

**AUTOMATIC ROUTINE MANAGEMNET SYSTEM**

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This Report Presented in Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science in Computer Science and Engineering.

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**DHAKA, BANGLADESH**

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## **APPROVAL**

This Project titled “Automatic Routine Management System”, submitted by Md. Imran Hossain to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 21 September 2020.

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## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Mr. Mohammad Jahangir Alam, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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## **ABSTRACT**

This project name is “Automatic Routine Management System”. This is a web application and online platform. This project mainly focusses on creating automatic class routines with teacher’s requirements. This project has mainly two parts or two panel 1. Admin panel & 2. Student or User panel. In admin panel we get some information like courses information, teacher’s information, rooms information etc. We can Update, Delete & Add this information’s. There have teacher’s requirement for creating class routine and semester wise course offer distribution for teacher’s. We can update and view all this field in admin panel. After that we made a class routine using all of this field. In another panel is user panel. In this part we get all of information about course, teacher’s and rooms. In this panel we can see all this information & routine. There is no update, add and delete option in this panel. Both of this panel, we get routine separate by days, teacher’s and sections wise. There have day routine, section routine and teacher routine. We create this application for front-end using html5, css3, JavaScript and for back-end using php. We create this application for reduce the complexity of routine creation manually, to reduce time to solve a problem and to reduce routine version.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

**Automatic Routine Management System** is web application and online platform for making an automatic class routine with teacher's requirements.

### 1.2 Motivation

The Purpose of Developing This Software Project Is to Fully Automate. This Software Is Capable of Showing Room, Time, Teacher Name, Subject Name of These Routine.

That Is Very Helpful for Maintenance Class Schedule Creating. All The Data Such as Room, Time, Teacher Name, Subject Name Will Be Stored as A Track Record.

The System Will Be Capable to Show the Updated Routine Automatically.

Whenever The Routine Updates, Then The Previous Version Automatically Will Be saved in database and The New Version Will Be Online.

### 1.3 Objectives

Manually Routine Management Is Our Problem.

Because We Face the Many Problem in This System. We Are Going to Solve It by Automatic Routine Management

- To Reduce the Complexity of Routine Creation Manually.
- To Create a User-Friendly Interface.
- To Reduce Time to Solve a Problem.
- To Reduce Routine Version.

## **1.4 Expected Outcome**

Our Expected Outcome is:

- Faster Than Manual Process.
- User Friendly.
- Flexible.
- Notified New Routine Version.
- Complaint Box.

## **CHAPTER 2**

### **BACKGROUND**

#### **2.1 Introduction**

Automatic Routine Management System is a web application that can be provided an easy working experience to teacher's, admin and students also. This application is platform where admin and teachers are work collaboratively. There is a triangle relationship in the application.

Here admin can give the course to the teacher's and the teacher also can choose their customized time. The teacher can submit their weekly holy day's and there counseling time. Then admin also can give any slot free from the routine. Then they can create the final routine automatically. But there is no individual roll for the students. They cannot give any requirement to create the routine. But there is a way to give them complain in the out box. The teachers have the opportunity to give their requirement. They can choose maximum two off day and two-day counseling hour. There are a easy assign technique to offer teacher's course requirement.

The admin can also update the requirements and can give new requirements. Routine committee select the class hour and other requirement. The routine creates day wise and time slot of teacher and sections.

#### **2.2 Related Works**

There are many applications and many works are available in the market and DIU but not similar to our system. These applications are android, web or any other systems. But they do not create automatic class routine. But the applications show the routine which are created by manually. These are:

DIU Student Portal: Where we can see the class routine but the routine created by manually.

DIU Class Routine: Here also the same features like student portal but our application gives the different experience and features.

## **2.3 Comparative Studies**

Purpose: A part from all the available technologies and applications in university and markets. Our system is different and that can beat all these applications. Many unique features are adding in this system or application. Here teachers can submit his/her proposal or requirements. Give the requirements and offer the courses for the teachers is the unique features.

Approach: This system has built focusing on faculties and admins. Students cannot give their requirements because we built the routine by focus on day and available rooms and time.

Originally: This application is more useful for the users (students, admin and teacher) of this system. Any faculties can get facility from this system. And there were not arise any confusion about faculty and admins time table and give an accurate class routine and counseling time with their details.

## **2.4 Scope of the problem**

Most of the time it's not possible to manage or find out the teacher's requirement and class information. There are lot of problems arise when we create the class routine and counseling time. There are many applications to use against these problems but they are severer application for severer problem but our application solves these problems by combo pack solution. Our application has those all facilities to make this easier for them. So that admin or authority, the teachers and the students can use this system and get the benefit by using it.

## **2.5 Challenges**

- i. The major challenges of our application is routine management time complexity. Because it takes severer time to make a routine. We have to minimize its time complexity.
- ii. We have used core php. We have to use a framework for security reason.
- iii. This application is run in browser by using the internet connection. So, this application is not possible to use without availability of internet connection.
- iv. Another challenge for this application is to maintain and update processes.

v. Using and finding the capable database for managing and handing several admin or users requests at a time.

## CHAPTER 3 REQUIREMENT SPECIFICATION

### 3.1 Business Process Model

Business Process Modeling is a process that's way of representation and it's showing users demand and showing a business data graphically. In this modeling we can easily understand any business process or any application process. There are many topics related to in this business process modeling. Such as a context, cross function flow etc. Show in figure no 3.1

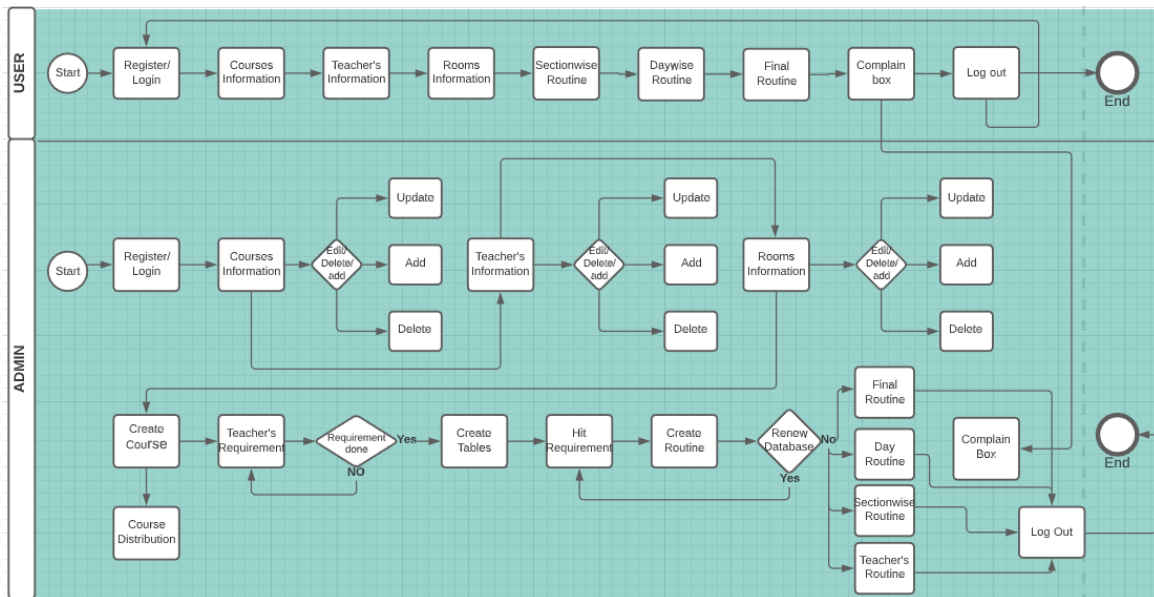


Figure 3.1: Business Process Modeling

## **3.2 Requirements Collection and Analysis:**

In a development system, it is a need to collect some data and information for developing a system from users. For Software Development Life Cycle (SDLC) it is a really important part. From this requirement collection part, we can easily understand that which information's or requirements we need to create a class routine like hardware requirement, software requirements etc. And from this analysis part we get clear ideas as well as a functional specification of a system. The major target of our system is create class routine.

### **3.2.1 Users Requirements:**

In our system the student and the teacher are users. After login to the system they are access to view final routine, day wise routine, section wise routine and teacher's routine. They are also access to view some information's. Those are courses information, rooms information and teacher's information. They are able to complain box for post any complain about this system.

- Login in User panel
- View information's
- View final routine
- View day wise routine
- View section wise routine
- View teacher's routine
- Complain box

### **3.2.2 Teacher's Requirement:**

In this system the teachers are able to access user panel. But for creating a routine we need teacher's requirement. So the admin after the login in admin panel they need to fill up teacher's requirements form. It is really important for creating a routine.

- Login in Admin Panel
- Teacher's Requirement Form



### 3.2.3 Admin Requirement:

Admin is the special user in this system. They are control or manage all of those fields. Like information's, requirements, create routines etc. After login the admin can add, edit and delete courses information, teacher's information and rooms information. They are also set teacher's requirements and create course offering and course distribution for teacher's. They can view all of this data and they can view final routine, day wise routine, section wise routine and teacher's routine. They also access in renew database option.

- Login Admin panel
- Manage all information (add, edit, delete)
- Set teacher's requirements
- Manage teacher's requirements
- Creating course offer distribution for teacher's
- Manage course offers (add, edit, delete)
- View all information's (courses, teacher's, rooms, course offering etc.)
- View all routines (day wise, section wise, teacher's)

### 3.2.4 Hardware and Software Requirements:

For using this system, we should have fulfilled some minimum software and hardware requirements and the requirement are given below.

#### 3.2.4.1 Hardware Requirement:

Table 3.2.5.1 Hardware Requirements

Computer Processor	Intel Pentium
Hard Disk (HDD)	More than 20GB
Ram	More than 512MB
Motherboard	Anyone
Internet Connections	Mobile Networks or Broadband or Wi-Fi
Monitor	Any

### 3.2.4.2 Software Requirement:

Table 3.2.5.2 Software Requirement

Browsers	Google Chrome, Firefox, Edge, Opera Mini, UC Browser, Safari
----------	---

### 3.3 Use Case Model

Use case modeling is the way of showing user interactions in the system. In a system there are many users are linked. In automatic routine management system have two users one is students and teachers and second one is admin. They are linked all the activates in this system. And they are playing individual role in our system.

