VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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A Final Project

Report On

"Development of Website : To Manage College Data"

Submitted in the Partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING

In

ELECTRONICS AND COMMUNICATION ENGINEERING

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2023-24

MARATHA MANDAL ENGINEERING COLLEGE,
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

CERTIFICATE

This is to certify that **Mr. Amey Raju Pradhan** bearing **USN:2MM20EC001 , Mr . Gurunath M Jadhav** bearing **USN:2MM20EC002, Mr. Sushant S Patil** bearing **USN:2MM20EC016**, of final year has satisfactorily completed their Project on **" Development of Website : To Manage College Data "** in partial fulfillment of the requirement for the award of the degree **Bachelor of Engineering in Electronics and Communication Engineering** of Visvesvaraya Technological University, Belagavi during the academic year **2023-24.**

GUIDE	H.O.D.	PRINCIPAL
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EXAMINERS	SIGNATURE
1)……	……
2)……	……

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ABSTRACT

The college database management web-site is a platform designed to efficiently manage student and staff information and streamline administrative processes within educational institutions. This abstract provides an overview of the key functionalities and benefits of implementing an College Data Management system(CDMS). The CDMS serves as a centralized repository for storing and organizing a wide range of student and staff-related data, including personal information, staff records, staff department, student registration, courses offered to the students and course line of the staff. By digitizing these records, the College Database Management web-site eliminates the need for manual paperwork, reducing administrative burden, minimizing errors, and improving data accuracy. The web-site facilitate faculty management tasks such as course scheduling, syllabus distribution etc. This might include features for posting course materials, managing office hours, and submitting grades. Furthermore the response of the web-site is also been discussed.

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ACKNOWLEDGEMENT

I extend my sincere gratitude to all those who have contributed to the completion of this project. First and foremost, I would like to express my deepest appreciation to **MARATHA MANDAL ENGINEERING COLLEGE** for providing the necessary resources and support throughout the duration of this project. I am immensely thankful to **Dr. D G KULKARNI** Director (MMEC) and **Dr. SURESH MASHYAL** Principal (MMEC) for their guidance, encouragement, and invaluable insights which have been instrumental in shaping this project. I am also indebted to **Prof. VAIBHAV KAKADE (H.O.D)** Electronics and Communication Department for their expert advice, constructive criticism, and unwavering support at every stage of this endeavour. I would like to extend my thanks to other staff members for their collaboration, assistance, and cooperation, which significantly contributed to the success of this project. Furthermore, I would like to express my gratitude to my family for their unwavering support, understanding, and encouragement throughout this journey. Last but not least, I am grateful to all those who have directly or indirectly contributed to this project, including friends, classmates, and anyone else who has aided or motivation along the way. Their collective efforts have made this project possible, and for that, I am truly thankful.

CHAPTER 1: INTRODUCTION

1.1 Overview of the Project:

The web-site is designed to streamline the process of managing student data, course information, and academic records for colleges and universities. With our user-friendly interface and powerful features, it aims to simplify the complex task of organizing and accessing critical information for educational institutions. It integrates various functionalities to manage data related to students, faculty, courses, finances, and other essential aspects of college management. By centralizing data, the web-site ensures easy access and accurate reporting for administrators, faculty, and students. It also enhances communication through portals and dashboards, providing real-time updates and alerts. The goal of the web-site is to enhance efficiency, accuracy, and accessibility of information, thereby improving the overall educational experience for students and administrative workflow for staff. The website contains various modules such as the separate login sessions for student, staff & the administrator, which gives it a unique approach by giving a restriction of access to the user strictly to his respective requirements. The website also includes dedicated modules for Examination section, fees & department. By automating routine tasks, the Web-site reduces administrative burdens, allowing staff to focus on strategic initiatives and improving the educational experience for students.

1.2 Present issues in Management of Data:

The existing traditional paper-based system currently used for managing student information and academic processes presents several challenges that can hinder efficiency and accuracy. Firstly, the physical storage of vast amounts of paper records requires significant space and resources, leading to increased operational costs. Secondly, retrieving specific information from paper records is time-consuming and prone to errors, as it often involves manual searching through numerous files. This can result in delays in processing requests and hinder timely decision-making. Additionally, paper records are susceptible to damage or loss due to environmental factors such as fire, water, or simply through misplacement, risking the loss of critical student information.

The existing data management system is plagued by issues such as extensive physical storage requirements, time-consuming retrieval of information, susceptibility to damage or loss, and

heightened risks of unauthorized access and data breaches. Moreover, manual processing of data leads to frequent errors and delays, impacting the accuracy and timeliness of academic records, and administrative decision-making. There is a critical need for a centralized, secure, and automated platform that can streamline data management, enhance communication between stakeholders, ensure compliance with data protection regulations, and ultimately improve the overall efficiency and effectiveness of the institution's operations.

1.3 Problem statement:

Developing a college data management website aims to address the inefficiencies and challenges associated with the traditional paper-based system currently used for managing student information and academic processes and the existing system which suffers with the issues such as extensive physical storage requirements, time-consuming retrieval of information, susceptibility to damage or loss, and heightened risks of unauthorized access and data breaches, manual processing of data leads to frequent errors and delays, impacting the accuracy and timeliness of academic records, financial aid management, and administrative decision-making**.**

1.4 Objectives:

- **Centralized Data Storage and Management:** The primary objective is to create a centralized repository for all college-related data, including student records, faculty information, course details, and administrative documents. This ensures that all data is stored in a unified location, making it easier to manage, update, and retrieve information as needed. Centralized data management reduces redundancy, minimizes errors, and improves data consistency across different departments.
- **Enhanced User Experience and Accessibility:** The website should be designed with an intuitive user interface that is easy to navigate for all users, including students, faculty, and administrative staff. This involves implementing responsive design for accessibility across various devices, providing clear menus, search functionality, and user-friendly forms. Enhanced user experience ensures that users can efficiently find and utilize the information they need without unnecessary complexity.

- **Streamlined Administrative Processes:** Automating and streamlining administrative tasks such as admissions, enrollment, grading, and scheduling is another critical objective. By integrating tools that automate these processes, the website can significantly reduce the workload on administrative staff, minimize human error, and expedite routine operations. This can include features like online application submission, automated grade calculation, and digital attendance tracking.
- **Secure Data Handling and Privacy:** Ensuring the security and privacy of sensitive data is paramount. The website must implement robust security measures, including encryption, secure login protocols, and regular security audits. Compliance with relevant data protection regulations, such as GDPR or FERPA, should be ensured to protect personal information from breaches and unauthorized access. Secure data handling fosters trust among users and protects the institution from legal and reputational risks.
- **Real-time Reporting and Analytics:** Providing real-time reporting and analytics capabilities is crucial for informed decision-making. The website should feature dashboards and reporting tools that allow administrators to generate reports on various metrics, such as enrollment trends, academic performance, and resource allocation.
- **Examination declaration and grade allotment:** The web-site allows the staff too upload the examination schedule and also the grades that are allotted to the student according to the examination results.
- **Data extraction :** the web-site should be able to give the information for the required student, staff in the excel sheet format . so that the

CHAPTER 2: LITERATURE SURVEY

[1] Lalit Mohan Joshi : "A Research Paper on College Management System", July 2015.

Summary: ABSTRACT This paper is aimed at developing an Online Intranet College Management System (CMS) that is of importance to either an educational institution or a college. The system (CMS) is an Intranet based application that can be accessed throughout the institution or a specified department. This system may be used for monitoring attendence for the college. Students as well as staffs logging in may also access or can be search any of the information regarding college. Attendance of the staff and students as well as marks of the students will be updated by staff. This system (C.M.S) is being developed for an engineering college to maintain and facilitate easy access to information. For this the users must be registered with the system after which they can access as well as modify data as per the permissions given to them. CMS is an intranet based application that aims at providing information to all the levels of management with in an organization. This system can be used as a knowledge/information management system for the college. For a given student/staff (technical/Non-technical) can access the system to either upload or download some information from the database. The title of the project is "COLLEGE MANAGEMENT SYSTEM FOR COLLEGE" (CMS). CMS is defined as an application based on Intranet that aims to all the levels of management providing information within an organization. This system can be used as a information management system for the college. For a given student/staff (Technical / Non-technical) the Administrator creates login id & password, using these student/ staff (Technical / Non-technical) can access the system to either upload or download some information from the database. The front-end will be HTML pages for client side validation with Java Script where as all business logics will be in Java reside at middle layer. third layer of database will be intereacted with these layers, which would be Oracle database. The web server would be Tomcat 5.5 version. Server have Tomcat5.5 as web server is required to start working on this project environment like Java Runtime Environment (JRE) as development environment and Oracle10g as database The project is divided into 6 scenarios; each scenario can be developed independently. And knowledge of Java with oracle10g is desirable to execute this project. The architectural design of a software project is simply the design of the entire software system. This includes the hierarchy of the modules and also which modules are present in the system. A good architectural design will create a clear and fair balance between cohesion (each module has only one distinct purpose), coupling (no two modules depend completely on each other), abstraction (seeing modules in full and not in detail), hierarchy (logical modules stem from others) and partitioning (logically grouping modules together) of the software modules

[2] Sourabh Salokhe, Supriya Patil, Savita Patil, Tushar Salavi, Snehal Mali, Rahaul Nejkar, International Research Journal of Engineering and Technology (IRJET) : "College Management System" , July 2021. Summary: The college management system is developed by using the Android. The main aim of this project is to develop an android application which covers the all the details of college like student profile, teacher profile, student progress, academic events, student attendance, Bus fees, College Fees, library, sports. All the data related to college, staff and student is securely stored on firebase database which is managed by the college administrator. The system utilizes the authentication, each subactivity has authentication allowing the authorised 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. College Management System project is implemented in java platform. College Management system is integrated android application that handles various academic or nonacademic activities of college. The system can access by every students/faculties/employee of the college through internet with help of android mobiles with their email id and password. Every users in college management system has different home page with their respective levels like student has the different level and teacher has the different level. Through that displayed menu user can access the different option of the application assigned him. The system college 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 provide user-friendly environment for everyone.

[3] Rushikesh Basatwar, Aakash Patil, Rushikesh Taiwade, Prateek Sahu, Prof. Priyadarshani Patil, International Journal of Advanced Research in Science, Communication and Technology (IJARSCT): "College Management System", May 2022. Summary: There are several services required for the students in an application. Most of them are schedule of new session, time table of the class, schedule of examination, registration in new semester, examination form, new admission, study materials, placement materials common or company wise, list of company coming for placements, scope of technology in present and future, scope of courses, real time transportation status, real time placement status, real time performance status, real time attendance status, results, infrastructure like lab, workshop, gym, classroom, smart class, Wi-Fi, hostel, dispensary, bank, post office, library etc. But, mostly all school and colleges providing services of infrastructures, results, admission, and placement but not up the mark, study materials (very few institutes) as shown in figure. For accomplishing big projects, the number of developers work collectively on different modules. Their efforts when combined together gives the final outcome .However, a member working on one module may encounter the need to understand other modules. Hence, he may feel the need of telling the concerned member to explain his module. It may be time consuming and troublesome for the concerned member to explain the entire code of the module a need for a tool like CLASS BROWSER which gives the class diagram of the entire module (project). It is quite reliable and easy to understand. It also helps in debugging large projects. The traditional view of software development takes an algorithmic perspective. In this approach, the main building block of all software is the procedure or function. This view leads developers to focus on issues of control and the decomposition of larger algorithms into smaller ones. There is nothing inherently evil about such a point of view except that it tends to yield brittle systems. As requirements change and the system grows, systems built on algorithmic focus turn out to be very hard to maintain. The contemporary view of software development takes an object-oriented perspective .In this approach, the main building block of all software systems is the object or class. Simply put, an object is a thing, generally drawn from the vocabulary of the problem space or the solution space; a class is a description of a set of common objects. Every object has identity, state, and behaviour. Basically, all school or college or university has their own websites. Some of them are providing very basic services like admission, notification, infrastructure and availability of courses. Some of them providing extra services like result, online study materials, research facilities and training and placement (only for advertisement purpose). Organization are not designing and

developing tools or application according to the requirement of present era students using latest technology with latest services to help students, parents and others. That is why students visits their school or college or university websites only for notification and result purpose. Pillai HOC app is an Android Application which provides a common, easy to use platform for college students to develop a better interaction with fellow students, faculty and administration.This work has unique and helpful feature of raising queries, where students can put up their queries and anyone can answer their queries. For keeping a check over the inappropriate posts a feature of report is also provided which informs the admin about inappropriate posts and actions which could be taken over it accordingly. Furthermore, it provides user a help option which helps them in discovering any information regarding labs, faculty and lecture halls. Pillai HOC app also creates a platform where user can view daily updates of his/her attendance syllabus, and time table. The system college 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 provide user-friendly environment for everyone. The proposed system for college information system is fully an automated one using Wireless Android. In this system, we are using firebase Page for Admin side to maintain the student details. Admin can register the student details and requirements such as attendance, exam details are added into the database. This a centralized one, by which the data server updates the each and every detail; the coordination between server and client becomes much easier. The system provides high security for all its data. Server can update or delete student information. In server side, easily add the details about attendance, exam schedule, exam results and grade details. Server easily updates each and every student's details. The system architecture has a smart phone with android OS, a web services, a database server and the user as its components. The android smart phone or tablet must use 3G or Wi-Fi network for internet connectivity to ensure better performance however 2G should also satisfy user request with added disadvantage of time lag.

