Unofficial College Platform
(College-Katta)

Submitted in partial fulfillment of the requirements of the

Third Year of Bachelor in Computer Science & Engineering

By

Ghude Sakshi Krushna
Roll No.11

Kumbhar Shubham Pandurang
Roll No.21

Lavhangade Sai Pravin
Roll No.22

Patil Drashan Manoj
Roll No.27

Guide

Prof. P. P. MANGRULKAR

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

KONKAN GYANPEETH COLLEGE OF ENGINEERING

UNIVERSITY OF MUMBAI

(2024-2025)

CERTIFICATE

This is to certify the project entitled **"Unofficial College Platform (College-Katta)"** is a bonafide work of **"Ghude Sakshi Krushna (11), Kumbhar Shubham Pandurang (21), Lavhangade Sai Pravin (22), Patil Drashan Manoj (27)"** submitted to be University of Mumbai in partial fulfillment of the requirement for the award of the **"T.E."** in **"Computer Science & Engineering".**

(Prof. P. P. Mangrulkar)
Guide

(Prof. V. R. Keshwani)
Head of Department

(Dr. V. J. Pillewan)
Principal

KONKAN GYANPEETH COLLEGE OF ENGINEERING, KARJAT

(Affiliated to University of Mumbai, Approved by A.I.C.T.E., New Delhi.)

Konkan Gyanpeeth Shaikshanik Sankul, Vengaon Road, Dahivali, Karjat, Dist.-Raigad-410201. (M.S.)

Department of Computer Science & Engineering

Project Report Approval

This is project report entitled **"Unofficial College Platform (College Katta)"** by work of **Ghude Sakshi Krushna (11), Kumbhar Shubham Pandurang (21), Lavhangade Sai Pravin (22), Patil Drashan Manoj (27)** is approved for the full completion of T.E. of Department of **Computer Science & Engineering**.

Examiners

1. .....

2. .....

Date:

Place:

DECLARATION

We declare that this written submission represents our ideas in our own words and where other ideas or words have been included, we have adequately excited and referenced the original sources. We also declare that We have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Ghude Sakshi Krushna (11) _____

Kumbhar Shubham Pandurang (21) _____

Lavhangade Sai Pravin (22) _____

Patil Drashan Manoj (27) _____

Date:

ACKNOWLEDGEMENT

We would like to express our gratitude and appreciation to all those who gave us the possibility to complete this project and this report.

We thanks to our project in charge & guide Prof. P. P. MANGRULKAR, without whose guidance this project would not have become successful a great source of inspiration to us who help to stimulating suggestions and encouragement helped us a lot during our project work.

Finally, we would like to thank our parents and mentors for the support they gave us throughout the course.

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ABSTRACT

College-Katta is a comprehensive web-based platform designed to streamline communication, enhance document management, and foster community engagement within a college environment. The platform offers role-based access with distinct login experiences for students and staff, ensuring tailored functionalities and tools for each group. Through its intuitive interface, users can access important announcements, share and manage academic documents, and participate in real-time discussions. College Katta serves as an alternative to existing platforms like WhatsApp and Google Classroom, offering a more structured and organized solution specifically designed for the needs of college communities. By integrating communication, document sharing, and collaboration features into a single platform, College-Katta promotes a connected and efficient academic experience for all users.

❖ Lists of Figures:

CHAPTER NO 1

INTRODUCTION

INTRODUCTION

❖ V S Code

Visual Studio Code for the Web provides a free, zero-install Microsoft Visual Studio Code experience running entirely in your browser, allowing you to quickly and safely browse source code repositories and make lightweight code changes.

VS Code for the Web provides a browser-based experience for navigating files and repositories and committing lightweight code changes. However, if you need access to a runtime to run, build, or debug your code, you want to use platform features such as a terminal, or you want to run extensions that aren't supported in the web, we recommend moving your work to the desktop application, GitHub for the full capabilities of VS Code. In addition, VS Code Desktop lets you use a full set of keyboard shortcuts not limited by your browser.

❖ Introduction to Python

In the College-Katta project, Python plays a crucial role in handling the backend operations, ensuring smooth data flow, security, and user management. Python, along with frameworks like Flask or Django, can be used to create a reliable and scalable backend for managing various functions such as user authentication, role-based access, communication, and document management.

Python’s robust libraries and ease of integration with databases such as MongoDB make it an ideal choice for managing the backend infrastructure. It allows for the implementation of essential features like secure login, registration, and data handling, ensuring that users’ information is stored and managed efficiently. Moreover, Python’s extensive support for RESTful APIs ensures smooth communication between the frontend (built with React) and the backend.

By utilizing Python in the backend, College Katta delivers a highly secure, scalable, and performance-driven platform, streamlining communication, resource management, and overall user engagement.

❖ Introduction to MERN Stack

The College Katta platform is built using the MERN Stack, a powerful combination of technologies that includes MongoDB, Express.js, React, and Node.js. This stack provides a seamless development experience for building dynamic, scalable, and high-performance web applications, perfectly suited for the needs of a college community platform.

➢ **MongoDB :** serves as the database, offering flexible document storage that allows for easy handling of user data, announcements, and document management features.

➢ **Express.js :** is used to create the backend API, managing server-side logic, handling HTTP requests, and providing a secure and efficient communication layer between the frontend and the database.

➢ **React :** powers the frontend, delivering a highly interactive and responsive user experience. With React, the platform ensures smooth navigation and real-time updates, enabling students and staff to easily access information, share documents, and communicate.

➢ **Node.js** : acts as the server-side runtime, enabling efficient execution of JavaScript code on the backend. This ensures fast processing of requests, smooth data flow between the frontend and backend, and support for real-time functionalities.

By leveraging the MERN stack, College Katta provides a robust platform that simplifies communication, document management, and community engagement, offering a modern, user-friendly solution for college students and staff. The combination of these technologies ensures that the platform is highly scalable, easy to maintain, and performs well under heavy usage, making it ideal for a large college community.