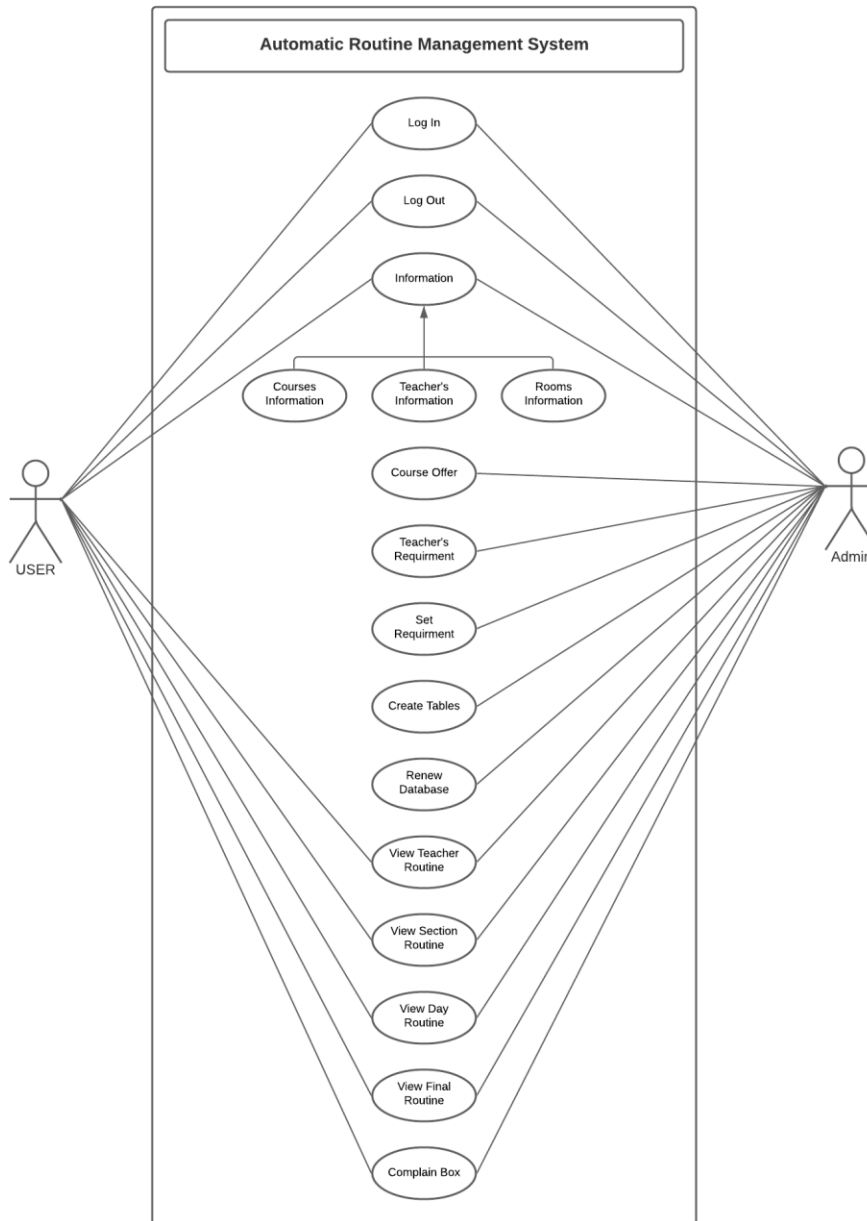


Fig: 3.3 Use Case Model

### 3.3.1 Use Case Model Descriptions

Table: 3.3.1.1 for Sign up

Case id	1
Statement Name	Sign Up
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	User can register successfully
Primary_Actors	User (students, teachers), Admin
Secondary_Actors	No one
Precondition	Nothing
Post condition	Nothing

Table: 3.3.1.2 for Sign in Use

Case id	2
Statement Name	Signin
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	Users can sing in successfully
Primary_Actors	Users (student, teacher), Admin
Secondary_Actors	No one
Precondition	Registration page
Post condition	User Home page

Table: 3.3.1.3 for Course information

Case id	3
Statement Name	Course information
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	Admins & Users both are view courses information but if needed only admins can add data, edit data and delete data courses information's.
Primary_Actors	Admins & Users
Secondary_Actors	No one
Precondition	Log in successfully
Post condition	Teacher's information

Table: 3.3.1.4 for Teacher's information

Case id	4
Statement Name	Teacher's information
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	Admins & Users both are view teacher's information but if needed only admin can add, edit and delete teacher's information's.
Primary_Actors	Admins & Users
Secondary_Actors	No one
Precondition	Log in successfully
Post condition	Rooms information

Table: 3.3.1.5 For Rooms information

Case Id	5
Statement Name	Rooms information
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	Admins & Users both are view rooms information but if needed only admins can add data, edit data and delete data rooms information's.
Primary_Actors	Admins & Users
Secondary_Actors	No one
Precondition	Log in successfully
Post condition	Teacher's Requirement

Table: 3.3.1.6 For Teacher's Requirement

Case Id	6
Statement Name	Teacher's Requirement
Created By	Imran Hossain
Creation date	18-09-2020
Descriptions	Fill the teacher's requirement form for creating class routine with teacher's requirements
Primary_Actors	Admins
Secondary_Actors	No one
Precondition	Login successfully
Post condition	Course offering

Table: 3.3.1.7 For Course offering

Case id	7
Statement Name	Course offering
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	Course distribution for teacher's for creating routine
Primary_Actors	Admins
Secondary_Actors	No one
Precondition	Login successfully
Post condition	Create Tables

Table: 3.3.1.8 For Create Tables

Case id	8
Statement Name	Create Tables
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	Create Tables for sections, day and teacher data tables for creating routine
Primary_Actors	Admins
Secondary_Actors	No one
Precondition	Teacher's Requirement
Post condition	Set Requirements

Table: 3.3.1.9 For Set requirements

Case id	9
Statement Name	Set requirements
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	Set all of the teacher's requirements with course distribution.
Primary_Actors	Admins
Secondary_Actors	No one
Precondition	Create Tables
Post condition	Create Routine

Table: 3.3.1.10 For Create Routine

Case id	10
Statement Name	Create Routine
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	If create tables and set the requirements are done. Click create routine for creating routine.
Primary_Actors	Admins
Secondary_Actors	No one
Precondition	Set Requirements
Post condition	Renew Database



Table: 3.3.1.11 For Renew Database

Case id	11
Statement Name	Renew Database
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	For renew database, at first you must need to create routine. If something is wrong then renew database and again create routine.
Primary_Actors	Admins
Secondary_Actors	No one
Precondition	Create Routine
Post condition	View Final Routine

Table: 3.3.1.12 For View Final Routine

Case id	12
Statement Name	View Final Routine
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	After created routine you can view final routine.
Primary_Actors	Admins
Secondary_Actors	Users
Precondition	Create routine
Post condition	Log out

Table: 3.3.1.13 For View Day wise Routine

Case id	13
Statement Name	View Day wise Routine
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	You can view day wise routine
Primary_Actors	Admins
Secondary_Actors	Users
Precondition	Create routine
Post condition	Log out

Table: 3.3.1.14 For View Section Wise Routine

Case id	14
Statement Name	View Section wise Routine
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	You can view section wise routine
Primary_Actors	Admins
Secondary_Actors	Users
Precondition	Create routine
Post condition	Log out

Table: 3.3.1.15 For View Teacher Wise Routine

Case id	15
Statement Name	View teacher wise Routine
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	You can view teacher wise routine
Primary_Actors	Admin
Secondary_Actors	User
Precondition	Create routine
Post condition	Log out

Table: 3.3.1.16 For Log out

Case id	16
Statement Name	Log out
Created By	Imran Hossain
Creation Date	18-09-2020
Descriptions	Log out
Primary_Actors	Admin & User
Secondary_Actors	No one
Precondition	Nothing
Post condition	Nothing

### 3.4 Logical Data Model

Logical Data Modeling represented data's as much as details possible. It's including all the entities and relationships between them. It's show primary key for each entity is specified. Our system has several entities such as Course information, teacher information, room table, lab room table, requirement table, register user, final routine etc.

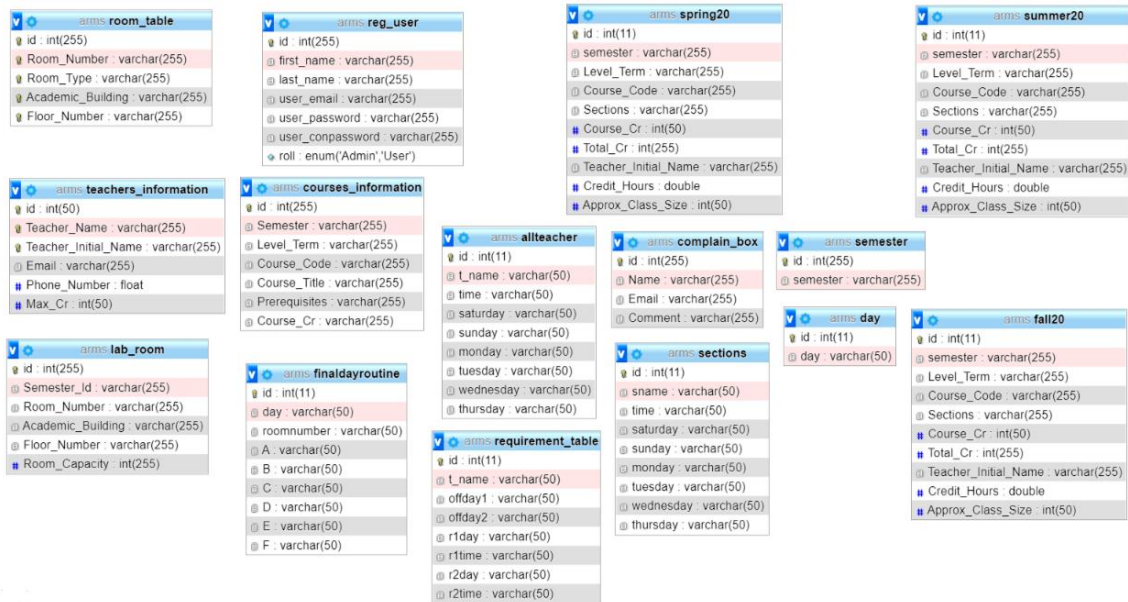


Fig: 3.4 Logical Data Model

### 3.5 Design Requirements

Design is one of the part of GUI (graphical user interface). Design a user-friendly layout is a necessary for taking user inputs. This application process understanding is important for user. That's why we use design. We use design for easily understand the full process. In our system we use frontend and backend both. In front-end design we use HTML5, CSS3 and JAVASCRIPT for creating a user friendly layout. We created a navigation bar for easily understand our process and easily find user requirements. In back-end part we use HTML5 and CSS3 for user-friendly layout. We try to keep our design simple and user friendly.

## **CHAPTER 4**

### **DESIGN SPECIFICATION AND SYSTEM DESIGN**

#### **4.1 Front end design:**

Automatic Routine Management system structured by markup language. When we design our web application, we collect a clear vision from our approximate user for easy graphical user interface and their understanding. Bellow we gave our used languages name and their description...

- HTML
- CSS3
- Bootstrap
- JavaScript

##### **4.1.1 HTML**

For making layout of a website we used HTML markup language.

HTML means Hypertext Markup Language. This is program that can be marge with server then html makes enjoyer layouts where different visible texts, visuals, buttons are placed. By using these buttons enjoyer can do definite direction. In web application HTML tags are initiated by less than (<) operator and finish by greater than (>) operator. There are given an example :<body>....</body>.