[4] Aditya Shelar, Sudarshan Sawant, Abhishek Pacharne, Sahil Tike, Prof. Dipali M. Mane , International Journal of Scientific Research in Science and Technology : "College Management System" , 30 May 2023. Summary: College management systems play a critical role in managing the daily operations of educational institutions. With the advent of web-based systems, the management of colleges has become more efficient and effective. This survey paper provides a comprehensive overview of college management systems developed using PHP, a widely-used server-side scripting language. The paper presents an analysis of ten recent IEEE reference papers and a base paper on college management systems using PHP. This survey paper examines the different approaches, methodologies, and contributions of these papers, and identifies the factors that make an ideal college management system. Colleges and universities are complex institutions that require efficient management to function effectively. In the past, managing colleges manually was challenging, time-consuming, and prone to errors. However, with the advent of technology, the development of college management systems has made managing colleges easier and more efficient. College management systems are software applications designed to help colleges and universities manage their day-to-day activities, such as student registration, attendance tracking, course management, and grade management. PHP is one of the most widely-used server-side scripting languages for developing web-based college management systems. PHP is a powerful language that enables developers to create

dynamic web applications quickly and efficiently. In recent years, many researchers have focused on developing college management systems using PHP. This survey paper analyzes ten recent IEEE reference papers and a base paper on college management systems using PHP. The papers cover a range of topics related to college management systems, including student information management, course management, and examination management. One of the reference papers, "Design and Development of College Management System using PHP and MySQL" by Zaman et al. (2020), focuses on the design and development of a college management system using PHP and MySQL. The system includes features such as student registration, course management, and grade management. The paper provides a detailed description of the system architecture, database design, and user interface. Another reference paper, "Development of College Management System using PHP and MySQL" by Ayyub and Malik (2021), presents the development of a college management system using PHP and MySQL. The system includes features such as student registration, attendance tracking, and examination management. The paper provides a detailed description of the system architecture, database design, and user interface.

[5] Vaishnavi Patel, Sakshi Bhagwat, Shreya Ashtikar,Sakshi Kumbhare, Sharayu Deote , International Research Journal of Modernization in Engineering Technology and Science : “A RESEARCH PAPER ON COLLEGE MANAGEMENT SYSTEM” Summary: This paper is aimed at developing an Online Intranet College Management System(CMS) that's of significance to either an educational institution. The system(CMS) is an Intranet grounded operation that can be penetrated throughout the institution or a specified department. This system may be used by students as well as teachers. students as well as staff logging in may also pierce or can search any of the information regarding college. This system (C.M.S) is being developed for an engineering college to maintain and grease easy access to information. For this the Students must be registered with the system after which they can pierce as well as modify data as per the warrants given to them. This system can be used as a knowledge/ information operation system for the college. For a given pupil/ staff(specialized/Non-technical) can pierce the system to either upload or download some information from the database. I. INTRODUCTION "College Management System For College" (Cms) is the name of the project. CMS is characterized as an intranet based program that provides information to all levels of management inside an organization. The college can utilize this system as an information management system. The Administrator creates a login id and password specifically for a specified student or staff member (technical or non-technical). Using these, students or staff members (technical or non-technical) can access the system and upload or download data from the database. All business logic will be in Java at the middle layer, while the front-end will be HTML pages for client-side validation with Java Script. A web server must be started because the third layer of the database will interact with these layers.The college management system offers assistance to educational institutions, particularly colleges, in a number of ways, including data storage, student profile upkeep, analysis of administrative and academic data, enhanced communication, and student engagement. The system was created and put into operation to serve institutes and colleges. The system will replace the current paper records by offering a thorough student information system and user interface. College employees post college notifications using a safe online interface provided by admin.How the college manages a student's admission is described in the student admission management module. Every course that the college offers will have its subjects assigned by the courses and subject management module. The college administration has access to and can keep track of the student's information.

[6] Rohit Jain, Aman Modi , Ishan Kashyap, Prof. Vandana Kate and Prof. Rachana Bahrawat, International Journal of Research Publication and Reviews, : “Research Paper on College Management System” Summary: This paper is aimed at developing an Online Intranet College Management System (CMS) that is of importance to either an educational institution or a college. The system (CMS) is an Intranet based application that can be accessed throughout the institution or a specific department. This system may be used for monitoring attendance for the college. Students and staff logging in may also access or can search any of the college information. Attendance of the staff and students as well as marks of the students will be updated by the staff. This system is being developed for an engineering college to maintain and facilitate easy access to information. For this, the users must be registered with the system after which they can access as well as modify data as per the permissions given to them. CMS is an intranet-based application that aims at providing information to all levels of management within an organization. This system can be used as a knowledge/information management system for the college. A given student/staff (technical/Non-technical) can access the system to either upload or download some information from the database. Introduction: The college management system project is a comprehensive software application that is designed to manage and streamline the various functions of a college. The system is developed using multiple programming languages such as PHP, SQL Server, HTML, and JavaScript. It is a web-based system that stores all the records in a MySQL database. The main objective of the system is to reduce paperwork, reduce operational time, increase accuracy and reliability, increase operational efficiency, and ensure data security. The system also allows students to create an account and apply for job posts, while the placement head can maintain daily updates. The system has several key modules, including the student module, placement module, notices module, registration module, and room allotment module. The student module stores student records and allows users to search the database according to different criteria, such as name, course, and room number. The placement module includes details regarding the placement of students in different companies, while the notices module provides information about various events. The system also includes a registration module that allows students to check their hostel fees and mess bill by entering their unique hostel ID. The room allotment module is used to allocate a room to students according to their educational details and section, and an ID is generated for each student. The module also displays the room fee structure records and student dues or refund status. The college management system project is developed using several technologies and tools such as Java, SQL (MySQL), Visual Studio 2010, and MySQL server. The system is easy to use and has a user-friendly graphical user interface that enables users to access and search for information quickly. The system is designed to automate the placement process of the institute, and it provides placement reports, such as company-wise, branch-wise, and package wise reports. In conclusion, the college management system project is a valuable tool for colleges and universities as it helps to manage and streamline various functions of the institution. The system is paperless, reduces the manpower required, provides accurate information, and enables stakeholders and staff members to get the desired information without delay. The system is essential for the efficient functioning of colleges and universities.

CHAPTER 3: METHODOLOGY

3.1 Flowchart for Student session:

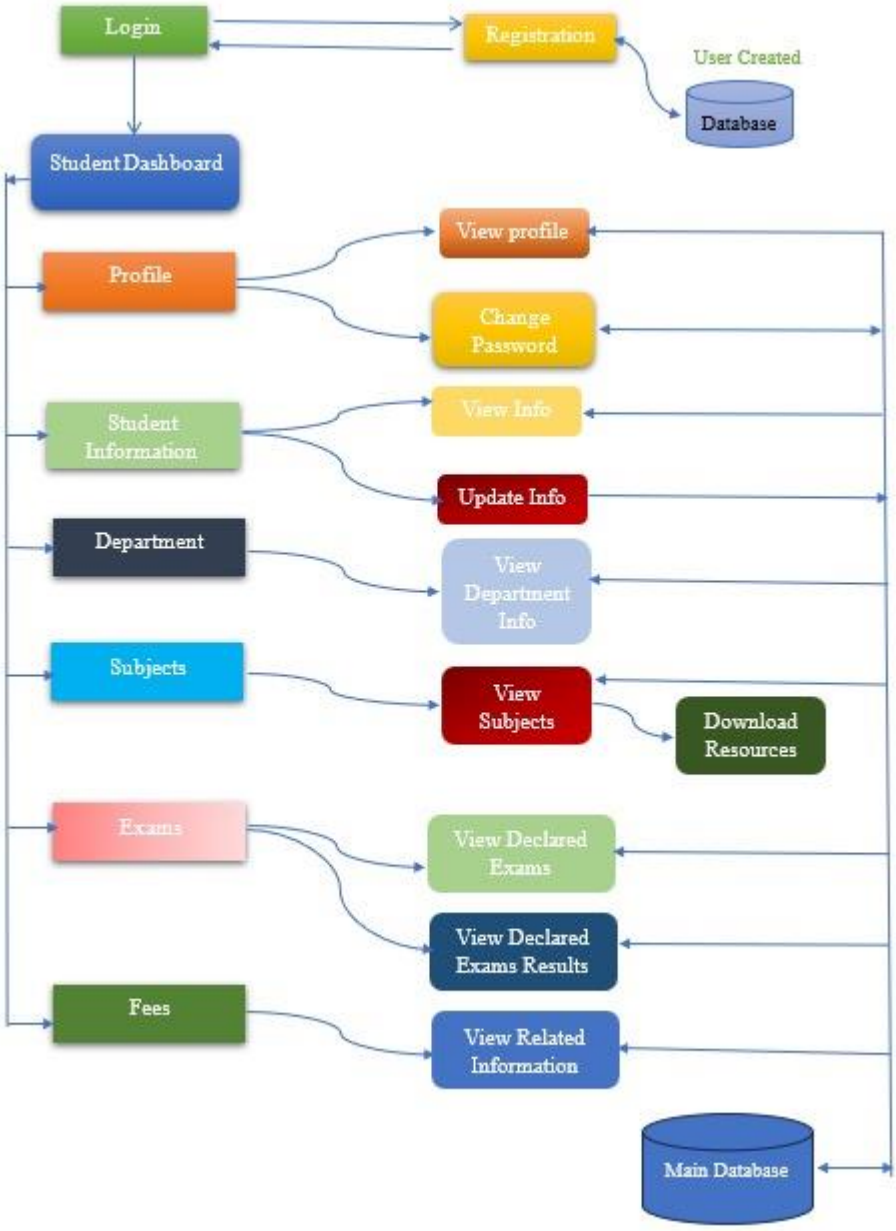


Fig 1. flowchart for student session

- **Steps for the Students to Register, login and use the website explained :**
  - ✓ Firstly, the student has to register himself/herself into the website.
  - ✓ after registration is done an email will be sent to the student by the system containing a unique password, refer that email for temporary use , use the password and login into the website .

- ✓ Go to student info section, you will find the update button ,click on it to further fill the remaining information into the website.
- ✓ Click on update to update your profile.
- ✓ To change your password simply go to profile section , click on password, enter temporary password, then the new password and confirm password and click enter to the save changes button.
- ✓ After this u will be again redirected to login page , now you can use your changed password to login into the website.
- ✓ click on department section to get department information.
- ✓ click on subject , subject list will appear , now click on subject list , choose scheme of course and click enter on view subjects.
- ✓ You will be redirected to subjects page there you will find semester listed subject list
- ✓ To get subject resources , just click on subject name you will be redirected to the subject resources page now you can simply click on download button to download the resources.
- ✓ Click on exam section to see exam declaration and examination results.

As shown in the above flowchart the requests are done through the login session . Every module has its own sub modules which are requested and the data is delivered accordingly to the request made by the user.

