A Project Report
On

Campus Infrastructure Planner and Monitor (CIPM)

Submitted in partial fulfillment of the requirements for the Major Project 2 of

Bachelor of Technology
In
Computer Science & Engineering

Submitted by:

Rittick Datta **R780209025**

Under the guidance
Dr. Neelu J Ahuja
Assistant Professor

Department of Computer Science & Engineering
COLLEGE OF ENGINEERING STUDIES
UNIVERSITY OF PETROLEUM & ENERGY STUDIES
Dehradun- 248007

April 2013

CERTIFICATE

This is to certify that the Project entitled **"Campus Infrastructure Planner and Monitor"** submitted by

Rittick Datta **R780209025**

for the partial fulfillment of the requirements of the course **Major Project 2** of **Bachelor of Technology in Computer Science & Engineering** degree of **University of Petroleum & Energy Studies, Dehradun** embodies the confide work done by above students under my supervision.

External Examiner

External Examiner

12/4/2013

Signature of Mentor

Dr. Neelu J Ahuja
Assistant Professor

DECLARATION

I, Rittick Datta bearing the Roll No: R780209025 respectively hereby declare that this Project work entitled "Campus Infrastructure Planner and Monitor (CIPM)" was carried out by me under the guidance and supervision of Dr. Neelu J Ahuja. This Project work is submitted to University of Petroleum & Energy Studies in partial fulfilment of the requirement for the award of Bachelor of Technology in Computer Science and Engineering during the Academic Semester July 2012 - Dec - 2012. We also declare that, we have not submitted this dissertation work to any other university for the award of either degree or diploma.

12/4/2013

Place: Dehradun

Rittick Datta

Date:6/12/2012

ABSTRACT

"Campus Infrastructure Planner and Monitor"

The major project is an extension of minor project. The topic is "Campus Infrastructure Planner and Monitor" which aims to facilitate dynamic class room allocation to faculty. The minor project gave us the opportunity to understand the existing system in which a timetable is generated at the beginning of each semester and is made available to faculty in the Learning Management System (my moodle). Another insight was that in case a faculty wanted to schedule a class, he/she sent a mail which was approved after a manual check and sometimes even resulted in inconsistencies. Sometimes the faculty's cabin location is not considered while preparing the time table which causes an inconvenience. The major project aims to address these and many other issues present.

ACKNOWLEDGEMENT

It is a pleasure to thank all those people who helped, supported and encouraged me during this project work.

Firstly i express my sincere gratitude to Dr. Neelu J Ahuja, the guide of the project who carefully and patiently leant her valuable time and effort to give directions as well as to correct various documents with attention and care.

It is a great honour to do this project in this esteemed institution, and we would extend our thanks to the HOD, Prof Manish Prateek and other faculty members who have shared their vast knowledge and experience during our stay.

We do also like to appreciate the consideration of the Project Coordinator, our Faculty and colleagues, which enabled us to balance our work along with this project. It was their attitude that inspired us to do such an efficient and apposite work.

We are indebted to those people across the globe who have shared their knowledge and perspectives in the form of online tutorials, forums and other resources which helped us to a great extent whenever we met with technical obstacles during this endeavour.

We wish to avail this opportunity to express a sense of gratitude and love to all our friends and our family for their unwavering support, strength, help and in short for everything they have done during the crucial times of the progress of our project.

Last but not the least I thank GOD ALMIGHTY for HIS blessings and guidance without which this dream project wouldn't have been a reality.

Rittick Datta (R780209025)

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CHAPTER 1 INTRODUCTION

1.1 What is "Campus Infrastructure Planner and Monitor"?

The topic is "Campus Infrastructure Planner and Monitor" which aims to facilitate dynamic class room allocation to faculty. The minor project gave us the opportunity to understand the existing system in which a timetable is generated at the beginning of each semester and is made available to faculty in the LMS. Another insight was that in case a faculty wanted to schedule a class, he/she sent a mail which was approved after a manual check and sometimes even resulted in inconsistencies. Sometimes the faculty's cabin location is not considered while preparing the time table which causes an inconvenience. Our major project aims to address these and many other issues present.

We developed our minor project on Visual Studio 2008 and Microsoft SQL Server 2005. It was windows based application and could be installed on every system. The software was fed with the latest time table and allowed the user to schedule a class after a thorough search block wise, floor wise and lastly room wise. The layouts of the rooms were a replica of the actual layout and were colour coded in red (for on-going class) and green (for available class). But the major drawback which emerged in the final presentation of our project was that once a class was booked by a faculty, it could not reflect on all other applications on all other systems of other faculties. It provided a good interface to view and book classrooms but still left room for inconsistency due to lack of centralization of the application on a server.

CHAPTER 2 PROBLEM DEFINITION

Develop a web based application to tackle the problems mentioned above and remove any scope for inconsistencies. The application will be hosted on the college server and be accessible by faculty. The faculty will open the application on the web browser and interact with the interface to view and search a class block wise, floor wise and specific room wise. An aged faculty will be given preference for booking in ground floor and block in close proximity to his/her cabin. Such details will be incorporated into our major project and implemented in campus. Different constraints like total number of bookings in a day, week and month will be kept. The faculty will not be able to book a single classroom for back-to-back classes which will remove the option of that classroom for other faculty members.

CHAPTER 3 LITERATURE SURVEY

3.1 PHP

PHP is a general-purpose scripting language that is especially suited to server-side web development where PHP generally runs on a web server. Any PHP code in a requested file is executed by the PHP runtime, usually to create dynamic web page content or dynamic images used on Web sites or elsewhere.

It can also be used for command-line scripting and client-side graphical user interface (GUI) applications. PHP can be deployed on most Web servers, many operating systems and platforms, and can be used with many relational database management systems (RDBMS).

PHP acts primarily as a filter, taking input from a file or stream containing text and/or PHP instructions and outputting another stream of data; most commonly the output will be HTML.

It is available free of charge, and the PHP Group provides the complete source code for users to build, customize and extend for their own use.

3.2 MySQL

MySQL is the world's most used open source relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases.

3.3 Apache HTTP Server

Apache, otherwise known as Apache HTTP Server, is an established standard in the online distribution of website services, which gave the initial boost for the expansion of the World Wide Web. It is an open-source web server platform, which guarantees the online availability of the majority of the websites active today. The server is aimed at serving a great deal of widely popular modern web platforms/operating systems such as Unix, Windows, Linux, Solaris, Novell NetWare, FreeBSD, Mac OS X, Microsoft Windows, OS/2, etc.

The Apache server has been developed by an open source community - Apache Software Foundation, whose members are constantly adding new useful functionalities, with the sole purpose of providing a secure and extensible server platform that ensures HTTP service delivery in accordance with the current HTTP standards.

3.3.1 WAMP

WAMPs are packages of independently created programs installed on computers that use a Microsoft Windows operating system.

WAMP is an acronym formed from the initials of the operating system Microsoft Windows and the principal components of the package: Apache, MySQL and one of PHP, Perl or Python. Apache is a web server. MySQL is an open-source database. PHP is a scripting language that can manipulate information held in a database and generate web pages dynamically each time content is requested by a browser. Other programs may also be included in a package, such as phpMyAdmin which provides a graphical user interface for the MySQL database manager, or the alternative scripting languages Python or Perl.

3.3.2 Macromedia Dreamweaver 8

Adobe Dreamweaver (formerly Macromedia Dreamweaver) is a **proprietary web development application** originally created by Macromedia. Adobe Dreamweaver is available for both Mac and Windows operating systems. Releases of Dreamweaver subsequent to version 8.0 have been more compliant with W3C standards. Recent versions have improved support for web technologies such as CSS, JavaScript, and various server-side scripting languages and frameworks including ASP (ASP JavaScript, ASP VBScript, ASP.NET C#, ASP.NET VB), ColdFusion, Scriptlet, and PHP.

3.3.3 Notepad++

Notepad++ is a text editor and source code editor for Windows. It aims to be a lightweight and robust editor for a variety of programming and scripting languages. One advantage of Notepad++ over the built-in Windows text editor, Notepad, is tabbed editing, which allows working with multiple open files. Notepad++ is distributed as free software. To display and edit text and programming language source code files, Notepad++ uses the Scintilla editor component.

3.3.3 JavaScript

JavaScript (sometimes abbreviated JS) is a scripting language commonly implemented as part of a web browser in order to create enhanced user interfaces and dynamic websites.

3.3.4 HTML

HyperText Markup Language (HTML) is the main markup language for displaying web pages and other information that can be displayed in a web browser.

CHAPTER 4 SYSTEM REQUIREMENT SPECIFICATION

4.1 Overall Description

4.1.1 Product Perspective

My product "Campus Infrastructure Planner and Monitor" is built with the objective of dynamic classroom allocation on a weekly basis and to monitor infrastructure usage in the University of Petroleum and Energy Studies. The key problem being addressed is that presently if a faculty wants to schedule a class/lab, he/she has to send an e-mail which is manually handled and the scheduling is prone to errors. The second problem being addressed is that sometimes the faculty's cabin location is not considered while allocating classes at the beginning of the semester. The product will be a web based application and will be hosted on the UPESNET. Later, it can be accessed as and when required by faculty for scheduling.

4.1.2 Product Features

The major functionalities of the proposed system are:

1. View and search a class block wise, floor wise and specific room wise.
2. Schedule on first-come-first-serve basis.
3. On a weekly basis, classes will be scheduled by faculty based on the credit of the subjects.
4. On a monthly basis, a report on the usage of campus infrastructure will be generated. Load balancing in case of labs will be implemented.
5. On a day-to-day basis, students can view their dynamic timetable online.

4.1.3 User Classes and Characteristics

The Product is developed primarily for faculty members. Faculty members can register at the beginning of each semester with their basic information and teaching details. Once they register, they can login with their username and password. They will be directed to the scheduling page of the application.

Students are secondary users of the web application. After faculty has scheduled a class, it will be visible to the student. Students are also required to register and login.

4.1.4 Operating Environment

The product is built for the Windows based environment and the users are required to connect to UPESNET to access the web application.

4.1.5 Design and Implementation Constraints

I expect the client system to be turned on and connected to the UPESNET. But these factors are purely dependent on the external environment factors such as uninterrupted power supply and internet access.

Another constraint which surfaced during the implementation phase is that since the web application is hosted on the UPESNET, it is not accessible by nodes outside the university and hence the faculty is required to schedule during the working hours in college.

If the UPESNET is down or slow, scheduling requests can go unprocessed .It can lead to errors and confusion among students and faculty members. High speed intranet is mandatory for smooth processing of scheduling requests.

4.1.6 User Documentation

User documentation components proposed to be available with the software are

- Readme file

4.1.7 Assumptions and Dependencies

Some of the factors that can impact the web application directly or indirectly are:

- At the beginning of each semester , faculty has to register with basic information and teaching details
- Students can only view the scheduled classes but cannot schedule or don't have editing rights.
- Running state of the web application is entirely dependent on state of the UPESNET.

- It is assumed that in a semester, a faculty member is teaching only one subject to a particular course.
- The location of the faculty cabin and the class scheduled is at unreasonable distances sometimes. This problem cannot be addressed as time tables are released only once at the beginning of each semester in PDF format and circulated.
- It is expected that students sign into the web application and check for scheduled classes in which they have enrolled.

4.2 System Features

4.2.1 Dynamic scheduling by Faculty Members

Description and Priority

After faculty has registered, he/she has access to the scheduling page after login. Faculty provides the date, time and classroom where he/she wants to schedule a class. An SQL query is fired in the table called "Scheduled Classes" to check if the particular class is available on the specified date and time. Scheduling is prioritized on a first-come-first-serve basis. Once the scheduled class is over, the tuple of scheduling details is deleted and that class is again available for scheduling.

Functional Requirements

Req 1. Start windows

Req 2. Connect to UPESNET

Req 3. Type the URL of the web application in the address bar and click on go.

Req 4. The welcome page of "Campus Infrastructure Planner and Monitor" is opened.

Req 5. If you are a faculty and visiting the page for the first time, then click on "Faculty Registration" button.

Req 6. Fill page 1 with the basic information and click on "Next".

Req 7. Fill page 2 with teaching details and click on "Complete Registration".

Req 8. You will be redirected to the login page.

Req 9. Login with username and password entered during registration.

Req 10. You will be redirected to the scheduling page screen.

Req 11. Select date, time and classroom where you wish to conduct a class. Click on "Check Availability" button.

Req 12. If the class is available, then click on the "Confirm" button. Class is scheduled.

Req 13. The class is not available until that date and time has elapsed.

Req 14. If you are a Student and you are visiting the website for the first time, then click on "Student Registration" button.

Req 15. Fill the registration form and click on the "Confirm" button.

Req 16. You will be directed to the login page.

Req 17. Login with username and password.

Req 18. You will be directed to the page with classes scheduled for your course and sem.

Req 19. Logout

4.3 External Interface Requirements

4.3.1 User Interfaces

The software has minimum user interfaces to interact with the user. It has the following user interfaces:

1. Welcome Page
2. Faculty Registration Interface
3. Student Registration Interface
4. Faculty Login
5. Student Login
6. Faculty Scheduling Interface
7. Student Viewing Interface
8. Usage Meter Interface
9. Admin Control Interface

4.3.2 Software Interfaces

The web application is developed in Dreamweaver 8 and Notepad++.WAMP server was installed and PHP code was tested on the local machine. Windows OS was aimed as it is the most

widely used operating system. The application will run on Linux systems as well as since it is web based and only needs a web browser and connection to UPESNET.

4.4 Other Non-functional Requirements

4.4.1 Performance Requirements

The web application is light and avoids complications to enable smooth access and user experience. The only requirement is that UPESNET should be up and running without any timeouts.

4.4.2 Security Requirements

Both Faculty members and Students are provided with username and password to enable a secure authenticated access to the web application. Rights are defined by the administrator and visibility of content to different users is controlled. The application has taken care of the security aspects.

CHAPTER 5 SYSTEM DESIGN

The idea for implementing is to obtain a request from the faculty and process the request. Processing the request will involve firing an SQL query in the server database and performing a tedious check on all the tuples to eradicate any scope of error. Only if the timeslot is available on that date, the class will be scheduled and will be unavailable to other faculty members till that time has elapsed.

At the high level design, the system is composed of two processes i.e. registration and scheduling. Two external databases (Registration records, Scheduled records) are updated with user activity as the processes are triggered in the system. The registration process takes in the teacher details and the scheduling process takes in the scheduling preferences.

The system then processes the request and displays availability/non availability. Later , user confirms the result to proceed.

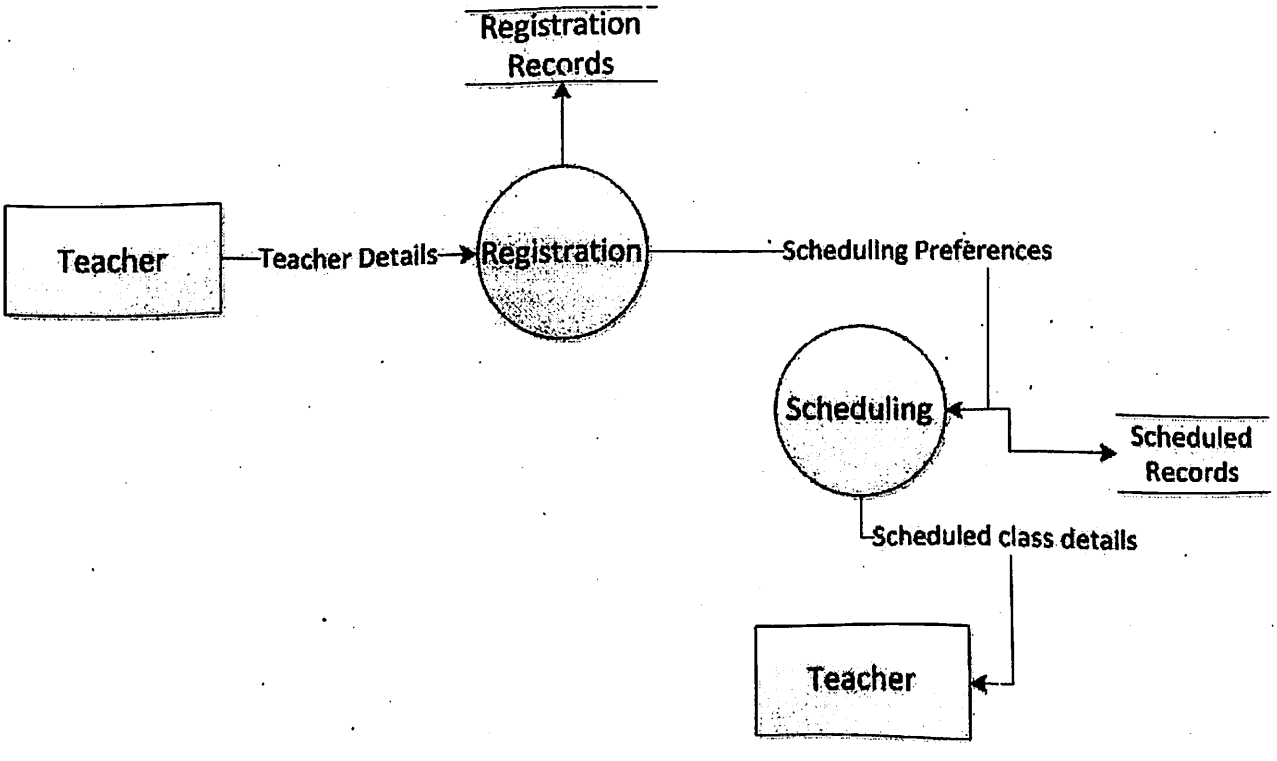


Fig: 5.1 - High-level Design

CHAPTER 6 DETAILED DESIGN

The System is mainly having four modules:

- Registration Module
- Scheduling Module
- Usage Meter Module
- Admin Module

6.1 Registration Module

Only registered users are allowed access to the web application to maintain the authenticity of information and a consistent database of records. This module focuses on:

1. Faculty registration
2. Student Registration

At the beginning of each semester, faculty is required to register with the following details:

1. First name
2. Last name
3. Age
4. Address
5. Phone no.
6. Email ID
7. Qualifications
8. Employee ID
9. Department
10. Username
11. Password

The above information is gathered from the first page of registration (Basic Information). The next page collects information regarding the faculty's teaching details which are as follows:

1. Course
2. Semester
3. Subject
4. Credits

After this page, the faculty will submit the details and get registered.

Students can also register but have limited rights. They can only view the classes scheduled for which they have enrolled at the beginning of each semester. The student registration form has the following fields:

1. First name
2. Last name
3. Age
4. Address
5. Phone no.
6. Email ID
7. Roll No.
8. Course
9. Semester
10. Username
11. Password

*NOTE: The course and semester fields from the student and faculty registration will be utilized to display appropriate classes to the student.

After this page, the student will submit the details and get registered.

