



Hostel Management System

BIA Capstone Project MGMT –

6134

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Project Charter

This Charter formally authorizes to start the implementation of Online Hostel Management System. In this document we have outlined the significance of the project, the scope, some of the expected deliverables of this project. Also, we have included the roles of the team members and all the information about the stakeholders of the project.

Scope

The scope of the Online Hostel Management System is to develop a web application that will that manages the various activities in the hostel . It manages project like Tracking/Status of the both students and the staff in charge of the registration and its processes. The user can manage the details of hostel such as rooms, meals, payments. It also manages information about allotted students, visitors/guests. This website will be built using front end development language as well as backend.

Deliverables

- It helps from manual work from which it is very difficult to find the record of the students and the employee.
- The Registration form verification to the different data processing is done manually.
- This project deals with the problem on managing a hostel and avoids the problems which occur when carried manually.
- Identification of drawbacks of the existing system leads to the designing of computerized system that will be compatible to the existing system.

Opportunities

- No need to make entries for every operation for any in/out, for project manually.
- NO need to manually the entries of employee and client.
- User information, payments are also managed in the user friendliness manner.

Summary Project Status	
Project Start Date	2023-05-29
Estimated Completion	2023-08-04
Process Impacted	Term Planning
Potential Financial Impact	High

CORE TEAM MEMBERS	
NAME	ROLES
Omolar Olowookere	Project Manager
	Developer
Harsh Chauhan	Designer/Scrum Team
Mohak Patel	Database Administrator/ QA Analyst/Product Owner/
STAKEHOLDERS	
NAME	ROLES
Georgi Ivanov	Project Sponsor
Marc Bueno	Subject Matter Expert

Georgi Ivanov	Subject Matter Expert
Georgi Ivanov	Mentor
Marc Bueno	Mentor

The Project Manager, Omolara Olowookere , is hereby authorized to interface with management as required, negotiate for resources, delegate responsibilities within the framework of the project, and to communicate with all contractors and management, as required, to ensure successful and timely completion of the project. The Project Manager is responsible for developing the project plan, monitoring the schedule, cost, and scope of the project during implementation, and maintaining control over the project by measuring performance and taking corrective action.

The project plan will be submitted and approved in accordance with the milestone schedule below. Upon approval of the project plan resources will be assigned to the project and work will commence within 5 business days. The Project Sponsor must approve any schedule changes which may impact milestones. A detailed schedule will be included in the project plan. The milestone schedule is:

Milestone Schedule			
Milestone	Status	Due	Done
Milestone 1	Completed	2023-05-29	2023-05-29
Milestone 2	Not started	2023-06-15	2023-06-11
Milestone 3	Not Started	2023-06-30	2023-06-29
Milestone 4	Not Started	2023-07-14	2023-07-12
Final Milestone	Not Started	2023-08-04	2023-08-04
In-Class Presentation	Not Started	2023-08-04	2023-08-04

Sponsor Acceptance

Approved by the Project Sponsor:

Georgi Ivanov

Date:

Requirements Gathering

- This product should be able to perform the following operations:
 - a) It must be able to authenticate the login id and be able to create new login id for the students residing in the hostels only and for the staff as well.
 - b) It must be able to initiate requests by the user in the various categories mentioned. Software Requirements Specification for Hostel Management System.
 - c) It must be able to notify the requests made by the user to the respective departments correctly without any errors and mixing up.
 - d) It must be able to take the feedback from the students once the task is completed and be able to take the mess feedback.
- The goal is to design the software used for proper management of hostels and automate the current process. The user types are listed followed:
 - a) Students
 - b) Hostel Staff
 - c) Mess Manager
 - d) Administrator
- Our goal is to develop a software that should be easy to use for all types of users. Thus, while designing the software one can assume that each user type has the following characteristics:
 - I. The user is a computer-literate and has little or no difficulty in using the software keeping in mind the software is user friendly.
 - II. To use software a user must be aware of the internal working and expected to know how things work.
 - III. All the guidelines about the use of software will be informed to the user once the user signs up on the software or web page.
- Hardware Interfaces
 - a. Computer: A computer will be required to open the website and use the software

- b. Smartphone: A smartphone can also be required in case there is no availability of computer.
- c. Internet: A good internet connection is required to access the website.
- Software Interfaces
 - a. A SQL Database Server will be required to store and retrieve data.
 - b. A web browser will be required to open the website.

Functional Requirements

- Provide residents the ability to lodge a complaint about an issue in the room. Through our websites, residents have the right to register a complaint regarding different issues in the room related to maintenance or cleaning. The residents just need to select the type of complaint from a list of complaints including AC repairs, other electrical complaints, plumbing problems or if they want their room to be cleaned. This will save their time of going to caretaker's office and then writing a complaint. Then the problem will take 3-4 days to be solved.
- Provide residents the ability to lodge a complaint about mess food and hygiene. Residents will no longer have to write about the mess complaints in the register which are not read by anyone in the mess management. They can register a complaint by one click through our web portal. Taking into consideration different parameters, a form is made to monitor the quality and taste of food. After filling form, the residents can also give suggestions or register a complaint in the others box.
- Provide contact numbers of maintenance worker in charge. Once a complaint is registered through our web portal, the resident will get the details of the worker assigned to get the issue resolved. For example, if a resident wants his room to be cleaned, after registering to get the room cleaned, he will get the details like name of the worker, his mobile number, and the time he will come to clean the room.
- Provide mess manager the ability to view the detailed feedback of the residents. In the current scenario, no one reads the complaints and suggestions listed by the residents in the mess. Now, detailed feedback in the form of bar graphs will be given to the mess manager and the head of the mess managers of the university. Each suggestion will reach the mess manager and a proper action will be taken by the mess manager for smooth functioning.