3.2 Flowchart for Staff session:

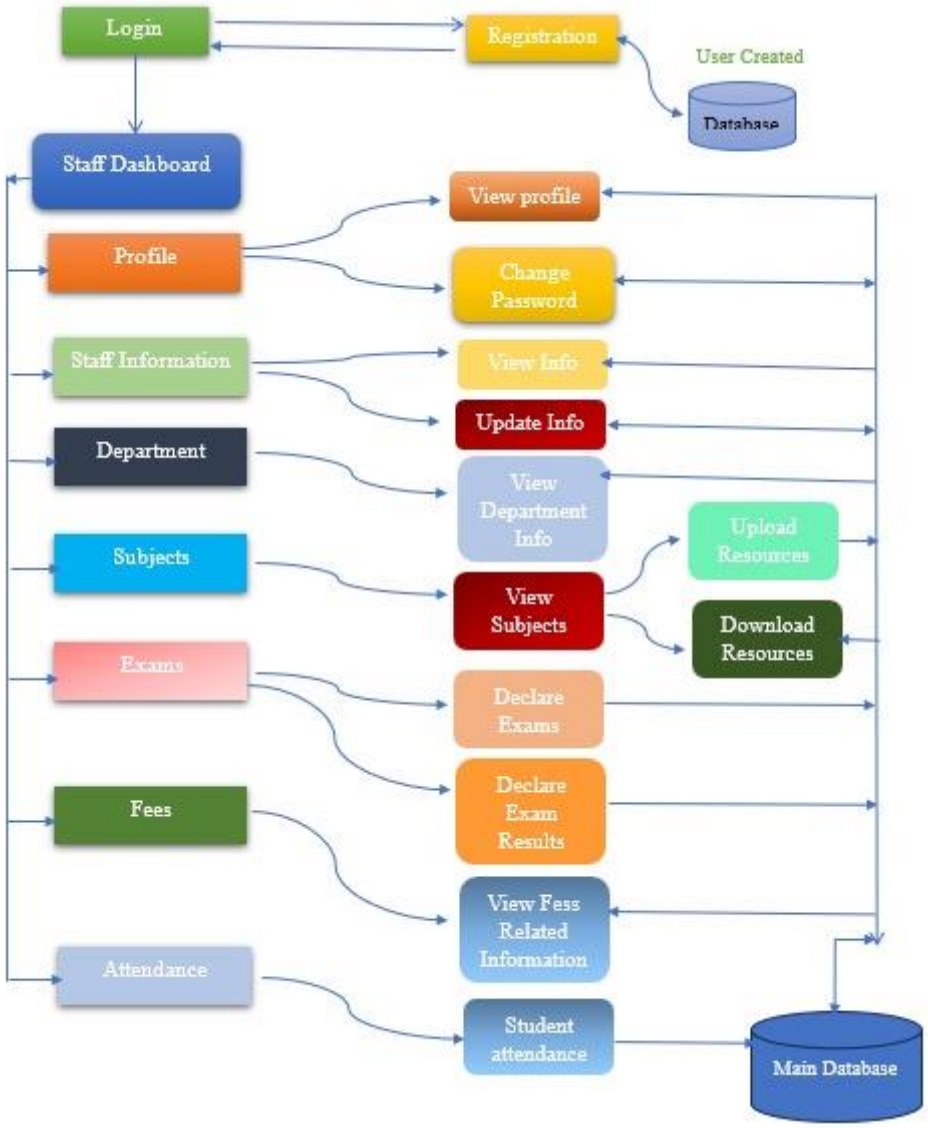


Fig 2. Flowchart for staff session

- **Steps for the Staff to Register, login and use the website explained :**
  - ✓ Firstly, login if already registered into the web-site.
  - ✓ if not registered then complete registration by clicking on signup link which appears on the top of the page.
  - ✓ After completing the registration the web-page will redirect you to the login page , use usn and temporary generated password which has been sent on email and to login.
  - ✓ After login the staff dashboard will appear on the screen.

- ✓ Now Go to staff , click on update button and the update page will open up.
- ✓ Fill in the necessary information and click on update button.
- ✓ Now you will again redirected to staff page, click on staff name , you will see staff information, user can view the profile from here.
- ✓ Now to change the password go to password , enter old password , new password, confirm password and click on save changes button.
- ✓ Now you will again be redirected to login page, changed password to login.
- ✓ Click on department section to see department information.
- ✓ Go to subject section , user will have the filter option , subject list and add subjects.
- ✓ Go to subject list, choose respective scheme and click on view subjects.
- ✓ According to semester and scheme subjects will be displayed , to upload subject resources just click on subject name, and upload page will open, choose file and upload it.
- ✓ Go to add subject page, select scheme, subject code, subject name, department and semester and click on add subject.
- ✓ Exam section , there are 4 sections , exam list, exam declaration, IA exam result and exam result.
- ✓ To get list of exams , click on list exam , then select semester , department, scheme and exam type to get that exam.
- ✓ To declare exam choose semester, department and scheme , the respective semester and scheme subjects will displayed , add time and date and click on declare exam button.
- ✓ To declare exam result choose semester scheme and subjects and allocate marks for each students ..
- ✓ To see fees related information , click on fees, and view fees.

3.3 Flowchart for Administrator session:

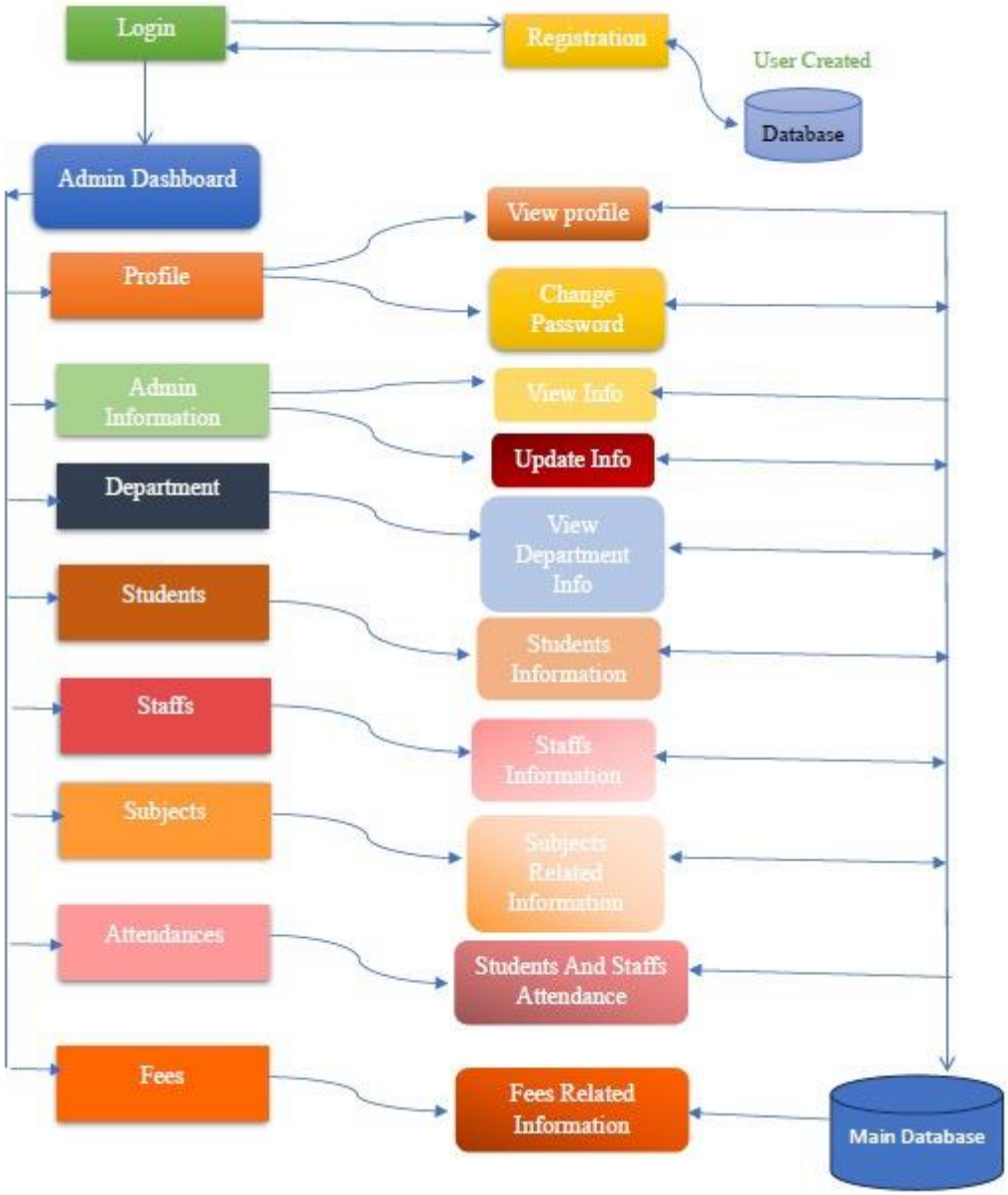


Fig 3. Flowchart for Administrator session

- **Steps for the Admin to Register, login and use the website explained :**
  - ✓ Firstly, login if already registered into the web-site.
  - ✓ if not registered then complete registration by clicking on signup link which appears on the top of the page.
  - ✓ After completing the registration the web-page will redirect you to the login page , use temporary generated password which has been sent on email and to login.
  - ✓ After login the staff dashboard will appear on the screen.

- ✓ Now Go to Admin , click on update button and the update page will open up.
- ✓ Fill in the necessary information and click on update button.
- ✓ Now you will again redirected to admin page, click on admin name , you will see admin information, user can view the profile from here.
- ✓ Now to change the password go to password , enter old password , new password, confirm password and click on save changes button.
- ✓ Now you will again be redirected to login page, changed password to login.
- ✓ Click on department section to see department information.
- ✓ Go to subject section , user will have the filter option , subject list and add subjects.
- ✓ Go to subject list, choose respective scheme and click on view subjects.
- ✓ According to semester and scheme subjects will be displayed , to upload subject resources just click on subject name, and upload page will open, choose file and upload it.
- ✓ Go to add subject page, select scheme, subject code, subject name, department and semester and click on add subject.
- ✓ Exam section , there are 4 sections , exam list, exam declaration, IA exam result and exam result.
- ✓ To get list of exams , click on list exam , then select semester , department, scheme and exam type to get that exam.
- ✓ To declare exam choose semester, department and scheme , the respective semester and scheme subjects will displayed , add time and date and click on declare exam button.
- ✓ To declare exam result choose semester scheme and subjects and allocate marks for each students .
- ✓ To see fees related information , click on fees, and view fees.

3.4 Flowchart for Accountant:

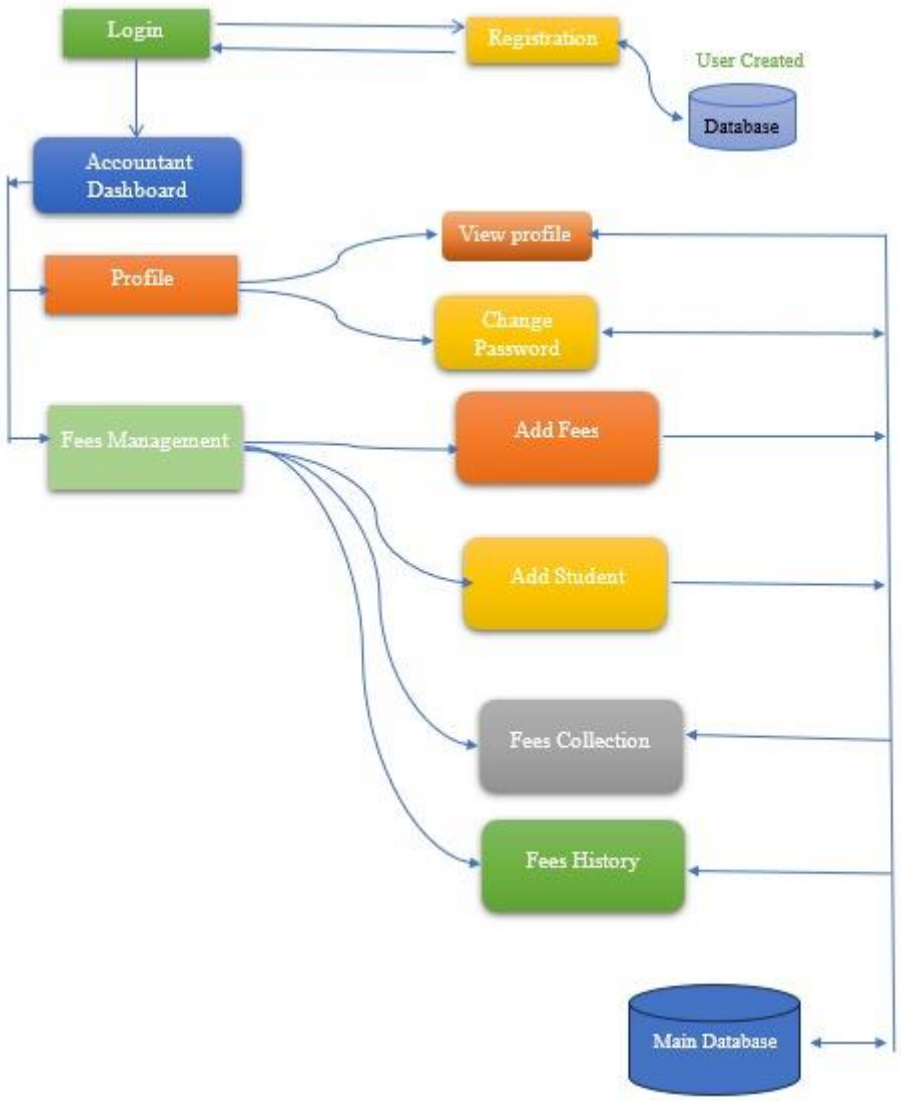


Fig 4. flowchart for accountant session

❖ **Steps for the accountant to Register, login and use the website explained :**

- ✓ Firstly, login if already registered into the website.
- ✓ If not registered then complete the registration by clicking on signup link.
- ✓ After registration the user will redirected to the login page , use temporary password which has been sent on the respective email and to login .
- ✓ After login is completed the user will be redirect to the accountant dashboard.
- ✓ Now Go to profile and change password.
- ✓ Fees management section have 4 sub sections, add fees, add student, fees collection and fees history.
- ✓ Click on add student and add student information like usn , name, total fees.
- ✓ Click on add fees to add students fees year wise.
- ✓ Click on fees collection to see paid fees.
- ✓ Click on fees history to track fees paid with date recpectively.

