

Project Presentation of Full Stack Engineering Project (FSE) (22CS037)

On

Real Time Chat App

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Introduction



A **Real-Time Chat App** using the **MERN stack (MongoDB, Express.js, React, Node.js)** enables seamless, instant messaging between users. It leverages **WebSockets** (via **Socket.io**) to establish real-time communication. The backend, powered by **Node.js** and **Express**, handles authentication, message storage in **MongoDB**, and WebSocket connections.





SDLC Diagram



Planning

Defining project scope, objectives, and requirements to establish a clear direction..



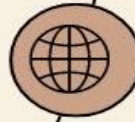
Design

Creating UI/UX layouts to visualize the application's appearance



Development

Implementing the front-end design by writing codes.



Testing

Conducting various tests to ensure the quality, reliability, and usability



Deployment

Releasing the application for users to access.

TECHNICAL DETAILS

HTML:

- Markup language for creating the structure of web pages.
- Utilizes elements like `<div>`, `<p>`, `` to organize content.
- Forms for user input, with various input types like text, password, etc.
- Semantics for accessibility and SEO.



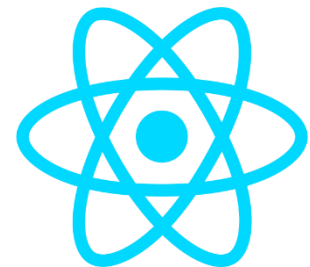
TAILWIND CSS:

- A utility-first CSS framework for styling HTML elements.
- Simplifies layout design with classes for the box model: content, padding, border, and margin
- Provides utility classes for positioning, display, flexbox, and grid layouts.
- Enables responsive design through media query utilities.



REACTJS:

- Allows dynamic rendering of HTML content based on real-time data.
- Facilitates reusable components like headers, footers, and forms.
- Supports conditional rendering to tailor content based on user roles or data.
- Seamlessly integrates form handling for actions like login and data submissions.
- Efficiently loops through arrays to render dynamic content such as notices, events, or appointments.



Backend

MongoDB:

- NoSQL database designed for handling large volumes of data.
- Uses flexible, JSON-like documents to store data.
- Supports dynamic schemas, allowing easy updates to data structure.
- Provides horizontal scaling for managing distributed data.
- Facilitates fast queries and indexing for efficient data retrieval.



Express:

- Express is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications.
- Express is a lightweight and flexible routing framework with minimal core features meant to be augmented through the use of Express middleware modules.



Postman:

- Postman is a global software company that offers an API platform for developers to design, build, test, and collaborate on APIs.



User Authentication – Secure login/signup using JWT and bcrypt.

✓ **Real-Time Messaging** – Instant chat using **Socket.io** for real-time communication.

✓ **One-on-One & Group Chats** – Support for personal and group conversations.

✓ **Online/Offline Status** – Show users' availability in real-time.

✓ **Message Read Receipts** – Indicate when messages are delivered and read.

✓ **Typing Indicators** – Display when a user is typing.

✓ **Media & File Sharing** – Send images, videos, and documents.

✓ **Notifications** – Real-time alerts for new messages.

✓ **Search & Filters** – Find users or messages easily.

✓ **Chat History & Storage** – Store messages securely in MongoDB.

Target Audience

•Who is this for?

1. General Users

- Individuals looking for instant messaging solutions.

2. Businesses & Enterprises

- Teams needing real-time collaboration (e.g., Slack alternative).

3. Developers & Tech Enthusiasts

- MERN stack developers learning WebSockets & real-time features.

4. Educational Platforms

- Online learning portals requiring live discussions.



Drag-and-Drop File Sharing

Users can easily send images, videos, and documents by dragging and dropping them into the chat.

Rich Messaging Experience

Built-in support for emojis, GIFs, reactions, and formatted text to enhance communication.

Intuitive Navigation

A simple and well-structured UI with easy access to contacts, recent chats, and settings.
Would you like me to add more features or refine the content further?

