

MERN Stack

Introduction

The MERN stack is becoming more and more popular. React has become the hottest new library, and using it with Node and Express means a high level of harmony between the client and server. Throw MongoDB on for data storage, and you have JavaScript from front to back. These applications are quick to put together, and represent the modern state of web application development.

M= MongoDB is a free and open-source cross-platform document-oriented database program. It is Classified as a NoSQL database program.

E = Express.js, a framework which supports and is used to host Node.js projects. It is a JavaScript web application framework used to build dynamic websites with efficient features.

R = React, yet another framework for building apps. It is used to provide features like the two-way data binding. It also provides maintenance, reusability, and testability.

N = Node.js, it is a runtime environment, which runs server-side web applications, i.e. it works on the back-end, away from the user's eyes to fetch relevant data or perform operations on the same. It helps in building profoundly adaptable, flexible and concurrent applications in quick time .

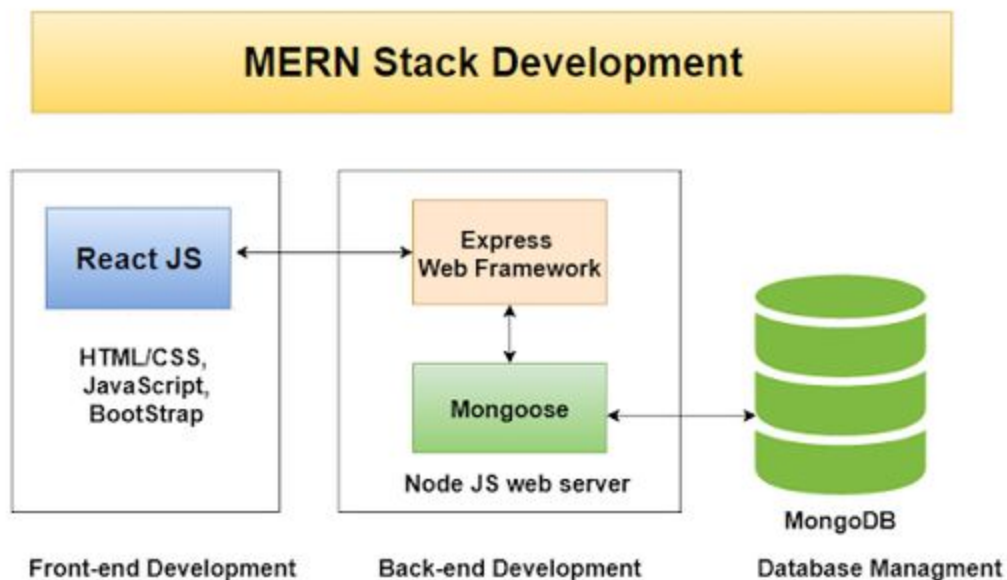


Fig: MERN Architecture

These all consolidate together into one powerful package called as MERN stack which makes developers pick this over different technologies for building up an incredible responsive site and web applications.

Activity Breakdown:

Introduction: 5 hours

1. React, Node and MongoDB overview and Features descriptions.
2. React, Node and MongoDB setup.
3. MERN Architecture.
4. Javascript, CSS and HTML practices

By the end of Week 1, students should be able to get knowledge on MERN Architecture and able to design website layouts.

Project Setup and getting started REST API with Node and Express : 10 hours

1. Node and Express setup.
2. JSON format overview and JSON Mapping.
3. Node REST API overview
4. Node REST API designing.
5. MVC architecture in API
6. Async javascript function in Node API.
7. Promise and await concepts,
8. Use of postman for API call.

By the end of week 2, students should be able to get knowledge on JSON Data format,Node API design with async javascript custom functions.

MongoDB: 10 hours

1. MongoDB overview.
2. MongoDB connection.
3. Setup mongoose
4. Design schema
5. Mongo Queries(Create and drop database,Insert, delete,update and read documents)
6. CRUD Operations.

By the end of the session, students should be able to develop RESTful Application using Node, Express and MongoDB.

Angular: 15 hours

1. React Application setup and overview on react architecture.
2. Types of components
3. Components(Child and parent components).
4. React routing.
5. Managing states and props
6. Data binding
7. Message passing between components.
8. API call from React.
9. Axios request
10. Promise, async and await functions
11. React redux integration

By the end of the session,, students should be able to develop full stack MERN projects.