

**A Project/Dissertation Review-2 Report**  
on  
**Faculty Management System**

*Submitted in partial fulfillment of the  
requirement for the award of the degree of*

**BACHELOR OF ENGINEERING  
IN  
COMPUTER SCIENCE & ENGINEERING**



(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

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INDIA OCT, 2021



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**CANDIDATE'S DECLARATION**

I/We hereby certify that the work which is being presented in the thesis/project/dissertation, entitled **“FACULTY MANGEMENT SYSTEM”** in partial fulfillment of the requirements for the award of the Btech submitted in the School of Computing Science and Engineering of Galgotias University, Greater Noida, is an original work carried out during the period of month, Year to Month and Year, under the supervision of MR. Arvindhan M Ast prof, Department of Computer Science and Engineering/Computer Application and Information and Science, of School of Computing Science and Engineering , Galgotias University, Greater Noida

The matter presented in the thesis/project/dissertation has not been submitted by me/us for the award of any other degree of this or any other places.

Nitesh Singh, 19SCSE1010709  
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This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Mr. Arvindhan M  
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**CERTIFICATE**

The Project Review examination of Nitesh Singh: 19SCSE1010709, Mohit Bhatia: 19SCSE1010012 has been held on \_\_\_\_\_ and his/her work is recommended for the award of B.tech(Hons)

**Signature of Examiner(s)**

**Signature of Supervisor(s)**

**Signature of Project Coordinator**

**Signature of Dean**

Date: December, 2021  
Place: Greater Noida

## **ABSTRACT**

The purpose of faculty management system is to replace the current manual by helping them to computerized their equipment's and fully developed software by fulfilling its requirement, so their data should be store for a longer period of time with ease to access. This paper is about to introducing the such kind of environment for faculties which is easy to handle their work and maintain their records easily. Web page provides them a such kind of platform for the faculties to overcome such issues and complex work. This web page is platform independent workspace for faculties so that they can easily access. It will support different types of browsers like Internet Explorer, Google chrome, Mozilla Firefox etc.

Faculty Management System, as it was described above, it also can lead to the reliable, error free, secure and fast management system. It will assist the user to concentrates on other activities rather than the concentration on record keeping. Thus, it will also help the organization/institutions with the better use of resource. The organization can also maintain computerized record without the redundant entry, which means that one need not be distract by the information, i.e. not relevant, while being able to reach the information.

Basically, this project describes how to manage for good performance and service for the client/organizations.

It is better, by secure transfer of the all information provided by using advanced technologies. Inserting, Updating, Deletion and all the other operation can be done in an efficient manner. This web page will be the most useful in future so that it reduces the paper work and it will also affect the time as well as the environment.

## **ACKNOWLEDGEMENT**

I am overwhelmed in all humbleness and gratefulness to acknowledge my debt to all those who have helped me to put these ideas, well above the level of simplicity and into something concrete.

I would like to express my special thanks of gratitude to my project guide as well as our project coordinator who gave me the golden opportunity to do this wonderful project on the topic "Faculty Management System, which also helped me in doing a lot of Research and I came to know about so many new things. I am really thankful to them.

Any attempt at any level can't be satisfactorily completed without the support and guidance of my parents and friends.

I would like to thank my parents who helped me a lot in gathering different information, collecting data and guiding me from time to time in making this project, despite of their busy schedules, they gave me different ideas in making this project unique.

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# 1. INTRODUCTION

## 1.1. Description

The “Faculty Management System” has been developed to override the problems prevailing in the practicing manual Systems. The main aim of this project is to develop a web application which covers all the details of the faculties and schedule their time table show their time table. The system utilizes the authentication, each sub-activity has authentication allowing the authorized users to login in the system to create or update information in the particular activity. The staff can submit request for the leave thus reducing the processing time. The application reduced the time needed to access and deliver the student records to users.

The system Faculty management system can be used to manage data of all type of education institute. It will support both stand alone and also networking environment. The application reduces as much as possible to avoid error while entering the data. No formal knowledge is needed for the user to use this application. Thus, it provides user-friendly environment for everyone.

### **Website Development Process:**

Various Steps consider in Website Development Process:

- Analysis
- Requirements
- Invention & Development
- Content Writing
- Coding
- Advancement
- Maintenance & Update

### **Analysis:**

Right off the bat, we comprehend the site prerequisite for creation, including web composition and Website styling, the Web pages utilizes, site content and for recommendation and conversations, a legitimate space accessible on a site foreffectively agreeable.

### **Requirements:**

Predicated on Requisite, set up a draft assignment of destinations to be created incorporate the sitemap and a progression of fluctuated measure



**Invention & Development:**

Invention and Development plays a significant role in Web Development. Designing plays a vital role in the web development. And it also decides that how is our website or web application looks and at what place is for what thing.

