# D. Y. PATIL COLLEGE OF ENGINEERING AND TECHNOLOGY

## (An Autonomous Institute)

## KASABA BAWADA, KOLHAPUR

A PROJECT REPORT

ON

## CHAT APPLICATION USING MERN

Submitted in partial fulfillment for the award of the degree of

## BACHOLER OF TECHNOLOGY IN

## COMPUTER SCIENCE AND ENGINEERING

## Submitted By

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## Kasaba Bawada, Kolhapur

## 2022-23

# D.Y.PATIL COLLEGE OF ENGINEERING AND TECHNOLOGY
# KASABA BAWADA, KOLHAPUR
# DEPARETMENT OF COMPUTER SCIENCE AND ENGINEERING



## CERTIFICATE

It is to certify that a project report titled "Chat Application using MERN" carried out by

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Date:

Place:

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# **<u>DECLARATION</u>**

We, undersigned are the students of sixth semester B. Tech, Department of Computer Science and Engineering, **D. Y. Patil College of Engineering & Technology Kolhapur**, hereby declare that the project-III titled "**Chat Application using MERN**" has been prepared and presented by us and submitted in partial fulfillment of the course requirements for the award of degree in Bachelor of Technology in Computer Science and Engineering of **D. Y. Patil College of Engineering and Technology, Kolhapur** during the academic year **2022-2023**. Further the content of the project-III has not been submitted previously for the award of any degree or diploma to any other university.

Place:

Date:

| Name | Roll No | Signature |
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# ABSTRACT

The latest development of the Internet has brought the world into our hands. Everything happens through internet from passing information to purchasing something. Internet made the world as small circle. This project is also based on internet. This paper shows the importance of chat application in day today life and its impact in technological world.

This project is to develop a chat system based on MERN. The application allows people to transfer messages both in private and public way. It also enables the feature of sharing resources like files, images, videos, etc. This online system is developed to interact or chat with one another on the Internet. It is much more reliable and secure than other traditional systems available. Chatting applications are very popular among Internet users and Smartphone's owners.

Hundred millions of smartphone owners use chat applications on monthly basis. These chat applications offer the communication free of charge and majority of them are free to install which makes it very appealing for the potential customers. These chat applications offer different services and built-in features to their users while in majority of the cases, they neglect security aspects of their usages and messages.

# **INDEX**

# CHAPTER - 1
# INTRODUCTION

The chatting application has huge impact on day to day life. There are numerous chatting application available in this world. Each application has different additional features varying from other applications. These application organizations compete with each other and add some competing features during each release. They have reached people much and have an impact on people's life. People find a better application from an available internet application which they feel much reliable and secure.

Some of the available chatting applications that are available in these days are Whatsapp, Facebook, Instagram, Hike, etc...The above mentioned applications have billion users all over the world. Those companies are one of the top companies in the world. They have higher revenue per year and have many employees for their organizations developing additional features to compete with other organizations during their each release. These applications have different features and follows different ways to ensure security of their user data.

Today a data theft is the major crime and most people are involved in it. There are many cases being filed these days about personal data loss. So the organizations have to ensure the security from data loss by the third party data crisis. The basic chatting system should involve both sending and receiving processes simultaneously. In this application both sending and receiving messages simultaneously happens through MERN concept.

**Scope:**

The scope of the project should be broken-down and the system should be declared before advancing further. The scope are as follows:

1. The design and construction of this application is aimed at building a web-based application and mobile application.
2. This system is developed using React.js and Node.js.
3. The database of this system implemented using MongoDB.

**Technology Used**

HTML, CSS and Javascript

1. Mongo DB: Cross-platform Document-Oriented Database

2. Express: Back-End Framework

3. React: Front-End Library

4. Node.js: JS Runtime Environment

**HTML**: The Hyper Text Markup Language, or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

**CSS:** Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts.

**Java script:** JavaScript is one of the core technologies of the World Wide Web. Over 97% of websites use it client side for web page behavior, often incorporating third-party libraries. All major web browsers have a dedicated JavaScript engine to execute the code on the user's device.