❖ Introduction to College-Katta Platform

College Katta is a web-based community platform designed to enhance the organization and connectivity of college life for both students and staff. The platform provides a centralized space where users can easily access important announcements, share and manage academic documents, and engage with their peers and colleagues. By

offering distinct sections tailored to the needs of students and staff, College Katta ensures that each group can access the information and tools relevant to them.

The platform promotes seamless communication, efficient document management, and meaningful community engagement, helping to create a more collaborative and connected academic environment. With a user-friendly interface and real-time interaction tools, College Katta addresses the modern challenges of college communication and resource management, serving as a structured alternative to platforms like WhatsApp and Google Classroom. It is designed to simplify the academic experience by providing all necessary features in one easy-to-use platform.

❖ Problem Statement:

In many colleges, communication and resource management between students and staff are often fragmented across multiple platforms like WhatsApp, Google Classroom, and email. This leads to disorganized communication, missed announcements, and difficulties in managing and sharing academic documents. Additionally, existing platforms lack role-based access control, making it hard to tailor information and tools specifically for students and staff.

This disorganization and lack of centralized control result in inefficiencies, decreased engagement, and a lack of a cohesive community within the college. There is a need for a dedicated platform that brings together all these functionalities in a user-friendly, centralized space, ensuring that both students and staff have quick and easy access to the resources they need while fostering better communication and collaboration.

College Katta aims to solve these problems by offering a single, integrated platform designed specifically for college communities, enabling efficient communication, document management, and engagement for both students and staff.

❖ Objectives:

- Streamline Communication: Provide a centralized platform for students and staff to communicate effectively, ensuring that important announcements and discussions are easily accessible.
- Enhance Document Management: Simplify the process of sharing, storing, and managing academic documents, assignments, and other important files within the college community.

- Foster Community Engagement: Promote collaboration and interaction among students and staff through discussion boards, group messaging, and other interactive features.
- Ensure Role-Based Access: Implement role-based access control, providing distinct dashboards and tools for students and staff to ensure that each group has access to the relevant features and information.
- Provide an Alternative to Existing Platforms: Offer a structured and organized alternative to commonly used platforms like WhatsApp and Google Classroom, focusing on the specific needs of academic environments.
- Deliver a User-Friendly Experience: Create an intuitive and easy-to-use interface that allows users to efficiently navigate the platform and access all features without any technical difficulties.
- Promote Collaboration and Connectivity: Build a connected and collaborative environment within the college by facilitating real-time communication and resource sharing.

❖ **Scope**

The scope of the College Katta project involves creating a web-based platform designed to streamline communication, enhance document management, and foster community engagement within a college setting. The platform will provide role-based access for students and staff, allowing each group to access tailored features through personalized dashboards. Key functionalities include real-time announcements, document sharing and management, messaging tools for communication, and task management features like event calendars and to-do lists. The platform will be accessible on various devices, ensuring a user-friendly experience with responsive design. Security and privacy will be prioritized through secure logins and role-based access control. While the initial scope is focused on internal college communication and resource management, the platform is scalable for future enhancements such as mobile app development or integration with external systems.

CHAPTER NO 2

REQUIREMENT ANALYSIS

REQUIREMENT ANALYSIS

1. **Software Requirements:**

- Visual Studio Code
- Python
- HTML, CSS, JS
- MERN STACK
- Windows Operating System

2. **Hardware Requirements:**

- Processor: Intel core i5
- PC with 8GB RAM and 515 SSD

3. **System Requirements:**

- Operating System: The application should be compatible with major operating systems such as Windows, macOS, and Linux.
- Web Browser: Support for modern web browsers including Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge.
- Web Server: Node.js (v14.x or later) to run the backend server and APIExpress.js as the backend framework
- Database: MongoDB (v4.x or later) for data storage and management
- Version Control: Git for version control and collaboration and GitHub or GitLab for code repository
- Hardware Requirements: The application should run smoothly on standard desktop and laptop computers with reasonable hardware specifications, including sufficient RAM and processing power.
- Security Considerations: Implementation of basic security measures such as encryption for database connections and input validation to prevent SQL injection and other security vulnerabilities.

❖ **Development Environment Requirements:**

➢Frontend:

1. React.js (v17.x or later) for building the user interface.
2. Redux or Context API for state management.
3. HTML5, CSS3, JavaScript (ES6+).

➢Backend:

1. Node.js (v14.x or later).
2. Express.js for API and routing.
3. JWT (JSON Web Token) for authentication.
4. bcrypt for password encryption.

❖ **Pre-Processor Segment:**

The Pre-Processor Segment of the College Katta project focuses on the essential steps needed to prepare the application for development and deployment. It begins with requirement gathering from stakeholders to identify their needs and defining functional and non-functional requirements. The segment includes system design, such as architecture planning, database schema creation, and UI mockups, as well as selecting the technology stack, which features React.js, Node.js, Express.js, and MongoDB. Setting up the local development environment, establishing version control, and planning the development process using Agile methodologies are also key components. Additionally, risk assessment and drafting initial project documentation ensure that the project is well-prepared for efficient development, leading to a robust platform for college communication and resource management.

CHAPTER NO 3

SYSTEM DESIGN

SYSTEM DESIGN

The System Design of the College-Katta project outlines the architecture, components, and interactions within the application. This design is essential for ensuring that the platform meets the defined requirements while providing scalability, reliability, and security.

- **Architectural Design:** The College Katta platform follows a Client-Server Architecture using the MERN stack (MongoDB, Express.js, React.js, Node.js). The architecture consists of three primary layers

- Frontend Layer: Developed using React.js, this layer handles the user interface and user experience and It interacts with the backend through RESTful APIs to send and retrieve data.
- Backend Layer: Built with Node.js and Express.js, this layer processes requests from the frontend and communicates with the database and It implements business logic, handles user authentication, and manages data operations.
- Database Layer: Utilizes MongoDB for data storage, providing a flexible NoSQL database to store user information, documents, announcements, and messages.

