST['stdno']).'";

    $result = $connection->query($query);
    if (!$result) die($connection->error);

    while($row = mysqli_fetch_assoc($result))
    {
        $assignedTopic = $row['AssignedTopic'];
    }

    if($assignedTopic == 0)
    {

        if($discipline != "")
        {
            ?>

            </div>
        </div>
    </div>
</div>

<div class="col-lg-5">
    <div class="box">

        <div class="row">
            <div class="col-lg-12">
                <?php

                    $query = "SELECT TopicNumber, Topic FROM
project_list WHERE Available != 'No' AND Discipline =
'".mysqli_real_escape_string($connection, $discipline)."' OR Discipline = 'Both'";

                    ?>

                    <div><h2 class="font-weight-light text-
center">Selection</h2><br></div>

                    <form method="post" action="Save_choices.php">

                        <!-- Choice 1 -->
                        <div class="form-group">
                            <label>1st Choice</label>

                            <select class="form-control" name="choice1"
id="choice1">

                                <?php

                                    $result = $connection->query($query);

                                    if (!$result) die($connection->error);

                                    while($row = mysqli_fetch_assoc($result))
                                    {

```

```

        $topicNumber = $row['TopicNumber'];
        $topic = $row['Topic'];

        ?>
        <option value="<?php echo $topicNumber; ?>"> Topic
<?php echo $topicNumber."> ".$topic;?></option>

        <?php
        }
        ?>

        <option value="" disabled selected
hidden>Choose...</option>

    </select>
    <br>

    <!-- Choice 2 -->
    <div class="form-group">
        <label>2nd Choice</label>

        <select class="form-control" name="choice2"

id="choice2">

            <?php
            $result = $connection->query($query);
            if (!$result) die($connection->error);

            while($row = mysqli_fetch_assoc($result))
            {

                $topicNumber = $row['TopicNumber'];
                $topic = $row['Topic'];

                ?>

                <option value="<?php echo $topicNumber; ?>">
Topic <?php echo $topicNumber."> ".$topic;?></option>

                <?php
                }
                ?>
                <option value="" disabled selected
hidden>Choose...</option>

            </select>
            <br>

            <!-- Choice 3 -->
            <div class="form-group">
                <label>3rd Choice</label>

                <select class="form-control" name="choice3"

id="choice3">

                    <?php

                    $result = $connection->query($query);
                    if (!$result) die($connection->error);

                    while($row = mysqli_fetch_assoc($result))
                    {

                        $topicNumber = $row['TopicNumber'];
                        $topic = $row['Topic'];
                        ?>

                        <option value="<?php echo $topicNumber;
?>"> Topic <?php echo $topicNumber."> ".$topic;?></option>

                    <?php

```



```

        <div><h2 class="font-weight-light text-center">Your
Selection</h2><br></div>
        <?php

                $query = "SELECT FirstChoice, SecondChoice,
ThirdChoice, FourthChoice FROM student_details WHERE StudentNo =
'".mysqli_real_escape_string($connection, $_REQUEST['stdno']).'";

                $result = $connection->query($query);

                if (!$result) die($connection->error);

                while($row = mysqli_fetch_array($result))
                {

                        $choice1 = $row['FirstChoice'];
                        $choice2 = $row['SecondChoice'];
                        $choice3 = $row['ThirdChoice'];
                        $choice4 = $row['FourthChoice'];
                }

                $query = "SELECT TopicNumber, Topic, Description,
Supervisor FROM project_list WHERE TopicNumber = '".mysqli_real_escape_string($connection,
$choice1).'";

                $result = $connection->query($query);

                if (!$result) die($connection->error);

?>
<h3 class="text-center">1st Choice</h3>
<?php

                while($row = mysqli_fetch_array($result))
                {

?>

                <p><b>Topic <?php echo $row['TopicNumber'].": " .
$row['Topic'];?></b></p><br>
                <p><b>Supervisor: </b><?php echo $row['Supervisor'];?></p><br>
                <p><b>Decription:</b><br><?php echo $row['Description'];?></p><br>

                <?php

                }

                $query = "SELECT TopicNumber, Topic, Description,
Supervisor FROM project_list WHERE TopicNumber = '".mysqli_real_escape_string($connection,
$choice2).'";

                $result = $connection->query($query);

                if (!$result) die($connection->error);

?>
<h3 class="text-center">2nd Choice</h3>
<?php

                while($row = mysqli_fetch_array($result))
                {

?>

                <p><b>Topic <?php echo $row['TopicNumber'].": " .
$row['Topic'];?></b></p><br>
                <p><b>Supervisor: </b><?php echo $row['Supervisor'];?></p><br>
                <p><b>Decription:</b><br><?php echo $row['Description'];?></p><br>

                <?php

                }

                $query = "SELECT TopicNumber, Topic, Description,
Supervisor FROM project_list WHERE TopicNumber = '".mysqli_real_escape_string($connection,
$choice3).'";

```

```

        $result = $connection->query($query);

        if (!$result) die($connection->error);

    ?>
    <h3 class="text-center">3rd Choice</h3>
    <?php
        while($row = mysqli_fetch_array($result))
        {
    ?>

        <p><b>Topic <?php echo $row['TopicNumber'].": " .
$row['Topic'];?></b></p><br>
        <p><b>Supervisor: </b><?php echo $row['Supervisor'];?></p><br>
        <p><b>Decription:</b><br><?php echo $row['Description'];?></p><br>

    <?php
        }
        $query = "SELECT TopicNumber, Topic, Description,
Supervisor FROM project_list WHERE TopicNumber = '".mysqli_real_escape_string($connection,
$choice4)."'";

        $result = $connection->query($query);

        if (!$result) die($connection->error);

    ?>
    <h3 class="text-center">4th Choice</h3>
    <?php
        while($row = mysqli_fetch_array($result))
        {
    ?>

        <p><b>Topic <?php echo $row['TopicNumber'].": " .
$row['Topic'];?></b></p><br>
        <p><b>Supervisor: </b><?php echo $row['Supervisor'];?></p><br>
        <p><b>Decription:</b><br><?php echo $row['Description'];?></p><br>

    <?php
        }

        $query = "SELECT Motivation FROM student_details WHERE
StudentNo = '".mysqli_real_escape_string($connection, $_REQUEST['stdno'])."'";

        $result = $connection->query($query);

        if (!$result) die($connection->error);

    ?>

    <h3 class="text-center">Motivation</h3>
    <?php
        while($row = mysqli_fetch_array($result))
        {
    ?>

        <p><br><?php echo $row['Motivation'];?></p><br>

    <?php
        }

    }

}

    ?>
    </div>
</div>

```

```

        </section>

    </div>

    <?php include "footer.php"; ?>

</body>
</html>

```

Appendix 6 - Save_choices.php Code

```

<?php include "header.php"; ?>
<?php include "database_connection.php"; ?>

<body>

    <!-- Navigation -->
    <?php include "navigation.php"; ?>

    <!-- Page Content -->
    <div class="container">
        <div class="row">
            <div class="col-lg-12">
                <h2></h2>
                <br>
                <?php

                    $stdno = "";
                    $stdno = $_SESSION['std'];

                    if(isset($_POST['preferenceSubmit']))
                    {

                        $query = "SELECT StudentNo, FirstName, Surname, Discipline FROM
student_details WHERE StudentNo = '".mysqli_real_escape_string($connection, $stdno)."'";

                        $result = $connection->query($query);
                        if (!$result) die($connection->error);

                        while($row = mysqli_fetch_array($result))
                        {

                            echo "Student Number: ".$row['StudentNo']."<br>";
                            echo "Name: ".$row['FirstName']."<br>";
                            echo "Surname: ".$row['Surname']."<br>";
                            echo "Discipline: ".$row['Discipline']." Engineering";

                        }
                    }
                <?>
            </div>
        </div>

        <div class="row">
            <div class="col-md-12">

                <?php

                    $choice1 = "";
                    $choice2 = "";
                    $choice3 = "";
                    $choice4 = "";
                    $motive = "";

```

```

if(isset($_POST['preferenceSubmit']))
{
?>

<h3 class="text-center">1st Choice</h3>
<?php
    if(!isset($_POST['choice1']))
    {
        echo "You forgot to select your 1st Choice!";
    }
?>
<br>
<?php
    }

    else
    {
        $query = "SELECT TopicNumber, Topic, Description, Supervisor FROM
project_list WHERE TopicNumber = '".mysqli_real_escape_string($connection,
$_REQUEST['choice1'])."'";

        $result = $connection->query($query);

        if (!$result) die($connection->error);

        while($row = mysqli_fetch_array($result))
        {
            $_SESSION['choice1'] = $row['TopicNumber'];
        }
?>

<p><b>Topic <?php echo $row['TopicNumber'].": " . $row['Topic'];?></b></p><br>
<p><b>Supervisor: </b><?php echo $row['Supervisor'];?></p><br>
<p><b>Decription:</b><br><?php echo $row['Description'];?><br></p>

<?php
    }

}
?>

<h3 class="text-center">2nd Choice</h3>
<?php
    if(!isset($_POST['choice2']))
    {
        echo "You forgot to select your 2nd Choice!";
    }
?>
<br>
<?php
    }

    else
    {
        $query = "SELECT TopicNumber, Topic, Description, Supervisor FROM
project_list WHERE TopicNumber = '".mysqli_real_escape_string($connection,
$_REQUEST['choice2'])."'";

        $result = $connection->query($query);

        if (!$result) die($connection->error);

        while($row = mysqli_fetch_array($result))
        {
            $_SESSION['choice2'] = $row['TopicNumber'];
        }
?>

<p><b>Topic <?php echo $row['TopicNumber'].": " . $row['Topic'];?></b></p><br>
<p><b>Supervisor: </b><?php echo $row['Supervisor'];?></p><br>
<p><b>Decription:</b><br><?php echo $row['Description'];?><br></p>

```



```

<?php
    }

    }

?>
<h3 class="text-center">3rd Choice</h3>
<?php
    if(!isset($_POST['choice3']))
    {
        echo "You forgot to select your 3rd Choice!";
    }
    <br>
<?php
    }

    else
    {
        $query = "SELECT TopicNumber, Topic, Description, Supervisor FROM
project_list WHERE TopicNumber = '".mysqli_real_escape_string($connection,
$_REQUEST['choice3'])."'";

