

CHAT APPLICATION USING MERN STACK(MongoDB,Expressjs,Reactjs,Nodejs)

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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.

Keyword : - MERN(MongoDB, Express.js, React.js, Node.js), Internet, Chat, Security.

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.

1.1 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.

1.2 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.

2. LITERATURE SURVEY

With the development and enhancement in internet, more and more people have been choosing network chatting tools for communication. Applications such as these facilitates communication over great distances. Therefore, this application must both be real-time and multi-platform to be used by many users. The web-based real-time chatting application does not need any additional third-party client program, and the visual communication could be established conveniently. The programming tools used in building this application is React.js, Node.js with express framework and Mongo DB database. The text communication is transferred through and from servers and the data transmission is facilitated through point to point connection between servers. Due to the usage of react framework, virtual space concept is implemented which enhances the performance over existing applications developed using PHP by a factor of approximately 6 times.

This paper is aimed at developing an Online College Management System that is of importance to the educational institute or college. This system is named College ERP using MERN stack. This system may be used to monitor college students and their various activities. This application is being developed for an engineering college to maintain and facilitate ease of access to information. For this the users must be registered with the system. College ERP is an Internet based application that aims at providing information to all levels of management within an organization. This system is used as an information management system for the college. For a given student and staff (technical and non technical) can access the system to either upload and access some information from the database.

In today's expeditiously moving business world, it's extremely crucial to be able to understand client demand in the most efficacious and ahead of time. If our customers could have our business online and have that at their fingertips to our products or services, it would have a greater impact on their day-to-day life, which would also create an ecosystem of doing business online and serving customers on a large scale. Shopping online or doing business online has become a lifestyle for the younger generation *per se*. e-commerce web application, which retails a number of products has given people access to the basic necessity to luxury products. This project allows viewing various products on a web user interface and enables registered users to get hold of desired products instantly using desired payment options. This project dispenses an approachable way for business owners to view orders placed. In contemplation to establish an e-commerce web application, several technologies have been studied and acknowledged. Technologies that have been included are, React.js, MongoDB, Node.js, Express.js. This is a project to ease the accessing of various products and establish a web application where a customer is delivered with an exhaustive web application and also to understand the technologies used to demonstrate such an application. This paper will discuss each of the fundamental technologies to create and implement an e-commerce web application.

Chat applications have become one of the most important and popular applications on smartphones. It has the capability of exchanging text messages, images and files which is cost free for the users to communicate with each other. All messages must be protected. The aim of the paper is to propose a chat application that provides End-to-End security that lets safely exchange private information with each other without worrying about data. In addition to the protection of storage. A list of requirements to make a secure chat application is presented in this paper and based on these requirements, the application was designed. The proposed chat application was compared with other popular applications based on those requirements as well as it has been tested as a proof for providing End-to-End security.

In this application, we have developed a website where users can sign up and login and be able to share their thoughts and events at their colleges or companies and experience at interviews or etc and also like, comment on respective posts, and also a user can be able to follow or unfollow a user to get updates from different users. We feel very difficult to find blood donors at difficult times, this website provides a list of blood donors with their details such that it will be very helpful in finding blood donors. It is very helpful to people who require blood urgently. There is a good number of donors but we find it difficult to find them. This website solves this issue. We can create chat rooms or join chat rooms and discuss things with people around the world in this application.

Chatting applications are very popular among Internet users and Smartphone's owners. Hundred millions of smartphone owners use chat applications on a 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.

The latest development of the Internet has brought the world into our hands. Everything happens through the internet from passing information to purchasing something. The internet made the world a small circle. This project is also based on the internet. This paper shows the importance of a chat application in day-to-day life and its impact in the technological world. This project is to develop a chat system based on Java multithreading and network concepts. The application allows people to transfer messages both in private and public ways. 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. Java, multi-threading and client-server concepts were used to develop the web-based chat application. This application is developed with proper architecture for future enhancement. It can be deployed in all private organizations like colleges, IT parks, etc.

This research paper is about the modelling and construction of a Management Information System with the help of the MERN stack. The MERN stack consists of MongoDB, Express.js, React and Node.js. This MIS (Management Information System) is specially designed for IMOs and the Govt. of India. The schema modelling is flexible and it can be used by almost every loan-providing govt. agency. For deploying the application, the database used is MongoDB and the server used is Heroku. The entire system can be integrated with Docker to reduce the development setup time. The application comes with a built-in feature that allows the admin to send messages to the loan-bearing group.

3. OBJECTIVE

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.

3.1 FUTURE SCOPES

Especially if I don't have any experience. Finding work can be a real challenge. A successful learning can help me turn an experience into a career opportunity.

To be work IT company.

Can work as a Software Engineer.

Can work as a Web Designer.

Can work as a Web Developer.

Can work as a QA Tester.

4. METHODOLOGY

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.

5. CONCLUSIONS

As a conclusion, I can say that this undergoing project is giving great experience. Thanks to this project, I am acquiring deeper knowledge concerning my technical skills but I also personally benefited. Currently MERN stack is a common technologies of web applications and chat applications, and one of the most popular technology 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. I am learning to live in a different environment from the one I am used to. Indeed, I am growing more independent in work and also in everyday life, realizing that I could do more things than I thought like learning new things by myself.

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.

6. REFERENCES

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