UNIVERSITI TEKNIKAL MALAYSIA MELAKA

FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

W O R K S H O P 1

R E P O R T

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TABLE OF CONTENT

IMPLEMENTATION

CHAPTER 1

INTRODUCTION

1.1 Introduction

In this era of Information Technology, we are bound with the use of computerized system in our daily life. With the help of information system, we can clearly see that the efficiency of our workload had been reduced by more than half compare to traditional paper-based system. Computerized system also fully utilized the used of the database in storing all our information inside the database. This makes the system become more versatile and flexible to the user to check for any existing records.

FTMK is one the faculty at University Teknikal Malaysia Melaka (UTeM). FTMK offered 6 certificate and every student in each department must attend certificate training based on their degree major. Certificate training available are Rapid Miner, HTML 5, CCNA Security, CCNA R&S, Oracle Java, Oracle DB.

At the meantime, all the certificate management process is done by lecturers using the paper-based approach. This approach is very tedious to record and keep track of the students' progress. Human error might also occur due to the huge number of data need to review and track.

With the system entitled FTMK Professional Certificate management system, all the workload done by Lecturers in keep track the student's certificate is reduced and more convenient. The system able to make reporting more easily even the students' number increased.

1.2 Problem Statements

- The process of keep track the student certification status is tedious and tiring as lecturers need to view the records files in paper based.
- Time consumption on checking the students' certification progress.
- There might be some students who will be miss from the training list as the paper-based system is easier to produce error compared to the computerized system.

1.3 Objectives

1. To design and develop a management system for FTMK.
2. To keep track of the details of the students and certificate in database system.
3. To ease reporting by digitalized all the students and certification data.

1.4 User Scope

i) System Administrator

Full Privilege will be given such as granted access for all the registered user information to monitor, update and access to the student details on their certification process.

ii) Course Instructor

Able to view students' certificate progress and take students attendance. Course instructor can't make change to students' data in the database.

1.5 System and Hardware Requirements

Table 1.5.1: System and Hardware Requirements

System	Hardware Requirement
• XAMPP version 7.3 • Sublime Text version 3.3.1 • PHP version 7.3.5 • MYSQL version 10.1.38-MariaDB • HTML 5.2 • JavaScript ES 2019 • JQuery version 3.3.1 • Google Chrome version 74.0.3729.169	• Personal Computer (PC) Tested on Intel Core i5-5200U, 4GB RAM Laptop • Internet Access

1.6 Gantt Chart

Table 1.6.1: Gantt Chart

	TASK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Briefing of Workshop 1															
2	Assigning Students to Supervisors															
3	Discussion / Verification of title and synopsis. Proposal preparation															
4	Student submits proposal to Supervisor & Committee. (**Proposal**)															
5	Discussion with supervisor on analysis of problem.															
6	Discussion with supervisor on design of solution.															
7	Project Implementation (**Progress 1**)															
8	Project Implementation (**Progress 2**)															
9	Project Implementation (**Progress 3**)															
10	Final Presentation & Submission of Final Report															

CHAPTER 2

PROBLEM ANALYSIS

2.1 Problems Description

In FTMK, all the students from cohort 2017/2018 are planned for professional certificate training and exam. All the students in FTMK are required to attend art least one of the certificate training or examination. The lecturer will play very important roles to keep track of the students' certificate status on whether they had completed the payments, completed the training and attend for the examination. There come problems where one lecturer needs to keep track of one batch of students. This process is tedious and tiring because of lecturers unable to view all the reporting through the paper-based system easily. Besides that, there is no proper management system available for the lecturers to check the status of the student and the certification. FTMK Professional Certificate Management System lay its role by making all the process computerized. By going to the computerized process, we can make the tracking process more flexible and faster as the data is stored in the database. This system also able to replace the current attendance system to online attendance system.

2.2 Problem Decomposition for the Proposed System

Table 2.2.1: Problem Decomposition Table of the proposed system

No	Problem Statements	Solution
1.	Students' payment details are not centralized in one place and need to check manually.	All the students' payment details are saved inside the management system.
2.	Students' payment details are hard to keep track and trace its progress.	The management system uses SQL statement to find the relationship between students and payment status. If student's payment is RM 400 hence fully paid will be shown else will show not fully paid.

3.	Course Instructor must take the attendant manually in paper-based and later convert to excel which is very tedious.	The management system enables course instructor to register class together with all the students and then take their attendance.
4.	Lecturers cannot directly get the name of the students who haven't pay for the certificate.	The management system able to show the number of students who haven't finish their certificate payment in the forms of graph or table.
5.	Lecturers hard to trace the students by course, by group, by cohort.	The management provide overview interface for lecturers to view students' details based on the selected criteria such as cohort, course etc.

2.3 Structure Chart

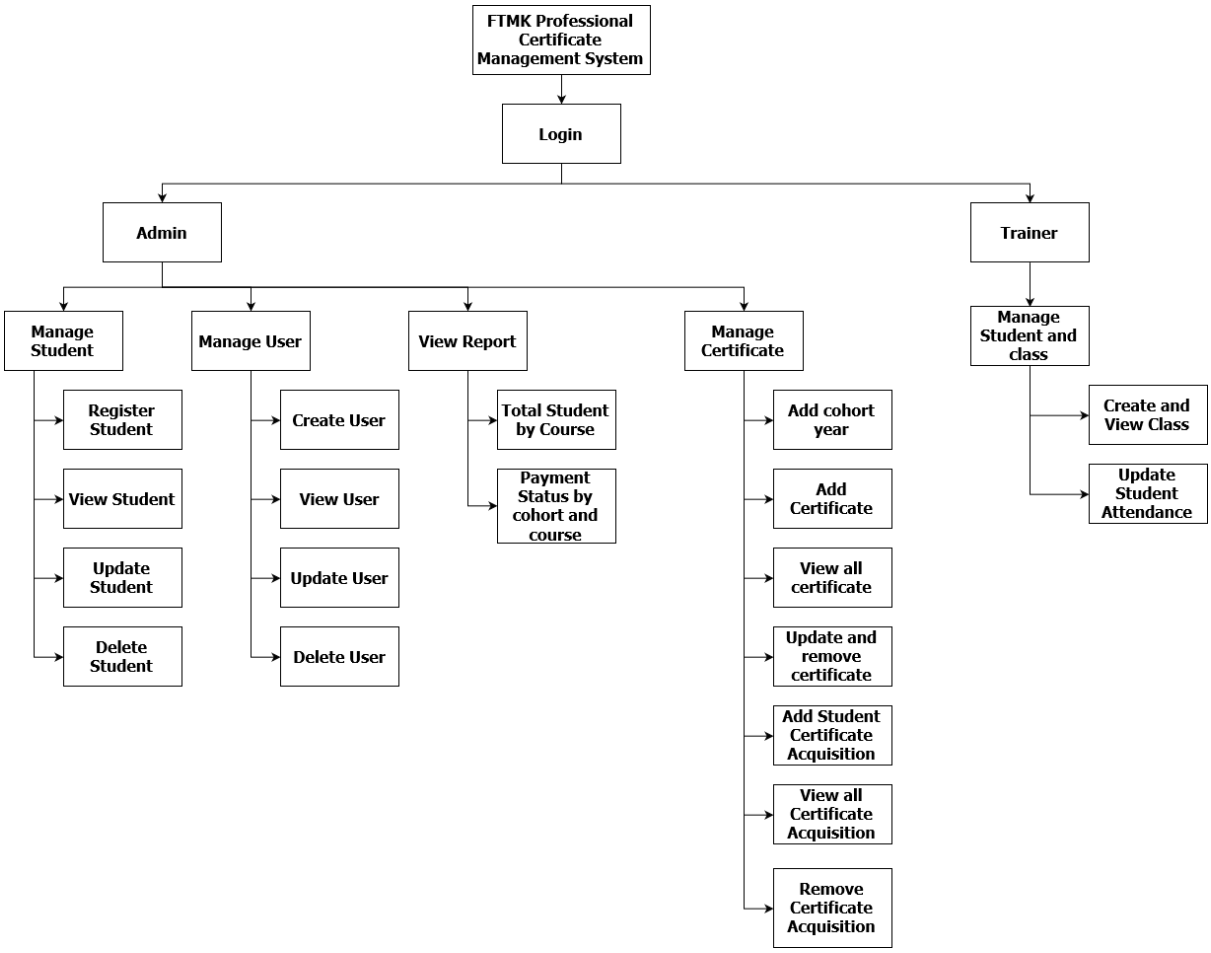


Figure 2.3.1: Decomposition Diagram of the System

CHAPTER 3

DESIGN

3.1 Introduction

When we talk about design, it is an early sketch of our project. Doesn't matter your project is categorized as which field, sketching ideas would be the first step before you proceed with all other technical and complex tasks. You will not be able to come out with a good outcome if you skip doing the design phase even through it seems to be unnecessary to jot down all the ideas in a piece of paper but you will find it useful if you encounter some sort of malfunction towards your project Only then you know where you should refer on. Specifically, in this FTMK Professional Certificate Management System, it deals with some idea and concept sketching such as Flowchart, Entity Relationship Diagram (ERD), Data Dictionary and Interface Design. These are all the element that are needed. The same elements for this project are also apply on other Information Technology related projects.