3.5 System Requirements:

3.5.1 Software Requirements:

Deployment Environment:

1. Operating System:

- Windows 10 or higher
- Ubuntu 18.04

2. Java Development Kit (JDK):

- JDK 8 or 11

3. Integrated Development Environment (IDE):

- Spring Tool Suite (STS)

4. Build Tools:

- Maven 3.6+

5. Spring Boot Framework:

- Spring Boot 2.7.17

6. Database:

- MySQL 5.7 or higher (including MySQL 8.x)
- MySQL Shell

3.5.2 Hardware Requirements:

1. Processor: Quad-core or higher (Intel Xeon or equivalent) .

2. Memory (RAM): Minimum 16 GB (32 GB or more for high-traffic applications) .

3. Storage: SSD with at least 15 GB of available space .

4. Network: High-speed network connection with redundancy.

CHAPTER 4: IMPLEMENTATION

4.1 FRONT END: CSS , JSP , J QUERRY

[A] CSS

Fig 5. CSS logo

CSS, or Cascading Style Sheets, plays a fundamental role in shaping the visual presentation and layout of websites. It acts as the design language for web pages, allowing developers to control various aspects of the site's appearance, such as colors, fonts, spacing, and positioning of elements. By separating style from content, CSS promotes cleaner code and easier maintenance, enabling consistent styling across multiple pages. With CSS, designers can create responsive layouts that adapt to different screen sizes, enhancing user experience on various devices. Additionally, CSS facilitates accessibility by allowing developers to structure content in a way that is more navigable for users with disabilities. Through its cascading nature, CSS provides a hierarchical system for styling, where styles can be inherited, overridden, or supplemented, offering flexibility and efficiency in website design and development.

[B] JSP

In Java, JSP stands for Java Server Pages. It is a server-side technology which is used for creating web applications. It is used to create dynamic web content. JSP consists of both HTML tags and JSP tags. In this, JSP tags are used to insert JAVA code into HTML pages. It is an advanced version of Servlet Technology i.e. a web-based technology that helps us to create dynamic and platform-independent web pages. In this, Java code can be inserted in

HTML/ XML pages or both. JSP is first converted into a servlet by the JSP container before processing the client's request. JSP has various features like JSP Expressions, JSP tags, JSP Expression Language, etc.

[C] J QUERRY

Fig 6 . J Query logo

jQuery is a lightweight, free, and open-source JavaScript library that simplifies manipulating the Document Object Model (DOM), handling events, and creating dynamic web experiences. The main purpose of jQuery is to simplify the usage of JavaScript on websites. jQuery simplifies complex JavaScript tasks with single-line methods, it makes your code more readable and maintainable. jQuery is a fast, small, and feature-rich JavaScript library designed to simplify the client-side scripting of HTML. Created to ease the complexity of JavaScript, jQuery provides an easy-to-use API that works across a multitude of browsers, making web development more accessible. It streamlines tasks such as HTML document traversal and manipulation, event handling, animation, and Ajax interactions. This helps developers write less code while achieving more functionality. jQuery's powerful selectors and event-handling capabilities enhance the interactivity and responsiveness of websites. Additionally, its extensive plugin ecosystem allows for the addition of advanced features without the need for extensive coding. By abstracting many of the complexities involved in working with JavaScript, jQuery has become a fundamental tool in modern web development, fostering rapid development and cross-browser compatibility

4.2 BACK END: JAVA 8 , SPRING BOOT

[A]JAVA 8

Fig 7 . JAVA 8 logo

Java 8, released by Oracle in March 2014, is a major update to the Java programming language and its associated platform. It introduced several significant features that revolutionized the way Java developers write code. Among the most notable additions is the Introduction of Lambda expressions, which enable developers to write more concise and functional-style code, enhancing productivity and readability. Java 8 also brought the Stream API, allowing for efficient processing of sequences of elements, which simplifies the manipulation of collections and arrays. Another key feature is the new Date and Time API, which addresses the shortcomings of previous date and time handling in Java, offering a more comprehensive and flexible approach. Additionally, Java 8 introduced default methods in interfaces, permitting the addition of new methods to interfaces without breaking existing implementations. These enhancements make Java 8 a powerful and versatile platform for building a wide range of applications, from enterprise-level systems to mobile and web applications, providing developers with the tools to write cleaner, more efficient, and more maintainable code.

[B] SPRING BOOT

Fig 8. spring boot logo

Spring Boot is an open-source framework developed by Pivotal, designed to simplify the creation of stand-alone, production-grade Spring-based applications. It provides a streamlined approach to developing Spring applications by eliminating the need for extensive configuration. Spring Boot achieves this through convention over configuration, sensible defaults, and embedded servers, such as Tomcat or Jetty, allowing developers to run applications with minimal setup. Key features include auto-configuration, which automatically configures Spring applications based on the dependencies present, and the Spring Boot CLI for command-line execution and prototyping.

Spring Boot is widely used for building microservices architectures, where it excels due to its lightweight nature and ease of deployment. It supports various applications, from web applications with RESTful services to complex enterprise systems. Its ability to integrate seamlessly with other Spring projects and third-party libraries makes it a robust choice for developing scalable, secure, and maintainable applications. Additionally, Spring Boot's built-in tools for monitoring, managing, and deploying applications simplify the development lifecycle, making it a popular choice among developers aiming for rapid development and deployment.

4.3 DATABASE: MySQL Database

Fig 9. MySQL logo

MySQL is an open-source relational database management system (RDBMS) that uses Structured Query Language (SQL) for managing and manipulating data. It's one of the most popular database management systems in the world, known for its reliability, scalability, and ease of use.

- Data Storage: MySQL stores data in tables, which consist of rows and columns. Each column has a specific data type, such as integers, strings, dates, etc. Tables can be related to each other through foreign key constraints, enabling the creation of complex relational databases.
- Querying: MySQL uses SQL as its querying language. With SQL, users can retrieve, insert, update, and delete data from the database. SQL queries are powerful and flexible, allowing for precise manipulation and retrieval of data. MySQL supports concurrent access to the database, allowing multiple users to perform operations simultaneously. It also provides transaction support, ensuring that a series of database operations either all succeed or all fail, maintaining data integrity.
- Security: MySQL offers various security features to protect sensitive data. This includes user authentication, access control, and encryption capabilities to safeguard data both at rest and in transit. MySQL is designed to handle both small-scale and large-scale applications. It supports replication, clustering, and partitioning to distribute data across multiple servers and handle high volumes of traffic efficiently.
- Performance: MySQL is optimized for performance, with features such as indexing, query caching, and efficient storage engines. These optimizations ensure that database operations are executed quickly and efficiently, even with large datasets. MySQL is widely supported across different platforms, operating systems, and programming languages. It integrates seamlessly with various development frameworks, making it a popular choice for web development, enterprise applications, and more.

CHAPTER 5: RESULT AND DISCUSSION

5.1 Desktop Response:

[A] for student

- Below shown is the UI response to sign in /sign up into the website .
- if the user has already registered the user can sign in by filling in the following tabs as shown

USN →Password →select whether the user is a student , staff or Admin → click login .

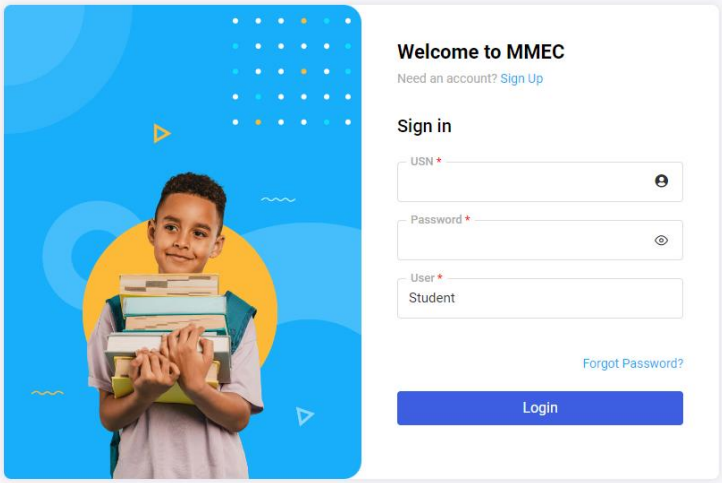


fig 10. Login page

- The user will be logged in to the respective.
- If the user has not yet registered, then click on the signup URL which appears in blue colour font on the top.

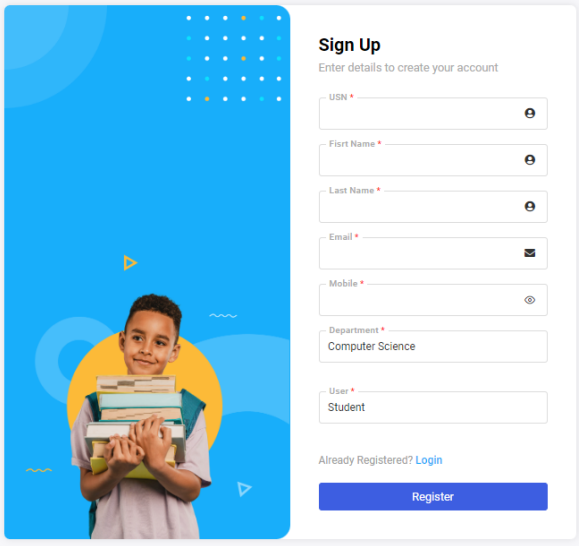


Fig 11 registration page

- To register the user needs to fill some basic info about oneself as asked in the UI
- USN→First Name →Last Name → Email→ mobile no. → user → click login.

- And the user will receive a OTP/temporary password on the email provide.
- Which can be used to now login .

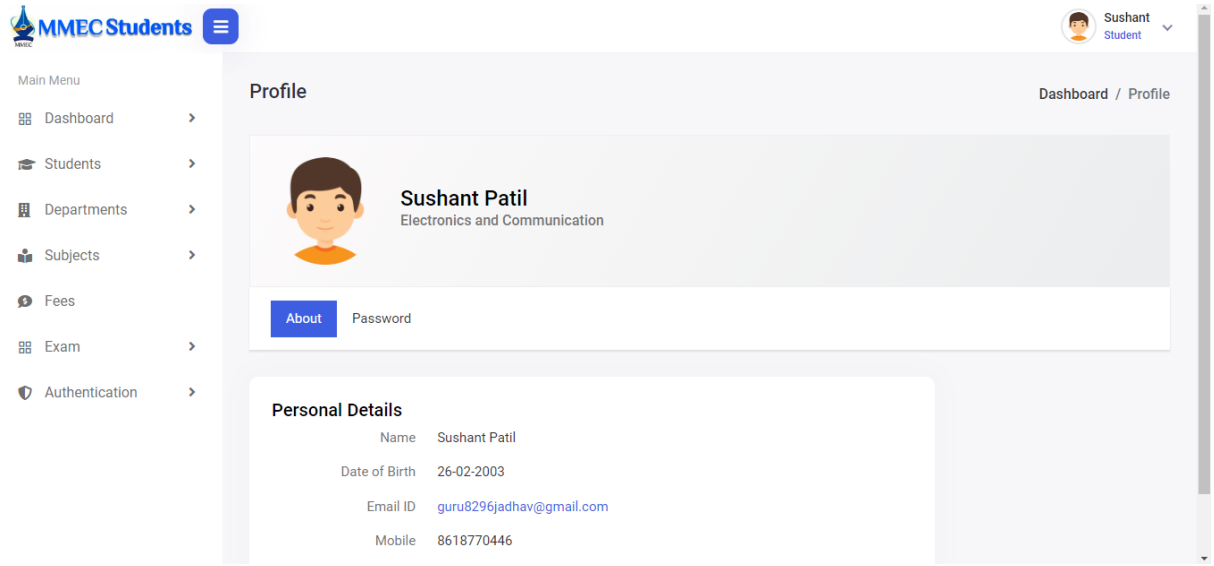


Fig 12 student profile update

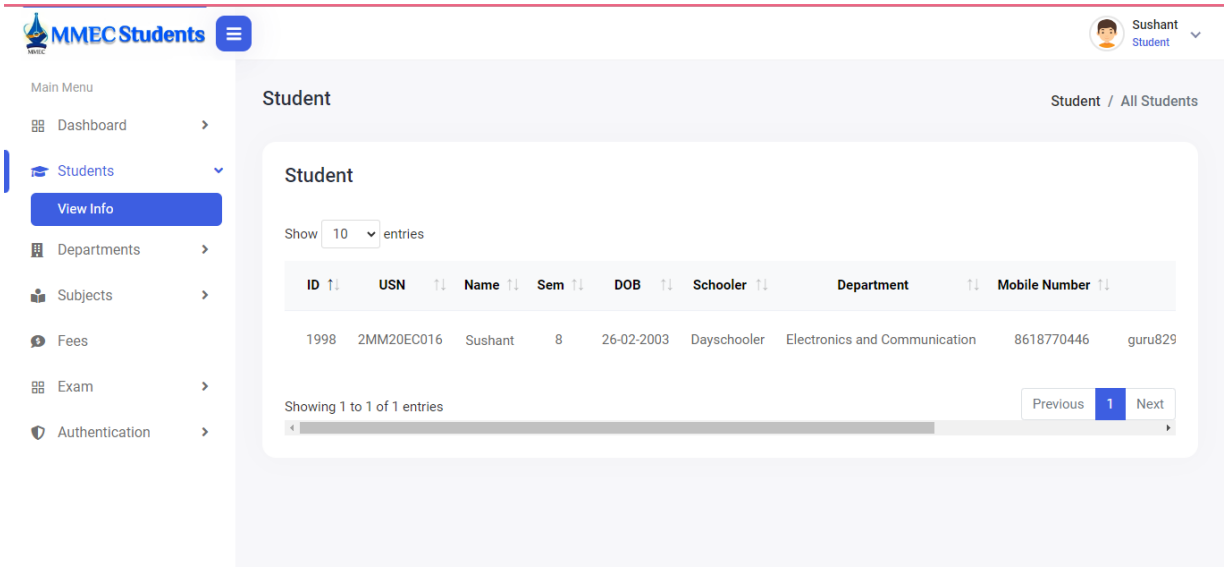


fig 13 student profile update

- The user will be able to view his profile and can now update it .
- If the user wishes to update the password he/she can also change it .