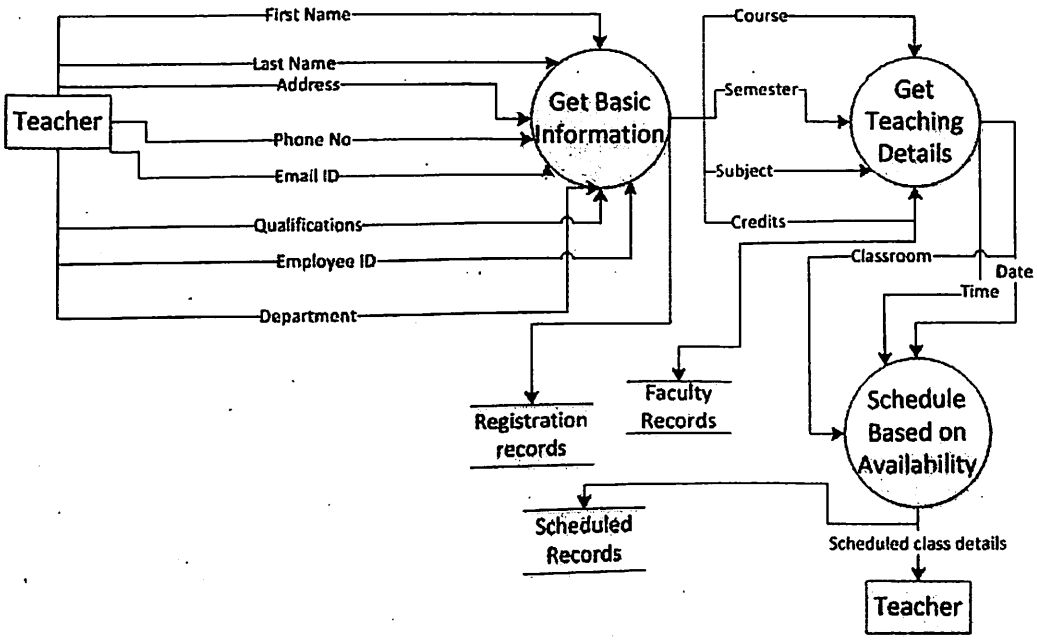


Fig: 6.1 - DFD for Registration and Scheduling Module

6.2 Scheduling Module

This module focuses on the scheduling aspects of the System.

6.2.1 *Scheduling*

After registration, the faculty signs in with username and password entered during registration.

The scheduling page allows the faculty to select a classroom block wise, floor wise and even class wise according to its proximity with the faculty's cabin location.

The faculty needs to provide the web application with the following details for it to process a request:

1. Date
2. Timeslot
3. Resource (Classroom, Laboratory, Auditorium, Board room, Playground)

A dynamic SQL query will be constructed and fired in the database to check availability/non-availability.

In case the particular resource is not available on the requested date and timeslot then the system will run an algorithm to find out the next best alternative class in the nearest date and timeslot to handle the inconvenience caused to the faculty.

The web application serves as a dynamic bulletin board for the students. The student can select his/her course to filter schedules and view relevant classes. The students can sign in with the username and password provided at the time of registration.

An SQL query is constructed using the username to find out the course and semester the student has enrolled in. Then a dynamic query is constructed using the course and semester to find out the faculty teaching the student.

Any schedules made by the faculty will then be displayed to the student along with details like date, timeslot and class.

6.3 Usage Meter Module

The usage meter is a module accessible by faculty and administrator. The key functionality of usage meter is to determine the usage of a resource (Classroom, Laboratory, Auditorium, Board room, Playground).

There are two modes available: weekly and monthly.

The usage is calculated in percentage and is put in one of the following categories according to range values:

- Under-utilized resources
- Normal usage of resources
- Over-utilization of resources

The different ranges are colour coded as follows:

- Orange colour for under-utilized resources
- Green colour for normal usage of resources
- Red colour for over-utilization of resources

The object of such classification is to identify resources which are underutilized and engage them in more usage and to find out reasons for low usage. Reasons can be damaged infrastructure, lighting, low student capacity or distance. Some of the reasons can be dealt with appropriate corrective

measures and the usage of that particular resource can be brought up into the normal utilization zone. Usage meter helps to filter a list of over utilized classes which will help administration to distribute work load from over utilized resources to under-utilized resources.

Following are the ranges of the categories:

- Below 30 % under-utilized resources
- Between 30-80% normal usage of resources
- Above 80% over-utilized resources

Usage meter allows the faculty and administrator to view the following:

- Recently scheduled classes
- Employees who are scheduling
- Calculate usage of a particular class in either of the two modes (Weekly/Monthly)
- View all resources with their usage percentage and the category into which it is falling(Weekly/Monthly)
- View all resources falling in the under-utilized category with their usage percentage and the category into which it is falling(Weekly/Monthly)
- View all resources falling in the over-utilized category with their usage percentage and the category into which it is falling(Weekly/Monthly)
- View all resources and those which are under-utilized with their usage percentage and the category into which it is falling(Weekly/Monthly)
- View all resources and those which are over-utilized with their usage percentage and the category into which it is falling(Weekly/Monthly)
- View under-utilized and over-utilized resources with their usage percentage and the category into which it is falling(Weekly/Monthly)

All permutation and combination of the options are coded and tested with all possible use cases. It is possible that the user selects only one of the features of the module or selects all the features of the module. Accordingly a comprehensive colour coded report is generated for the user to draw inferences and plan out an appropriate plan-of-action.

6.4 Admin Module

The admin module is an added feature to the previous version of Campus Infrastructure Planner and Monitor. The Administrator has privileges to delete a schedule made by a faculty in case the faculty exceeds the limit of three classes. It should be noted that laboratory, auditorium, board room, playground do not fall into the limit 3 classes.

The admin is the second entity besides faculty members who has access to the usage meter module.

The admin can research resource usage and suggest rectification measures to deal with under or over utilization of resources.

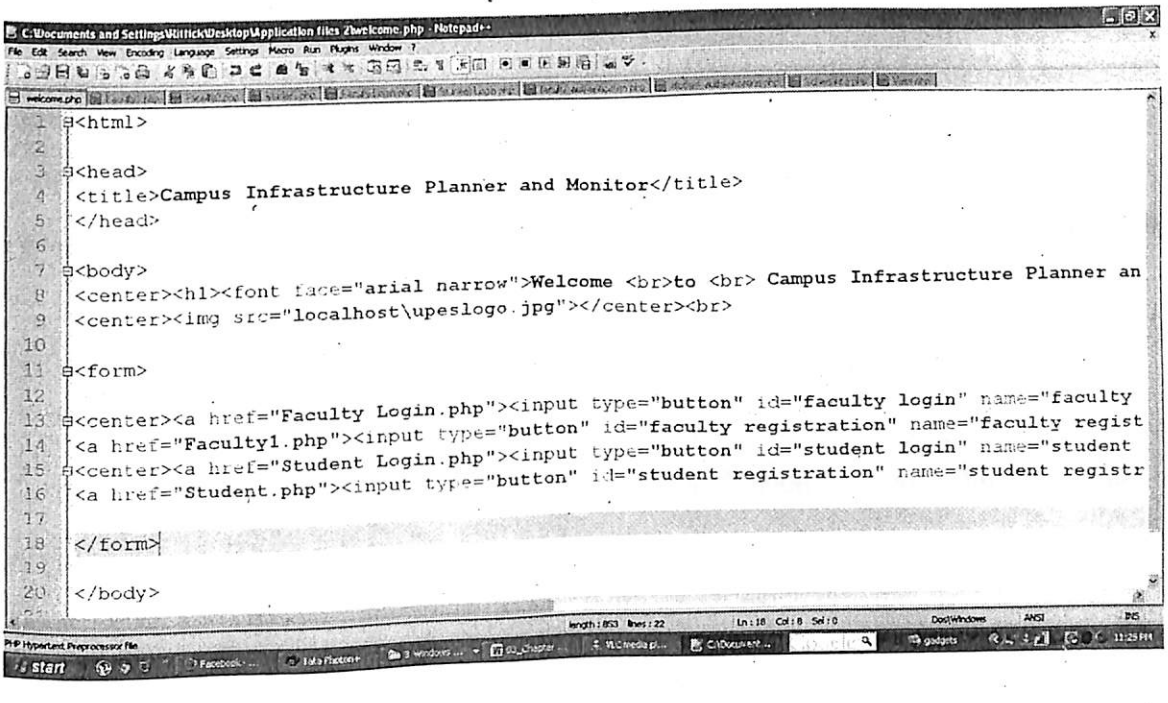
The admin needs to be in regular communication with administration department to serve the purpose if load balancing and efficient infrastructure usage.

CHAPTER 7 IMPLEMENTATION

The implementation of the "Campus Infrastructure Planner and Monitor" is done in a modular fashion. This increases the reusability of the code as well the makes the application structured.

7.1 Registration Module

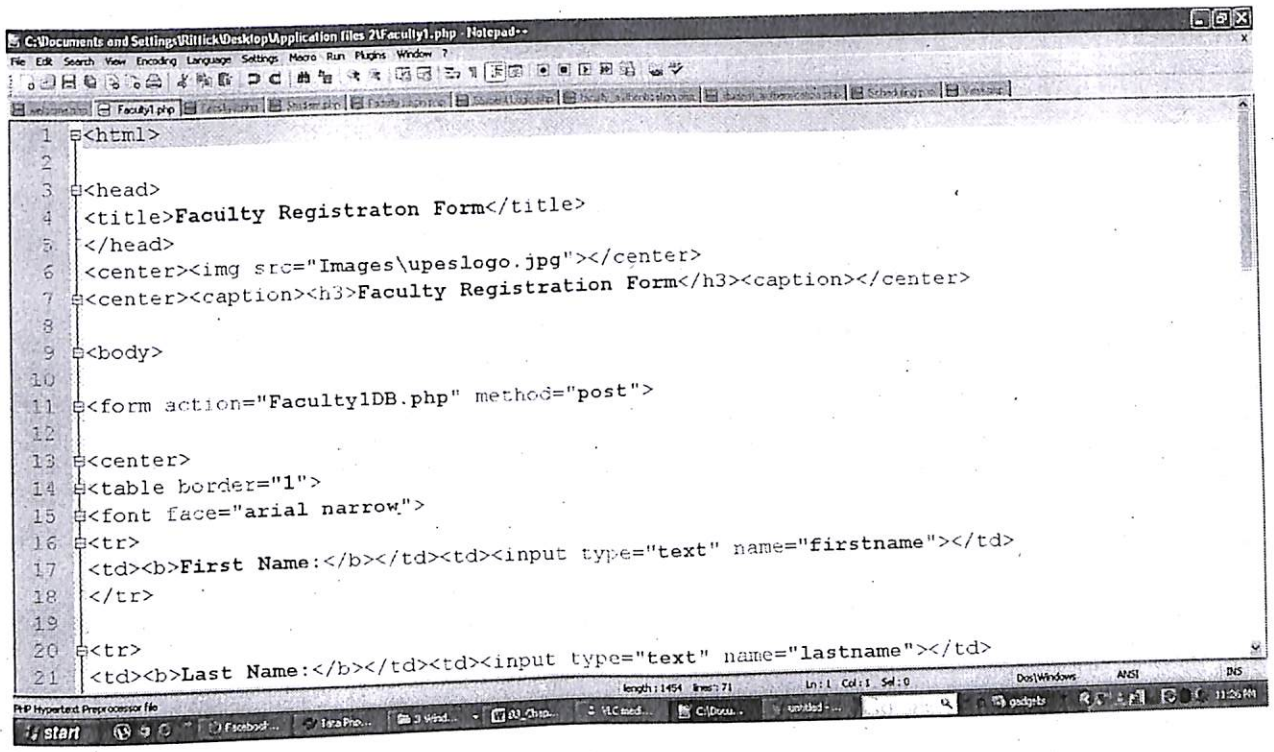
7.1.1 Welcome Page of Campus Infrastructure Planner and Monitor




```
<html>

<head>

<title>Campus Infrastructure Planner and Monitor</title>

</head>

<body>

<center><h1><font face="arial narrow">Welcome <br>to <br> Campus Infrastructure Planner and Monitor !</font></h1></center>

<center><img src="images\upeslogo.jpg"></center><br>
```

```
<form>

<center><a href="Faculty Login.php"><input type="button" id="faculty login" name="faculty login"
Value="Faculty Login" > </a>

<a href="Faculty1.php"><input type="button" id="faculty registration" name="faculty registraton"
Value="Faculty Registration"></a></center>

<hr width=240>

<center><a href="Student Login.php"><input type="button" id="student login" name="student login"
Value="Student Login"> </a>

<a href="Student.php"><input type="button" id="student registration" name="student registraton"
Value="Student Registration"></a></center>

<hr width=240>

<center><a href="admin_CC.php"><input type="button" id="admin" name="admin"
Value="Administrator"> </a></center>

</form>

</body>

<html>
```

7.1.2 Faculty Registration Page 1



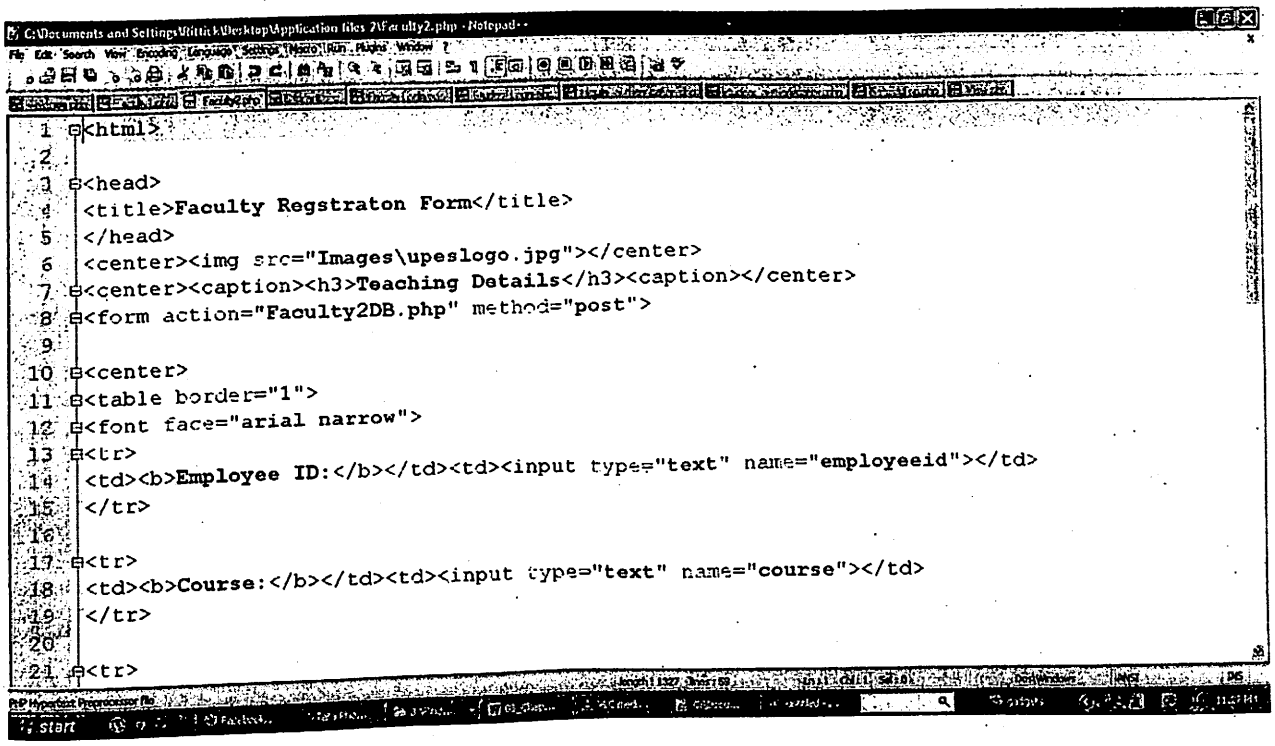

```
<html>

<head>

<title>Faculty Registraton Form</title>

</head>

<center><img src="Images\upeslogo.jpg"></center>

<center><caption><h3>Faculty Registration Form</h3><caption></center>

<body>

<form action="Faculty1DB.php" method="post">

<center>

<table border="1">

<font face="arial narrow">
```

```
<tr>
<td><b>First Name:</b></td><td><input type="text" name="firstname"></td>
</tr>
<tr>
<td><b>Last Name:</b></td><td><input type="text" name="lastname"></td>
</tr>
<tr>
<td><b>Age:</b></td><td><input type="number" name="age"></td>
</tr>
<tr>
<td><b>Address:</b></td><td><input type="text" name="address"></td>
</tr>
<tr>
<td><b>Phone no:</b></td><td><input type="text" name="phoneno"></td>
</tr>
<tr>
<td><b>Email ID:</b></td><td><input type="text" name="emailid"></td>
</tr>
<tr>
<td><b>Qualifications:</b></td><td><input type="text" name="qualification"></td>
```

```
</tr>

<tr>

<td><b>Employee ID:</b></td><td><input type="text" name="employeeid"></td>

</tr>

<tr>

<td><b>Department:</b></td><td><input type="text" name="department"></td>

</tr>

<tr>

<td><b>Username:</b></td><td><input type="text" name="username"></td>

</tr>

<tr>

<td><b>Password:</b></td><td><input type="password" name="password"></td>

</tr>

<tr>

<td colspan="2"><center><input type="submit" value="Submit"></center></td>

</tr>

<table></center>

</font>

</form>

</body>
```

```
</html>
```