3.2 Flowchart

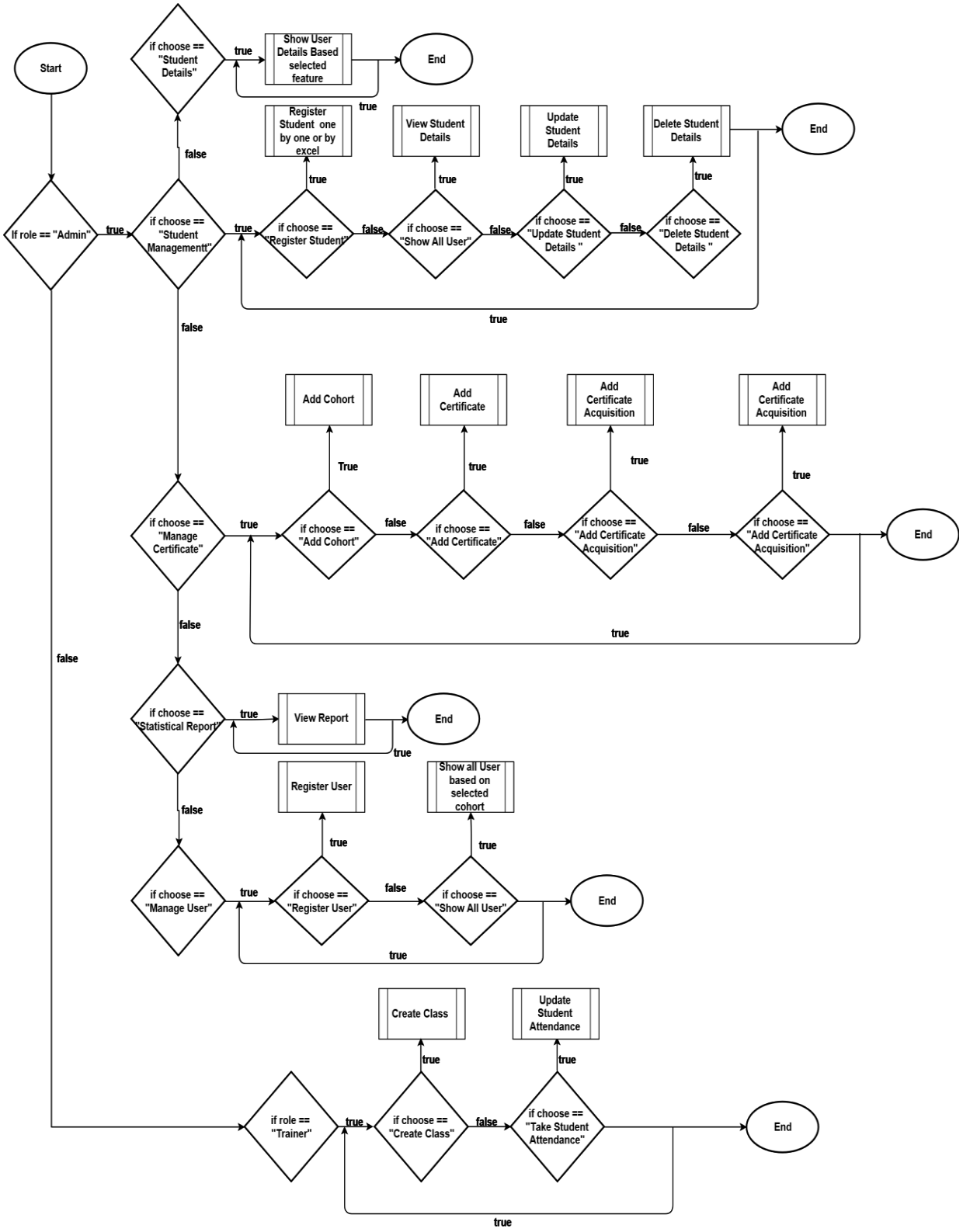


Figure 3.2.1: Flowchart of the FTMK Professional Certificate Management System

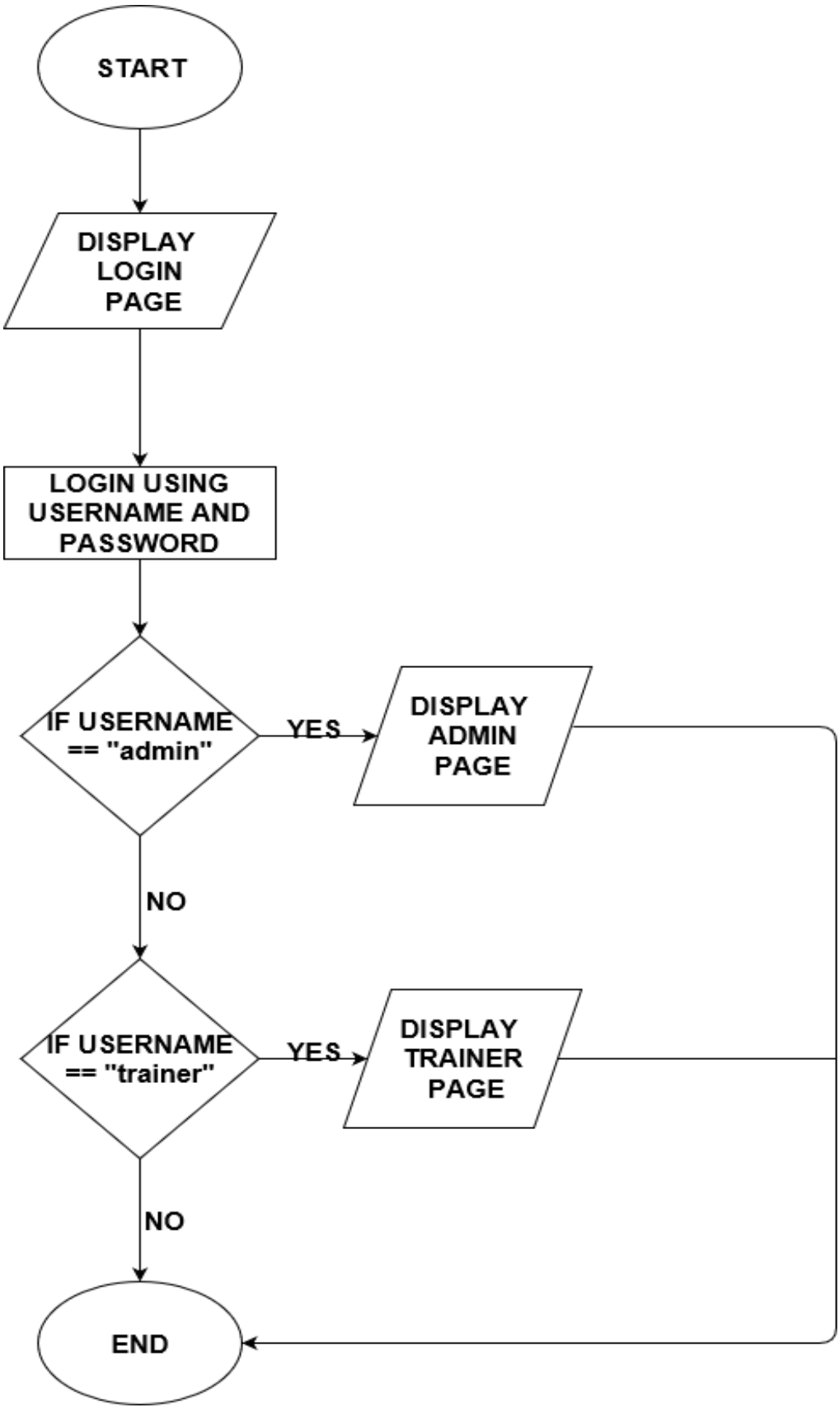


Figure 3.2.2: Flowchart of User Login

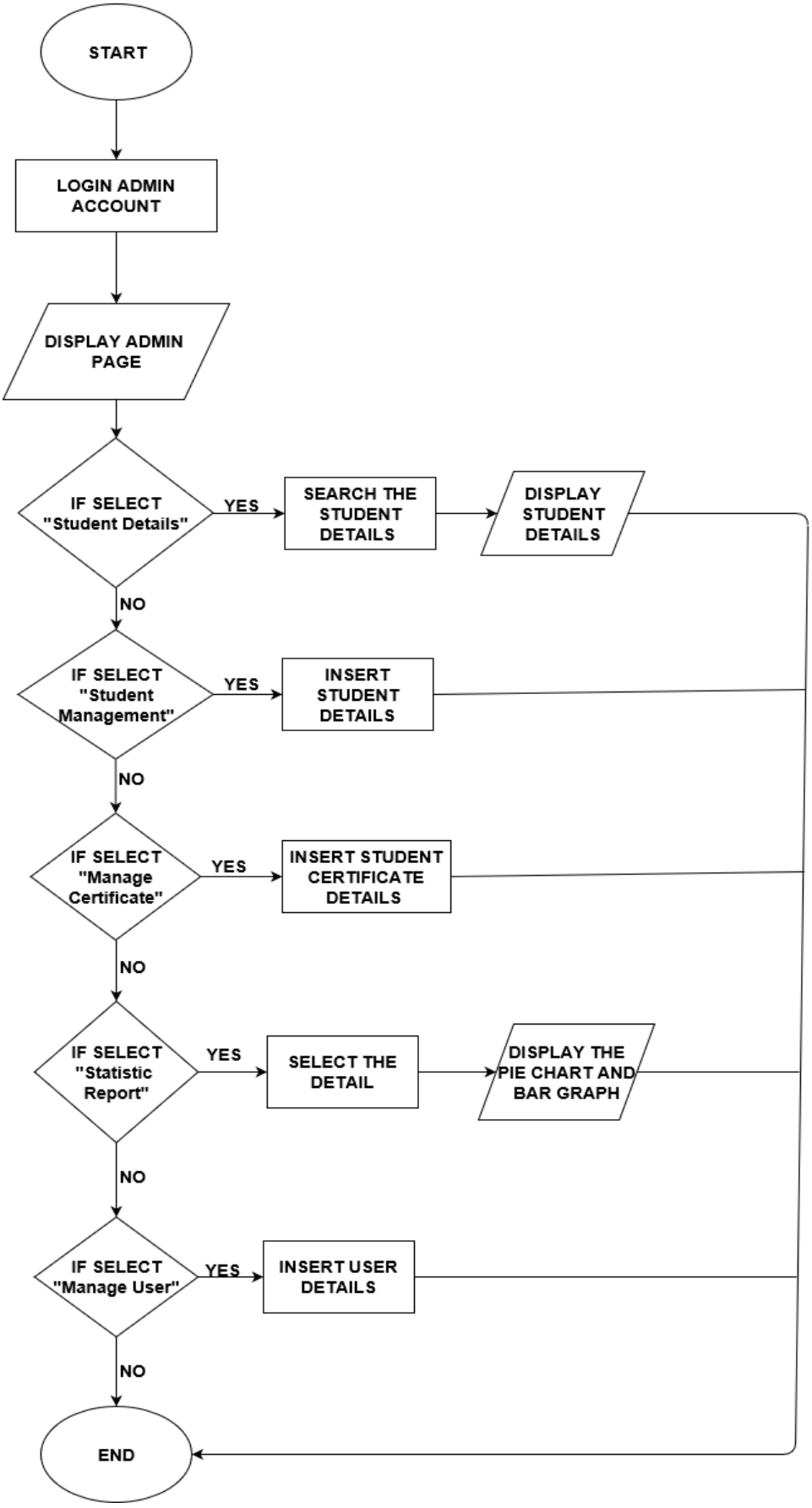


Figure 3.2.3: Flowchart of Admin

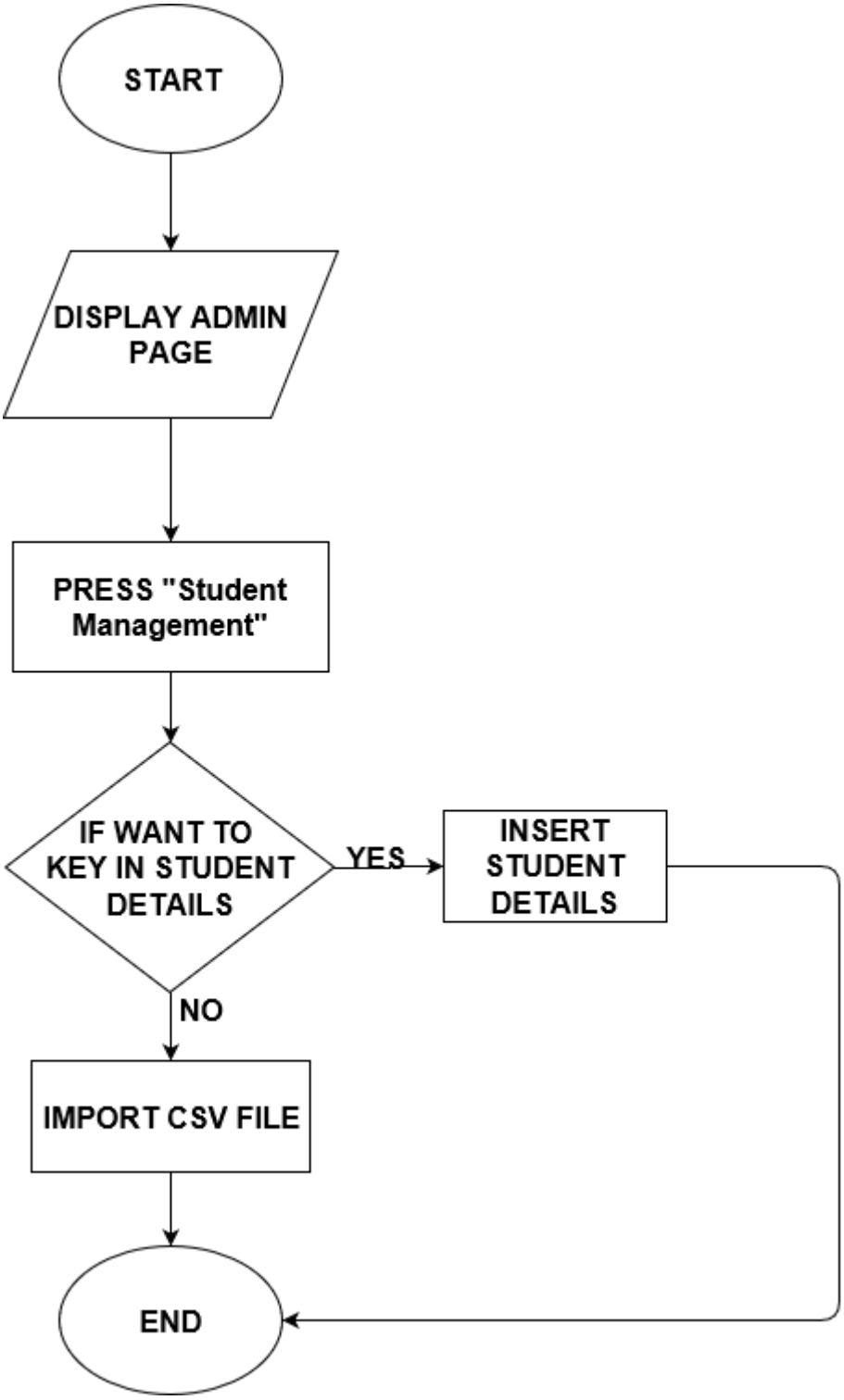


Figure 3.2.4: Flowchart of Admin Student registration

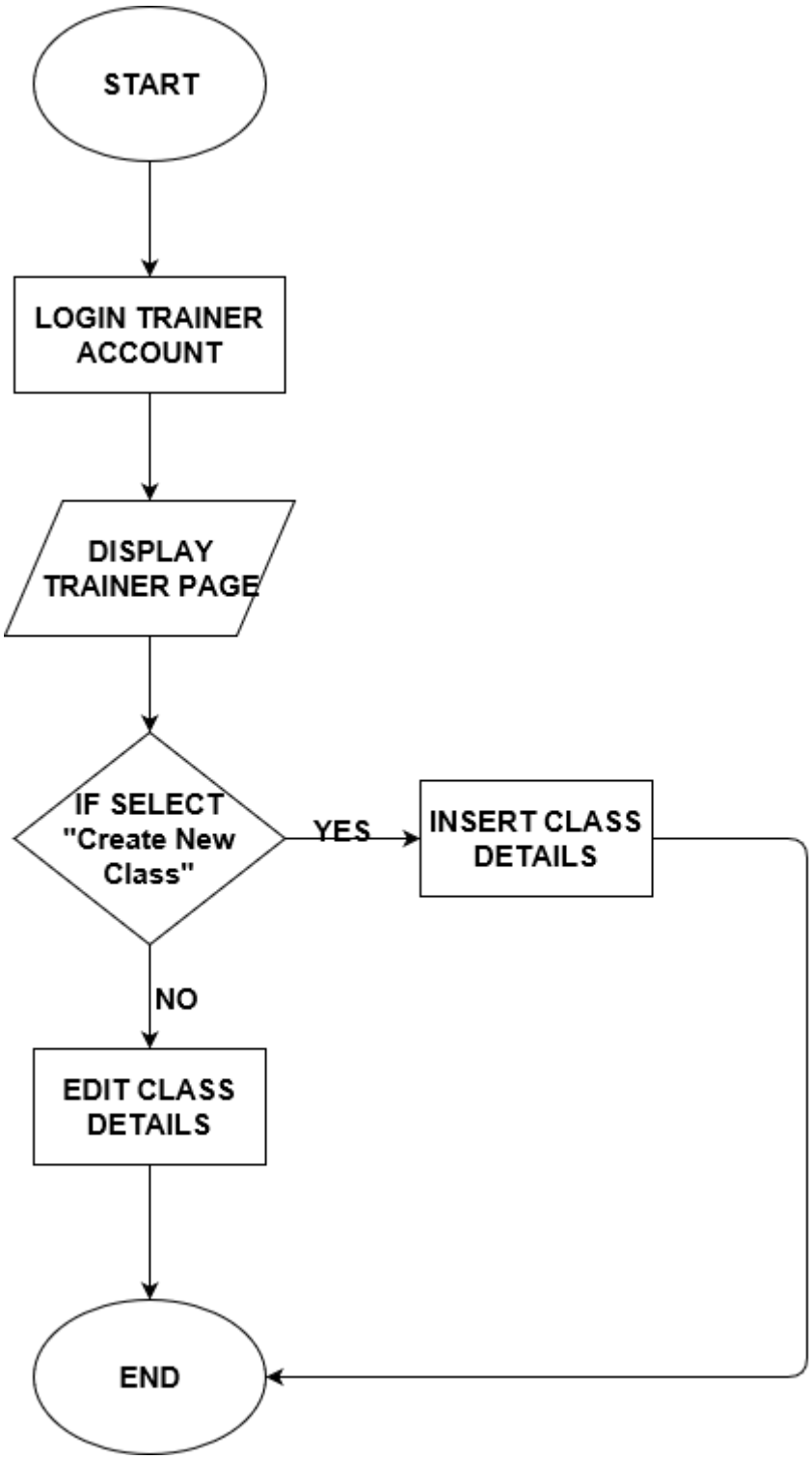


Figure 3.2.5: Flowchart of Trainer

3.3 Entity Relationship Diagram (ERD)

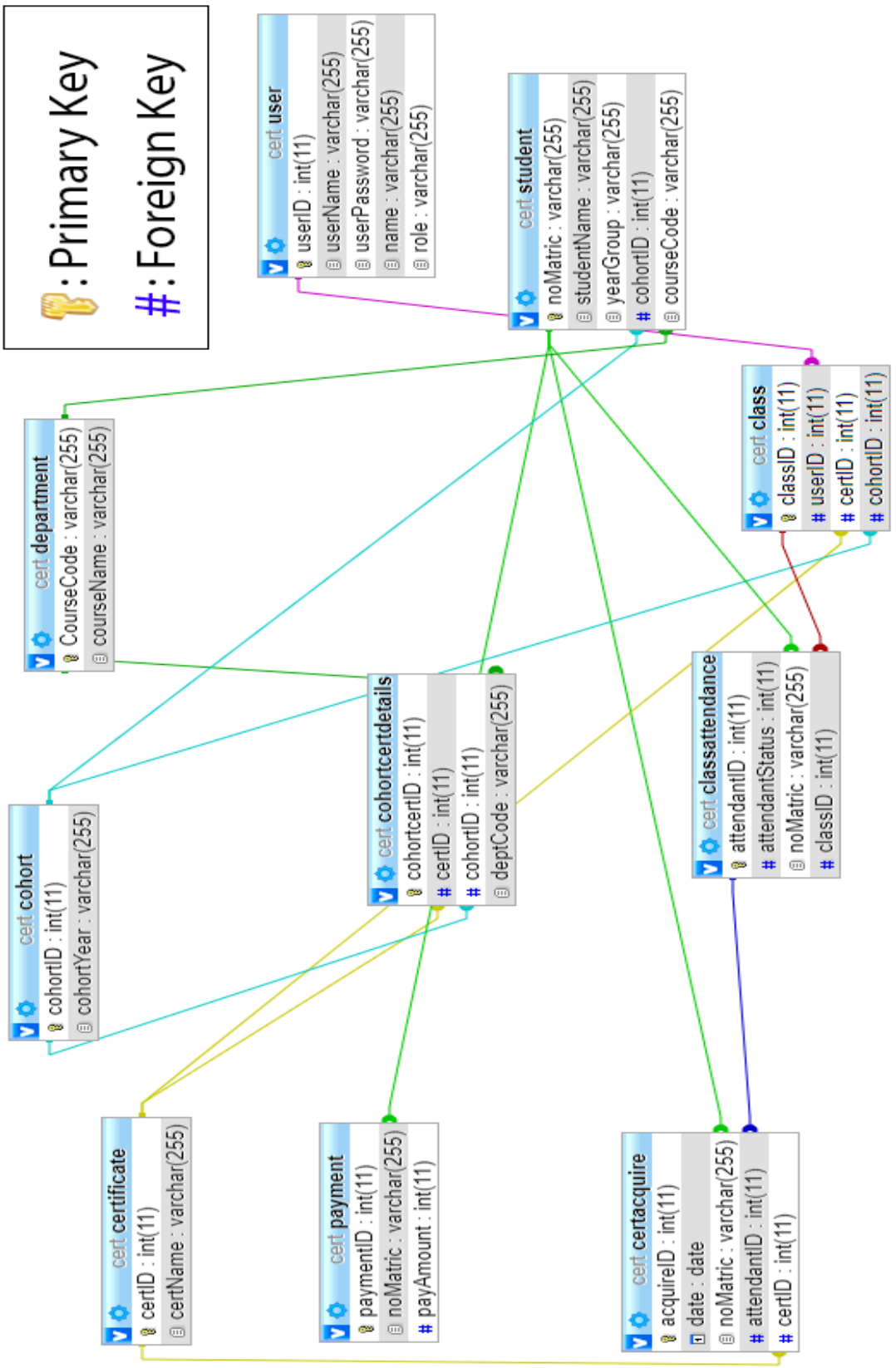


Figure 3.3.1: Entity Relationship Diagram

3.3.1 Business Rules

1. One Student need to have one payment
2. Admin can add new certificate and new cohort year.
3. Admin able to view statistic report of the student.
4. Admin can record certificate acquisition date if students have fully attended the training session.
5. Admin can add student together with their payment amount
6. Trainer able to take attendance of the student
7. Trainer able to add class and assign students to his/her respective class.

3.4 Input Process Output (IPO)

Table 3.4.1 IPO chart for student details

Input	Process	Output
• Input Course • Input Seksyen • Input Cohort • Input Payment • Input Attendance • Input Certificate	• Join table certacquire, certificate, class, classttendance, cohort, cohortcertdetails, department, payment, student, user	• Index • Matric Number • Name • Section • Cohort • Payment • Attendance • Cert Acquisition • CourseCode

Table 3.4.2 IPO Chart for Student Management show all user

Input	Process	Output
• Course Code • Cohort	• Use SQL Join to join table student, cohort, payment • Select Matric Number, Student Name, Year Group, Cohort Year, Course Code from table student • Select Payment Amount from table payment	• Index • Matric Number • Student name • Year Group • Cohort year • Course Code • Payment Amount • Options

Table 3.4.3 IPO Chart of Statistic Report

Input	Process	Output
• Cohort Year • Course	• Count The number of the student by course and output in Pie Chart • Count the number of students fully paid and unpaid based on course and cohort	• Pie Chart • Bar Chart

Table 3.4.4 IPO Chart of View User

Input	Process	Output
• Role	• Select username, name, role from the table user based on the role	• Index • username • Name • Role • Options