- **Component Design**: The system consists of several key components, each with its own functionality,

- User Authentication: Registration: A module for users to create accounts, including email verification and Login Handles user login with secure token-based authentication (JWT).
- User Dashboard: Student Dashboard: Displays announcements, personal tasks, and a document management interface and Staff Dashboard: Allows staff to post announcements, manage documents, and view student engagement.
- Communication Module: Messaging System: Enables real-time chat between users, including group chats and direct messaging features.

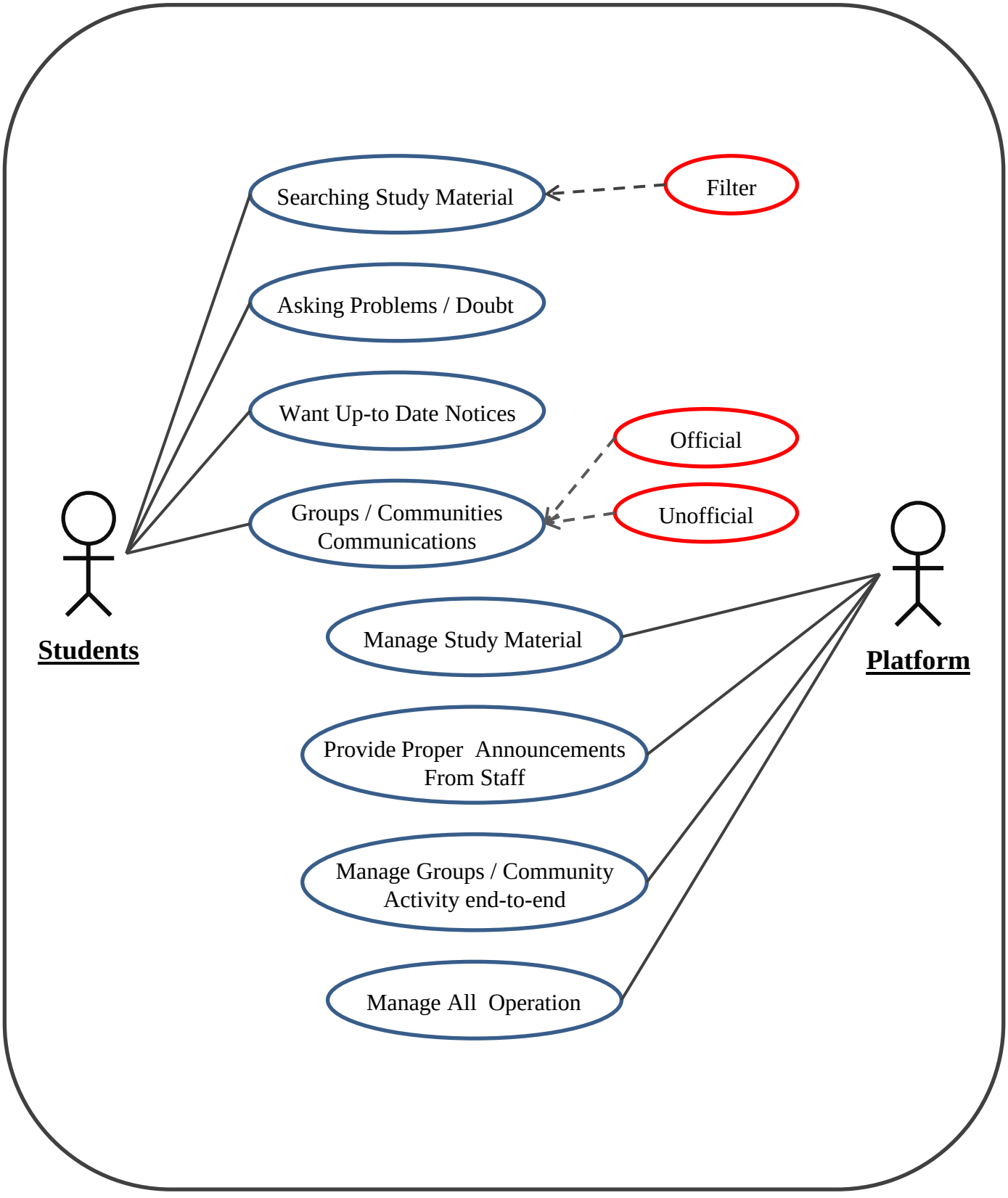
- Document Management System: Upload/Download: Allows users to upload, share, and download documents.Version Control: Keeps track of document changes and maintains a history of revisions.
- Announcement Board: Post Announcements: Staff can create and manage announcements, which are visible to all users.
- Task Management: Calendar Integration: Displays important dates, deadlines, and events and To-Do Lists: Enables users to create, manage, and prioritize personal tasks

❖ **Database Design:** The database schema is designed to accommodate the needs of both students and staff, ensuring efficient data management,