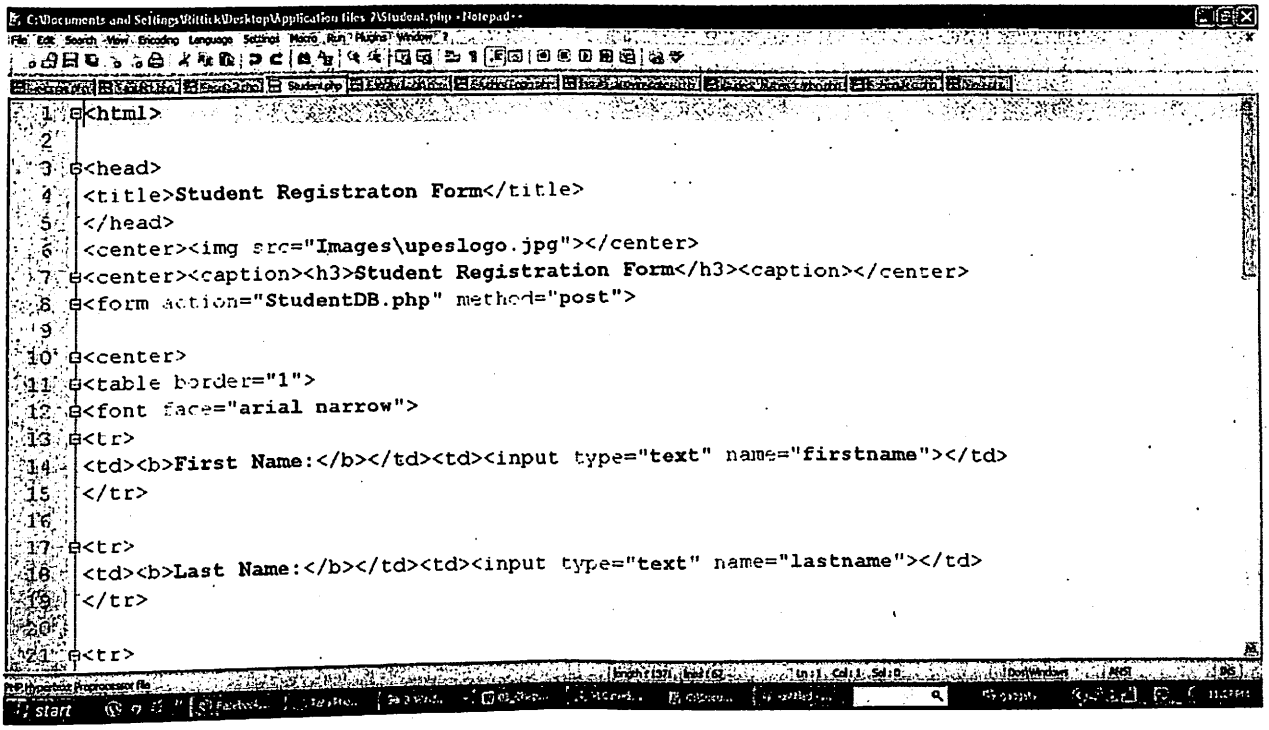
7.1.3 Faculty Registration Page 2




```
<html>

<head>
<title>Faculty Regstraton Form</title>
</head>
<center><img src="Images\upeslogo.jpg"></center>
<center><caption><h3>Teaching Details</h3><caption></center>
<form action="Faculty2DB.php" method="post">

<center>
<table border="1" bgcolor=#C0C0C0>
<font face="arial narrow">
<tr>
<td><b>Employee ID:</b></td><td><input type="text" name="employeeid"></td>
</tr>

<tr>
<td><b>Course:</b></td><td><input type="text" name="course"></td>
</tr>

<tr>
<td><b>Semester:</b></td>
<td>

<input type="radio" value="1" name="semester">1
```

```
<input type="radio" value="2" name="semester">2
<input type="radio" value="3" name="semester">3
<input type="radio" value="4" name="semester">4
<input type="radio" value="5" name="semester">5
<input type="radio" value="6" name="semester">6
<input type="radio" value="7" name="semester">7
<input type="radio" value="8" name="semester">8

</td>
</tr>

<tr>
<td><b>Subject:</b></td><td><input type="text" name="subject"></td>
</tr>

<tr>
<td><b>Credit:</b></td>
<td>
<input type="radio" name="credit" value="1">1
<input type="radio" name="credit" value="2">2
<input type="radio" name="credit" value="3">3
<input type="radio" name="credit" value="4">4
</td>
</tr>

<tr>
<td colspan="2"><center><input type="submit" value="Register"></center></td>
</tr>
<table></center>
</font>
</form>
</html>
```

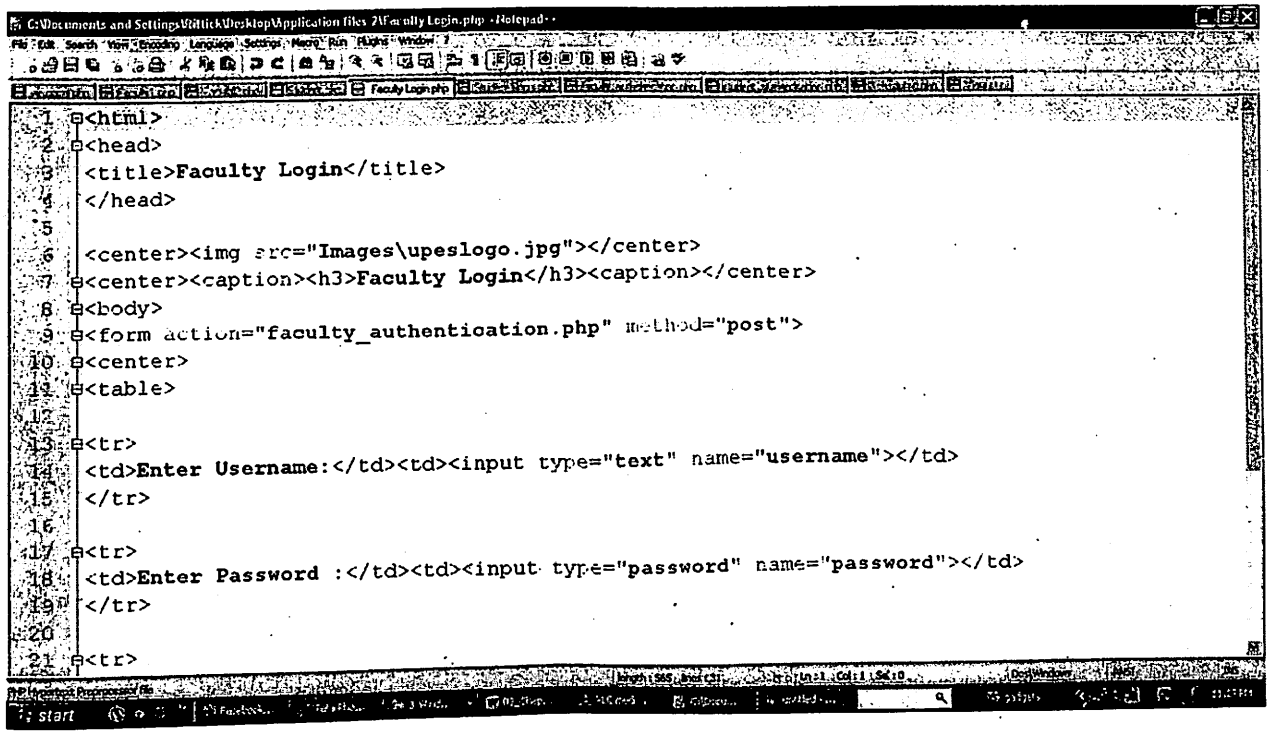
7.1.4 Student Registration Page




```
<html>

<head>
<title>Student Registraton Form</title>
</head>
<center><img src="Images\upeslogo.jpg"></center>
<center><caption><h3>Student Registration Form</h3><caption></center>
<form action="StudentDB.php" method="post">

<center>
<table border="1">
<font face="arial narrow">
<tr>
<td><b>First Name:</b></td><td><input type="text" name="firstname"></td>
</tr>

<tr>
<td><b>Last Name:</b></td><td><input type="text" name="lastname"></td>
</tr>

<tr>
<td><b>Age:</b></td><td><input type="number" name="age"></td>
</tr>

<tr>
<td><b>Address:</b></td><td><input type="text" name="address"></td>
</tr>
```

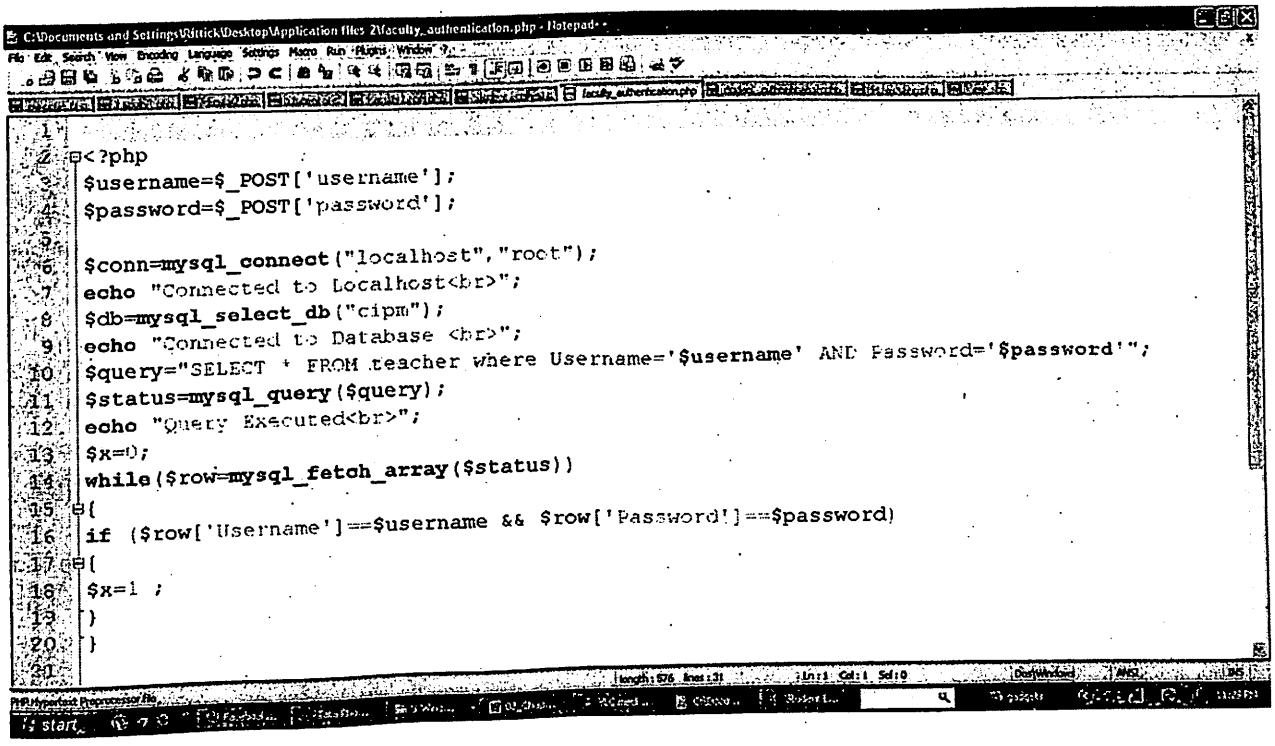
```
<tr>
<td><b>Phone no:</b></td><td><input type="text" name="phoneno"></td>
</tr>

<tr>
<td><b>Email ID:</b></td><td><input type="text" name="emailid"></td>
</tr>

<tr>
<td><b>Roll No.</b></td><td><input type="text" name="rollno"></td>
</tr>

<tr>
<td><b>Course:</b></td><td><input type="text" name="course"></td>
</tr>

<tr>
<td><b>Semester:</b></td><td><input type="text" name="semester"></td>
</tr>

<tr>
<td><b>Username:</b></td><td><input type="text" name="username"></td>
</tr>

<tr>
<td><b>Password:</b></td><td><input type="password" name="password"></td>
</tr>

<tr>
<td colspan="2"><center><input type="submit" value="Register"></center></td>
</tr>
<table>
</center>
</font>
</form>

</html>
```

7.1.5 Faculty Login and Authentication



```
<html>
<head>
<title>Faculty Login</title>
</head>

<center><img src="Images\upeslogo.jpg"></center>
<center><caption><h3>Faculty Login</h3><caption></center>
<body>
<form action="faculty_authentication.php" method="post">
<center>
<table>

<tr>
<td>Enter Username:</td><td><input type="text" name="username"></td>
</tr>

<tr>
<td>Enter Password :</td><td><input type="password" name="password"></td>
</tr>

<tr>
<td></td><td><center><input type="submit" value="Login"></center></td>
</tr>
<tr>
<td></td><td><center><a href="changeFacPas.php">Change Password</a></center></td>
</tr>
</table>
```

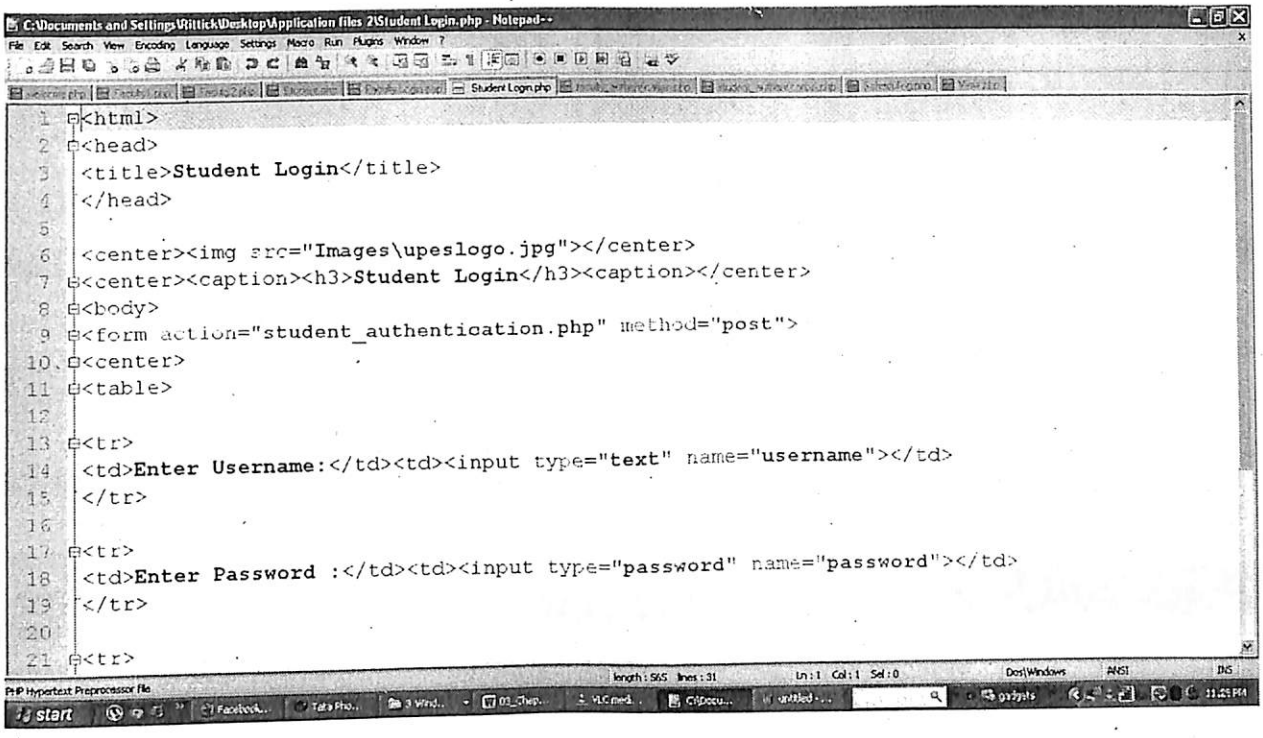
```
</center>
</form>
</body>

</html>
```



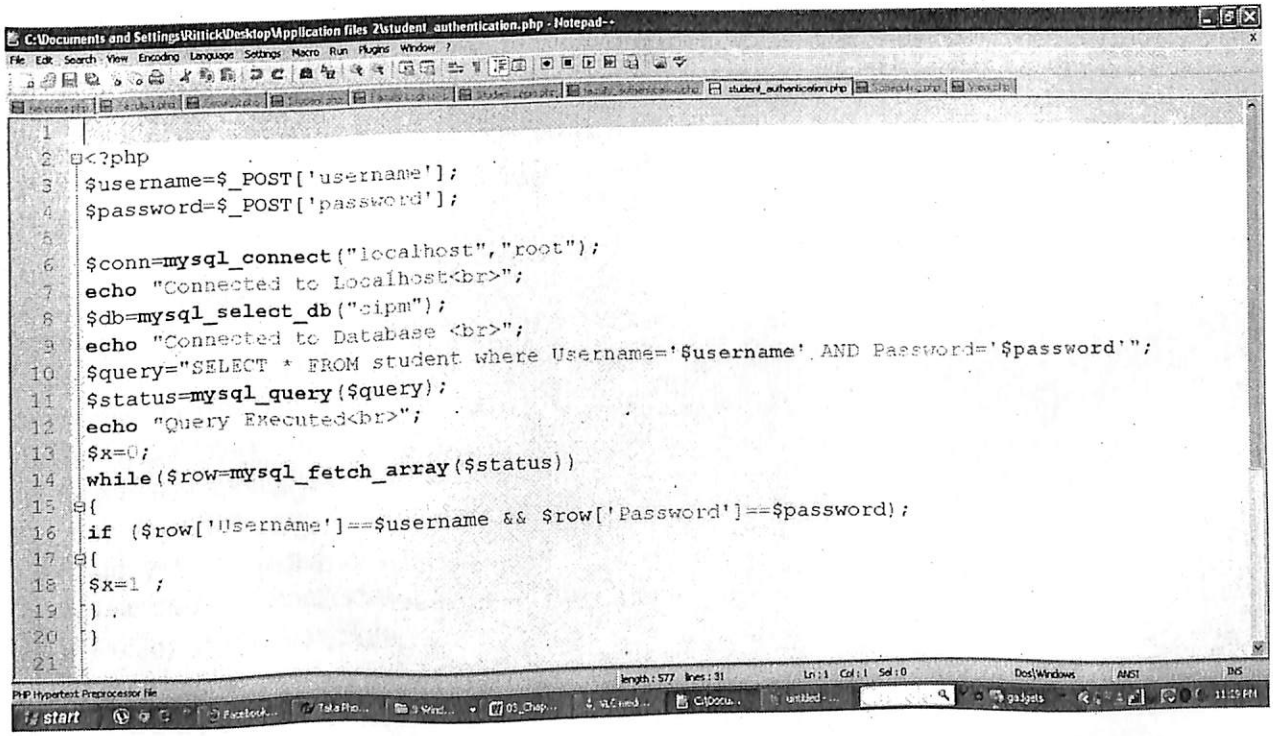
```
<?php
$username=$_POST['username'];
$password=$_POST['password'];

$conn=mysql_connect("localhost","root");
//echo "Connected to Localhost.<br>";
$db=mysql_select_db("cipm");
//echo "Connected to Database. <br>";
$query="SELECT * FROM teacher where Username='$username' AND Password='$password'";
$status=mysql_query($query);
//echo "Query Executed.<br>";
$x=0;
while($row=mysql_fetch_array($status))
{
if ($row['Username']==$username && $row['Password']==$password)
{
$x=1 ;
}
}
```

```
if ($x)
{
echo "Access Granted !";
?>
<html>
<center>
<head>
<title>Campus Infrastructure Planner and Monitor</title>
</head>

<body>
<center><h1><font face="arial narrow">Campus Infrastructure Planner and Monitor
!</font></h1></center>
<center><img src="images\upeslogo.jpg"></center><br>
<form action="Scheduling.php" method="php">
<b>Welcome ! </b><br>
<input type="submit" value="Schedule Now !"><br>
<a href="Faculty2.php"><input type="button" Value="Edit Teaching Details"></a><br>
<a href="adminUsageMeter.php"><input type="button" Value="Use Usage Meter"></a><br>
<a href="welcome.php"><input type="button" Value="Logout"></a>
</form>
</center>
</body>
</html>
<?php
}
else
{
echo "Access Denied !";
}
?>
```

