International Journal of Engineering Applied Sciences and Technology, 2024
Vol. 8, Issue 09, ISSN No. 2455-2143, Pages 109-114
Published Online January 2024 in IJEAST (http://www.ijeast.com)

TEAM UP -VIDEO CONFERENCING APPLICATION

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Abstract— **The main purpose of this article is to design a prototype of open-source video conferencing, in which anyone can take participation openly. Using the video conferencing it has become more reliable and popular tool which is used to reduce the distance gap. Online learning provides a material based educational experience, which means that although it can be a material-rich and stimulating learning situation, it can also be a socially impoverished and lonely learning as well. Communication activities such as voice call, seminars, meeting and messaging can be utilized. It is used to gather people located at different location using audio or video. Online studying presents an event of ability improvement and know-how advantage from anywhere, each time and anyplace. Schools and colleges adopting this technology to continue their work. This application users can communicate with each other and also share important files or documents through this application.**

Keywords— **Video Conferencing, Online learning, Communication, Audio, Video.**

I. INTRODUCTION

Video conferencing plays vital role in communication which can be point to point or multi point real time communication between two or more students located at different geographical locations. There is requirement of real time interaction between faculty and students getting feedback of student's reaction at remote class to a lecture is very important. However, it is difficult to adjust a video capturing device to focus on faculty especially in distance education where faculty moves of the camera while delivering the lecture. We all know that our teaching is based on face-to-face communication. In the current situation, where everything is going online and people are working from home, and also students are learning through the online classes conducted by colleges, and faculties from college with the help of this video conferencing platform. Video conferencing has recently become increasingly popular and disperse in the wake of faster and cheaper internet connections and better technologies. This project provides a video conferencing platform in which anyone can communicate with anyone with their own private room, companies can use it for project discussion or interviews, and schools and colleges can use it for online teaching by sharing virtual whiteboards. The sharing of documents is not possible through these platforms; therefore, we introduced platform like team up for the betterment in the Online learning, and easily sharing of documents or some other important files through a single platform. The team up application provides two different options one is for Video meeting called as meet and other is called classroom for the sharing of important documents and files with each other. Through these faculty can share important notes with their students and students can also submits their assignments through this platform that will be beneficial for both the student as well as for teachers. The concept behind this video call is simple: It is simple as making a phone call to any one, and it provides both video and audio. The right video conferencing tool allows us to set up a virtual "room" and provides a number link from where any users can use to "enter" the room. When all are in the meeting, they can see them on our screen and with the help of webcam they can see us. A conference video call is helpful for a meeting because it makes it easier to keep track of who is speaking. In this application we can also view the stored documents or files. The teachers can view the documents share by each student in the classroom section. While making the application we have identify the various issues faced by other meeting apps users. The user's security and theft of personal data has also been identifying while making the app. A Video conference can be between two sites, i.e. locations which are connected to each other via the video conference, or the conference can connect multiple locations. The quality of meeting application has been focused and the video meetup between the users has also been improved in this application. The languages used for the application are CSS, PHP, JAVA, C++. The front end of the application is made using the CSS language. The connection medium through which the users can connect to each other is LAN cable or Wi-Fi. The user can either host a meeting or join the meeting using the meeting code. Maximum six users can join the meeting.

II. OBJECTIVE

I. Evaluate the Effectiveness of the Online Video Conferencing App.
II. Examine Classroom Integration and User Experience.

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III. Analyze Technical Challenges and Solutions.
IV. Explore Pedagogical Implications and Future Trends.
V. Create a reliable and user-friendly online video conferencing platform.
VI. Ensure seamless video and audio quality.

III. REVIEW OF LITERATURE

Guzacheva, N. (2020), This paper explores the difficulties associated with incorporating successful educational technologies into university-based distant learning programs for foreign language education. The author provides an in-depth evaluation of the application of Zoom technology in the field of medical education. Zoom, a cloud-based meeting and webinar service, is utilized for document sharing and video conferencing. Its capabilities enable English professors, among others, to seamlessly unite students in order to enhance productivity. The paper elaborates on the use of the electronic educational resource Zoom for distance learning, specifically in educating medical students in a foreign language.

T., S., Chakraborty, A., & Gurusamy, M. (2020), A recent study discovered that aside from traditional lecturing, seminars, and training, e-learning stands out as the predominant method for acquiring additional knowledge in today's world. Zoom, a prominent e-learning tool, facilitates knowledge acquisition through features such as video conferencing, recording, audio functionalities, and screen sharing for images, graphs, and charts. The Zoom research study incorporated both primary and secondary data collection methods. Primary data was obtained through questionnaires distributed to 100 respondents, while secondary data was sourced from various outlets, including websites, newspapers, and magazines. The study's findings emphasize the need for enhancements to the overall quality of the Zoom application through regular updates. To ensure the safety and security of users, careful consideration must be given to the satisfaction and requirements of Zoom users in implementing any improvements.