3.5 Data Flow Diagram (DFD)

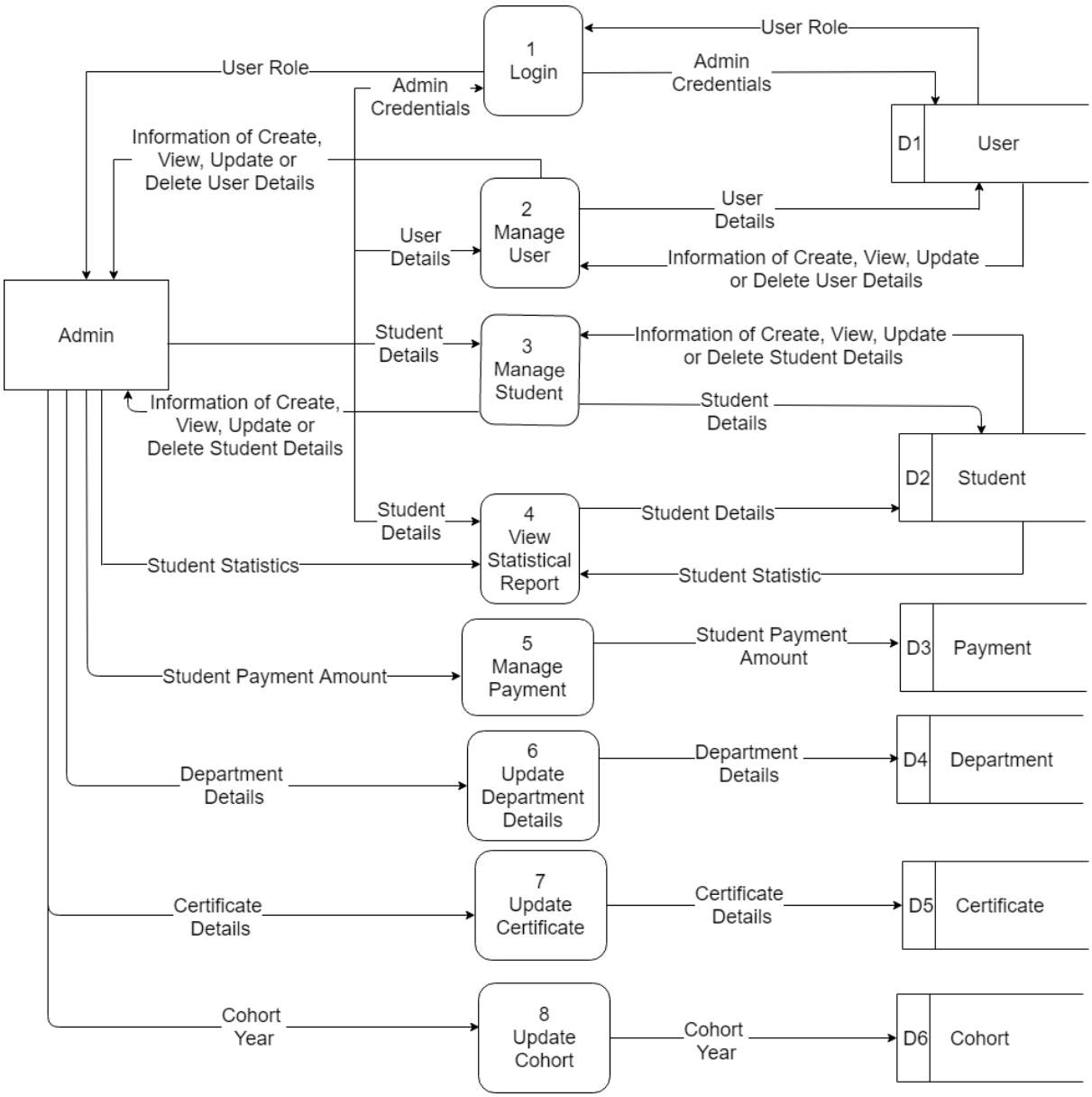


Figure 3.5.1: Level-0 Admin DFD Diagram

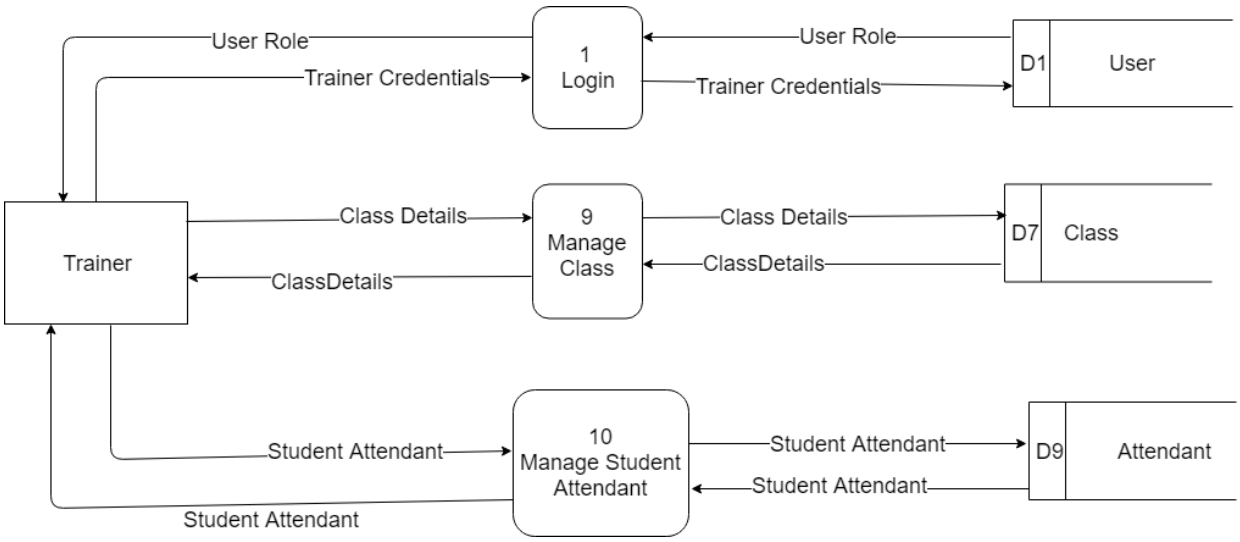


Figure 3.5.2: Level-0 Trainer DFD Diagram

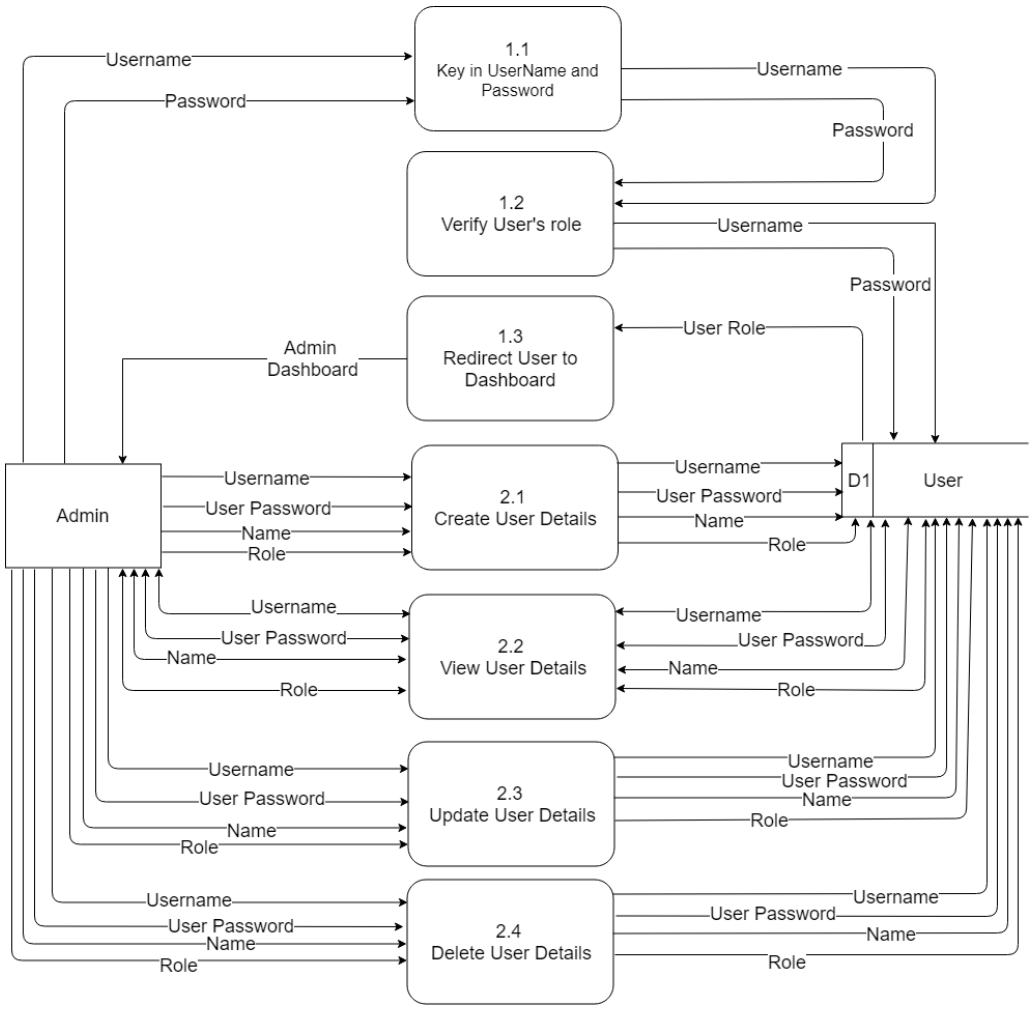


Figure 3.5.3: Level-1 Process 1 and Process 2 User Diagram

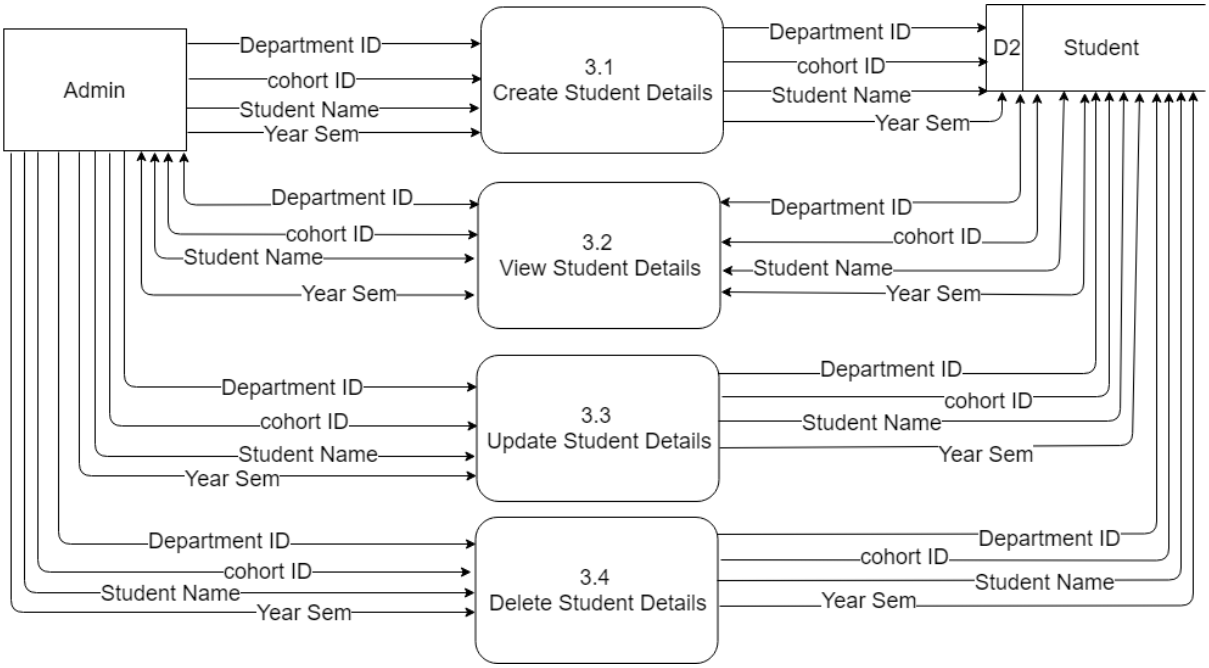


Figure 3.5.4: Level-1 Process 3 Student Diagram

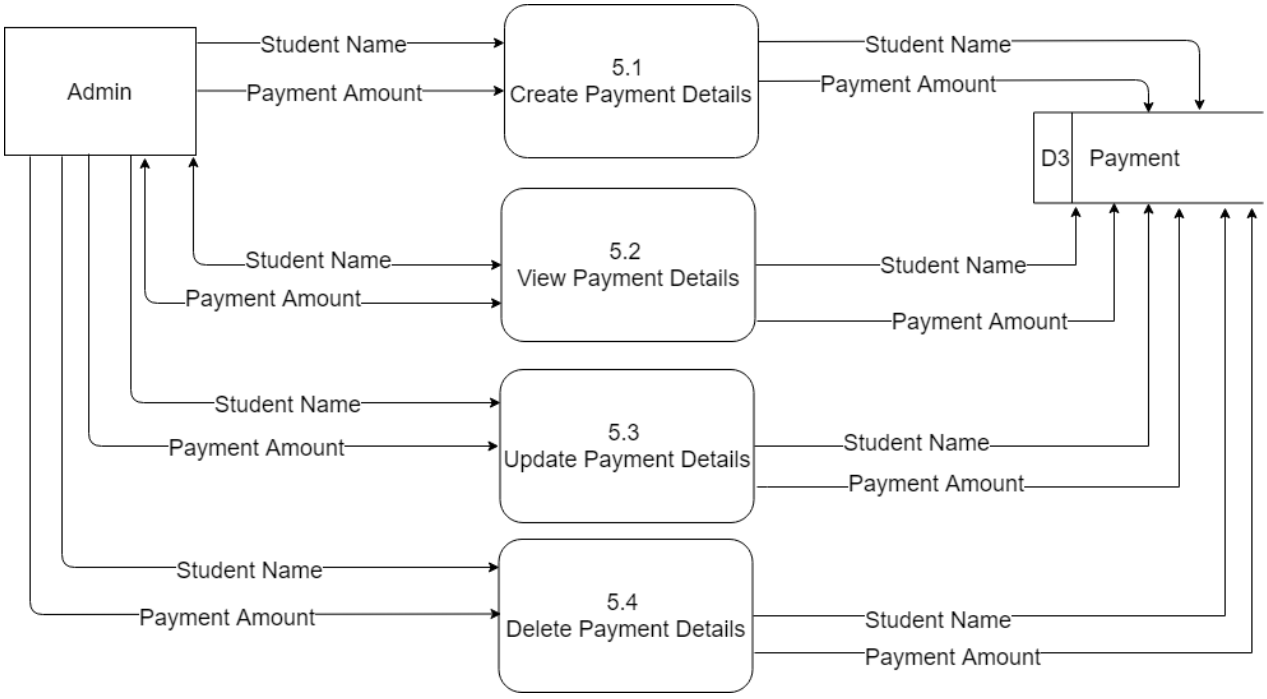


Figure 3.5.5: Level-1 Process 5 payment Diagram

3.6 Data Dictionary

Table 3.6.1: Table data dictionary

Table Name	Attribute Name	Content	Type	Required	PK/ FK	FK Reference Table
Student	noMatric	Student matric number	VARCHAR	YES	PK	
	studentName	Student name	VARCHAR	YES		
	yearGroup	Student section	VARCHAR	YES		
	cohortID	ID for cohort	INT	YES	FK	Cohort
	courseCode	Course code	VARCHAR	YES	FK	Department
User	UserID	ID for user	INT	YES	PK	
	userName	Username	VARCHAR	YES		
	userPassword	User password	VARCHAR	YES		
	name	Role name	VARCHAR	YES		
	role	Role for user	VARCHAR	YES		
Payment	paymentID	ID for payment	INT	YES	PK	
	noMatric	Student matric number	VARCHAR	YES	FK	Student
	payAmount	Payment amount	INT	YES		
Certificate	CertID	ID for certificate	INT	YES	PK	
	certName	Name for certificate	VARCHAR	YES		

Department	CourseCode	Department course code	VARCHAR	YES	PK	
	courseName	Course name	VARCHAR	YES		
Cohort	cohortID	ID for cohort	INT	YES	PK	
	cohortYear	Cohort year	VARCHAR	YES		
cohortCertDetails	cohortcertID	ID for cohort certificate	INT	YES	PK	
	certID	ID for certificate	INT	YES	FK	Certificate
	cohortID	ID for cohort	INT	YES	FK	Cohort
	deptCode	Department course code	VARCHAR	YES	FK	Department
Class	classID	ID for class	INT	YES	PK	