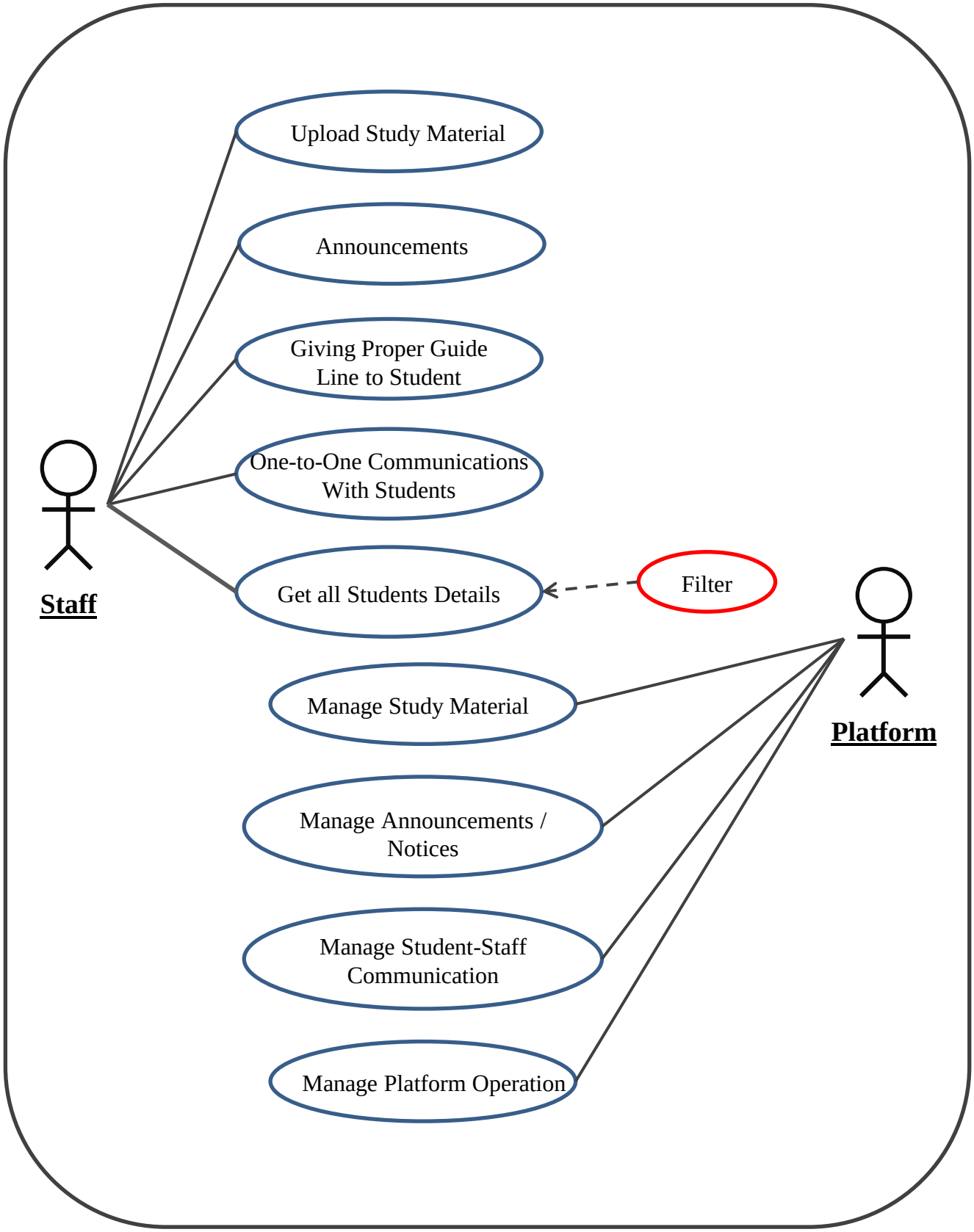
- User Collection: Fields userId, name, email, password, role (student/staff), profilePicture, createdAt, updatedAt.
- Document Collection: Fields documentId, title, uploadedBy, filePath, uploadDate, version, sharedWith, createdAt, updatedAt.
- Announcement Collection: Fields announcementId, title, content, postedBy, postedDate, visibility (public/private).
- Message Collection: Fields messageId, senderId, receiverId, content, timestamp, isGroupMessage.
- Task Collection: Fields taskId, title, description, assignedTo, dueDate, status, createdAt, updatedAt.

By carefully designing the system architecture, components, and interactions, the College Katta platform is positioned to effectively meet user needs while ensuring performance, security, and scalability.

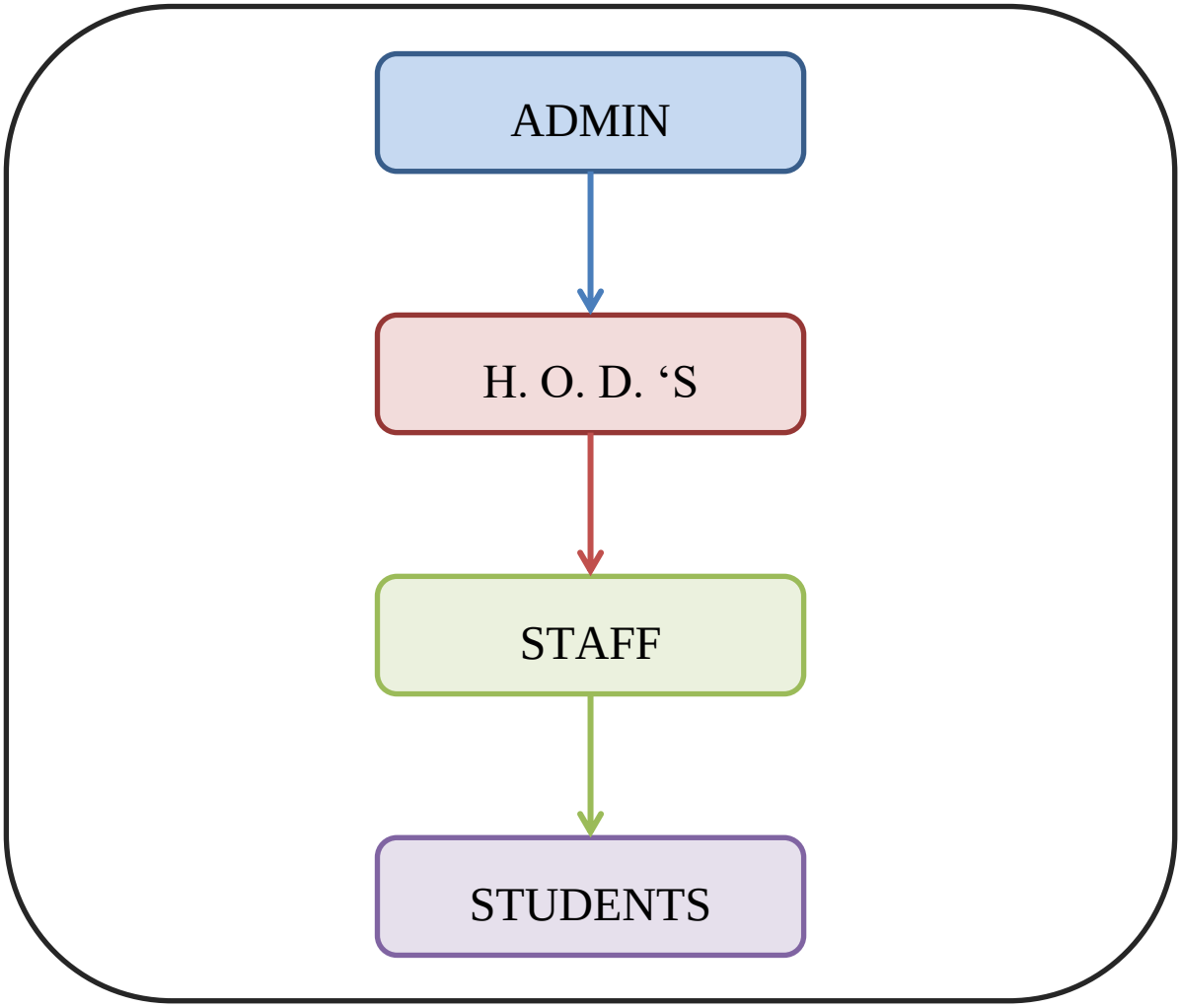
❖ **Use Case Diagram:** For Student and Platform