Nadire, C., & Daniel, S. A. (2021) has observed that the impact on teaching and learning has been noted to have adverse effects on students, teachers, and the educational system overall. The objective of this research is to aid educators, students, and educational institutions in making informed decisions about the most suitable platform for them, simplifying the selection process and enhancing accuracy. The study employs comparative research to facilitate successful and dynamic communication during online lectures, where professors and students rely on online video conference platforms. Presently, there are various options for online video conferencing. The study's findings reveal that each chosen online video conference platform offers its own unique benefits. The needs of teachers and students (users of these platforms) differ, encompassing factors such as teaching style, course material, personality, etc.

Rahman, S. A., Jalil, M. J., & Ghani, T. A. (2021), The research concentrated on the novel coronavirus Covid-19, which has affected millions of individuals and claimed the lives of hundreds of thousands. Consequently, all non-essential activities, including higher education institutions, came to a standstill. The Ministry of Higher Education has suggested a transition to online teaching and learning. Google Meet, a free video conferencing program accessible to anyone with a Google account, was examined in this study. Using a series of questionnaires, the study explored the preferences and perceived ease of use of Google Meet. The findings revealed that the students in this study strongly preferred and readily accepted Google Meet for remote education.

IV. PROPOSED METHODOLOGY

The working of an online video conferencing app involves multiple components and processes that enable users to engage in real-time video and audio communication over the internet. Here's a simplified overview of how such an app typically functions:

- User Registration and Authentication:

Users start by registering an account on the video conferencing app. They provide essential information, such as their name, email address, and a secure password. The app stores user account data in a database and uses encryption to protect sensitive information.

- Meeting Setup:

When it's time for the conference to begin, the app creates a virtual meeting room or session.
This virtual meeting room is hosted on a server.

- Meeting Procedure:

Participants join the meeting by clicking the provided link or entering the meeting ID.

- **Data Distribution**:

Processed video and audio data are distributed to all participants in the meeting, enabling real-time communication. The app's server manages data distribution to ensure that participants receive the relevant streams.

- **User Interface:**

Participants view the video streams of other participants on their screens. The app's user interface provides controls for muting/unmuting, video on/off, and chat Functionality.

- **Security and Encryption:**

Throughout the process, the app employs encryption and security measures to protect user data, ensuring that the video conference remains private and secure.

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V. FLOWCHART

Description:
1. Firstly, log in to the application using username and password.
2. If account is not created in application, then sign up.
3. In the third user can view the home page.
4. In the home page user can select either meet or classroom option.
5. After choosing the meet option user has to enter the room number.
6. At the end user joins the meet.

VI. RESULT

STEP 1: In this step, sign up for the further process for which we have to fill some details like first name, last name, department, phone number, PRN number, password etc. after this process we can submit it.

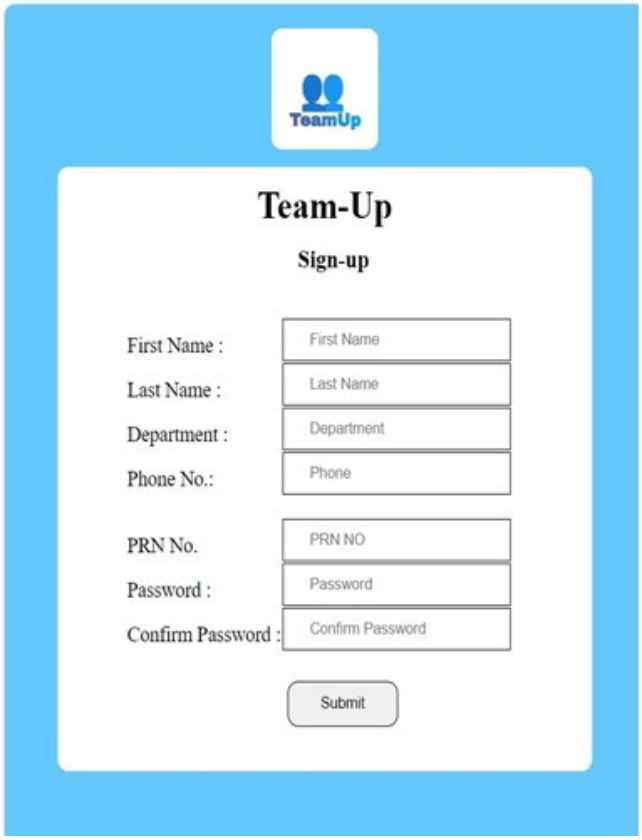

Fig 6.1 Sign up Page

STEP 2: In this process we have to log in for the user confirmation if we already sign in the application. In login process we only have to enter the user id and password.

Fig 6.2 Login Page

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STEP 3: In the third step the user has two options one is for meeting and other is for classroom if you have to join the meeting you can click on meet or either you can click on classroom for viewing the documents.

Fig 6.3 Home Page

STEP 4: After choosing the meet option you see a interface in which you have to enter the room id for accessing the conference and then click on join room. There is a 'create room' option to create your own meet.