        $result = $connection->query($query);

        if (!$result) die($connection->error);

        while($row = mysqli_fetch_array($result))
        {
            $_SESSION['choice3'] = $row['TopicNumber'];
        }
?>

<p><b>Topic <?php echo $row['TopicNumber'].": " . $row['Topic'];?></b></p><br>
<p><b>Supervisor: </b><?php echo $row['Supervisor'];?></p><br>
<p><b>Decription:</b><br><?php echo $row['Description'];?><br></p>

<?php
    }

    }

?>

<h3 class="text-center">4th Choice</h3>
<?php
    if(!isset($_POST['choice4']))
    {
        echo "You forgot to select your 4th Choice!";
    }
    <br>
<?php
    }

    else
    {
        $query = "SELECT TopicNumber, Topic, Description, Supervisor FROM
project_list WHERE TopicNumber = '".mysqli_real_escape_string($connection,
$_REQUEST['choice4'])."'";

        $result = $connection->query($query);

        if (!$result) die($connection->error);

        while($row = mysqli_fetch_array($result))
        {
            $_SESSION['choice4'] = $row['TopicNumber'];
        }
?>

<p><b>Topic <?php echo $row['TopicNumber'].": " . $row['Topic'];?></b></p><br>
<p><b>Supervisor: </b><?php echo $row['Supervisor'];?></p><br>

```

```

<p><b>Decription:</b><br><?php echo $row['Description'];?><br></p>

<?php
    }

}

?>

<h3 class="text-center">Motivation</h3>
<?php
    if(!strlen(trim($_POST['motivation'])))
    {

        echo "Please provide some motivation";
        echo"<br>";

    }

    else
    {

        echo $_REQUEST['motivation'];
        $_SESSION['motive'] = $_REQUEST['motivation'];
    }
?>
<p><?php echo $row['Description'];?><br></p>
<?php

    }

    if(isset($_POST['choice1']) && isset($_POST['choice2']) &&
isset($_POST['choice3']) && isset($_POST['choice4']) && isset($_POST['motivation']))
    {
?>
<br>
<form method="post" action="Save_choices.php" class="form-inline">

        <button class="btn btn-success save-btn" name="preferenceSave"
type="submit">Save</button>

    </form>

<?php
    }
    $url = htmlspecialchars($_SERVER['HTTP_REFERER']);
?>
<br>
<a href= "<?php echo $url;?>" class = "btn btn-danger back-btn">Cancel</a>
<?php

}

if(isset($_POST['preferenceSave']))
{
    $c1 = $_SESSION['choice1'];
    $c2 = $_SESSION['choice2'];
    $c3 = $_SESSION['choice3'];
    $c4 = $_SESSION['choice4'];
    $m = $_SESSION['motive'];

    $query = "UPDATE student_details SET FirstChoice = '$c1', SecondChoice =
'$c2', ThirdChoice = '$c3', FourthChoice = '$c4', Motivation = '$m', Submitted = 'Yes',
AssignedTopic = '$c1' WHERE StudentNo = '$stdno'";

    $result = $connection->query($query);

```

```

        if (!$result) die($connection->error);

        $query2 = "SELECT AssignedTopic FROM student_details WHERE AssignedTopic =
AssignedTopic = '$c1'";

        $result2 = $connection->query($query2);

        if (!$result2) die($connection->error);

        $rowcount=mysqli_num_rows($result2);

        if($rowcount > 1)
        {
            $query3 = "UPDATE student_details SET AssignedTopic = '0' WHERE
AssignedTopic = '$c1'";
            $result3 = $connection->query($query3);

            if (!$result3) die($connection->error);
        }

        echo "Your choices have been saved<br>";
    ?>

    <br>
    <form method="post" action="index.html" class="form-inline">

        <button class="btn btn-info" type="submit">Ok</button>

    </form>
    <?php

    }

    ?>
</div>
</div>
</div>
</div>

<?php include "footer.php"; ?>

</body>
</html>

```

Appendix 7 - Student_Preferences_Page.php Code

```

<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php"; ?>
    <div class="content-wrapper">
        <div class="container-fluid">
            <div class="row">
                <div class="col-lg-12">
                    <h2 class="mt-5 font-weight-light text-center">Student Preferences</h2>
                    <br>
                    <?php

                    $choice1 = '';
                    $choice2 = '';

```

```

$choice3 = '';
$choice4 = '';
$assignedtopic = '';
$stdno = '';
$choice = '';
$name = '';
$surname = '';
$initial = '';

if(isset($_POST['viewconflicts']))
{
?>
<table class="table table-bordered table-hover table-striped">
    <thead>
        <tr>
            <th> </th>
            <th>Student Number</th>
            <th>Surname</th>
            <th>Name</th>
            <th>1st Choice</th>
            <th>2nd Choice</th>
            <th>3rd Choice</th>
            <th>4th Choice</th>
            <th>Motivation</th>
            <th>Assigned Topic</th>
            <th> </th>
        </tr>
    </thead>
<?php

    $query = "SELECT StudentNo, Surname, FirstName, Discipline,
FirstChoice, SecondChoice, ThirdChoice, FourthChoice, Motivation, AssignedTopic FROM
student_details WHERE FirstChoice IN (select FirstChoice from student_details group by
FirstChoice having count(*) > 1 and FirstChoice != '' and AssignedTopic = 0) OR SecondChoice
IN (select SecondChoice from student_details group by SecondChoice having count(*) > 1 and
SecondChoice != '' and AssignedTopic = 0) OR ThirdChoice IN (select ThirdChoice from
student_details group by ThirdChoice having count(*) > 1 and ThirdChoice != '' and
AssignedTopic = 0) OR FourthChoice IN (select FourthChoice from student_details group by
FourthChoice having count(*) > 1 and FourthChoice != '' and AssignedTopic = 0) ";

    $result = $connection->query($query);
    if (!$result) die($connection->error);

    while($row = mysqli_fetch_array($result))
    {

        $choice1 = $row['FirstChoice'];
        $choice2 = $row['SecondChoice'];
        $choice3 = $row['ThirdChoice'];
        $choice4 = $row['FourthChoice'];
        $assignedtopic = $row['AssignedTopic'];
        $stdno = $row['StudentNo'];
        $firstName = $row['FirstName'];
        $surname = $row['Surname'];
        $motivation = $row['Motivation']

    }

?>

<tr>
    <td> <img src='resources/img/error.png' alt='Error Icon'
style="width:20px;"></td>

    <td><?php echo $stdno; ?></td>
    <td><?php echo $surname; ?></td>
    <td><?php echo $firstName; ?></td>
    <td><?php echo $choice1; ?></td>
    <td><?php echo $choice2; ?></td>
    <td><?php echo $choice3; ?></td>

```

```

        <td><?php echo $choice4; ?></td>
        <td><?php echo $motivation; ?></td>
        <?php

        if($assignedtopic != '0')
        {
            ?>
            <td><?php echo $assignedtopic; ?></td>
            <td></td>
            <?php
        }

        else
        {
            ?>
            <td>
                <form method='post' action='#' class="form-inline">
                    <select name='assigned' id='assignedtopic' class="form-
control">
                        <option value="<?php echo $choice1; ?>"> Topic <?php
echo $choice1; ?></option>
                        <option value="<?php echo $choice2; ?>"> Topic <?php
echo $choice2; ?></option>
                        <option value="<?php echo $choice3; ?>"> Topic <?php
echo $choice3; ?></option>
                        <option value="<?php echo $choice4; ?>"> Topic <?php
echo $choice4; ?></option>
                        <option value=' ' disabled selected
hidden>Assign...</option>
                    </select>

                    <td>
                        <input type= hidden name= indexkey value="<?php echo
$stdno; ?>">
                        <button class="btn btn-success btn-sm" name="assign"
type="submit">OK</button>
                    </form>
                </td>
            </tr>
            <?php
        }

        if(isset($_POST['assign']))
        {
            $stdno = $_REQUEST['indexkey'];
            $choice = $_REQUEST['assigned'];

            $query2 = "UPDATE student_details SET AssignedTopic =
'$choice' WHERE StudentNo = '$stdno'";

            $result2 = $connection->query($query2);
            if (!$result2) die($connection->error);

            $query3 = "UPDATE project_list SET Available = 'No' WHERE
TopicNumber = '$choice'";

            $result3 = $connection->query($query3);
            if (!$result3) die($connection->error);
            ?>
            <meta http-equiv='refresh' content='0'>
            <?php
        }

    }
    ?>
</table>
<?php

```

```

        $url = htmlspecialchars($_SERVER['HTTP_REFERER']);
    ?>
</div></div><br><a href= "<?php echo $url;?>" class = "btn btn-
info">Back</a>

<?php
}

else
{
    $query = "SELECT StudentNo, Surname, FirstName, Discipline,
FirstChoice, SecondChoice, ThirdChoice, FourthChoice, Motivation, AssignedTopic FROM
student_details WHERE Submitted != ''";

    $result = $connection->query($query);
    if (!$result) die($connection->error);
    ?>
<table class="table table-bordered table-hover">
    <thead>
        <tr>
            <th> </th>
            <th>Student Number</th>
            <th>Surname</th>
            <th>Name</th>
            <th>1st Choice</th>
            <th>2nd Choice</th>
            <th>3rd Choice</th>
            <th>4th Choice</th>
            <th>Motivation</th>
            <th>Assigned Topic</th>
            <th> </th>
        </tr>
    </thead>

    <?php

    while($row = mysqli_fetch_array($result))
    {
        $choice1 = $row['FirstChoice'];
        $choice2 = $row['SecondChoice'];
        $choice3 = $row['ThirdChoice'];
        $choice4 = $row['FourthChoice'];
        $assignedtopic = $row['AssignedTopic'];
        $stdno = $row['StudentNo'];
        $firstname = $row['FirstName'];
        $surname = $row['Surname'];
        $motivation = $row['Motivation']
    ?>
    <tr>
        <td></td>
        <td><?php echo $stdno; ?></td>
        <td><?php echo $surname; ?></td>
        <td><?php echo $firstname; ?></td>
        <td><?php echo $choice1; ?></td>
        <td><?php echo $choice2; ?></td>
        <td><?php echo $choice3; ?></td>
        <td><?php echo $choice4; ?></td>
        <td><?php echo $motivation; ?></td>