	userID	ID for user	INT	YES	FK	User
	certID	ID for certificate	INT	YES	FK	Certificate
	cohortID	ID for cohort	INT	YES	FK	Cohort
classattendance	attendantID	ID for attendant	INT	YES	PK	
	attendantStatus	Attendant status	INT	YES		
	noMatric	Student matric number	VARCHAR	YES	FK	Student
	classID	ID for class	INT	YES	FK	Class

certacquire	acquireID date	ID for certificate acquire Date	INT DATE	YES YES	PK	
	noMatric attendantID certID	Student matric number ID for attendant ID for certificate	VARCHAR INT INT	YES YES YES	FK FK FK	Student classattendance Certificate

3.7 Interface Design

Login Page

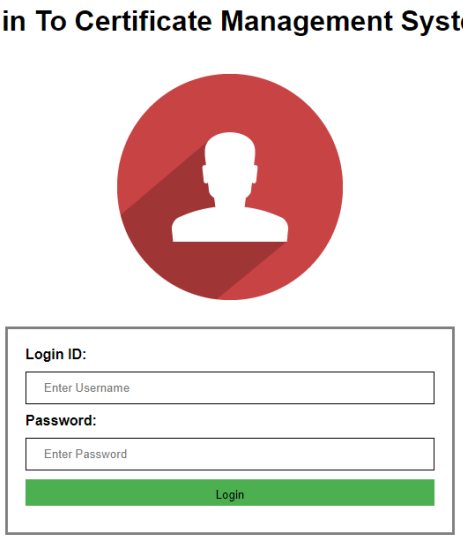
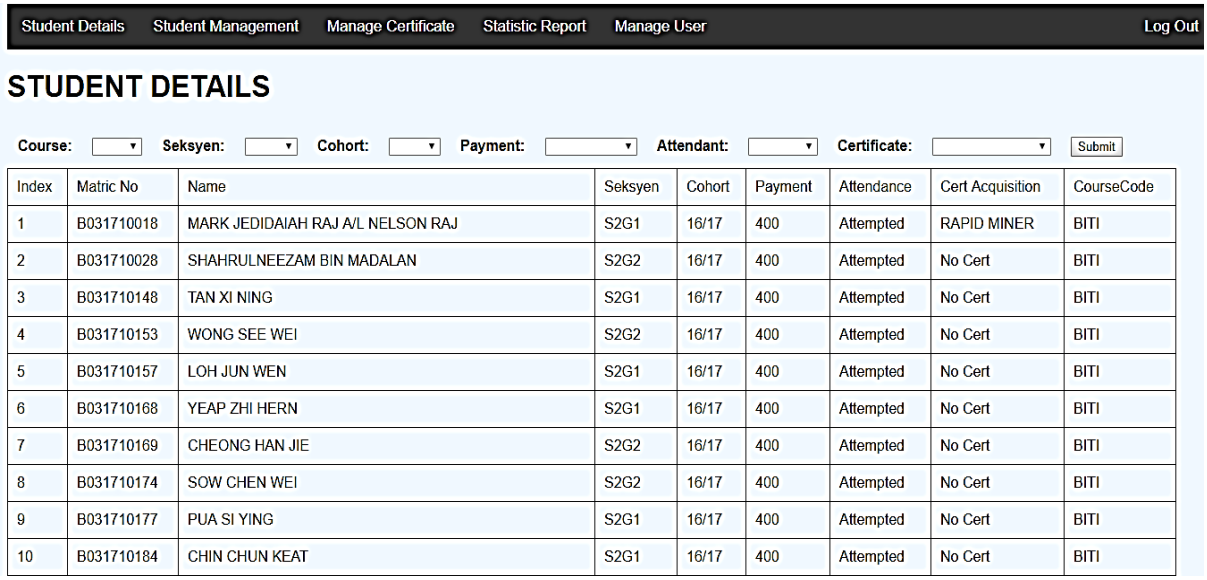


Figure 3.7.1: Login Page Interface

Student Details Overview Page



Index	Matric No	Name	Seksyen	Cohort	Payment	Attendance	Cert Acquisition	CourseCode
1	B031710018	MARK JEDIDAIAH RAJ A/L NELSON RAJ	S2G1	16/17	400	Attempted	RAPID MINER	BITI
2	B031710028	SHAHRULNEEZAM BIN MADALAN	S2G2	16/17	400	Attempted	No Cert	BITI
3	B031710148	TAN XI NING	S2G1	16/17	400	Attempted	No Cert	BITI
4	B031710153	WONG SEE WEI	S2G2	16/17	400	Attempted	No Cert	BITI
5	B031710157	LOH JUN WEN	S2G1	16/17	400	Attempted	No Cert	BITI
6	B031710168	YEAP ZHI HERN	S2G1	16/17	400	Attempted	No Cert	BITI
7	B031710169	CHEONG HAN JIE	S2G2	16/17	400	Attempted	No Cert	BITI
8	B031710174	SOW CHEN WEI	S2G2	16/17	400	Attempted	No Cert	BITI
9	B031710177	PUA SI YING	S2G1	16/17	400	Attempted	No Cert	BITI
10	B031710184	CHIN CHUN KEAT	S2G1	16/17	400	Attempted	No Cert	BITI

Figure 3.7.2: Student Details Overview Interface

Register Student Page

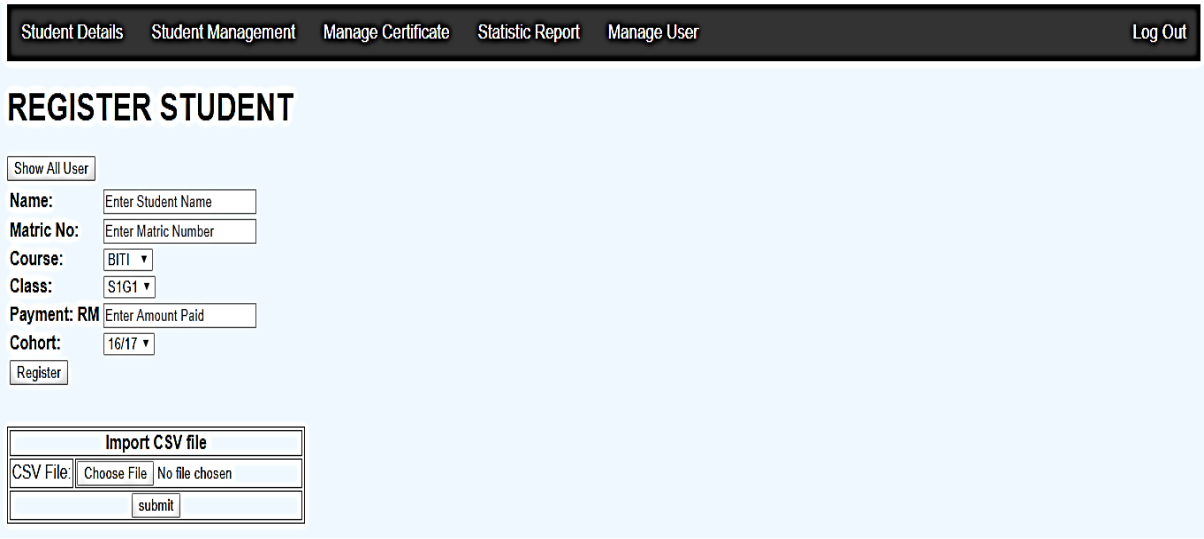
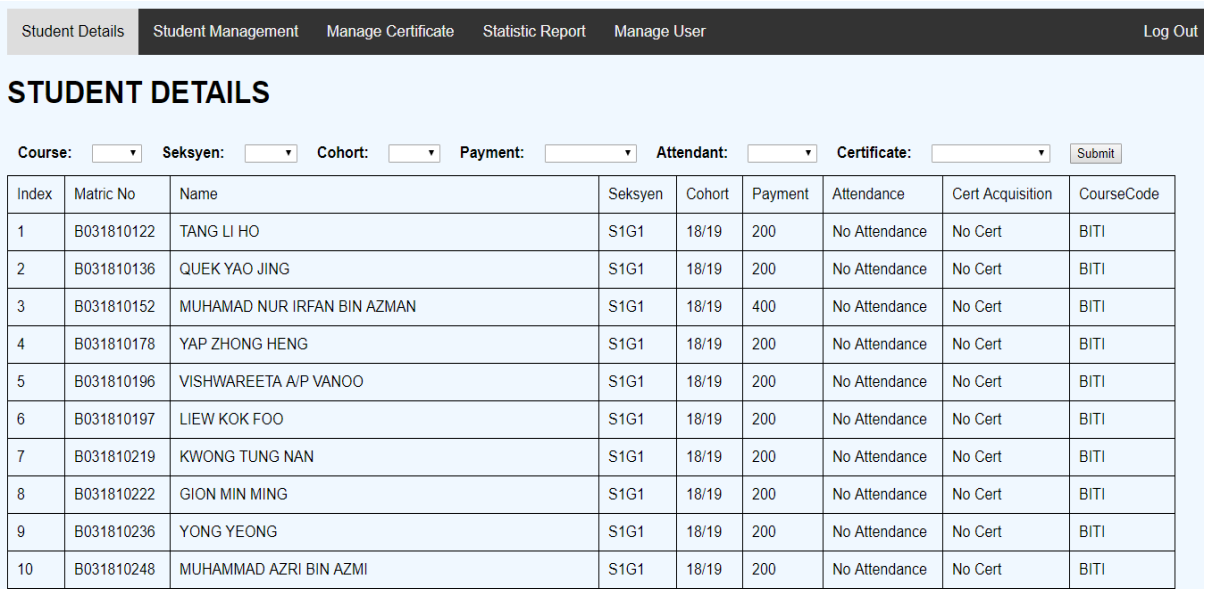