7.1.6 Student Login and Authentication



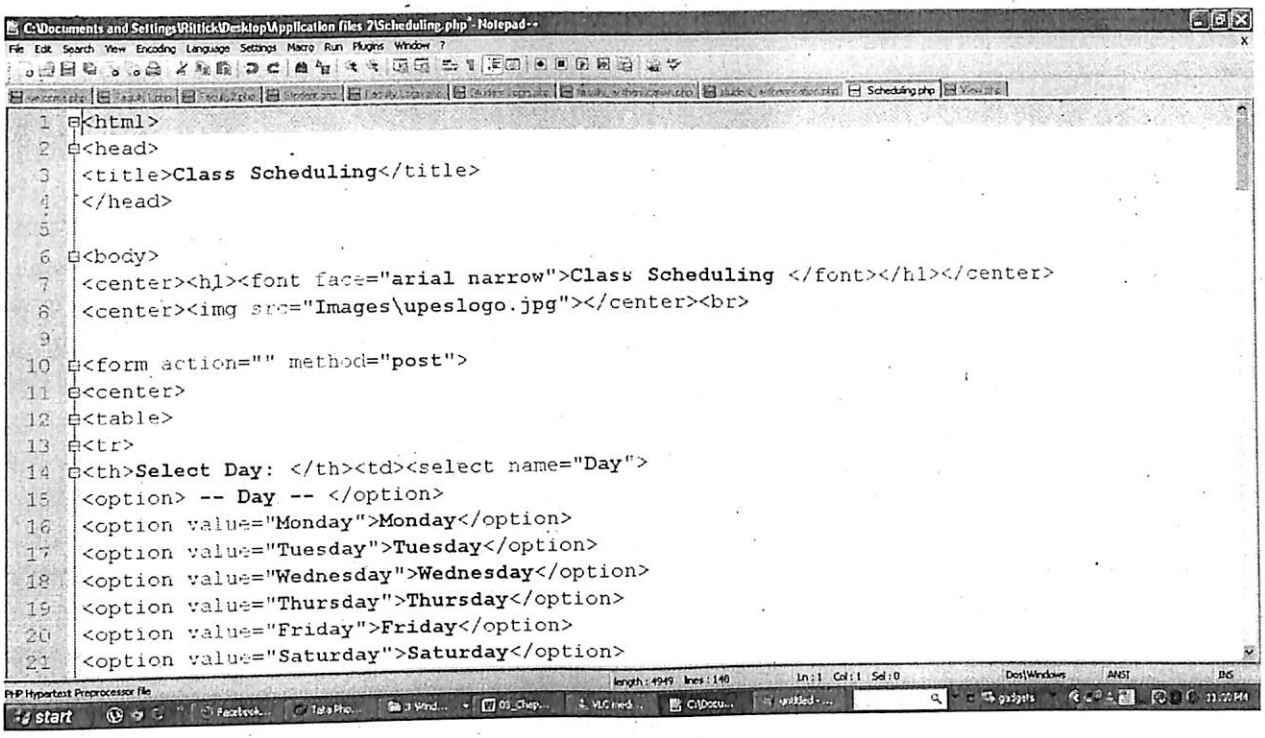
```
<html>
<head>
<title>Student Login</title>
</head>

<center><img src="Images\upeslogo.jpg"></center>
<center><caption><h3>Student Login</h3><caption></center>
<body>
<form action="student_authentication.php" method="post">
<center>
<table>

<tr>
<td>Enter Username:</td><td><input type="text" name="username"></td>
</tr>

<tr>
<td>Enter Password :</td><td><input type="password" name="password"></td>
</tr>

<tr>
```



```
<?php
$username=$_POST['username'];
$password=$_POST['password'];

$conn=mysql_connect("localhost","root");
echo "Connected to Localhost<br>";
$db=mysql_select_db("cipm");
echo "Connected to Database <br>";
$query="SELECT * FROM student where Username='$username' AND Password='$password'";
$status=mysql_query($query);
echo "Query Executed<br>";
$x=0;
while($row=mysql_fetch_array($status))
{
if ($row['Username']==$username && $row['Password']==$password);
{
$x=1 ;
}
}
```

7.2 Scheduling Module

7.2.1 Scheduling Page




```
<html>
<head>
<title>Class Scheduling</title>

<script language="javascript" type="text/javascript" src="datetimepicker.js">


</script>

<script type="text/javascript">
function disp()
{
var d=new Date();
var day=d.getDate();
var month=d.getMonth()+1;
var year=d.getFullYear();
var cdate=year+"-"+month+"-"+day;
//var cdate=day+"-"+month+"-"+year;
document.my.date.value=cdate;

var suffix="am";
var hour=d.getHours();
var min=d.getMinutes();
var sec=d.getSeconds();
if(min<10)
{
min="0"+min;
}

if(sec<10)
```

```
{
sec="0"+sec;
}
if(hour>12)
{
hour=hour-12;
suffix="pm";
var ctime=hour+":"+min+":"+sec+" "+suffix;
document.my.time.value=ctime;
setTimeout("disp()",1000);
}
}
</script>

</head>

<body onload="disp()">
<center><h1><font face="arial narrow">Class Scheduling </font></h1></center>
<center><img src="Images\upeslogo.jpg"></center><br>

<form name="my" action="create_schedule.php" method="post" >
<center>
<table align="JUSTIFY" bgcolor=#C0C0C0>
<tr>
<th>Enter Employee ID</th>
<td><input type="text" name="employeeid"></td>
</tr>

<tr>
<th>Select Date</th>
<td><input type="text" id="datetime" size="25" name="day"><a
href="javascript:NewCal('datetime','ddmmyyyy')"><img src="images/cal.gif" width="16" height="16"
border="0" alt="Pick a date"></a></td>
</tr>


<tr>
<th>Select Timeslot</th>
<td><select name="Timeslot">
<option> -- Timeslot -- </option>
<option value="08:00-08:30">08:00-08:30</option>
<option value="08:30-09:00">08:30-09:00</option>
<option value="09:00-09:30">09:00-09:30</option>
<option value="09:30-10:00">09:30-10:00</option>
<option value="10:00-10:30">10:00-10:30</option>
<option value="10:30-11:00">10:30-11:00</option>
<option value="11:00-11:30">11:00-11:30</option>
<option value="11:30-12:00">11:30-12:00</option>
<option value="12:00-12:30">12:00-12:30</option>
<option value="12:30-01:00">12:30-01:00</option>
```

```
<option value="01:00-01:30">01:00-01:30</option>
<option value="01:30-02:00">01:30-02:00</option>
<option value="02:00-02:30">02:00-02:30</option>
<option value="02:30-03:00">02:30-03:00</option>
<option value="03:00-03:30">03:00-03:30</option>
<option value="03:30-04:00">03:30-04:00</option>
<option value="04:00-04:30">04:00-04:30</option>
<option value="04:30-05:00">04:30-05:00</option>
<option value="05:00-05:30">05:00-05:30</option>
<option value="05:30-06:00">05:30-06:00</option>
<option value="06:00-06:30">06:00-06:30</option>
</td>
</select>
</tr>

<tr>

<th>Select Resource</th>
<td>
<select name="resource">
<option><b>- Resource -</b></option>
<option value="classroom">Classroom</option>
<option value="lab">Laboratory</option>
<option value="auditorium">Auditorium</option>
<option value="boardroom">Board Room</option>
<option value="playground">Play ground</option>
</select>
</td>

</tr>
<tr>
<td align="RIGHT"></td>
<td><select name="classroom">
<option> - Classroom - </option>
<option value="1001">1001</option>
<option value="1002">1002</option>
<option value="1003">1003</option>
<option value="1004">1004</option>
<option value="1005">1005</option>
<option value="1006">1006</option>
<option value="1101">1101</option>
<option value="1102">1102</option>
<option value="1103">1103</option>
<option value="1104">1104</option>
<option value="1105">1105</option>
<option value="1106">1106</option>
<option value="1201">1201</option>
<option value="1202">1202</option>
<option value="1203">1203</option>
<option value="1204">1204</option>
```

```
<option value="2001">2001</option>
<option value="2002">2002</option>
<option value="2003">2003</option>
<option value="2004">2004</option>
<option value="3002">3002</option>
<option value="3003">3003</option>
<option value="2101">2101</option>
<option value="2102">2102</option>
<option value="2103">2103</option>
<option value="2104">2104</option>
<option value="3101">3101</option>
<option value="3102">3102</option>
<option value="3103">3103</option>
<option value="3104">3104</option>
<option value="3201">3201</option>
<option value="3202">3202</option>
<option value="4001">4001</option>
<option value="4002">4002</option>
<option value="4003">4003</option>
<option value="4004">4004</option>
<option value="5001">5001</option>
<option value="5003">5003</option>
<option value="5004">5004</option>
<option value="5005">5005</option>
<option value="4101">4101</option>
<option value="4102">4102</option>
<option value="4103">4103</option>
<option value="4104">4104</option>
<option value="5101">5101</option>
<option value="5102">5102</option>
<option value="5103">5103</option>
<option value="5104">5104</option>
<option value="5105">5105</option>
<option value="5201">5201</option>
<option value="5202">5202</option>
<option value="5203">5203</option>
<option value="5204">5204</option>
<option value="5205">5205</option>
<option value="7001">7001</option>
<option value="7003">7003</option>
<option value="7004">7004</option>
<option value="7005">7005</option>
<option value="7101">7101</option>
<option value="7102">7102</option>
<option value="7103">7103</option>
<option value="7104">7104</option>
<option value="7105">7105</option>
<option value="7201">7201</option>
<option value="7202">7202</option>
<option value="7203">7203</option>
```

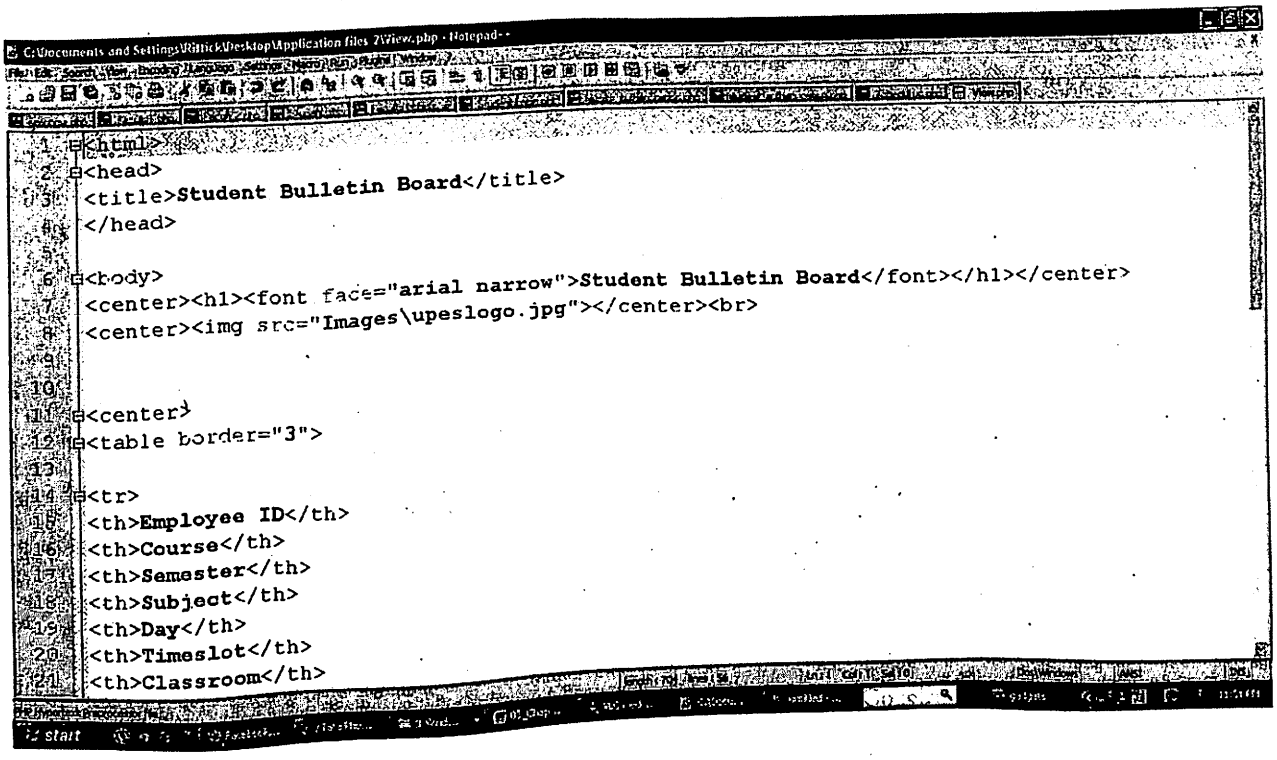
```
<option value="7204">7204</option>
<option value="7205">7205</option>
<option value="6001">6001</option>
<option value="6002">6002</option>
<option value="6003">6003</option>
<option value="6004">6004</option>
<option value="6005">6005</option>
<option value="6101">6101</option>
<option value="6103">6103</option>
<option value="6104">6104</option>
<option value="6105">6105</option>
<option value="6201">6201</option>
<option value="6203">6203</option>
<option value="6204">6204</option>
<option value="6205">6205</option>
</td>
</select>
</tr>

<tr>
<td align="LEFT"></td>
<td>
<select name="lab">
<option>- Laboratory -</option>
<option value="Automotive Chassis Lab">Automotive Chassis Lab
</option>
<option value="Basic Electrical Lab">Basic Electrical Lab
</option>
<option value="Basic Electronics Lab">Basic Electronics Lab
</option>
<option value="CAD Lab A">CAD Lab A
</option>
<option value="CAD Lab B">CAD Lab B
</option>
<option value="Chemistry Lab A">Chemistry Lab A
</option>
<option value="Chemistry Lab B">Chemistry Lab B
</option>
<option value="Communication Lab B">Communication Lab B
</option>
<option value="Concrete Design Lab">Concrete Design Lab
</option>
<option value="EE Lab">EE Lab
</option>
<option value="Electrical Machines Lab">Electrical Machines Lab
</option>
<option value="Electronic Workshop Lab">Electronic Workshop Lab
</option>
<option value="Fluid Mechanics Lab">Fluid Mechanics Lab
</option>
```

```
<option value="Geology Lab">Geology Lab
</option>
<option value="Heat Transfer Lab">Heat Transfer Lab
</option>
<option value="Instrumentation and Controls Lab">Instrumentation and Controls Lab
</option>
<option value="IT Tower Lab 1">IT Tower Lab 1
</option>
<option value="IT Tower Lab 2">IT Tower Lab 2
</option>
<option value="IT Tower Lab 3">IT Tower Lab 3
</option>
<option value="IT Tower Lab 4">IT Tower Lab 4
</option>
<option value="IT Tower Lab 5">IT Tower Lab 5
</option>
<option value="IT Tower Lab 6">IT Tower Lab 6
</option>
<option value="Manufacturing and Metallurgy Lab">Manufacturing and Metallurgy Lab
</option>
<option value="Mass Transfer Lab">Mass Transfer Lab
</option>
<option value="Material Testing Lab">Material Testing Lab
</option>
<option value="Microprocessors Lab">Microprocessors Lab
</option>
<option value="Physics Lab 1">Physics Lab 1
</option>
<option value="Physics Lab 2">Physics Lab 2
</option>
<option value="Power Electronics and Electrical Drives Lab">Power Electronics and Electrical Drives
Lab
</option>
<option value="Power System Protection and Switchgear Lab">Power System Protection and
Switchgear Lab
</option>
<option value="Propulsion Lab">Propulsion Lab
</option>
<option value="Reservoir Lab">Reservoir Lab
</option>
<option value="Robotics Lab">Robotics Lab
</option>
<option value="Structures Lab">Structures Lab
</option>
<option value="Survey Lab">Survey Lab
</option>
<option value="Workshop Lab">Workshop Lab
</option>
</select>
</td>
```

```
</tr>

<tr>
<td align="LEFT"></td>
<td>
<select name="auditorium">
<option>- Auditorium -</option>
<option value="Openair Auditorium">Open Air Auditorium</option>
<option value="Vivekananda Auditorium">Vivekananda Auditorium</option>
</select>
</td>
</tr>

<tr>
<td align="LEFT"></td>
<td>
<select name="boardroom">
<option>- Board Room -</option>
<option value="Board room 1">Board Room 1</option>
<option value="Board room 2">Board Room 2</option>
<option value="Board room 3">Board Room 3</option>
<option value="Board room 4">Board Room 4</option>
<option value="Board room 5">Board Room 5</option>
<option value="Board room 6">Board Room 6</option>

</select>
</td>
</tr>

<tr>
<td align="LEFT"></td>
<td>
<select name="playground">
<option>- Playground -</option>
<option value="Cricket">Cricket Field</option>
<option value="Basketball">Basketball Court</option>
<option value="Volleyball">Volleyball Court</option>
<option value="Table Tennis">Table Tennis</option>
</select>
</td>
</tr>

</tr>
<tr>
<td></td><td><input type="submit" value="Check Availability"></td>
</tr>

<tr>
<td></td><td><a href="welcome.php"><input type="button" Value="Logout"></a></td>
</tr>
```

```
<tr>
<td align="CENTER"><b>Today's Date:</b></td><td><input type="text" name="date"/></td>
</tr>

<tr>
<td align="CENTER"><b>Current Time:</b></td><td><input type="text" name="time"/></td>
</tr>

</table>

</center>

</form>

</body>

</html>
```

