



VIRAT

Video and Interaction Relay Associated Tool

Team members with Contribution:

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Implementations, Video Call Implementation, Project Development Documentation, PPT Narration

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VIRAT

Video and Interaction Relay Associated Tool

A website which serves as a socializing platform providing chat, group creation, synced streaming with a user-friendly interface.

Introduction:

Nowadays, Billions of people around the world use social media to share information and make connections. On a personal level, social media allows you to communicate with friends and family, learn new things, develop your interests, and be entertained.

We provide a robust platform, 'VIRAT', with a user-friendly interface that enables us to create groups, chat with friends, watch local videos in sync with friends by creating rooms with admin access.



Working:

A user first encounters a log in page where he/she is asked to enter already entered credentials such as email and password. If incorrect credentials are entered, your login form will be reset. If account doesn't exist, he/she will be redirected to sign-up page to create account. After successful log-in, we will land to dashboard which contains general profile settings, chatting options and a watch-party button which on click directs to a video streaming player with robust video-audio calling facility and side by side chatting option. A log-out option is also provided to logout safely.

Implementation:

Major idea used to practically implement it is 'divide and conquer'. Each functionality such as video call, chat is divided into major two parts, front end and back end and then work is distributed among the team members.

Technology used:

Our project uses following tools:

- ArgoUML, draw.io
- HTML5
- CSS
- Bootstrap5
- JavaScript



- NodeJS
- NodeJS frameworks such as Express.JS, Socket.IO etc
- Mongo DB/Mongoose
- JS libraries such as JQuery etc
- IDE (Integrated Development Environment)
- Figma

Software Design:

We have used the basic principles of Object-Oriented Analysis and Design to develop the project during brainstorming. Extensive use of UML tools such as ArgoUML and draw.io has been made to simplify the development process.

Graphic Design:

The logo and visuals used in the project have been designed using the tool figma.

Coding Process:

The process of coding has been carried on using IDEs such as VS Code etc. The Live share feature of VS code is used extensively to work together and has been



proven very useful in debugging. Also, use of version control systems such as GitHub was proven to be crucial for code maintenance and preservation purposes.

Front End Development:

The basic structure of the website has been built by HTML5 serving as back bone of our project. To enhance the looks furthermore, we have used CSS and Bootstrap. JavaScript is used to enhance the functionality of front end and is also used to make website responsive.

Back End Development:

The backend development has been done using JavaScript, NodeJS, various other frameworks such as Express.JS and the inbuilt libraries that provide functionalities in the form of various inbuilt functions such as socket.io, peer.io etc. that make the development process a lot easier.

Node.js: Node.js is an open-source and cross-platform runtime environment for executing JavaScript code outside a browser.

Socket.io: This is the backbone for the networking aspect such as chat, video call, synced stream. All the connections between two users have been made using



it. It is an event-driven library for real-time web applications. It enables real-time, bi-directional communication between web clients and servers.

Peer.js: It helps us to send and receive the audio and video streams of the other clients.

Data Base:

In order to store the data entered by the user that we will require for login etc. we have used Mongo DB/Mongoose database.

References: We learnt about the various tools involved in the development process from the following references such as

<https://www.w3schools.com/> ,

<https://www.udemy.com/> ,

<https://www.codewithharry.com/> ,

<https://www.getbootstrap.com/> ,

<https://www.stackoverflow.com/> ,

<https://peerjs.com/> ,

<https://developers.google.com/>

<https://freecodecamp.com/>