

A Project Report on

MEETHUB

Submitted by

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Under the guidance of

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**In partial fulfillment of the award of Bachelor of Technology in Artificial
Intelligence and Data Science**



Department of Emerging Science and Technology

Maharashtra Institute of Technology,

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[2024-25]

DECLARATION

we declare that this written submission represents my ideas in my own words and where others ideas or words have been included, we have adequately cited 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 penalty action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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CERTIFICATE

This is to certify that the Major Project Part-I report entitled “**MEETHUB**”, submitted by **Sambhaji Shinde, Saurabh Sahalugde, Varad Puranik** is the bonafied work completed under my supervision and guidance in partial fulfillment for the award of Bachelor of Technology in Artificial Intelligence and Data Science, Maharashtra Institute of Technology under Dr. Babasaheb Ambedkar Marathwada University, Chh. Sambhajinagar (Aurangabad).

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INDEX/CONTENTS

TITLE	PAGE NO
Declaration	
Certificate	
Acknowledgement	
Approval certificate	
List of Figures	ii
Abstract	iii
1. INTRODUCTION	1
1.1 Necessity	2
1.2 Problem definition	3
1.3 Objectives	4
1.4 Scope and limitations	5
1.5 Applications	7
1.6 Organization and project plan	8
2. REQUIRMENT ANALYSIS	13
2.1 Functional Requirement	13
2.2 Non-Functional Requirement	13
3. SYSTEM DESIGN	14
3.1 Architectural Diagram	14
3.2 DFD	15
3.3 USE case Diagrams	20
3.4 Sequence Diagram	22
3.5 Deployment Diagram	23
3.6 ER-Diagram	24
3.7 Project Images	25
4. Conclusion	34
Future Scope	35
References	36

List of Figures

Figure	Illustration	Page
3.1	Architectural Diagram	14
3.2	DFD level 0	15
3.3	DFD level 1	16
3.4	DFD level 2	18
3.5	: Use case diagram	20
3.6	Sequence diagram	22
3.7	Sequence diagram 2	22
3.8	deployment diagram	23
3.9	ER-diagram	24
3.10	Landing page	25
3.11	Main page	25
3.12	Meeting page	26
3.13	Meeting join page	26
3.14	Meeting schedule page	27
3.15	Meeting upcoming page	27
3.16	Previous meeting page	28
3.17	Meeting recordings page	28
3.18	Personal room page	29
3.19	Authentication page	29
3.20	Board home page	30
3.21	Create organization page	30
3.22	Whiteboard page	31
3.23	Invite member's page	31
3.24	Livedocs home page	32
3.25	Livedocs edit page	32
3.26	Livedocs invite page	33
3.27	Livedocs notification page	33

ABSTRACT

In today's digitally interconnected world, the demand for efficient online communication and collaboration tools has surged. MeetHub emerges as a versatile online video conferencing platform, designed to meet the diverse needs of businesses, educational institutions, and individuals. This platform prioritizes usability, security, scalability, and accessibility to redefine the standards of virtual collaboration.

MeetHub leverages cutting-edge technologies such as H.264, H.265, VP9, and AAC for video and audio compression, ensuring high-quality transmission while minimizing bandwidth requirements. Additionally, it incorporates advanced web technologies to optimize real-time communication and enable features like interactive whiteboards, screen sharing.

With a user-centric design approach, MeetHub offers a seamless experience for conducting virtual meetings, workshops, presentations, and collaborative sessions. By integrating robust security measures and innovative features, MeetHub aims to empower users to connect, collaborate, and thrive in an increasingly interconnected world.

Chapter 1

INTRODUCTION

In today's digital era, efficient communication tools are crucial, especially with the rise of globalized businesses, remote work trends, and virtual collaboration. MeetHub emerges to meet this demand, offering a comprehensive online video conferencing website aimed at streamlining communication and enhancing collaboration experiences.

MeetHub transcends traditional communication channels, leveraging cutting-edge technology and user-centric design principles to revolutionize virtual connections. With a deep understanding of modern needs, it addresses challenges faced by businesses, educational institutions, and individuals. Its intuitive video conferencing features, robust screen sharing options, and customizable meeting settings empower users to conduct seamless virtual meetings, webinars, and interactive workshops.

Beyond its functionality, MeetHub fosters community engagement, knowledge sharing, and collaborative innovation. Through interactive discussion forums, interest-based groups, and networking events, it cultivates a sense of belonging and camaraderie among users, facilitating professional growth and development.

At MeetHub, we envision an inclusive and interactive future of communication. By staying attuned to user feedback and emerging trends, we're committed to continuously enhancing the MeetHub experience, redefining how the world connects, communicates, and collaborates online.

Join us on this transformative journey towards a more connected and collaborative future with MeetHub. Experience the power of seamless communication, vibrant communities, and innovative collaboration tools—all in one platform designed to elevate your virtual interactions and propel you towards success in an ever-evolving digital landscape.

1.1 Necessity

In today's dynamic digital landscape, the reliance on online communication tools has become increasingly pronounced, with online video conferencing platforms serving as indispensable assets for remote collaboration. The ubiquity of high-speed internet connectivity, coupled with the global proliferation of mobile devices and the imperative of remote work spurred by the COVID-19 pandemic, has propelled the demand for efficient and reliable virtual communication solutions to unprecedented heights. In this context, the development of MeetHub emerges as a timely response to the evolving needs of businesses, educational institutions, and individuals seeking a comprehensive online video conferencing platform. With businesses expanding their operations across geographical boundaries, educational institutions embracing remote learning models, and individuals seeking to connect with colleagues, friends, and family members regardless of distance, the need for a versatile and user-friendly video conferencing solution has never been more pronounced. MeetHub aims to bridge this gap by offering a feature-rich platform that prioritizes usability, flexibility, and security. By leveraging cutting-edge technologies and adopting a user-centric design approach, MeetHub endeavors to redefine the standards of online collaboration, empowering users to conduct seamless virtual meetings, workshops, presentations, and collaborative sessions.

The primary objective of the MeetHub project is to provide a holistic online video conferencing solution that caters to the diverse needs of its users. Whether facilitating small team meetings, large-scale webinars, or interactive training sessions, MeetHub seeks to enhance communication experiences and foster collaboration in virtual environments. Moreover, the platform is designed to integrate seamlessly with existing productivity tools and workflows, ensuring interoperability and workflow efficiency. By prioritizing user feedback and iterative development cycles, MeetHub aims to evolve continuously, adapting to the changing demands and preferences of its user base. This report serves as a comprehensive documentation of the MeetHub project, offering insights into its development process, key features, technical architecture, and future prospects. By delving into the rationale, objectives, methodology, and outcomes of the project, this report aims

to provide valuable insights and lessons learned for stakeholders, researchers, and practitioners interested in online collaboration technologies.

Through collaborative efforts and a commitment to innovation, MeetHub endeavors to empower individuals and organizations to connect, collaborate, and thrive in an increasingly interconnected world.

1.2 Problem definition

In today's digital era, the demand for seamless and effective online communication tools has surged, driven by the globalization of businesses, remote work trends, and the necessity for virtual collaboration. While existing online video conferencing platforms offer valuable solutions for remote communication, they often present challenges and limitations that hinder user experience and productivity.

One of the primary challenges is the lack of a unified and user-friendly platform that caters to the diverse needs of users across different industries and sectors. Existing solutions may offer a plethora of features, but navigating through complex interfaces and managing multiple applications can be daunting for users, leading to inefficiencies and frustrations. Moreover, the fragmented nature of the current landscape makes it challenging for organizations to integrate disparate tools and ensure seamless interoperability, resulting in disjointed workflows and compromised collaboration experiences.

Security and privacy concerns also pose significant challenges for online video conferencing platforms. Instances of data breaches, unauthorized access, and privacy violations have raised apprehensions among users regarding the safety and confidentiality of their communications. Ensuring robust security measures, such as end-to-end encryption, access controls, and compliance with data protection regulations, is imperative to instill trust and confidence in users. Another critical issue is scalability and performance. As the user base and demand for online video conferencing continue to grow, platforms must be capable of accommodating increasing numbers of concurrent users, delivering high-quality audio and video streams, and maintaining consistent performance under varying network conditions. Failure to scale effectively can result in service disruptions,

latency issues, and degraded user experiences, undermining the reliability and utility of the platform.

Furthermore, accessibility remains a concern for individuals with disabilities, as many online video conferencing platforms may not adequately support assistive technologies or provide features to accommodate diverse needs. Ensuring inclusivity and accessibility is essential to enable all users, regardless of their abilities, to participate fully in virtual meetings and collaboration activities.

Considering these challenges, the development of MeetHub aims to address these limitations and provide a comprehensive solution that meets the evolving needs of users. By prioritizing usability, security, scalability, and accessibility, MeetHub endeavors to redefine the standards of online video conferencing, empowering users to communicate, collaborate, and succeed in today's interconnected world.

1.3 Objectives

The MeetHub project is driven by a clear set of objectives aimed at addressing the challenges inherent in existing online video conferencing platforms while meeting the evolving needs of users. Firstly, the project aims to develop a user-centric platform, prioritizing usability, simplicity, and intuitive design. Through comprehensive user research, feedback gathering, and the application of human-centered design principles, MeetHub endeavors to provide a seamless and engaging user experience accessible to individuals of all technical proficiencies. Security is a paramount concern in online communication platforms, and thus, another objective of MeetHub is to ensure robust security measures. This entails implementing end-to-end encryption, multi-factor authentication, and stringent access controls to safeguard sensitive information and protect user privacy from potential threats or breaches. Additionally, the project seeks to enhance scalability and performance to accommodate varying user demands and ensure uninterrupted service availability. By designing and optimizing the platform's infrastructure, MeetHub aims to support a large number of concurrent users, maintain high-quality video and audio streams, and deliver consistent performance under diverse network

conditions. Integration with existing productivity tools and platforms is essential for enhancing workflow efficiency and user experience. Therefore, MeetHub aims to facilitate seamless integration with popular productivity tools, project management software, calendar applications, and messaging platforms. This integration empowers users to transition seamlessly between different tools and streamline their workflows, enhancing overall productivity and collaboration. MeetHub is committed to promoting accessibility and inclusivity by ensuring that the platform is accessible to users of all abilities. By implementing accessibility features and supporting assistive technologies, the project aims to enable individuals with disabilities to fully participate in virtual meetings and collaboration activities, fostering a more inclusive environment for all users. Furthermore, beyond basic video conferencing functionality, MeetHub seeks to foster collaboration and engagement among users. The project aims to provide interactive features such as screen sharing, chat messaging, whiteboarding, and participant polls, facilitating real-time interactions, knowledge sharing, and collaborative problem-solving. Finally, MeetHub recognizes the importance of iterative improvement and innovation to meet the evolving needs of users over time. By adopting an iterative development approach and gathering feedback from users, the project aims to continuously iterate on features and functionalities, enhancing the platform's usability, performance, and value proposition.

1.4 Scope and limitations Scope

The scope of the MeetHub project encompasses the development, deployment, and initial rollout of an online video conferencing platform designed to facilitate seamless communication and collaboration among users. Key aspects within the scope of the project include:

1.4.1 Platform Development: The development phase involves designing and implementing the core features and functionalities of MeetHub, including video and audio conferencing capabilities, screen sharing, chat messaging, file sharing, scheduling, and participant management.