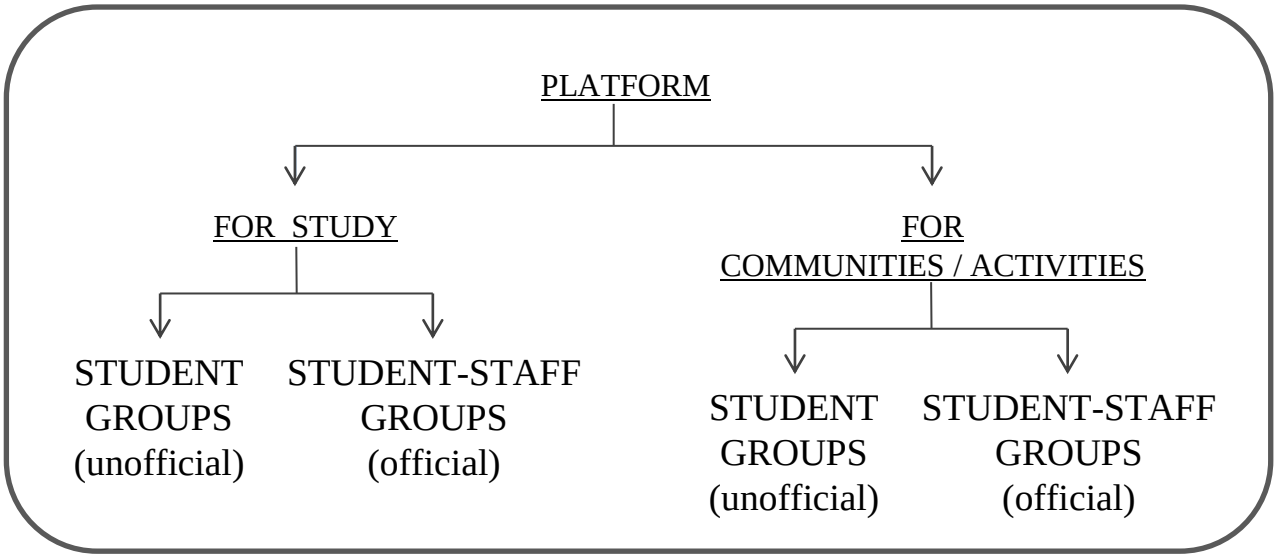
❖ **Use Case Diagram:** For Staff and Platform