**Content Writing:**

Composing of substance is a huge piece of making a site and assumes a vital function to give as much as data about the what is the motivation behind making a site. Content composed by a more expert requires more unadulterated, simple and exact substance.

**Coding:**

Beginning of the coding of a Web Pages is starts using CSS, HTML, SQL server, Python and Django contents and different advances of WWW (internet), for drawing of the realistic and text substance.

**Advancements:**

The headways are in like manner a vital advance for site to attention to the people groups. To turn out to be greater, we will do site advancement that are recorded underneath:

1. E-mails
2. Social media
3. Web logs
4. Articles
5. Blog
6. Advertisements
7. Networks

**Maintenance & Update:**

For better performance our developer and other user can suggest and monitor the website from time to time. And we can make it an open source project as there are many developers in our country who can give us more ideas on what new content we can add or what we can do to improve our site by posting on Firebase or Git Hub.

## **1.2.Problem formulation**

This system defines, now-a-days faculty deals with the papers and all the management regarding issue of making and maintaining the all documents and records related the students and their daily conductance. It helps to make sure that paper work should be reduce to the smart work using the remote web application. And by doing the paper works there is some error or some mistakes to the information. But by using this they can edit there information easily and It helps them to save all the data in server for the future. And all these is done by the administrator or dean. So it will helps to make sure that paper work should be reduce to smart work by provide them a platform so that they can store all these information on the application without any paper work.

## **1.3 . LITERATURE SURVEY**

Personnel the executives framework help with changing the current framework to site based framework. This is a paperless work and it likewise lessen the necessary labor. It fundamentally gives the stage to the educators with the goal that they can have simplicity of their work just as diminishing the desk work will assist with saving the climate. This application expressed likewise gives independent application stage to give the different notification too the understudy subtleties for the resources. The application can be extremely valuable in the field of schooling as well as utilized in the business too. Bosses can send effectively message and interface with their representative as opposed to circling the paper notice to everybody. This application gives a colossal assistance to both every single field.

What happen precisely in the prior framework utilizes the one man to another functioning methodology just as the notification or the data should be utilization of paper. This prompts didn't guarantee that the data will precisely give to every individual in the framework. Refreshing the data need to utilize the new paper each on numerous occasions flow that among the understudies which is very interesting. Rather than utilizing such, we can utilize the application which can be effectively refreshed and the warning got by understudies

## 2. REQUIREMENTS

This section discusses about what requirements needed to create a site. Basically, we need to know all about a web browser for creating a website we need a web browser like Google Chrome, Microsoft edge, Firefox etc. We also need the basic knowledge of HTML, CSS, JavaScript, PHP AND MYSQL.

**Hypertext Markup Language (HTML)** is the standard markup language for documents designed to be displayed in a web browser. It's used to create a structure for a website.

**Cascading Style Sheets (CSS)** is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. It helps us to style the html document or website to show it attractive like making a background, changing fonts, styling images etc. it also used to make the site responsive using media queries i.e., the site is can be view in both desktop and mobile without any font dissimilarity.

**JavaScript** often abbreviated as **JS**, is a programming language that conforms to the ECMAScript specification. JavaScript is high-level, often just-in-time compiled, and multi-paradigm. It has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions. It is used for the both frontend and backend for frontend we use it for animations and tracking the HTML and for backend it uses for client-server.

**SQL Server** is a relational database management system that is used for storing and retrieving data as requested by software applications. The connectivity is applicable to the data stored on same computer or on different computers.

**PYTHON** is a computer programming language often used to build websites and software, automate tasks. In this project we use python basically for the automatic timetable generation with the help of Django.

**DJANGO** is a high-level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel.

### 2.1. System Requirements

**FACULTY MANGEMENT SYSTEM** web application consists of two modules-

#### [1] –a) Admin

- Admin Registration

The first step in this application is to get the HOD, staff members and teaching faculty to register. They need to first register their employee ID of the institution in the database. The respective person will then provide his or her phone's e-mail id and password for registration. An OTP would be then sent via e-mail address on the phone by the admin or faculty.

**a) Admin subgroups**

- Admin Registration

The initial phase in this application is to get the HOD, staff individuals and helping workforce to enlist. They need to initially enroll their worker ID of the establishment in the information base. The individual will then, at that point, give their telephone's email id and secret phrase for enrollment. An OTP would be then sent by means of email address on the telephone by the administrator or staff.

- Admin Login

Subsequent to enlisting the administrator is permitted to sign in. The individual in question would now be able to see administrator landing page where there are choices to oversee workforce and understudies, oversee schedule, courses, personnel and understudies leave, staff and understudy criticism and results. Administrator can likewise see the participation taken and transferred results.

- Add Faculty and Students

Admin can add new faculty and students who can join the institution recently according to their respective departments.

- Manage courses

Admin can add or remove courses for the students and faculties or according to demand of the education policy.

- View attendance

Admin can view the attendance for the student which is marked by faculties but as I mention in future work , we will take attendance with QR code and it was verified by facial recognition of the students.

