

Assignment 4.5 (MERN Stack)

The MERN Stack:-

The MERN Stack is a popular full-stack development framework that enables developers to build robust, scalable web applications. It comprises four key technologies: MongoDB, Express.js, React.js & Node.js. Each Technology play a specific role in Stack, collectively providing a comprehensive framework for both frontend & backend developments.

① MongoDB:-

MongoDB is a nosql database that stores data in flexible, json like documents. It is designed for scalability & performance, making it ideal for modern web applications that require rapid development & iteration.

② Express.js:-

Express.js is a web application framework for node.js. It provides a robust set of features for web & mobile applications, including middleware to handle HTTP requests, routing & dynamic rendering.

③ React.js :-

React.js is a javascript library for building user interfaces. Developed by Facebook, it allowed developers to create large web applications that can update & render efficiently in response to data changes.

React components encapsulates their own state & logic, promoting reusability.

④ Node.js:-

Node.js is a javascript runtime built on chrome's V8 javascript engine. It allows developers to run javascript on server side enabling the creating of scalable & efficient server-side applications.

Roles of Each Tech in MERN Stack:-

① MongoDB :-

MongoDB serves as the database component of Mern Stack. It stores application data in a flexible, json like format, which allows for easily data retrieval & manipulation.

② Express.js:-

Express.js acts as the web server framework for Node.js simplifying the process of building robust API & handling HTTP request. It manages routing, middleware & other backend logic.

③ React.js:-

React.js handles the frontend development by providing a powerful library for building interactive & dynamic user interfaces.

④ Node.js:-

Node.js provides the runtime environment for executing javascript code on the server side. It enables the developers of fast & scalable serverside applications.

Setting up a MERN Stack Application:-

Prerequisites:-

- node.js & npm.
- mongodb
- A code editor

→ Setting up the Frontend:-

```
npx create-react-app client  
cd client  
npm install axios
```

→ Setting up the Backend:-

```
mkdir mern-app  
cd mern-app  
npm init -y  
npm install express mongoose cors dotenv
```

Start the application:-

```
npm start.
```