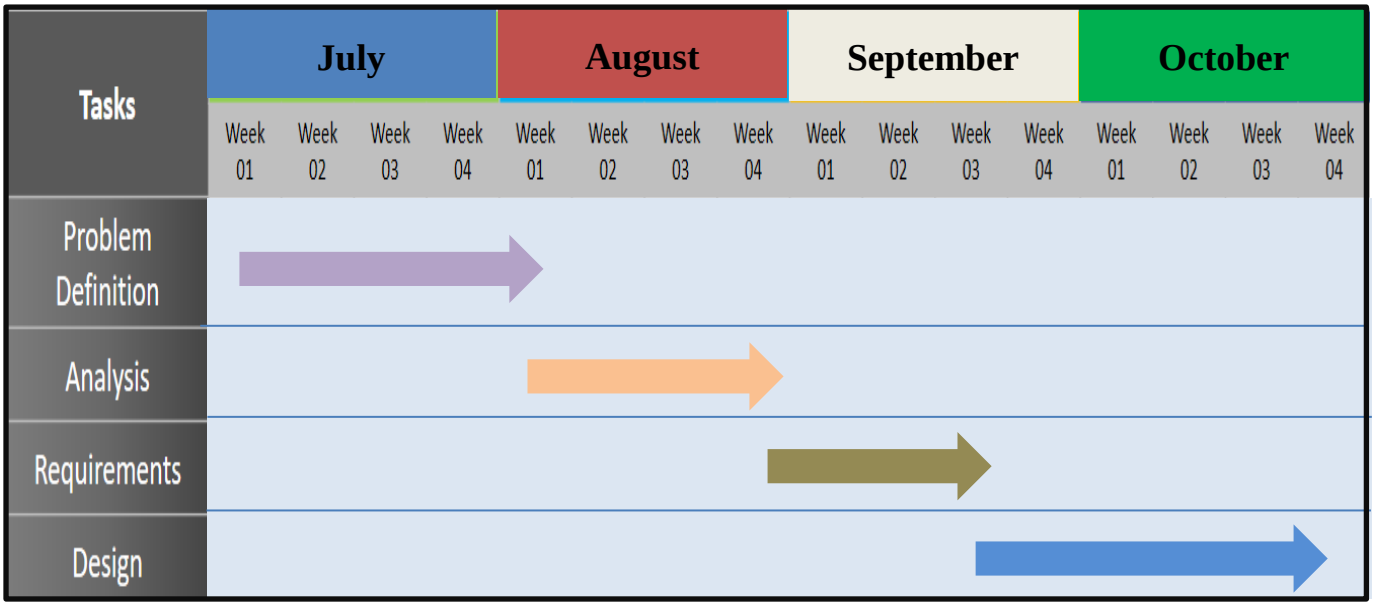
❖ Role-Based Access



❖ Chart Diagram for Giving Project Idea



❖ Gantt Chart:

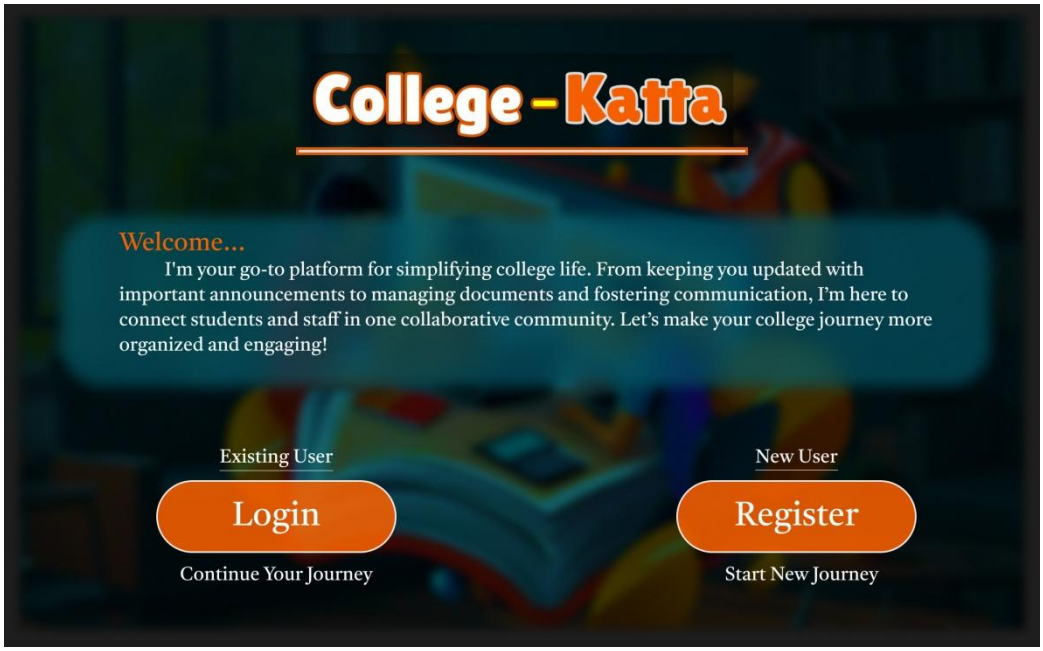

Tasks
July
August
September
October
Week 01
Week 02
Week 03
Week 04
Week 01
Week 02
Week 03
Week 04
Week 01
Week 02
Week 03
Week 04
Week 01
Week 02
Week 03
Week 04
Problem Definition
Analysis
Requirements
Design