- Timetable Generation

Admin doesn't need to schedule the timetable because we generate automatic timetable with the help of using Heuristic Algorithm. Workflow of Timetable generation is explained in III-i-b) part.

- Staff and students leave

Admin can manage the application leave for faculties and students.

- Results

Admin can view and generate the results of each students where marks of the students will be uploaded by their respective faculties.

- Feedback

Students can give feedback of faculties to the admin and similarly faculties can also provide their feedback about, if there is any need of improvement in infrastructure and the coordinators of the respective courses etc.

## **b) Automatic Timetable Generation**

### **Heuristic Algorithm.**

The term heuristic is utilized for calculations which discover arrangements among every conceivable one, however they don't affirm that the best will be found, they might be thought as about and not exact algorithms. These algorithms, normally view as a arrangement near awesome and they think that it is quick and basically. Now and then these calculations can be precise, that is they turncoat track down the best arrangement yet the calculation is unmoving called heuristic until this best arrangement is shown to be awesome. The technique old from a heuristic calculation is one of the referred to techniques, like covetousness, however to be basic what's more quick the calculation overlooks or lopsided stifles some of the issue's requests.

Think about the case of programmed schedule generator.

- Time allotments of the time tables:-  $ts_1, ts_2, ts_3, \dots, ts_n$
- Subjects List:-  $s_1, s_2, s_3, \dots, s_n$
- Educators: -  $t_1, t_2, t_3, \dots, t_n$
- Students batches:-  $c_1, c_2, c_3, \dots, c_n$
- Banners showing concluded timeslots :-  $tsf_1, tsf_2, tsf_3, \dots, tsf_n$
- Information construction to hold Last Schedule:-  $final\_tt$
- Count for day of week: Daycount
- Number of days of the week:-  $n$
- Information construction to hold Subject-conflict inside the day:-  $conflict$ .
- Every component of Conflict information structure:-  $clash\_element$
- Information structure for Subject-conflict across days:-  $Dayclash$
- Every component of Dayclash information structure:-  $day\_clash\_element$
- Subject contained in dayclash:-  $sdc$
- Instructor related with subject in dayclash:-  $tdc$
- Max number of talks of subject  $s_i$  in the week:-  $k$
- Counter for the quantity of subjects:-  $counter\_sub$

- Irregular number showing arbitrary space distribution for subject:- rand\_sub\_allot
- Information construction to hold arbitrarily designated subject:-rand\_sub\_seq
- Information construction to hold all subjects:- init\_sub.

This calculation is intended to address and produce educational timetables. Coming up next is a rundown of presumptions made while fostering this calculation:

1. The calculation produces Ideal results in a five-dayweek.
2. The quantity of subjects (s1, s2, ...,sn) should be finished before the calculation starts execution.
3. Number of educators (t1, t2, ...,tn) entered previously execution of the calculation are thought to be steady and can't be changed during or later the calculation has been executed.
4. Any adjustment of the over two speculation will require another age of Schedule for the changed information.
5. In each time table, untouched opening is busy with, a novel blend of subjects with next to no redundancy of subjects.
6. Any educator is permitted all things considered 'k' number of addresses in seven days. The worth of k is acknowledged previously execution of the calculation.
7. It is expected that a talk can't take more than one talk for a similar class in a day.
8. Timeslots ts1, ts2, ...,tsn once entered at the starting can't be changed all through the execution.

## **[2] Faculty/ Teaching Staff**

- Add Students

Faculties can made a request to admin to add students who can join the institution recently according to their respective departments.

- Manage courses

Faculties can made a request to admin to add or remove courses for the student.

- Mark attendance

Faculties can mark the attendance for the students for their classes.

- Apply leave

Faculty can also apply application leave if they holiday.

- Feedback

Faculties can give the feedback to admin for students and session they taken.

## **[3] Student**

- View Attendance

Students can view attendance uploaded by the faculty or admin. They can check the attendance at any time but they cannot manipulate the data.

- Course registration

Students will register for the courses in each session which will be approved by the admin.

- View Results

Students can even view results uploaded by the HOD or faculty. They can check the marks at any time.

- Apply leave

Student can also apply application leave if they holiday.

- Feedback

Students can give the feedback to admin for faculties for each session they taken.

### **1. Tools & Technology-**

1. **FRONTEND:** - HTML, CSS AND JavaScript
2. **BACKEND:** - PYTHON AND DJANGO
3. **BROWSER:** - Google Chrome & Mozilla Firefox
4. **Hardware Requirement**
  1. Intel Quad core 2.30 GHZ Processor or above.
  2. Minimum 100 GB HD.
  3. Minimum 4 GB of RAM.
  4. Standard Keyboard and Serial Mouse.

### **5. Software Requirement**

1. Text Editor (ex-visual studio code or sublime text).
2. GCM Server
3. SQL Server (Either on local host/domain)
4. WAMP / PHP my Admin tool.