##### **4.1.2 CSS3**

The modern HTML helper is CSS or cascading style sheet. CSS adds rules on different HTML tags and Html creates layouts. This is usually recycled for stylish design. CSS are recycled in a web application in different way. These are...

- Inline CSS
- Internal CSS
- External CSS

### **4.1.3 Bootstrap**

Bootstrap is most popular and most useful HTML framework or library. This is usually use for considerable pre-designed slider, buttons, form, layouts, bar etc. Every formation can be completed easily right time by applying bootstrap. That reason the repeated modernize and bolster of bootstrap is welcome a popular framework in the way.

### **4.1.4 JavaScript**

There is a web programming language. This language is used for making a web page more dynamic for the enjoyer which is called JavaScript. By using JavaScript, this is desirable to organize slider, button and animation in website. Current JavaScript is higher prominent. The developers are most use the JavaScript framework and grow their community very well.

## **4.2 Backend Design:**

The most relevant part of our software is Back-end. Admin and another routine faculty member can access the Back-end. Personal dashboard is exclusive and that can be entried using their password. No one can give any changes without permission to others private data or property. Now security is the most relevant thing to solution here. We create the final routine by an algorithm witch is giving a unique Automatic Routine Management System. We use MySQL database for the storing and proving data to web application. These are given bellow:

- PHP
- MySQL

### **4.2.1 PHP**

Hypertext Pre Processor in sort PHP which is the used in a web technology for creating web applications. In 1995 PHP become famous amid web developers everywhere in this earth. This is very accessible web programming language in web automation. Nowadays, big range of websites everywhere in this earth are using PHP for prepare web applications. It is a simple language. And for that reason, it is runs from the server efficiently. The another reason is, server cost for hosting PHP application is low-priced than others. Day by day updates, communities, and participation have prepare this program very smooth and enjoyer.

### **4.2.2 MySQL**

The highest beloved and open sources database for the web application is MySQL.

Everyone can handle this database to their applications. It can marge with every server site languages like: python, c++, php etc.

## **4.3 Interaction Design and UX**

An application and user between relationship described by the Interaction designs. A user marge is very relevant for a web app and android app. The enjoyer marge is depending on software or app gets reputation in the market. Almost all users have no prior technical knowledge. on the specific application. Smart clear design of layout is always recommended. So that the users can easily access to several menus, option or features of application. In mind it is need to design an application properly. Good design can lead an app to create more income in the market. In this application we tried the best to make simple accessible layout for the user so that, they can find out their required features within small moment. User experience design is the most demanding part for a designer. All-time they need to attract on the UX for using web program and which way they amuse with the application. We kept very easy UX for the user.

## 4.4 Entity Relationship Diagram

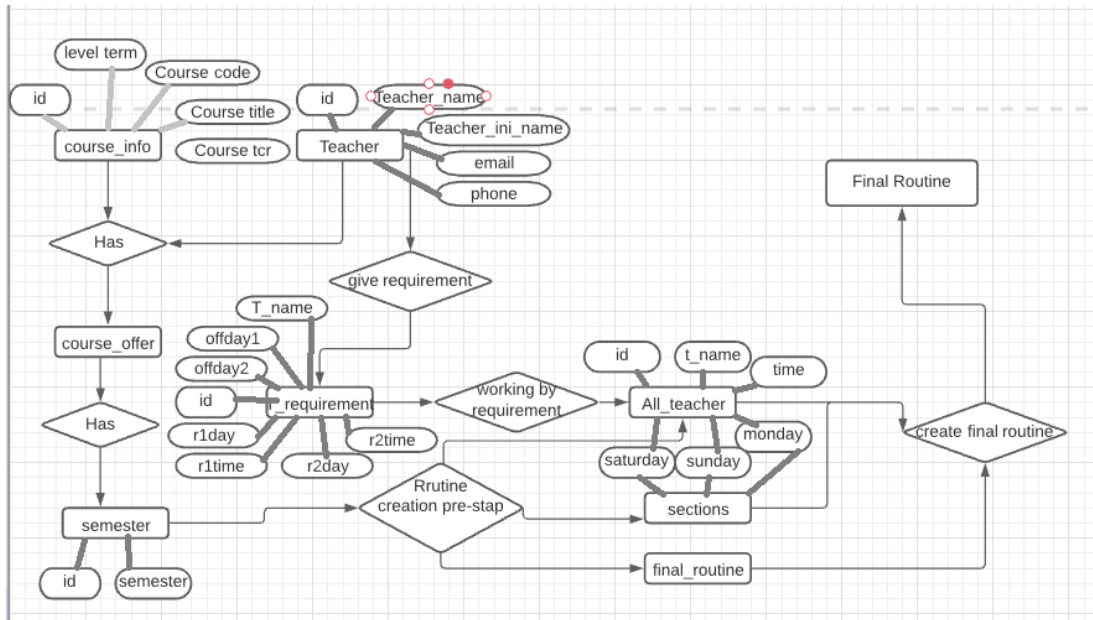


Fig: 4.4 Entity Relationship Diagram

## 4.5 Data Flow Diagram

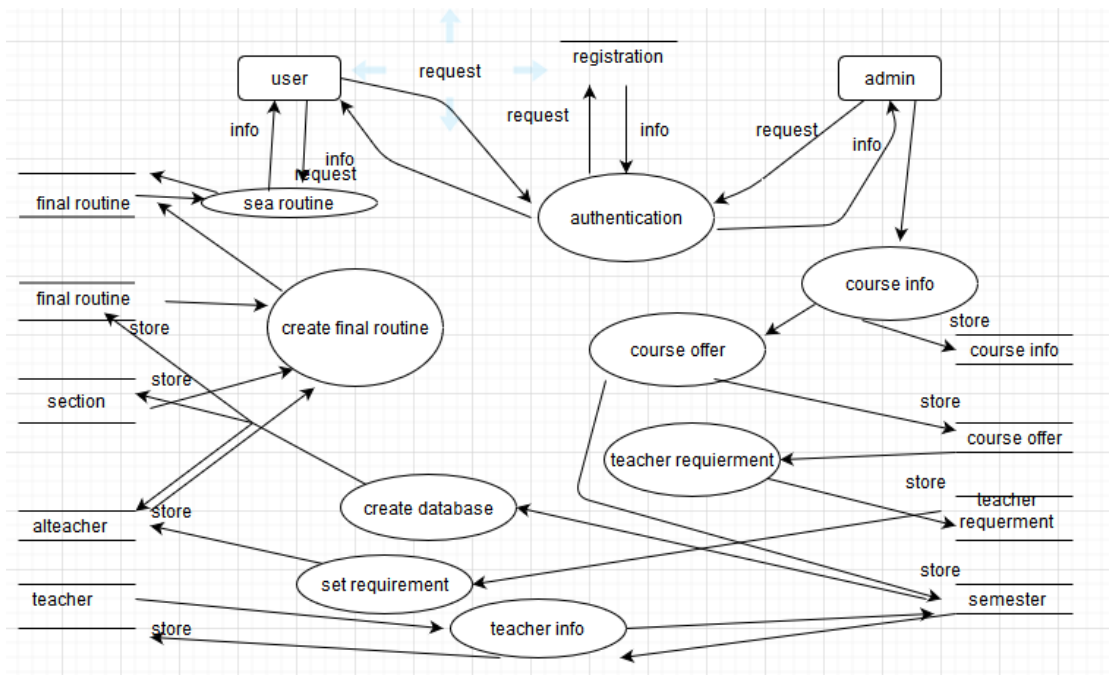


Fig: 4.5 Data Flow Diagram



## **4.6 Implementation Requirement**

For making the web program our team have to collect distinct types of software or application like text editor like: Visual Studio Code, a browser like: Chrome and used to installing local php executing server like: Xampp. And git is right to be installed in our program for managing source code.

# **CHAPTER 5 IMPLEMENTATION & TESTING**

## **5.1 Implementation of Database**

Database is the processing system that is used for saving our project or system data and delivered that data to the users according to their request. Database is a data storing process. In our system we use PHP MySQL for storing our data.

- ❖ Installing DBMS
- ❖ Configure DBMS
- ❖ It's running in a system
- ❖ Database Creation
- ❖ Database Table Creation

## **5.2 Implementation of front-end Design**

In our system there is front-end and back-end both. In front-end design there is a nice and user-friendly layout. There is some menus and shortcut button or option for easily create a routine. In front-end design we have a navigation bar for easily understand the process and easily create a routine and view the routine. We have navigation bar in both panel user panel and admin panel. You can create a routine in our application simple clicking a mouse for the front-end design.