**React.js Front End**: The top tier of the MERN stack is React.js, the declarative JavaScript framework for creating dynamic client-side applications in HTML. React lets you build up complex interfaces through simple Components, connect them to data on your backend server, and render them as HTML.

**Express.js and Node.js Server Tier**: The next level down is the Express.js server-side framework, running inside a Node.js server. Express.js bills itself as a "fast, un opinionated, minimalist web framework for Node.js," and that is indeed exactly what it is. Express.js has powerful models for URL routing (matching an incoming URL with a server function), and handling HTTP requests and responses.

**Mongo DB Database Tier**: If your application stores any data (user profiles, content, comments, uploads, events, etc.), then you're going to want a database that's just as easy to work with as React, Express, and Node.

# CHAPTER – 2

# OBJECTIVES AND PROPOSED WORK

Our goal is to build a web chat that holds a single chat room. Any user can connect to it from an open window/tab, is able to upload an image to use as avatar during the chat, each connected user will see instantly any message sent, and new connected users will see the last 10 messages sent. Mongo DB makes use of records which are made up of documents that contain a data structure composed of field and value pairs.

Documents are the basic unit of data in Mongo DB.Express does is that it enables you to easily create web applications by providing a slightly simpler interface for creating your request endpoints, handling cookies, etc. than vanilla Node.React is an open-source, component-based JavaScript library used to create quick and interactive interfaces or UI components for users for web and mobile-based applications. It is a declarative and highly accurate library that provides reusable code, which enhances the efficiency and flexibility of single-page applications.Node.js is an open-source and cross-platform JavaScript runtime environment. Node.js with Express.js can also be used to create classic web applications on the server-side.
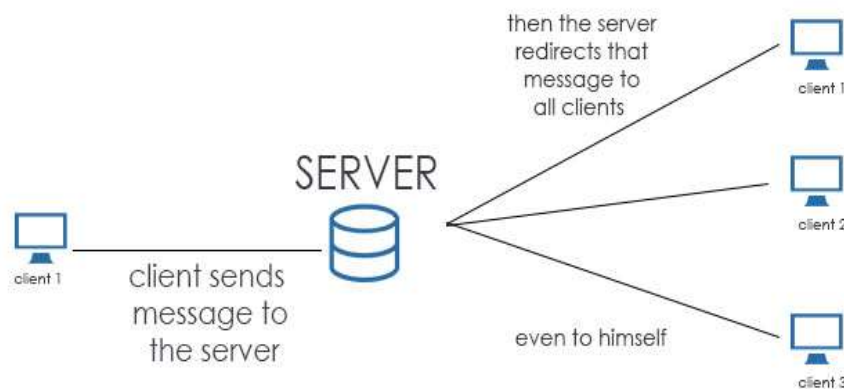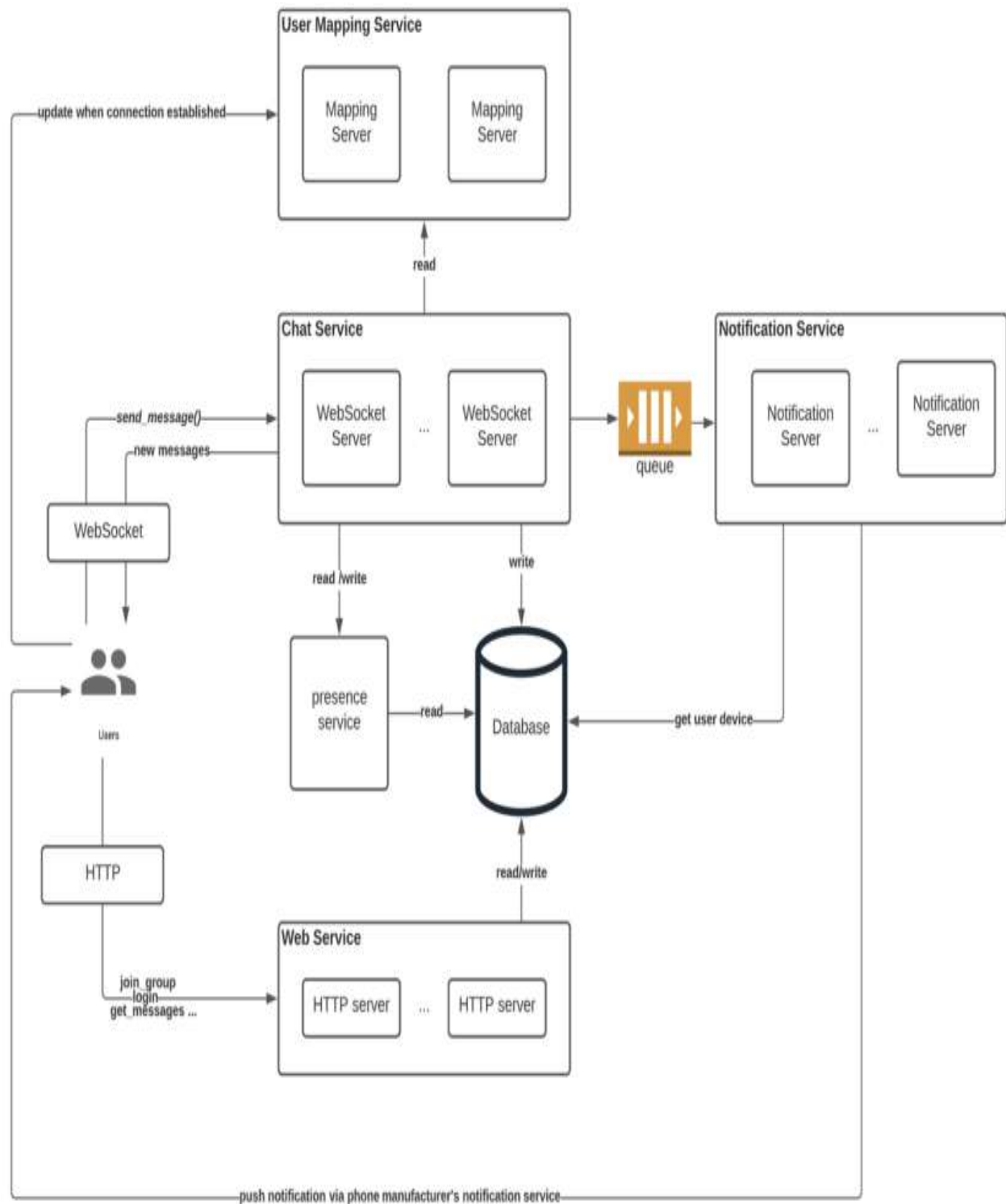