## **2.2. Scope & Objective**

Our main motto is giving the simple and easiest system to run and save all the data for the organization like the faculty details, courses, classes, students etc., The system that deals with the issue related manual college management system. This project is successfully implemented with all the features required for college. The application provides appropriate information to user according to the chosen activity. The project is designed keeping in view the day-to-day problem faced by a manual college management system

### 3. Activity Time Schedule (PERT)

Basically, our project is Divided into two major PHASES:

1. PHASE-1 (FRONTEND)
2. PHASE-2 (BACKEND)

#### PHASE-1 (FRONTEND):

S no.	Activity/Objective	Duration
1	Designing the login form for admin and faculty	2 days
2	Designing the page after login	1 Weeks
3	Implementation of different modules	2Weeks
4	Implementation of Style Sheet language	2Weeks

**Table1: Frontend**

- In phase -1, we are developing frontend of our web application.
- We are design our login form where admin and faculty can login.
- We are implementing the different modules like add faculty, add subjects etc.
- We are decorating our site by using CSS
- We are using HTML, CSS and JavaScript for the frontend.

#### ii)PHASE-2(BACKEND):

- In phase -2, we will be setting up our php server to connect with our database
- We will implement the backend logic to connect to frontend.
- We will make it responsive website.
- We will Host our website after its completion.

S no.	Activity/Objective	Duration
1	Setting up the server	1 Weeks
2	Creating the Database using MYSQL	2 Weeks
3	Connecting to the database (MySQL)	2 Weeks

**Table2: Backend**



## 4. Project Design

Faculty management system assist in modifying the existing system to site-based system. This is a paperless work and it also reduce the required manpower. It basically provides the platform for the teachers so that they can have ease of their work as well as reducing the paper work will help to save the environment. This application stated also provides standalone application platform to provide the various notices as well the student details for the faculties. The application can be very useful not only in the field of education but it can be also used in the industry as well. Employers can send easily message and interact with their employee instead of circulating the paper notice to everyone. This application provides a huge help to both each and every field. What happen exactly in the earlier system uses the man to man working strategy as well as the notices or the information needs to be use of paper. This leads to didn't ensure that the information will exactly provide to each person in the system. Updating the information need to use the new paper each time and again circulate that among the students which is quite tricky. Instead of using such, we can use the application which can be easily updated and the notification received by students.

### i. Activity UML Diagram

An activity diagram is a **behavioral diagram** i.e. it depicts the behavior of a system. An activity diagram portrays the control flow from a start point to a finish point showing the various decision paths that exist while the activity is being executed.

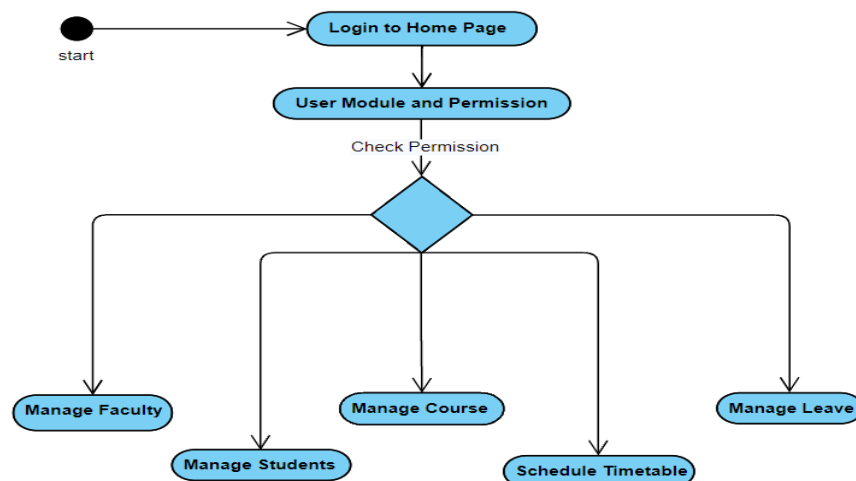


Figure 1: Activity Diagram

## ii. Class Diagram

Class diagrams are one of the most useful types of diagrams in UML as they clearly map out the structure of a particular system by modeling its classes, attributes, operations, and relationships between objects