## 5.2.1 User Login

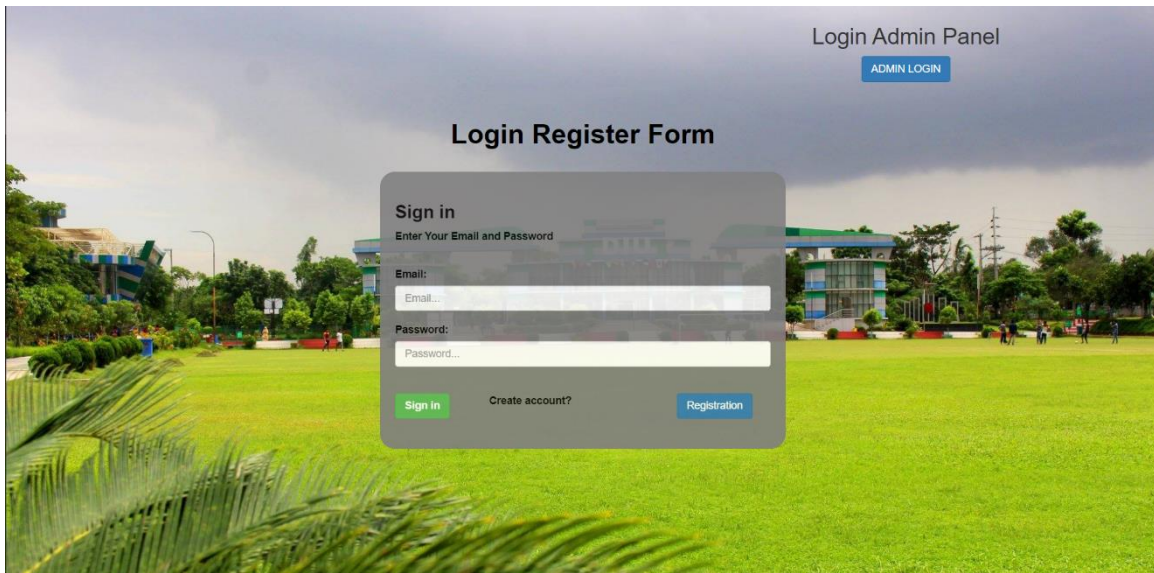


Fig: 5.2.1 User Login Page

## 5.2.2 User Home

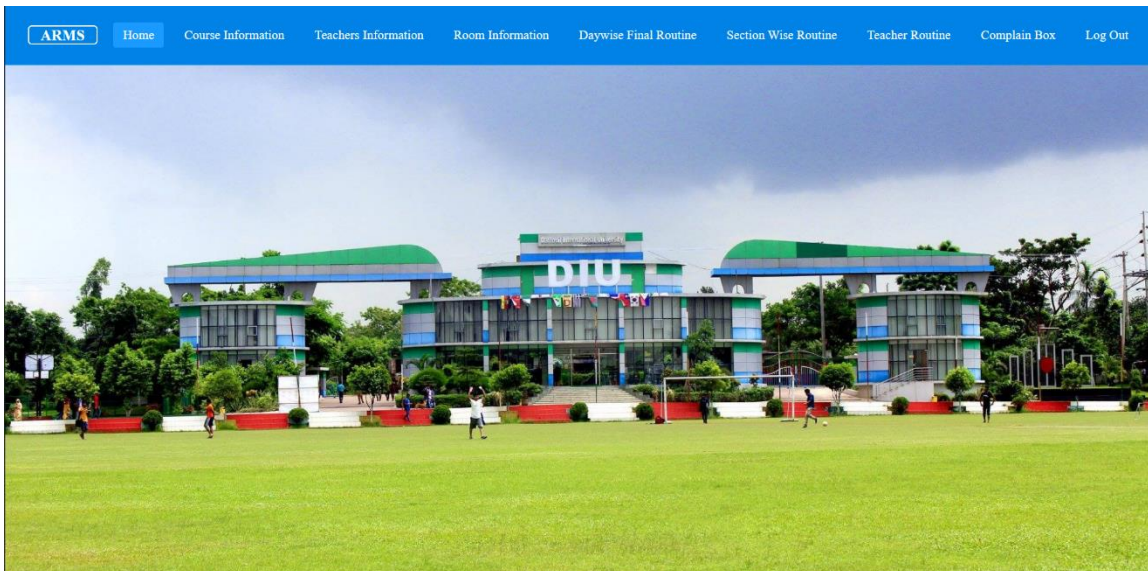


Fig: 5.2.2 User Home Page

### 5.2.3 User Course Information

Level Term	Course Code	Course Title	Course Cr
Level1Term1	GED111	History of Bangladeshi And Bangla Language	1.5
Level1Term1	MAT111	Basic Mathematics	1.5
Level1Term1	PHY113	Basic Physics	1.5
Level1Term1	PHY114	Basic Physics Lab	1.5
Level1Term1	CSE112	Computer Fundamentals	1.5
Level1Term1	ENG113	Basic Functional English and English Spoken	3

Fig: 5.2.3 User Course Information

### 5.2.4 User Teacher Information

Teacher Name	Teacher Initial Name	Email	Phone Number
S. M. Safayet Ullah	SMS	safayet.us@dnu.edu.bd	1717500000

Fig: 5.2.4 User Teacher Information

## 5.2.5 User Room Information

Room Number	Room Type	Academic Building	Floor Number
101	Office Room	AB-1	G

Fig: 5.2.5 User Room Information

## 5.2.6 Final Routine

Days	Roomnumber	8.30-10.00	10.00-11.30	11.30-1.00	1.00-2.30	2.30-4.00
saturday	101	(CSE122+SRH+PCA)	(CSE112+MJ+PCA)	(CSE123+SRH+PCB)	(CSE421+MJ+PCA)	(CSE122+SRH+PCA)
saturday	102	(CSE311+MJA+PCC)	(CSE231+AAM+PCB)	(CSE312+MJA+PCC)	(CSE232+AAM+PCB)	(CSE311+MJA+PCC)
saturday	103	(CSE412+SR+PCB)	(CSE225+FZA+PCC)	(CSE331+SR+PCA)	(CSE214+SMAH+PCB)	(CSE412+SR+PCB)
saturday	104	(CSE423+FF+PCA)	(CSE214+SMAH+PCA)	(CSE225+NRC+PCB)	(CSE123+MRH+PCC)	(CSE225+NRC+PCA)
saturday	105	(CSE321+AS+PCA)	(CSE221+MRH+PCB)	(CSE331+SMTS+PCB)	(CSE414+TK+PCA)	(CSE331+SMTS+PCA)
saturday	106	(CSE225+NRC+PCA)	(CSE131+TK+PCC)	(CSE423+FF+PCA)	(CSE225+FZA+PCC)	
saturday	107	(CSE331+SMTS+PCA)		(CSE321+AS+PCA)		
sunday	101	(CSE221+ZH+PCA)	(CSE134+SAH+PCA)	(CSE222+ZH+PCA)	(CSE135+SAH+PCA)	(CSEXXX/2+SMAH+PCA)

Fig: 5.2.6 Final Routine

## 5.2.7 Section Wise Routine

Time	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
A						
B						
C				CSEXXX(2)		

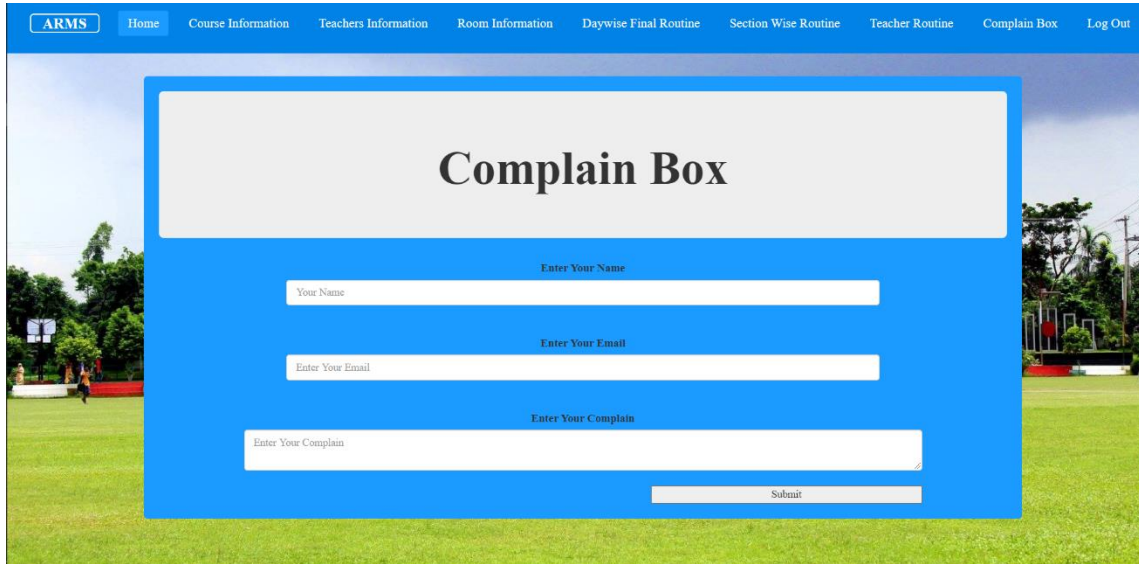
Fig: 5.2.7 Section Wise Routine

## 5.2.8 Teacher's Routine

Time	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
A		CSE215	CSE214	CSE215		
B	CSE214					
C		CSE215	CSE214	CSEXXX(2)		
D	CSE214					

Fig: 5.2.8 Teacher's Routine

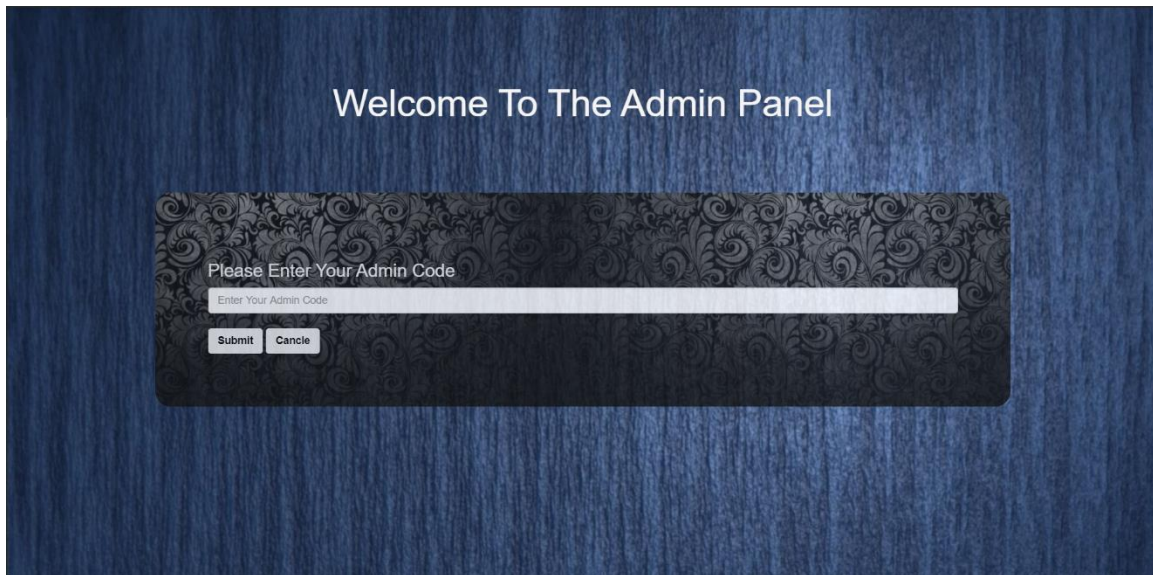
## 5.2.9 Complain Box



The screenshot shows a web application interface for a 'Complain Box'. At the top, there is a blue navigation bar with the following menu items: ARMS, Home, Course Information, Teachers Information, Room Information, Daywise Final Routine, Section Wise Routine, Teacher Routine, Complain Box, and Log Out. The main content area has a light blue background with a large white box containing the title 'Complain Box'. Below the title, there are three input fields: 'Enter Your Name', 'Enter Your Email', and 'Enter Your Complain'. A 'Submit' button is located at the bottom right of the form.

Fig: 5.2.9 Complain Box

## 5.2.10 Unlock Admin Panel



The screenshot shows a login form for the admin panel. The background is a dark blue wood-grain texture. At the top, it says 'Welcome To The Admin Panel'. Below this, there is a dark grey box with a decorative pattern. Inside this box, it says 'Please Enter Your Admin Code'. There is a text input field with the placeholder 'Enter Your Admin Code'. Below the input field, there are two buttons: 'Submit' and 'Cancel'.