Figure 3.7.3: Register Student Page Interface

View Student Details Page



Index	Matric No	Name	Seksyen	Cohort	Payment	Attendance	Cert Acquisition	CourseCode
1	B031810122	TANG LI HO	S1G1	18/19	200	No Attendance	No Cert	BITI
2	B031810136	QUEK YAO JING	S1G1	18/19	200	No Attendance	No Cert	BITI
3	B031810152	MUHAMAD NUR IRFAN BIN AZMAN	S1G1	18/19	400	No Attendance	No Cert	BITI
4	B031810178	YAP ZHONG HENG	S1G1	18/19	200	No Attendance	No Cert	BITI
5	B031810196	VISHWAREETA A/P VANOO	S1G1	18/19	200	No Attendance	No Cert	BITI
6	B031810197	LIEW KOK FOO	S1G1	18/19	200	No Attendance	No Cert	BITI
7	B031810219	KWONG TUNG NAN	S1G1	18/19	200	No Attendance	No Cert	BITI
8	B031810222	GION MIN MING	S1G1	18/19	200	No Attendance	No Cert	BITI
9	B031810236	YONG YEONG	S1G1	18/19	200	No Attendance	No Cert	BITI
10	B031810248	MUHAMMAD AZRI BIN AZMI	S1G1	18/19	200	No Attendance	No Cert	BITI