❖ Email→Enter the previous password →Enter the new password .

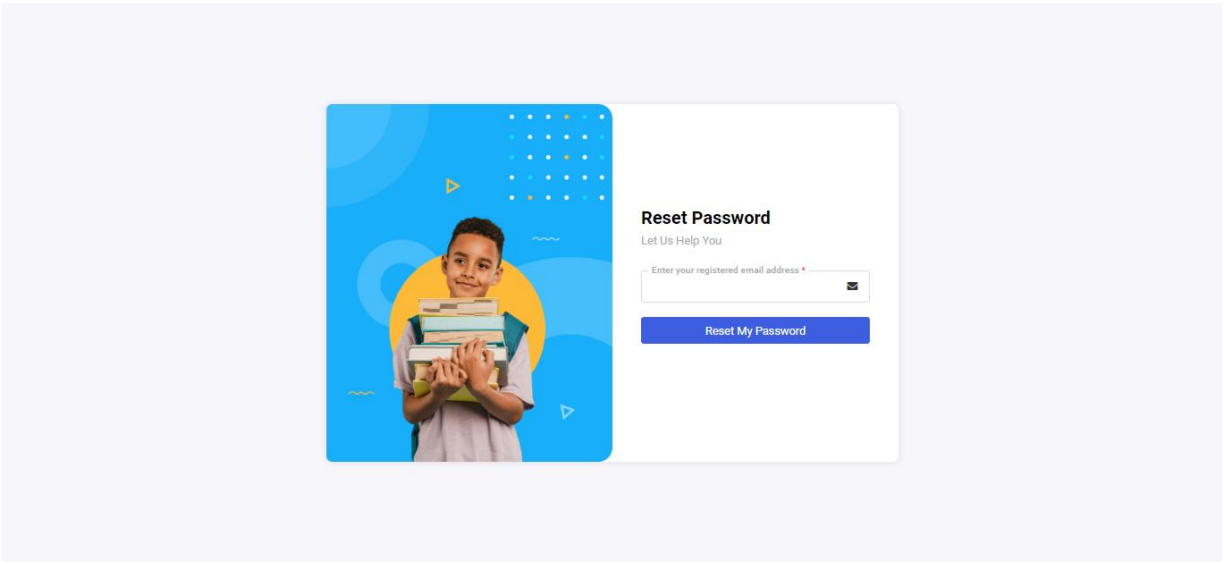
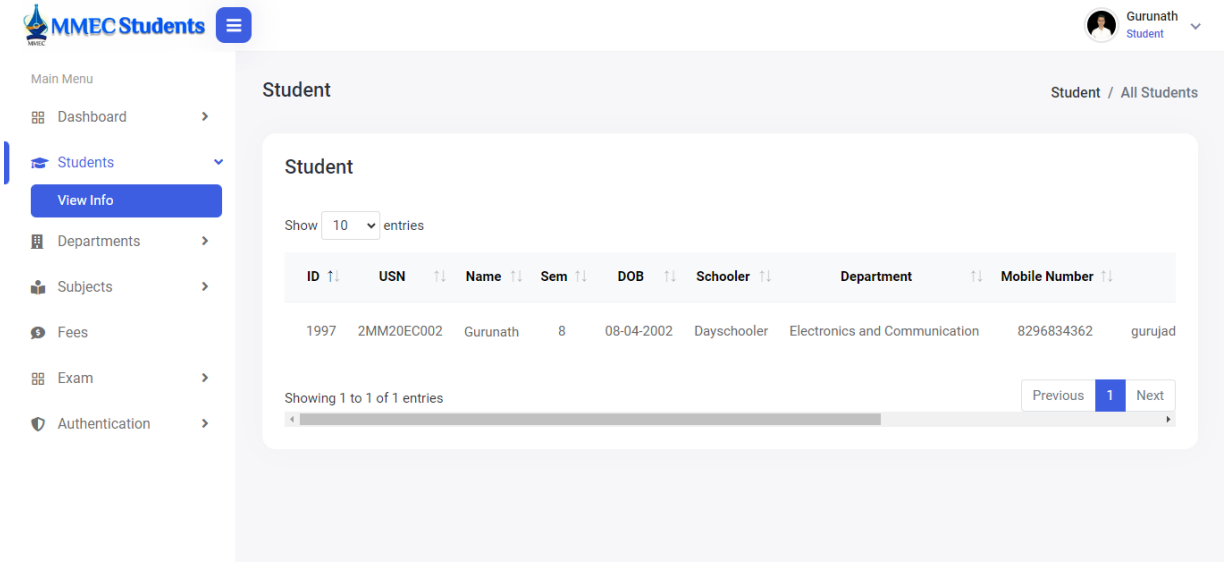


Fig 14 change password

❖ Below show is the student Dashboard UI.



- After updating the data and completing the process the student profile will apper.

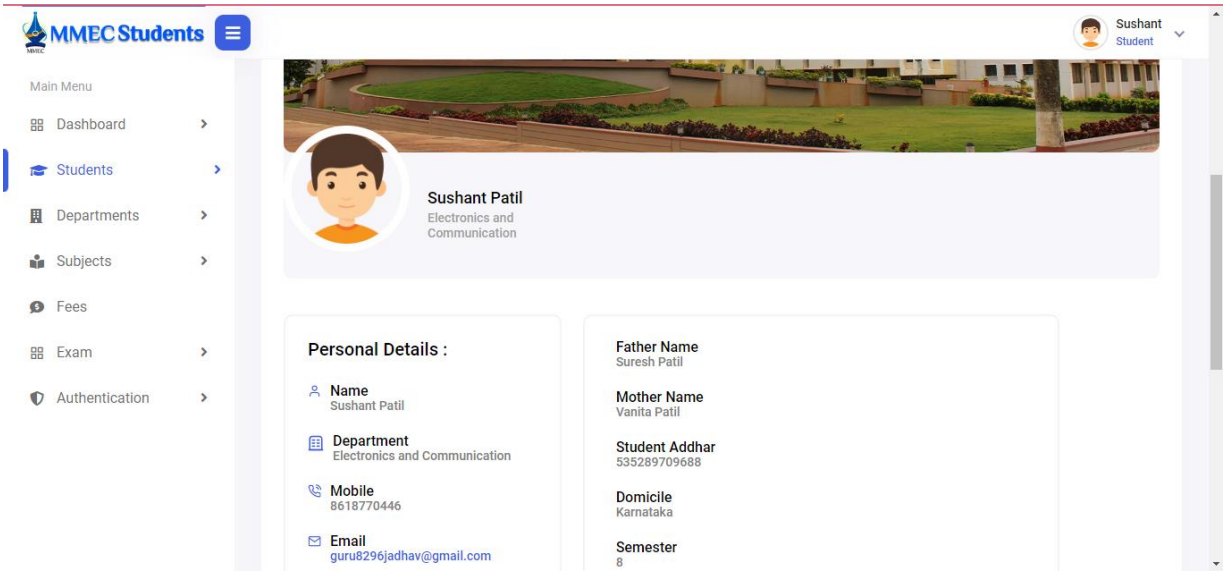


Fig 15 student profile view

- The student can also upload the picture of himself.
- Now the student can view their respective profiles as convenient

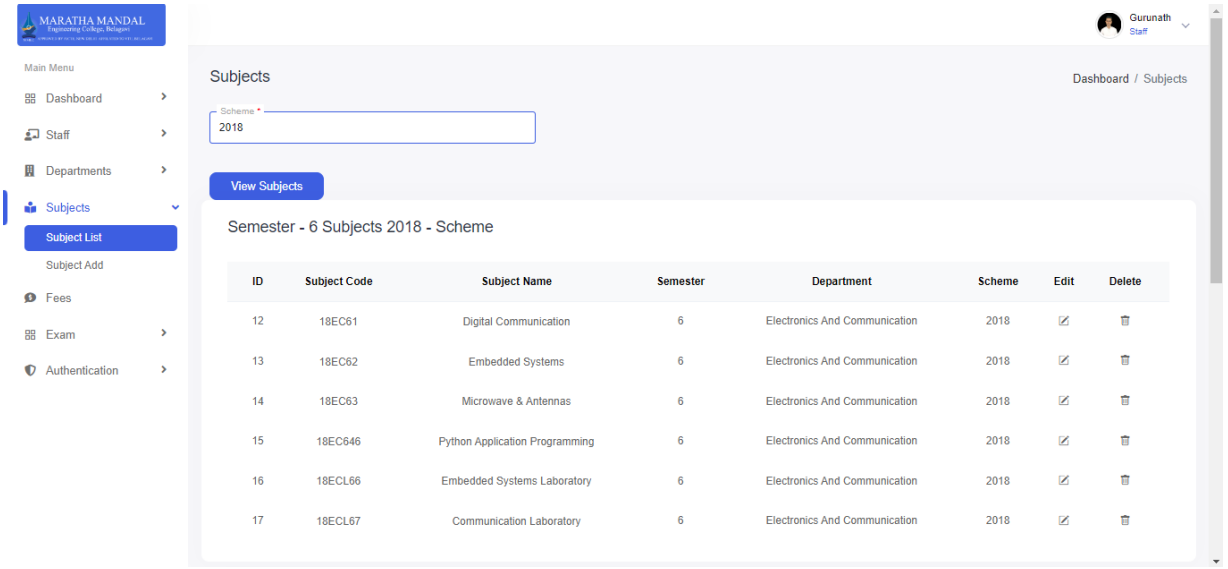


Fig 16 student subjects view

- The website also provides the user with the list of subjects in respective to the scheme on academic year.
- Notes for a student in respect to the particular subject are also available to the student which are uploaded by the respective staff himself.

[B] For Admin

- Below shown is the login page for the admin.