Fig: 5.2.10 Unlock Admin Panel

## 5.2.11 Admin Login

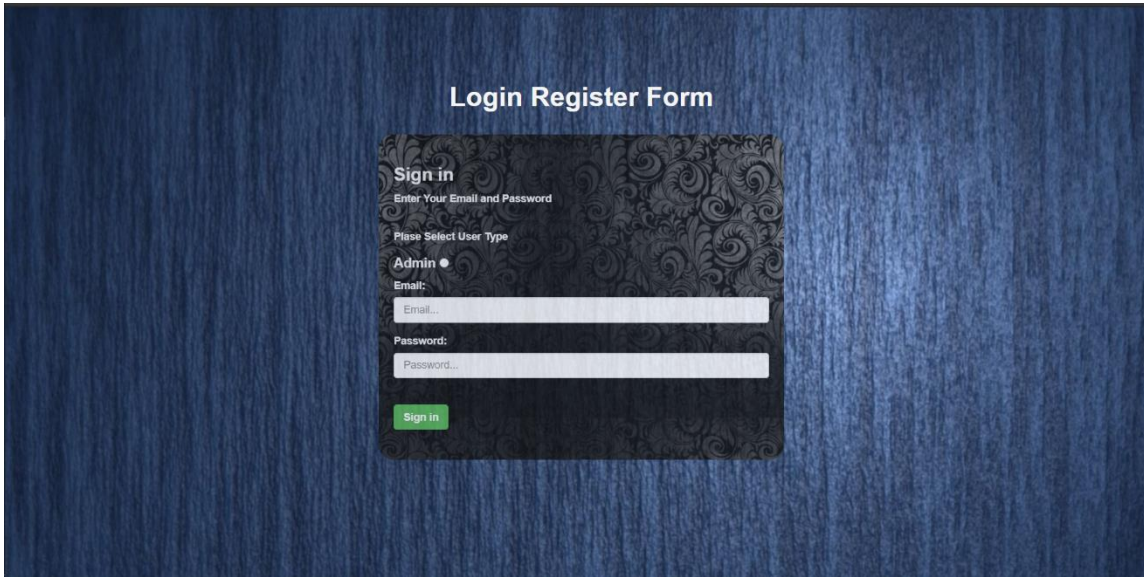


Fig: 5.2.11 Admin Login

## 5.2.12 Admin Home

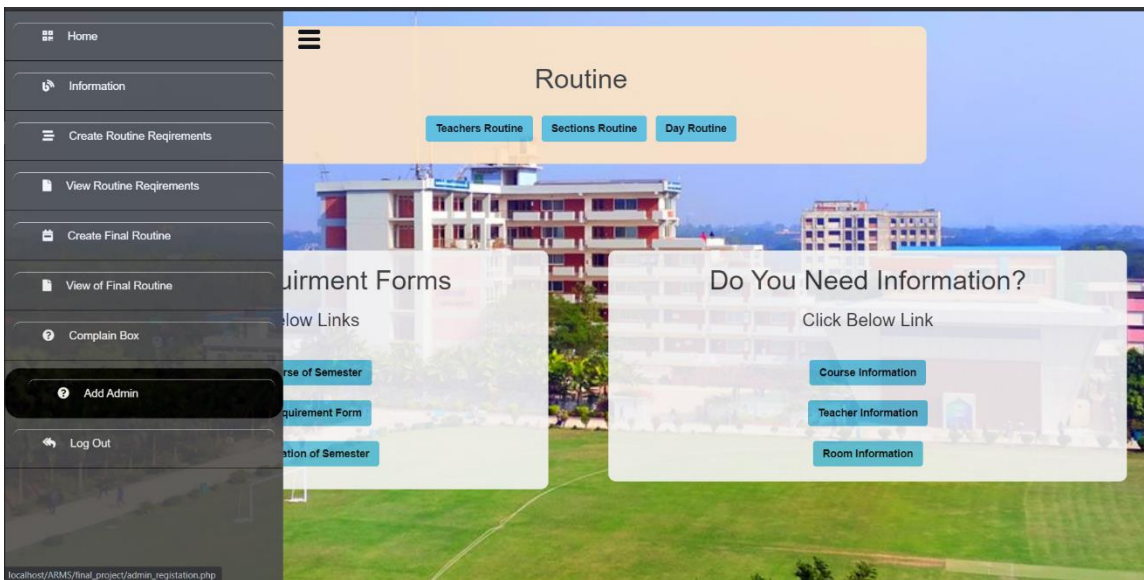
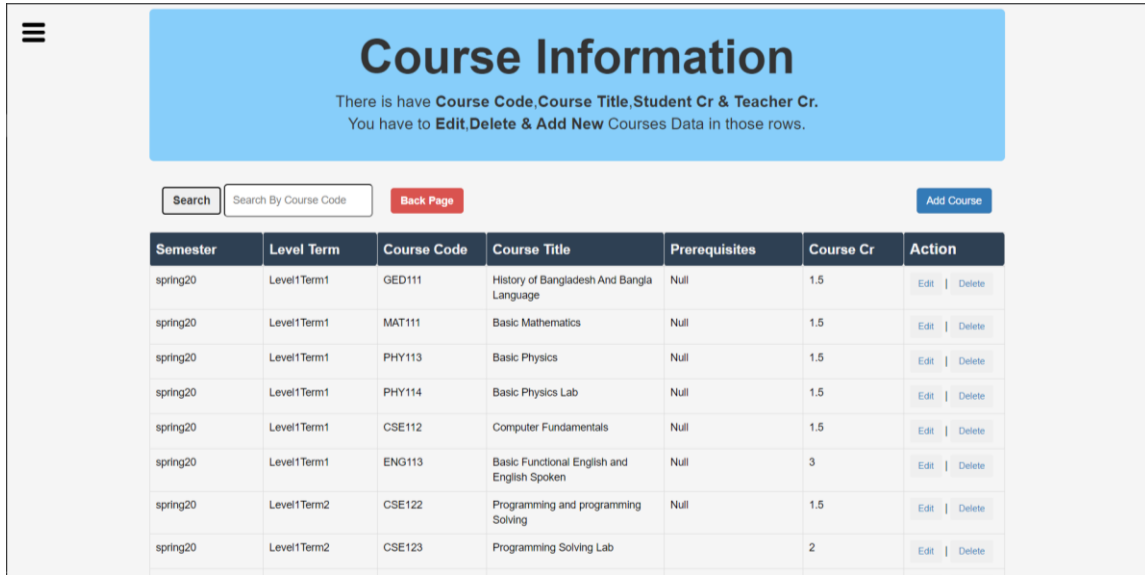


Fig: 5.2.12 Admin Home

## 5.2.13 Course Information

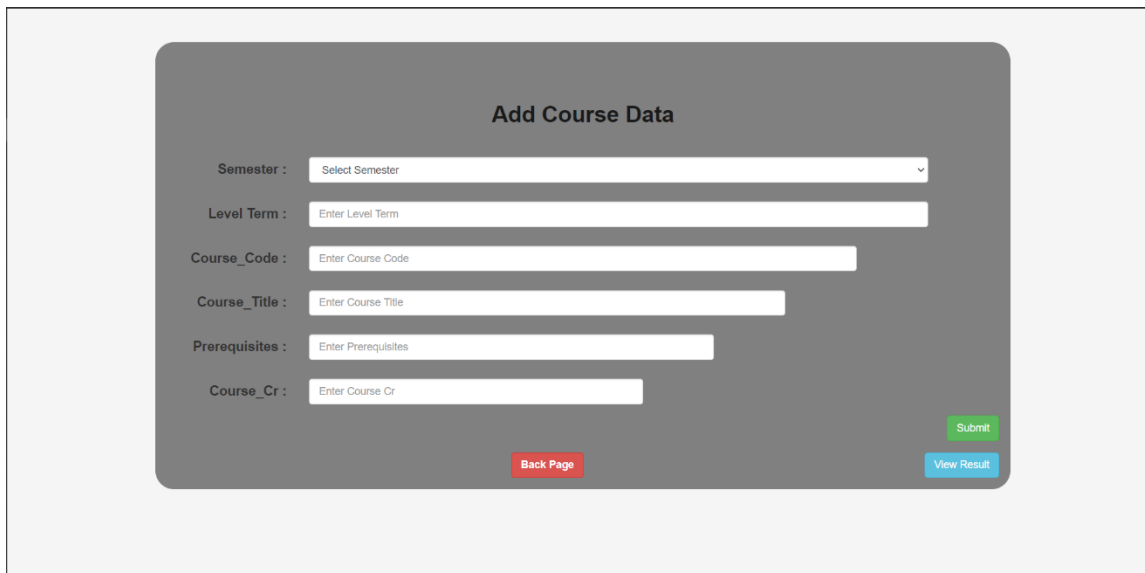


The screenshot shows a web interface for course information. At the top, there is a blue header with the title "Course Information" and a message: "There is have Course Code, Course Title, Student Cr & Teacher Cr. You have to Edit, Delete & Add New Courses Data in those rows." Below the header, there is a search bar with the text "Search By Course Code" and a "Back Page" button. To the right, there is an "Add Course" button. The main content is a table with the following columns: Semester, Level Term, Course Code, Course Title, Prerequisites, Course Cr, and Action. The table contains 8 rows of course data.

Semester	Level Term	Course Code	Course Title	Prerequisites	Course Cr	Action
spring20	Level1Term1	GED111	History of Bangladesh And Bangla Language	Null	1.5	Edit   Delete
spring20	Level1Term1	MAT111	Basic Mathematics	Null	1.5	Edit   Delete
spring20	Level1Term1	PHY113	Basic Physics	Null	1.5	Edit   Delete
spring20	Level1Term1	PHY114	Basic Physics Lab	Null	1.5	Edit   Delete
spring20	Level1Term1	CSE112	Computer Fundamentals	Null	1.5	Edit   Delete
spring20	Level1Term1	ENG113	Basic Functional English and English Spoken	Null	3	Edit   Delete
spring20	Level1Term2	CSE122	Programming and programming Solving	Null	1.5	Edit   Delete
spring20	Level1Term2	CSE123	Programming Solving Lab		2	Edit   Delete

Fig: 5.2.13 Course Information

## 5.2.14 Add Course



The screenshot shows a form titled "Add Course Data" with the following fields and buttons:

- Semester : Select Semester (dropdown menu)
- Level Term : Enter Level Term (text input)
- Course\_Code : Enter Course Code (text input)
- Course\_Title : Enter Course Title (text input)
- Prerequisites : Enter Prerequisites (text input)
- Course\_Cr : Enter Course Cr (text input)
- Submit (green button)
- Back Page (red button)
- View Result (blue button)

Fig: 5.2.14 Add Course



## 5.2.15 Update Course

### Update Course Data

Semester:

Level Term:

Course Code:

Course Title:

Prerequisites:

Course Cr:

Fig: 5.2.15 Update Course

## 5.2.16 Delete Course

Confirmation

There is have **Course Code, Course Title, Student Cr & Teacher Cr.**  
You have to **Edit, Delete & Add New Courses** Data in those rows.