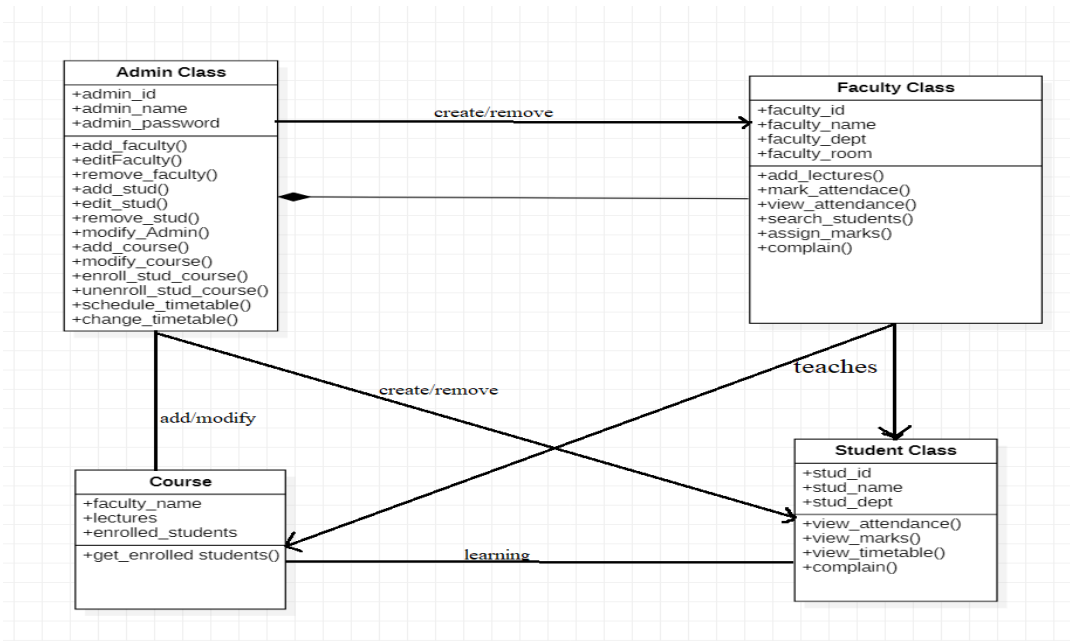


Figure 2 : Class Diagram

## iii. Use Case Diagram

A use case diagram can summarize the details of your system's users (also known as actors) and their interactions with the system. To build one, you'll use a set of specialized symbols and connectors.

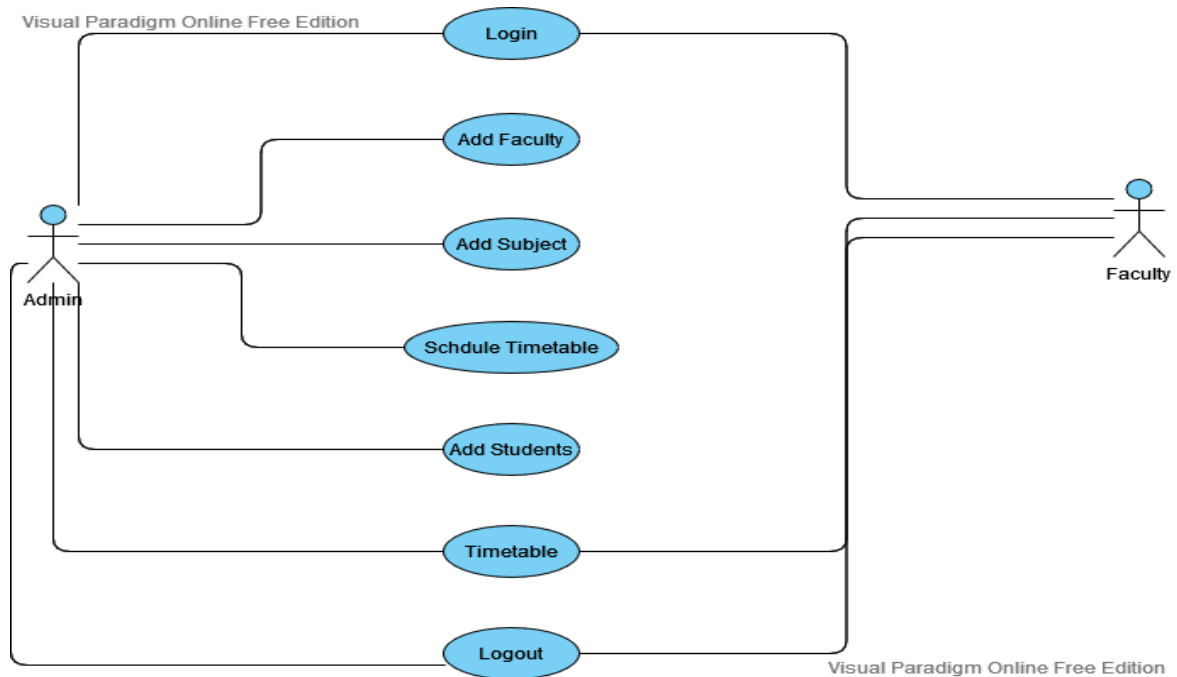


Figure 3: Use Case Diagram

#### iv. Dataflow Diagram

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one.