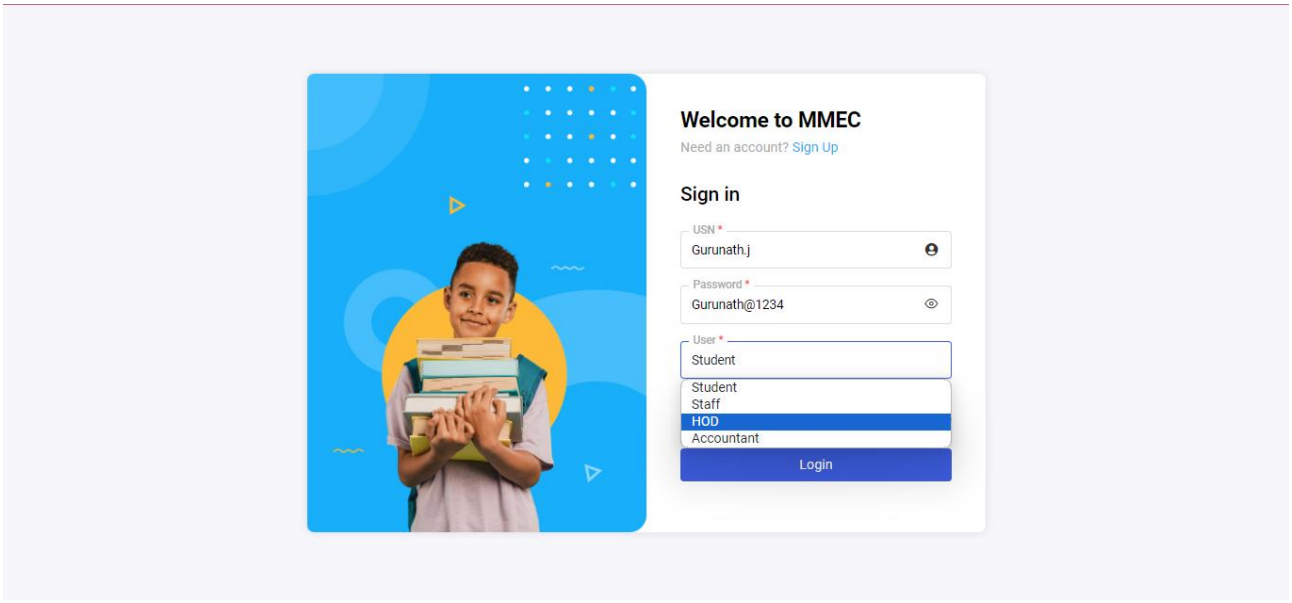


Fig 17. Admin Login page

- Below shown is the Registration page for admin

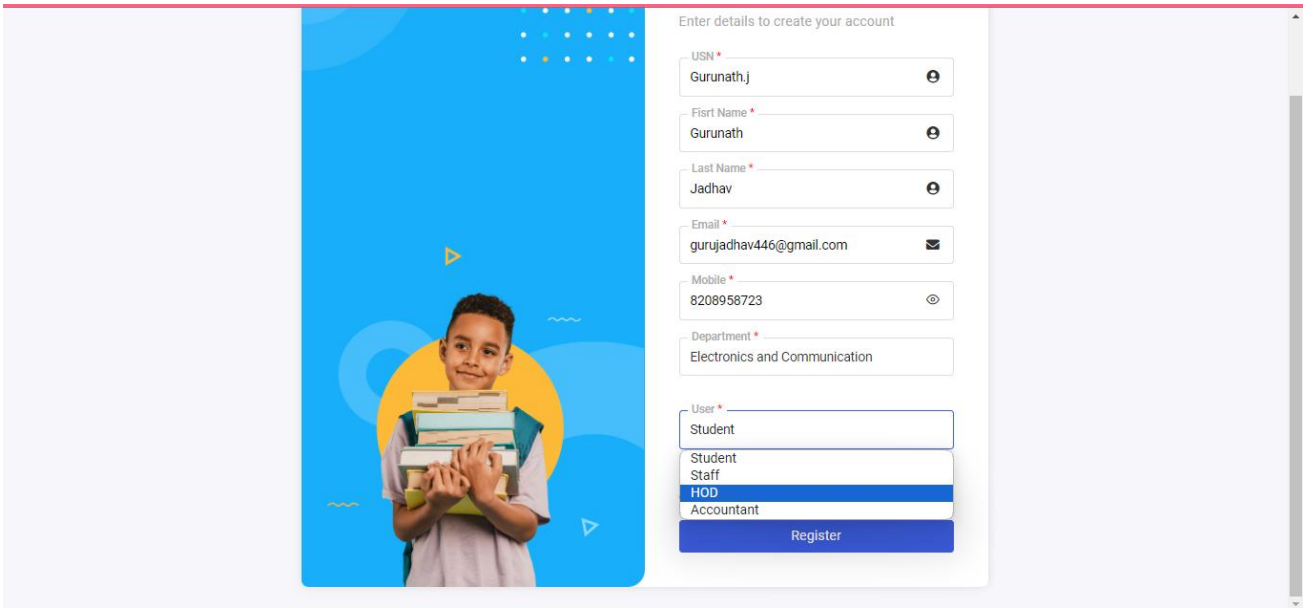


Fig 18 admin registration page

- As shown in the above figure the admin needs to enter the required information .
- And with the help of the password received on the respective email address login function is performed

- Below shown UI is the dashboard for the admin that is the head of the department .
- The admin can view , update , alter any changes which are even restricted to the staff and the students.

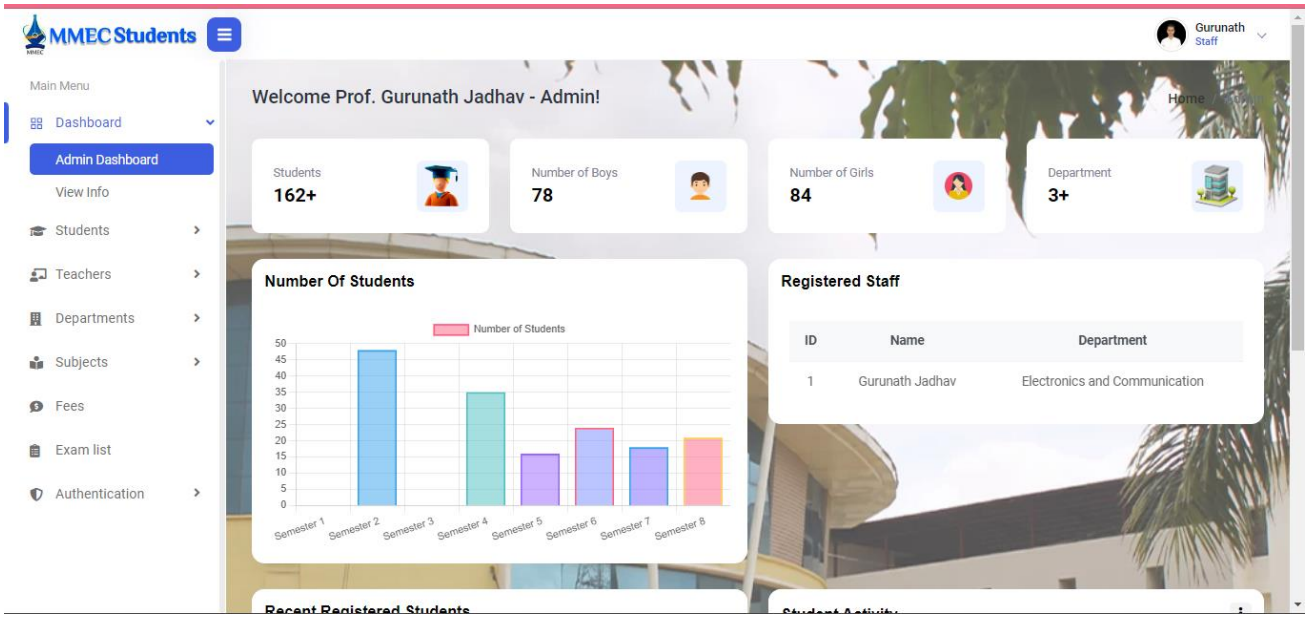


Fig 19. Admin Dashboard

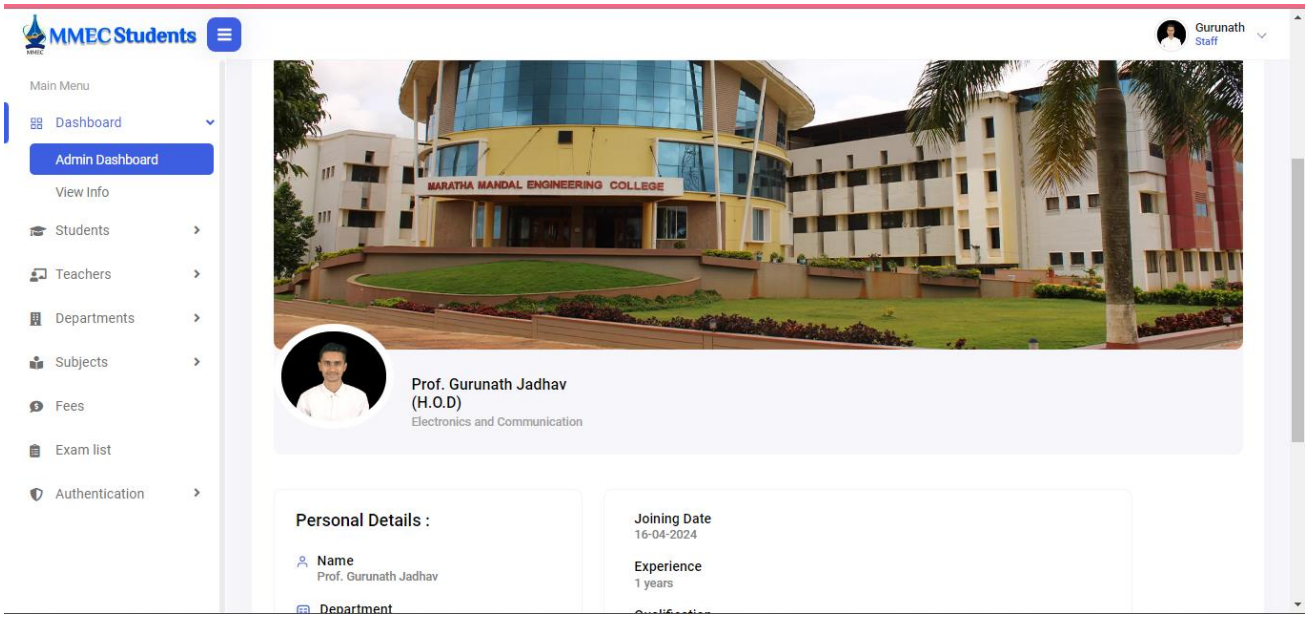


Fig 20 Admin Profile

[C] For Staff

- Below shown is the UI for staff.
- Staff login page and registration page is shown below and the procedure for login as well as registration is the same as of the admin.