Semester	Level Term	Course Code	Course Title	Prerequisites	Course Cr	Action
spring20	Level1Term1	GED111	History of Bangladesh And Bangla Language	Null	1.5	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
spring20	Level1Term1	MAT111	Basic Mathematics	Null	1.5	<input type="button" value="Edit"/>   <input type="button" value="Delete"/>
spring20	Level1Term1	PHY113	Basic Physics	Null	1.5	<input type="button" value="Edit"/>   <input type="button" value="Delete"/>
spring20	Level1Term1	PHY114	Basic Physics Lab	Null	1.5	<input type="button" value="Edit"/>   <input type="button" value="Delete"/>
spring20	Level1Term1	CSE112	Computer Fundamentals	Null	1.5	<input type="button" value="Edit"/>   <input type="button" value="Delete"/>
spring20	Level1Term1	ENG113	Basic Functional English and English Spoken	Null	3	<input type="button" value="Edit"/>   <input type="button" value="Delete"/>
spring20	Level1Term2	CSE122	Programming and programming Solving	Null	1.5	<input type="button" value="Edit"/>   <input type="button" value="Delete"/>
spring20	Level1Term2	CSE123	Programming Solving Lab		2	<input type="button" value="Edit"/>   <input type="button" value="Delete"/>

Fig: 5.2.16 Delete Course

## 5.2.17 Teacher Information

Teachers Information

There is have Teacher\_Name, Teacher\_Initial\_Name, Email, Phone\_Number & Max\_Cr  
You have to Edit, Delete & Add New Teachers Data in those rows.

Search Search By Initial Name Back Page Add Teacher

Teacher_Name	Initial_Name	Email	Phone_Number	Action
Faisal Ahmed	FA	na128	0	Edit   Delete
Tasfia Anika Bushra	TAB	na127	0	Edit   Delete
Shayla Sharmin	SS	na126	0	Edit   Delete
Salma Afrin	SA	na125	0	Edit   Delete
Zakia Sultana	ZS	na124	0	Edit   Delete
Shahana Shultana	SSH	na123	0	Edit   Delete
Aliza Ahmed Khan	AAK	na122	0	Edit   Delete
Al Amin Biswas	AAB	na121	0	Edit   Delete
Mushfiqur Rahman	MUR	na120	0	Edit   Delete

Fig: 5.2.17 Teacher Information

## 5.2.18 Add Teacher

Add Teacher Data

Teacher Name : Enter Teacher Name

Teacher Initial Name : Enter Teacher Initial Name

Email : Enter Email

Phone Number : Enter Phone Number

Max Cr : Enter Max Cr

Submit

Back Page View Result

Fig: 5.2.18 Add Teacher

## 5.2.19 Update Teacher

**Update Teachers Data**

Teacher Name	<input type="text" value="Faisal Ahmed"/>
Teacher Initial Name	<input type="text" value="FA"/>
Email	<input type="text" value="nai26"/>
Phone Number	<input type="text" value="0"/>
Max Cr	<input type="text" value="0"/>

[Back Page](#)[Update](#)

Fig: 5.2.19 Update Teacher

## 5.2.20 Room Information

### Room Information

There is have **Room Number, Floor Number & Academic Building.**  
You have to **Edit, Delete & Add New** Courses Data in those rows.

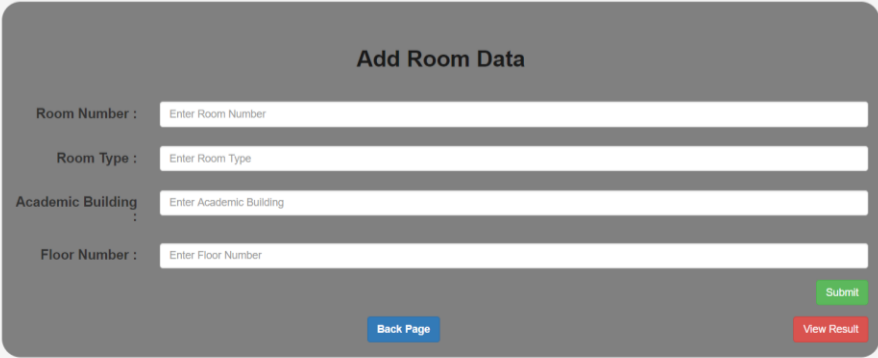
[Back Page](#)

[Add Room](#)

Room Number	Room Type	Academic Building	Floor Number	Action
104	Class Room	AB-1	G	<a href="#" style="font-size: 0.8em;">Edit</a>   <a href="#" style="font-size: 0.8em;">Delete</a>
103	Class Room	AB-1	G	<a href="#" style="font-size: 0.8em;">Edit</a>   <a href="#" style="font-size: 0.8em;">Delete</a>
102	Teachers Room	AB-1	G	<a href="#" style="font-size: 0.8em;">Edit</a>   <a href="#" style="font-size: 0.8em;">Delete</a>
101	Office Room	AB-1	G	<a href="#" style="font-size: 0.8em;">Edit</a>   <a href="#" style="font-size: 0.8em;">Delete</a>

Fig: 5.2.20 Room Information

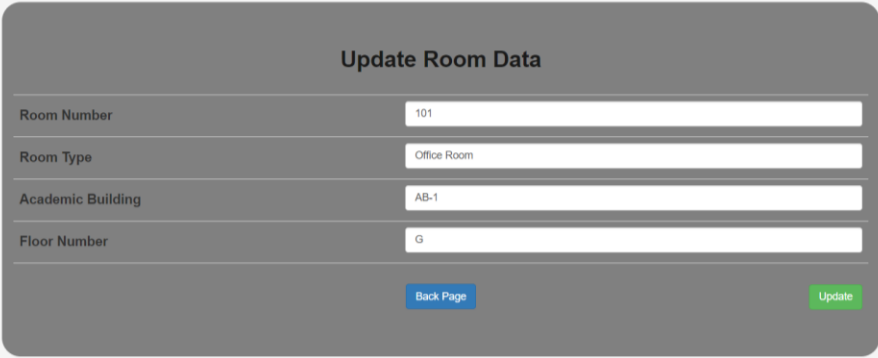
## 5.2.21 Add Room



The screenshot shows a web form titled "Add Room Data" with a dark grey background. It contains four input fields: "Room Number" with placeholder text "Enter Room Number", "Room Type" with "Enter Room Type", "Academic Building" with "Enter Academic Building", and "Floor Number" with "Enter Floor Number". At the bottom right, there are three buttons: a blue "Back Page" button, a green "Submit" button, and a red "View Result" button.

Fig: 5.2.21 Add Room

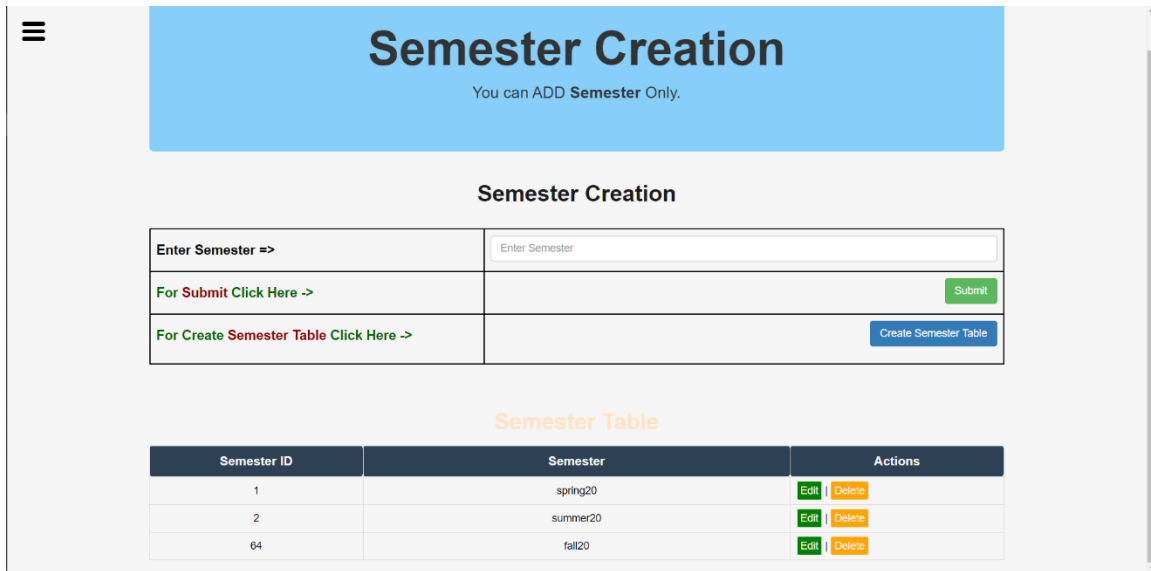
## 5.2.22 Update Room



The screenshot shows a web form titled "Update Room Data" with a dark grey background. It contains four input fields with pre-filled values: "Room Number" with "101", "Room Type" with "Office Room", "Academic Building" with "AB-1", and "Floor Number" with "G". At the bottom right, there are two buttons: a blue "Back Page" button and a green "Update" button.

Fig: 5.2.22 Update Room

## 5.2.23 Create Semester



**Semester Creation**  
You can ADD Semester Only.

**Semester Creation**

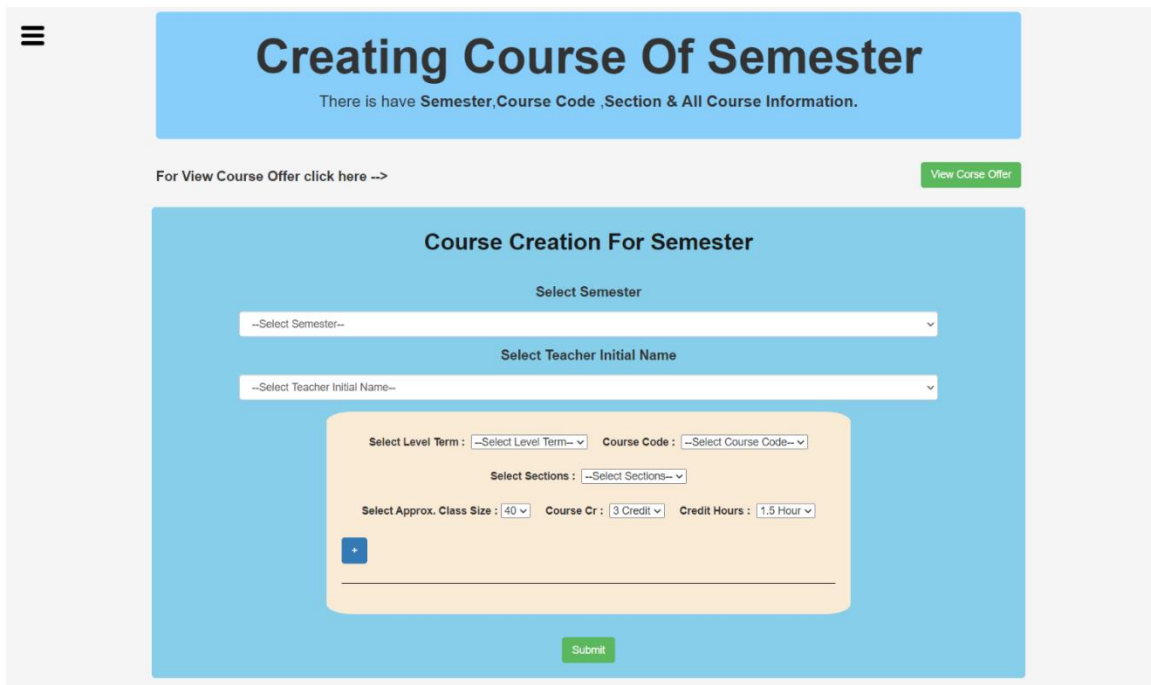
Enter Semester =>	<input type="text" value="Enter Semester"/>
For Submit Click Here ->	<input type="button" value="Submit"/>
For Create Semester Table Click Here ->	<input type="button" value="Create Semester Table"/>

