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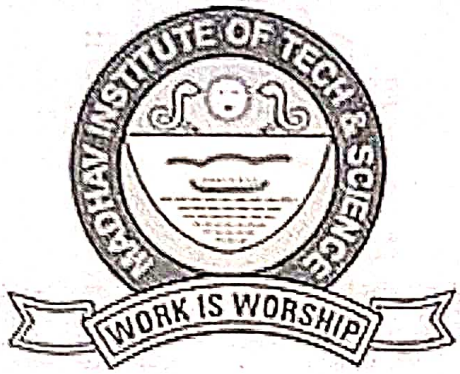

Project Report

on

ChatCity : Chat Application

Submitted By:

Akhil Kumar

0901CS191013

Chinmay Farkya

0901CS191030

Faculty Mentor:

Mr. Mir Shahnawaz Ahmad,

Assistant Professor, Computer Science & Engineering

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE
GWALIOR - 474005 (MP) est. 1957

MAY-JUNE 2022**MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR**

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ChatCity : Chat Application

A project report submitted in partial fulfillment of the requirement for the degree of

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE AND ENGINEERING

Submitted by:

Akhil Kumar

0901CS191013

Chinmay Farkya

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CERTIFICATE

This is certified that **Akhil Kumar** (0901CS191013) has submitted the project report titled **ChatCity Chat Application** under the mentorship of **Mr. Mir Shahnawaz Ahmad,** in partial fulfilment of the requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering from Madhav Institute of Technology and Science, Gwalior.

09/05/22

Mr. Mir Shahnawaz Ahmad
Faculty Mentor
Asst. Professor
Computer Science and Engineering

09/05/2022

Dr. Manish Dixit
Professor and Head,
Computer Science and Engineering

Dr. Manish Dixit
Professor & HOD
Department of CSE
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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CERTIFICATE

This is certified that **Chinmay Farkya** (0901CS191030) has submitted the project report titled **ChatCity Chat Application** under the mentorship of **Mr. Mir Shahnawaz Ahmad,** in partial fulfilment of the requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering from Madhav Institute of Technology and Science, Gwalior.

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DECLARATION

I hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering at Madhav Institute of Technology & Science, Gwalior is an authenticated and original record of my work under the mentorship of **Mr. Mir Shahnawaz Ahmad, Assistant Professor, Computer Science & Engineering**

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.

Akhil Kumar
0901CS191013
3rd Year
Computer Science and Engineering

Chinmay Farkya
0901CS191030
3rd Year
Computer Science and Engineering

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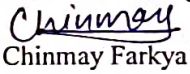

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ABSTRACT

For the Minor Project of VI SEM, for our partial fulfillment of our Bachelor's of Technology degree, we (Akhil Kumar and Chinmay Farkya) have decided to make a fully responsive and operational Web Chat Application. The Chat Application has been built with Chat Engine API as back-end support. We used Chat Engine due to its properties such as scalability, easy to use and implement and sleek structure. The Minor Project has helped us tremendously in learning new technologies and their implementation like React.js, Git and GitHub, Terminal Commands and many more which would help us for sure in our future career paths. During the course of the project we've also learnt how to effectively read Documentations and large code bases as well as become adept in changing, refactoring and editing existing code bases effectively.The Web Application has a lot of features like PDF support, real-time messaging and image support which makes it very responsive and could be used with school/college classrooms for the purpose of communication between students and faculty.

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CHAPTER 1 : INTRODUCTION

1.1. Project Overview:

ChatCity is a web chat application that we made for our Minor Project of VI SEM.
The chat application is a perfect tool for casual chat and messaging between friends and family as it contains all the functionalities necessary for a chat application like image support, social login support, PDF file support, etc.

1.2. Objective & Scope:

The objective of the project is as follows:

1.1.1. Project Objective:

- A chat application supported on almost any hardware hosting the modern browsers.
- To prevent Group Admins from adding us in illicit groups
- To provide real-time messaging services
- To provide image and document support

1.1.2. Personal Objective:

- To get first hand experience on building web application
- To improve general language as well as coding proficiency.
- Learn about various API's and their integration into the software.
- Get better at using React.JS, JS and related libraries.

1.3. Project Features:

- Social Authenticated login page.
- PDF Files support.
- Images support.
- Real-time messaging.
- Platform independent.
- Sleek look and easy to use
- Track and delete users from admin end
- Changing chat dashboard timezones using offset property
- A chat room can be modified and new people added only by the user who created it.

1.4. Feasibility:

The web application is completely cloud based with its backend, frontend and database all being hosted in remote servers making it extremely feasible to access from anywhere and any device having the modern web browser and decent internet connectivity.

1.5. System Requirements:

Most of the components of the application are generic with the application being web based, it doesn't have any specific system requirements. The backend API is cloud based remote server, minimizing the load on host system whereas the frontend hosting of the application is also cloud based, making it easy for users to access the web based application without worrying about the hardware requirements as long the web browser installed in their system supports modern technologies.

CHAPTER 2 : TECHNOLOGY USED

2.1. Firebase:

Firebase was used in the application to facilitate the social authorized login with Facebook and Google while initiating the session.

2.2. Chatengine.io:

Chat Engine API was used as the back-end support for the web application.

The Chat Engine API provides us with scalable and easy to use and implement interface for our web application and also provides a load of features for the application. The API is one of the best available in the segment along with being serverless. It can be used to build many different types of chat applications. And it's also free.

2.3. JavaScript

2.4. React-Context API

2.5. Google Authentication

To facilitate social login

2.6. Facebook Authentication

To facilitate social login

2.7. Netlify

Netlify offers hosting and serverless backend services for web applications and static websites. We also used it for that purpose only, that is to host our web chat application

2.8. React.JS

React.JS was used for the front-end development of the web application along with the externally imported React-Hooks components.