MongoDB

A NoSQL database that stores data in flexible, JSON-like documents, perfect for content-rich applications like blogs.

Express.js

A minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications.

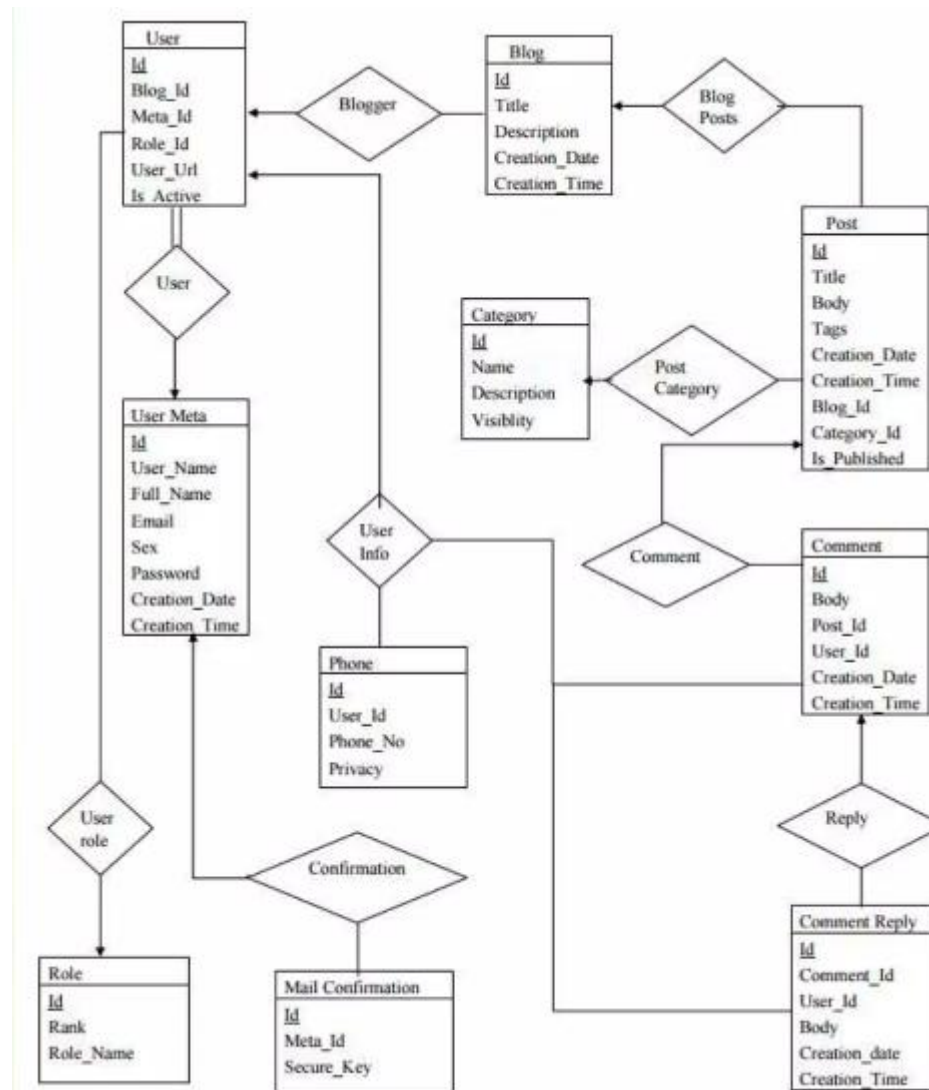
React

A powerful JavaScript library for building user interfaces, enabling the creation of dynamic, responsive, and interactive blog experiences.