**Semester Table**

Semester ID	Semester	Actions
1	spring20	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
2	summer20	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
64	fall20	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

Fig: 5.2.23 Create Semester

## 5.2.24 Create Course Offer



**Creating Course Of Semester**  
There is have Semester, Course Code, Section & All Course Information.

For View Course Offer click here ->

**Course Creation For Semester**

Select Semester  
--Select Semester--

Select Teacher Initial Name  
--Select Teacher Initial Name--

Select Level Term : --Select Level Term-- Course Code : --Select Course Code--

Select Sections : --Select Sections--

Select Approx. Class Size : 40 Course Cr : 3 Credit Hours : 1.5 Hour

Fig: 5.2.24 Create Course Offer

## 5.2.25 Update Course Offer

☰

### Update Course Of Semester

There is have Level Term, Course Code, Section & All Course Information.  
You Can Edit, Delete & ADD New Courses Data in those rows.

Select Semester: --Select Semester-- Submit

Level Term	Course Code	Teacher Initial Name	Section	Course Cr	Total Cr	Credit Hours	Approx Class Size	Actions
Level1Term3	CSE134	SAH	PCA	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level1Term3	CSE135	SAH	PCA	3	6	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level1Term1	CSE112	MIJ	PCA	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level4Term2	CSE421	MIJ	PCA	3	6	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level1Term2	CSE122	SRH	PCA	2	2	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level1Term2	CSE123	SRH	PCB	3	5	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level3Term1	CSE311	MJA	PCC	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level3Term1	CSE312	MJA	PCC	3	6	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level4Term1	CSE412	SR	PCB	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level3Term3	CSE331	SR	PCA	3	6	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level4Term2	CSE423	FF	PCA	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level3Term2	CSE321	AS	PCA	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level2Term2	CSE225	NRC	PCA	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level2Term2	CSE225	NRC	PCB	3	6	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level2Term2	CSE221	ZH	PCA	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level2Term2	CSE222	ZH	PCA	3	6	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>
Level3Term3	CSE331	SMTS	PCA	3	3	1.5	40	<span style="background-color: #f1c40f; padding: 2px 5px; font-size: 10px;">Update</span>

Fig: 5.2.25 Update Course Offer

## 5.2.26 Teacher Requirement Form

☰

### Teacher's Requirement Form

You can select Teacher's name & Day's, for teacher's

For see teacher's requirement click here --> View Teacher's Requirement

Select Teacher Name

--Select Teacher Name--

Select First Offday: --Select First Offday--

Select Second Offday: --Select First Offday--

#### Choice Your Exception Day and Time

Choice Your Exception Day: --Select First Offday--

8:30-10:00
 10:00-11:30
 11:30-1:00
 1:00-2:30
 2:30-4:00

Choice Your Another Exception Day: --Select First Offday--

8:30-10:00
 10:00-11:30
 11:30-1:00
 1:00-2:30
 2:30-4:00

Submit

Fig: 5.2.26 Teacher Requirement Form

## 5.2.27 View Teacher Requirement

View Teacher's Requirement

There is have Teacher Name & Off Day's

For more teacher's requirment click here --> [Teacher's Requirement](#)

After requirment for Create Tables routine click here --> [Create Tables](#)

Teacher Initial Name	First Off Day	Second Off Day	First Random Day	First Random Slot	Second Random Day	Second Random Slot	Actions
AAM	tuesday	friday	wednesday	AB	Nullable	Nullable	<a href="#">Delete</a>
AS	sunday	friday	wednesday	E	Nullable	Nullable	<a href="#">Delete</a>
FF	friday	thursday	sunday	B	Nullable	Nullable	<a href="#">Delete</a>
FZA	friday	Nullable	Nullable	Nullable	Nullable	Nullable	<a href="#">Delete</a>
MIJ	friday	thursday	saturday	A	Nullable	Nullable	<a href="#">Delete</a>
MOT	saturday	friday	Nullable	Nullable	Nullable	Nullable	<a href="#">Delete</a>
MRH	monday	friday	Nullable	Nullable	Nullable	Nullable	<a href="#">Delete</a>
NRC	friday	Nullable	Nullable	Nullable	Nullable	Nullable	<a href="#">Delete</a>
SAH	saturday	friday	sunday	A	Nullable	Nullable	<a href="#">Delete</a>

Fig: 5.2.27 View Teacher Requirement

## 5.2.28 View Course Offer

View Course Load Distribution For Teacher Of Semester

There is have Level Termr,Course Code,Section & All Course Information.

Select Semester:  [Submit](#)

Level Term	Corse Code	Course Cr	Total Cr	Teacher Initial Name	Section	Credit Hours	Approx Class Size
Level1Term1	CSE112	3	3	MIJ	PCA	1.5	40
Level1Term2	CSE122	2	2	SRH	PCA	1.5	40
Level1Term2	CSE123	3	5	SRH	PCB	1.5	40
Level1Term2	CSE123	3	5	MRH	PCC	1.5	40
Level1Term2	CSE122	2	7	MRH	PCC	1.5	40
Level1Term2	CSE123	3	9	MOT	PCA	1.5	40
Level1Term2	CSE123	3	12	MOT	PCC	1.5	40
Level1Term2	CSE123	3	12	TK	PCG	1.5	40

Fig: 5.2.28 View Course Offer

### 5.2.29 View Lab Rooms

Room Number	Academic Building	Floor Number	Room Capacity
201	AB-4	1st	40
202	AB-4	1st	40
2022	AB-4	1st	40
203	AB-4	1st	40
204	AB-4	2nd	40
205	AB-1	2nd	40
206	AB-1	2nd	40
207	AB-4	2nd	40
26	AB-4	1st	40
4	AB-4	1st	40
40	AB-4	1st	40
56	AB-4	1st	40