1.4.2 User Interface Design: MeetHub will prioritize user experience by employing modern design principles to create an intuitive and visually appealing user interface. Usability testing and iterative design processes will be conducted to ensure that the platform meets the needs and preferences of its users.

1.4.3 Security and Privacy: Ensuring the security and privacy of user data is a paramount concern. MeetHub will implement robust security measures, such as encryption, authentication, and access controls, to protect sensitive information and prevent unauthorized access or data breaches.

1.4.4 Scalability and Performance: The platform will be designed to scale effectively to accommodate varying numbers of users and usage patterns. Performance optimization strategies will be employed to ensure consistent performance under different network conditions.

1.4.5 Integration with Productivity Tools: MeetHub will support integration with popular productivity tools and platforms to enhance workflow efficiency and user productivity. This includes compatibility with calendar applications, project management software, and file sharing platforms.

1.4.6 Accessibility: MeetHub will strive to be accessible to users of all abilities by implementing accessibility features and supporting assistive technologies. This includes features such as keyboard navigation, screen reader compatibility, and adjustable font sizes.

While MeetHub aims to provide a comprehensive solution for online video conferencing, there are certain limitations to be acknowledged:

1.4.7 Feature Set: The initial rollout of MeetHub may not include all desired features and functionalities. Certain advanced features, customization options, or integrations with specific third-party tools may be added in future updates based on user feedback and resource availability.

1.4.8 Technical Constraints: The development of MeetHub is subject to technical constraints such as hardware limitations, software dependencies, and compatibility issues.

While efforts will be made to address these constraints, they may impact the timeline and scope of the project.

1.4.9 Resource Constraints: The availability of resources, including time, budget, and personnel, may impose limitations on the scope and pace of development. Prioritization of features and tasks will be necessary to ensure the timely delivery of key milestones.

1.4.10 Security and Privacy Risks: Despite implementing robust security measures, MeetHub may still be susceptible to security vulnerabilities or privacy risks. Continuous monitoring, vulnerability assessments, and prompt response to security incidents will be essential to mitigate these risks.

1.4.11 User Adoption and Feedback: The success of MeetHub depends on user adoption and feedback. While efforts will be made to solicit user input and address user needs, there is no guarantee of widespread adoption or user satisfaction with the platform.

1.5 Application

1.5.1 Business Meetings and Conferences: MeetHub can be used by businesses for virtual team meetings, client presentations, and company-wide conferences. Its intuitive video conferencing features and customizable meeting settings make it ideal for facilitating seamless communication and collaboration among remote teams and stakeholders.

1.5.2 Remote Work and Telecommuting: In an era where remote work is increasingly prevalent, MeetHub can serve as a central platform for remote employees to conduct virtual meetings, brainstorming sessions, and project collaborations. Its robust screen sharing options and real-time collaboration tools enable teams to work together effectively from anywhere in the world.

1.5.3 Educational Institutions: MeetHub can be utilized by educational institutions for online classes, lectures, and interactive discussions. With the rise of remote learning models, MeetHub provides a secure and user-friendly platform for educators to engage with students in virtual classrooms, host guest lectures, and facilitate group projects.

1.5.4 Training and Workshops: Organizations can use MeetHub for conducting virtual training sessions, workshops, and professional development programs. Its interactive features, such as screen sharing and whiteboarding, allow trainers to deliver engaging and interactive sessions, while its recording capabilities enable participants to review the content at their own pace.

1.5.5 Webinars and Events: MeetHub can be leveraged for hosting webinars, seminars, and virtual events for a wide audience. Its scalability and performance ensure seamless streaming of audio and video content to large numbers of attendees, while its chat messaging and Q&A features enable audience engagement and interaction.

1.5.6 Community Building and Networking: MeetHub can be used to create online communities and networking groups for professionals, enthusiasts, and hobbyists. By hosting virtual meetups, discussion forums, and networking events, MeetHub fosters community engagement, knowledge sharing, and collaborative innovation among like-minded individuals.

1.5.7 Healthcare and Telemedicine: MeetHub can be adopted by healthcare providers for conducting telemedicine consultations, patient education sessions, and virtual support groups. Its secure and HIPAA-compliant platform ensures the privacy and confidentiality of patient information, while its user-friendly interface makes it accessible to patients of all ages.

1.5.8 Government and Public Sector: MeetHub can be utilized by government agencies and public sector organizations for hosting virtual town hall meetings, public hearings, and stakeholder consultations. Its accessibility features ensure that all citizens, including those with disabilities, can participate in civic engagement activities and contribute to public discourse.

1.6 Organization and project plan

The development and implementation of MeetHub require a structured approach and effective coordination among team members, stakeholders, and resources. This section outlines the organizational structure and project plan for the successful execution of the MeetHub project.

1.6.1 Organizational Structure

MeetHub project team consists of multidisciplinary professionals with expertise in software development, user experience design, project management, and domain-specific knowledge. The organizational structure includes the following key roles and responsibilities:

Project Manager: Oversees the overall project execution, including planning, scheduling, resource allocation, and risk management. Responsible for ensuring that the project stays on track and meets its objectives within the specified timeline and budget.

Development Team: Comprises software engineers, designers, and quality assurance specialists responsible for building and testing the MeetHub platform. The development team collaborates closely to implement features, address technical challenges, and ensure the quality and performance of the application.

User Experience (UX) Designers: Focus on designing intuitive and user-friendly interfaces for the MeetHub application. Conduct user research, create wireframes and prototypes, and iterate on designs based on user feedback to enhance usability and accessibility.

Quality Assurance (QA) Team: Conducts thorough testing of the MeetHub platform to identify and address any bugs, issues, or inconsistencies. Performs functional testing, usability testing, performance testing, and security testing to ensure the reliability and stability of the application.

1.6.2. Project Plan

The project plan outlines a comprehensive roadmap for the development and deployment of MeetHub, a cutting-edge online video conferencing platform. It encompasses multiple phases, each focusing on specific tasks and objectives to ensure the successful delivery of the project.

Phase 1: Project Initiation

During this initial phase, the project team will lay the foundation for MeetHub by defining the project scope, objectives, and requirements in detail. Key activities include:

Scope Definition: Clearly defining the scope of the project, including its goals, deliverables, and constraints.

Stakeholder Engagement: Identifying key stakeholders and conducting stakeholder analysis to understand their needs and expectations.

Team Formation: Establishing the project team, assigning roles and responsibilities, and conducting team kickoff meetings.

Research and Planning: Conducting preliminary research on industry trends, competitor analysis, and user preferences. Developing a high-level project plan and timeline.

Phase 2: Design and Prototyping

In this phase, the focus shifts to designing the user interface and experience for MeetHub. The goal is to create wireframes, mockups, and prototypes that accurately reflect the intended functionality and user interactions. Key activities include:

Wireframing: Developing wireframes to outline the layout and structure of the MeetHub application.

Prototyping: Creating interactive prototypes to simulate user interactions and gather feedback from stakeholders.

User Feedback and Iteration: Soliciting feedback from stakeholders and users to iterate on designs and improve usability.

Final Design Approval: Finalizing the user interface and experience design based on feedback and stakeholder input.

Phase 3: Development

With the design phase completed, the development team begins building the core features and functionalities of the MeetHub platform. This phase involves translating the finalized designs and specifications into a functional application. Key activities include:

Frontend Development: Implementing the user interface design using frontend technologies such as React, HTML, CSS, and JavaScript.

Backend Development: Building the backend infrastructure and logic to support user authentication, data storage, and real-time communication.

Security Implementation: Integrating robust security measures, such as encryption, authentication, and access controls, to protect user data and ensure privacy.

Integration with Third-party Tools: Developing interfaces to integrate MeetHub with popular productivity tools, calendar applications, and messaging platforms.

Phase 4: Testing and Quality Assurance

In this critical phase, the MeetHub application undergoes rigorous testing to identify and resolve any issues or bugs before deployment. Various types of testing are conducted to ensure the quality, reliability, and security of the platform. Key activities include:

Functional Testing: Verifying that all features and functionalities work as intended and meet the specified requirements.

Usability Testing: Evaluating the user interface and experience to ensure ease of use and accessibility for all users.

Performance Testing: Assessing the platform's performance under different load conditions to identify bottlenecks and optimize performance.

Security Testing: Conducting vulnerability assessments and penetration testing to identify and address security vulnerabilities.

Compliance Testing: Ensuring compliance with industry standards, regulations, and best practices related to security, privacy, and accessibility.

Phase 5: Deployment and Rollout

In the final phase, the MeetHub platform is prepared for deployment to production environments. This involves finalizing preparations, conducting user acceptance testing, and deploying the application to servers and cloud platforms. Key activities include:

User Acceptance Testing: Allowing users to test the application in a production-like environment and providing feedback.

Performance Tuning: Fine-tuning the platform's performance based on user feedback and testing results.

Deployment Planning: Planning and executing the deployment process, including data migration, server setup, and configuration.

Post-launch Monitoring: Monitoring the performance and stability of the platform post-launch and addressing any issues or concerns that arise.

1.6.3. Project Management Approach

The project will be managed using agile methodologies, with iterative development cycles and regular sprint reviews. Agile practices such as daily stand-up meetings, sprint planning sessions, and retrospective meetings will facilitate effective communication, collaboration, and adaptation to changing requirements.

1.6.4. Risk Management

Identify potential risks and uncertainties that may impact the success of the project, such as technical challenges, resource constraints, and external dependencies. Develop risk mitigation strategies to address and minimize the impact of these risks on project outcomes

Chapter 2

REQUIREMENT ANALYSIS

2.1. Functional Requirements:

MeetHub will offer a wide range of features and functionalities to facilitate seamless online communication and collaboration, including video and audio conferencing, screen sharing, chat messaging, file sharing, scheduling, and participant management.

The platform will prioritize user experience by employing modern design principles to create an intuitive and visually appealing user interface, ensuring accessibility for individuals of all technical proficiencies.

Security measures, such as end-to-end encryption, multi-factor authentication, and access controls, will be implemented to safeguard sensitive information and protect user privacy.

MeetHub will be designed to scale effectively to accommodate varying numbers of users and usage patterns, ensuring consistent performance under different network conditions.

2.2. Non-functional Requirements

Performance optimization strategies will be employed to maintain high-quality video and audio streams, deliver consistent performance, and support a large number of concurrent users.

The platform will integrate seamlessly with existing productivity tools and platforms to enhance workflow efficiency and user productivity.

Accessibility features, such as keyboard navigation, screen reader compatibility, and adjustable font sizes, will be implemented to ensure inclusivity for users with disabilities.