Figure 3.7.4: View Student Details Page Interface

Update Student Details Page

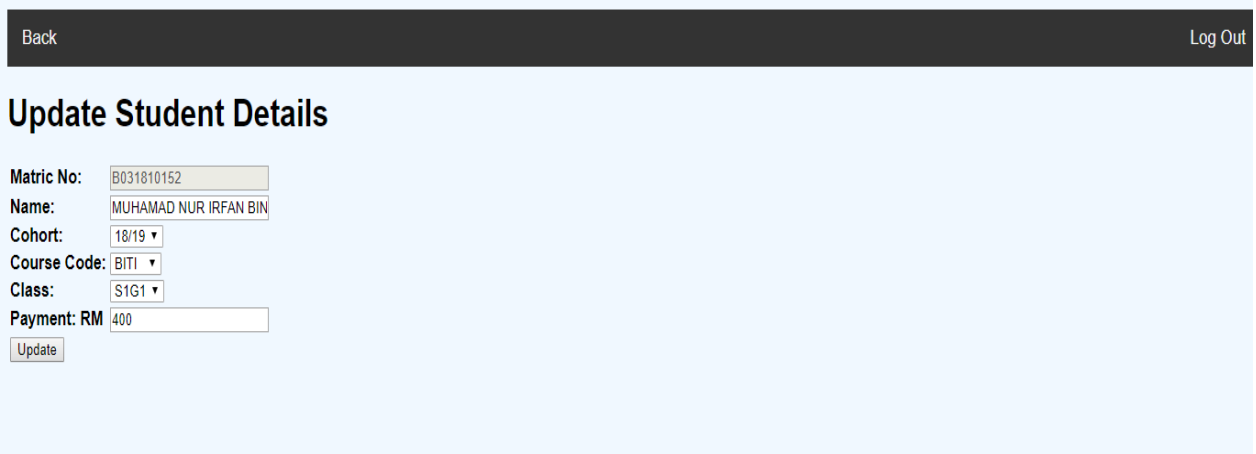


Figure 3.7.5: Update Student Details Page Interface

Manage Certificate Page

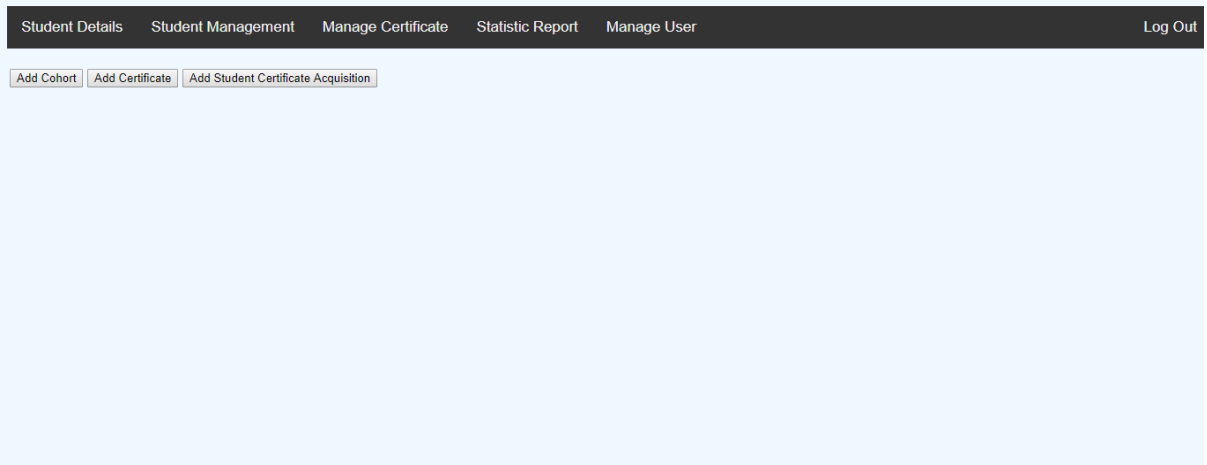


Figure 3.7.6: Manage Certificate Page Interface

Add Cohort Page

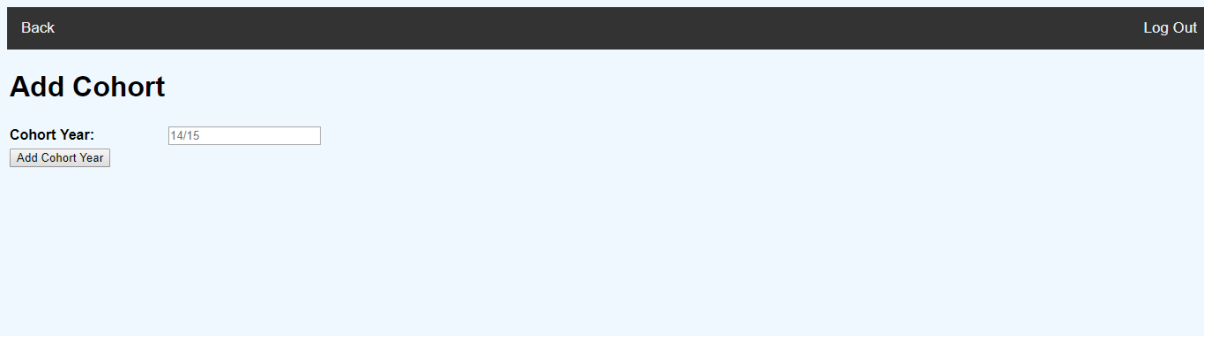


Figure 3.7.7: Add Cohort Page Interface

Add Certificate Page

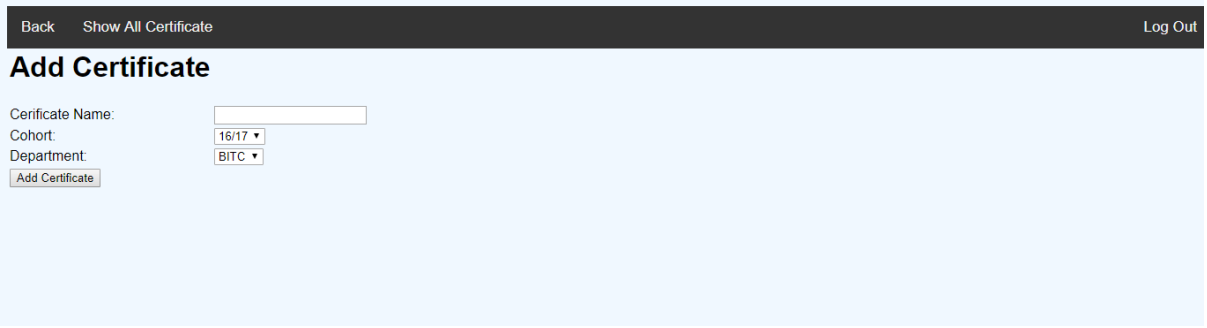


Figure 3.7.8: Add Certificate Page Interface

Show All Certificate Page

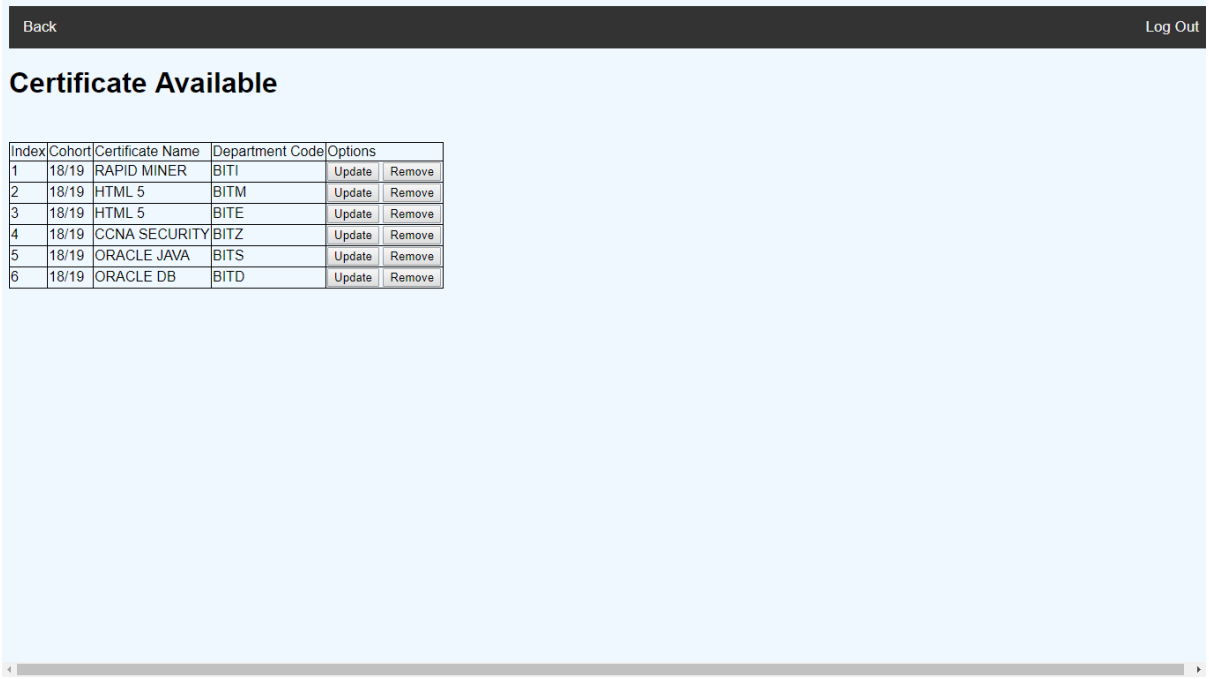


Figure 3.7.9: Show All Certificate Page Interface

Update Certificate Page

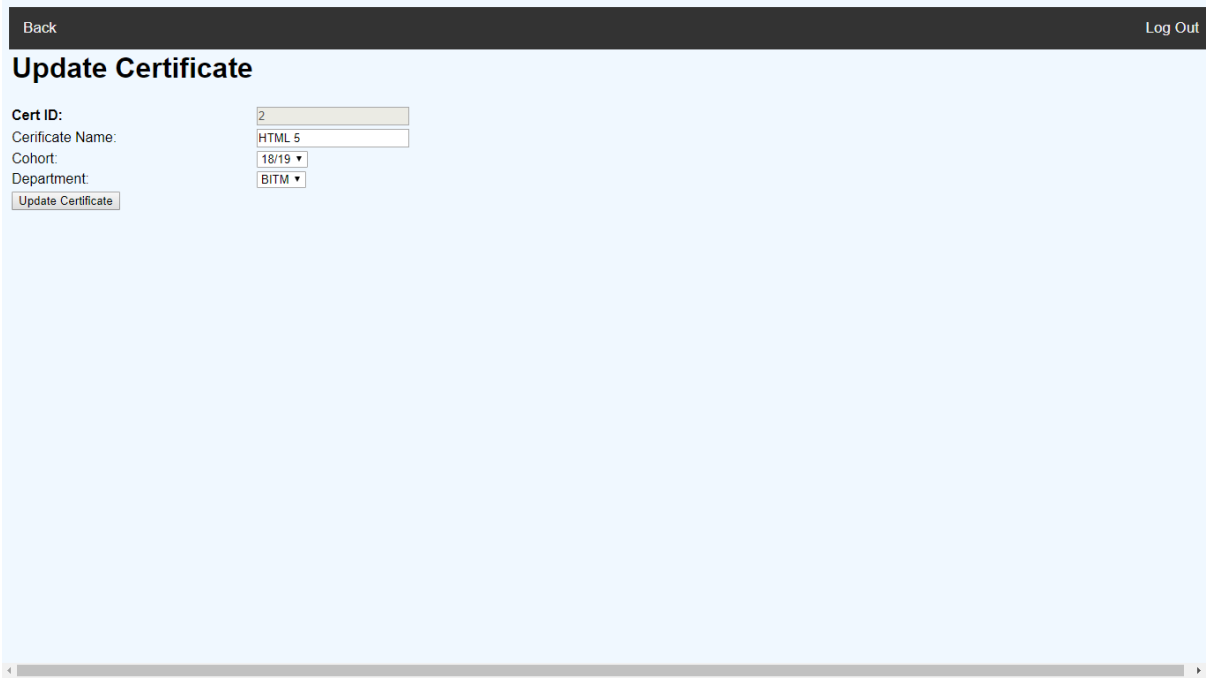


Figure 3.7.10: Update Certificate Page Interface

Statistic Report Page

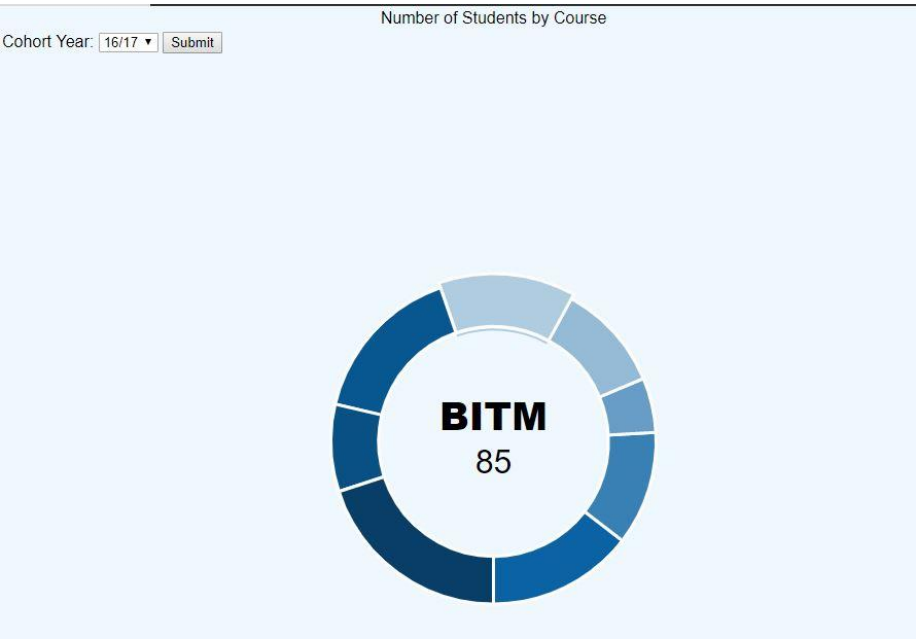


Figure 3.7.11: Statistic Report Page Interface Number of Student by Course

Figure 3.7.12: Student Payment Status

Register User Page

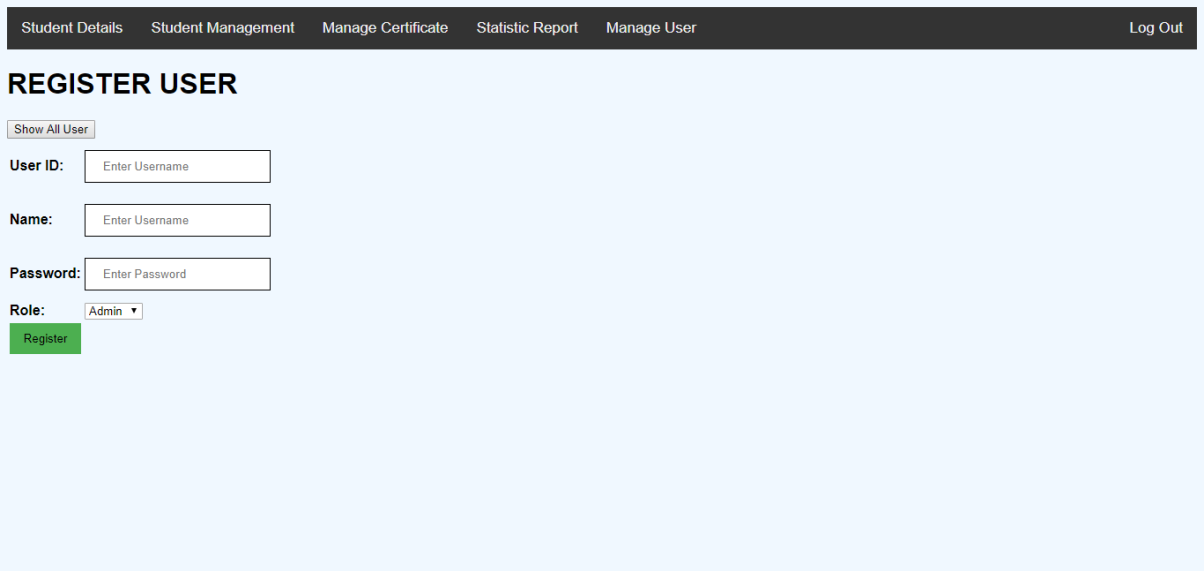


Figure 3.7.13: Register User Page Interface

Show All User Page

Figure 3.7.14: Show All User Page Interface

Update User Page

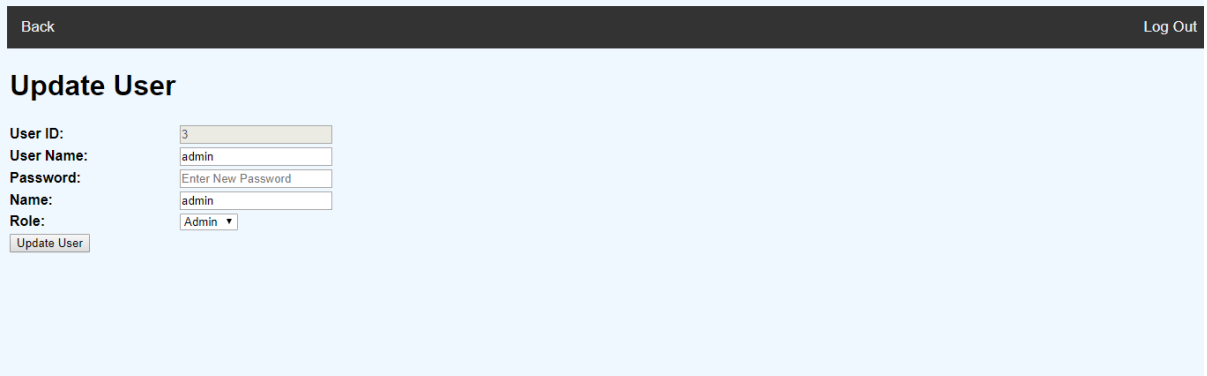


Figure 3.7.15: Update User Page Interface

Trainer Dashboard Page

Figure 3.7.16: Trainer Dashboard Page Interface

Trainer Create Class Page

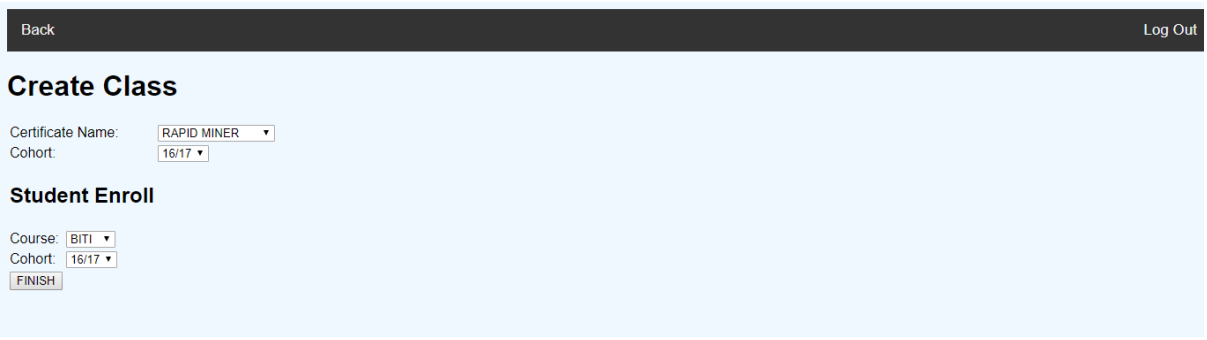


Figure 3.7.17: Trainer Create Class Page Interface

Take Attendance Page

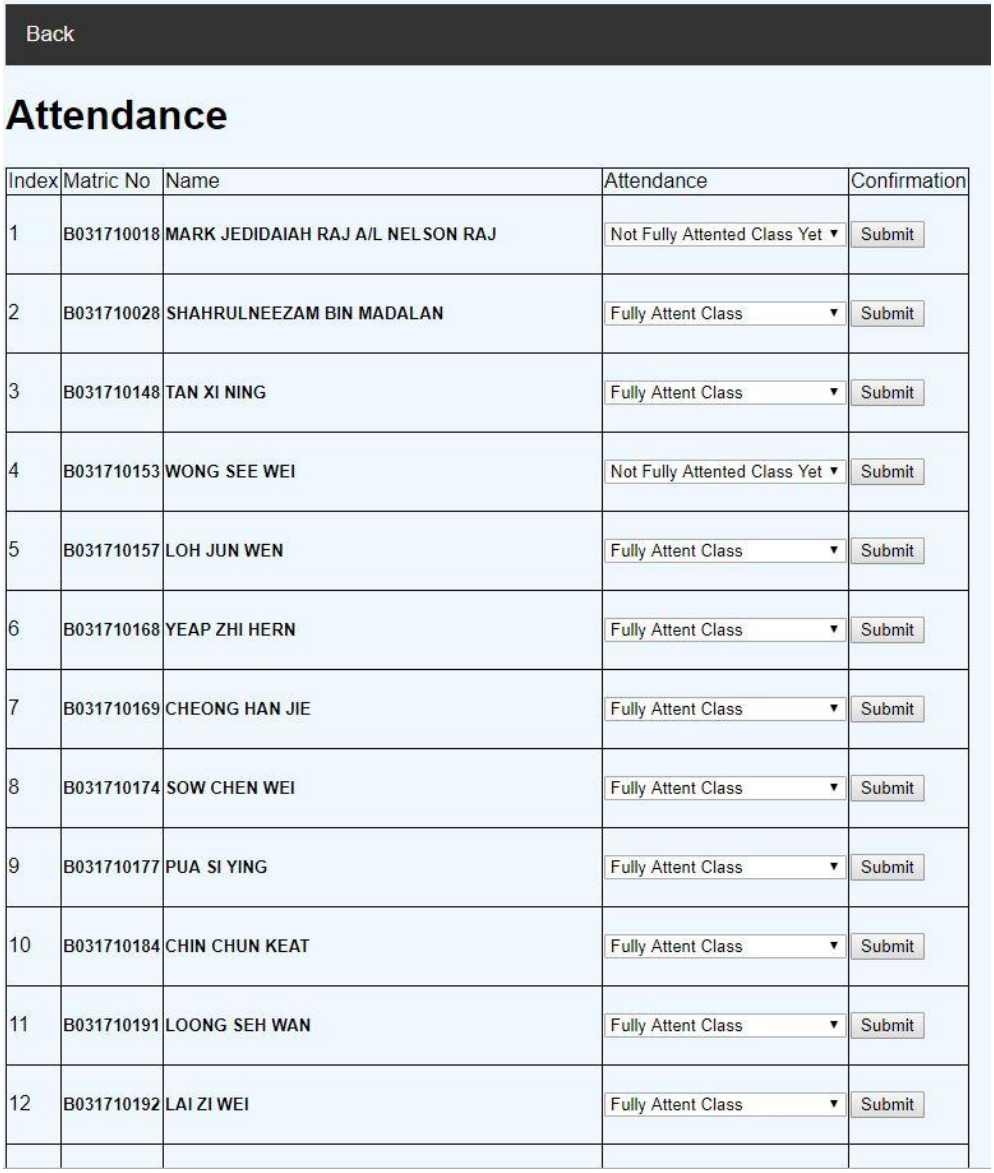


Figure 3.7.18: Take Attendance Page Interface

CHAPTER 4

IMPLEMENTATION

4.1 PHP Programming Coding

This system used PHP programming language at server-side.