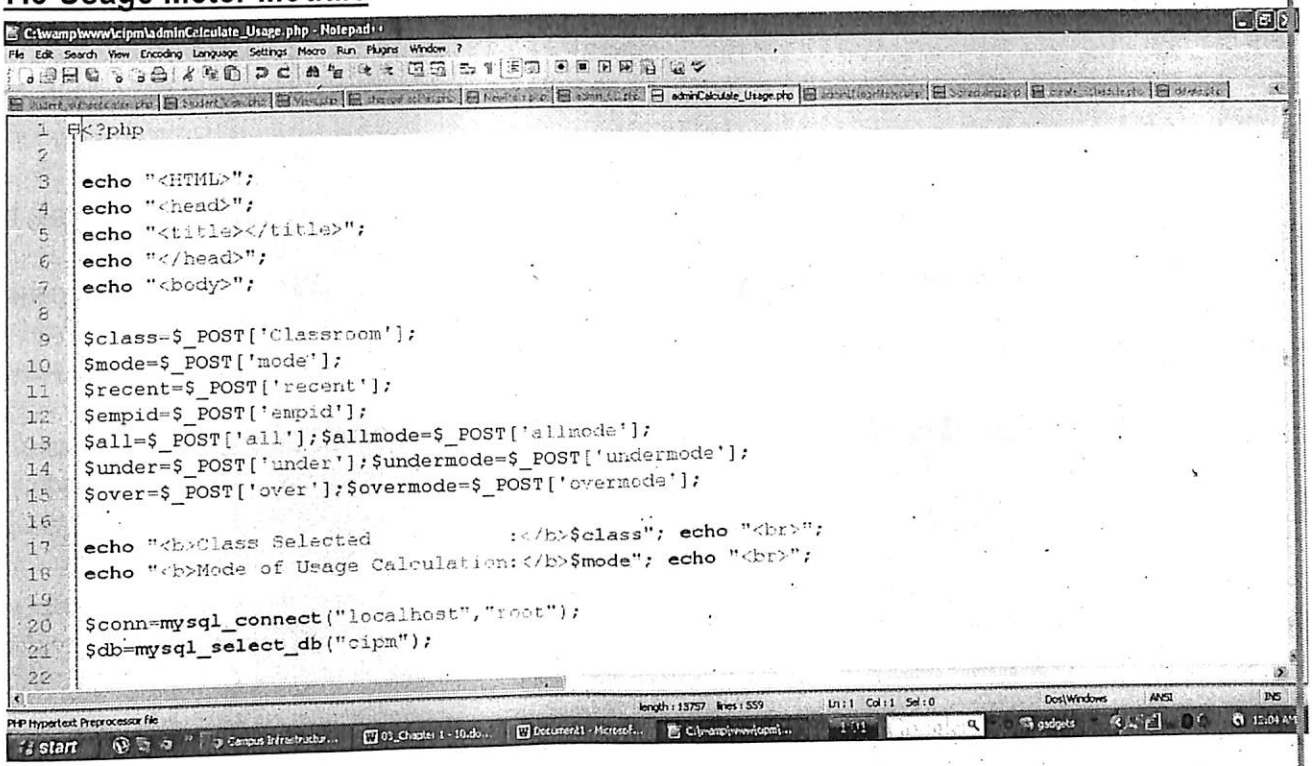
7.2.2 Students Bulletin Board




```
<html>
<head>
<title>Student Bulletin Board</title>
</head>

<body>
<center><h1><font face="arial narrow">Student Bulletin Board</font></h1></center>
<center><img src="Images\upeslogo.jpg"></center><br>
```

```
<center>
<form method="post" action="Student_View.php">
Select Branch
<select name="branch">
<option>Branch</option>
<option value="B.Tech(CSE)">B.Tech(CSE)</option>
<option value="B.Tech(EE)">B.Tech(EE)</option>
</select>
<input type="submit" value="Filter Records">
</form>
<a href="welcome.php"><input type="button" Value="Logout"></a>
</center>
<?php
$conn=mysql_connect("localhost","root");
$db=mysql_select_db("cipm");
$query="SELECT * FROM schedules;";
$status=mysql_query($query);
echo "<center>";
echo "<table border='3'>";
echo "<tr><th>Employee
ID</th><th>Course</th><th>Semester</th><th>Subject</th><th>Day</th><th>Timeslot</th><th>Class
room</th></tr>";
while($row=mysql_fetch_array($status)or die(mysql_error()))
{
echo "<tr>";
echo "<td>" .$row['Employee ID']. "</td>" ;
echo "<td>" .$row['Course']. "</td>" ;
echo "<td>" .$row['Semester']. "</td>" ;
echo "<td>" .$row['Subject']. "</td>" ;
echo "<td>" .$row['Day']. "</td>" ;
echo "<td>" .$row['Timeslot']. "</td>" ;
echo "<td>" .$row['Classroom']. "</td>" ;
echo "</tr>";
}
echo "</table>";
echo "</center>";
mysql_close($conn);
?>
?>

</body>
</html>
```

7.3 Usage Meter Module




```
<?php

echo "<HTML>";
echo "<head>";
echo "<title></title>";
echo "</head>";
echo "<body>";

$class=$_POST['Classroom'];
$mode=$_POST['mode'];
$recent=$_POST['recent'];
$empid=$_POST['empid'];
$all=$_POST['all'];$allmode=$_POST['allmode'];
$under=$_POST['under'];$undermode=$_POST['undermode'];
$over=$_POST['over'];$overmode=$_POST['overmode'];

echo "<b>Class Selected :</b>$class"; echo "<br>";
echo "<b>Mode of Usage Calculation:</b>$mode"; echo "<br>";

$conn=mysql_connect("localhost","root");
$db=mysql_select_db("cipm");

$query="SELECT * FROM schedules where Classroom=$class;";
$status=mysql_query($query);
echo "<b>Query Execution:</b> Success";echo "<br>";
$count=0;

while($row=mysql_fetch_array($status))
{
```

```
$count=$count+1;
}

//echo $count;
$usagePercent=0;

if ($mode=="Weekly")
{
$usagePercent=($count/7)*100;echo "<b>Usage in last 7 days: </b>";echo $usagePercent;echo " %
<br>";
}else
{
$usagePercent=($count/30)*100;echo "<b>Usage in last 30 days: <b>";echo $usagePercent;echo "
%<br>";
}



if($recent=="yes" & $empid=="yes")
{
$query4="SELECT * FROM schedules;";
$status4=mysql_query($query4);
/*echo "EMPLOYEE ID -------->CLASSROOM<br>";*/

echo "<table border='3'>";
echo "<tr><th>Employee ID</th><th>Classroom Booked</th></tr>";

while($row=mysql_fetch_array($status4))
{
/*echo $row['Employee ID'];echo " ---------->";;echo $row['Classroom'];echo "<br>";*/
echo "<tr>";
echo "<td>" .$row['Employee ID']. "</td>" ;
echo "<td>" .$row['Classroom']. "</td>" ;
echo "</tr>";
}
echo "</table>";

}
else
if ($recent=="yes")
{
$query2="SELECT Classroom FROM schedules;";
$status1=mysql_query($query2);
/*echo "<b>Recently Booked Classes :</b><br>";*/
echo "<table border='3'>";
echo "<tr><th>Recently Booked Classes</th></tr>";
while($row=mysql_fetch_array($status1))
{
/*echo $row['Classroom'];echo "<br>";*/
echo "<tr>";
```

```
echo "<td>" .$row['Classroom']. "</td>" ;
echo "</tr>";
}
echo "</table>";
}
else
if ($empid=="yes")
{
$query3="SELECT * FROM schedules ;";
$status3=mysql_query($query3);
/*echo "<b>Employees Recently Schedling :</b><br>";*/
echo "<table border='3'>";
echo "<tr><th>Employee ID</th></tr>";
while($row=mysql_fetch_array($status3))
{
/*echo $row['Employee ID'];echo "<br>";*/
echo "<tr>";
echo "<td>" .$row['Employee ID']. "</td>" ;
echo "</tr>";
}
echo "</table>";
}
else
echo "<b>Note:Neither all Classrooms nor Employee IDs selected</b>";

//ALL RESOURCES
if($all=="yes")
{
if($allmode=="Weekly")
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FFCC00 width=30px>Under Utilized</td><td bgcolor=#00FF00 width=30px>Normal
Usage</td><td bgcolor=#FF0000 width=30px>Over Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
```

```
}

$U2=($C1/7)*100;
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
echo "</table>";

}
else
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FFCC00 width=30px>Under Utilized</td><td bgcolor=#00FF00 width=30px>Normal
Usage</td><td bgcolor=#FF0000 width=30px>Over Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/30)*100;
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
echo "</table>";

}
```

```
}
else
if($under=="yes")
{
if($undermode=="Weekly")
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FFCC00 width=30px>Under Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/7)*100;
if($U2<30){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td        bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
}
echo "</table>";

}
else
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
```

```
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FFCC00 width=30px>Under Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/30)*100;
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
echo "</table>";

}
}
else
if($over=="yes")
{
if($overmode=="Weekly")
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FF0000 width=30px>Over Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;
```

```
while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/7)*100;
if($U2>80){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
}
echo "</table>";

}
else
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FF0000 width=30px>Over Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/30)*100;
if($U2>80){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
```

```
echo "</tr>";
}
}
echo "</table>";

}
}
else
if($all=="yes" & $under=="yes")
{
if($allmode=="Weekly"& $undermode=="Weekly")
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FFCC00 width=30px>Under Utilized</td><td bgcolor=#00FF00 width=30px>Normal
Usage</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/7)*100;
if($U2<80){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td        bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
}
echo "</table>";

}
else
{
```

```
$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FFCC00 width=30px>Under Utilized</td><td bgcolor=#00FF00 width=30px>Normal
Usage</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/30)*100;
if($U2<80){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
}
echo "</table>";
}
}
else
if($all=="yes" & $over=="yes")
{
if($allmode=="Weekly"& $overmode=="Weekly")
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#00FF00 width=30px>Normal Usage</td><td bgcolor=#FF0000 width=30px>Over
Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
```

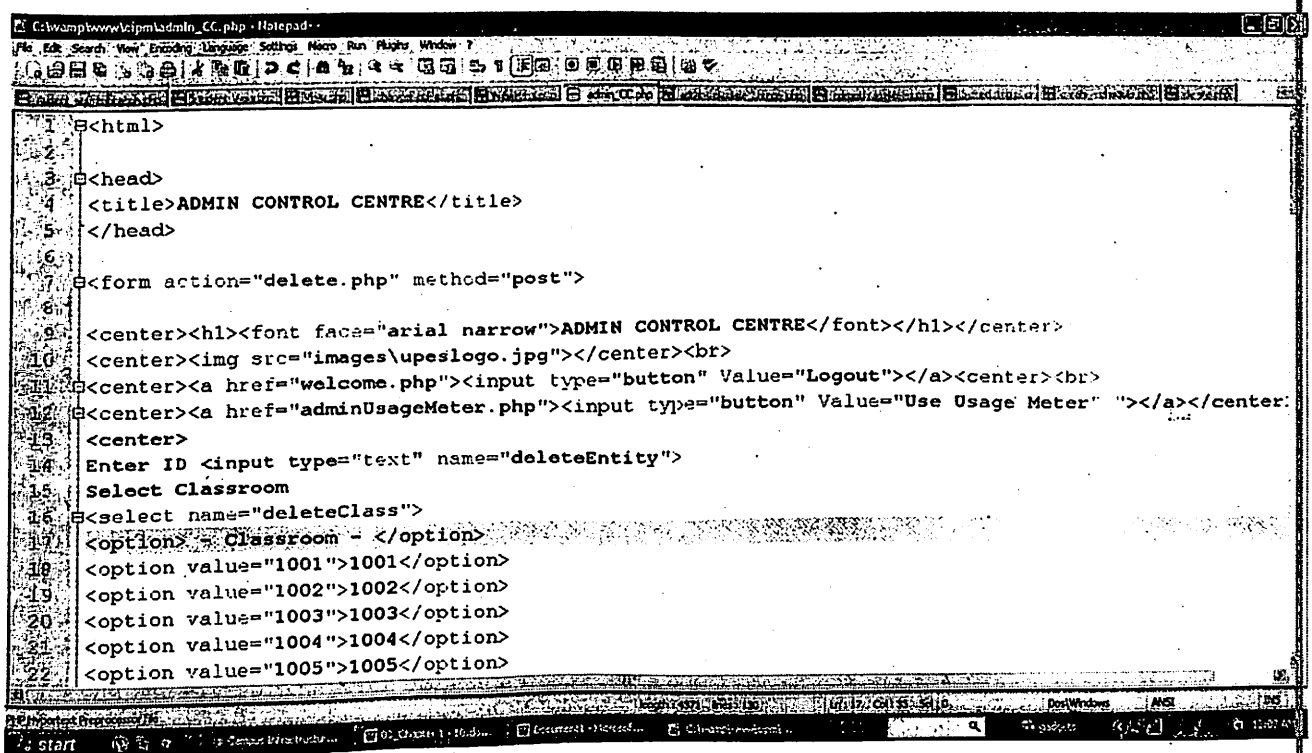
```
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/7)*100;
if($U2>80){
if($U2<80){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
}
}
echo "</table>";
}
else
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#00FF00 width=30px>Normal Usage</td><td bgcolor=#FF0000 width=30px>Over
Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
```

```
}

$U2=($C1/30)*100;
if($U2<80){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
}
echo "</table>";
}
}
else
if($under=="yes" & $over=="yes")
{
if($undermode=="Weekly"& $overmode=="Weekly")
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FFCC00 width=30px>Under Utilized</td><td bgcolor=#FF0000 width=30px>Over
Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/7)*100;
if($U2<30 | $U2>80){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
```

```
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
}
echo "</table>";
}
else
{

$queryA="SELECT * FROM schedules ;";
$statusA=mysql_query($queryA);

echo "<table border='3'>";
echo "<tr><th bgcolor=#FFFF00>Resource</th><th bgcolor=#FFFF00>Usage</th><td
bgcolor=#FFCC00 width=30px>Under Utilized</td><td bgcolor=#FF0000 width=30px>Over
Utilized</td></tr>";
while($row1=mysql_fetch_array($statusA))
{
$t=$row1['Classroom'];
$queryB="SELECT * FROM schedules WHERE Classroom=$t;";
$statusB=mysql_query($queryB);

$C1=0;
$U2=0;

while($row2=mysql_fetch_array($statusB))
{
$C1=$C1+1;
}

$U2=($C1/30)*100;
if($U2<30 | $U2>80){
if($U2<30){$color="#FFCC00";}else if ($U2>80){$color="#FF0000";}else{$color="#00FF00";}

echo "<tr>";
echo "<td          bgcolor=#C0C0C0><b>" .$row1['Classroom']. "</b></td>" ;
echo "<td bgcolor=#00FFFF>" .$U2. "</td>" ;
echo "<td colspan=3><hr align=left noshade size=25% width=$U2 color=$color></td>";
echo "</tr>";
}
}
echo "</table>";
}
}

else
echo "";

echo "</body>";
echo "</html>";
```

?>

7.4 Admin Module



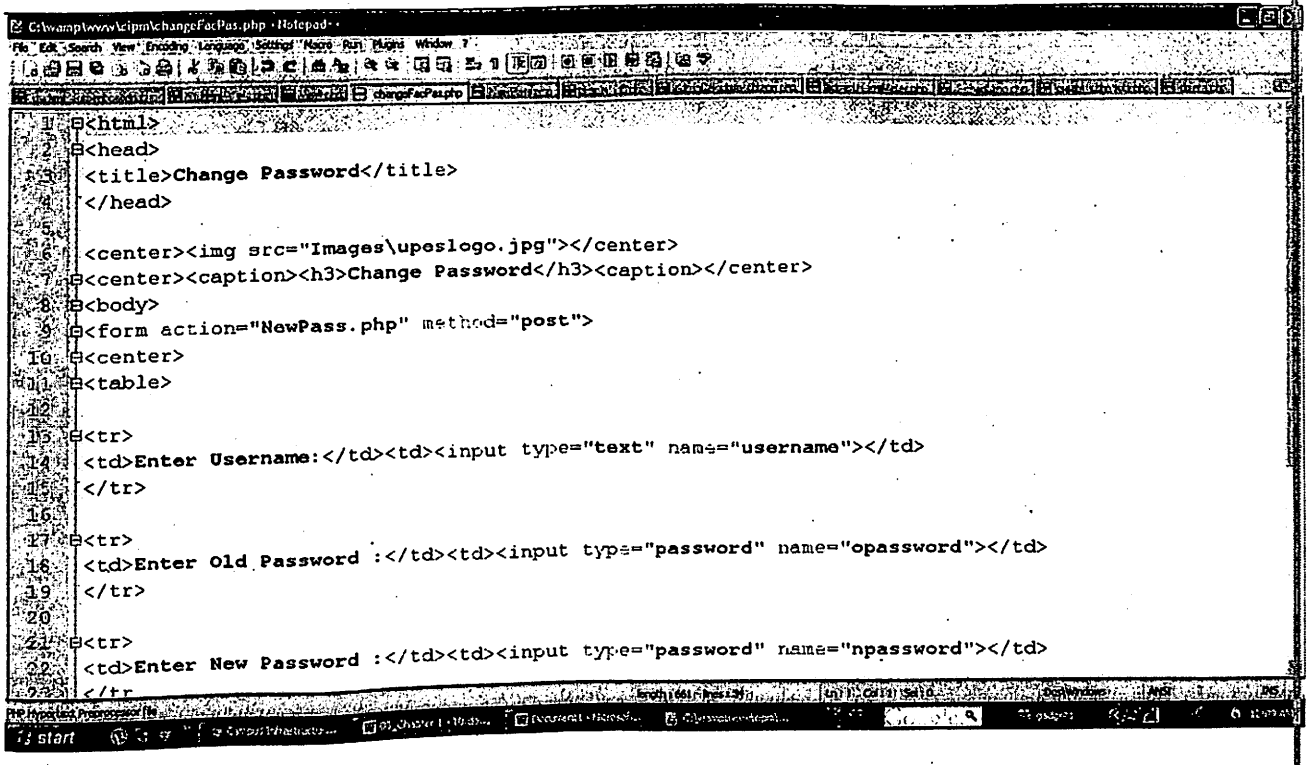

```
<html>

<head>
<title>ADMIN CONTROL CENTRE</title>
</head>

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

<center><h1><font face="arial narrow">ADMIN CONTROL CENTRE</font></h1></center>
<center><img src="images\upeslogo.jpg"></center><br>
<center><a href="welcome.php"><input type="button" Value="Logout"></a><center><br>
<center><a href="adminUsageMeter.php"><input type="button" Value="Use Usage Meter"
"></a></center><br>
<center>
Enter ID <input type="text" name="deleteEntity">
Select Classroom
<select name="deleteClass">
<option> - Classroom - </option>
<option value="1001">1001</option>
<option value="1002">1002</option>
<option value="1003">1003</option>
<option value="1004">1004</option>
<option value="1005">1005</option>
<option value="1006">1006</option>
<option value="1101">1101</option>
<option value="1102">1102</option>
```

```
<option value="1103">1103</option>
<option value="1104">1104</option>
<option value="1105">1105</option>
<option value="1106">1106</option>
<option value="1201">1201</option>
<option value="1202">1202</option>
<option value="1203">1203</option>
<option value="1204">1204</option>
<option value="2001">2001</option>
<option value="2002">2002</option>
<option value="2003">2003</option>
<option value="2004">2004</option>
<option value="3002">3002</option>
<option value="3003">3003</option>
<option value="2101">2101</option>
<option value="2102">2102</option>
<option value="2103">2103</option>
<option value="2104">2104</option>
<option value="3101">3101</option>
<option value="3102">3102</option>
<option value="3103">3103</option>
<option value="3104">3104</option>
<option value="3201">3201</option>
<option value="3202">3202</option>
<option value="4001">4001</option>
<option value="4002">4002</option>
<option value="4003">4003</option>
<option value="4004">4004</option>
<option value="5001">5001</option>
<option value="5003">5003</option>
<option value="5004">5004</option>
<option value="5005">5005</option>
<option value="4101">4101</option>
<option value="4102">4102</option>
<option value="4103">4103</option>
<option value="4104">4104</option>
<option value="5101">5101</option>
<option value="5102">5102</option>
<option value="5103">5103</option>
<option value="5104">5104</option>
<option value="5105">5105</option>
<option value="5201">5201</option>
<option value="5202">5202</option>
<option value="5203">5203</option>
<option value="5204">5204</option>
<option value="5205">5205</option>
<option value="7001">7001</option>
<option value="7003">7003</option>
<option value="7004">7004</option>
<option value="7005">7005</option>
```

```
<option value="7101">7101</option>
<option value="7102">7102</option>
<option value="7103">7103</option>
<option value="7104">7104</option>
<option value="7105">7105</option>
<option value="7201">7201</option>
<option value="7202">7202</option>
<option value="7203">7203</option>
<option value="7204">7204</option>
<option value="7205">7205</option>
<option value="6001">6001</option>
<option value="6002">6002</option>
<option value="6003">6003</option>
<option value="6004">6004</option>
<option value="6005">6005</option>
<option value="6101">6101</option>
<option value="6103">6103</option>
<option value="6104">6104</option>
<option value="6105">6105</option>
<option value="6201">6201</option>
<option value="6203">6203</option>
<option value="6204">6204</option>
<option value="6205">6205</option>
<input type="submit" name="delete" value="Delete Entry">
<center>

<?php
$conn=mysql_connect("localhost","root");
$db=mysql_select_db("cipm");
$query="SELECT * FROM schedules;";
$status=mysql_query($query);
echo "<center>";
echo "<table border='3' bgcolor=#B0E0E6>";
echo "<tr><th>Employee
ID</th><th>Course</th><th>Semester</th><th>Subject</th><th>Day</th><th>Timeslot</th><th>Class
room</th></tr>";
while($row=mysql_fetch_array($status)or die(mysql_error()))
{
echo "<tr>";
echo "<td>" .$row['Employee ID']. "</td>" ;
echo "<td>" .$row['Course']. "</td>" ;
echo "<td>" .$row['Semester']. "</td>" ;
echo "<td>" .$row['Subject']. "</td>" ;
echo "<td>" .$row['Day']. "</td>" ;
echo "<td>" .$row['Timeslot']. "</td>" ;
echo "<td>" .$row['Classroom']. "</td>" ;
echo "</tr>";
}
echo "</table>";
echo "</center>";
```

```
mysql_close($conn);
?>

</form>


</html>
```