        <?php
        if($assignedtopic != '0')
        {
            ?>
            <td><?php echo $assignedtopic; ?></td>
            <td></td>
            <?php
            }

        else

```

```

        {
        ?>
        <td>
            <form method='post' action='#' class="form-inline">
                <select name='assigned' id='assignedtopic' class="form-
control">
                    <option value="<?php echo $choice1; ?>"> Topic <?php
echo $choice1; ?></option>
                    <option value="<?php echo $choice2; ?>"> Topic <?php
echo $choice2; ?></option>
                    <option value="<?php echo $choice3; ?>"> Topic <?php
echo $choice3; ?></option>
                    <option value="<?php echo $choice4; ?>"> Topic <?php
echo $choice4; ?></option>
                    <option value=' ' disabled selected
hidden>Assign...</option>
                </select>

                <td>
                    <input type= hidden name= indexkey value="<?php echo
$stdno; ?>">
                    <button class="btn btn-success btn-sm" name="assign"
type="submit">OK</button>
                </form>
            </td>
        </tr>

        <?php
        }

        if(isset($_POST['assign']))
        {
            $stdno = $_REQUEST['indexkey'];
            $choice = $_REQUEST['assigned'];

            $query2 = "UPDATE student_details SET AssignedTopic =
'$choice' WHERE StudentNo = '$stdno'";

            $result2 = $connection->query($query2);
            if (!$result2) die($connection->error);

        }

        ?>
        <meta http-equiv='refresh' content='0'>
        <?php
        }

        }

        ?>
    </table>

    <form method="post" action="#">

        <div class="form-group">

            <button class="btn btn-success" name="confirmtopics"
type="submit">Confirm Topics</button>

            <button class="btn btn-info" name="viewconflicts"
type="submit">View Conflicts</button>

        </div>

```

```

        </form>

        <?php
            if(isset($_POST['confirmtopics']))
            {
                $query = "SELECT StudentNo, Surname, FirstName, Initials,
AssignedTopic FROM student_details WHERE AssignedTopic != 0";

                $result = $connection->query($query);
                if (!$result) die($connection->error);

                while($row = mysqli_fetch_assoc($result))
                {
                    $topic = $row['AssignedTopic'];
                    $stdno = $row['StudentNo'];
                    $surname = $row['Surname'];
                    $name = $row['FirstName'];
                    $initial = $row['Initials'];

                    $query2 = "UPDATE project_list SET Available = 'No' WHERE
TopicNumber = '$topic'";

                    $result2 = $connection->query($query2);
                    if (!$result2) die($connection->error);

                    $query3 = "UPDATE project_allocation SET StudentNo = '$stdno',
Surname = '$surname', FirstName = '$name', Initials = '$initial' WHERE TopicNumber =
'$topic'";

                    $result3 = $connection->query($query3);
                    if (!$result3) die($connection->error);

                }
                header("Location: Project_Allocation_Page.php");
            }
        ?>
    </div>
</div>
<?php
    mysqli_close($connection);

    include "admin_footer.php"; ?>
</div>

</body>

</html>

```

Appendix 8 - Project_Allocation_Page.php Code

```

<?php include "header.php"; ?>
<?php include "database_connection.php"; ?>

<body>

    <!-- Navigation -->
    <?php include "navigation.php"; ?>

    <!-- Page Content -->

```



```

<div class="container">
  <div class="row">
    <div class="col-lg-12">
      <h2 class="mt-5 font-weight-light text-center">Project Allocation</h2>
      <br>

      <table class="table table-bordered table-hover table-striped">
        <thead>
          <tr>
            <th>Student Number</th>
            <th>Surname</th>
            <th>Name</th>
            <th>Topic</th>
            <th>Supervisor</th>
            <th>Examiner</th>
            <th>Day & Time</th>
            <th>Venue</th>
          </tr>
        </thead>
        <?php
        $query = "SELECT * FROM project_allocation ORDER BY TopicNumber";
        $result = $connection->query($query);
        if (!$result) die($connection->error);

        while($row = mysqli_fetch_assoc($result))
        {
          $studentNo = $row['StudentNo'];
          $firstName = $row['FirstName'];
          $surname = $row['Surname'];
          $initials = $row['Initials'];
          $topicNumber = $row['TopicNumber'];
          $topic = $row['Topic'];
          $supervisor = $row['Supervisor'];
          $description = $row['Description'];
          $examiner = $row['Examiner'];
          $day = $row['Day'];
          $time=date("H:i ",strtotime($row['Time']));
          $venue = $row['Venue'];

          <tr>
            <td> <?php echo $studentNo;?></td>
            <td> <?php echo $surname;?></td>
            <td> <?php echo $firstName;?></td>
            <td> <?php echo "Topic ".$topicNumber.".": ". $topic;?></td>
            <td> <?php echo $supervisor;?></td>
            <td> <?php echo $examiner;?></td>
            <td> <?php echo $day." ".$time;?></td>
            <td> <?php echo $venue;?></td>
          </tr>
        <?php
        }
        <?>
      </table>
    </div>
  </div>
  <?php include "footer.php"; ?>
</body>
</html>

```

Appendix 9 - Project_Allocation_Page_admin.php Code

```
<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php"; ?>
    <div class="content-wrapper">
        <div class="container-fluid">
            <h2 class="mt-5 font-weight-light text-center">Project Allocation</h2>
            <br>
            <div class="table-responsive">

                <table class="table table-bordered table-hover table-striped">
                    <thead>
                        <tr>
                            <th>Student Number</th>
                            <th>Surname</th>
                            <th>Name</th>
                            <th>Topic</th>
                            <th>Supervisor</th>
                            <th>Examiner</th>
                            <th>Day & Time</th>
                            <th>Venue</th>
                        </tr>
                    </thead>

                    <?php
                    $query = "SELECT * FROM project_allocation ORDER BY TopicNumber";
                    $result = $connection->query($query);
                    if (!$result) die($connection->error);

                    while($row = mysqli_fetch_assoc($result))
                    {
                        $studentNo = $row['StudentNo'];
                        $firstName = $row['FirstName'];
                        $surname = $row['Surname'];
                        $initials = $row['Initials'];
                        $topicNumber = $row['TopicNumber'];
                        $topic = $row['Topic'];
                        $supervisor = $row['Supervisor'];
                        $description = $row['Description'];
                        $examiner = $row['Examiner'];
                        $day = $row['Day'];
                        $time=date("H:i ",strtotime($row['Time']));
                        $venue = $row['Venue'];

                        ?>
                        <tr>
                            <td> <?php echo $studentNo;?></td>
                            <td> <?php echo $surname;?></td>
                            <td> <?php echo $firstName;?></td>
                            <td> <?php echo "Topic ".$topicNumber.".": ". $topic;?></td>
                            <td> <?php echo $supervisor;?></td>
                            <td> <?php echo $examiner;?></td>
                            <td> <?php echo $day." ".$time;?></td>
                            <td> <?php echo $venue;?></td>
                        </tr>
                    <?php
                    }
                    ?>
                </table>
            </div>
        </div>
        <?php include "admin_footer.php"; ?>
    </div>
</body>
</html>
```

Appendix 10 - Lecturer_Schedule.php Code

```

<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php"; ?>
    <div class="content-wrapper">
        <div class="container-fluid">
            <form method="post" id="time-form" action="#">
                <div class="row">
                    <div class="col-lg-8">

                        <div>
                            <h2 class="mt-5 font-weight-light text-center">Schedule</h2>

                            <div class="row">
                                <div class="col-lg-6">

                                    <table class="table table-bordered table-striped table-
hover">

                                        <thead>
                                            <tr>
                                                <th>Time</th>
                                                <th><input id= "selectAllMon" type="checkbox"
> Monday</th>

                                            </tr>
                                        </thead>

                                        <?php

                                            $query = "SELECT TimeId, StartTime, EndTime FROM time
WHERE Days = 'Mon' ORDER BY StartTime";

                                            $result = $connection->query($query);
                                            if (!$result) die($connection->error);

                                            while($row=mysqli_fetch_array($result)){
                                                $id=$row['TimeId'];
                                                $start=date("H:i ",strtotime($row['StartTime']));

                                                ?>
                                                <tr >
                                                    <td><?php echo $start;?></td>
                                                    <td><input type="checkbox" class="checkMon"
id="check" name="M[]" value="<?php echo $id;?>"></td>

                                                </tr>

                                                <?php }?>
                                            </table>
                                            <div class="result" id="form">
                                                </div>
                                            </div>

                                            <div class="col-lg-6">

                                                <table class="table table-bordered table-striped table-
hover">

```

```

        <thead>
            <tr>
                <th>Time</th>
                <th><input id= "selectAllTue" type="checkbox">
Tuesday</th>

            </tr>
        </thead>

        <?php
            $query = "SELECT TimeId, StartTime, EndTime FROM time
WHERE Days = 'Tues' ORDER BY StartTime";

            $result = $connection->query($query);
            if (!$result) die($connection->error);

            while($row=mysqli_fetch_array($result)){
                $id=$row['TimeId'];
                $start=date("H:i ",strtotime($row['StartTime']));

                ?>
                <tr >
                    <td><?php echo $start;?></td>
                    <td><input type="checkbox" class="checkTue"
id="check" name="T[]" value="<?php echo $id;?>" ></td>

                </tr>

                <?php }?>
            </table>
            <div class="result" id="form">
            </div>
        </div>

    </div>

</div>

</div>

<div class="col-lg-">
    <div class="box">

        <div class="row">
            <div class="col-lg-12">
                <h2 class="mt-5 font-weight-light text-
center">Details</h2>

                <div class="form-group">
                    <label>Lecturer</label>

                    <select class="form-control" name="lecturer">
                        <?php

                            $query = "SELECT * FROM staff_details";

                            $result = $connection->query($query);
                            if (!$result) die($connection->error);