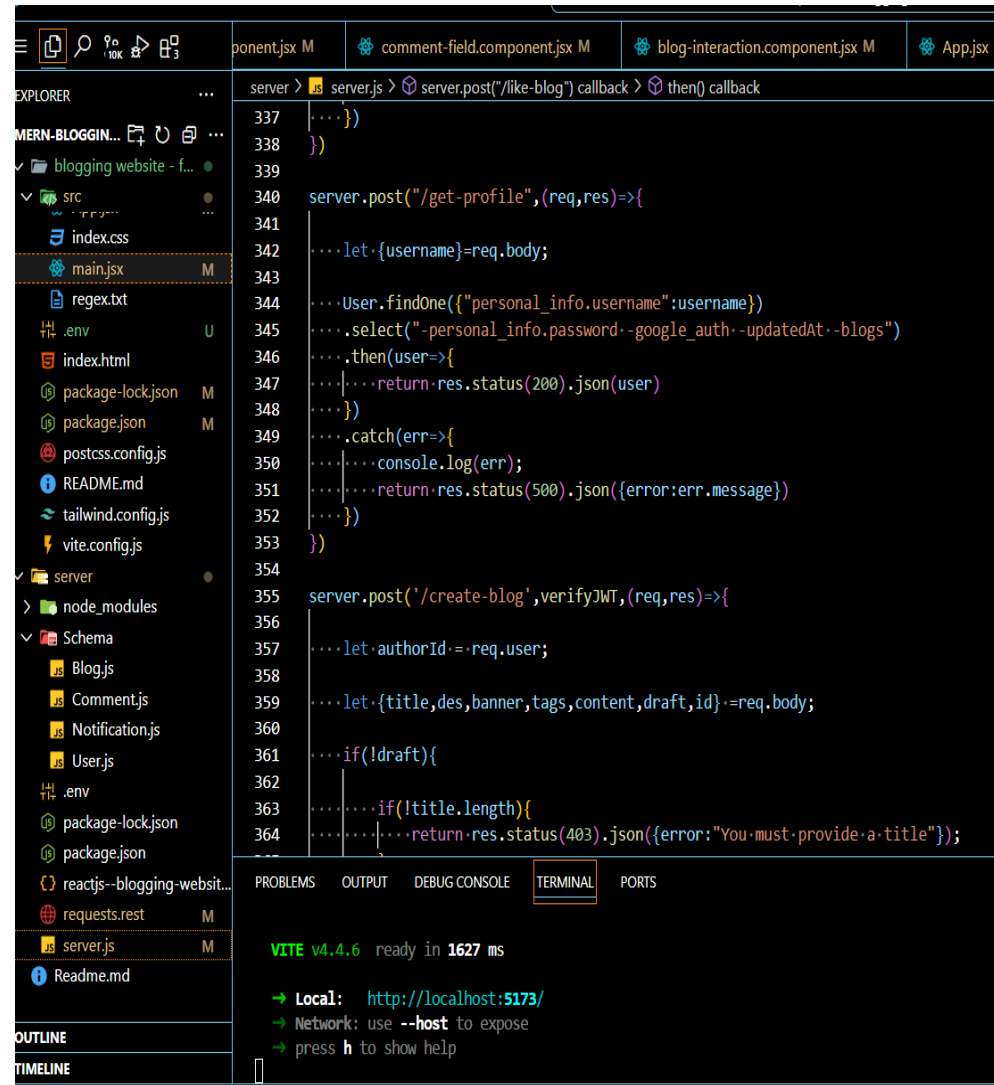
Node.js

A JavaScript runtime built on Chrome's V8 JavaScript engine, allowing server-side scripting and efficient data handling.

ER Diagram



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Output



Sign up




Welcome Back

Email

Password

Signin

OR

 Continue With Google

Don't have an account? [Join us today](#)

Sign in



Join Us Today


Full Name

Email

Password

Signup

OR

 Continue With Google

Already a member? [Sign in here](#)

Sign out



 Write



Profile

Dashboard

Settings

Sign Out

@sam



Home Page



Search

Write

Sign In

Sign Up

Home

👤 sam @sam 10 Oct

just a random note

this is the description

Kindness ❤️ 400

👤 sam @sam 8 Oct

Dosa: touch of south indian authentic delight

1. colourful but desi 2. served with variety of flavours 3. simple but tasty

Food ❤️ 2

👤 sam @sam 30 Sep

Staying connected to your routes is the best thing to do

Stay grounded stay humble stay kind

Kindness ❤️ 0

👤 sam @sam 22 Sep

Pastaaaaaaaaa

have pasta and enjoy your day. A go to thing to lift up the mood.