System and User Interface Requirements

<u>Technical Requirements</u>	
Process	Tools
Development	HTML 5,CSS,Core PHP
Database	Laravel 8 MySQL(8.3)
Documentation	Microsoft Word, Draw.io, MS Visio
Code Management	Github.com

User Interface Requirements:

Following are the main core complaints of the system:

User (Employee/Student)

User:

This module includes the management of all users of the system. In all the information about the user is stored and the profile will maintain for that. Every user of the system is reference to his user module.

Admin:

These modules include the management of the projects of the company. In this the employee wise details and student wise details for every project is maintained.

Risk Analysis

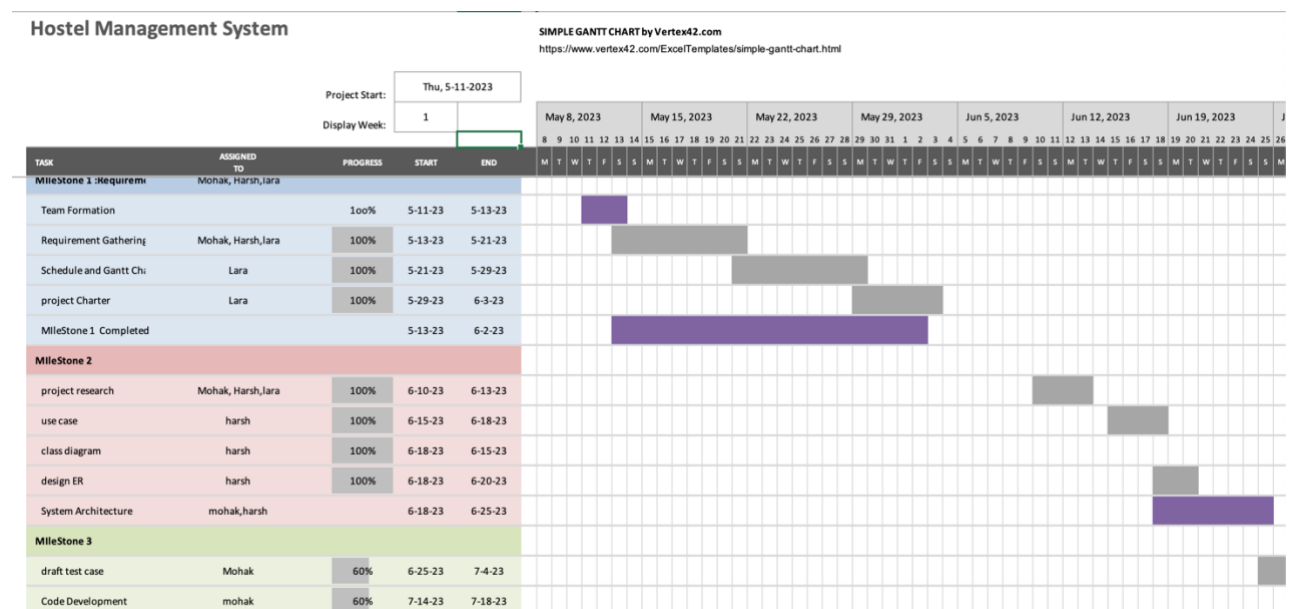
Risk	Portability	Effect	Action
LAN Connection	Moderate	Tolerable	Make Sure every system will connect with high bandwidth LAN Connection

In/Out Entry Not Create	High Moderate	Serious	It Must that every employee has today In/Out
Hardware Breaking Down	Medium	Tolerable	Make sure that every system will maintain regularly

Change management.

- considering the change as important part of the development we have planned to build the whole project in distributed components (microservices) which later can help us to develop each service individually without affecting other.
- If any of the service die out while in operation other service won't give error and they will continue working as designed.
- for all the important services we have made them in such way by which they can access other dependent services by proper authorization.