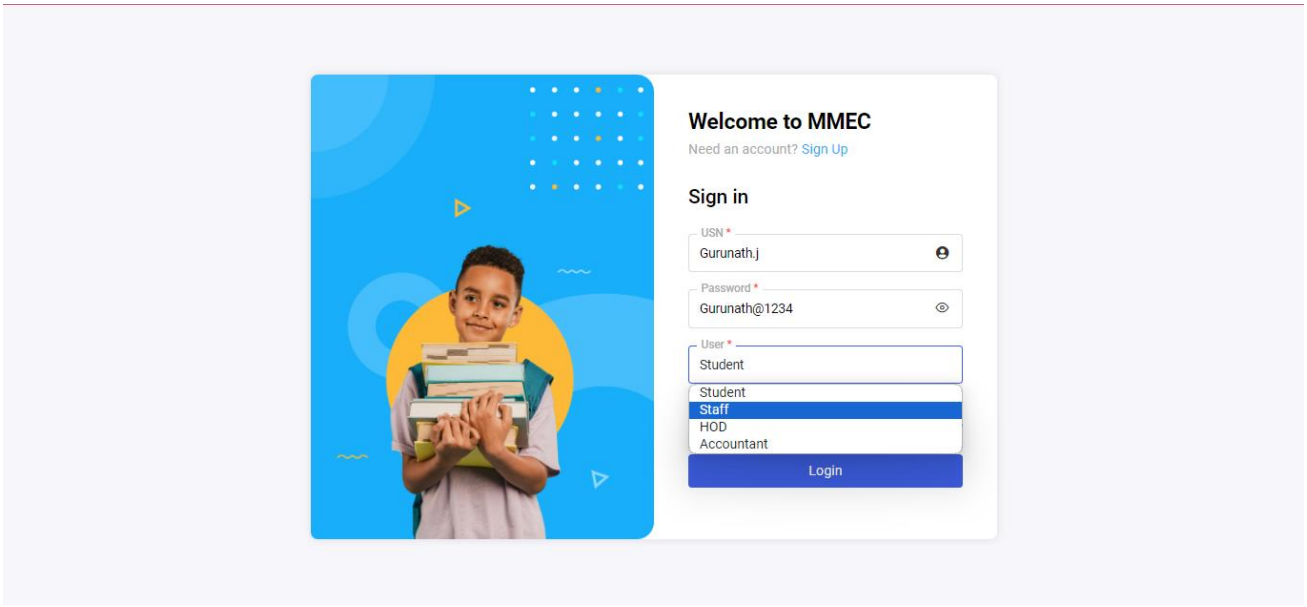


Fig 21 staff login page

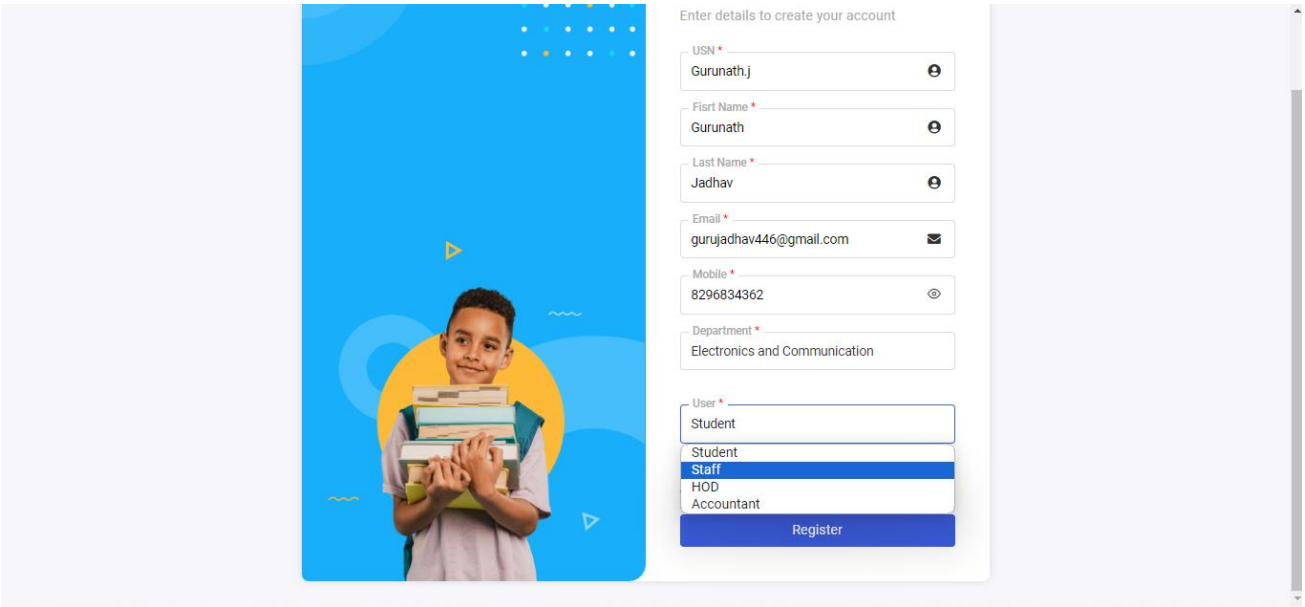


Fig 22 staff Registration page

fig 23 staff dashboard

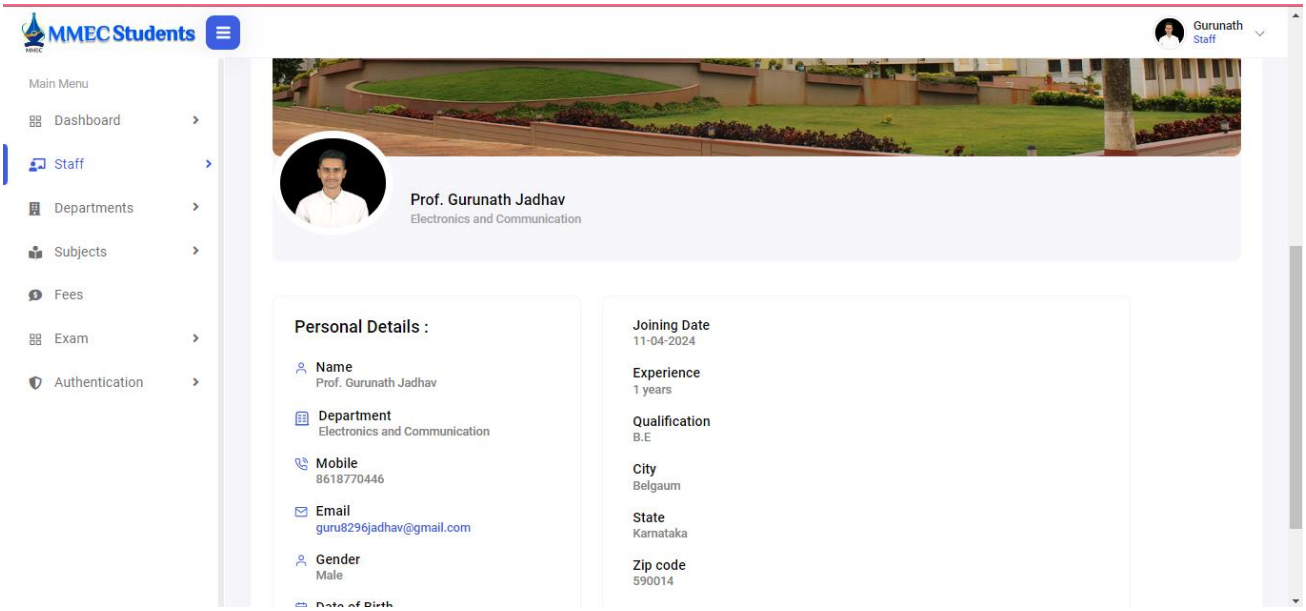


Fig 24 staff profile

- The staff can declare the examination schedules on the website as well.

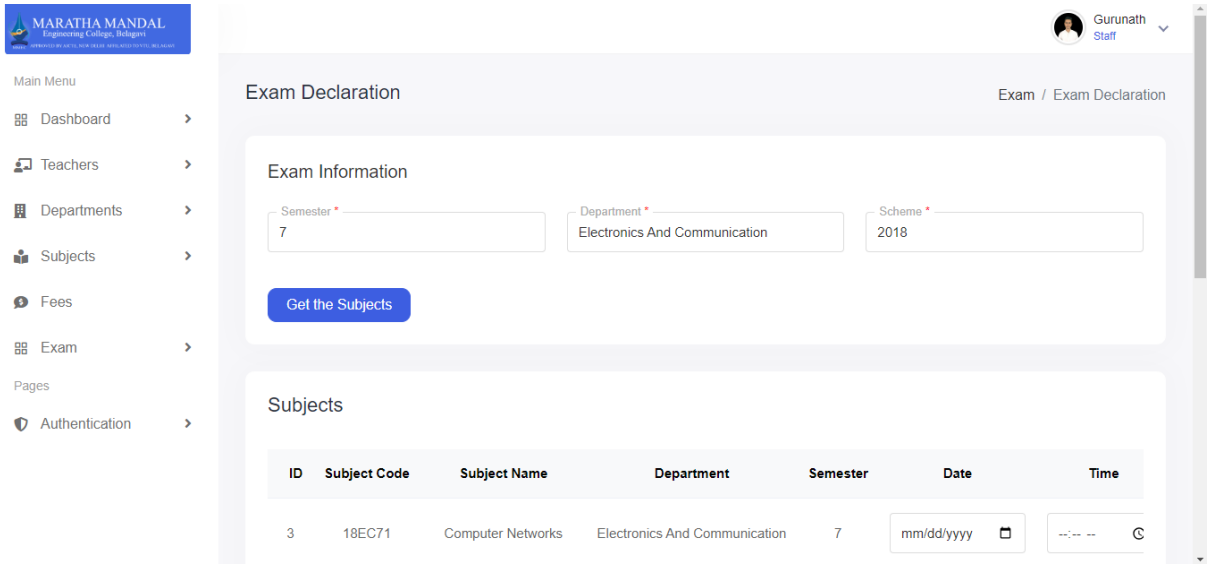


Fig 25 exam declaration page

- Any examination for whichever scheme or the academic year can be declared.
- As shown in the above UI respective filter are been made available to make the work more efficient and less time consuming.
- Examination can be declared.

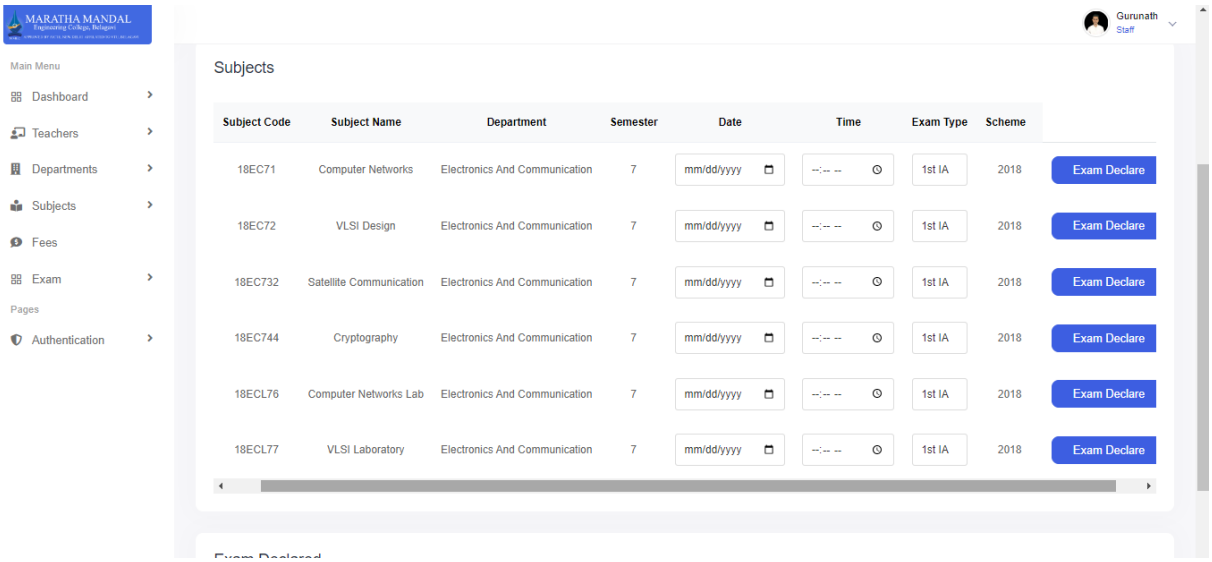


Fig 26 subject page

- The staff is empowered to declare the result of the examination in particular on the website

❖ Which will be available to the student to view.

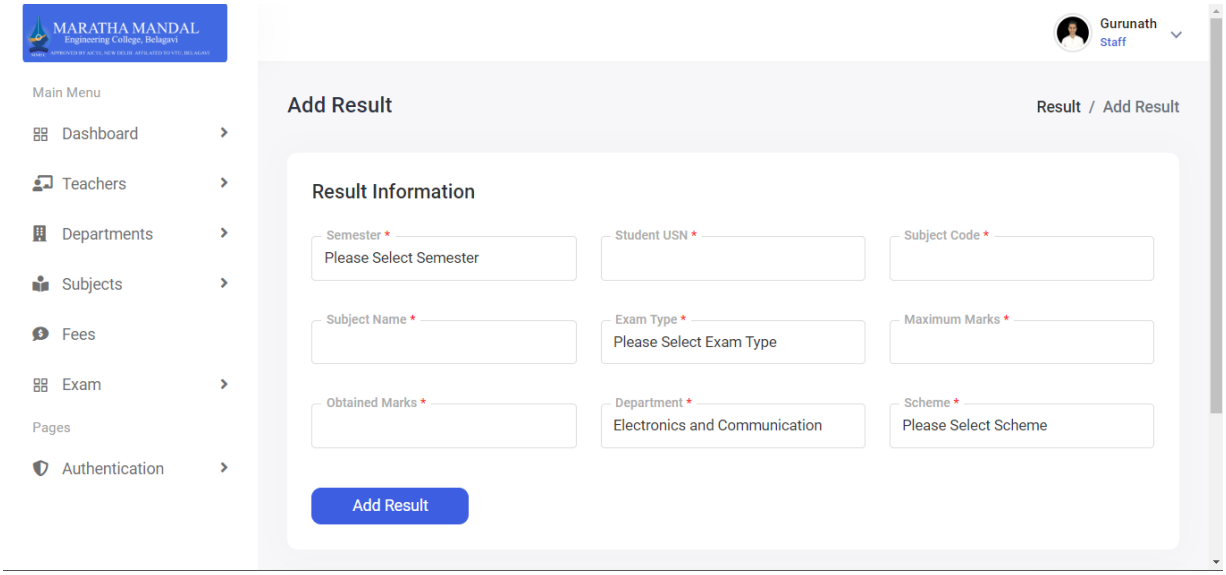


Fig 27 result page

5.2 Mobile Response:

- Below shown is the UI response to sign in /sign up into the website .
- if the user has already registered the user can sign in by filling in the following tabs as shown

USN →Password →select whether the user is a student , staff or Admin → click login .

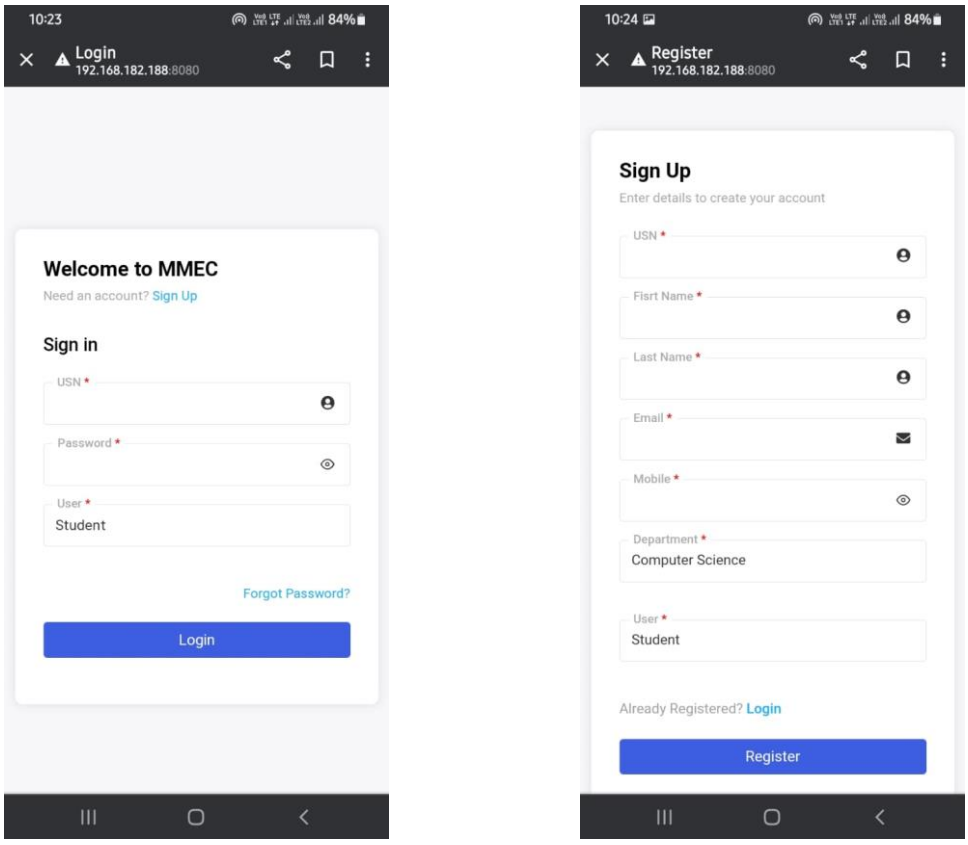


fig . mobile Response login and sign up page

- The user will be logged in to the respective.
- If the user has not yet registered, then click on the signup URL which appears in blue colour font on the top
- To register the user needs to fill some basic info about oneself as asked in the UI
- USN→First Name →Last Name → Email→ mobile no. → user → click login.