Food ❤️ 0



Stories form all interests

Programming

Hollywood

Film Making

Social Media

Cooking

Tech

Finances

Travel

Food

Trending ~^

01 👤 sam @sam 10 Oct

just a random note

02 👤 sam @sam 8 Oct

Dosa: touch of south indian authentic delight

03 👤 sam @sam 16 Sep

hello

04 👤 sam @sam 16 Sep

yummmm

05 🧑 samiksha @sam25 15 Sep

test title



Sorted By Interests



Search

Write



Food

sam @sam 8 Oct

Dosa: touch of south indian authentic delight

1. colourful but desi 2. served with variety of flavours 3. simple but tasty

Food 2

sam @sam 22 Sep

Pastaaaaaaaaa

have pasta and enjoy your day. A go to thing to lift up the mood.

Food 0

Load More



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Trending ~

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just a random note

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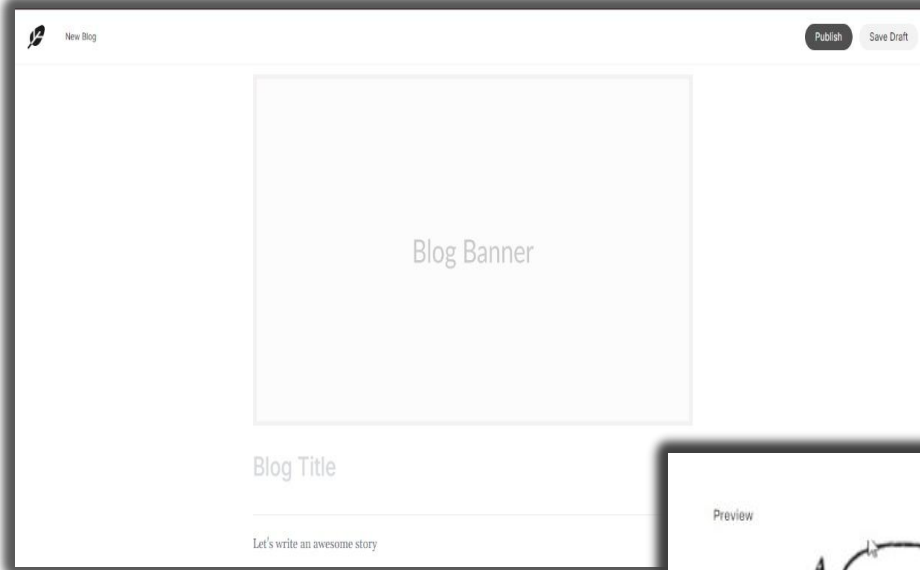
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yummmm