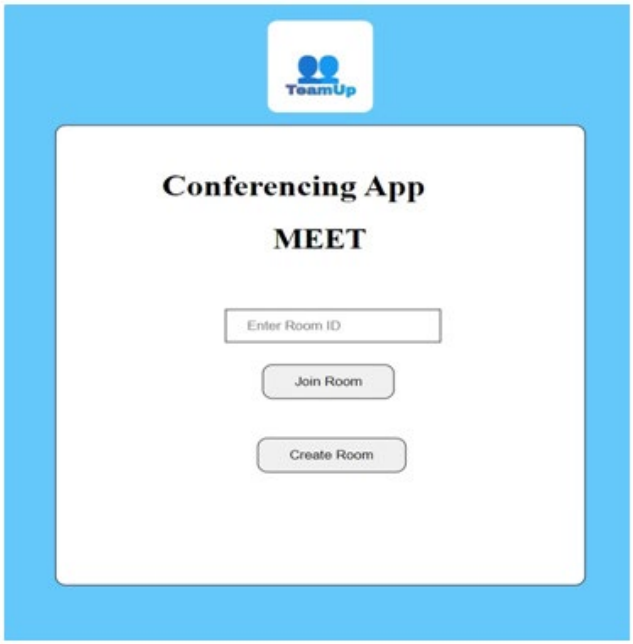

Fig 6.4 Meet Page

Step 5: Once user enter the room id, there will be the icon that ask you to 'Enter Your Name to Join'. Then the user had to enter his/her name before joining

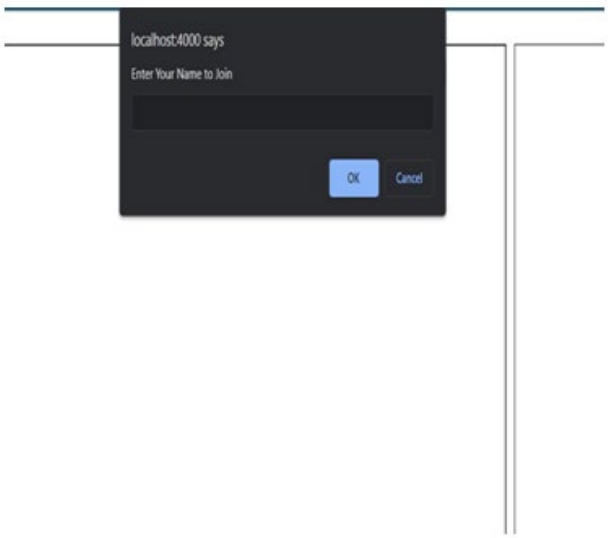

Fig 6.5 Conferencing Window 1

Step 6: After entering the name, the user actually joins the meeting and communicate the others through video and messaging as well.

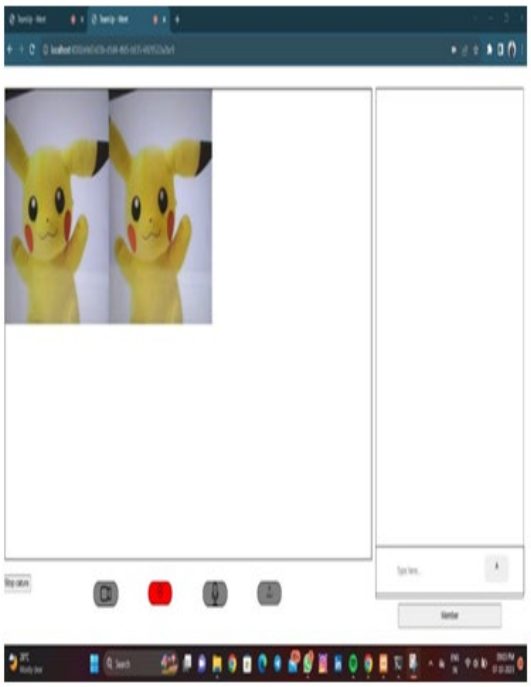

Fig 6.6 Conferencing Window 2

Step 7: In this section the user knows who joins the meeting and who left the meeting and also communicate with the other users.

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Fig 6.7 Comment Section

VII. CONCLUSION

The development of an online video conferencing web-based application that incorporates classroom functionalities represents a significant advancement in the realm of remote education and collaborative communication. This project offers a range of compelling advantages for both educators and learners, as well as professionals and organizations seeking to enhance their virtual interactions. The inclusion of a virtual classroom within a web-based video conferencing application enriches the learning environment. It allows students to actively engage in real-time discussions, ask questions, and replicate the traditional classroom experience, irrespective of geographical barriers. Beyond educational applications, this project offers immense value to professionals and businesses. It empowers efficient remote communication, and knowledge sharing. An online video conferencing web-based application with integrated classroom features has the potential to revolutionize the way it approaches education and virtual communication. By fostering engagement, accessibility, and cost-effectiveness, it aligns with the evolving demands of our interconnected world. However, vigilance regarding security, scalability, and user experience remains crucial to fully unlock the potential of this project. The users can easily access the application by using their user-id and password for accessing the meeting. The main aim of this research is to minimize the effort and difficulty of mobility to communicate and to create a video conference that supports the characteristics of voice calls, video calls. The application is useful in education purpose like school's colleges etc.

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