Schedule



User Interface



Click the button according to Login

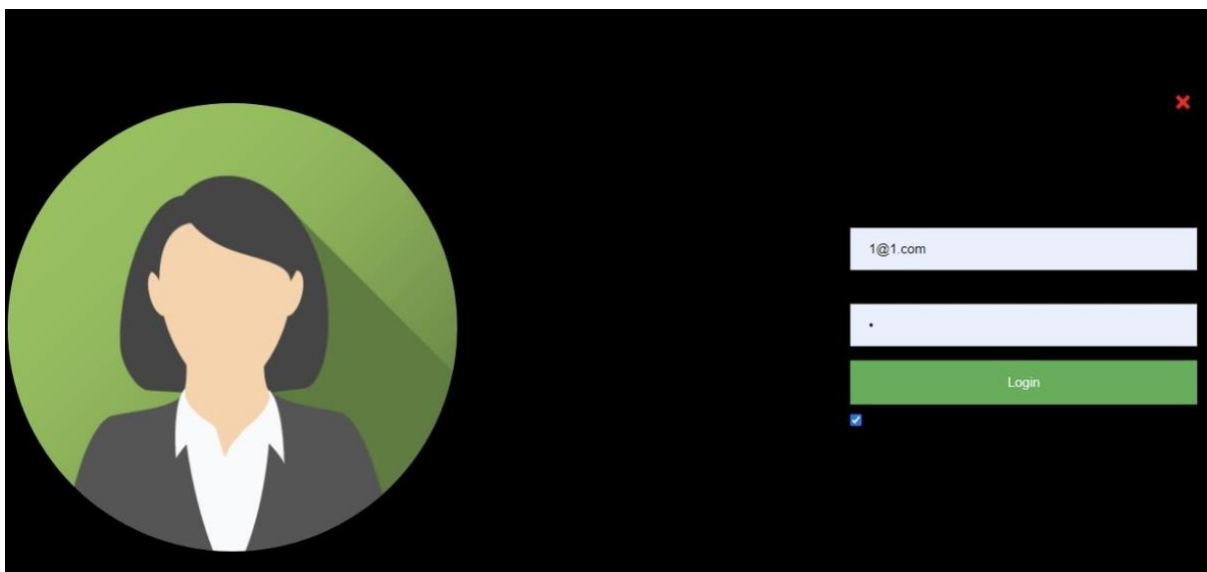


Figure 4: Admin Login



Figure 4.1: Student Login

Admin Interface – Dashboard

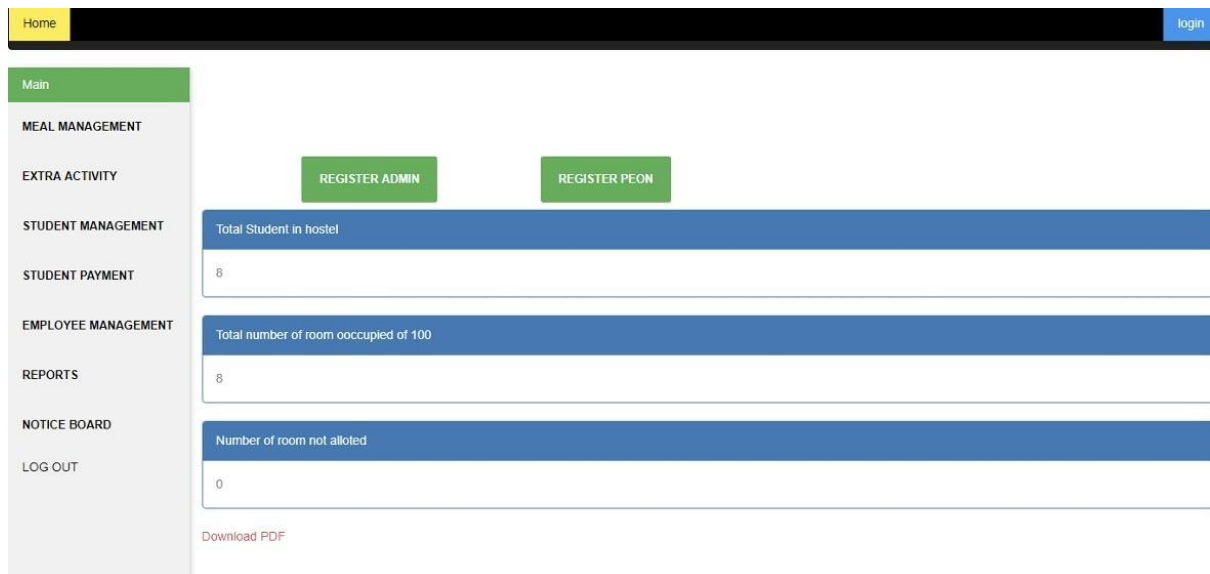


Figure 5: Dashboard

The dashboard is the place where admin will be able to go through and add update delete users and will also be able to make a meal and notice updation.

Home

login

Main

GUEST

MEAL MANAGEMENT

EXTRA ACTIVITY


STUDENT MANAGEMENT

NOTICE BOARD

LOG OUT

Hi Dev Manoj Sheth

Student Id	Dev23
Full Name	Dev Manoj Sheth
ContactNo	314567890
Address	315 ,The Country Way,
Email	dev23@gmail.com
UserName	Dev23
Password	Dev.2310
Fee	10000
Marks	89
dob	2023-06-07
RoomNO	0



Home

login

Main

GUEST

MEAL MANAGEMENT

EXTRA ACTIVITY

STUDENT MANAGEMENT

NOTICE BOARD

LOG OUT

Meal Menu

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Breakfast	Pancakes with Maple Syrup	Montreal-Style Bagels	Canadian Bacon	Maple Syrup Waffles	Baked Beans with Toast	Burrito with Eggs, Bacon, Cheese	Nanaimo Bars
Lunch	French fries with cheese curds	Split Pea Soup	Classic Caesar Salad	Lobster Roll	Smoked Meat Sandwich	Butter Tarts	Bannock
Dinner	Canadian Meat Pie	Baked Salmon with Maple Glaze	Beef Stew with Dumplings	Vegetarian Poutine	Mushroom Tourtière	Grilled Maple-Glazed Pork	Bison Burger

Home

login

Main

MEAL MANAGEMENT

EXTRA ACTIVITY

STUDENT MANAGEMENT

STUDENT PAYMENT

EMPLOYEE MANAGEMENT

Add

Delete

List view

LOG OUT

List of Employee

ID	Full Name	ContactNo	Email	Job	Jod start date	Salary
4	Jay	989876743	jayZala@gmail.com	Receptionist	2023-08-07 18:24:39	30000



Registration for admin

Name :-

Email :-

Password :-

[Login Page](#)

[Register](#)

Home

login

Main

GUEST

MEAL MANAGEMENT

EXTRA ACTIVITY

Add new

List view

NOTICE BOARD

LOG OUT

Current Data

Student Id	Full Name	applied in Gym	applied in Lirary
1125	Dev Manoj Sheth	no	no

Update data

☐ Gym

☐ Library

REGISTER

Web Search

Tools and Technologies used in this project are:

- Core PHP
- SQL Database
- XAMP
- HTML
- CSS
- Bootstrap

Why PHP as Programming language?

The Hypertext Pre-processor (or simply PHP) is a server-side scripting language that was created for Web development but is also used for general-purpose programming. Rasmus Lerdorf designed the PHP reference implementation in 1994, and it is presently produced by The PHP Group. PHP initially stood for Personal Home Page, but it is now abbreviated as PHP: Hypertext Pre-processor.

PHP code can be inserted in HTML code or used in conjunction with a variety of web template systems, web content management systems, and web frameworks. PHP code is often executed by a PHP interpreter, which is either a web server module or a Common Gateway Interface (CGI) executable. The web server aggregates the results of the PHP code that has been evaluated and executed, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications

Why HTML and CSS?

HTML is the industry standard markup language for producing online pages and web applications. It constitutes a trinity of cornerstone technologies for the World Wide Web, together with Cascading Style Sheets (CSS) and JavaScript.

Web browsers accept HTML documents from a web server or local storage and convert them to multimedia web pages. HTML semantically explains the structure of a web page and initially provided signals for the look of the content.