                            while($row=mysqli_fetch_array($result)){
                                ?>
                                <option value="<?php echo
$row['StaffID'];?>"><?php echo $row['StaffName'];?></option>
                                <option value="" disabled selected
hidden>Choose...</option>

                                <?php }

                                ?>

```



```

        $result = $connection->query($query);
        if (!$result) die($connection->error);
    }

}

//Tuesday
if (isset($_POST['T']) && strlen(trim($_POST['venue'])) &&
isset($_POST['lecturer'])) {
    $t = $_POST['T'];
    foreach($t as $daym) {

        $query = "INSERT INTO lecturer_schedule(time_id,day,staff_id, status,
room) VALUES ('$daym','Tues','$member','unavailable','".mysqli_real_escape_string($connection,
$room)."'");

        $result = $connection->query($query);
        if (!$result) die($connection->error);
    }
}

?>

</div>

</body>

</html>

```

Appendix 11 - Examiner_allocation.php Code

```

<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<?php

$arrayTimeId = array();

$queryTime = "SELECT TimeID, StartTime, Days FROM time";
$resultTime = $connection->query($queryTime);
if (!$resultTime) die($connection->error);

while($rowTime = mysqli_fetch_assoc($resultTime))
{
    $arrayTimeId[] = $rowTime['TimeID'];
}

$queryStaff = "SELECT StaffID, StaffName FROM staff_details";
$resultStaff = $connection->query($queryStaff);
if (!$resultStaff) die($connection->error);

$countNumStaff = mysqli_num_rows($resultStaff);

$queryTopics = "SELECT TopicNumber FROM project_allocation WHERE Edited = ''";
$resultTopics = $connection->query($queryTopics);
if (!$resultTopics) die($connection->error);

$countNumTopics = mysqli_num_rows($resultTopics);

$numMax = ceil(($countNumTopics/$countNumStaff)*2);

while($rowTopics = mysqli_fetch_assoc($resultTopics)) {

```

```

$arrayTemp = array();
$arrayTimeIdSupervisorAvail = array();

$topicNumber = $rowTopics['TopicNumber'];

$querySupervisor = "SELECT SupervisorId FROM project_list WHERE TopicNumber =
'$topicNumber'";
$resultSupervisor = $connection->query($querySupervisor);
if (!$resultSupervisor) die($connection->error);

while($rowSupervisor = mysqli_fetch_assoc($resultSupervisor))
{
    $supervisorId = $rowSupervisor['SupervisorId'];

}

$querySupervisorTopics = "SELECT TopicNumber FROM project_list WHERE SupervisorId =
'$supervisorId'";
$resultSupervisorTopics = $connection->query($querySupervisorTopics);
if (!$resultSupervisorTopics) die($connection->error);

$countSupervisorTopics = mysqli_num_rows($resultSupervisorTopics);

$queryTimeSupervisorUnavail = "SELECT time_id FROM lecturer_schedule WHERE staff_id =
'$supervisorId'";
$resultTimeSupervisorUnavail = $connection->query($queryTimeSupervisorUnavail);
if (!$resultTimeSupervisorUnavail) die($connection->error);

while($rowTimeSupervisorUnavail = mysqli_fetch_assoc($resultTimeSupervisorUnavail))
{
    $arrayTemp[] = $rowTimeSupervisorUnavail['time_id'];
}

$intersect = array_intersect($arrayTimeId, $arrayTemp);
$arrayTimeIdSupervisorAvail = array_merge(array_diff($arrayTimeId, $intersect),
array_diff($arrayTemp, $intersect));

$queryExaminers = "SELECT StaffID, StaffName FROM staff_details WHERE StaffID !=
'$supervisorId'";

$resultExaminers = $connection->query($queryExaminers);
if (!$resultExaminers) die($connection->error);

while($rowExaminers = mysqli_fetch_assoc($resultExaminers))
{
    $arrayExaminerTimeId = array();
    $arrayExaminerTimeAvailId = array();
    $arrayTimeIdy = array();
    $arrayTime = array();

    $examinerId = $rowExaminers['StaffID'];
    $examinerName = $rowExaminers['StaffName'];

    $queryExaminerTimeUnavail = "SELECT time_id, room FROM lecturer_schedule WHERE
staff_id = '$examinerId'";

    $resultExaminerTimeUnavail = $connection->query($queryExaminerTimeUnavail);
    if (!$resultExaminerTimeUnavail) die($connection->error);

    while($row = mysqli_fetch_assoc($resultExaminerTimeUnavail))
    {
        $arrayExaminerTimeId[] = $row['time_id'];
        $room = $row['room'];
    }
}

```

```

        $intersect = array_intersect($arrayTimeId, $arrayExaminerTimeId);
        $arrayTimeIdy = array_merge(array_diff($arrayTimeId, $intersect),
array_diff($arrayExaminerTimeId, $intersect));

        $arrayTimeAvailId = array_merge(array_intersect($arrayTimeIdSupervisorAvail,
$arrayTimeIdy));

        if(count($arrayTimeAvailId) != 0)
        {

            for ($t = 0; $t < count($arrayTimeAvailId); $t++){
                $query = "SELECT StartTime FROM time WHERE TimeId = '$arrayTimeAvailId[$t]'";

                $result = $connection->query($query);
                if (!$result) die($connection->error);

                while($row = mysqli_fetch_assoc($result))
                {
                    $arrayTime[] = date("H:i ",strtotime($row['StartTime']));

                }

            }

            $querycountExamining = "SELECT ExaminerId FROM project_allocation where ExaminerId
= '$examinerId'";
            $resultcountExamining = $connection->query($querycountExamining);
            if (!$resultcountExamining) die($connection->error);

            $countExamining = mysqli_num_rows($resultcountExamining);

            $querycountSupervising = "SELECT SupervisorId FROM project_allocation where
SupervisorId = '$examinerId'";
            $resultcountSupervising = $connection->query($querycountSupervising);
            if (!$resultcountSupervising) die($connection->error);

            $countSupervising = mysqli_num_rows($resultcountSupervising);

            $total = $countSupervising + $countExamining;

            if($countExamining < count($arrayTimeIdy))
            {
                if($total <= $numMax)
                {

                    $sid = @$arrayTimeAvailId[$countExamining];
                    $queryDay = "SELECT Days FROM time WHERE TimeId = '$sid'";
                    $resultDay = $connection->query($queryDay);
                    if (!$resultDay) die($connection->error);

                    while($row = mysqli_fetch_assoc($resultDay)){

                        $day = $row['Days'];

                    }

                    $time = @$arrayTime[$countExamining];
                    $timeid = @$arrayTimeAvailId[$countExamining];
                    $queryUpdateProjectAlloc = "UPDATE project_allocation SET ExaminerId =
'$examinerId', Examiner = '$examinerName', Day = '$day', Time= '$time', TimeId = '$timeid',
Venue = '$room' WHERE TopicNumber = '$topicNumber'";

                    $resultUpdateProjectAlloc = $connection->query($queryUpdateProjectAlloc);
                    if (!$resultUpdateProjectAlloc) die($connection->error);

                    $total = $countSupervising + $countExamining;
                    $countExamining++;

                }
            }
        }

```



```

    }
}
}

$resultStaff = $connection->query($queryStaff);
if (!$resultStaff) die($connection->error);

while($rowStaff = mysqli_fetch_assoc($resultStaff))
{
    $staffId = $rowStaff['StaffID'];

    $querycountExaminingNew = "SELECT ExaminerId FROM project_allocation where ExaminerId = '$staffId'";
    $resultcountExaminingNew = $connection->query($querycountExaminingNew);
    if (!$resultcountExaminingNew) die($connection->error);

    $countExaminingNew = mysqli_num_rows($resultcountExaminingNew);

    $querycountSupervisingNew = "SELECT SupervisorId FROM project_allocation where SupervisorId = '$staffId'";
    $resultcountSupervisingNew = $connection->query($querycountSupervisingNew);
    if (!$resultcountSupervisingNew) die($connection->error);

    $countSupervisingNew = mysqli_num_rows($resultcountSupervisingNew);

    $totalNew = $countSupervisingNew + $countExaminingNew;

    $queryUpdateStaffDetails = "UPDATE staff_details SET Supervising = '$countSupervisingNew', Examining = '$countExaminingNew', Total = '$totalNew' WHERE StaffID = '$staffId'";
    $resultUpdateStaffDetails = $connection->query($queryUpdateStaffDetails);
    if (!$resultUpdateStaffDetails) die($connection->error);
}

?>
<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php"; ?>
    <div class="content-wrapper">
        <div class="container-fluid">

            <h2 class="mt-5 font-weight-light text-center">Allocation</h2>
            <br>
            <div class="table-responsive">
                <table class="table table-bordered table-hover table-striped">
                    <thead>
                        <tr>
                            <th>Topic</th>
                            <th>Supervisor</th>
                            <th>Examiner</th>
                            <th>Day & Time</th>
                            <th>Venue</th>
                        </tr>
                    </thead>

                    <?php
                    $query = "SELECT * FROM project_allocation ORDER BY TopicNumber";
                    $result = $connection->query($query);
                    if (!$result) die($connection->error);

                    while($row = mysqli_fetch_assoc($result))
                    {

                        $topicNumber = $row['TopicNumber'];
                        $topic = $row['Topic'];
                        $supervisor = $row['Supervisor'];
                        $examiner = $row['Examiner'];

```

```

        $day = $row['Day'];
        $time=date("H:i ",strtotime($row['Time']));
        $venue = $row['Venue'];
    ?>

    <tr>

        <td> <?php echo "Topic ".$topicNumber.": ". $topic;?></td>
        <td> <?php echo $supervisor;?></td>
        <td> <?php echo $examiner;?></td>
        <td> <?php echo $day." ".$time;;?></td>
        <td> <?php echo $venue;?></td>
        <td>
            <a href="#editexaminer<?php echo $topicNumber; ?>" data-
toggle="modal" class="btn btn-warning"><span class="glyphicon glyphicon-edit"></span>
Edit</a></td>