4.1.1 Database

```
<?php
	$servername = "localhost";
	$username = "root";
	$password = "";
	$dbname = "cert";

	$connect = mysqli_connect($servername, $username, $password, $dbname);

	//check connection
	if(!$connect){
		die("Connection failed: ".mysqli_connect_error());
	}
?>
```

4.1.2 Admin or Trainer Login

```
require_once('connect.php');
require_once('session.php');

if ($_SERVER["REQUEST_METHOD"] == "POST"){

if ( ! empty( $_POST ) ) {
   if ( isset( $_POST['username'] ) && isset( $_POST['password'] ) ) {
      $loginid = mysqli_real_escape_string($connect, $_POST['username']);
                  $password = mysqli_real_escape_string($connect, md5($_POST['password']));

                  $sql = "SELECT * FROM user WHERE userName = '$loginid' and userPassword
= '$password' ";

                  $result = mysqli_query($connect,$sql);
                  $row = mysqli_fetch_array($result, MYSQLI_ASSOC);
                 $count = mysqli_num_rows($result);

                  if($count == 1){
                        if ($row['role'] == 'admin'){
                              $_SESSION['user_id'] = $row['userName'];
                              header("location: admindashboard.php");
                        }else{
                              $_SESSION['user_id'] = $row['userName'];
                              header("location: trainerdashboard.php");
                        }
                  }else {
                        $error = "Your Login Name or Password is invalid";
                        echo $error;
                  }
   }
}

}
```

4.1.3 Insert into database coding

```
$query = "INSERT INTO user (userName,userPassword,name,role) VALUES ('$loginid',
'$password','$name',  '$role')";
mysqli_query($connect, $query);
```

4.1.4 Update database record coding

```
$sqlupdate="UPDATE user SET userName = '$userName', name = '$name', role = '$role'
WHERE userID = '$userid'";
mysqli_query($connect, $sqlupdate);
echo '
<script>
alert("Update Successfully");
</script>';
```

4.1.5 Delete Coding

```
$sql_delatt = "DELETE FROM user WHERE userID = '$userid'";
$query_delatt = mysqli_query($connect, $sql_delatt);
echo "
<script>
alert('Delete Successfully');
window.location.href = '/certSystem/ManageUser/manageUser.php'
</script>
";
```

4.1.6 Search and filter database records

```
<?php
//Get Certificate Name
$sql_certname = "SELECT certName FROM certificate WHERE certID = '" .
$row['certID'] . "'";
$result_cert = mysqli_query($connect, $sql_certname);
$row_certname = mysqli_fetch_array($result_cert, MYSQLI_ASSOC);
echo '<td>' . $row_certname["certName"] .'</td>';
echo '<td>' . $row["deptCode"] .'</td>';
$certificateID = $row['certID'];
//check certificate and certacquire

$sql_certificate_certAcquire = "SELECT certificate.certID FROM certificate INNER JOIN
certacquire ON certificate.certID = certacquire.certID AND certificate.certID =
'$certificateID'";

//check certificate and class
$sql_certificate_class = "SELECT certificate.certID FROM certificate INNER JOIN class
ON certificate.certID = class.certID AND certificate.certID = '$certificateID'";

//Query student
$query_certificate_certAcquire = mysqli_query($connect, $sql_certificate_certAcquire);
$query_certificate_class = mysqli_query($connect, $sql_certificate_class);
```

4.1.7 Report Graph Coding

JavaScript

```
function createBarchart(paid,unpaid)
{
        $('#payment_barchart').empty();
        var newdata = [{y: 'Fully Paid', a: paid },{y: 'Not Fully Paid', a: unpaid},];
        Morris.Bar({
          element: 'payment_barchart',
          data: newdata,
          xkey: 'y',
          ykeys: ['a', 'b'],
          labels: ['labels']
        });
}
```

Php

```
include('../connect.php');

//Payment Status by Course
$sql_paid = "SELECT COUNT(payment.noMatric) FROM payment INNER JOIN student
ON payment.noMatric = student.noMatric AND payment.payAmount >= 400 AND
student.courseCode = '$courseCodePOST' AND student.cohortID = '$cohortcoursePOST'";

$query_paid = mysqli_query($connect, $sql_paid);
$row_paid =  mysqli_fetch_array($query_paid);

$sql_unpaidval = "SELECT COUNT(payment.noMatric) FROM payment INNER JOIN
student ON payment.noMatric = student.noMatric AND payment.payAmount < 400 AND
student.courseCode = '$courseCodePOST' AND student.cohortID = '$cohortcoursePOST'";

$query_unpaidval = mysqli_query($connect, $sql_unpaidval);
```

```
$row_unpaidval =  mysqli_fetch_array($query_unpaidval);
$ar[] = array(
                'valPaid' => $row_paid[0],
                'valUnpaid' => $row_unpaidval[0]);

                //$barchart_data = "{y: 'Fully Paid', a:". $row_paid[0] ." },{y: 'Not Fully
Paid', a:". $row_unpaid[0] ."},";
                //$someArray = json_decode($barchart_data);

                echo json_encode($ar);
```

4.1.8 Import CSV File

```
<?php
require_once('../connect.php');
        if(isset($_POST['submit']))
        {
                $filename=$_FILES["file"]["tmp_name"];
                 $file = fopen($filename, "r");

                 //get only csv lines
                 fgetcsv($file);

                      while (($emapData = fgetcsv($file, 10000, ",")) !== FALSE)
                      {
                        $csvMatric = $emapData[0];
                        $csvName = $emapData[1];
                        $csvSection = $emapData[2];
                        $csvCohortYear = $emapData[3];
                        $csvCourse = strtoupper($emapData[4]);
                        $csvPayment =  $emapData[5];
```

```
                    $sql_cohortID = "SELECT cohortID FROM cohort WHERE
cohortYear = '$csvCohortYear'";
                    $query_cohortID = mysqli_query($connect, $sql_cohortID);
                            $row_cohortID =
mysqli_fetch_array($query_cohortID);
                            $csv_cohortID = $row_cohortID['cohortID'];

                    $sqlcheckmatric = "SELECT noMatric FROM student WHERE
noMatric = '$csvMatric'";
                    $csvresult = mysqli_query($connect, $sqlcheckmatric);
                            $user =  mysqli_fetch_array($csvresult);

                            if ($user['noMatric'] !== $csvMatric) {
                                    $sql_student = "INSERT INTO student
(noMatric,studentName,yearGroup,cohortID,courseCode) VALUES ('$csvMatric',
'$csvName', '$csvSection', '$csv_cohortID', '$csvCourse')";
                                    mysqli_query($connect, $sql_student);

                                    $sql_payment = "INSERT INTO payment
(noMatric,payAmount) VALUES ('$csvMatric','$csvPayment')";
                                    mysqli_query($connect, $sql_payment);

                            }
                    }
                    fclose($file);
                    echo "
                    <script>
                      alert('CSV File has been successfully Imported.');
                    </script>
                    ";
                    header('location: manageStudent.php');
            }
            else {
```

```
                echo "not POST";
        }
?>
```

4.1.9 Looping Structure

4.1.9.1 While Loop

```
while ($cohortID =  mysqli_fetch_array($result2)){
if ($row_checkCert['cohortID']==$cohortID[0])
{
        echo '<option value="'. $cohortID[0] .'" selected>'. $cohortID[1] . '</option>';
}
else
{
        echo '<option value="'. $cohortID[0] .'">'. $cohortID[1] . '</option>';
}
}
```

4.1.9.2 For Loop

```
foreach (mysqli_fetch_all($query_findstudent, MYSQLI_ASSOC) as $key => $value) {
                $student_matric[$value['noMatric']] = $value['noMatric'];
                $matric_available = $student_matric[$value['noMatric']];
                $sql_validatestudent = "SELECT * FROM certacquire WHERE
noMatric='$matric_available' LIMIT 1";
                $query_validatestudent = mysqli_query($connect, $sql_validatestudent);
                $row_validatestudent = mysqli_fetch_array($query_validatestudent);
                if($row_validatestudent['noMatric'] != $matric_available)
                {
                        $student_available[$value['noMatric']] = $value['noMatric'];
                }
        }
```

4.1.10 If-Else Decision

```
if ($row_checkCert['cohortID']==$cohortID[0])
{
	echo '<option value="'. $cohortID[0] .'" selected>'. $cohortID[1] . '</option>';
}
else
{
	echo '<option value="'. $cohortID[0] .'">'. $cohortID[1] . '</option>';
}
```

4.1.11 Example Error Handling

```
function validationForm(){
	var certacquiredate = document.forms['certacquireform']['date'].value;

	var todaydate = new Date();

	certacquiredate = new Date(certacquiredate);

	if(certacquiredate>todaydate)
	{
		alert("You cannot give certificate in the future!");
		return false;
	}
	else{
		return true;
	}
}
```

CHAPTER 5

CONCLUSION

5.1 Conclusion

FTMK Professional Certificate Management system is a computerized system that able to ease workload of the lecturers by making reporting easy and convenient. This system must maintain and update from time to time in order to meet all the new requirements of the faculty. This system at the same time able to minimize the errors produced by humans while able to save all the data in a centralized location. All the previous records will be saved in the system if not being deleted by the users. This will be a great help in building a big data system in the future and help in dataset construction. In addition, this system also will be a great help in saving space of the office by removing the needs of keeping track the documents in paper-based form, not to mention that computerized system is very environmentally friendly as more paper will be saved.

In the retrospect, FTMK professional certificate management system can help make the lecturers workload lighter and easier. The system is not perfect and there are several spaces is available for the improvements.

5.2 Limitations

The limitation aspects of interface design more works can be done and industrial standard tools such as bootstraps can be used to enhance the interface to make it become more user friendly and responsive in all the devices. The current interface design is simple and clean which is good, but there are few more space left for the improvement. Besides that, the current system cannot keep track of the student examination information for example exam payment, exam payment date and others.

5.3 Future Works

There several upgrades are suggested to the system as the current system can only keep track until student attendance status and certification acquisition status. First, the new upgrades would be examination function which consists of exam payment, exam date, exam grade and exam completion certificate. The exam of the certificate is not a must in FTMK but is suggested as it will be a great help to lecturers as some of the students might want to take on exam. Besides that, user interface and user experience of the system need to be improved as in order to make user use the system more easily.

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