2.9. Dependencies:

- Ant-design icons.
- axios

- → Firebase
- → use state if mounted
- → react DOM
- → react chat engine
- → react router DOM

2.10. Environment Variables:

The environment variables were used to hide the private key and enhance security of the web application.

We used ".env" files, so that if we publish our code on github, malicious people can not misuse our private key.

2.11. Font Family: Avenir

CHAPTER 3. SOFTWARE DESIGN & ANALYSIS

Our application is a fully-responsive web based chat platform which allows us to create multiple chat rooms and add people using their Email-ID. The final Look of the program is as follows-

Login Page:

Fig. 1 Login Page

Chat Dashboard:

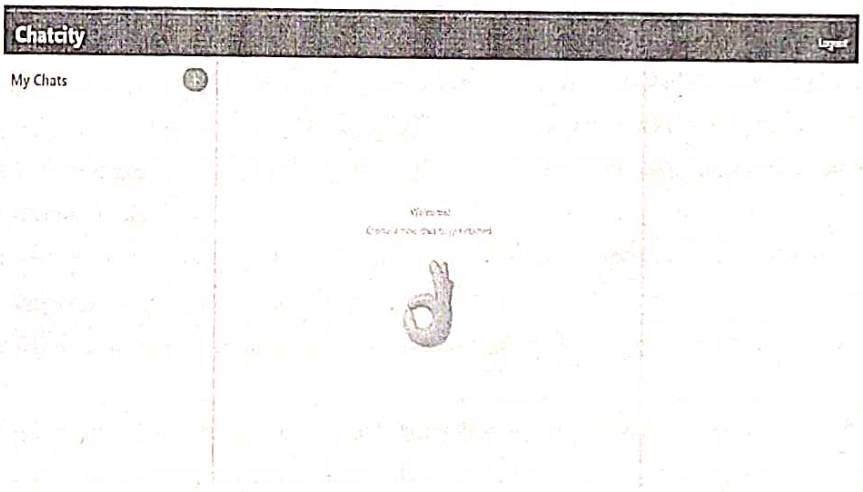

Fig. 2 Chat Dashboard

Chat Rooms UI:

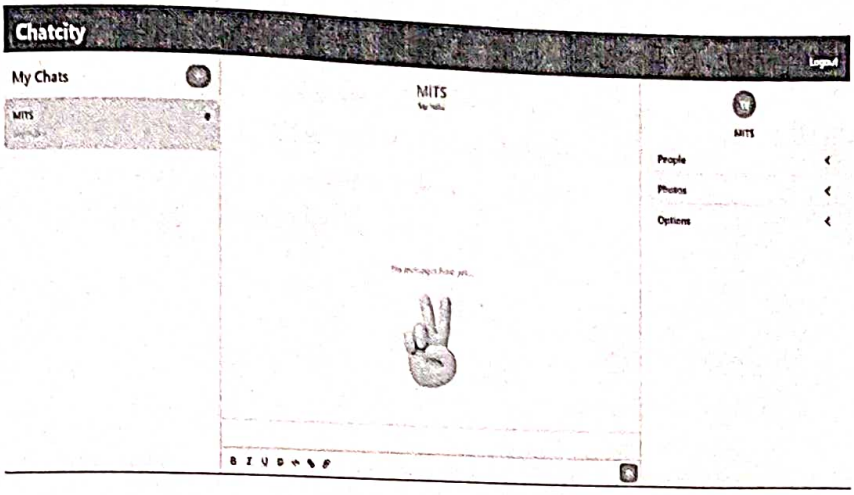

Fig. 3 Chat Room UI

3.1. Result:

The final outcome is a fully functional and responsive chat web application that can be easily accessed from any browser with a healthy internet connection. It can be used among friends, family and colleagues for secure, seamless and easy messaging service.

The chat web application can be accessed via the following link:

chatcity-akef.netlify.app

3.2. Problems Faced:

- One of the major problems faced through the weeks as we built the chat application was that the APIs and libraries used kept updating or were already updated making our code deprecate from time to time thus having us to read the documentations again and again to make our code run properly.
- Another similar problem we faced was lack of updated documentation and proper resources for the updated libraries and APIs, thus making it difficult for us to rectify the code as per the updated modifications in them.
- Another problem we faced was 403 errors due to incorrect state of update of user which were faced due to anomalies in the documentation of ChatEngine..
- One of the other problems we faced was that the chat application was by default showing GMT time for texts.
- CORS policy was also causing errors in the beginning due to problems in Firebase import which were handled by importing it again properly and enabling the CORS
- Anomalies in Chat Engine and Firebase SDK 9 documentations.

3.3. Limitations:

The limits of web application indirectly comes from the various components imported during the development of the application. Some of the prominent limitations are:

- Facebook data usage limit - From Facebook Authenticated Login
- Firebase free users limit - From Firebase Interface for Social Login
- Chat Engine API limitations

CHAPTER 4. CONCLUSION

APIs help us in making web and mobile applications with load of features very easily. The data is provided by API developers when we fetch it from the application. Rapid API marketplace is a platform where thousands of free as well as paid APIs are available which enable us to build lots of interactive, responsive as well as useful projects while learning the intricacies of software development.

Other technologies like libraries and packages are used in production builds of modern applications.

4.1. Future Scope:

1. Now we will add Emoji and GIF support.
2. Voice Notes feature in the application.
3. Notification support
4. Individual messaging support and Payments feature.
5. We'll look forward to using the application in our daily life to gain insights into the project and the changes that could be made as well as the features that could be added.

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FINAL LINK : chatcity-akcf.netlify.app .