HTML components are the foundation of HTML pages. Images and other objects, such as interactive forms, can be embedded within the produced page using HTML structures. HTML allows you to build organized pages by expressing structural semantics for text like headers, paragraphs, lists, links, quotations, and other elements.

And As far as CSS is concerned,

CSS (Cascading Style Sheets) is a style sheet language that is used to describe the display of a document written in a markup language such as HTML. CSS, like HTML and JavaScript, is a foundational technology of the World Wide Web.

CSS is intended to separate display from content, including layout, colours, and fonts. This separation can improve content accessibility, provide more flexibility and control in defining presentation characteristics, allow multiple web pages to share formatting by specifying the relevant CSS in a separate CSS file, and reduce complexity and repetition in structural content.

Why MySQL and XAMP?

XAMPP is a free and open source cross-platform web server solution stack package built by Apache Friends that includes the Apache HTTP Server, the MariaDB database, and interpreters for PHP and Perl scripts. Cross-Platform (X), Apache (A), MariaDB (M), PHP (P), and Perl (P) are the acronyms for XAMPP. It is a small, lightweight Apache distribution that allows developers to easily establish a local web server for testing and deployment. An extractable file contains everything required to set up a web server, including the server program (Apache), database (MariaDB), and scripting language (PHP). XAMPP is also cross-platform, meaning it works on Linux, Mac, and Windows. Because the majority of genuine web server implementations employ the same components as XAMPP, it makes transitioning from a local test server to a live server extremely easy as well.

MySQL Workbench is a visual database architect, developer, and DBA tool. MySQL Workbench includes data modelling, SQL creation, and extensive administrative tools for server configuration, user management, backup, and much more. MySQL Workbench runs on Windows, Linux, and Mac OS X

jQuery: It is a lightweight 'write less, do more' js library. It is a fast, small, and feature-rich JavaScript library. It makes it easy to manipulate HTML document traversal, event handling, animation, and the use of ajax.

Class Diagram

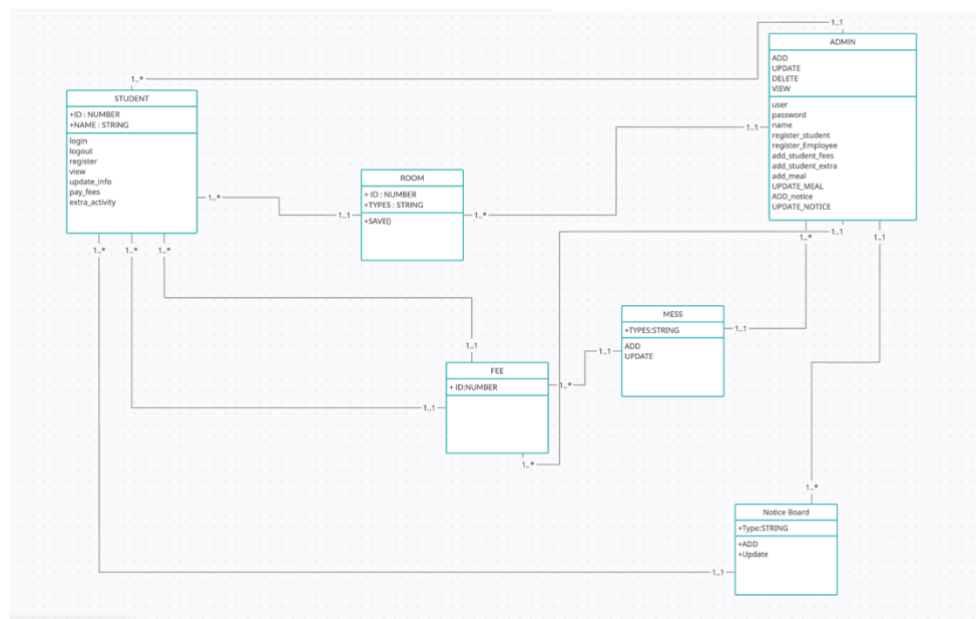


Figure : Class Diagram

In this class diagram, the structure of the software is described, and one can learn the detailed structure with the help of the system's classes their attributes, operations, and relationships with each other. Some of the classes are Users, Job posts, rentals, and admin.