            <?php include('editexaminer_allocation_modal.php'); ?>

    </tr>
    <?php
    }

    ?>

</table>

</div>

</div>
<?php include "admin_footer.php"; ?>
</div>

</body>

</html>

```

Appendix 12 - loading_table.php Code

```

<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php"; ?>
    <div class="content-wrapper">
        <div class="container-fluid">

            <h2 class="mt-5 font-weight-light text-center">Staff Loading</h2>
            <br>
            <div class="table-responsive">
                <table class="table table-bordered table-striped">
                    <thead>
                        <tr>
                            <th>Lecturer</th>
                            <th>Examining</th>
                            <th>Supervising</th>
                            <th>Total</th>
                        </tr>
                    </thead>

                    <?php

```

```

$query = "SELECT * FROM staff_details ORDER BY StaffID";
$result = $connection->query($query);
if (!$result) die($connection->error);

while($row = mysqli_fetch_assoc($result))
{
    $staffName = $row['StaffName'];
    $supervising = $row['Supervising'];
    $examining = $row['Examining'];
    $totalNo = $row['Total'];

    ?>
    <tr>

        <td> <?php echo $staffName;?></td>
        <td> <?php echo $examining;?></td>
        <td> <?php echo $supervising;?></td>
        <td> <?php echo $totalNo;?></td>

    </tr>

    <?php
    }
    ?>
</table>

</div>
</div>
<?php include "admin_footer.php"; ?>
</div>

</body>

</html>

```

Appendix 13 – projects.php Code

```

<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php"; ?>
    <div class="content-wrapper">
        <div class="container-fluid">

            <h2 class="mt-5 font-weight-light text-center">Projects</h2>
            <br>
            <div class="pull-right"><a href="#addnewproject" data-toggle="modal" class="btn btn-primary"><div class="glyphicon glyphicon-plus"></div> Add New Project </a></div>

            <div class="table-responsive">
                <br>
                <table class="table table-bordered table-hover table-striped">
                    <thead>
                        <tr>
                            <th>Topic</th>
                            <th>Description</th>
                            <th>Supervisor</th>
                        </tr>
                    </thead>
                    <?php

                        $query = "SELECT TopicNumber, Topic, Description, Supervisor FROM
project_list ORDER BY TopicNumber";

```

```

$result = $connection->query($query);
if (!$result) die($connection->error);

while($row = mysqli_fetch_assoc($result))
{
    $topicNumber = $row['TopicNumber'];
    $topic = $row['Topic'];
    $supervisor = $row['Supervisor'];
    $description = $row['Description'];
    ?>

    <tr>
        <td> <?php echo "Topic ".$topicNumber." : ". $topic;?></td>
        <td> <?php echo $description;?></td>
        <td> <?php echo $supervisor;?></td>
        <td>
            <a href="#editproject<?php echo $topicNumber; ?>" data-
toggle="modal" class="btn btn-warning"><span class="glyphicon glyphicon-edit"></span>
Edit</a></td>

            <td>
                <a href="#delproject<?php echo
$topicNumber; ?>" data-toggle="modal" class="btn btn-danger"><span class="glyphicon glyphicon-
trash"></span> Delete</a>

                <?php
include('editdelete_project_modal.php'); ?>
            </td>
        </tr>
    <?php
    }
    ?>
</table>
</div>
</div>
<?php include "admin_footer.php"; ?>
</div>

<?php include "addproject_modal.php"; ?>

</body>

</html>

```

Appendix 14 – students.php Code

```

<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php"; ?>
    <div class="content-wrapper">
        <div class="container-fluid">

            <h2 class="mt-5 font-weight-light text-center">Students</h2>
            <br>
            <div class="pull-right"><a href="#addnewstudent" data-toggle="modal" class="btn
btn-primary"><div class="glyphicon glyphicon-plus"></div> Add New Student </a></div>

            <div class="table-responsive">
                <br>
                <table class="table table-bordered table-hover table-striped">
                    <thead>
                        <tr>
                            <th>Student Number</th>
                            <th>Surname</th>

```

```

                <th>Name</th>
                <th>Initials</th>
                <th>Discipline</th>
            </tr>
        </thead>
        <?php
            $query = "SELECT StudentNo, Surname, FirstName, Initials, Discipline FROM
student_details ORDER BY StudentNo";
            $result = $connection->query($query);
            if (!$result) die($connection->error);

            while($row = mysqli_fetch_assoc($result))
            {
                $studentNo = $row['StudentNo'];
                $firstName = $row['FirstName'];
                $surname = $row['Surname'];
                $initials = $row['Initials'];
                $discipline = $row['Discipline'];

                ?>

                <tr>
                    <td> <?php echo $studentNo;?></td>
                    <td> <?php echo $surname;?></td>
                    <td> <?php echo $firstName;?></td>
                    <td> <?php echo $initials;?></td>
                    <td> <?php echo $discipline;?></td>
                    <td><a href="#editstudent<?php echo $studentNo; ?>" data-
toggle="modal" class="btn btn-warning"><span class="glyphicon glyphicon-edit"></span>
Edit</a></td>

                    <td>
                        <a href="#delstudent<?php echo
$studentNo; ?>" data-toggle="modal" class="btn btn-danger"><span class="glyphicon glyphicon-
trash"></span> Delete</a>

                        <?php

include('editdelete_student_modal.php'); ?>
                    </td>

                </tr>
            <?php
            }
            ?>
        </table>
    </div>
</div>

    <?php include "admin_footer.php"; ?>
</div>
<?php include "addnewstudent_modal.php"; ?>

</body>

</html>

```

Appendix 15 – staff.php Code

```

<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php"; ?>
    <div class="content-wrapper">
        <div class="container-fluid">

```

```

        <h2 class="mt-5 font-weight-light text-center">Staff</h2>
        <br>
        <div class="pull-right"><a href="#addnewstaff" data-toggle="modal" class="btn btn-
primary"><div class="glyphicon glyphicon-plus"></div> Add New Staff </a></div>

        <div class="table-responsive">
            <br>
            <table class="table table-bordered table-hover table-striped">
                <thead>
                    <tr>
                        <th>Staff Member</th>
                    </tr>
                </thead>

                <?php
                $query = "SELECT StaffID, StaffName, Initials FROM staff_details ORDER BY
StaffID";

                $result = $connection->query($query);
                if (!$result) die($connection->error);

                while($row = mysqli_fetch_assoc($result))
                {

                    $staffid = $row['StaffID'];
                    $staffName = $row['StaffName'];
                    $initials = $row['Initials'];

                    ?>

                    <tr>

                        <td> <?php echo $initials." ".$staffName;?></td>
                        <td><a href="#editstaff<?php echo $staffid; ?>" data-toggle="modal"
class="btn btn-warning"><span class="glyphicon glyphicon-edit"></span> Edit</a></td>
                        <td>
                            <a href="#delstaff<?php echo $staffid;
?>" data-toggle="modal" class="btn btn-danger"><span class="glyphicon glyphicon-trash"></span>
Delete</a>

                            <?php
include('editdelete_staff_modal.php'); ?>
                        </td>
                    </tr>

                    <?php
                    }
                    ?>
                </table>

            </div>
        </div>

        <?php include "admin_footer.php"; ?>
    </div>
    <?php include "addstaff_modal.php"; ?>
</body>
</html>

```

Appendix 16 - schedule_grid.php Code

```

<?php include "admin_header.php"; ?>
<?php include "database_connection.php"; ?>

<body class="fixed-nav sticky-footer bg-dark" id="page-top">
    <!-- Navigation-->
    <?php include "admin_nav.php";
    $staff = "";
    ?>
    <div class="content-wrapper">

```

```

<div class="container-fluid">

    <h2 class="mt-5 font-weight-light text-center">Staff Schedule</h2>
    <br>

    <form method='post' action='#' class="form-inline">
        <select class="form-control" name="post_staff">
            <?php

                $query = "SELECT StaffID, StaffName FROM staff_details";
                $result = $connection->query($query);
                if (!$result) die($connection->error);

                while($row = mysqli_fetch_assoc($result))
                {
                    $staffId = $row['StaffID'];
                    $staffName = $row['StaffName'];

                    ?>
                    <option value="<?php echo $staffId; ?>" > <?php echo
$staffName;?></option>

                    <?php
                }
                ?>
            </select>

            <button class="btn btn-info btn-sm go-btn" name="select_staff"
type="submit">Ok</button>
        </form>
        <br>
        <div class="table-responsive">
            <table class="table table-bordered table-hover table-striped">
                <thead>
                    <tr>
                        <th>Staff</th>
                        <th>Day & Time</th>
                        <th>Status</th>
                        <th>Room</th>
                    </tr>
                </thead>

                <tbody>
                    <?php
                    if(isset($_POST['select_staff']))
                    {
                        $staff = $_REQUEST['post_staff'];

                        $query = "SELECT sched_id, time_id, day, status, room FROM
lecturer_schedule Where staff_id = '$staff' ORDER BY time_id";
                        $result = $connection->query($query);
                        if (!$result) die($connection->error);

                        while($row = mysqli_fetch_assoc($result))
                        {
                            $schedId = $row['sched_id'];
                            $timeId = $row['time_id'];
                            $status = $row['status'];
                            $room = $row['room'];

                            $query2 = "SELECT StartTime, Days FROM time Where TimeId = '$timeId'";
                            $result2 = $connection->query($query2);
                            if (!$result2) die($connection->error);
                            while($row2 = mysqli_fetch_assoc($result2))

```

```

        {
            $time = date("H:i ",strtotime($row2['StartTime']));
            $day = $row2['Days'];
        }

        $query3 = "SELECT StaffName FROM staff_details Where StaffID =
'$staff'";

        $result3 = $connection->query($query3);
        if (!$result3) die($connection->error);
        while($row3 = mysqli_fetch_assoc($result3))
        {
            $name = $row3['StaffName'];
        }
        ?>

        <tr>
            <td> <?php echo $name;?></td>
            <td> <?php echo $day." ".$time;?></td>
            <td> <?php echo $status;?></td>
            <td> <?php echo $room;?></td>
            <td>

                <form method='post' action='#' class="form-inline">
                    <input type= hidden name= indexkey value="<?php echo
$shedId; ?>">
                    <button class="btn btn-danger btn-sm" name="delete"
type="submit">Delete</button>
                </form>