**Fig. 1**

**Fig.2**

## CHAPTER – 3

## DESIGN AND IMPLEMENTATION

```
PS C:\Users\mayur gaikwad\Desktop\chat app> cd public
PS C:\Users\mayur gaikwad\Desktop\chat app\public> cd chat-app
PS C:\Users\mayur gaikwad\Desktop\chat app\public\chat-app> npm start
npm WARN config global `--global`, `--local` are deprecated. Use `--location=global` instead.

> chat-app@0.1.0 start
> react-scripts start

Compiled successfully!

You can now view chat-app in the browser.

  Local:            http://localhost:3000
  On Your Network:  http://192.168.137.1:3000

Note that the development build is not optimized.
To create a production build, use npm run build.

webpack compiled successfully
```

**Fig. 3 : To Start the Frontend**

This is the terminal page. npm start command is used to start the frontend.

```
PS C:\Users\mayur gaikwad\Desktop\chat app> cd server
PS C:\Users\mayur gaikwad\Desktop\chat app\server> npm start
npm WARN config global `--global`, `--local` are deprecated. Use `--location=global` instead.

> server@1.0.0 start
> nodemon index.js

[nodemon] 2.0.20
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node index.js`
sserver started at 5000
connection succesful
```

**Fig. 4 : To Start the Backend**

This is the terminal page. In this figure we can see we have started the backend.
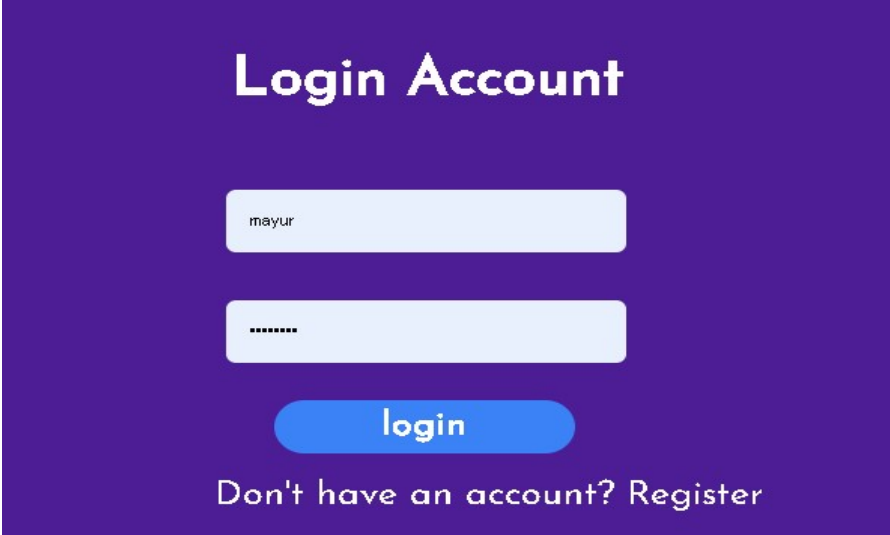
**Fig. 5 : Login Page**

We have to enter username and password to enter the Chat Application. If you don't have an account we can click Register and get transferred to RegisterPage.
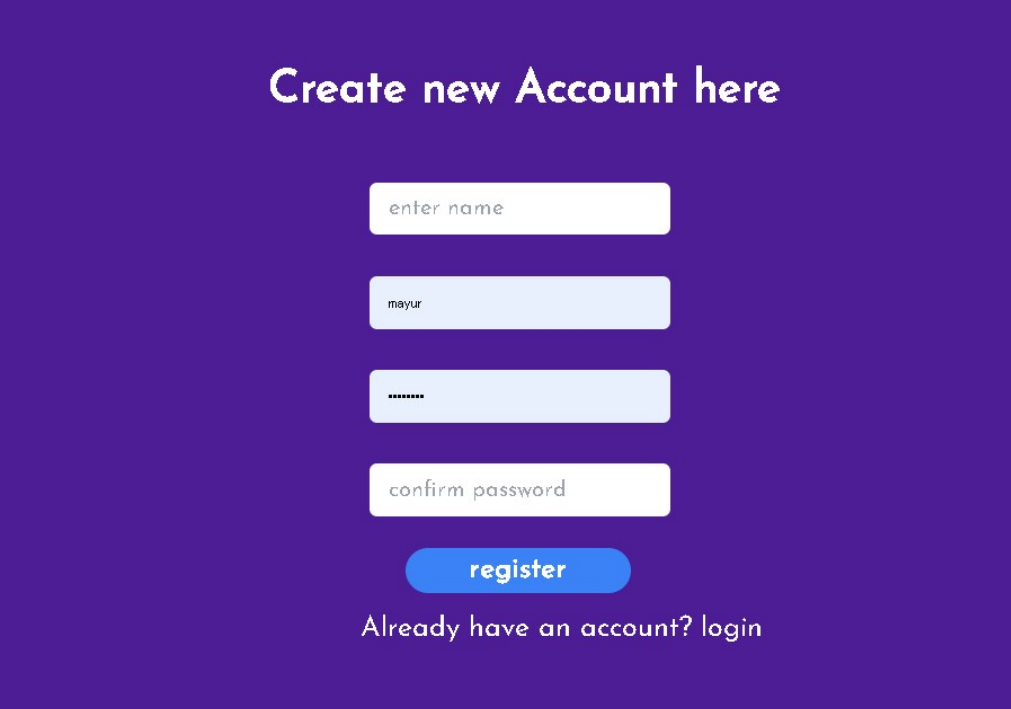


**Fig. 6 : Create Account Page or Register Page**

You can register yourself into the Chat Application from this Page.