7.5 Change Faculty Password



```
<html>
<head>
<title>Change Password</title>
</head>

<center><img src="Images\upeslogo.jpg"></center>
<center><caption><h3>Change Password</h3><caption></center>
<body>
<form action="NewPass.php" method="post">
<center>
<table>

<tr>
<td>Enter Username:</td><td><input type="text" name="username"></td>
</tr>

<tr>
<td>Enter Old Password :</td><td><input type="password" name="opassword"></td>
</tr>
```

```
<tr>
<td>Enter New Password :</td><td><input type="password" name="npassword"></td>
</tr

<tr>
<td></td><td><center><input type="submit" value="Change Password"></center></td>
</tr>

</table>
</center>
</form>
</body>

</html>
```

NEWPASS.PHP

```
<?php
$username=$_POST['username'];
$opassword=$_POST['opassword'];
$npassword=$_POST['npassword'];

$conn=mysql_connect("localhost","root");
echo "Connected to Localhost.<br>";
$db=mysql_select_db("cipm");
echo "Connected to Database. <br>";
$query="SELECT * FROM teacher ";
$status=mysql_query($query);
echo "Query Executed.<br>";
while($row=mysql_fetch_array($status))
{
if ($row['Username']=="$username" && $row['Password']=="$opassword")
{
$update="UPDATE `teacher` SET `Password`='$npassword' WHERE `Username`='$username';";
$UpdateStatus=mysql_query($update);
echo "Password Updated";
echo "<html><br>";
echo "<a href=welcome.php><input type=button Value=Logout></a>";
echo "</html>";
}
}

?>
```

7.6 Admin deletes Schedule in case of exceeding limit

```
<html>
<?php

$temp=$_POST['deleteEntity'];
```

```
$temp2=$_POST['deleteClass'];
$conn=mysql_connect("localhost","root");
echo "connected to localhost.</br>";
$db=mysql_select_db("cipm");
echo "database selcted.</br></br>";

$query="DELETE FROM `cipm`.`schedules` WHERE `schedules`.`Employee ID` = $temp AND
`schedules`.`Classroom` = $temp2;";

$status=mysql_query($query);
if($status=true)
{
echo "<b>Query Successfully Executed !";
}

?>
<br>
<a href="Welcome.php"><b>Go to Home Page</b></a>
</html>
```

CHAPTER 8 TESTING

8.1 Testing Approach

The testing approach adopted for this project involves four major phases

- Unit testing
- Integration testing
- Beta testing

8.1.1 Unit Testing

In this phase of testing I tested the individual forms, scheduling interface and their connectivity with the MySQL database .It involved testing of the system without actually integrating the various parts and I looked at the working of the application as a stand-alone system.

8.1.2 Integration Testing

I now integrated the scheduling feature and I continued the testing process to see how the system would react when I would host it on the UPESNET. The application was full up and functional. The SQL queries were working fine and updated the database as and when expected to do so.

8.1.3 Beta Testing

The application was accessed by a few faculty members who were associated with this project and helped us with their guidance. They were able to register and schedule as required by the web application. Due to the time constraint, we have done this phase for a short duration of one week.

8.2 Findings

8.2.1 Unit testing

No major issues found

8.2.2 Integration testing

Issue 1: Database was not getting filled with new records

Solution: Syntax error in PHP code resolved

8.2.3 Beta testing

Issue 1: A scheduled class was not reflected in the student interface

Solution: UPESNET had timed out and the authentication window was required to be filled and submitted. Slow net can become an issue for the web application.

CHAPTER 9 CONCLUSION

The system which I developed is up and running in the UPESNET and will serve the dynamic scheduling needs of the faculty and free us from one time released PDF timetables at the beginning of each semester. No longer will there be a need to manually write a lengthy email and wait for a delayed response which might be error prone from the other end.

The faculty will not face any situation where there is an overlapping of two schedules in the same classroom. If the UPESNET can be up and running 24/7 then "Campus Infrastructure Planner and Monitor" will continue to perform efficiently and up to everyone's expectations

CHAPTER 10 FUTURE ENHANCEMENTS

Although the primary purpose of "Campus Infrastructure Planner and Monitor" is fulfilled, it can be enhanced with the following features:

1. Graphical view of the classes
2. AJAX for visual appeal.

BIBLIOGRAPHY

- WAMP

  http://en.wikipedia.org/wiki/WAMP

- For online help

  http://www.codeproject.com/

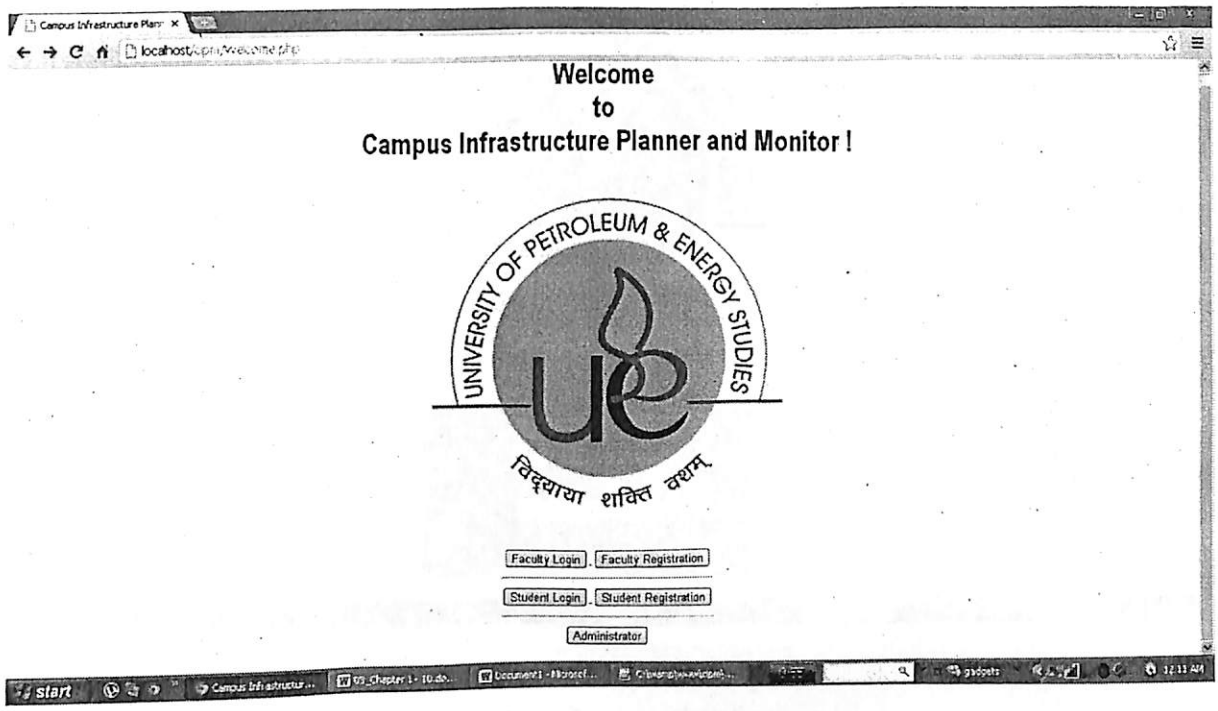
  http://in.answers.yahoo.com/

- *Books*

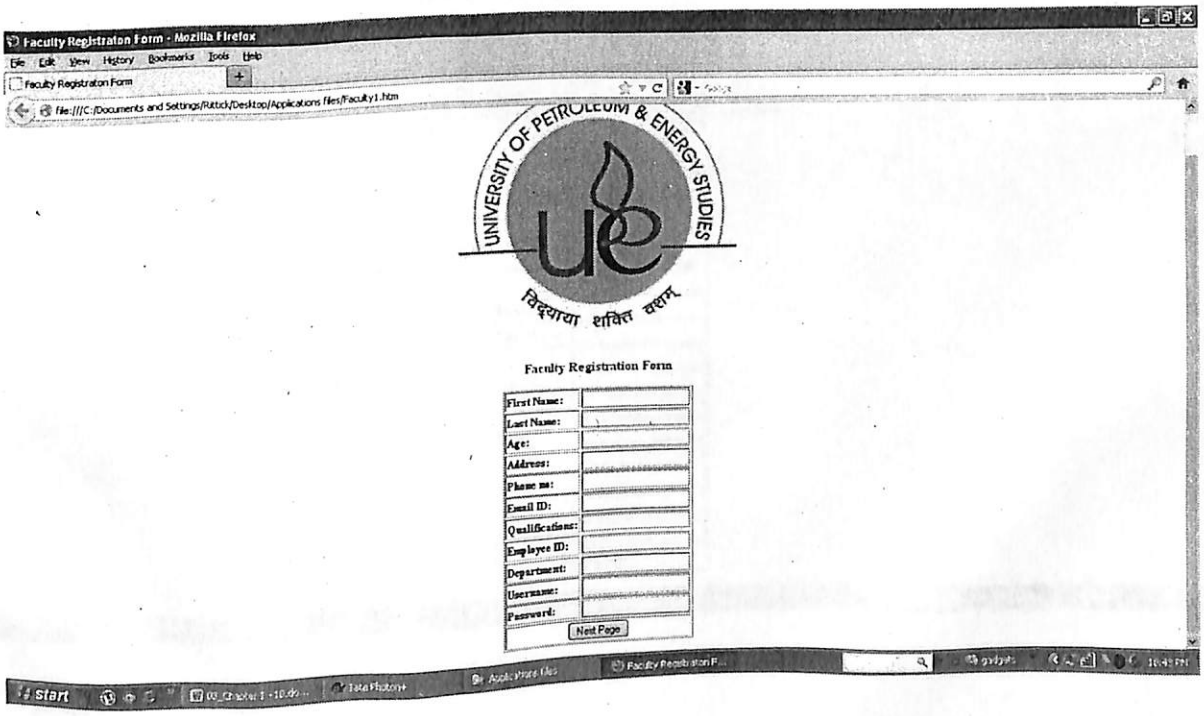
  Head First, PHP and MySQL

APPENDIX – SAMPLE SCREEN PRINTS

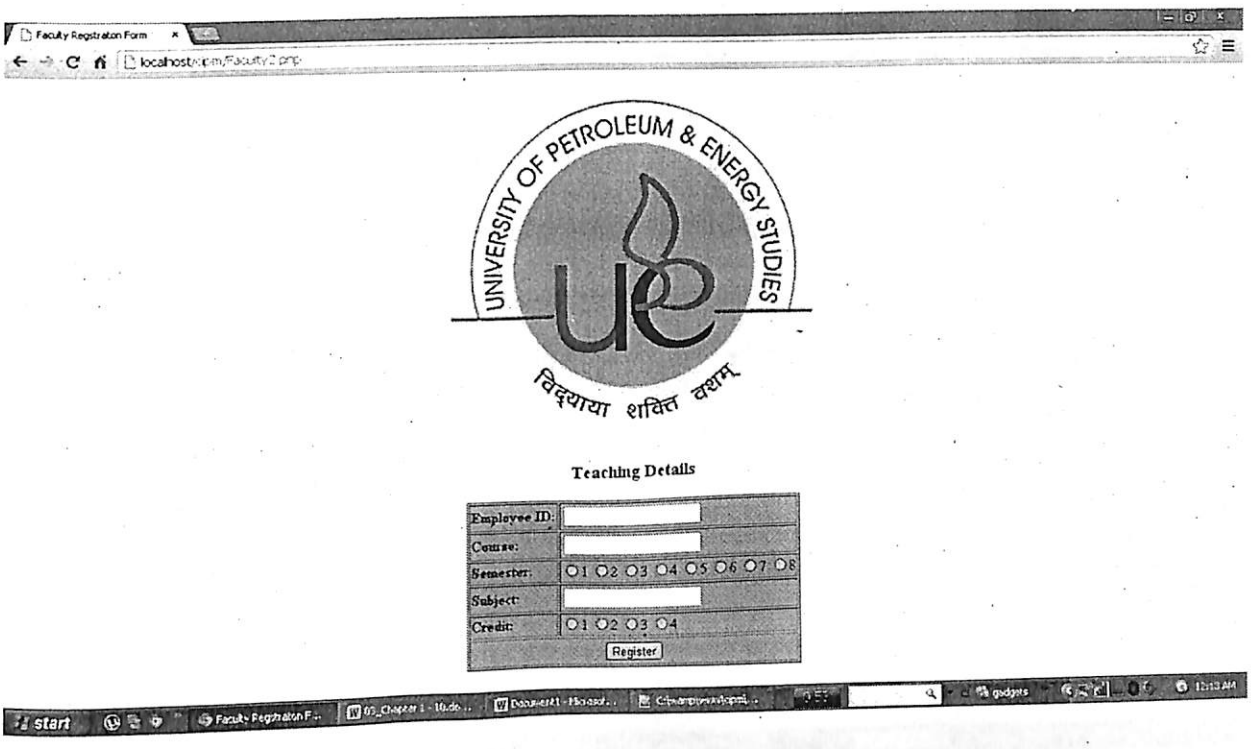
1. Welcome Screen



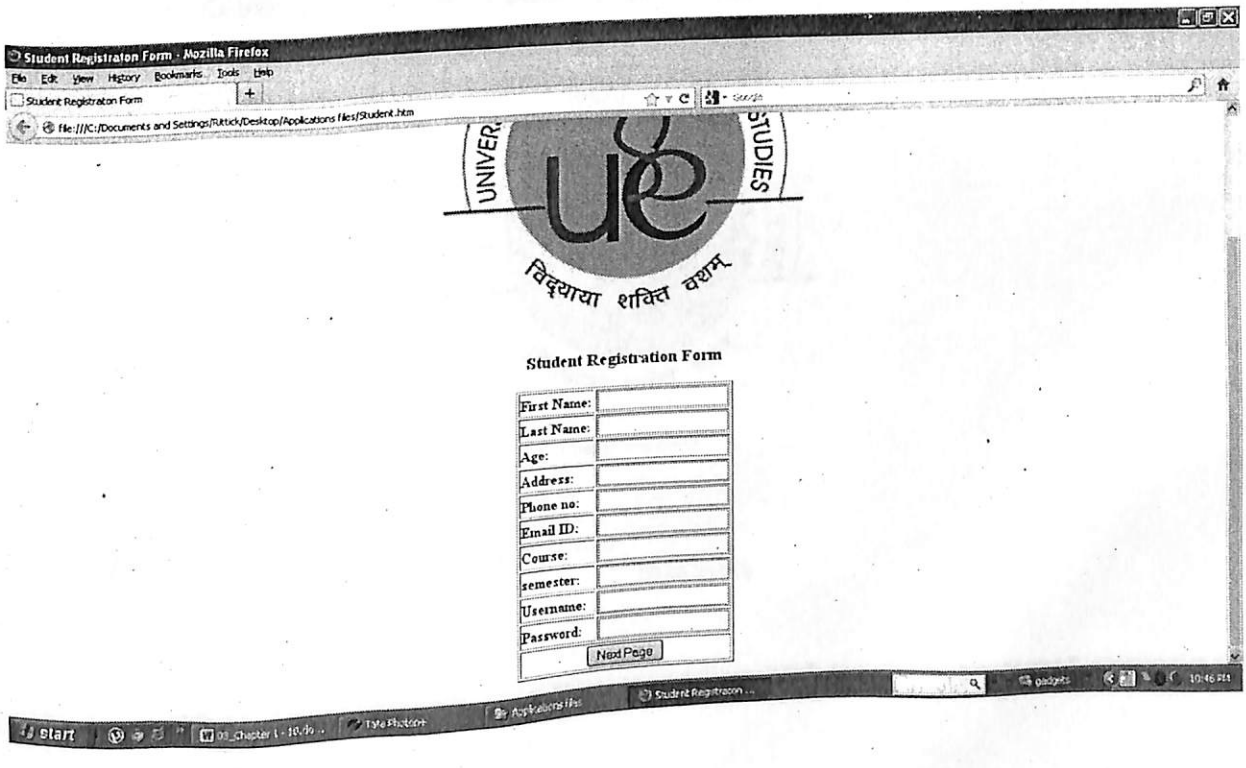
2. Faculty Registration Screen 1



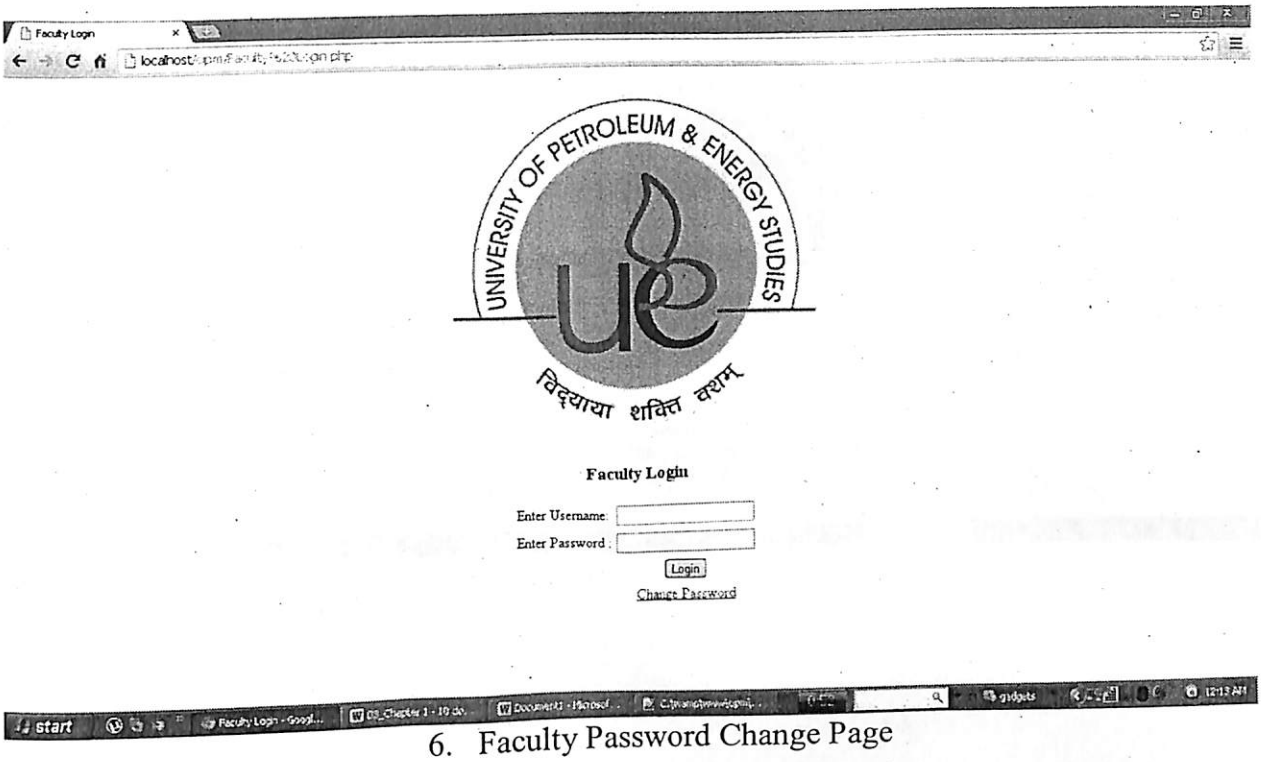
3. Faculty Registration Screen 2



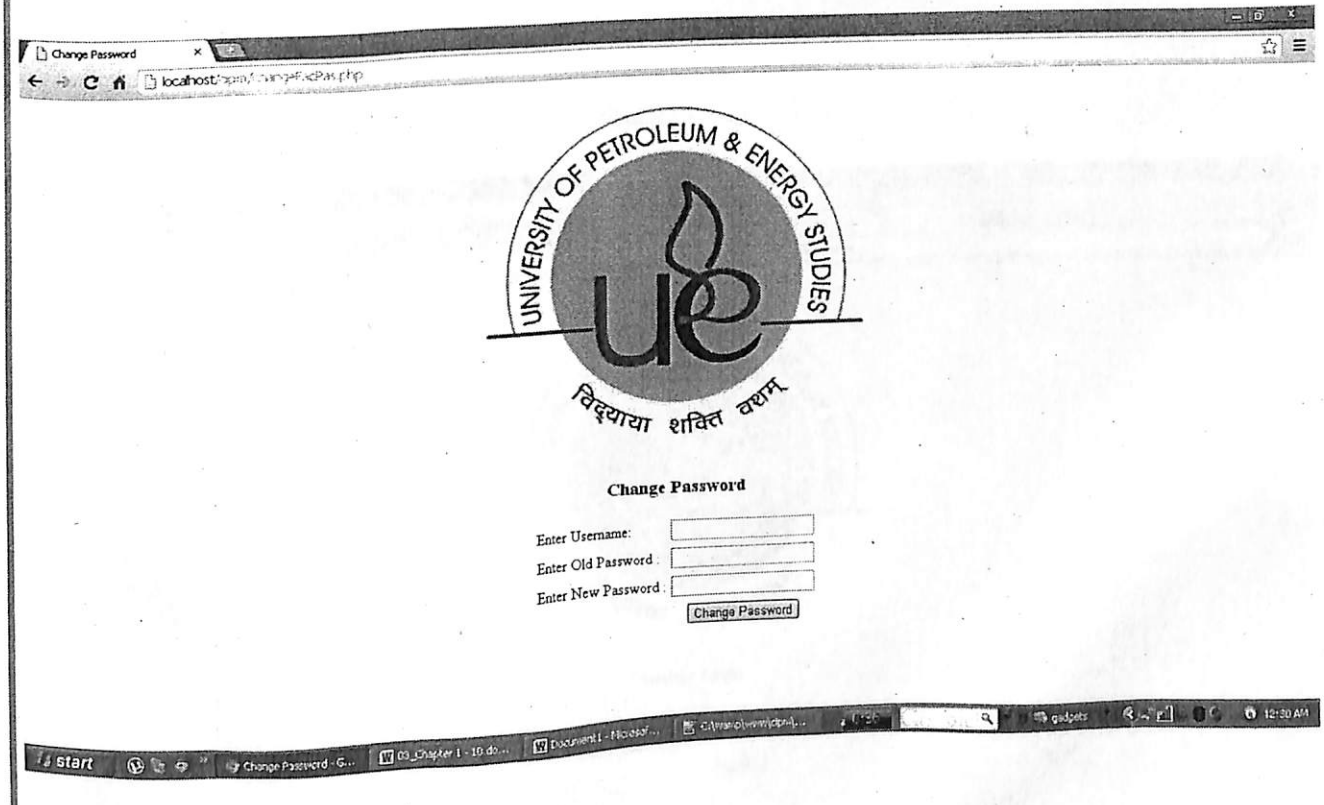
4. Student Registration Screen



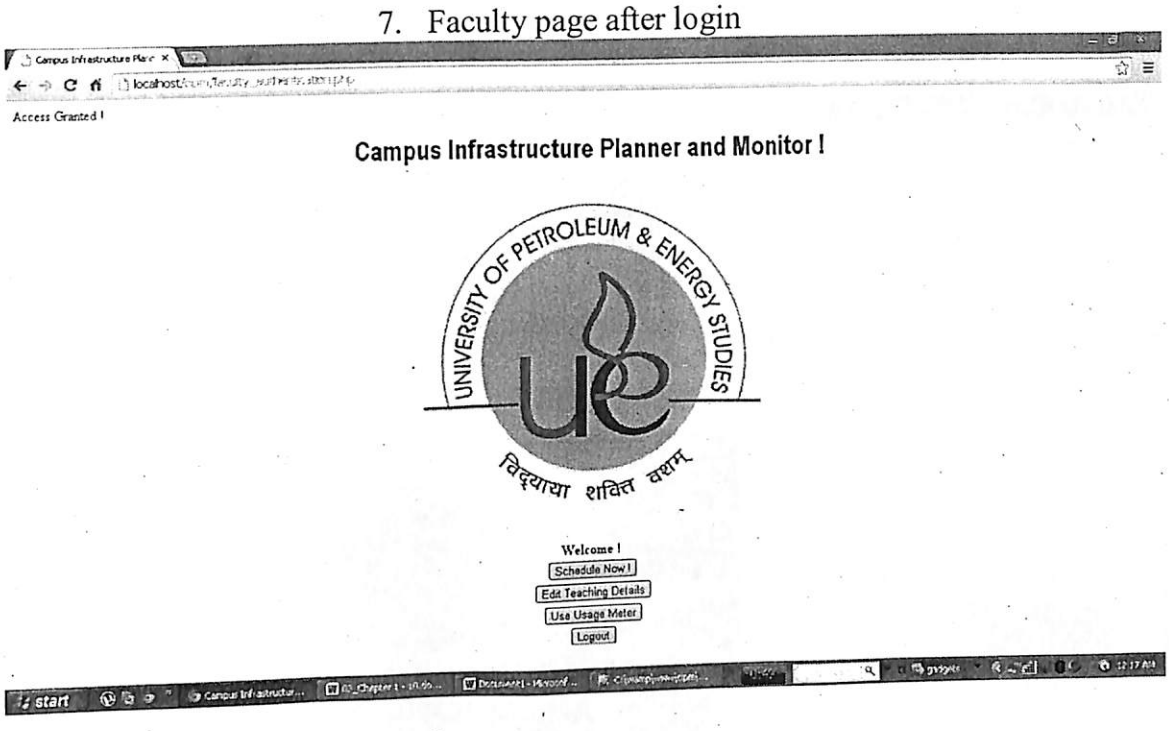
5. Faculty Login Page



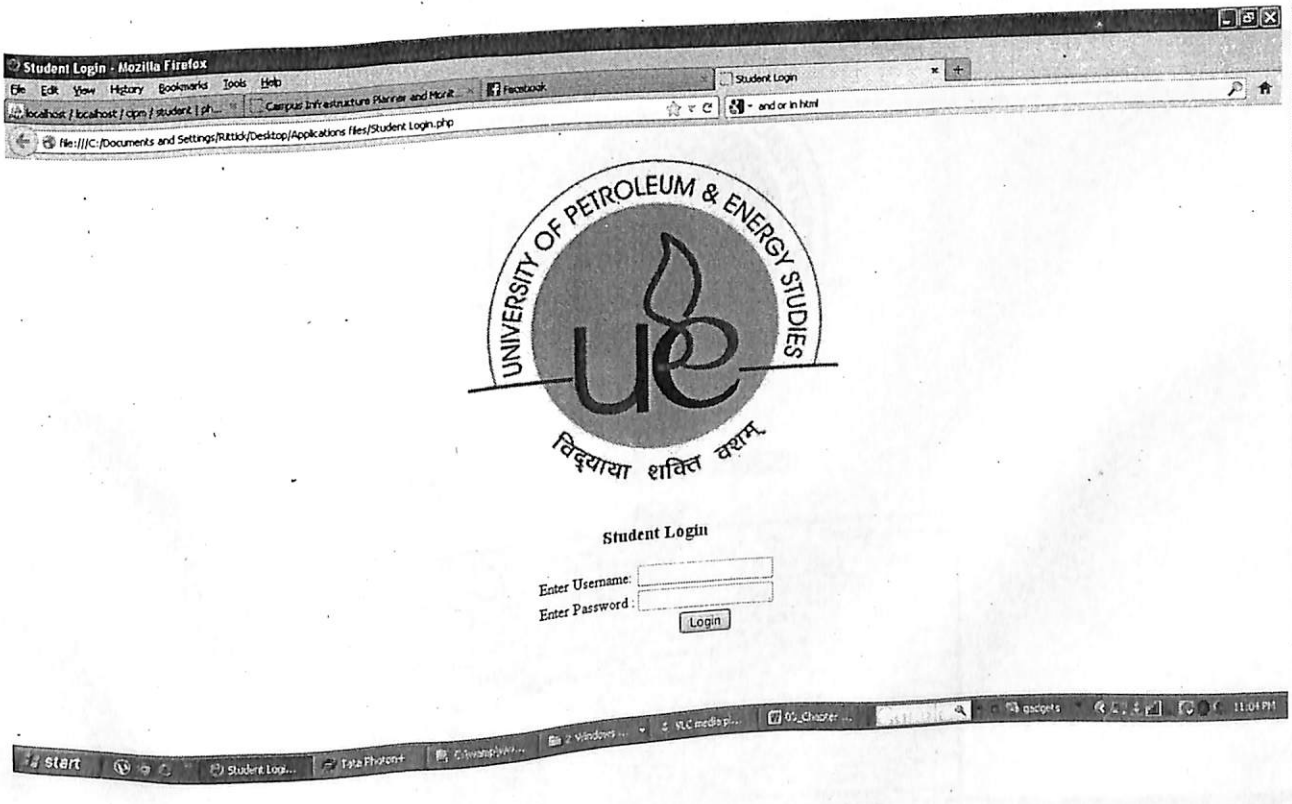
6. Faculty Password Change Page



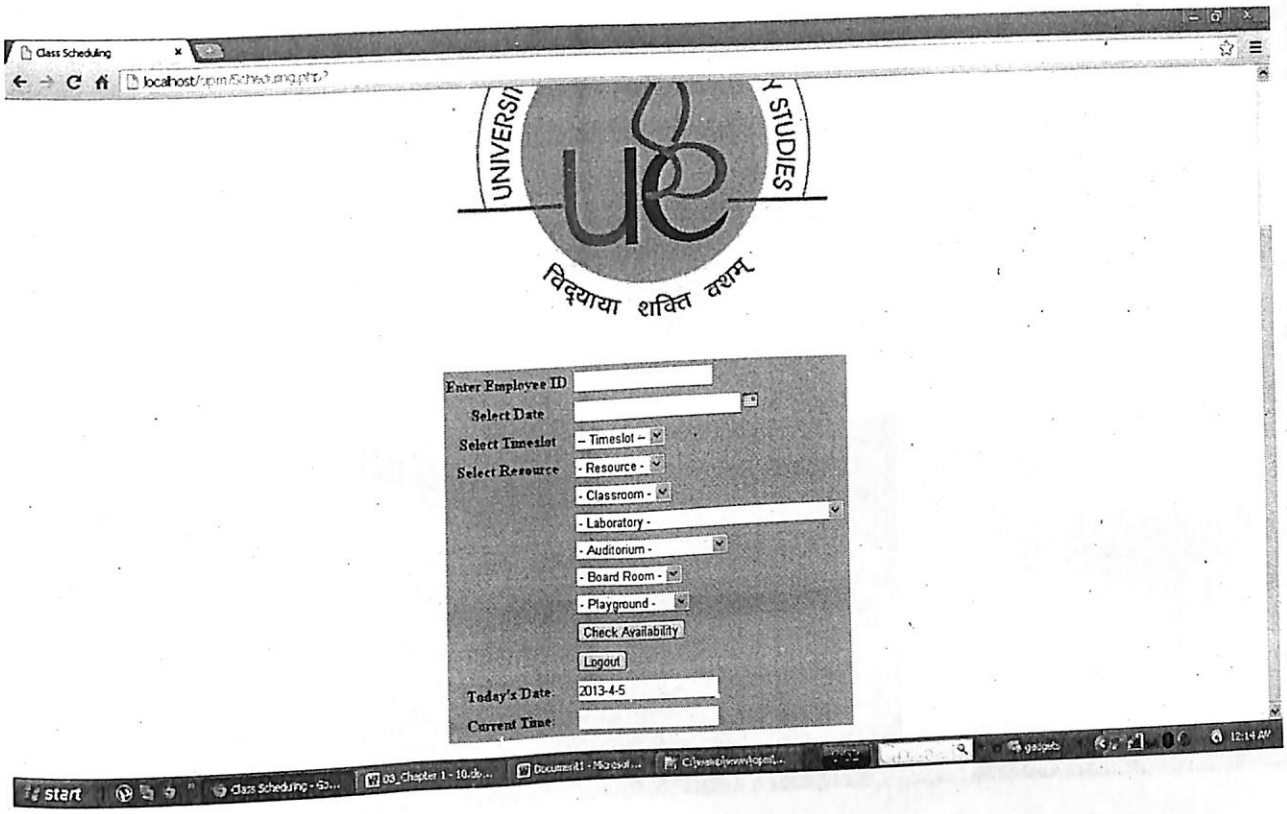
7. Faculty page after login



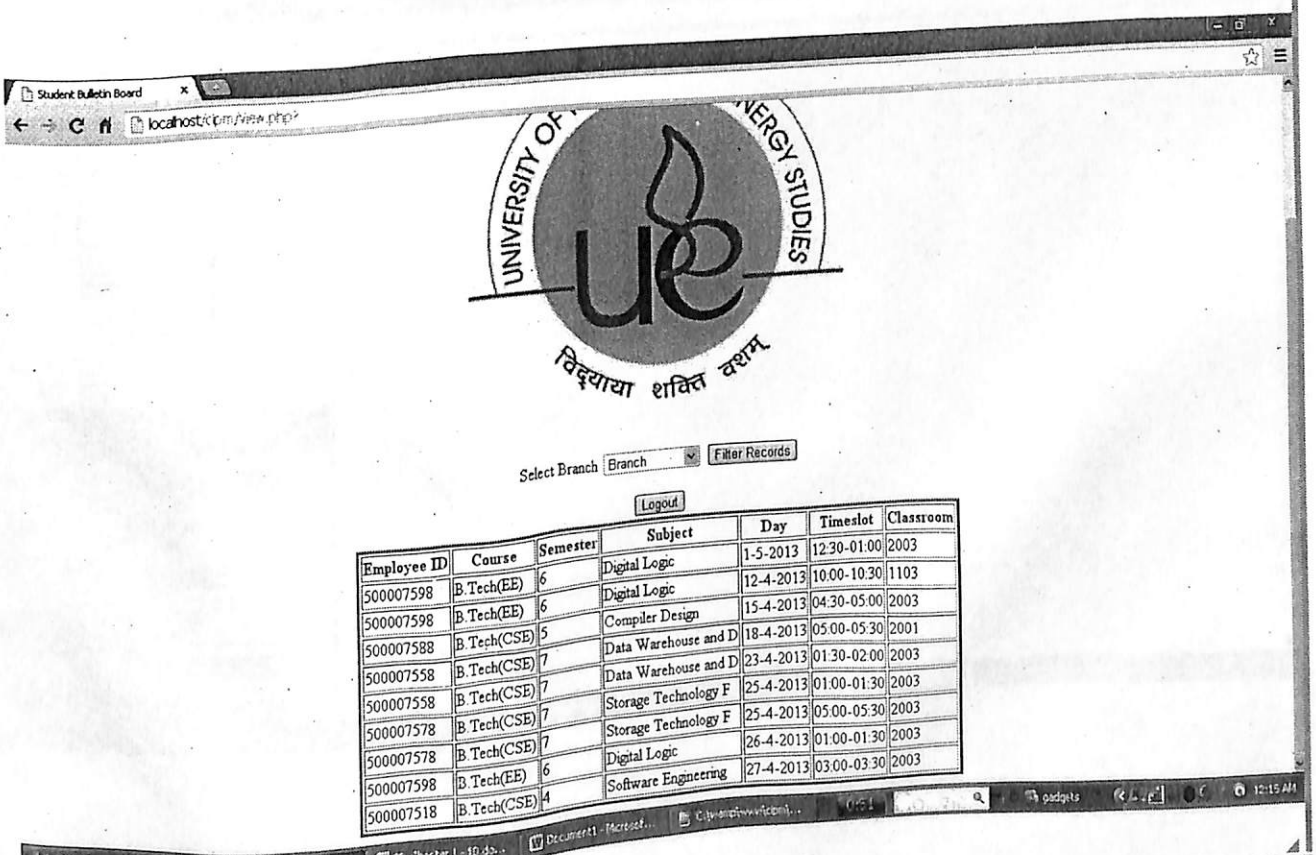
8. Student Login Page



9. Scheduling Page

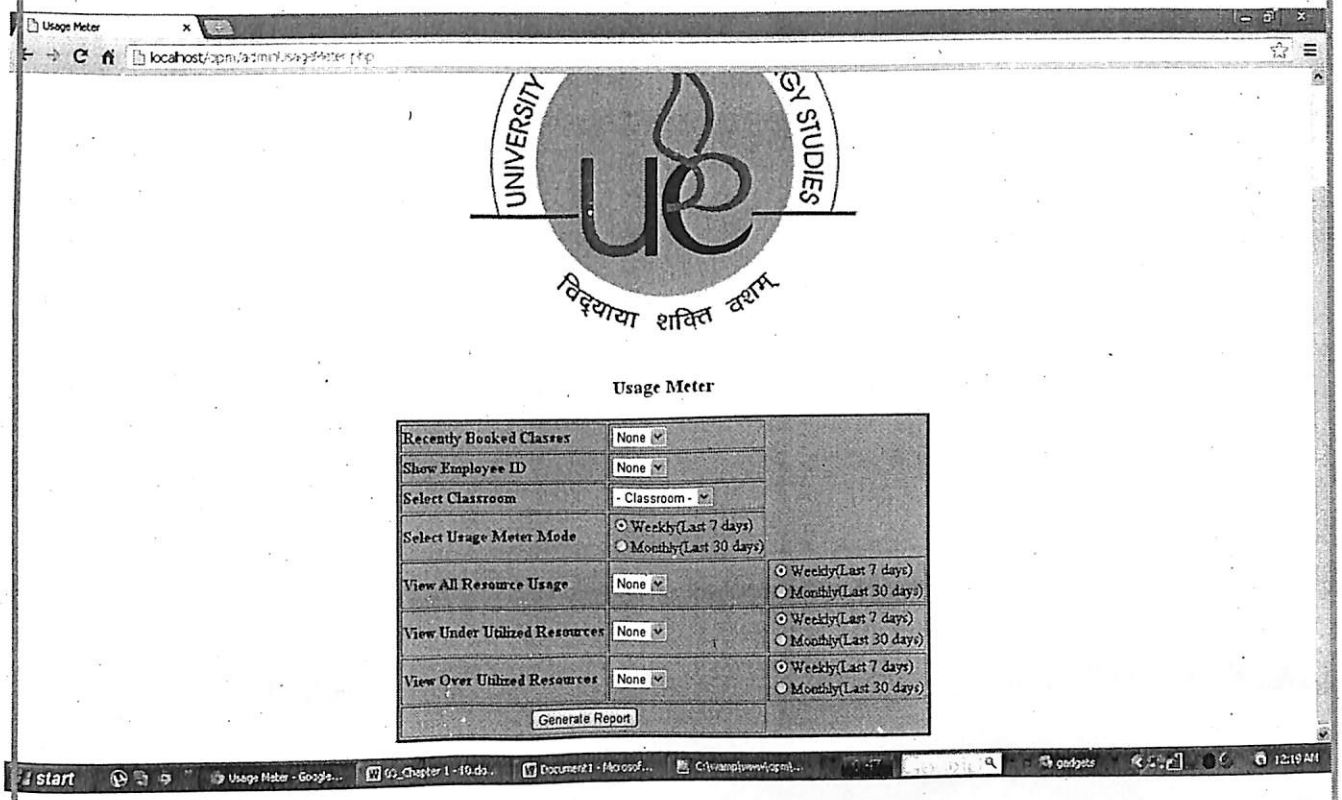


10. Students Bulletin Board View

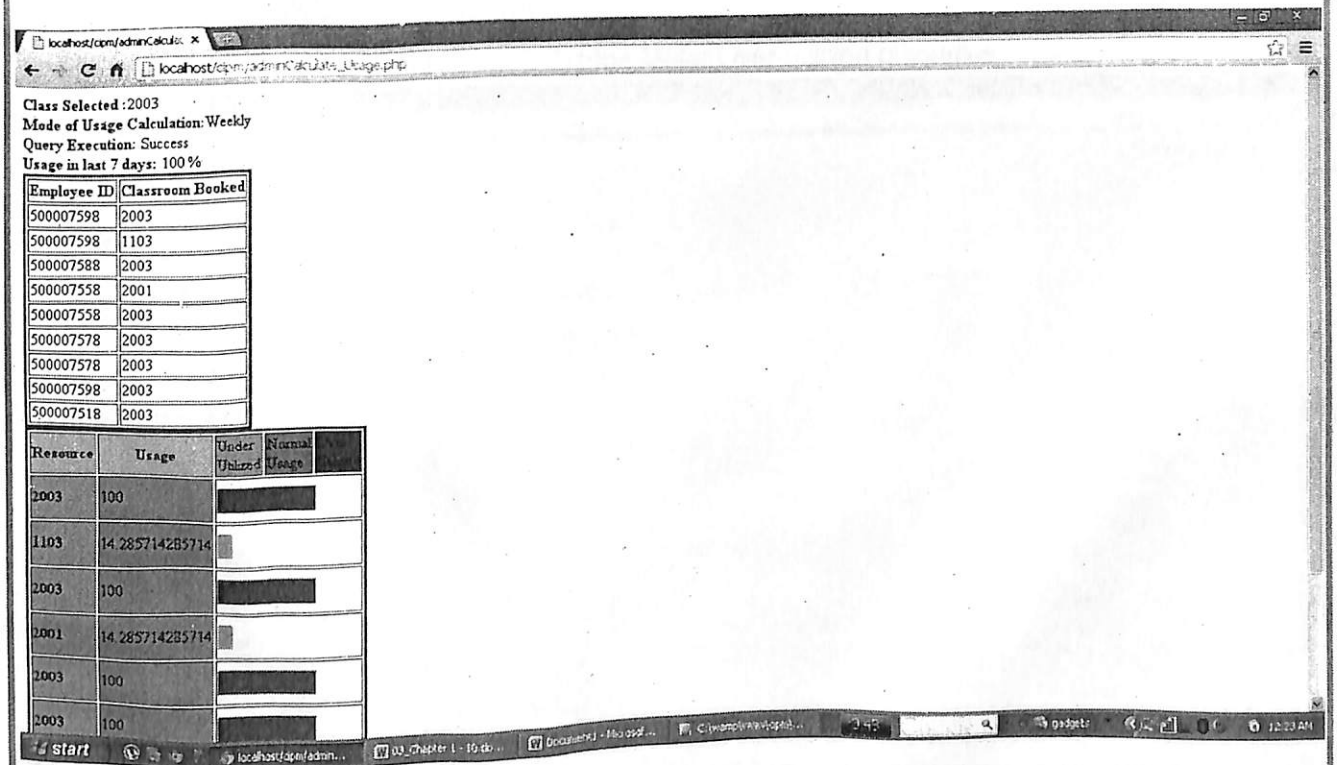


Employee ID	Course	Semester	Subject	Day	Timeslot	Classroom
500007598	B.Tech(EE)	6	Digital Logic	1-5-2013	12:30-01:00	2003
500007598	B.Tech(EE)	6	Digital Logic	12-4-2013	10:00-10:30	1103
500007598	B.Tech(EE)	6	Compiler Design	15-4-2013	04:30-05:00	2003
500007588	B.Tech(CSE)	5	Data Warehouse and D	18-4-2013	05:00-05:30	2001
500007558	B.Tech(CSE)	7	Data Warehouse and D	23-4-2013	01:30-02:00	2003
500007558	B.Tech(CSE)	7	Storage Technology F	25-4-2013	01:00-01:30	2003
500007578	B.Tech(CSE)	7	Storage Technology F	25-4-2013	05:00-05:30	2003
500007578	B.Tech(CSE)	7	Digital Logic	26-4-2013	01:00-01:30	2003
500007598	B.Tech(EE)	6	Software Engineering	27-4-2013	03:00-03:30	2003