Fig: 5.2.29 View Lab Rooms

### 5.2.30 Create Tables

Just select Semester and press Submit

Select Semester Name

fall20

Submit

Set or Hit the requirement

After that click here -->

Fig: 5.2.30 Create Tables



### 5.2.31 Hit Requirement

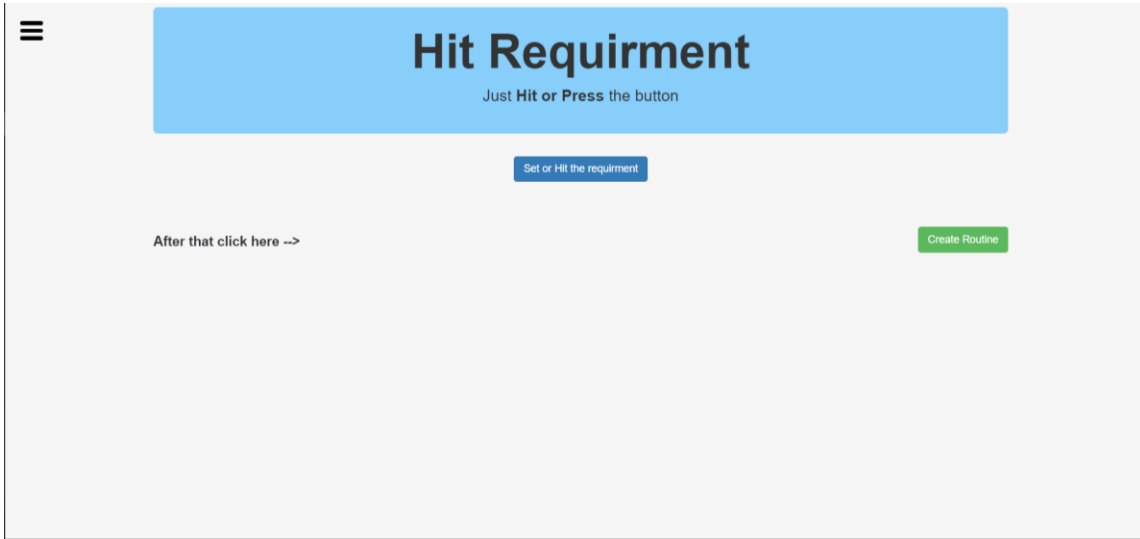


Fig: 5.2.31 Hit Requirement

### 5.2.32 Create Routine



Fig: 5.2.32 Create Routine

### 5.2.33 Renew Database

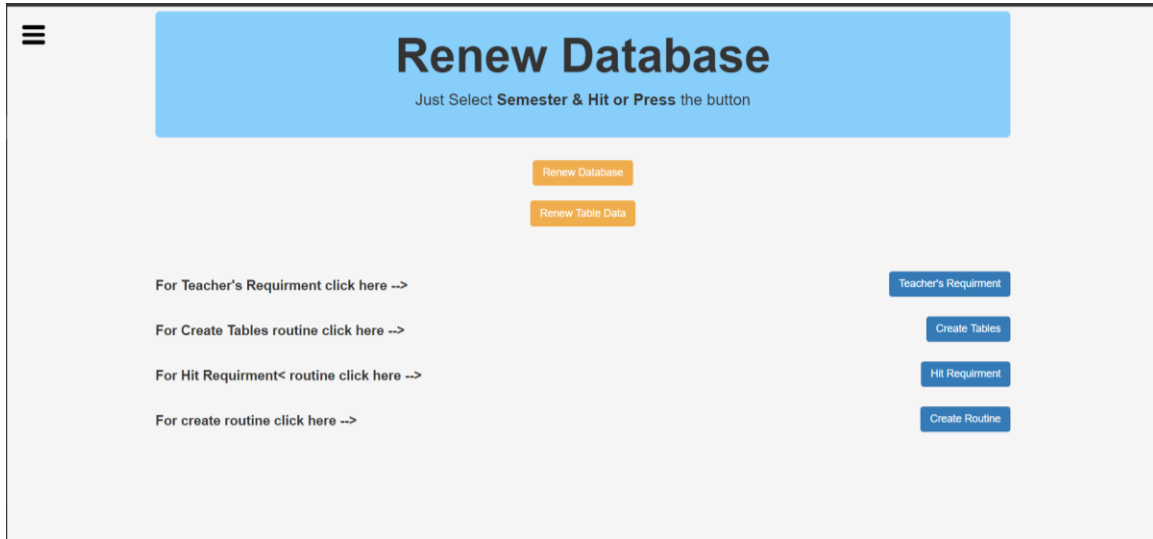


Fig: 5.2.33 Renew Database

### 5.2.34 View Final Routine

Days	Roomnumber	8.30-10.00	10.00-11.30	11.30-1.00	1.00-2.30	2.30-4.00
saturday	101	(CSE122+SRH+PCA)	(CSE112+MIJ+PCA)	(CSE123+SRH+PCB)	(CSE421+MIJ+PCA)	(CSE122+
saturday	102	(CSE311+MJA+PCC)	(CSE231+AAM+PCB)	(CSE312+MJA+PCC)	(CSE232+AAM+PCB)	(CSE311+
saturday	103	(CSE412+SR+PCB)	(CSE225+FZA+PCC)	(CSE331+SR+PCA)	(CSE214+SMAH+PCB)	(CSE412-
saturday	104	(CSE423+FF+PCA)	(CSE214+SMAH+PCA)	(CSE225+NRC+PCB)	(CSE123+MRH+PCC)	(CSE225+
saturday	105	(CSE321+AS+PCA)	(CSE221+MRH+PCB)	(CSE331+SMTS+PCB)	(CSE414+TK+PCA)	(CSE331+
saturday	106	(CSE225+NRC+PCA)	(CSE131+TK+PCC)	(CSE423+FF+PCA)	(CSE225+FZA+PCC)	
saturday	107	(CSE331+SMTS+PCA)		(CSE321+AS+PCA)		
sunday	101	(CSE221+ZH+PCA)	(CSE134+SAH+PCA)	(CSE222+ZH+PCA)	(CSE135+SAH+PCA)	(CSEXXX(2)

Fig: 5.2.34 View Final Routine

### 5.2.35 View Teacher's Routines

**View Teacher's Routine**  
There is have daywise routine for teacher

Select Teacher Name

--Select Teacher Name--

Submit

Time	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
A		CSE215	CSE214	CSE215		
B	CSE214					
C		CSE215	CSE214	CSEXXX(2)		
D	CSE214					
E		CSEXXX(2)	CSE215			

Fig: 5.2.35 View Teacher's Routines

### 5.2.36 View Section Wise Routine

**View Section's wise Routine**  
There is have sectionwise routine for teacher

Select Level Term : --Select Level Term--

Select Sections : --Select Sections--

Submit

Time	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
A		CSE112				
B	CSE112					
C						
D						
E						

Fig: 5.2.36 View Section Wise Routine

### 5.2.37 View Complains

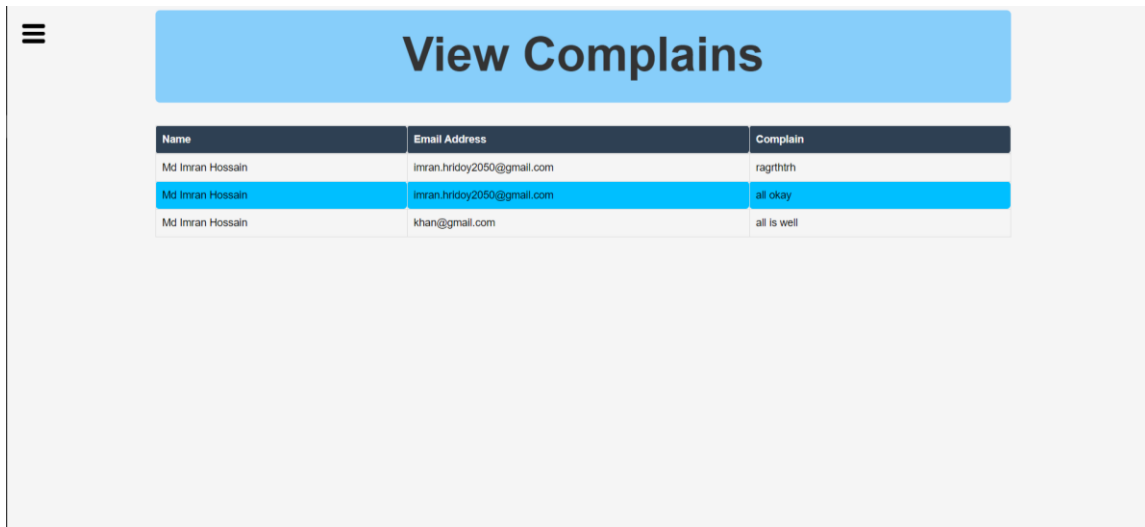


Fig: 5.2.37 View Complains

### 5.2.38 Admin Register

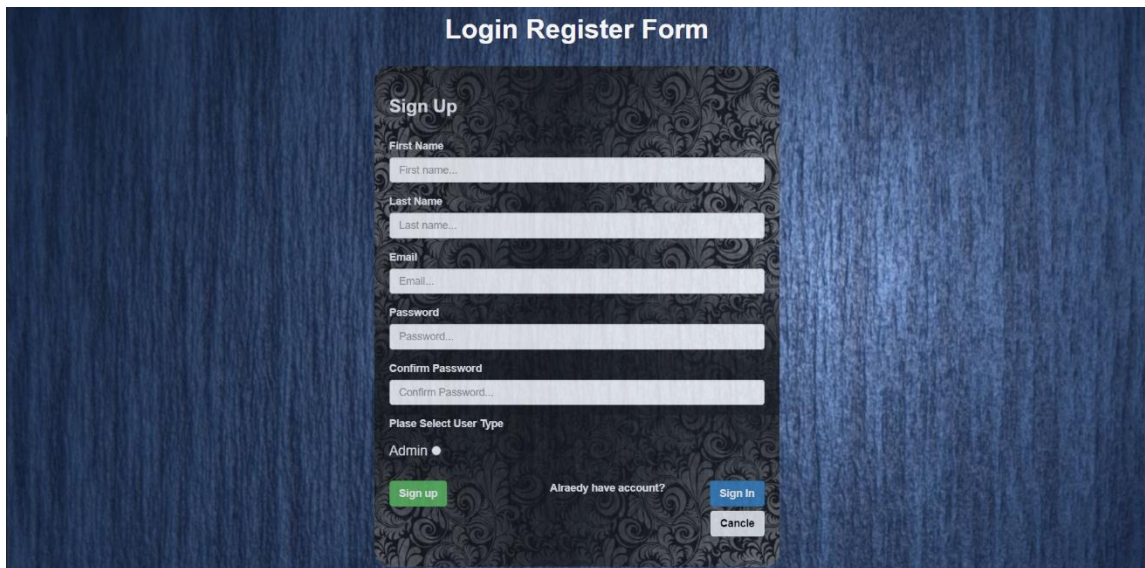


Fig: 5.2.38 Admin Register

### 5.2.39 User Register

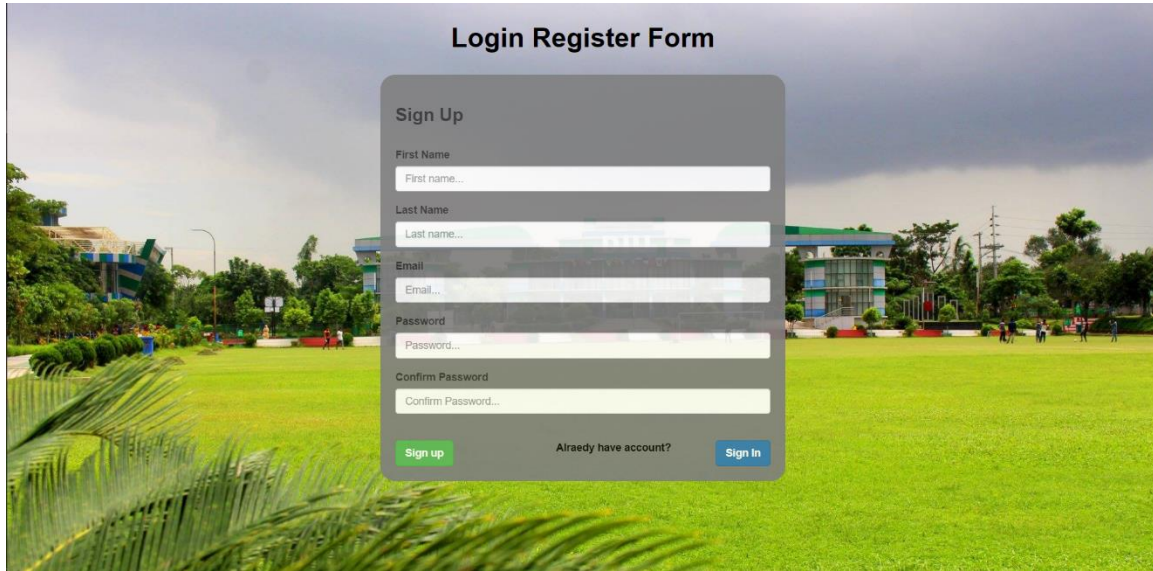


Fig: 5.2.39 User Register

### 5.3 Implementation of interactions

Implementation of interactions is a really important for developing an application or developing website. It is a part of developing web applications and websites. And implementation is a part of developing of an application or system. It's need to ensure how our application or system interact with user (students, teachers) activity in our web application.

It is really important that it's should be interactive with users. We made our application is very interactive for users. We implemented responsive UI in our system.

### 5.4 Testing implementation

This is the process of testing system & get results. We use usability testing, database testing and system testing.

### **5.4.1 Usability Testing**

Usability testing is testing for users interacts. That's mean this is the way of how users interacts with the system. Find out the user's interaction in a system and handling in control flexibility is the main focus of usability testing.

### **5.4.2 Database Testing**

Database testing is testing for ensure the data integrity and consistency in a system. In our database accessing is possible from front-end and back-end both. Our application is built to run using internet there is possibility of storing incorrect data.

### **5.4.3 System Testing**

System testing is a testing of whole system in an application. It is internal work of application. In this system testing, we find out our application is working properly or not. After testing the whole system, we got the output results.

### **5.5 Test result and reports:**

System testing was ended after that what we required form the system. We tested our system by different type of system tests. For our system testing all of the testing result is good and output is right. In the future we added some extra test for our system.

## **CHAPTER 6**

### **Conclusion and Future Work**

#### **6.1 Discussion and Conclusion:**

Automatic Routine Management System constantly directed on to create an automatic handle and load. Only ambition of this program was to create a routine without any time loss and problem of overlapping time or room. The idea was to reduce hassle during routine management board. In this program all the enjoyer are relevant to one another through this structure. The technology era where all are improving constantly. Now just needed to take the aptitude of internet and carry out in a structure in order to anyone gets help from it.

#### **6.2 Scope for Future Developments:**

Web application is a latest technology where everyone can approach by applying internet from computer or other devices. Our team implement this program and someday we wish to upgrade by extra features. There have a plan to implement it in our university for our modern routine. And also add more features for the student's real life work. Definitely we convert it for android users also.

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