CHAPTER NO 4

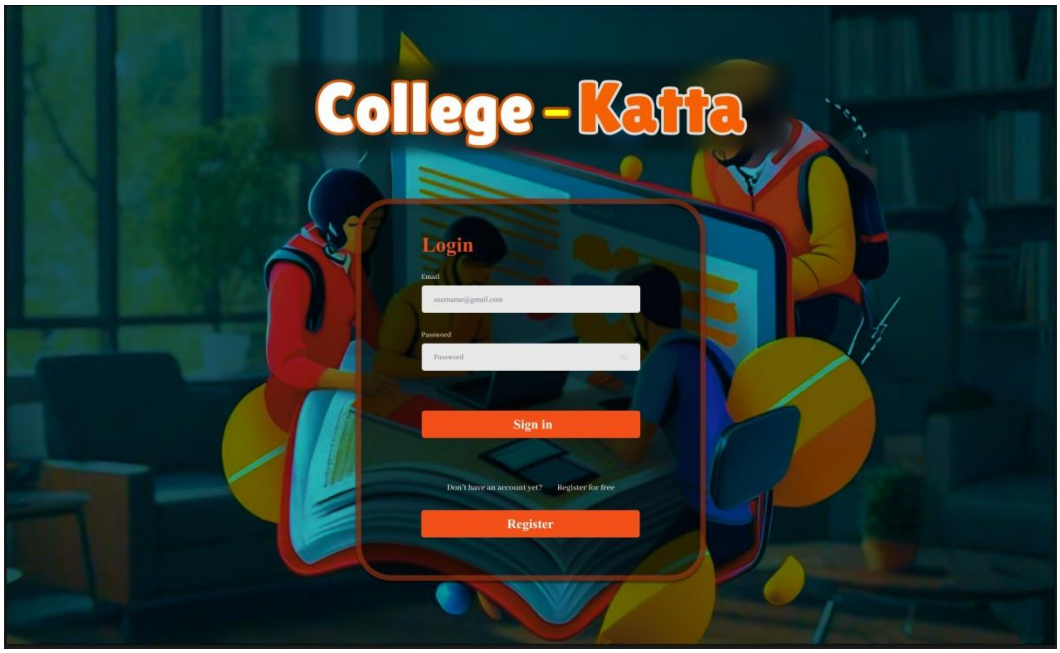
UI Design

UI Design

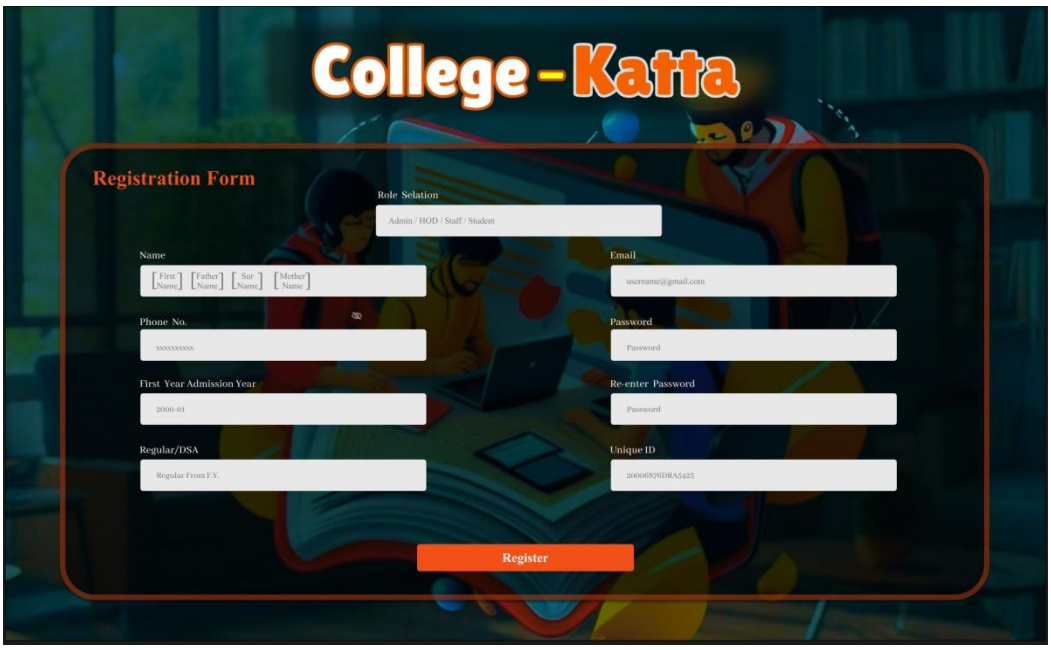
- **College-Katta Intro Page :-**



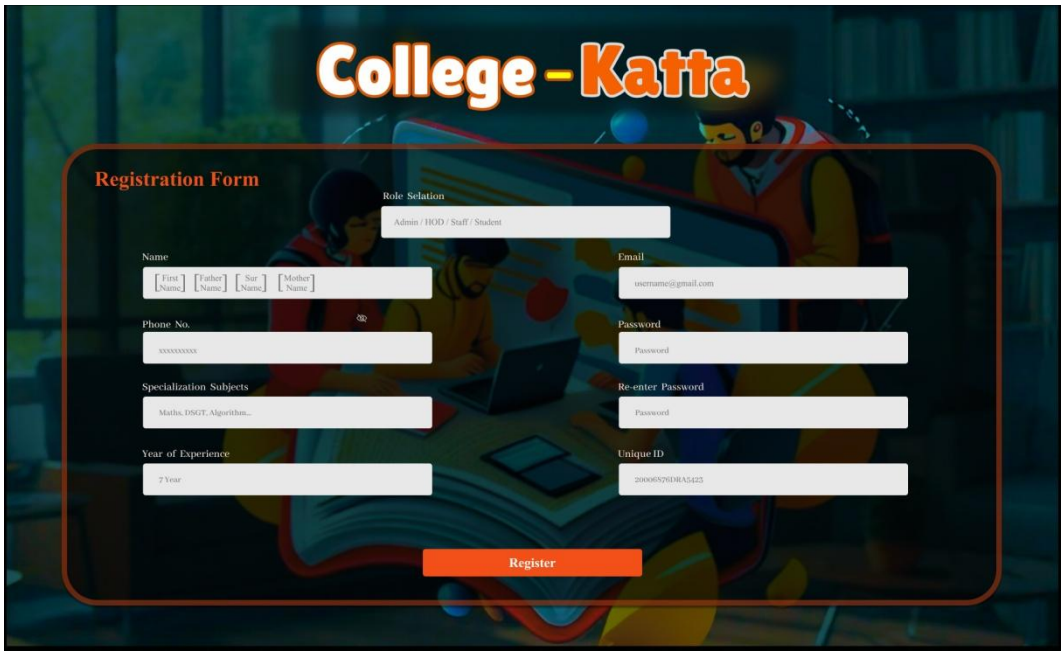
- **Login Page :-**



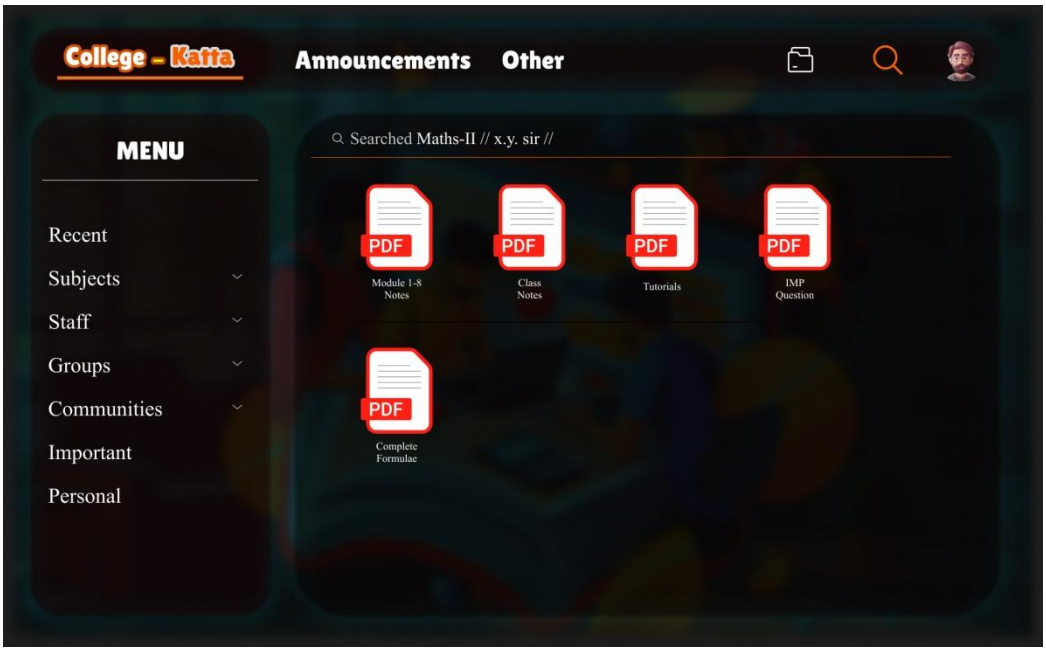
- **Registration Page (For Students)**



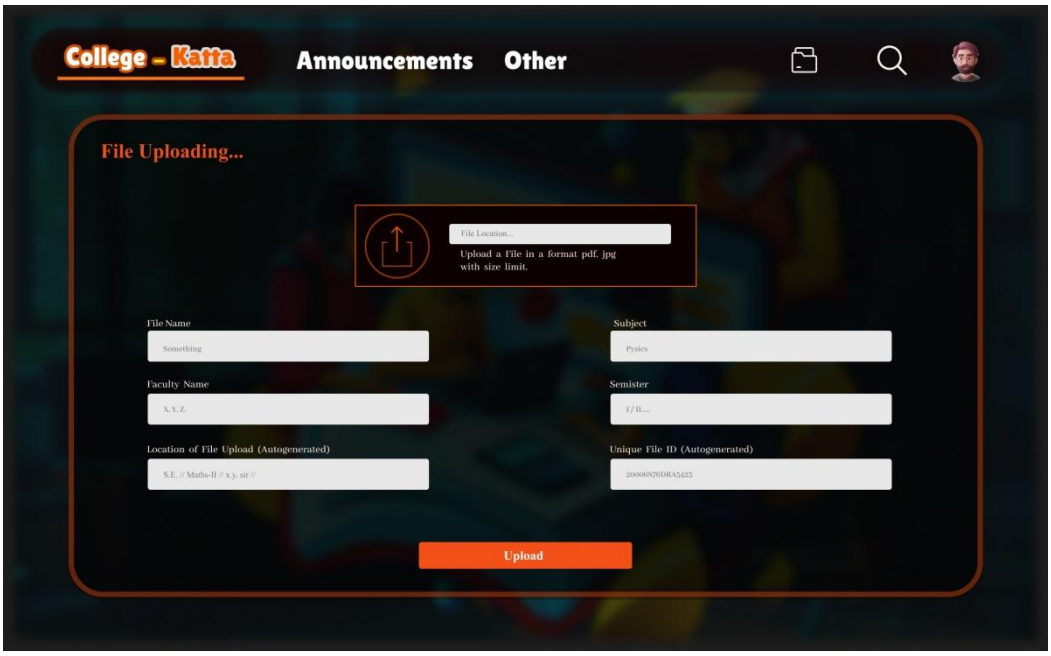
- **Registration Page (For Staff)**



- **Sample Dashboard :-**



- File Uploading Page Sample



CHAPTER NO.5

FUTURE ENHANCEMENTS

FUTURE ENHANCEMENTS

The College Katta platform has significant potential for future enhancements to better serve students and staff. Developing a mobile application for both Android and iOS platforms would enhance accessibility, allowing users to manage announcements and documents on-the-go. An advanced notification system could push real-time alerts for updates and deadlines, ensuring users stay informed. Improving search functionality would enable efficient access to documents and announcements using filters and keywords. Integrating with existing Learning Management Systems (LMS) like Moodle or Canvas would provide seamless access to course materials and assignments, enhancing the educational experience.

Furthermore, implementing data analytics tools would offer insights into user engagement and communication patterns, allowing administrators to make informed decisions. Role-based customization of the dashboard could provide tailored experiences for different user types, improving usability. Introducing gamification elements, such as badges and leaderboards, would encourage community engagement and participation. An enhanced document management system with version control and advanced sharing options would facilitate better collaboration among users.