Chapter 3

SYSTEM DESIGN

3.1 Architectural Diagram

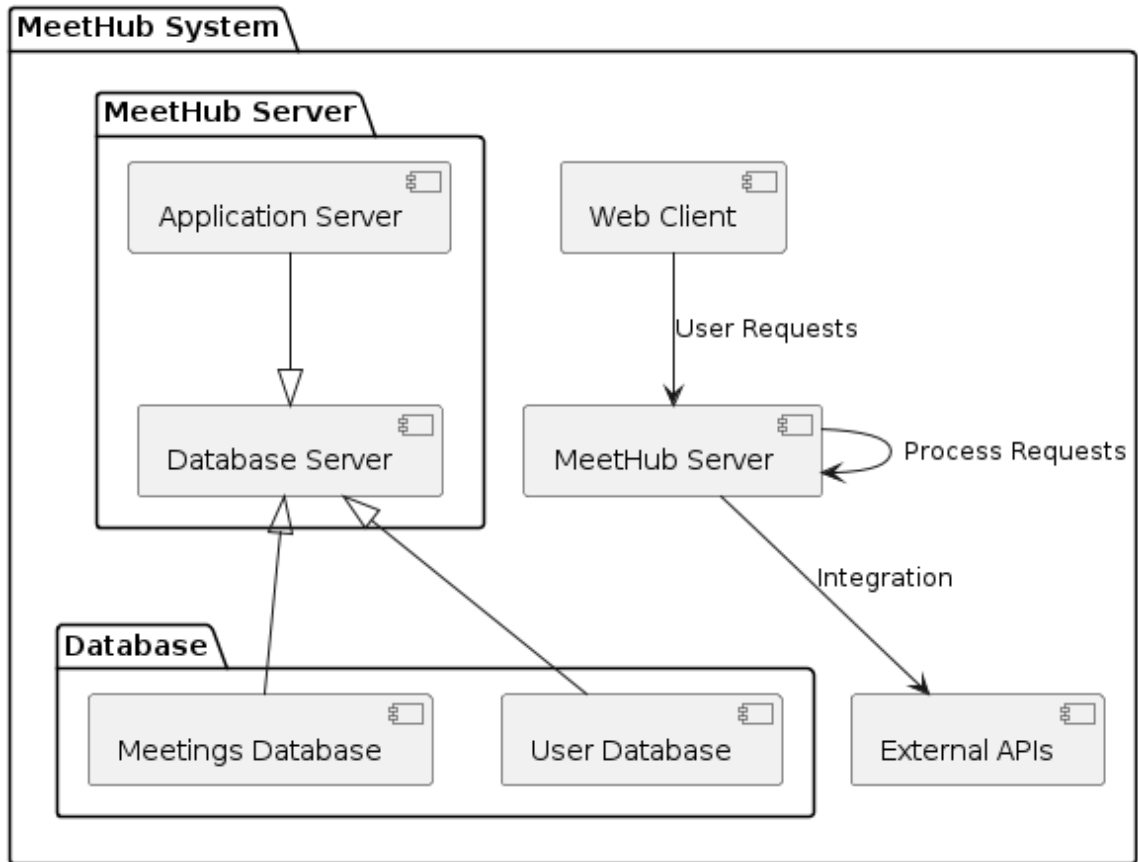


Figure 3.1: Architectural Diagram

Web Client: Represents users accessing MeetHub through web browsers or mobile devices.

MeetHub Server: The central server hosting the MeetHub application and database. It handles user requests, processes them, and integrates with external APIs if needed.

MeetHub Server (Application Server): Handles the application logic and business processes.

MeetHub Server (Database Server): Stores data related to meetings and users.

External APIs: Represents any external services or APIs that MeetHub may integrate with for additional functionality or data.

3.2 DFD

3.2.1 DFD level 0

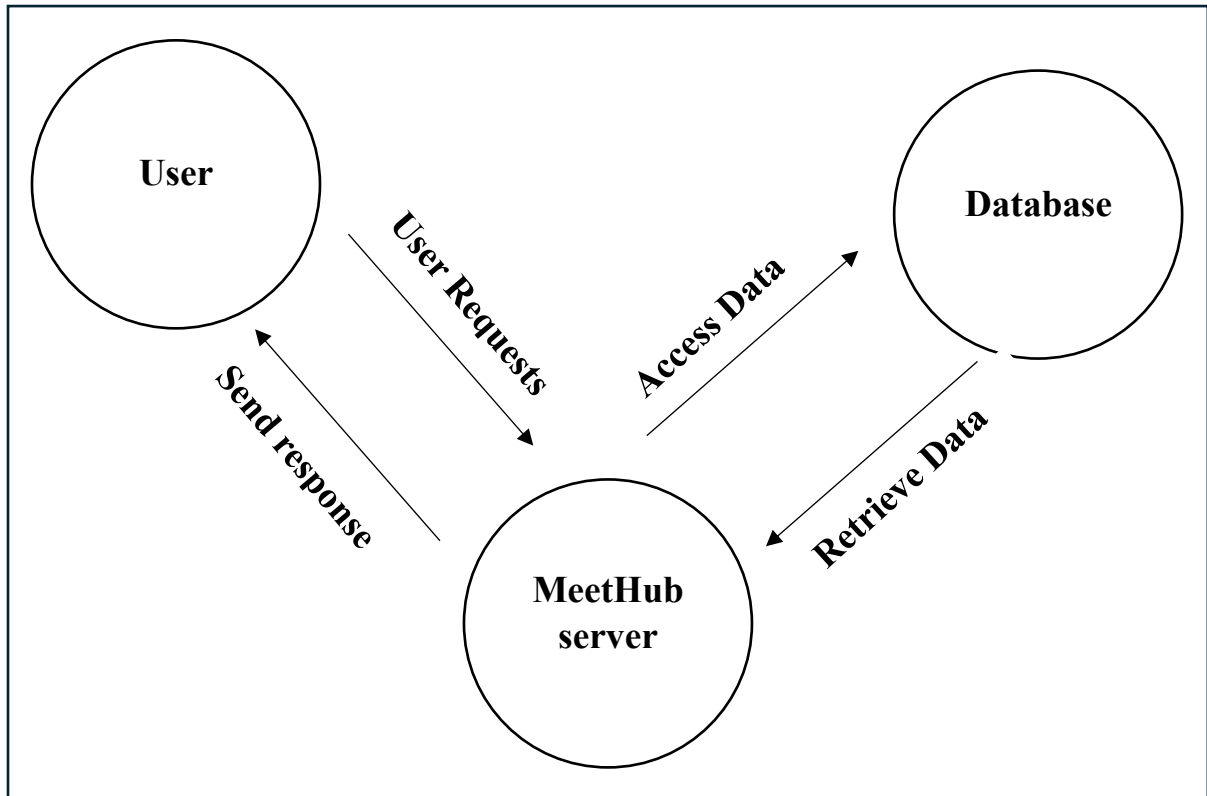


Figure 3.2: DFD level 0

User: This represents the user interacting with the MeetHub system. The user sends requests to the server and receives responses back.

MeetHub System: This is the main system of MeetHub, comprising the server and the database.

MeetHub Server: This is the central component of the MeetHub system. It receives requests from users, processes them, accesses data from the database, and sends responses back to the users.

Database: This is where the data related to MeetHub is stored. It could include user profiles, meeting information, settings, and other relevant data.

The interactions are as follows:

User Requests: The user sends requests to the MeetHub server, such as requesting to join a meeting, create a new meeting, or update their profile.

Access Data: The MeetHub server accesses the database to retrieve or store data based on the user's request. For example, if a user requests to join a meeting, the server retrieves the meeting details from the database.

Retrieve Data: Once the server accesses the required data from the database, it processes it as needed to fulfill the user's request.

Send Response: Finally, the server sends the processed data or response back to the user. This could include information about the requested meeting, confirmation messages, or error notifications.

3.2.2 DFD level 1

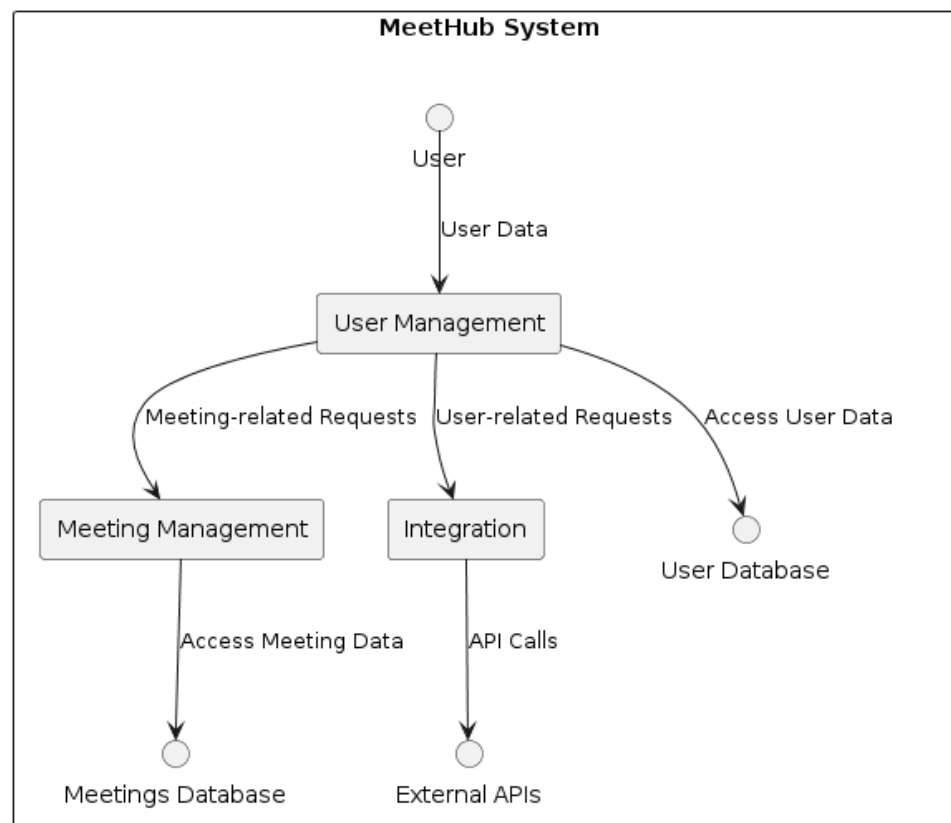


Figure 3.3: DFD level 1

MeetHub System: This represents the entire system of MeetHub, which includes various components responsible for user management, meeting management, and integration with external APIs.

User Management: This component handles user-related operations such as user authentication, registration, and profile management. It interacts with the User Database (UsersDB) to access and store user data. Additionally, it communicates with the Integration component to handle user-related requests from external APIs.

Meeting Management: This component is responsible for managing meetings within the MeetHub system. It interacts with the Meetings Database (MeetingsDB) to access and store meeting-related data.

Integration: This component facilitates integration with external APIs, allowing MeetHub to interact with third-party services or applications. It handles API calls and exchanges data with external systems.

User, Meetings Database, User Database, and External APIs: These represent external entities, data stores, or services that interact with the MeetHub system. Users interact with the system through the User component, while data related to users and meetings is stored in the Users Database and Meetings Database, respectively. External APIs represent any external services or APIs that MeetHub integrates with for additional functionality or data exchange.