500007518	B.Tech(CSE)	4				

11. Usage Meter



11.1 Usage Meter Output Example: All Resources

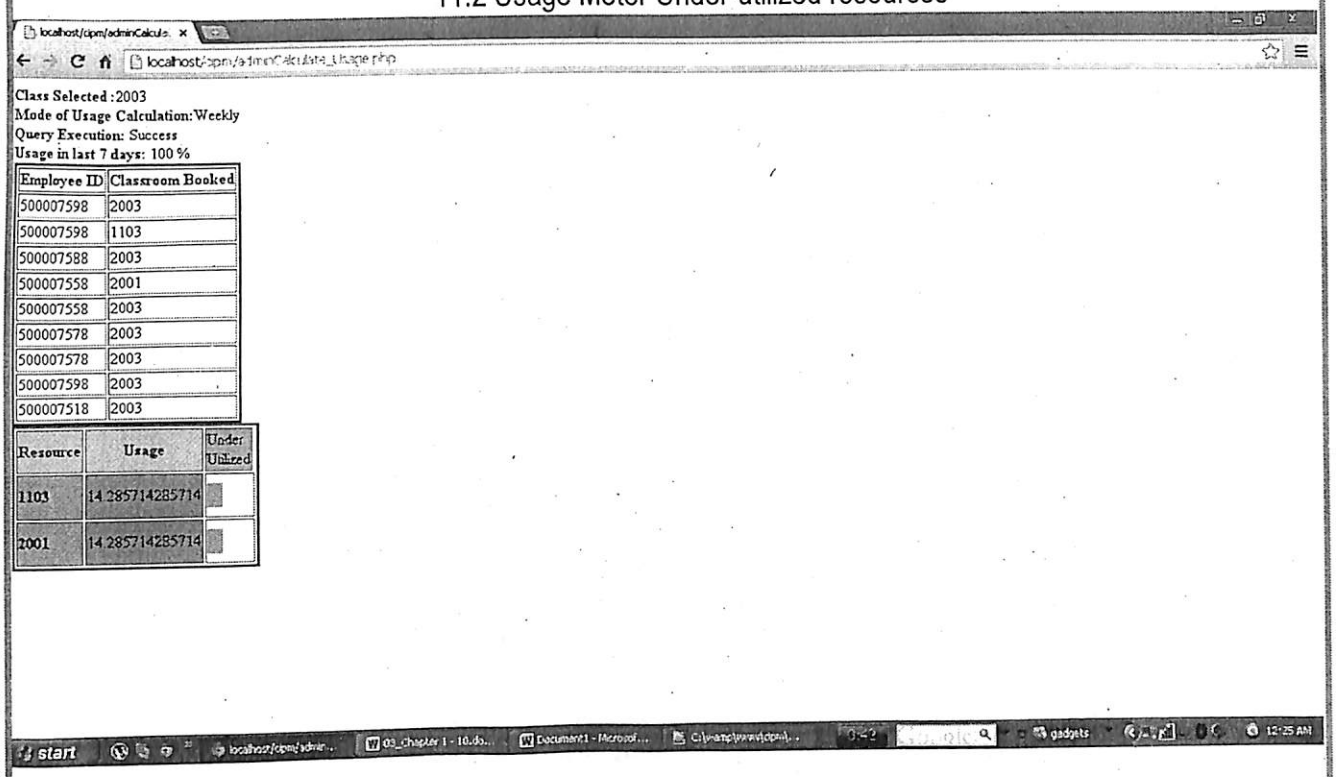


Class Selected :2003
Mode of Usage Calculation:Weekly
Query Execution: Success
Usage in last 7 days: 100 %

Employee ID	Classroom Booked
500007598	2003
500007598	1103
500007588	2003
500007558	2001
500007558	2003
500007578	2003
500007578	2003
500007598	2003
500007518	2003

Resource	Usage	Under Utilized	Normal Usage	Over
2003	100			
1103	14.285714285714			
2003	100			
2001	14.285714285714			
2003	100			
2003	100			

11.2 Usage Meter Under-utilized resources

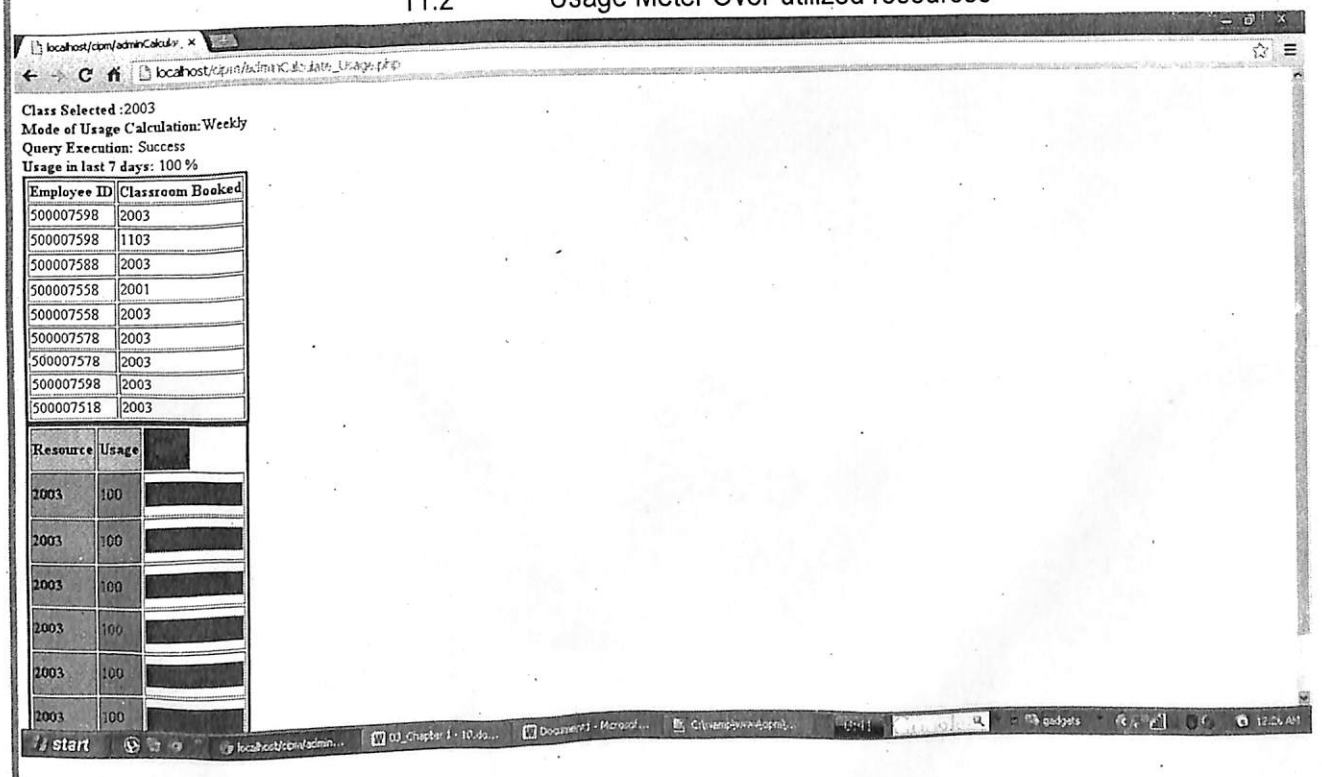


Class Selected :2003
Mode of Usage Calculation:Weekly
Query Execution: Success
Usage in last 7 days: 100 %

Employee ID	Classroom Booked
500007598	2003
500007598	1103
500007588	2003
500007558	2001
500007558	2003
500007578	2003
500007578	2003
500007598	2003
500007518	2003

Resource	Usage	Under Utilized
1103	14.285714285714	
2001	14.285714285714	

11.2 Usage Meter Over-utilized resources

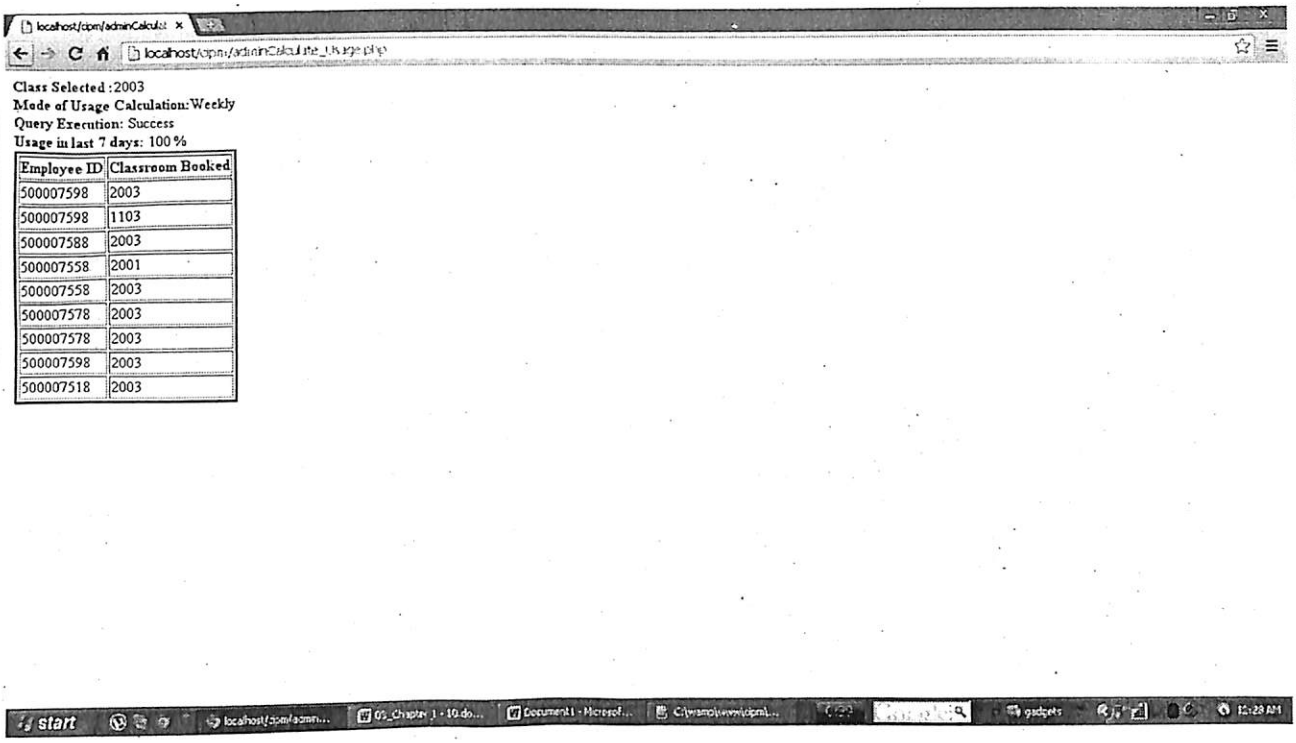


Class Selected :2003
Mode of Usage Calculation:Weekly
Query Execution: Success
Usage in last 7 days: 100 %

Employee ID	Classroom Booked
500007598	2003
500007598	1103
500007588	2003
500007558	2001
500007558	2003
500007578	2003
500007578	2003
500007598	2003
500007518	2003

Resource	Usage
2003	100
2003	100
2003	100
2003	100
2003	100
2003	100

11.4 Usage Meter for Particular Resource and Previous Schedules



Class Selected :2003
Mode of Usage Calculation: Weekly
Query Execution: Success
Usage in last 7 days: 100 %

Employee ID	Classroom Booked
500007598	2003
500007598	1103
500007588	2003
500007558	2001
500007558	2003
500007578	2003
500007578	2003
500007598	2003
500007518	2003