In addition, incorporating improved security features, such as two-factor authentication and regular audits, would protect user data and maintain platform integrity. Lastly, establishing a feedback system for users to suggest features and report issues would ensure continuous improvement based on user needs. By pursuing these enhancements, College Katta can evolve into a more comprehensive, user-friendly, and secure platform that fosters a connected and engaged college community.

CHAPTER NO.6

CONCLUSION

CONCLUSION

The College-Katta platform is designed to revolutionize the way students and staff interact within a college environment. By streamlining communication, enhancing document management, and fostering community engagement, the platform aims to create a more organized and connected college experience. The distinct login experiences for students and staff ensure that all users can access the information and tools relevant to their roles, thus promoting a collaborative environment.

The objectives outlined at the beginning of this project, such as ensuring role-based access and providing an alternative to existing platforms like WhatsApp and Classroom, have been carefully addressed throughout the development process. Future enhancements, including mobile application development, advanced notification systems, and improved security features, will further enhance the platform's capabilities and user satisfaction.

As the implementation of the College Katta project progresses, it is essential to focus on integrating user feedback and continuously iterating on the platform’s features. This commitment to improvement will ensure that the platform remains relevant and effectively meets the evolving needs of its users. By successfully implementing the project, we can create a valuable resource that not only simplifies communication and document management but also fosters a strong sense of community within the college.

CHAPTER NO.7

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REFERENCE

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