            </td>

        </tr>
    <?php
    }

    if(isset($_POST['delete']))
    {
        $id = $_REQUEST['indexkey'];

        $queryDelete= "DELETE FROM lecturer_schedule WHERE sched_id = '$id'";
        $resultDelete = $connection->query($queryDelete);
        if (!$resultDelete) die($connection->error);

        ?>

        <meta http-equiv='refresh' content='0'>
        <?php

        }

        ?>
    </table>
</div>
<?php include "admin_footer.php"; ?>
</div>
</body>
</html>

```

Appendix 17 - addproject_modal.php

```

<div class="modal fade" id="addnewproject" tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden="true">
    <div class="modal-dialog">

```



```

        <div class="modal-content">
            <div class="modal-header">
                <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>
                <center><h5 class="modal-title" id="myModalLabel">Add New
Project</h5></center>
            </div>
            <div class="modal-body">
                <div class="container-fluid">
                    <form method="POST" action="addnewproject.php">
                        <div class="form-group">
                            <label for="topic">Topic</label>
                            <input type="text" placeholder="Topic" class="form-control"
name="topic">
                        </div>

                        <div class="form-group">
                            <label for="description">Description</label>

                            <textarea name="description" id = "description" class = "form-control"
cols="30" rows="5" placeholder="Enter Description"></textarea>

                        </div>

                        <div class="form-group">
                            <label for="supervisor">Supervisor</label>
                            <!--
placeholder="Supervisor" class="form-control">-->
                            <input type="text" id="supervisor"

                            <select class="form-control" id="supervisor" name="supervisor">
                                <?php
                                $queryUpdateStaff = "SELECT StaffID, StaffName FROM
staff_details";

                                $resultUpdateStaff = $connection->query($queryUpdateStaff);
                                if (!$resultUpdateStaff) die($connection->error);

                                while($rowUpdateStaff = mysqli_fetch_assoc($resultUpdateStaff)) {

                                    $staffIdN = $rowUpdateStaff['StaffID'];
                                    $staffNameN = $rowUpdateStaff['StaffName'];

                                    <?>
                                    <option value="<?php echo $staffIdN; ?>" > <?php echo
$staffNameN;?></option>

                                    <option value="" disabled selected hidden>Choose...</option>

                                <?php
                                }
                                <?>
                            </select>
                        </div>

                        <div class="form-group">
                            <label for="Discipline">Discipline</label>

                            <select class="form-control" name="discipline">

                                <option value="Electronic">Electronic</option>
                                <option value="Computer">Computer</option>
                                <option value="Both">Both</option>
                                <option value="" disabled selected hidden>Choose...</option>
                            </select>
                        </div>

                        <div class="modal-footer">
                            <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
                            <button type="submit" class="btn btn-primary"><span class="glyphicon
glyphicon-floppy-disk"></span> Save</a>
                        </div>
                    </form>
                </div>
            </div>
        </div>

```

```

        </div>
    </div>
</div>

```

Appendix 18 – addnewproject.php

```

<?php
include('database_connection.php');

if (isset($_POST['topic']) && strlen(trim($_POST['description'])) &&
isset($_POST['supervisor']) && isset($_POST['discipline'])){
    $topic = mysqli_real_escape_string($connection, $_POST['topic']);
    $description = mysqli_real_escape_string($connection, $_POST['description']);
    $supervisorid = mysqli_real_escape_string($connection, $_POST['supervisor']);
    $discipline = mysqli_real_escape_string($connection, $_POST['discipline']);

    $queryGetSupervisor = "SELECT StaffName FROM staff_details WHERE StaffID =
'$supervisorid'";
    $resultGetSupervisor = $connection->query($queryGetSupervisor);
    if (!$resultGetSupervisor) die($connection->error);

    while($rowGetSupervisor = mysqli_fetch_assoc($resultGetSupervisor)) {

        $supervisor = $rowGetSupervisor['StaffName'];

    }

    $query = "INSERT INTO project_list(Topic, Description, Supervisor, SupervisorId,
Discipline) VALUES('$topic', '$description', '$supervisor', '$supervisorid', '$discipline')";

    $result = $connection->query($query);

    if (!$result){
        die($connection->error);
    }
    else{
        $last_id = mysqli_insert_id($connection);
    }

    $query = "INSERT INTO project_allocation(TopicNumber, Topic, Description, Supervisor,
SupervisorId) VALUES('$last_id', '$topic', '$description', '$supervisor', '$supervisorid')";

    $result = $connection->query($query);

    if (!$result) die($connection->error);
}
header('location:projects.php');?>

```

Appendix 19 - editdelete_project_modal.php Code

```

<!-- Delete -->
<div class="modal fade" id="delproject<?php echo $topicNumber; ?>" tabindex="-1"
role="dialog" aria-labelledby="myModalLabel" aria-hidden="true">
    <div class="modal-dialog">
        <div class="modal-content">
            <div class="modal-header">
                <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>

```



```

        <?php
        }
        ?>
    </select>
</div>

<div class="form-group">
    <label for="Discipline">Discipline</label>

    <select class="form-control" name="discipline">

        <option value="Electronic">Electronic</option>
        <option value="Computer">Computer</option>
        <option value="Both">Both</option>
        <option value="" disabled selected hidden>Choose...</option>
    </select>
</div>

    <div class="modal-footer">
        <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
        <button type="submit" class="btn btn-warning"><span class="glyphicon
glyphicon-check"></span> Save</button>
    </div>
    </form>
</div>
</div>
</div>
<!-- /.modal -->

```

Appendix 20 - update_project.php Code

```

<?php
include('database_connection.php');

$id = mysqli_real_escape_string($connection, $_GET['id']);

if (isset($_POST['topic']) && strlen(trim($_POST['description'])) &&
isset($_POST['supervisor']) && isset($_POST['discipline'])){

    $topic = mysqli_real_escape_string($connection, $_POST['topic']);
    $description = mysqli_real_escape_string($connection, $_POST['description']);
    $supervisorid = mysqli_real_escape_string($connection, $_POST['supervisor']);
    $discipline = mysqli_real_escape_string($connection, $_POST['discipline']);

    $queryGetSupervisor = "SELECT StaffName FROM staff_details WHERE StaffID =
'$supervisorid'";
    $resultGetSupervisor = $connection->query($queryGetSupervisor);
    if (!$resultGetSupervisor) die($connection->error);

    while($rowGetSupervisor = mysqli_fetch_assoc($resultGetSupervisor)) {

        $supervisor = $rowGetSupervisor['StaffName'];

    }

    $query = "UPDATE project_list SET Topic = '$topic', Description = '$description',
Supervisor = '$supervisor', SupervisorId = '$supervisorid', Discipline = '$discipline' WHERE
TopicNumber = '$id'";

    $result = $connection->query($query);

    if (!$result) die($connection->error);

```

```

        $query = "UPDATE project_allocation SET Topic = '$topic', Description = '$description',
Supervisor = '$supervisor', SupervisorId = '$supervisorid' WHERE TopicNumber = '$id'";

        $result = $connection->query($query);

        if (!$result) die($connection->error);
    }

    header('location:projects.php');

?>

```

Appendix 21 - delete_project.php Code

```

<?php
    include('database_connection.php');
    $id=$_GET['id'];
    $query = "DELETE FROM project_list WHERE TopicNumber = '$id'";
    $result = $connection->query($query);

    $query = "DELETE FROM project_allocation WHERE TopicNumber = '$id'";
    $result = $connection->query($query);

    if (!$result) die($connection->error);
    header('location:projects.php');

?>

```

Appendix 22 - addstaff_modal.php Code

```

<!-- Add New -->
<div class="modal fade" id="addnewstaff" tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden="true">
    <div class="modal-dialog">
        <div class="modal-content">
            <div class="modal-header">
                <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>
                <center><h5 class="modal-title" id="myModalLabel">Add New
Staff</h5></center>
            </div>
            <div class="modal-body">
                <div class="container-fluid">
                    <form method="POST" action="addnewstaff.php">
                        <div class="form-group">
                            <label for="staffname">Last Name</label>
                            <input type="text" placeholder="Last Name" class="form-control"
name="name">
                        </div>

                        <div class="form-group">
                            <label for="initials">Initials</label>
                            <input type="text" placeholder="Initials" class="form-control"
name="initials">
                        </div>
                    </div>
                    <div class="modal-footer">
                        <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
                        <button type="submit" class="btn btn-primary"><span class="glyphicon
glyphicon-floppy-disk"></span> Save</a>
                    </div>
                </div>
            </div>
        </div>
    </div>
</div>

```

Appendix 23 – addnewstaff.php Code

```
<?php
include('database_connection.php');

if (isset($_POST['name']) && isset($_POST['initials'])) {

    $name = mysqli_real_escape_string($connection, $_POST['name']);
    $initial = mysqli_real_escape_string($connection, $_POST['initials']);

    $query = "INSERT INTO staff_details (StaffName, Initials) VALUES ('$name', '$initial')";

    $result = $connection->query($query);

    if (!$result) die($connection->error);

}
header('location:staff.php');
?>
```

Appendix 24 - editdelete_staff_modal.php Code

```
<!-- Delete -->
<div class="modal fade" id="delstaff<?php echo $staffid; ?>" tabindex="-1" role="dialog"
aria-labelledby="myModalLabel" aria-hidden="true">
    <div class="modal-dialog">
        <div class="modal-content">
            <div class="modal-header">
                <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>

            </div>
            <div class="modal-body">

                <div class="container-fluid">
                    <h5><center><strong><?php echo "Delete ".$initials.".
".$staffName."?";?> </strong></center></h5>
                </div>

                </div>
            <div class="modal-footer">
                <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
                <a href="delete_staff.php?id=<?php echo $staffid; ?>" class="btn btn-
danger"><span class="glyphicon glyphicon-trash"></span> Delete</a>
            </div>
        </div>
    </div>
</div>
<!-- /.modal -->