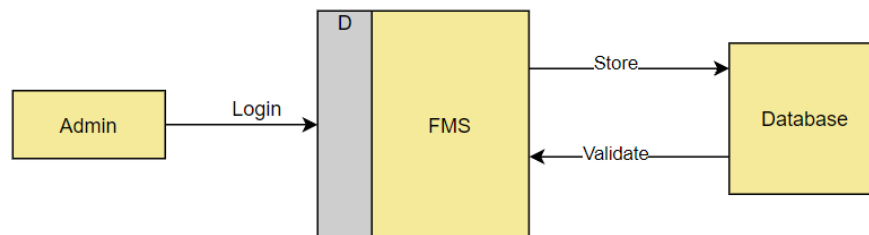


Figure 4-i : DFD level-0 Diagram

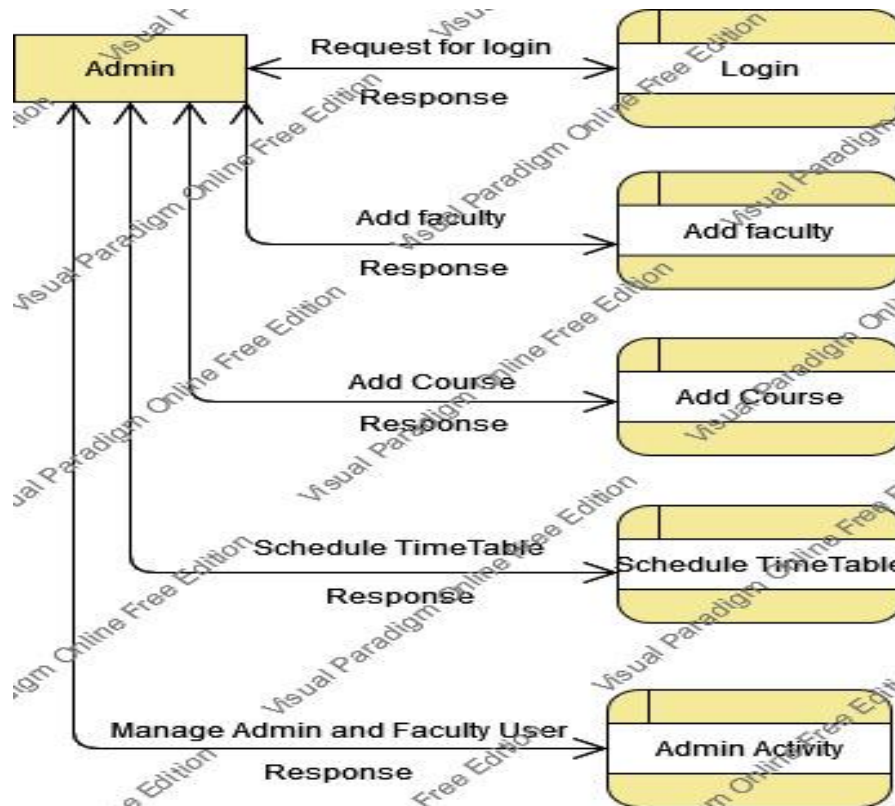


Figure 4-ii : DFD level-1 Diagram

The project is organized following diagram, and as multi-tier application. The frontend end consists of making a design or structure for the website. The HTML and CSS uses to create all the contents like navbar, footer section, cases section, about section etc. which is design by HTML and the styling is done by CSS.

The backend part consists of PHP coding in which we create our own server for the database and create the login page and all the necessary database for our application.

There are two functional components of this system i.e., the admin and the faculty. Faculty need to login in order to access the information. In this system admin has highest priority. Main functionality of admin is to add the faculty and manage the database dashboard. Admin gives the login credential to the faculty.