**Fig. 7 : Avatar Page**

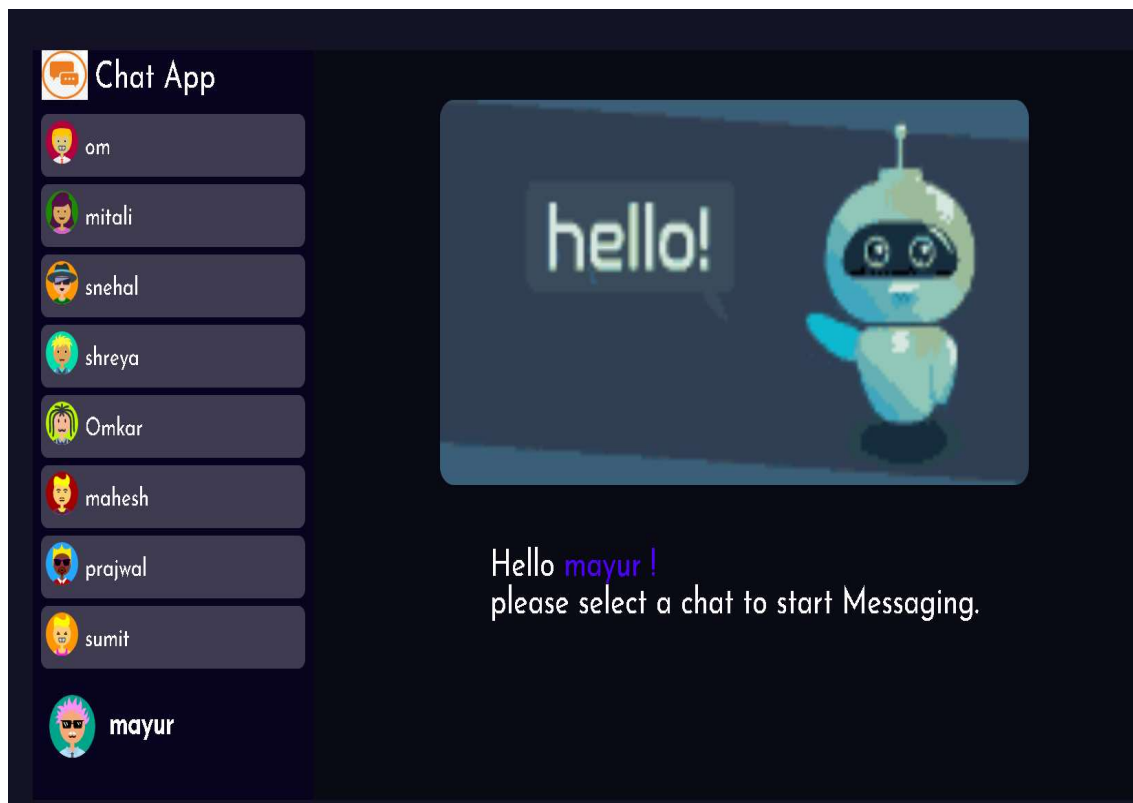You have to select a Avatar from this page and Set a Profile Picture.



**Fig. 8 : Home Page**

This is the main Home Page. You can see all the contacts and tap any contact to start the conversation.