3.2.3 DFD level 2

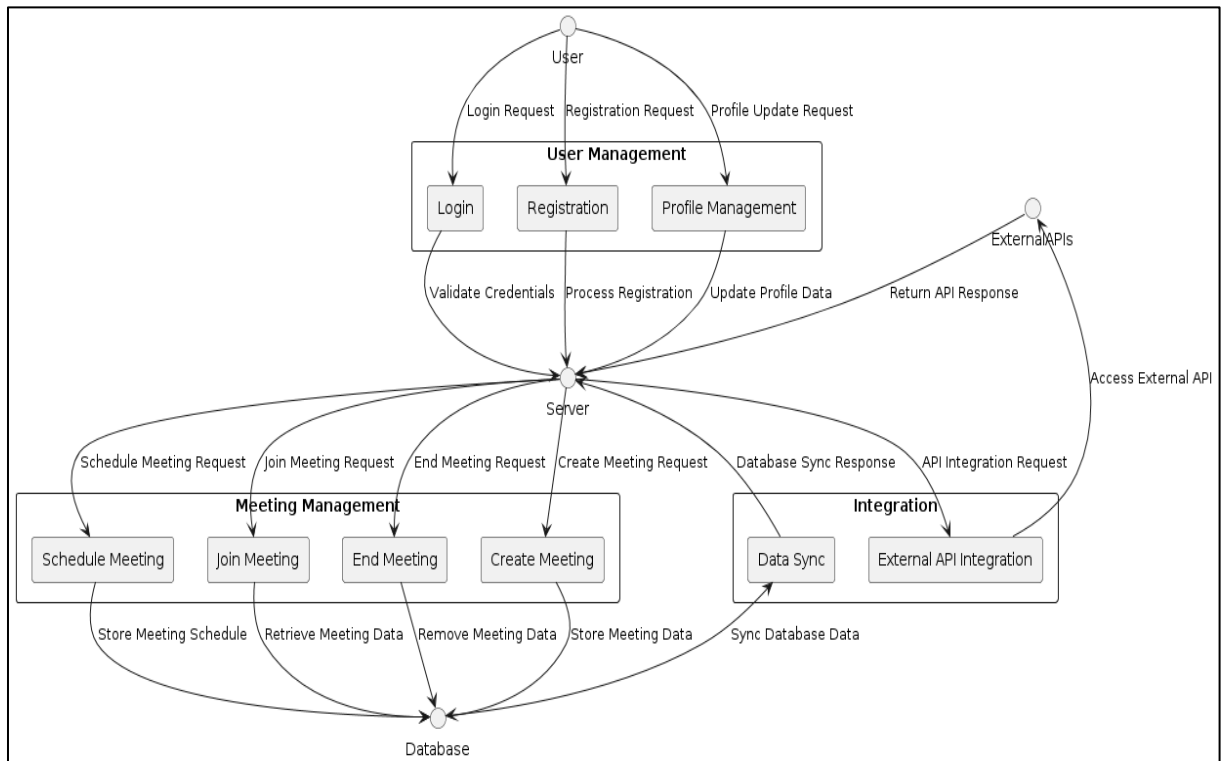


Figure 3.4: DFD level 2

User Management:

Login: This process handles user authentication. When a user requests to log in, their credentials are validated by the server.

Registration: Manages user registration. When a user requests to register, the server processes the registration information.

Profile Management: Handles user profile updates. When a user requests to update their profile, the server manages the profile data.

Meeting Management:

Create Meeting: This process is responsible for creating a new meeting. The server initiates the creation of a meeting, and the meeting data is stored in the database.

Schedule Meeting: Manages the scheduling of meetings. The server schedules a meeting, and the meeting schedule is stored in the database.

Join Meeting: Allows users to join meetings. The server retrieves meeting data from the database when a user requests to join a meeting.

End Meeting: Handles the termination of meetings. When a meeting ends, the meeting data is removed from the database.

Integration:

External API Integration: Manages integration with external APIs. The server sends requests to external APIs, such as for additional services or data.

Data Sync: Handles the synchronization of data with external systems or databases. The database synchronizes its data with external sources.

Data Flow:

User: Represents the user interacting with the system, initiating requests such as login, registration, and profile updates.

Server: Represents the MeetHub server, which processes user requests, manages meetings, integrates with external APIs, and synchronizes data.

Database: Stores user data, meeting data, and facilitates data synchronization with external sources.

External APIs: External services or APIs that the system interacts with for additional functionality or data.

3.3 Use case Diagrams

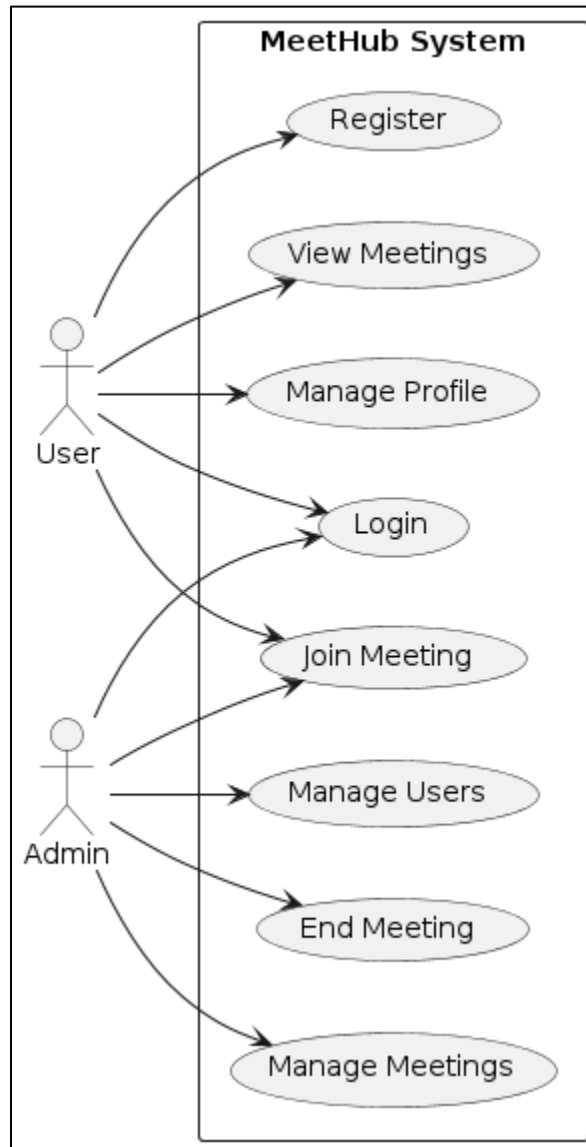


Figure 3.5: Use case diagram.

Actors:

User (U): Represents a regular user of the MeetHub system.

Admin (A): Represents an administrator or moderator with elevated privileges within the MeetHub system.

Use Cases:

Login (UC1): Allows both users and admins to log in to the MeetHub system.

Register (UC2): Enables users to register for a new account in the MeetHub system.

Join Meeting (UC4): Allows users and admins to join scheduled meetings.

End Meeting (UC5): Exclusive to admins, this use case allows them to end ongoing meetings.

Manage Profile (UC6): Users can manage their profile information such as name, email, etc.

View Meetings (UC8): Users can view a list of scheduled meetings.

Manage Users (UC9): Exclusive to admins, this use case allows them to manage user accounts, such as creating or deleting user accounts.

Manage Meetings (UC10): Exclusive to admins, this use case enables them to manage scheduled meetings, such as creating or deleting meetings.

Interactions:

User Interactions (U): Users can perform actions like logging in, registering, joining meetings, managing their profiles, and viewing scheduled meetings.

Admin Interactions (A): Admins can perform actions similar to users but with additional privileges like ending meetings and managing user and meeting data.

Relationships: Arrows indicate the direction of interaction between actors and use cases. For example, both users and admins can interact with the "Join Meeting" use case, but only admins can interact with the "End Meeting" use case.