05 samiksha @sam25 15 Sep

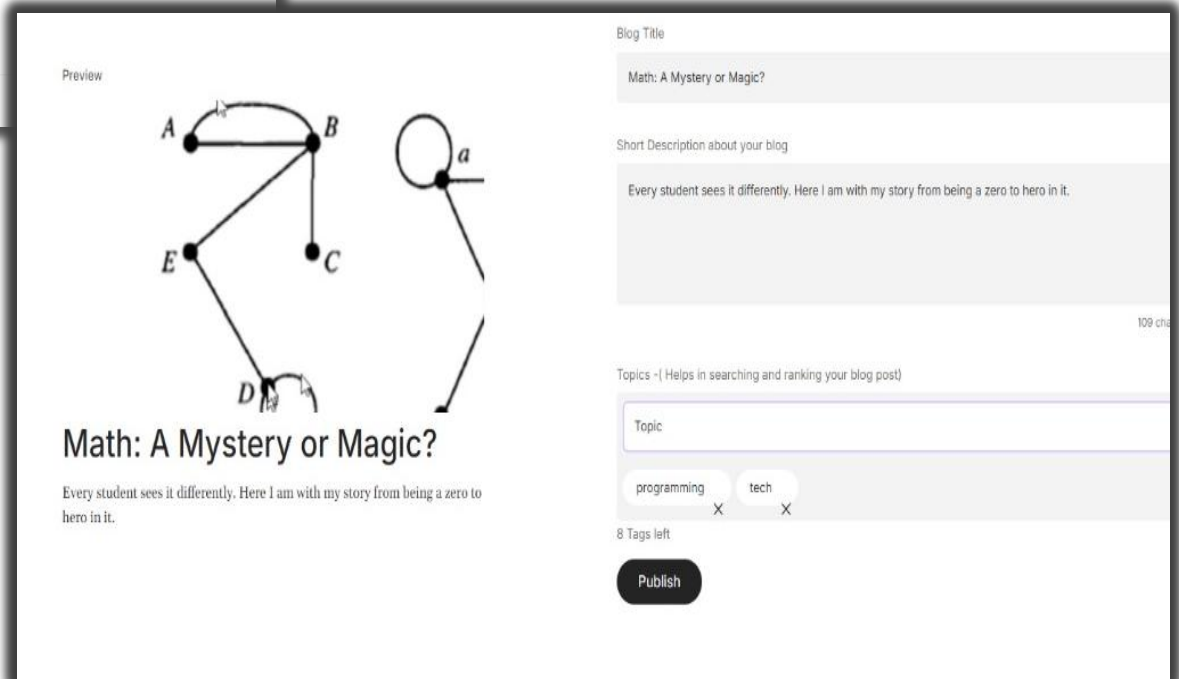
test title

Output



👉 👉 **Editor**

Preview 👉 👉



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Published on

1 18

Ed

Mathematics, a subject often regarded as complex and abstract, holds a mysterious allure that has fascinated humanity for centuries. From the basic counting of objects to the intricate patterns of the universe, math presents itself as both a puzzle to solve and a magical key to understanding the world.

1 18

Ed

×

Leave a comment...

Comment

 sam @samiksha aggarwal 24 Oct

and this is my child comment made on 24 oct

0 Reply [Reply](#)

👤 sam @samiksha aggarwal 24 Oct

Sam this is parent comment

1 Reply Reply



👤 sam @samiksha aggarwal 24 Oct


cccccccccccccccccccccccccccc

0 Reply [Reply](#)

Project Snippet

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Q Search

Write

Settings

Profile

Dashboard

Blogs

Notification

Write

Settings

Edit Profile


Change Password

Manage Blogs

Q Search Blogs

Published Blogs

Drafts




pastaaaaaaaaaaaaaa

Published on 11 Nov

[Edit](#) [Delete](#)

1 Likes 0 Comments 23 Reads




blog 8

Published on 11 Nov

[Edit](#) [Delete](#)

0 Likes 0 Comments 1 Reads




blog 7

Published on 11 Nov

[Edit](#) [Delete](#)

0 Likes 0 Comments 4 Reads



blog 6

Published on 11 Nov

[Edit](#) [Delete](#)

0 Likes 0 Comments 0 Reads

CONCLUSION

- Bloom - The Vibrant Blogging Platform offers a seamless and dynamic solution for content creators. With a user-friendly back-end system, it empowers users to effortlessly create, edit, and share blogs. By prioritizing performance, scalability, and security, Bloom ensures a smooth experience for both bloggers and readers. The project showcases efficient data management, real-time updates, and a robust architecture that supports future growth.
- Key Highlights:
 - Efficient Content Management: Easy-to-use tools for bloggers.
 - Scalable Architecture: Designed to handle increasing traffic and content volume.
 - Security Features: Protecting user data and ensuring platform integrity.
 - Future-Ready: Built with potential for further enhancements and features.

In conclusion, Bloom is not just a blogging platform—it's an intuitive, vibrant space for creativity to flourish.





*Thank
you!*