- And the user will receive a OTP/temporary password on the email provide.
- Which can be used to now login .

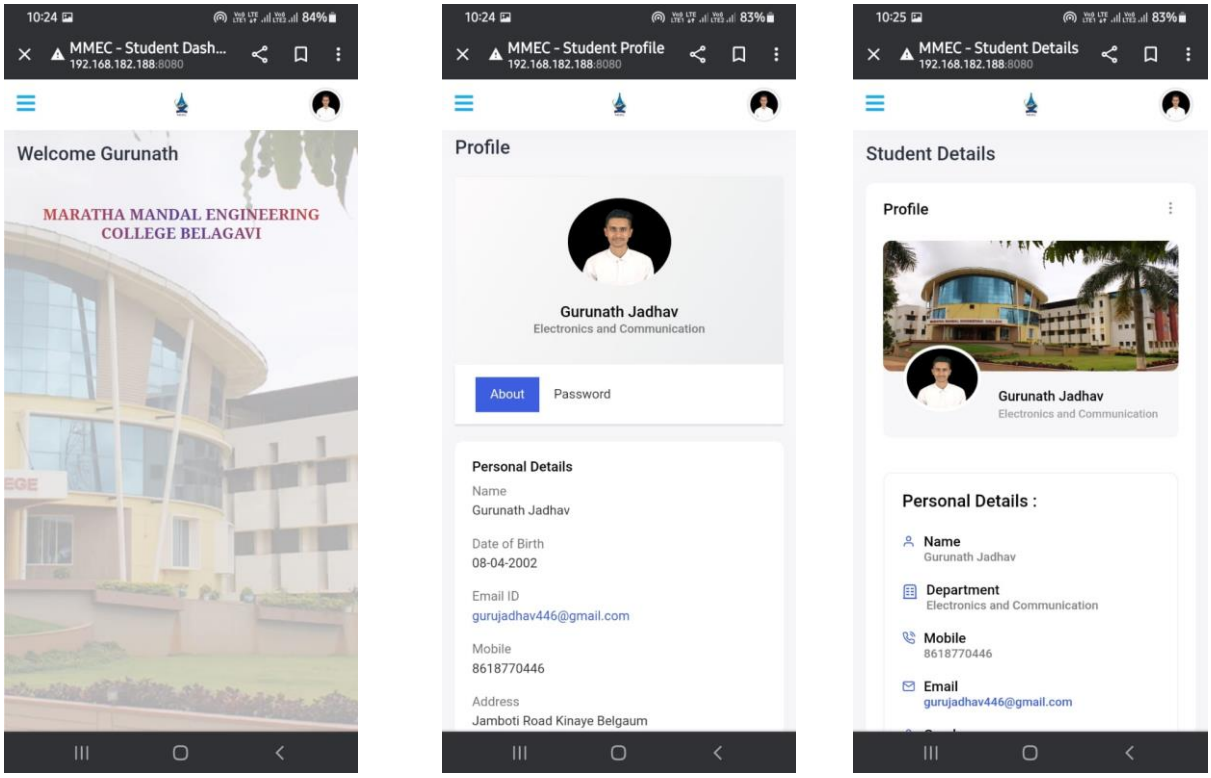


Fig Mobile Response Student Dashboard and Profile

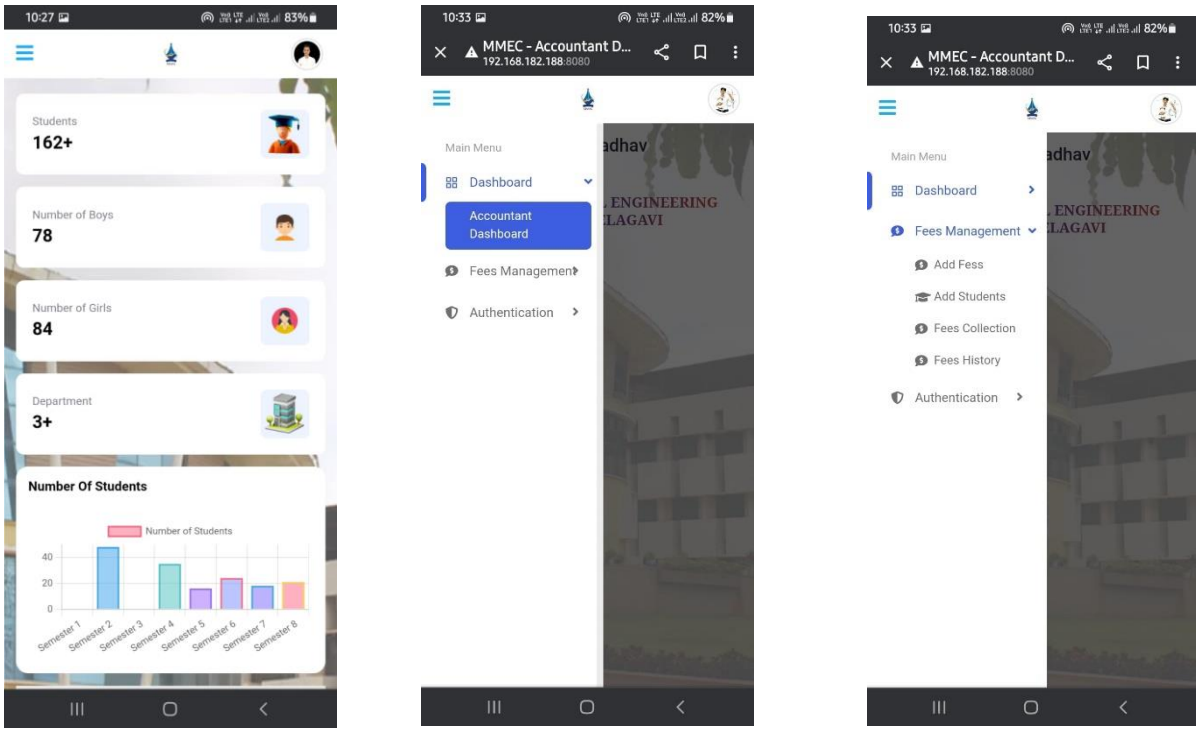


Fig Mobile Response for admin dashboard, accountant dashboard

CHAPTER 6: ADVANTAGES , DISSADVANTAGES & APPLICATION

6.1 Advantages of the Web-site:

- **Centralized Data Access:** A data management website centralizes student information, academic records, and administrative processes in one accessible platform. This streamlines access to data for administrators, faculty, and students, reducing the need for manual searches through physical records.
- **Improved Efficiency:** Automation of routine tasks such as registration, grading, and attendance tracking enhances administrative efficiency. This reduces the time and effort required to manage student data, allowing staff to focus on more strategic initiatives.
- **Accuracy and Timeliness:** Automated data entry and processing minimize errors and ensure the accuracy of academic records, financial transactions, and reporting. Timely updates and notifications enable prompt decision-making and response to student inquiries.
- **Scalability and Flexibility:** A data management website can easily scale to accommodate growing student populations and evolving administrative needs. Customizable features and integrations with other systems offer flexibility to adapt to changing requirements and workflows.
- **Direct access to information :** The students will have access to the respective notes which are provided by the respective faculty in-charge. As well as the examination timings and also the results of a particular examination.
- **User-Friendly Interface:** We've designed our website with ease of use in mind. Navigation is intuitive, and features are accessible, making your experience efficient and enjoyable.
- **Cost Savings:** By reducing reliance on paper-based systems, the website reduces costs associated with printing, storage, and manual labor. It also eliminates the need for physical infrastructure for storing and managing paper records.

6.2 Disadvantages of the Web-site:

- **Technical Issues:** Like any technology-driven system, a data management website is vulnerable to technical glitches, server downtime, or software bugs. These issues can

disrupt access to critical information and impede the smooth functioning of administrative processes.

- **Security Concerns:** Despite efforts to implement robust security measures, data management websites can still be susceptible to cyber threats such as hacking, malware, or phishing attacks. Breaches in security could lead to unauthorized access to sensitive student information, compromising privacy and confidentiality.
- **Learning Curve:** Introducing a new data management system requires training for staff and faculty to effectively navigate and utilize its features. The learning curve associated with adopting new technology may result in initial resistance or reluctance to change, potentially slowing down the implementation process.
- **Dependency on Internet Connectivity:** A data management website relies heavily on internet connectivity for access and functionality. In cases of poor or unstable internet connections, users may experience difficulties accessing the system or performing essential tasks, disrupting daily operations.

6.3 Applications of the Web-site:

- **Admissions and Enrollment:** Manage the entire admissions process, including online application submission, document verification, admissions decisions, and enrollment management.
- **Student Records and Academic Affairs:** Maintain comprehensive student records, including demographic information, academic transcripts, course registrations, grades, and degree progress tracking.
- **Course Management and Academic Planning:** Facilitate course scheduling, syllabus distribution, assignment submission, grading, and academic advising for both faculty and students.
- **Financial Aid and Student Finance:** Administer financial aid programs, process aid applications, award scholarships and grants, and manage student accounts, billing, and payments.
- **Student Services and Support:** Provide online access to support services such as counseling, tutoring, career services, and disability accommodations, and track student interactions and outcomes.

- **Faculty and Staff Management:** Manage faculty and staff profiles, contracts, evaluations, and professional development activities, and facilitate communication and collaboration among faculty members.
- **Institutional Research and Analytics:** Collect, analyze, and report data on student demographics, enrollment trends, academic performance, retention rates, graduation rates, and institutional effectiveness.
- **Compliance and Reporting:** Ensure compliance with regulatory requirements and accreditation standards by maintaining accurate and up-to-date records and generating required reports and documentation.
- **Communication and Collaboration:** Serve as a centralized platform for communication and collaboration among students, faculty, administrators, and staff through messaging systems, discussion forums, announcements, and shared documents.
- **Alumni Relations and Development:** Engage alumni through online communities, event management, fundraising campaigns, and alumni giving programs, and track alumni involvement and contributions.
- **External Stakeholder Engagement:** Provide access to external stakeholders such as parents, employers, and community partners to facilitate communication, collaboration, and engagement with the institution.

CHAPTER 7: CONCLUSION

In conclusion, a college data management website serves as a vital tool in modern educational institutions, offering a centralized platform for efficient administration, communication, and decision-making. By integrating various functionalities such as student administration, faculty management, resource allocation, and data analytics, these platforms enable colleges and universities to streamline operations, enhance student success, and ensure compliance with regulatory standards. Through effective data management, colleges can harness the power of information to drive continuous improvement, strategic planning, and institutional excellence. By leveraging data-driven insights, colleges can identify areas for improvement, implement evidence-based practices, and monitor progress towards their goals

FUTURE SCOPE

Develop comprehensive dashboards for real-time data visualization, helping administrators make data-driven decisions. Develop a platform for communication which will increase the collaboration between the faculty with the students as well as a specific platform facilitating communication between faculty and guardians of the students

REFERANCE

[1] Lalit Mohan Joshi : “A Research Paper on College Management System”, July 2015.

[2] Sourabh Salokhe, Supriya Patil, Savita Patil, Tushar Salavi, Snehal Mali, Rahaul Nejkar, International Research Journal of Engineering and Technology (IRJET) : “College Management System” , July 2021.

[3] Rushikesh Basatwar, Aakash Patil, Rushikesh Taiwade, Prateek Sahu, Prof. Priyadarshani Patil, International Journal of Advanced Research in Science, Communication and Technology (IJARSCT): “College Management System”, May 2022.

[4] Aditya Shelar, Sudarshan Sawant, Abhishek Pacharne, Sahil Tike, Prof. Dipali M. Mane , International Journal of Scientific Research in Science and Technology : “College Management System” , 30 May 2023.

[5] Vaishnavi Patel, Sakshi Bhagwat, Shreya Ashtikar,Sakshi Kumbhare, Sharayu Deote , International Research Journal of Modernization in Engineering Technology and Science : “A RESEARCH PAPER ON COLLEGE MANAGEMENT SYSTEM”

[6] Rohit Jain, Aman Modi , Ishan Kashyap, Prof. Vandana Kate and Prof. Rachana Bahrawat, International Journal of Research Publication and Reviews, : “Research Paper on College Management System”