3.4 Sequence Diagram

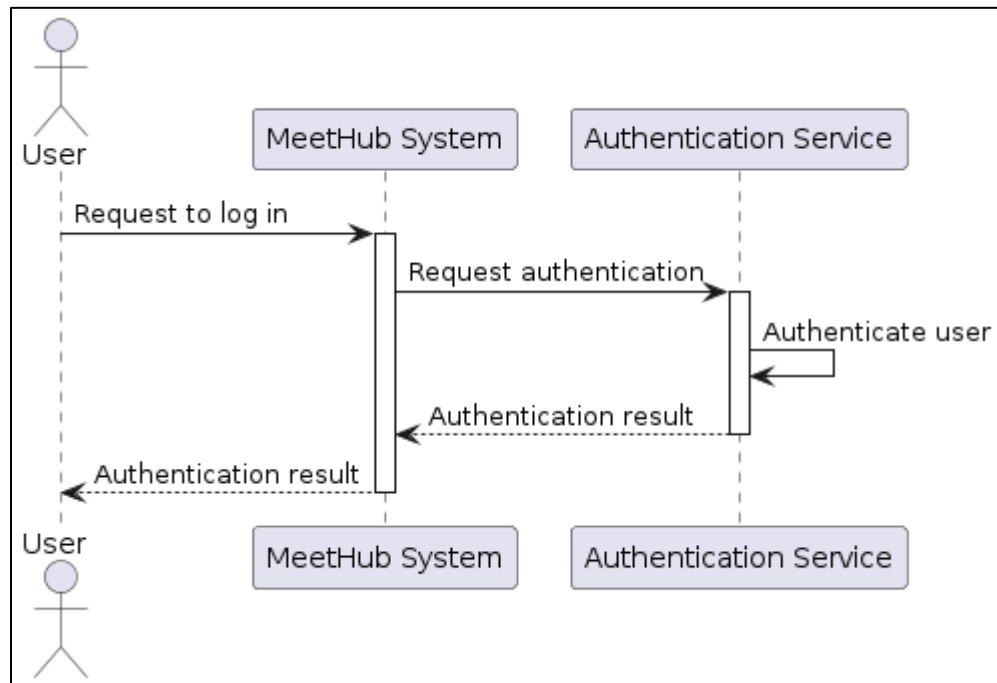


Figure 3.6: Sequence diagram

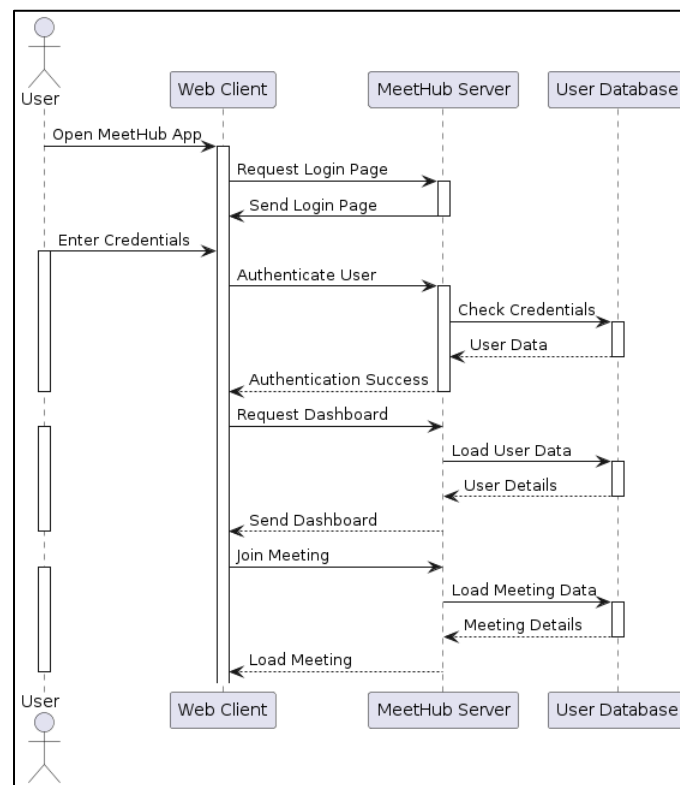


Figure 3.7: Sequence diagram 2

3.5 Deployment Diagram

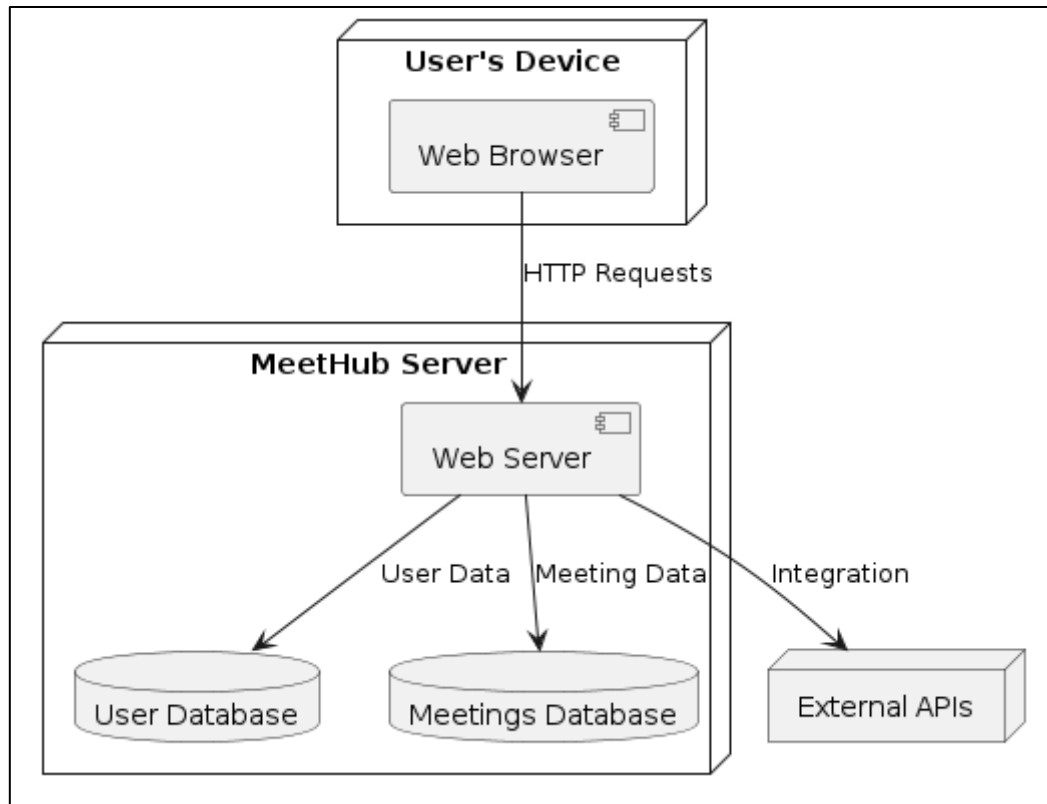


Figure 3.8: deployment diagram

User's Device (Node): This represents the device used by the users to access the MeetHub system. Typically, it could be a computer, laptop, tablet, or smartphone with a web browser installed.

Web Browser (Component): This component runs on the user's device and allows users to interact with the MeetHub system through a graphical user interface.

MeetHub Server (Node): This node represents the server infrastructure hosting the MeetHub application. It handles incoming requests from users' web browsers and performs the necessary processing.

Web Server (Component): Within the MeetHub server node, the web server component is responsible for receiving HTTP requests from users' web browsers and responding with the appropriate content.

User Database (Component): This database component stores user-related data, such as user profiles, login credentials, and preferences. It allows the system to manage user accounts and authentication.

Meetings Database (Component): This database component stores meeting-related data, such as meeting schedules, participant lists, and meeting details. It enables the system to manage meetings and associated information.

External APIs (Node): This node represents external application programming interfaces (APIs) that the MeetHub system may integrate with. These APIs could provide additional functionalities or services, such as authentication services, email notifications, or third-party integrations.

Integration (Connection): This connection represents the communication between the MeetHub server and external APIs. It allows the MeetHub system to exchange data or invoke functionalities provided by external services through API calls.