ER Diagram

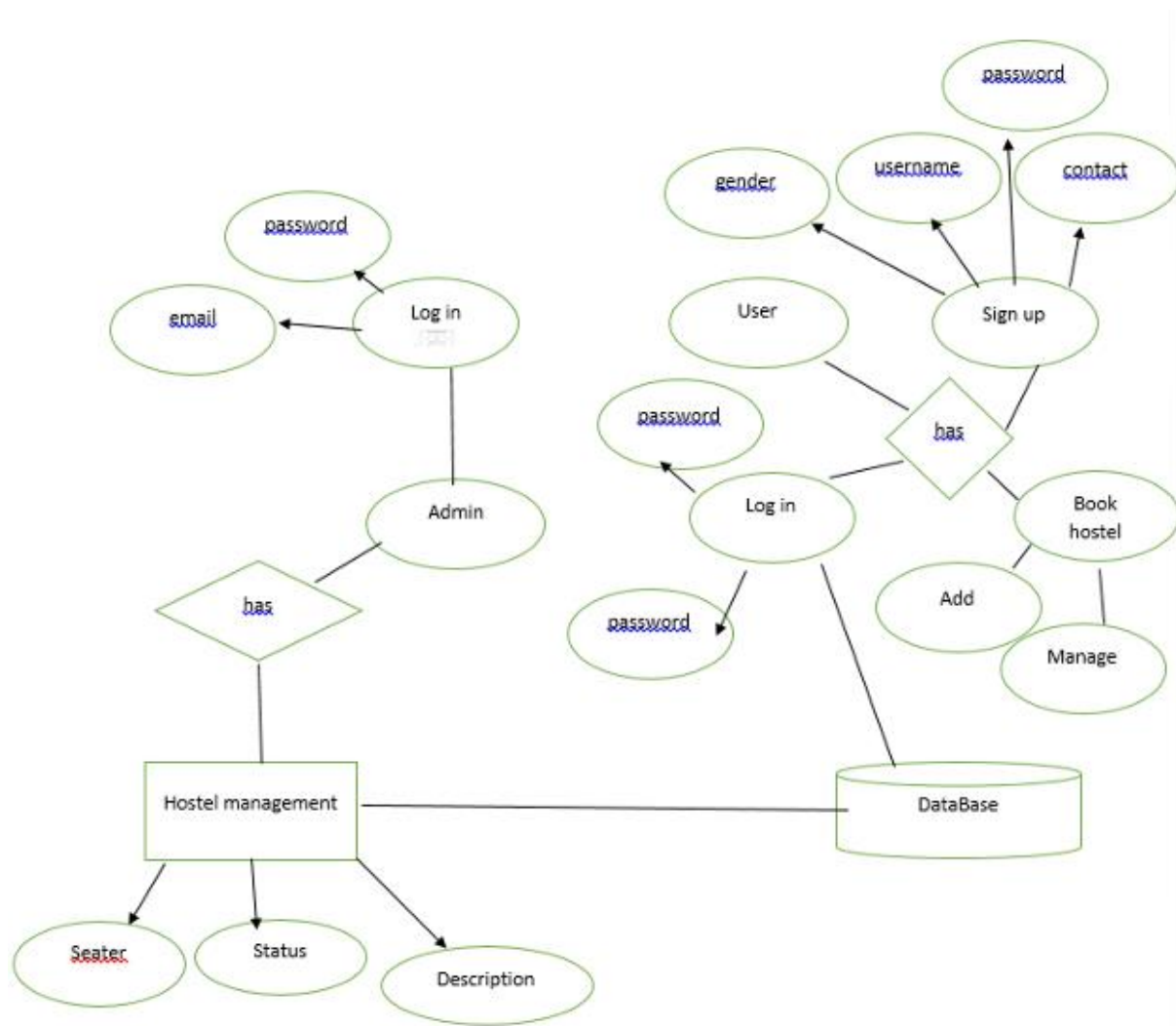


Figure: ER Diagram

In this ER diagram, we have the following entities:

- **User:** This entity represents the users of the online hostel system. Each user has a unique ID, a name, an email address, and a password.
- **Admin:** This entity represents the admins of the online hostel system. Each admin has a unique ID, a name, an email address, and a password.
- **Login:** This entity represents the users that has already signup for the online hostel system. Each login has a unique ID, a name, a description, a price, a quantity in stock, and manufacturer details.

- Book hostel: This entity represents an order that a user books its room on the online hostel system. Each order has a unique ID, a date, a total price, and a status (e.g., pending, booked)

This ER diagram represents an online hostel management system to manage the details of hostel such as rooms, meals, payments. It also manages information about allotted students, visitors/guests.