**Fig. 9 : Chat Page**

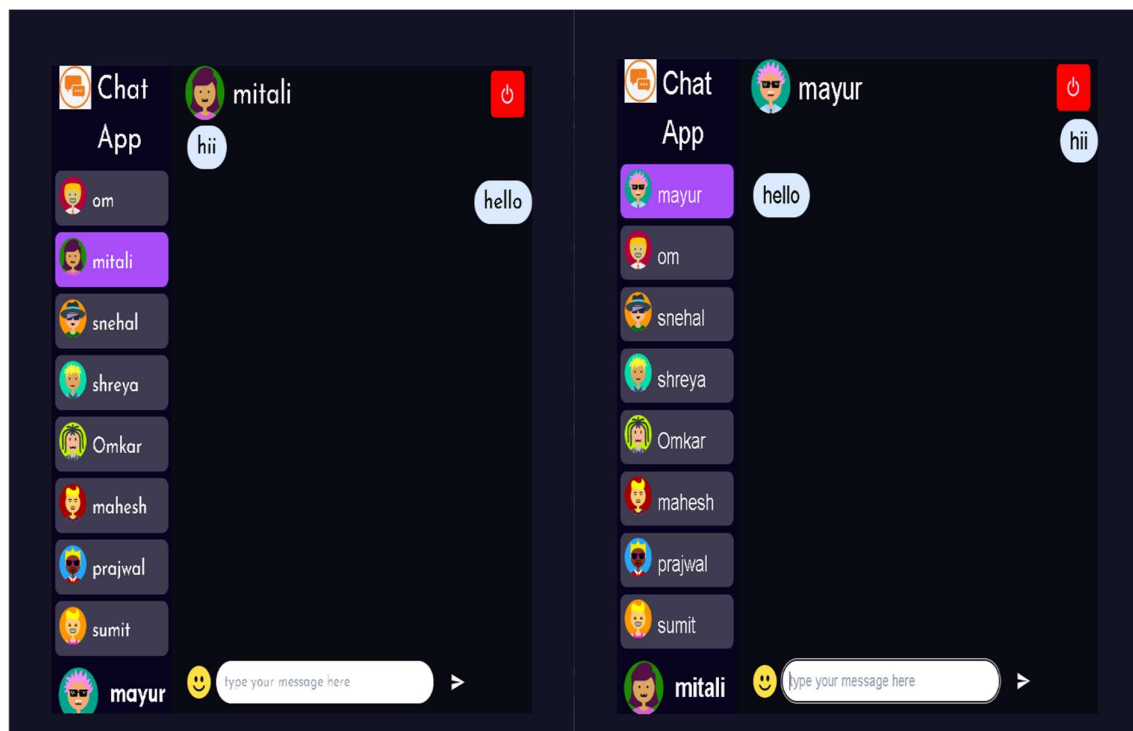This is the Chat Interface. You can chat with your contact



**Fig. 10 : Simulation**

From the above Figure you can see that the message is sent from one user to another user and another user has received the sent message.

# CHAPTER – 4
# RESULT ANALYSIS

Firstly, we will be doing the requirement and analysis part of the development cycle, in which we will find out our project's final goals and what will get in the long run. Then, we will move onto the designing phase of the cycle which will be deciding the designing and look of it. Then we'll deep dive into the implementation part which consists of frontend and back-end development. We'll first start from the back-end of the project with the help of the Java script and try to build the minimum valued product first which will set the base of our working project and then we will add other backlogs of the product and try to develop in their sprint. If a few backlogs will not be completed in their mentioned sprint, then we'll add it to the next sprint and try to finish it in that one.

During the development of the back-end of the product, we will be using only the React JS for the front-end which will be showing the info on the browser. Database part will be developed parallelly with the back-end development and MongoDB will be used for the database. If the back-end of the project gets complicated, we will move on to the front-end development fully. It will be developed by HTML, CSS , JavaScript and React js. When this all gets done, we will run some tests in the testing phase of the project and then will manage the documentation which we've maintained during the whole implementation and development phase.

# CHAPTER – 5
# CONCLUSION

As a conclusion, we can say that this undergoing project is giving great experience. Thanks to this project, we are acquiring deeper knowledge concerning our technical skills but we also personally benefited. Currently MERN stack is a common technologies of web applications and chat applications, and one of the most popular technologies for development used by developers worldwide. If we surf internet we can see millions of websites, applications and games built with MERN and MEAN stack.

We are learning to live in a different environment from the one we are used to. Indeed, we am growing more independent in work and also in everyday life, realizing that we could do more things than we thought like learning new things by ourselves. There are huge opportunities available for the students who want to work in this field. Many private and public organizations hire web designer and app designer for their online work and development.

With the rapid advent of online industry, the demand of web development and app development professionals is increasing and this has created a huge job opportunity for the aspirants in the upcoming days. Also, an experienced person in this field can also work as a freelancer; there are many online companies which provide online projects to the individuals.

# CHAPTER – 6
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