3.6 ER-Diagram

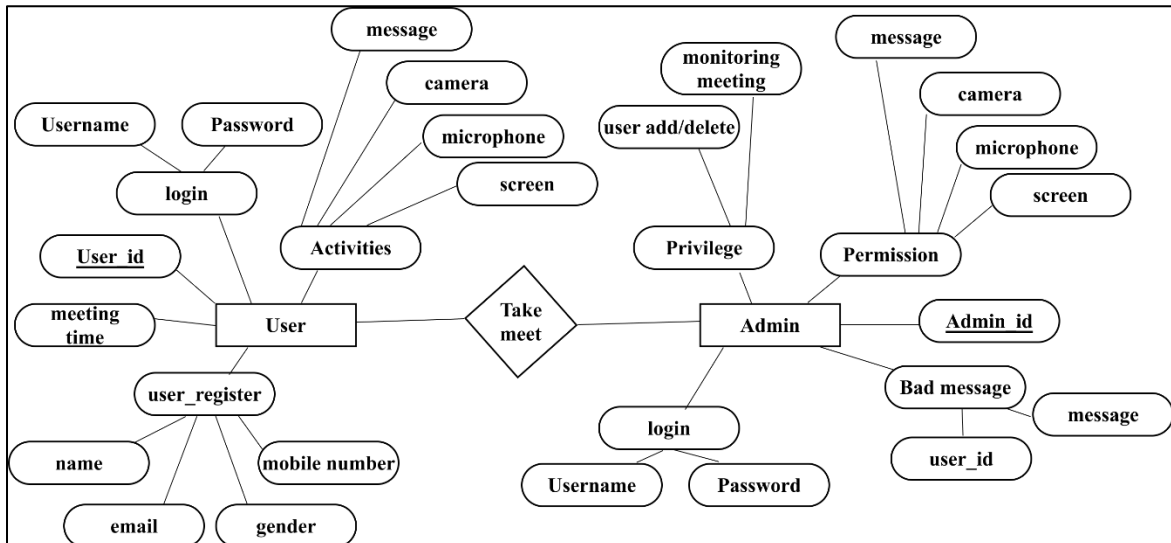


Figure 3.9: ER-diagram

3.7 Project images

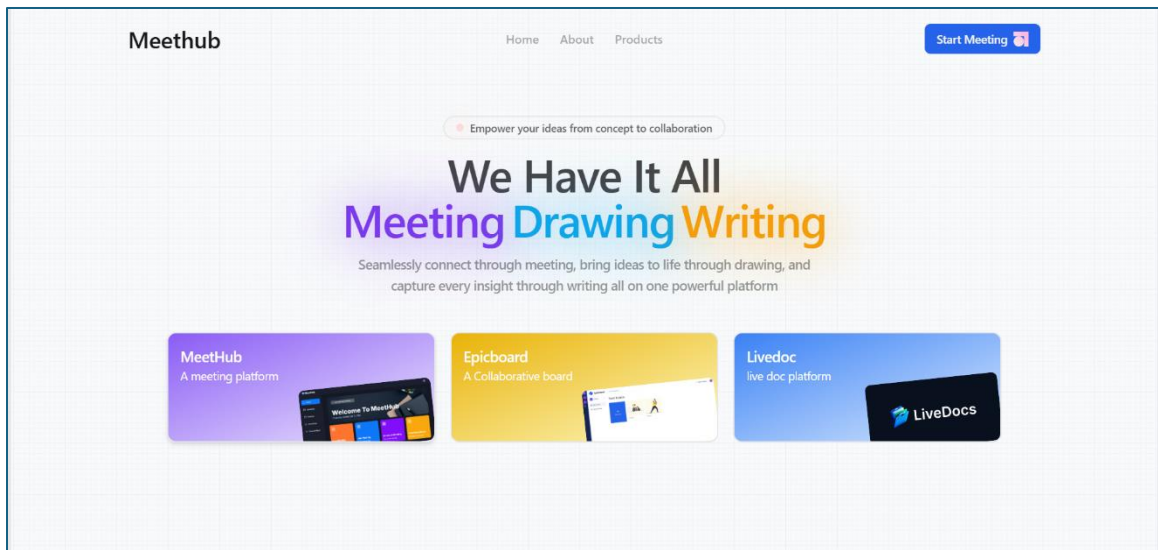


Figure 3.10: landing page



Figure 3.11: Main page

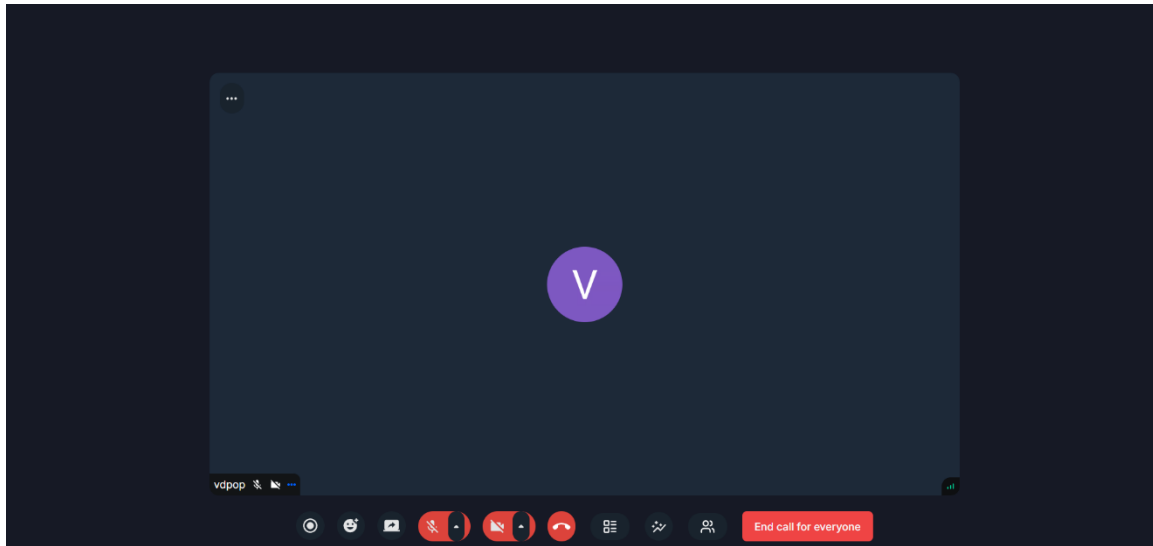


Figure 3.12: Meeting page

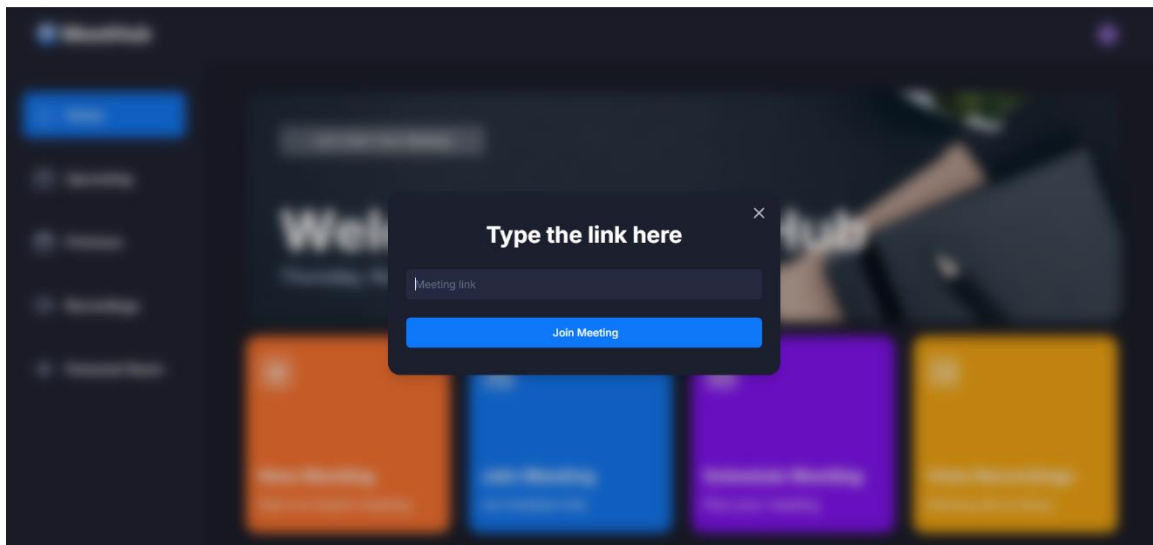


figure 3.13: Meeting join page

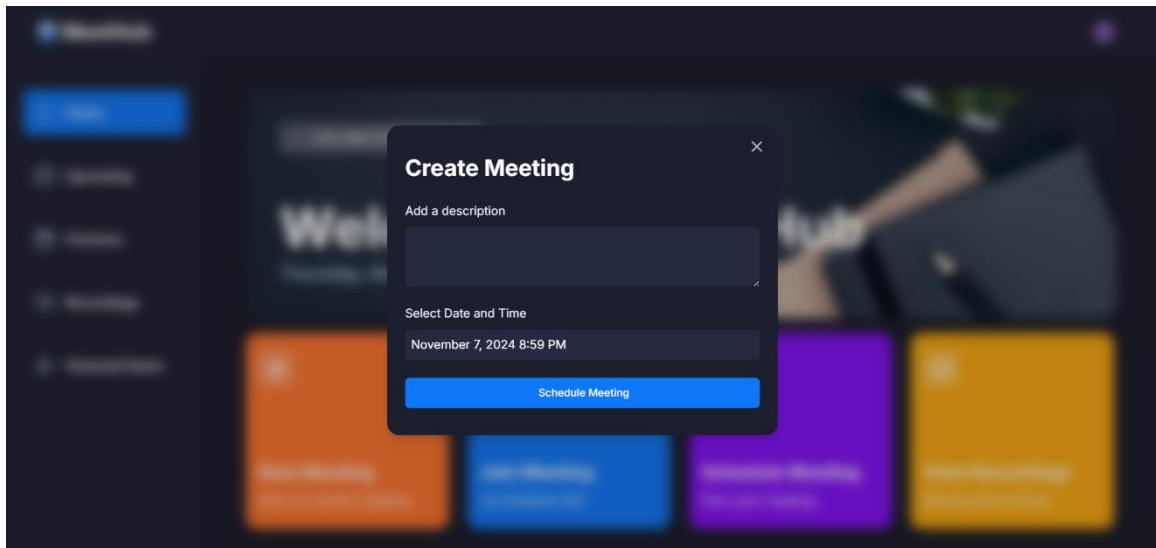


figure 3.14: Meeting schedule page

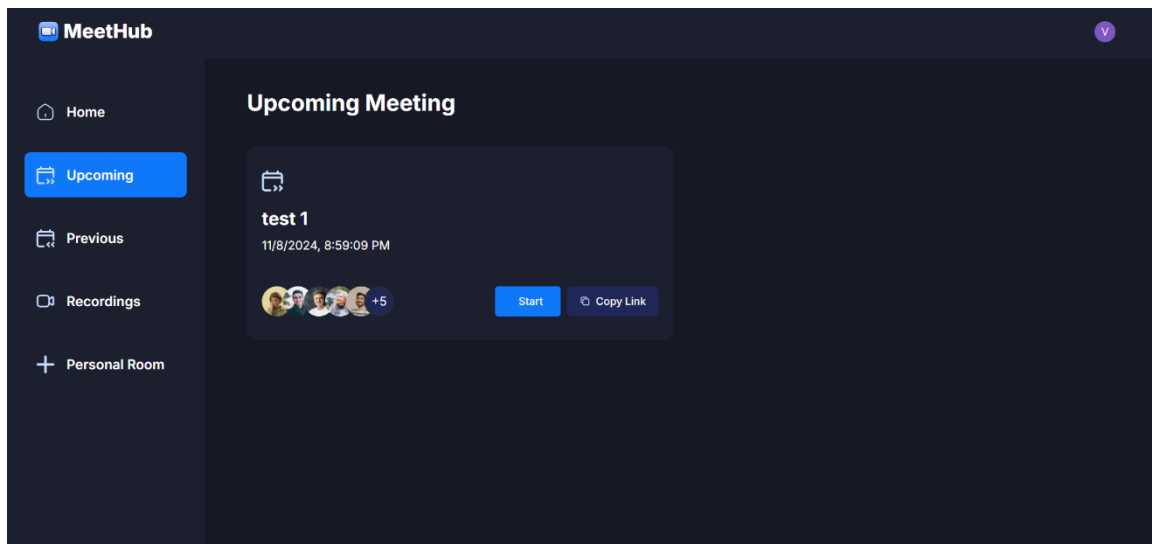


figure 3.15: Meeting upcoming page

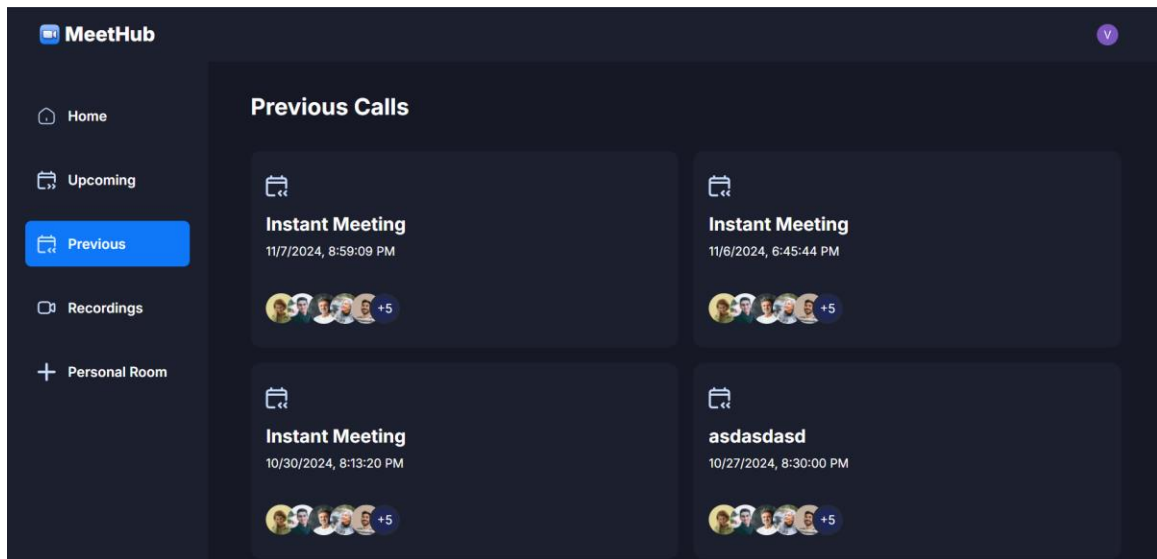


figure 3.16: Previous Meeting page

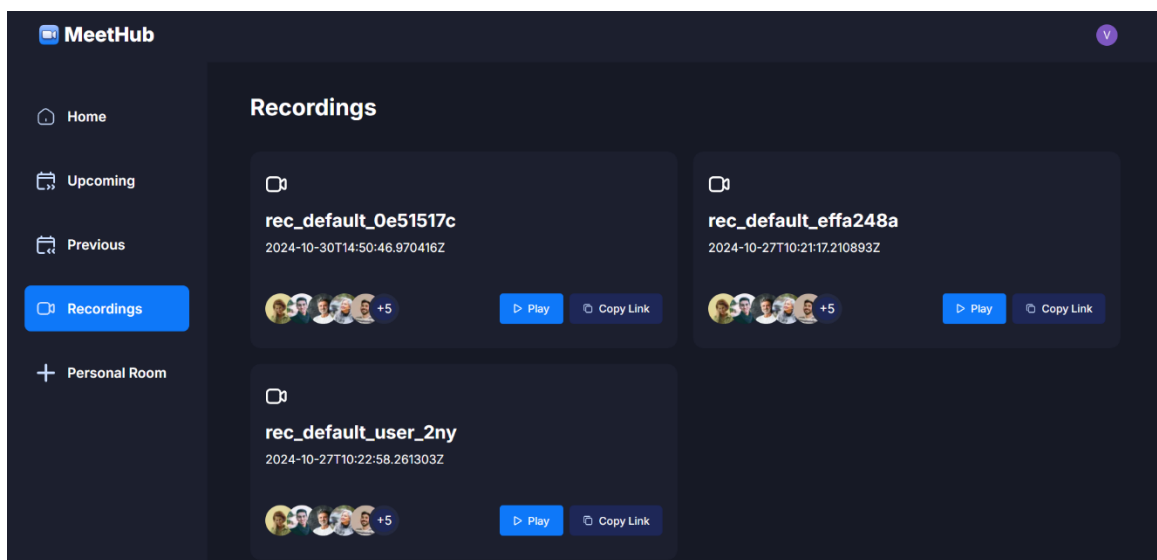


figure 3.17: Meeting recordings page

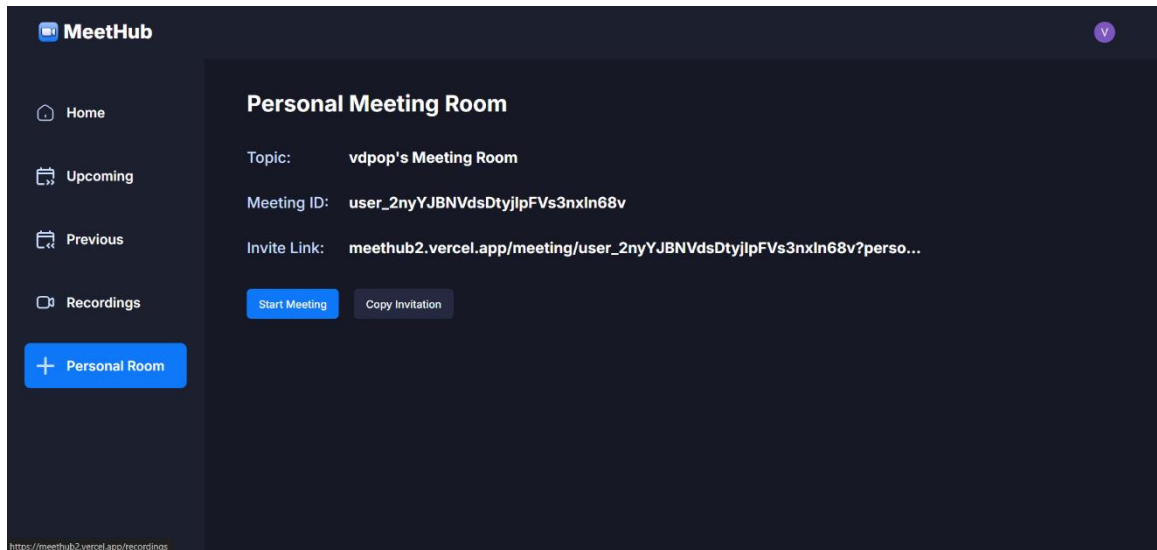


figure 3.18: Personal room page

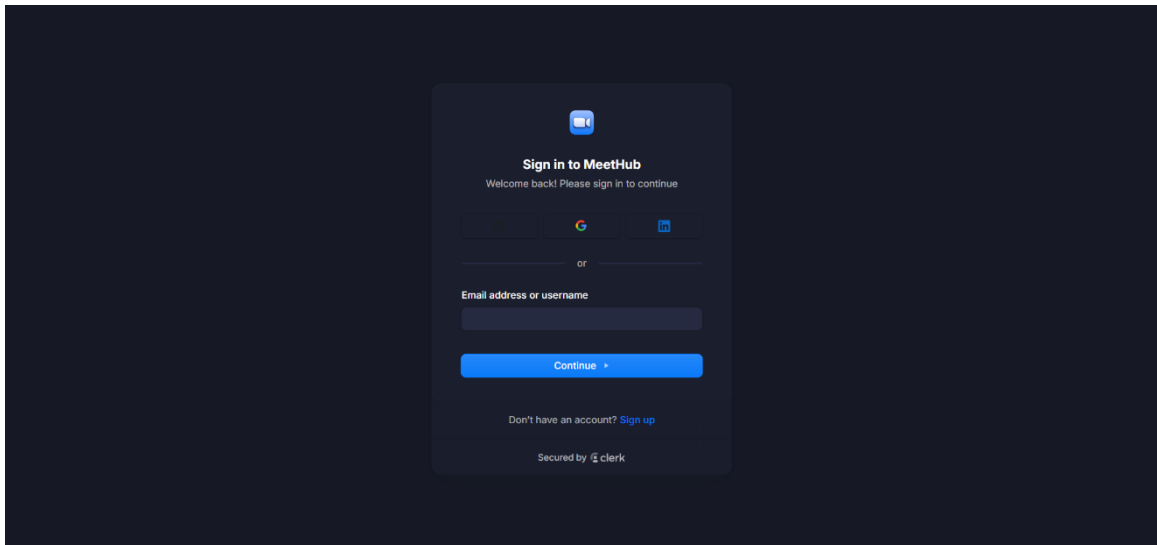


figure 3.19: Authentication page

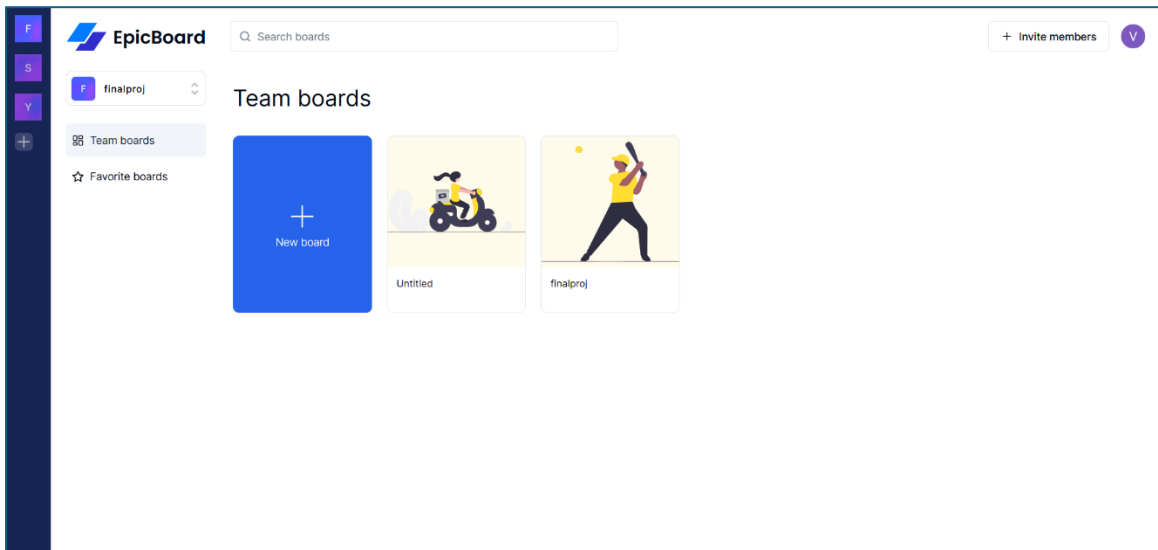


figure 3.20: board home page

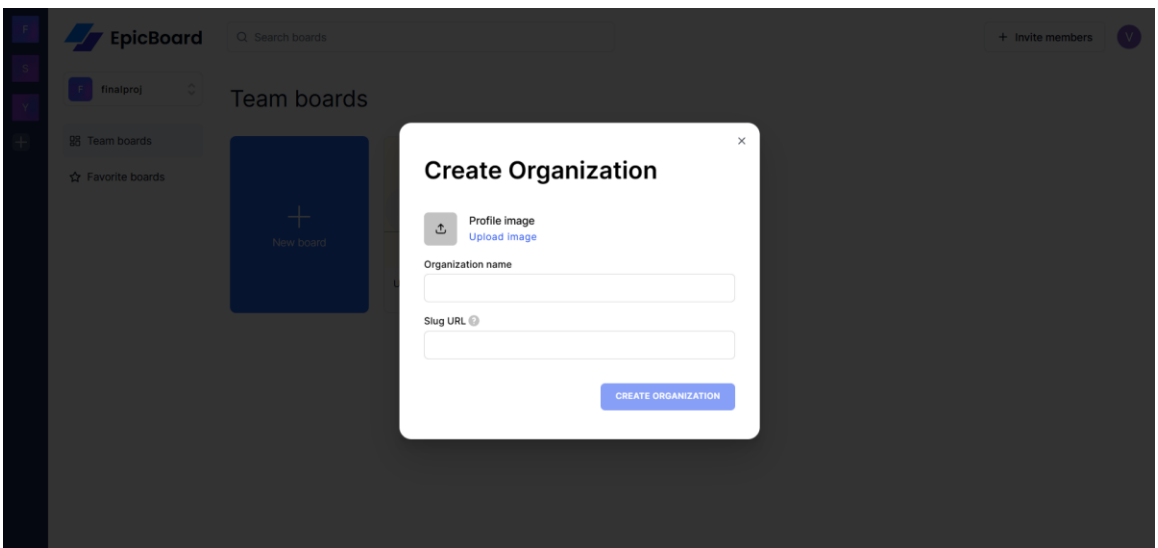


figure 3.21: create organization page

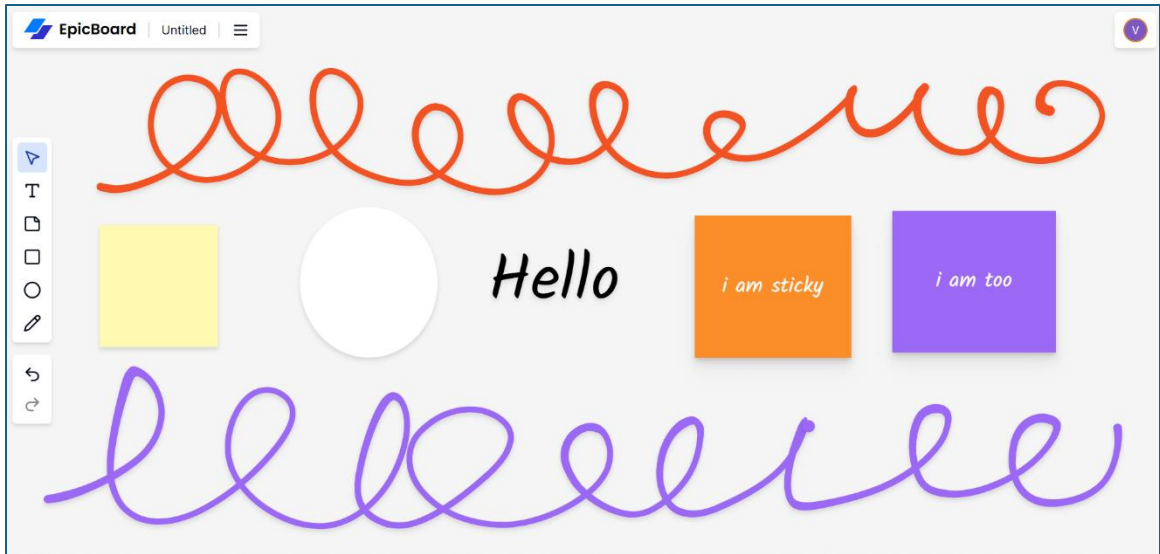


figure 3.22: whiteboard page

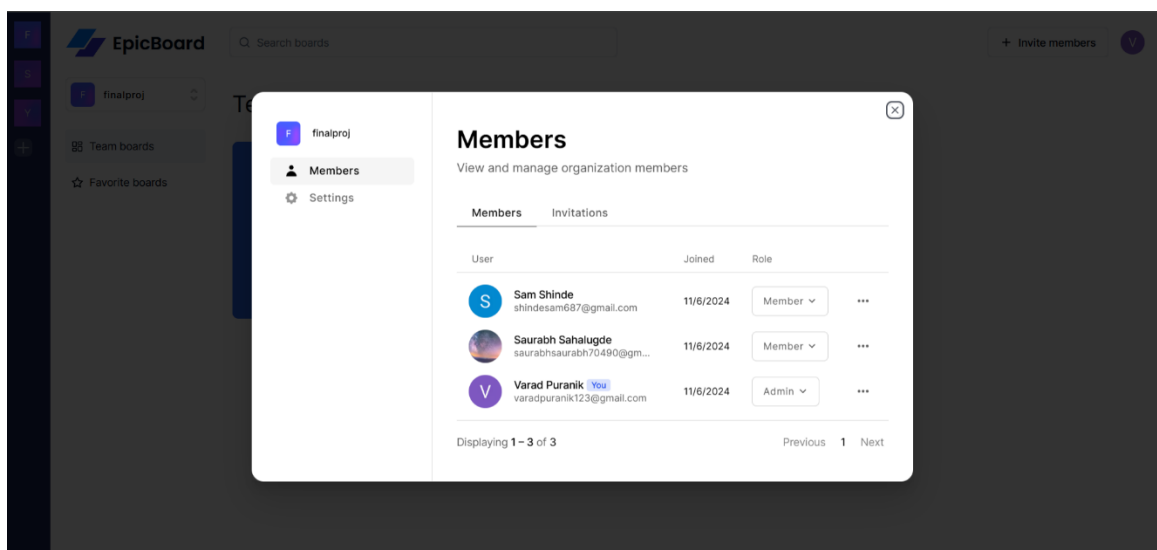


figure 3.23: invite member's page

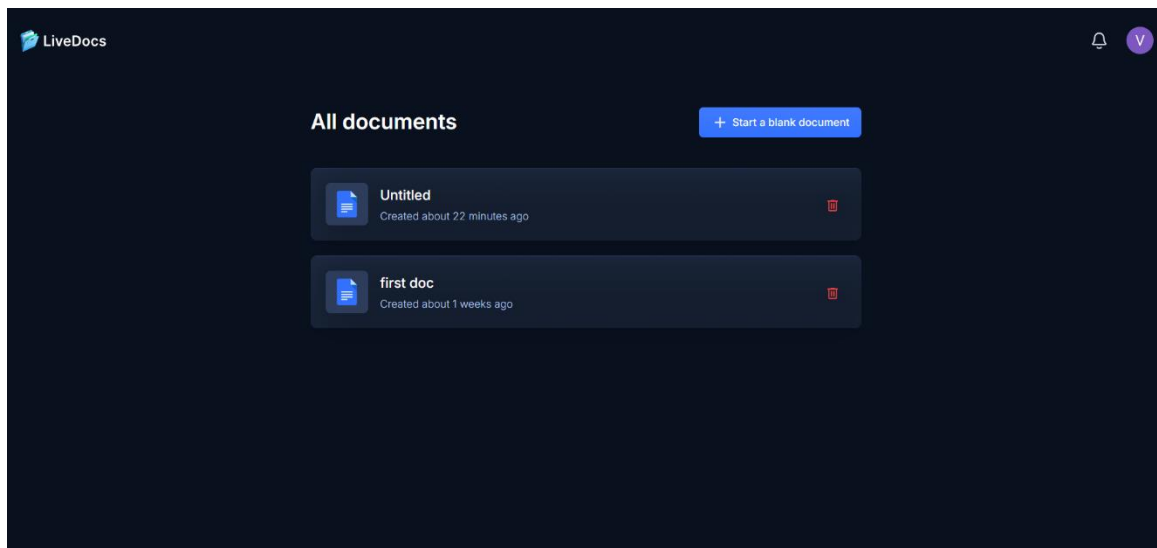


figure 3.24: livedocs home page

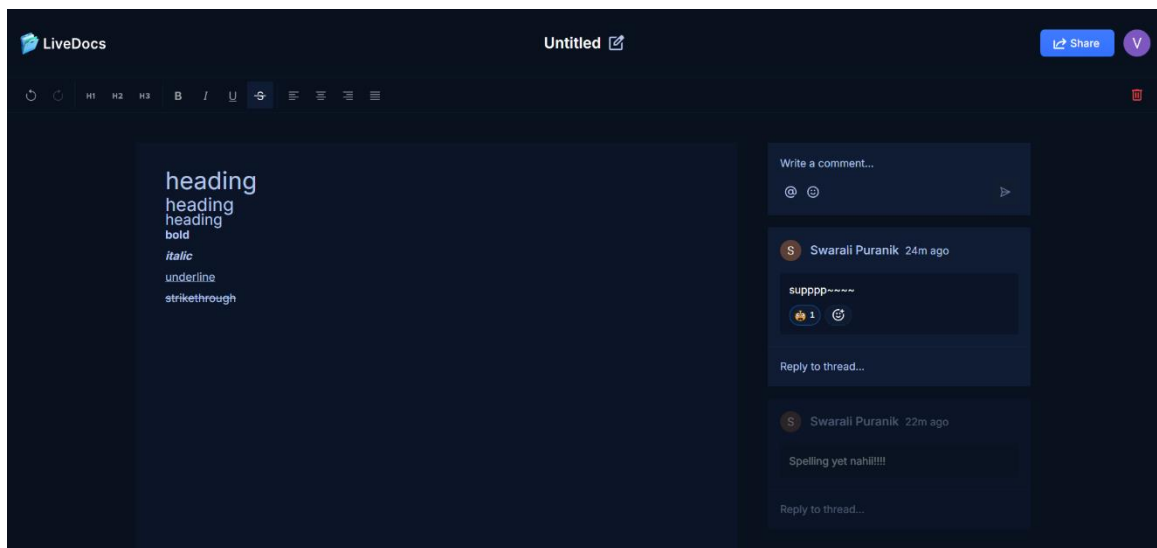


figure 3.25: livedocs edit page

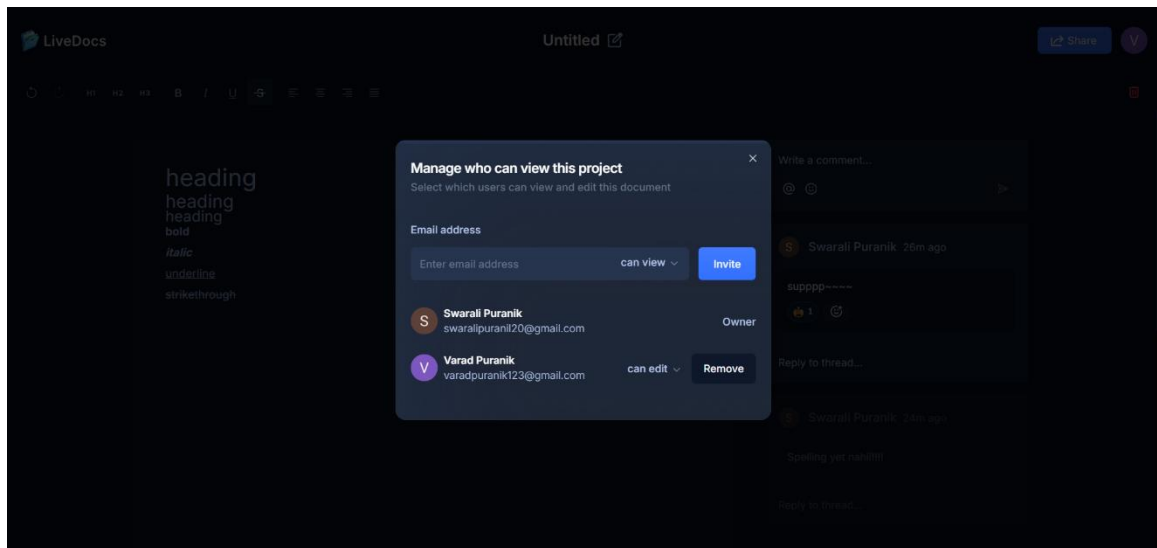


figure 3.26: livedocs invite page

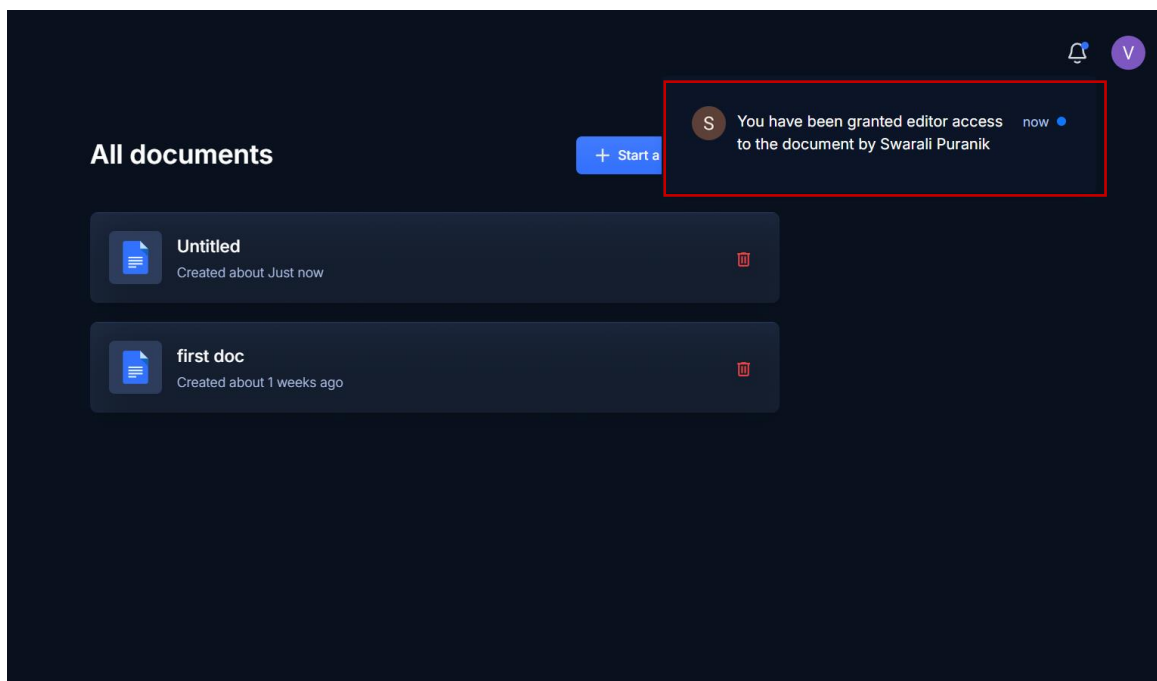


figure 3.27: livedocs notification page

Chapter 4

CONCLUSION