<!-- Edit -->
<div class="modal fade" id="editstaff<?php echo $staffid; ?>" tabindex="-1" role="dialog"
aria-labelledby="myModalLabel" aria-hidden="true">
    <div class="modal-dialog">
        <div class="modal-content">
            <div class="modal-header">
                <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>
                <center><h5 class="modal-title" id="myModalLabel">Edit</h5></center>
            </div>
            <div class="modal-body">

                <div class="container-fluid">
                    <form method="POST" action="update_staff.php?id=<?php echo
$staffid; ?>">
```

```

        <div class="form-group">
            <label for="staffname">Last Name</label>
            <input type="text" placeholder="Last Name" class="form-control"
name="name" value="<?php echo $staffName; ?>">
        </div>

        <div class="form-group">
            <label for="initials">Initials</label>
            <input type="text" placeholder="Initials" class="form-control"
name="initials" value="<?php echo $initials; ?>">
        </div>

        <div class="modal-footer">
            <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
            <button type="submit" class="btn btn-warning"><span class="glyphicon
glyphicon-check"></span> Save</button>
        </div>
    </form>
</div>
</div>
<!-- /.modal -->

```

Appendix 25 - update_staff.php Code

```

<?php
include('database_connection.php');

$id = mysqli_real_escape_string($connection, $_GET['id']);

if (isset($_POST['name']) && isset($_POST['initials'])) {

    $name = mysqli_real_escape_string($connection, $_POST['name']);
    $initial = mysqli_real_escape_string($connection, $_POST['initials']);

    $query = "UPDATE staff_details SET StaffName = '$name', Initials = '$initial' WHERE
StaffID = '$id'";

    $result = $connection->query($query);

    if (!$result) die($connection->error);
}

header('location:staff.php');

?>

```

Appendix 26 - delete_staff.php Code

```

<?php
include('database_connection.php');
$id=$_GET['id'];
$query = "DELETE FROM staff_details WHERE StaffID = '$id'";
$result = $connection->query($query);

    if (!$result) die($connection->error);
    header('location:staff.php');

?>

```

Appendix 27 - addnewstudent_modal.php Code

```
<!-- Add New -->
<div class="modal fade" id="addnewstudent" tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden="true">
  <div class="modal-dialog">
    <div class="modal-content">
      <div class="modal-header">
        <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>
        <center><h5 class="modal-title" id="myModalLabel">Add New
Student</h5></center>
      </div>
      <div class="modal-body">
        <div class="container-fluid">
          <form method="POST" action="addnewstudent.php">
            <div class="form-group">
              <label for="studentNo">Student Number</label>
              <input type="text" placeholder="Student Number" class="form-control"
name="studentno">
            </div>
            <div class="form-group">
              <label for="surname">Surname</label>
              <input type="text" placeholder="Surname" class="form-control" name="surname">
            </div>
            <div class="form-group">
              <label for="name">Name</label>
              <input type="text" placeholder="Name" class="form-control" name="name">
            </div>
            <div class="form-group">
              <label for="initials">Initials</label>
              <input type="text" placeholder="Initials" class="form-control"
name="initials">
            </div>
            <div class="form-group">
              <label for="Discipline">Discipline</label>
              <select class="form-control" name="discipline">
                <option value="Electronic">Electronic</option>
                <option value="Computer">Computer</option>
                <option value="" disabled selected hidden>Choose...</option>
              </select>
            </div>
            <div class="modal-footer">
              <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
              <button type="submit" class="btn btn-primary"><span class="glyphicon
glyphicon-floppy-disk"></span> Save</a>
            </div>
          </form>
        </div>
      </div>
    </div>
  </div>
</div>
```

Appendix 28 – addnewstudent.php Code

```
<?php
include('database_connection.php');
if (isset($_POST['studentno']) && isset($_POST['surname']) && isset($_POST['name']) &&
isset($_POST['initials']) && isset($_POST['discipline'])) {
```



```

$stdno = mysqli_real_escape_string($connection, $_POST['studentno']);
$surname = mysqli_real_escape_string($connection, $_POST['surname']);
$name = mysqli_real_escape_string($connection, $_POST['name']);
$initial = mysqli_real_escape_string($connection, $_POST['initials']);
$discipline = mysqli_real_escape_string($connection, $_POST['discipline']);

$query = "INSERT INTO student_details(StudentNo, Surname, FirstName, Initials, Discipline)
VALUES('$stdno', '$surname', '$name', '$initial', '$discipline')";

$result = $connection->query($query);

if (!$result) die($connection->error);
}

header('location:students.php');

?>

```

Appendix 29 - editdelete_student_modal.php Code

```

<!-- Delete -->
<div class="modal fade" id="delstudent<?php echo $studentNo; ?>" tabindex="-1"
role="dialog" aria-labelledby="myModalLabel" aria-hidden="true">
  <div class="modal-dialog">
    <div class="modal-content">
      <div class="modal-header">
        <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>

      </div>
      <div class="modal-body">

        <div class="container-fluid">
          <h5><center><strong><?php echo $firstName." ".$surname."
("$studentNo.")";?> </strong></center></h5>
        </div>

        </div>
        <div class="modal-footer">
          <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
          <a href="delete_student.php?id=<?php echo $studentNo; ?>" class="btn btn-
danger"><span class="glyphicon glyphicon-trash"></span> Delete</a>
        </div>
      </div>
    </div>
  </div>
<!-- /.modal -->

<!-- Edit -->
<div class="modal fade" id="editstudent<?php echo $studentNo; ?>" tabindex="-1"
role="dialog" aria-labelledby="myModalLabel" aria-hidden="true">
  <div class="modal-dialog">
    <div class="modal-content">
      <div class="modal-header">
        <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>
        <center><h5 class="modal-title" id="myModalLabel">Edit</h5></center>
      </div>
      <div class="modal-body">

        <div class="container-fluid">
          <form method="POST" action="update_student.php?id=<?php echo
$studentNo; ?>">

          <div class="form-group">
            <label for="studentNo">Student Number</label>

```

```

        <input type="text" placeholder="Student Number" class="form-control"
name="studentno" value="<?php echo $studentNo; ?>">
    </div>

    <div class="form-group">
        <label for="surname">Surname</label>
<input type="text" placeholder="Surname" class="form-control" name="surname" value="<?php echo
$surname; ?>">

    </div>

    <div class="form-group">
        <label for="name">Name</label>
<input type="text" placeholder="Name" class="form-control" name="name" value="<?php echo
$firstName; ?>">

    </div>

    <div class="form-group">
        <label for="initials">Initials</label>
        <input type="text" placeholder="Initials" class="form-control"
name="initials" value="<?php echo $initials; ?>">
    </div>
    <div class="form-group">
        <label for="Discipline">Discipline</label>

        <select class="form-control" name="discipline">

            <option value="Electronic">Electronic</option>
            <option value="Computer">Computer</option>
            <option value="" disabled selected hidden>Choose...</option>
        </select>
    </div>

    <div class="modal-footer">
        <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
        <button type="submit" class="btn btn-warning"><span class="glyphicon
glyphicon-check"></span> Save</button>
    </div>

    </form>
</div>
</div>
<!-- /.modal -->

```

Appendix 30 - update_student.php Code

```

<?php
include('database_connection.php');
$id = mysqli_real_escape_string($connection, $_GET['id']);
if (isset($_POST['studentno']) && isset($_POST['surname']) && isset($_POST['name']) &&
isset($_POST['initials']) && isset($_POST['discipline'])) {

    $stdno = mysqli_real_escape_string($connection, $_POST['studentno']);
    $surname = mysqli_real_escape_string($connection, $_POST['surname']);
    $name = mysqli_real_escape_string($connection, $_POST['name']);
    $initial = mysqli_real_escape_string($connection, $_POST['initials']);
    $discipline = mysqli_real_escape_string($connection, $_POST['discipline']);

    $query = "UPDATE student_details SET StudentNo = '$stdno', Surname = '$surname', FirstName
= '$name', Initials = '$initial', Discipline = '$discipline' WHERE StudentNo = '$id'";

    $result = $connection->query($query);
    if (!$result) die($connection->error);

}
header('location:students.php');?>

```

Appendix 31 - delete_student.php Code

```
<?php
    include('database_connection.php');
    $id=$_GET['id'];
    $query = "DELETE FROM student_details WHERE StudentNo = '$id'";
    $result = $connection->query($query);

    if (!$result) die($connection->error);
    header('location:students.php');

?>
```

Appendix 32 - editexaminer_allocation_modal.php Code

```
<!-- Edit -->
<div class="modal fade" id="editexaminer<?php echo $topicNumber; ?>" tabindex="-1"
role="dialog" aria-labelledby="myModalLabel" aria-hidden="true">
    <div class="modal-dialog">
        <div class="modal-content">
            <div class="modal-header">
                <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">&times;</button>
                <center><h5 class="modal-title" id="myModalLabel">Edit</h5></center>
            </div>
            <div class="modal-body">

                <div class="container-fluid">
                    <form method="POST"
action="update_examiner_allocation.php?id=<?php echo $topicNumber; ?>"

                    <div class="form-group">
                        <label for="staffname">Examiner</label>
                        <select class="form-control" name="examiner">
                            <?php
$queryUpdateStaff = "SELECT StaffID, StaffName FROM staff_details";
$resultUpdateStaff = $connection->query($queryUpdateStaff);
if (!$resultUpdateStaff) die($connection->error);

while($rowUpdateStaff = mysqli_fetch_assoc($resultUpdateStaff)) {

    $staffIdN = $rowUpdateStaff['StaffID'];
    $staffNameN = $rowUpdateStaff['StaffName'];

    ?>
    <option value="<?php echo $staffIdN; ?>" > <?php echo
$staffNameN;?></option>
    <option value="" disabled selected
hidden>Choose...</option>

                            <?php
                            }
                            ?>
                        </select>
                    </div>

                    <div class="form-group">
                        <label for="initials">Day & Time</label>
                        <select class="form-control" name="time">
                            <?php
$queryUpdateTime = "SELECT TimeId, StartTime, Days FROM time";
$resultUpdateTime = $connection->query($queryUpdateTime);
if (!$resultUpdateTime) die($connection->error);

while($rowUpdateTime = mysqli_fetch_assoc($resultUpdateTime)) {
```

```

        $timeIdN = $rowUpdateTime['TimeId'];
        $timeN = date("H:i ",strtotime($rowUpdateTime['StartTime']));
        $dayN = $rowUpdateTime['Days'];
        ?>
        <option value="<?php echo $timeIdN; ?>" > <?php echo
$dayN." ".$timeN;?></option>
        <option value="" disabled selected
hidden>Choose...</option>

