SYNOPSIS

ON

Meeting Application

Submitted By:

Shivam Goyal-B-2115000946

Vanshaj Tiwari-B-2115001090

Srajan Bansal-B-2115001004

Vishal-B-2115001124

Submitted To:

Sandeep Kumar Chhoker

Technical Trainer

CEA Department

Title of the Project: Meet IGI: Online Meeting Platform

Objective:

The main objective of our project is to develop a user-friendly and reliable video meeting application that addresses the growing need for seamless virtual communication. We aim to solve the problem of limited and fragmented options for remote collaboration, offering a comprehensive solution.

The proposed meeting application is a robust and feature-rich platform designed to facilitate efficient and collaborative virtual meetings, boasting a wide array of functionalities like Microsoft Teams.

This innovative meeting application is designed to cater to the diverse needs of modern professionals, from small teams to large enterprises. It serves as an all-encompassing solution for team communication, collaboration, and remote meetings.

Scope:

Our project will cover the development of the video meeting application itself, including core features and functionality. It will not cover hardware integration or advanced AI-based features, which are beyond the initial scope.

Methodology:

We plan to use a combination of programming languages, including MERN Stack, along with web development frameworks such as React for the front-end and NoSQL for the back-end, we use WebRTC technology for seamless audio and vedio communication. We will utilize cloud-based services for hosting and data storage.

- HTML, CSS, JS
- MERN: MERN stands for MongoDB, Express, React, Node. MERN is the ideal approach to working with JavaScript and JSON:

MongoDB — document database

Express(.js) — Node.js web framework

React(.js) — a client-side JavaScript framework

Node(.js) — the premier JavaScript web server

- WebRTC : WebRTC, short for Web Real-Time Communication (WebRTC), is an open-source communication protocol that enables chat, audio, and video streaming across devices and browsers without the need for plugins**.** Using this protocol, developers can easily create P2P (peer-to-peer) connections between browsers and mobile applications

Proposed System:

The proposed system is a cross-platform video meeting application that allows users to schedule, join, and host meetings. It will include real-time video and audio communication, screen sharing, chat, and file sharing capabilities. The core idea is to provide a seamless and intuitive virtual meeting experience.

Features:

With a strong focus on user experience, communication, and collaboration, this application offers the following key features:

1. Video Conferencing and Audio Calls:
The application supports high-quality video conferencing and audio calls using the technology WebRTC (Web Real Time Communication), allowing users to host meetings with participants.

2. Screen Sharing and Presentation:
- Users can share their screens and conduct interactive presentations, and present presentation to knowledge transfer and to collaboration with others.

3. Chat and File Sharing:

- Real-time chat and messaging functionalities enable participants to communicate within and outside meetings, transferring of information is fully-encrypted.
- The application allows for the easy sharing of files and documents with robust security measures, with real-time collaboration features.

4. Meeting Scheduling:

- Users can schedule and manage meetings effortlessly, with automated reminders (send the notification on Gmail before the meeting starts) and integrations with calendar applications and host have access to add or remove the particular participant and all participants will be required to take permission from the host to join the meeting.

5. User Management and Permissions:

Administrators can manage user access and permissions, ensuring that only authorized individuals can initiate or join meetings.

6. Recording:

The application offers the ability to record meetings and for later reference or accessibility.

7.Security Measures:

Security is a top priority, with end-to-end encryption to protect data and user information.

- By implementing Data Encryption, multi-factor authentication (MFA)
- Compliance features that meet industry-specific regulations (GDPR or local protection laws)
- Implement granular access controls to restrict meeting access to authorized users only.

8. Webinar and Large Meeting Support:

The application can accommodate webinars and large meetings, accommodating diverse use cases from small team meetings to large-scale presentations.

9. AI-Powered Insights and Analytics:

AI-driven analytics offer valuable insights on meeting performance, helping users optimize their communication and collaboration efforts.

Implementation Plan:

Phase 1 (3 weeks): System architecture and database design

Phase 2 (4 weeks): Front-end development and basic meeting functionality

Phase 3 (4 weeks): Back-end development and advanced features

Phase 4 (2 weeks): Testing, debugging, and security enhancements

Phase 5 (1 week): Deployment and user testing

Team Members:

Project Manager: Shivam Goyal

Front-end Developer: Shivam Goyal, Vishal

Back-end Developer: Srajan Bansal, Vanshaj Tiwari

Resources Required:

Video and audio processing libraries (WebRTC)

Development IDEs and tools (VScode)

References:

https://developer.mozilla.org/en-US/docs/Web/API/WebRTC_API

https://legacy.reactjs.org/docs/getting-started.html

Expected Outcomes:

We aim to deliver a fully functional video meeting application with a user base of at least 1,000 users within a year. The expected outcome is a reliable and user-friendly software application for virtual meetings and collaboration.

Project Supervisor:

Sandeep Kumar Chhoker

Conclusion:

Our project aims to address the increasing demand for virtual communication solutions by developing a robust and feature-rich video meeting application. By adhering to our implementation plan and leveraging our team's skills, we anticipate delivering a successful product that enhances remote collaboration and communication.

With its comprehensive suite of features, commitment to security, and adaptability for future needs, this meeting and collaboration platform emerges as a formidable competitor to Microsoft Teams, providing users with a dynamic and user-friendly solution for the challenges of modern work and collaboration.

This comprehensive meeting application aims to provide a seamless, all-in-one solution for virtual meetings, fostering efficient communication and collaboration while offering a rich set of features comparable to Microsoft Teams. Whether for businesses, educational institutions, or personal use, this application promises to be a versatile tool for the modern world of remote and online meetings.