Sequence Diagram

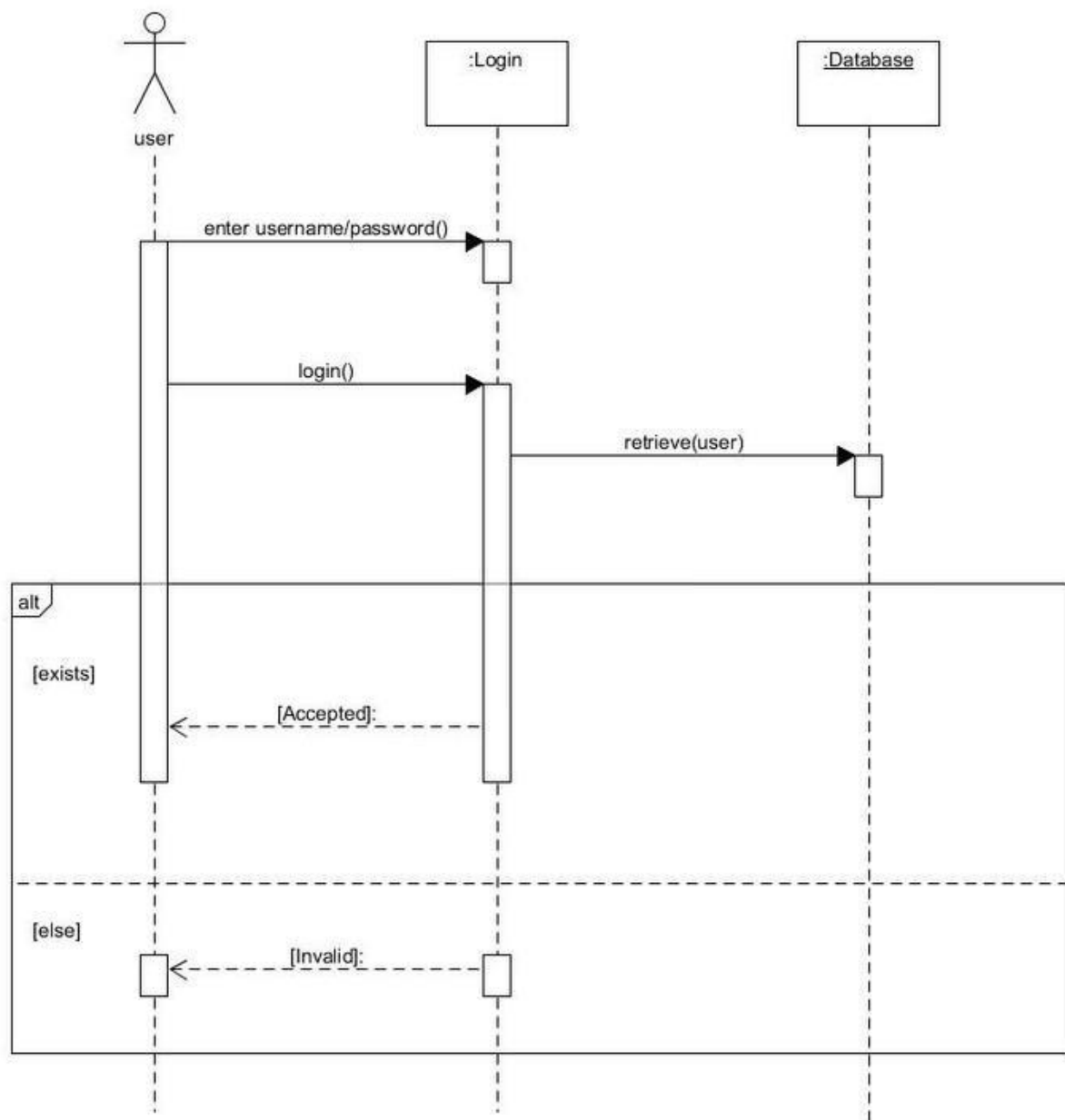
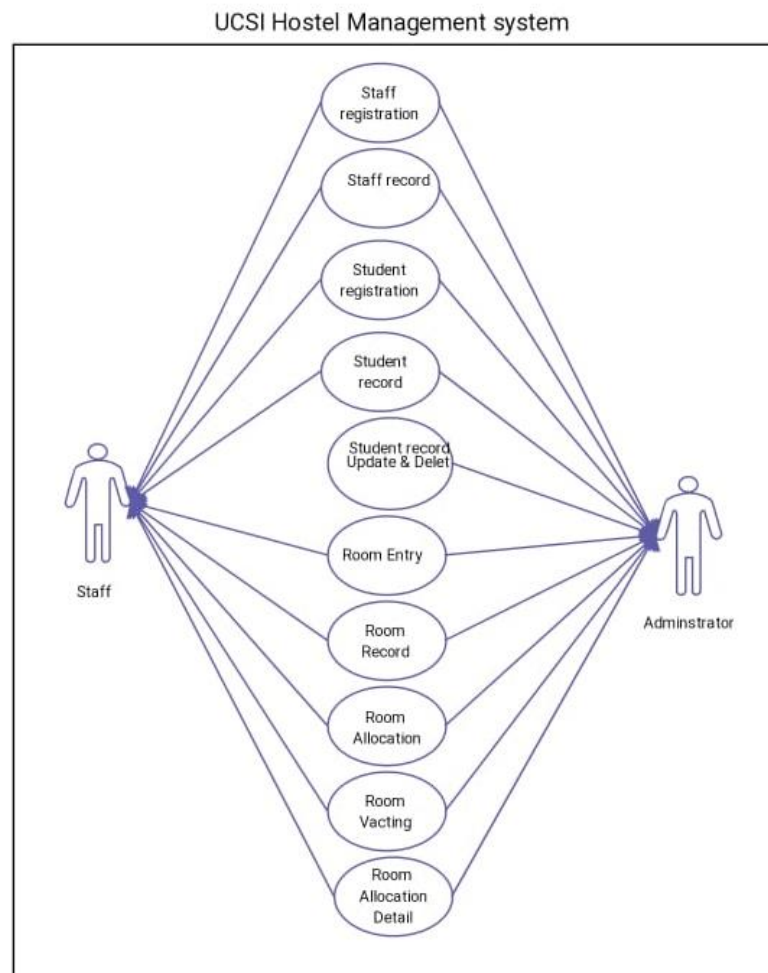


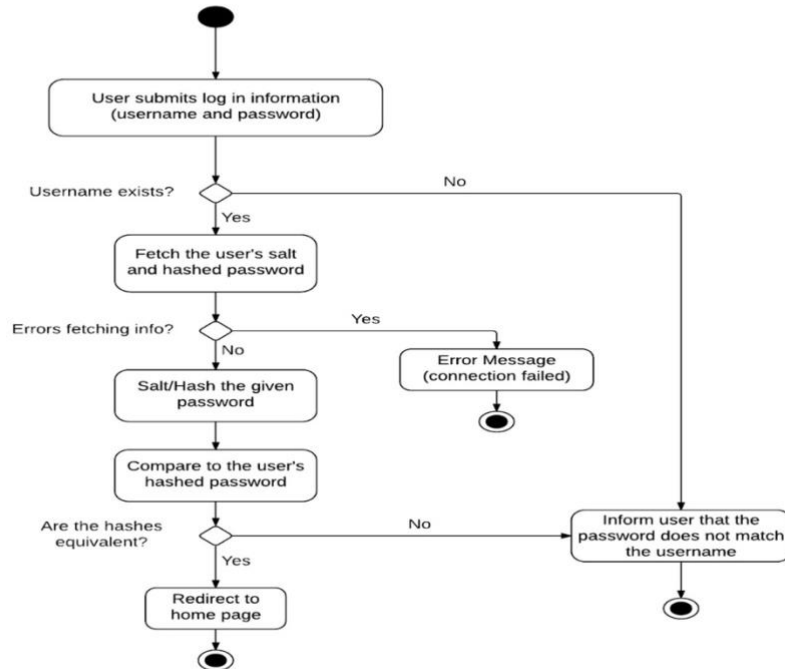
Figure: Sequence Diagram

Use Case Diagram



Activity Diagram

Logging into the website



Data Dictionary

A data dictionary is a collection of names, attributes, and data types about the data elements that are used in the composition of the database. Here in this system, the data dictionary is described in the detailed view as the grouping of all the data related parameters is explained.