# 5. RESULT

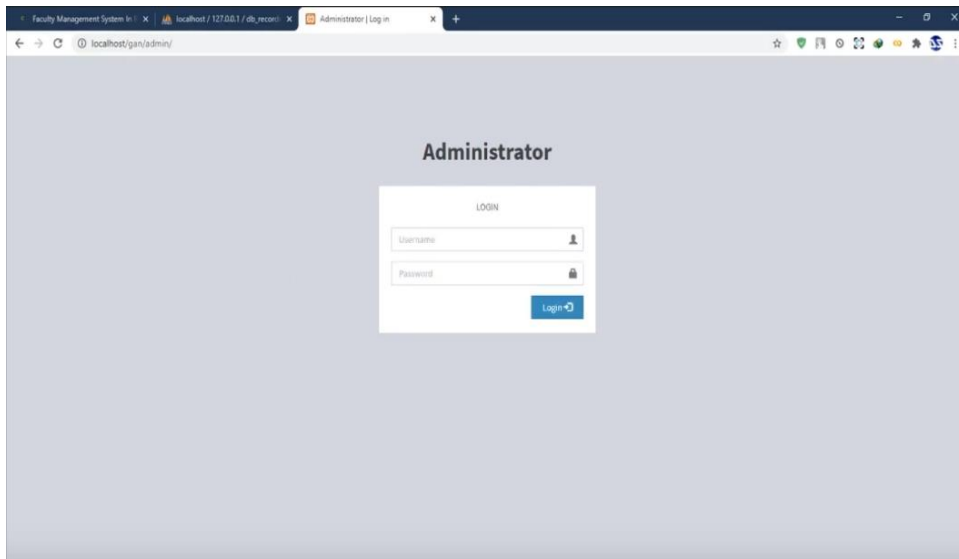


Figure 5: Admin Login



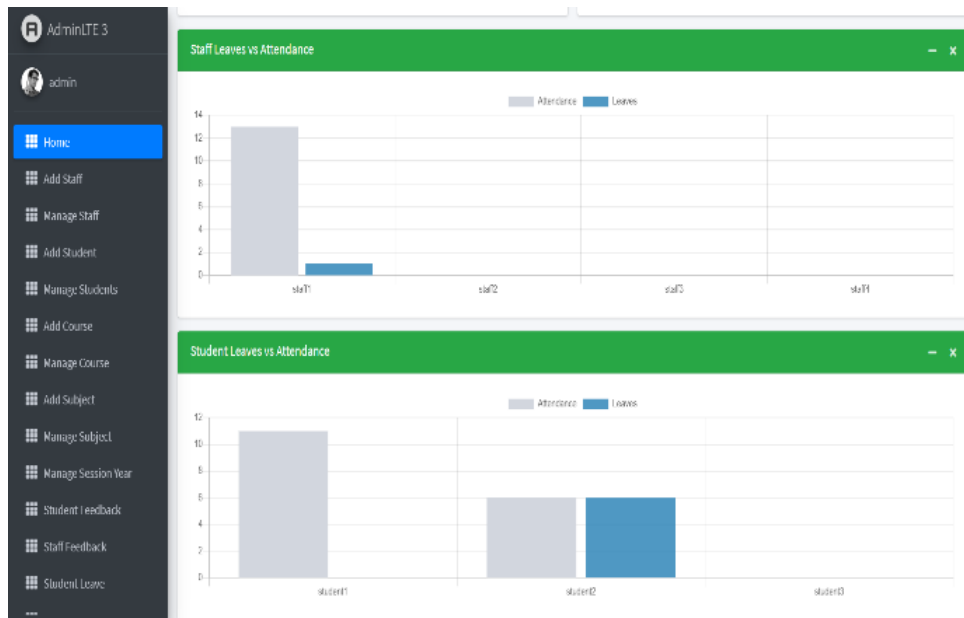


Figure 6: Admin Homepage

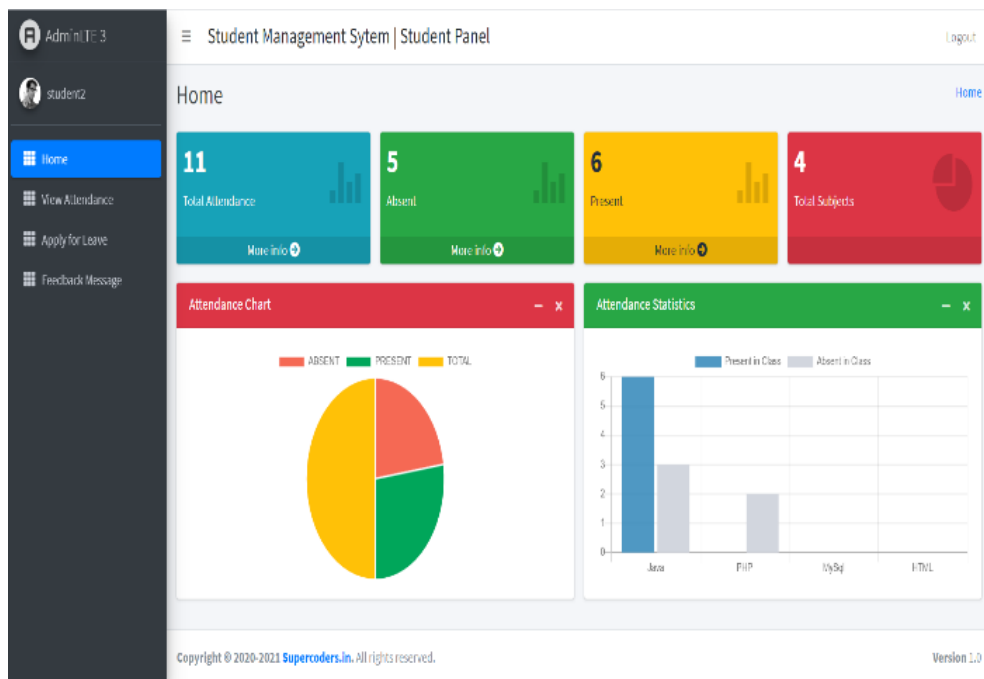


Figure 7: Student Homepage



Figure 8: Faculty Homepage

The Add Student Page in the Student Management System HOD Login includes the following elements:

- AdminLTE 3** header with user **admin**.
- Student Management System HOD Login** header with **Logout** and **Home** links.
- Add Student** title and a blue **Add Student** button.
- Form Fields:**
  - Email:**
  - Password:**
  - First Name:**
  - Last Name:**
  - Username:**
  - Address:**
- Left Sidebar:**
  - Add Staff
  - Manage Staff
  - Add Student** (highlighted)
  - Manage Students
  - Add Course
  - Manage Course
  - Add Subject
  - Manage Subject
  - View Attendance **New**
  - Student Feedback **New**
  - Staff Feedback **New**
  - Student Leave **New**
  - Staff Leave **New**

Figure 9: Add Student Page

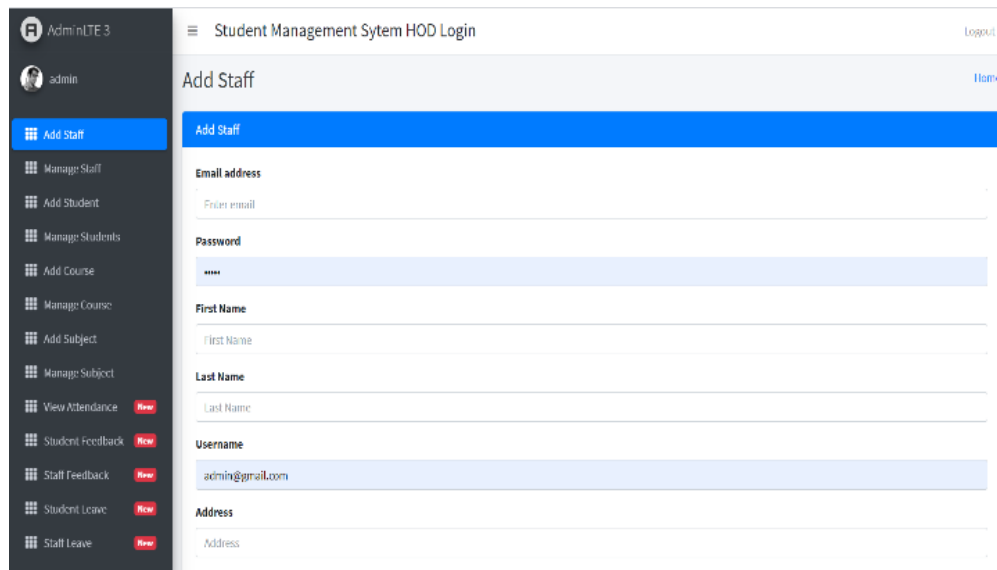


Figure 10: Add Faculty Page

## 6. IMPLEMENTATION

The majority of this section focuses on the PHASE of the project and tells the part of each Phase in project in details.

### 5.1. PHASE I

This part takes care of the front-end part of the web site on which we design the different sections using the HTML and CSS. In this part we make a core site in which we create two pages one for admin login and one for faculty login This part consists of following:

- **HTML and CSS:** In this we have to made the login form for the different pages and style it using CSS and create another page inside the admin login where there are different forms like he/she can add edit or delete faculty details, schedule classes etc., and for the faculty page there is where there information is shown which they can edit and the scheduled timetable by admin for them.
- **JavaScript:** It used for the inner HTML tags and Dom manipulation for the ease of the form in the application and connection of our database to the forms.



## **5.2. PHASE II**

This phase contains the backend part in we are a login and signup page for the user and also deploy our web app in Heroku. This part consists of following:

- PHP: We use this frame work for creating a Login form for the admin and the faculty for there the access to the database and add edit or delete the data from the database and also uses for the backend.
- Database: MYSQL is database for our application in which we save our faculty data like Name, Designation Year of joining etc.

## **7. FUTURE WORK**

As the titles says Faculty management system the work of managing the faculties in an virtual platform is done to ease to store there data. As this system is to ease the load of work to the faculties or the admin to do the work, we can make an automatic attendance system in our system through face recognition by those who came to the classes are marked absent and present through the face recognitions algorithm. And also for the future we can make a auto generate timetable by which the data of course and related faculty is given to the system and it will generates the timetable for the sessions which helps of clashing of two classes, and so on.

And in the future we can make the system for the mobile platform and also update new features in the system like video conferencing classes, and all.

## **8. CONCLUSION**

The project as Faculty Management System is the system that deals with the issue related manual faculty management system. This project is successfully implemented with all the features required for organization. The application provides appropriate information to user according to the chosen activity. The project is designed keeping in view the day-to-day problem faced by a manual faculty management system. Deployment of our Faculty Management System help the college to reduce unnecessary wastage of time in doing work using manual faculty management system. The system is user-friendly, highly interactive and flexible for further enhancement. The system generates the reports as when required. The coding is done in a simplified and understandable manner.

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