

Academic Manager with Server and Classroom Feature

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Abstract: This paper introduces a user-friendly Academic Manager platform, merging server capabilities and classroom features to enhance education. By utilizing technologies like WebRTC and chat apps, it facilitates instant communication among students, teachers, and administrators. We evaluate the impact of Google Classroom and address connectivity issues. Our platform aims to simplify academic tasks and boost student involvement, offering a modern solution for effective learning

Keywords: Academic Manager platform

I. INTRODUCTION

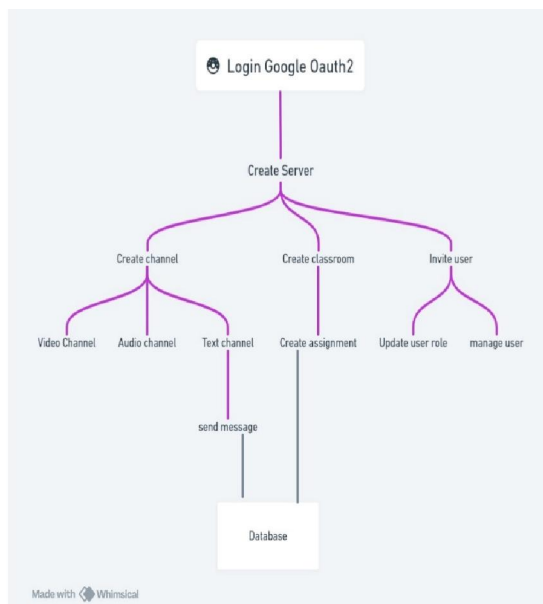
In response to the rapid advancements in technology, which have revolutionized educational practices, our project endeavours to develop a centralized online learning platform. This platform aims to streamline the online learning process by providing a singular server infrastructure that offers customizable channels tailored to different educational needs. Users will have the flexibility to create channels for classrooms, chat-only spaces, video conferencing, or a combination thereof, based on their specific requirements. The platform will feature a robust notification system, ensuring that members receive timely updates whenever administrators post new content or announcements within their respective channels. Administrators will have the authority to create servers, while moderators will manage individual channels, ensuring smooth operation and user experience. Furthermore, the platform will integrate assignment notifications seamlessly, ensuring that tasks posted within classroom channels are promptly communicated to members in the chat section. By centralizing these features, our platform aims to enhance communication, collaboration, and engagement in the online learning environment, ultimately contributing to a more efficient and effective educational experience.

II. PROBLEM FORMULATION

In contemporary academia, the widespread adoption of online tools like classroom management systems, video conferencing platforms such as Meet, and communication apps like WhatsApp has revolutionized academic procedures. However, a pressing challenge persists in the form of disparate functionalities scattered across these platforms. Users are compelled to navigate through multiple applications for various processes, leading to inefficiencies and manual interventions such as sharing links to bridge the gap between these tools. This fragmentation hampers seamless academic management, requiring users to invest extra effort and time in coordinating activities across different platforms.

III. PROBLEM SOLUTION

There is a growing need for a comprehensive solution that integrates essential features such as server hosting, classroom management, and communication functionalities within a single platform. This would streamline academic procedures, enhance collaboration, and alleviate the burden of managing multiple tools simultaneously. Thus, the development of an Academic Manager with Server and Classroom Features aims to address this challenge by providing a centralized platform that offers a cohesive and efficient solution to meet the diverse needs of academic stakeholders. The methodology for Academic Manager with Server and Classroom Features web application graphically shown in the following figure.



The main steps of the proposed methodology are:

- Login/Sign up
- Create server
- Create channel
- Create classroom
- Invite users to the server

The main activity in the proposed web application is to create a server by signing in. The person who creates the server will be the admin and he will be further responsible for other activities like creating channels, creating classroom, managing the members etc.

IV. METHODOLOGY

A. Login / Sign up

Initially when user opens the application user needs to login or sign up. Here we have used Google Oauth using which the user can login through emails easily.

B. Create server

User when logs in the server will be created, and by default one channel will be created within that server. The person who creates server will be considered as admin further he will have access to many functionalities.

C. Create channel

In addition to default channel further channels can be created which may be video channel which can be used for video conferencing or admin may create audio channel which is dedicated to audio conferencing or may create a text channel where the chatting between peer mates will be possible. Here the messages will be stored in the database and peer to peer chatting is also possible.