- **Table name: admin login**
- **Table Description:** Information admin login

Field Name	Data Type <with Size>	Constraint	Description	Sample Data
RollNo	Int	Primary Key	Id	1
Name	Varchar(50)	Not Null	Name	Sam
UserNam e	Varcahr(50)	Not Null	Email Id	Sam@gmail.c om
Password	Varchar(50)	Not Null	Password	sam@A123(m d5)

Table: Guest

Table Description: Information about Guest

Field Name	Data Type <with Size>	Constrai nt	Description	Sample Data
Name	Int	Primary Key	Name of the guest	Jeet
conatct	Varchar(50)	Not Null	Sign In User Name	9865321470
Reason	Varchar(50)	Not Null	Sign In Password	Pan card sign
Student_id	Varchar(10)	Not Null	User Security que.	5
In_time	Timestamp	Not Null	Current time	12/10/2019 12:25:55

Table Name: Employee

Table Description: Information about Payment

Field Name	Data Type <with Size>	Constraint	Description	Sample Data
Eno	Int	Primary Key	Payment Id	1
Name	Varchar(20)	Not Null	Name of Employee	Jignesh
Email	Varchar(20)	Not Null	Email of Employee	Jignesh53@gmail.com
Job	Int	Not Null	Jod definition	Cook
Job_Start	TimeStamp	Not Null	Join Date	12/5/2006
sal	Int	Not Null	Salary	56356

Table Name:

Table Description: Information about Project Master

Field Name	Data Type <with Size>	Constraint	Description	Sample Data
Heading	Varchar(20)	ot Null	Heading of Notice	Holiday
Info	Varchar(30)	Not Null	Body of the notice	12/9/2018 is holiday