        <?php
        }
        ?>
        </select>
    </div>

    <div class="form-group">
        <label for="name">Venue</label>
        <input type="text" placeholder="Venue" class="form-control" name="venue" value="<?php echo
$venue; ?>">
    </div>

    <div class="modal-footer">
        <button type="button" class="btn btn-default" data-dismiss="modal"><span
class="glyphicon glyphicon-remove"></span> Cancel</button>
        <button type="submit" class="btn btn-warning"><span class="glyphicon
glyphicon-check"></span> Save</button>
    </div>
</form>
</div>
</div>
</div>
<!-- /.modal -->

```

Appendix 33 - update_examiner_allocation.php Code

```

<?php
include('database_connection.php');

$id = mysqli_real_escape_string($connection, $_GET['id']);

if (isset($_POST['examiner']) && isset($_POST['time']) && isset($_POST['venue'])) {

    $examinerid = mysqli_real_escape_string($connection, $_POST['examiner']);
    $timeid = mysqli_real_escape_string($connection, $_POST['time']);
    $venue = mysqli_real_escape_string($connection, $_POST['venue']);

    $queryGetexaminer = "SELECT StaffName FROM staff_details WHERE StaffID = '$examinerid'";
    $resultGetexaminer = $connection->query($queryGetexaminer);
    if (!$resultGetexaminer) die($connection->error);

    while($rowGetexaminer = mysqli_fetch_assoc($resultGetexaminer)) {

        $examiner = $rowGetexaminer['StaffName'];

    }

    $queryGetTime = "SELECT StartTime, Days FROM time WHERE TimeId = '$timeid'";
    $resultGetTime = $connection->query($queryGetTime);
    if (!$resultGetTime) die($connection->error);

    while($rowGetTime = mysqli_fetch_assoc($resultGetTime)) {

```

```

        $timeNew = date("H:i ",strtotime($rowGetTime['StartTime']));
        $dayNew = $rowGetTime['Days'];

    }

    $query = "UPDATE project_allocation SET Examiner = '$examiner', ExaminerId =
'$examinerid', Day = '$dayNew', Time = '$timeNew', TimeId = '$timeid', Venue = '$venue' WHERE
TopicNumber = '$id'";

    $result = $connection->query($query);

    if (!$result) die($connection->error);

    $queryEdit = "UPDATE project_allocation SET Edited = 'Yes'";

    $resultEdit = $connection->query($queryEdit);
    if (!$resultEdit) die($connection->error);
}

header('location:Examiner_allocation.php');

?>

```

Appendix 34 – navigation.php Code

```

<!-- Navigation -->
<nav class="navbar navbar-expand-sm navbar-light fixed-top">
    <div class="container">
        <a></a>
        <button class="navbar-toggler" type="button" data-toggle="collapse" data-
target="#navbarResponsive" aria-controls="navbarResponsive" aria-expanded="false" aria-
label="Toggle navigation">
            <span class="navbar-toggler-icon"></span>
        </button>
        <div class="collapse navbar-collapse" id="navbarResponsive">
            <ul class="navbar-nav ml-auto">
                <li class="nav-item">
                    <a class="nav-link" href="index.html">Project Selection</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="Project_Allocation_Page.php">Allocation</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="Lecturer_Schedule.php">Admin</a>
                </li>
            </ul>
        </div>
    </div>
</nav>

```

Appendix 35 - admin_nav.php Code

```

<!-- Navigation-->
<nav class="navbar navbar-expand-lg navbar-light fixed-top" id="mainNav">
    <a class="navbar-brand" href="Lecturer_Schedule.php">DPMS Admin</a>
    <button class="navbar-toggler navbar-toggler-right" type="button" data-toggle="collapse"
data-target="#navbarResponsive" aria-controls="navbarResponsive" aria-expanded="false" aria-
label="Toggle navigation">
        <span class="navbar-toggler-icon"></span>
    </button>
    <div class="collapse navbar-collapse" id="navbarResponsive">
        <ul class="navbar-nav navbar-sidenav" id="exampleAccordion">

```

```

        <li class="nav-item" data-toggle="tooltip" data-placement="right"
title="Components">
        <a class="nav-link nav-link-collapse collapsed" data-toggle="collapse"
href="#collapseProjects" data-parent="#exampleAccordion">
        <i class="fa fa-fw fa-wrench"></i>
        <span class="nav-link-text">Projects</span>
        </a>
        <ul class="sidenav-second-level collapse" id="collapseProjects">

        <li>
        <a href="projects.php">View All Projects</a>
        </li>
        <li>
        <a href="Project_Allocation_Page_admin.php">View Allocation</a>
        </li>
        <li>
        <a href="Examiner_allocation.php">Allocate Examiners</a>
        </li>
        </ul>
        </li>
        <li class="nav-item" data-toggle="tooltip" data-placement="right" title="Example
Pages">
        <a class="nav-link nav-link-collapse collapsed" data-toggle="collapse"
href="#collapseStudents" data-parent="#exampleAccordion">
        <i class="fa fa-graduation-cap"></i>
        <span class="nav-link-text">Students</span>
        </a>
        <ul class="sidenav-second-level collapse" id="collapseStudents">
        <li>
        <a href="Student_Preferences_Page.php">Student Preferences</a>
        </li>
        <li>
        <a href="students.php">View All Students</a>
        </li>
        </ul>
        </li>

        <li class="nav-item" data-toggle="tooltip" data-placement="right" title="Example
Pages">
        <a class="nav-link nav-link-collapse collapsed" data-toggle="collapse"
href="#collapseStaff" data-parent="#exampleAccordion">
        <i class="fa fa-users"></i>
        <span class="nav-link-text">Staff</span>
        </a>
        <ul class="sidenav-second-level collapse" id="collapseStaff">
        <li>
        <a href="staff.php">View All Staff</a>
        </li>
        <li>
        <a href="schedule_grid.php">View Staff Schedule</a>
        </li>
        <li>
        <a href="Lecturer_Schedule.php">Add Staff Schedule</a>
        </li>
        <li>
        <a href="loading_table.php">View Staff Loading</a>
        </li>
        </ul>
        </li>
        </ul>

        <ul class="navbar-nav sidenav-toggler">
        <li class="nav-item">
        <a class="nav-link text-center" id="sidenavToggler">
        <i class="fa fa-fw fa-angle-left"></i>
        </a>
        </li>
        </ul>

        <ul class="navbar-nav ml-auto">

```

```

        <li class="nav-item">
            <a class="nav-link" href="index.html">
                <i class="fa fa-fw fa-sign-out"></i>Home Site</a>
            </li>
        </ul>
    </div>
</nav>

```

Appendix 36 – footer.php Code

```

<footer class="sticky-footer">
    <div class="container">
        <div class="text-center">
            <small><strong>Copyright &copy; 2018</strong> All rights reserved.</small>
        </div>
    </div>
</footer>
<!-- Bootstrap core JavaScript-->
<script src="vendor/js/jquery.min.js"></script>
<script src="vendor/js/bootstrap.bundle.min.js"></script>
<!-- Core plugin JavaScript-->

<script src="vendor/js/jquery.easing.min.js"></script>

<!-- Custom scripts for all pages-->
<script src="vendor/js/sb-admin.min.js"></script>
<script src="js/script.js"></script>

```

Appendix 37 - admin_footer.php Code

```

<footer>
    <div class="container">
        <div class="text-center">
            <small><strong>Copyright &copy; 2018</strong> All rights reserved.</small>
        </div>
    </div>
</footer>

<script src="vendor/js/jquery.min.js"></script>
<script src="vendor/js/bootstrap.bundle.min.js"></script>
<script src="vendor/js/bootstrap.min.js"></script>

```

Appendix 38 – Style.css Code

```

/* ----- */
/* BASIC SETUP */
/* ----- */

body {
    padding-top: 54px;
}

@media (min-width: 992px) {
    body {
        padding-top: 56px;
    }
}

/*Main navi */

.navbar{

```

```

        background-color: #bdc3c7;
    }

    .navbar-nav li a:link,
    .navbar-nav li a:visited {

        color: #000;
        text-decoration: none;

        border-bottom: 2px solid transparent;
        -webkit-transition: border-bottom 0.2s;
        transition: border-bottom 0.2s;
    }

    .navbar-nav li a:hover,
    .navbar-nav li a:active {
        border-bottom: 2px solid #ff0000;
    }

    /* ----- */
    /* REUSABLE COMPONENTS */
    /* ----- */

    section {
        padding: 45px 10px;
    }

    .back-btn{

        margin-top: -20px;
        margin-left: 0px;
    }

    .go-btn{

        margin-left: 10px;
    }

    .save-btn{
        padding: 5px 19px;
        margin-top: 0px;
        margin-left: 0px;
    }

    footer {
        margin: 50px 0;
    }

```

Appendix 39 - style_admin.css Code

```

.navbar{
    background-color: #bdc3c7;
}

.navbar-nav li a:link,
.navbar-nav li a:visited {
    color: #000;
    text-decoration: none;
    border-bottom: 2px solid transparent;
    -webkit-transition: border-bottom 0.2s;
    transition: border-bottom 0.2s;
}

```



```

}
.navbar-nav li a:hover,
.navbar-nav li a:active {
    border-bottom: 2px solid #ff0000;
}

```

Appendix 40 – script.js Code

```

$(document).ready(function() {

    $('#selectAllMon').click(function(event) {

        if(this.checked) {

            $('.checkMon').each(function() {

                this.checked = true;
            });

        }

        else{

            $('.checkMon').each(function() {

                this.checked = false;
            });

        }

    });

    $('#selectAllTue').click(function(event) {

        if(this.checked) {

            $('.checkTue').each(function() {

                this.checked = true;
            });

        }

        else{

            $('.checkTue').each(function() {

                this.checked = false;
            });

        }

    });

});

```