D. Create classroom

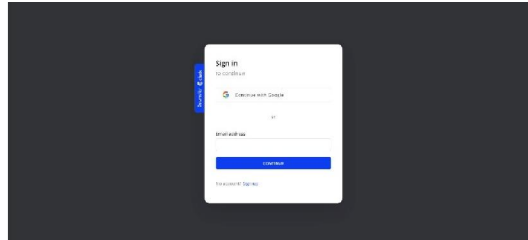
By creating a classroom, the admin or the moderator can post the assignments in that classrooms and all the students of that classroom will get that assignment.

E. User Management

Finally, the Admin can invite the users to the server and he can also update the role of the user i.e.; guest to moderator or vice versa. Admin also has the option to remove certain user from the server.

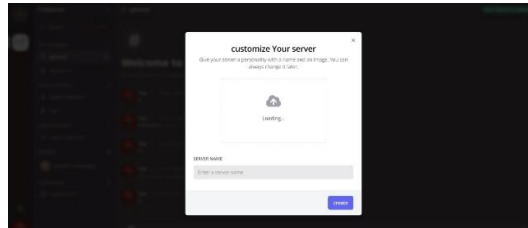
V. RESULTS

1. Login Page:



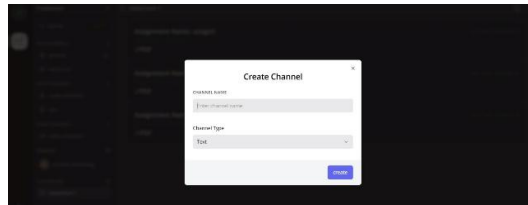
This is the login page where we have use Google OAuth2 package to make the login process easier. Here the user can log on by providing their email address or by directly continue with google.

2. Create server:



After the login the user will get the interface for creating a server, where user will get the option to give profile picture for the server and the user must give proper name for the server as per the user requirements. The person who created the server will be called as admin. He can invite the people to that channel using a link. And the person who joins the server will have the access to all functionalities of the server. When the server is created one text channel is created by default.

3. Create channel:



In addition to default text channel, admin can create more channels as per their requirements. While creating the channel admin needs to give the name for the channel and select the type of the channel needs to be created.

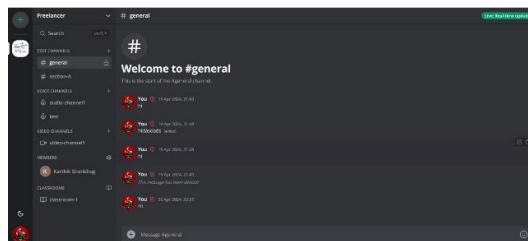
There are three types of channels:

Text channel

Audio channel

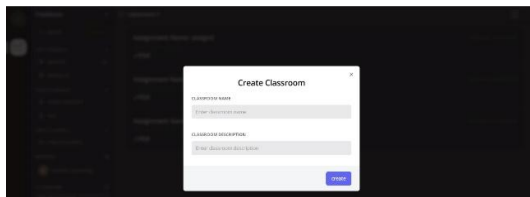
Video channel

4. Channel interface:



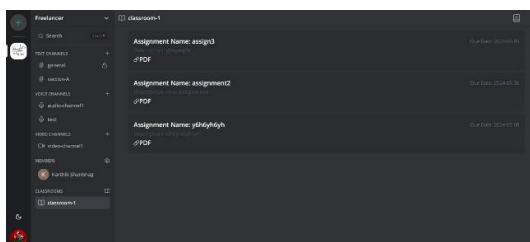
This is the interface for the channel. The leftmost window displays the available servers, next that available channels and classroom within the selected server will be displayed. And in the main part of channel interface will be the chat window where the members of the server can do group chat or personal chat.

5. Create classroom:



Admin has the option to create classrooms as per his requirements. While creating the classroom admin has to give proper name to and description of the classroom.

6. Classroom interface:



After creating the classroom we get the interface as shown in the above figure. Classroom is a feature in which admin and moderator has the access to add the assignment and guest users can only access the assignment.

VI. CONCLUSION AND FUTURE WORK

In conclusion, our project aims to develop a cutting-edge centralized online learning platform to revolutionize education. By automating interactions, integrating real-time collaboration features, and providing easy access to resources, our platform will enhance the user experience. With secure authentication processes and structured channels, we ensure smooth communication and management. Ultimately, our goal is to foster communication, collaboration, and engagement, making the educational journey more efficient and effective for all stakeholders.

In future we are thinking to extend this application even for the administration use by providing some more functionalities like student and faculty attendance management, faculty salary management etc. This will increase the productivity of the application to a great extent.

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