Database

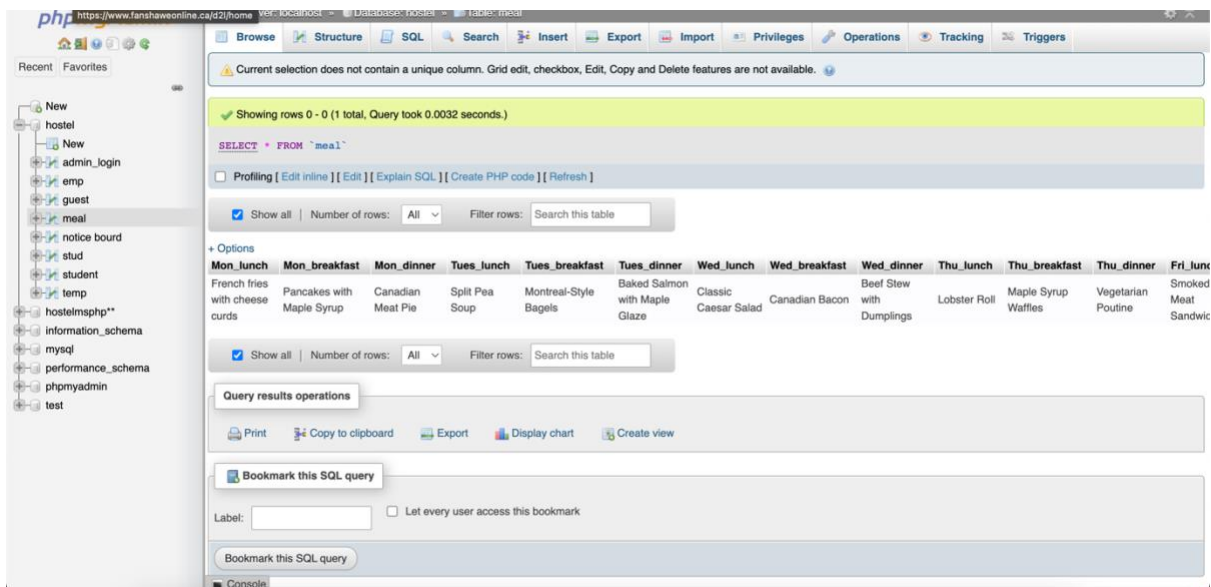


Figure 18: Draft of Database

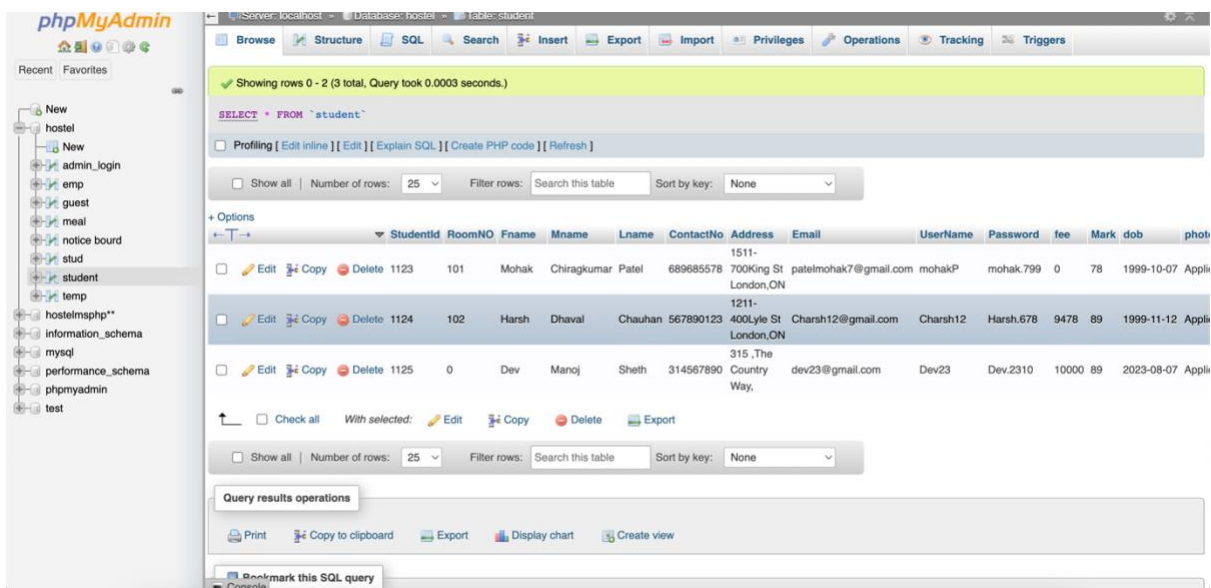


Figure 18.1: Draft of Database

Deployment Diagram

HOTEL MANAGEMENT SYSTEM

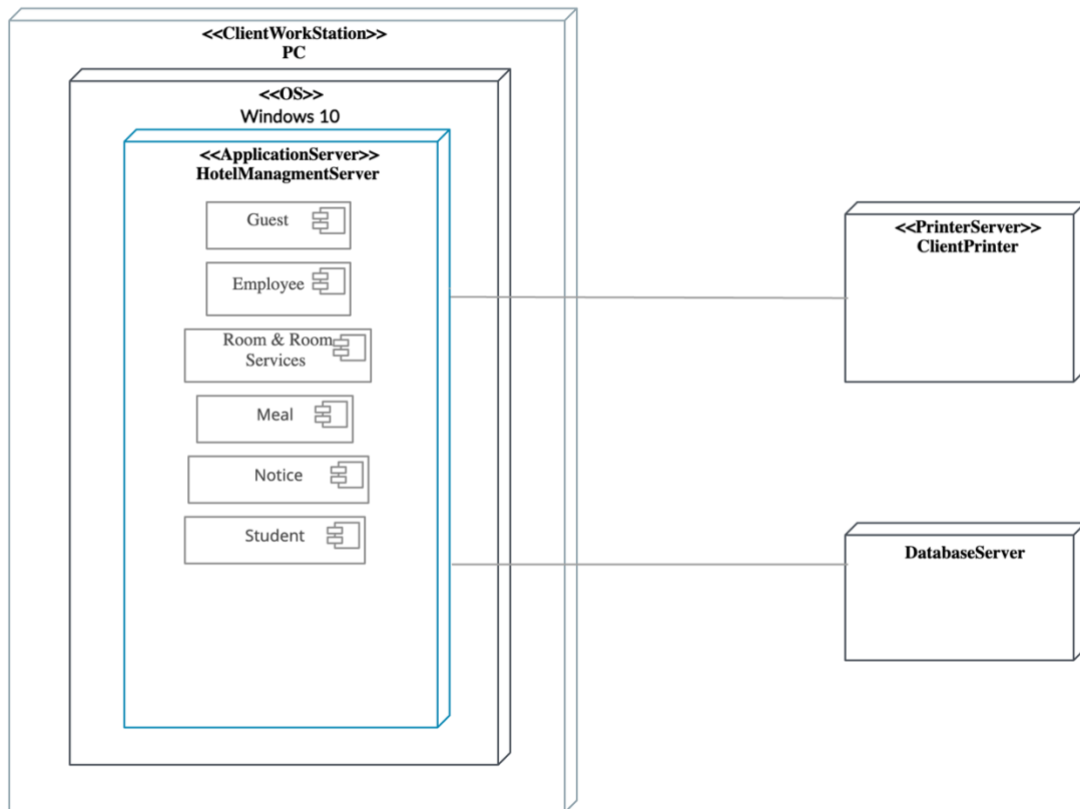


Figure 19: Deployment Diagram

A deployment diagram is a type of diagram that specifies the physical hardware on which the software system will execute. It also determines how the software is deployed on the underlying hardware. It maps software pieces of a system to the device that is going to execute it.

Test Cases

Case Name	Purpose	<u>Expected Result</u>	Actual Result	Pass/Fail
Login	Verifies password And username Is allowed	Valid password to login user	Login into the system	Pass

Home Page	Verify to not start any task before login	Message should appear when task start	Access Functionality	Pass
Add meal	To added meal by authorize user	Meal should be add	Access profile	Pass
Add student	Verify to student is added By authorize user	Student info should be added	Profile added and displays students details	Pass
Add Employee	Verify to employee is added By authorize user	Employee should be added	Employee added displays EMP details	Pass
Add notice	Verify to notice is added	Notice should be added	Displays Notice details	Pass

Coding Standards

Naming Conventions:

- Use descriptive and meaningful names for variables, functions, classes, and files. The name of meaningful and comprehensible variables enables everyone to understand why it is used. Follow camelCase for variable and function names (e.g., \$StudentId, getStudentDetails()). Follow Pascal Case for class names (e.g., Admin).

Commenting:

- Include comments to explain complex or important sections of your code. Also, document function and class headers with PHPDoc comments to describe their purpose and input/output parameters.
- **Error Handling:** Implement proper error handling using try-catch blocks or custom error handling functions to handle exceptions and errors gracefully.
- **Performance Optimization:** Optimize your code for performance by minimizing unnecessary database queries, using caching techniques, and identifying and eliminating bottlenecks.
- **Well-documented code** for easy comprehension, the program should indeed be correctly commented on. Comments are important while developing the code as it would be easy to understand for any other person.

Project Code

<https://github.com/mohak710/hostelmanagementSysteminphp>

Software Requirements & Installation Guide

Required Software

- Source code Editor (VSCode)
- XAMP

Environment Setup:

Download and install Xamp from following link:

<https://sourceforge.net/projects/xampp/>

- After you finish downloading the project, the project file and head over to your XAMPP directory.

- There you'll find a folder naming "htdocs".
- Inside the "htdocs" folder, paste the project folder (not the .zip one, but the extracted one).
- Open your favorite browser; we recommend using Google Chrome or Mozilla Firefox.
- Then, go to the URL "http://localhost/phpmyadmin".
- Create a Database with a name that is provided inside the "01 LOGIN DETAILS & PROJECT INFO.txt".
- Click on the "Import" tab and choose the database file (.sql) which is provided under the folder naming "DATABASE FILE".
- After setting up all these, go to the URL "http://localhost/[PROJECT_FOLDER_NAME]/"
- All the login details are provided inside the project folder, check that out and enter them in order to use it.

Recommendations

- Implement forget password and change password and email functionality.
- Make dashboard dynamic.
- A feature (exclusively for students) to directly update their information from there account.
- The admin can manage course details such as course name, course code, and its short form.
- Modules to manage staff members, their roles, and their schedules. Include features to add, edit, and delete staff profiles.
- A Feedback page can be added to make the website more interesting and interactive to users.