In conclusion, the development of MeetHub represents a significant milestone in creating a comprehensive platform for organizing and managing meetings efficiently. Throughout the project, we have successfully designed and implemented various features such as user authentication, meeting scheduling, attendee management, and integration with external APIs. The collaborative effort of the development team, along with effective project management practices, has led to the successful realization of MeetHub's core functionalities.

MeetHub offers a user-friendly interface that simplifies the process of scheduling and managing meetings for both organizers and attendees. By leveraging modern technologies and following best practices in software engineering, we have ensured that MeetHub is scalable, secure, and robust enough to meet the demands of diverse user groups.

However, like any software project, there is always room for improvement. Future enhancements to MeetHub could include additional features such as real-time collaboration tools, advanced analytics for meeting insights, and integrations with more third-party services. Moreover, ongoing maintenance and support will be crucial to address any potential issues and keep MeetHub up to date with evolving user needs and technological advancements.

Overall, the development of MeetHub has been a rewarding journey, and we are confident that it will continue to serve as a valuable tool for streamlining meeting management processes in various organizational settings.

FUTURE SCOPE

- **AI-Powered Chatbots and Assistants:** Implementing AI chatbots could automate routine tasks within channels, such as answering frequently asked questions, managing schedules, or even helping users navigate the platform. AI assistants could also provide real-time language translation and transcription during voice and video calls, enhancing accessibility and inclusivity.
- **Enhanced File Sharing and Management:** Building an efficient file-sharing system with dedicated storage would allow users to upload, organize, and access files within LearnHub easily. Features like version control, file preview, and document collaboration would make LearnHub a more comprehensive tool for teamwork.
- **Task Management and Productivity Tools:** By incorporating tools for managing tasks, setting deadlines, and tracking progress, LearnHub could serve as a project management hub for teams. Task boards, reminders, and progress tracking would enable teams to collaborate effectively and stay organized within the platform.
- **Data Analytics and Usage Insights:** Providing users with access to data analytics on their activities and engagement levels would be useful, especially for educational institutions or organizations. Analytics on attendance, participation, and engagement metrics would offer valuable insights for administrators, helping them to understand usage patterns and optimize the platform's effectiveness.

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