

# MERN STACK

## JAVASCRIPT (ES-5 and ES-6)

- Basic JavaScript
- DOM and BOM
- Intervals and Objects
- Prototype ,Hoisting and Closure
- Let , Const , Arrow , Class and Inheritance
- Map, Filter , Reduce , Template Literals
- forEach, for-in, for-of loop.

## Typescript

- Why Typescript
- Basic Types
- Class and Interfaces
- Modules

## INTRODUCTION TO REACT JS

- What is React JS?
- What is SPA?
- DOM vs Virtual DOM
- Advantages and Disadvantages
- Key Features

## ENVIRONMENTAL SETUP

- Node | NPM
- Installation of CLI
- Setup Project
- Directory Structure
- Code Editors
- How React JS Application Boot

## BASIC FEATURES OF REACT JS

- React Concepts
- JSX and TSX
- Render Elements
- Function and Class Components
- Props and State
- Handling Events
- Dynamic Data Rendering
- Property Binding

## KEY FEATURES OF REACT JS

- Conditional Rendering
- List and Keys
- Forms Handling
- Forms Validations

## COMPONENT LIFECYCLE HOOK

- Understanding component lifecycle
- All Lifecycle Hooks

## EVENT HANDLING REACT

- Understanding React Event System
- Passing arguments to event Handlers

## NETWORK CALL

- Fetch
- Axios

## CUSTOM SERVICES

- Introduction to Services
- Building a Service

## LOCAL DATA STORAGE

- Local Storage
- Session Storage
- Cookies

## ROUTING WITH REACT ROUTER

- Setting up React Router
- Configuring route with Route Component
- Making routes dynamic with Route Params
- Working with nested routes
- Link and NavLink
- Redirect Routes

## UI COMPONENTS

- Angular Material
- PrimeNG

## INTRODUCTION TO REDUX

- Why Redux
- Install and setup
- Store ,Reducer , actions
- Dispatcher
- High order Components
- mapStateToProps and mapDispatchToProps usage

## ADVANCE REDUX

- Async Actions
- Middleware
- Redux Thunk and Redux Saga

## React Hooks

- Why We Need Hooks.
- Different Types Of Hooks
- Using State And Effect Hooks
- Usereducer , Userref Etc.
- Custom Hooks
- Rules Of Hooks

## Third Party Modules

- Social Login
- Pagination
- Search
- Filter
- JWT Token
- File Upload
- Many More

## Develop a CRUD Application in React Js

### React JS Application Deployment

- Build Application and Deployment

# Node Js

## Introduction to Node.js

- What is node.js
- A word on event loop
- Event driven architecture
- Blocking vs non-blocking code
- Node Process Model
- Setup node.js
- Node REPL
- Debugging node.js app

## Modules in JS

- Understanding exports and require
- Creating modules
- Importing modules
- Quick tour on NPM
- Installing 3rd party modules

## Events & streams

- Significance of Events
- Event Emitter class
- Emitting and listening to events
- Types of streams
- Working with streams
- Composing streams using pipe

## Working with Process and File System

- Process object
- Handling exceptions at process level
- Listening to process events
- Working with file system using fs module
- Creating, Copying, Deleting files
- Creating, Copying, Deleting directories
- Watching for file changes

## HTTP

- Building a Web Server
- HTTP Request Methods, Headers
- Response Codes and Headers

# Express Js

## Expressjs Introduction & Setup

- Building a Web Server
- HTTP Request Methods, Headers
- Response Codes and Headers
- Serving static files with express
- Express application generator

## Routing

- Route Methods
- Route Paths
- Parameterized Routes
- Route Handlers
- Express Router

## Middleware

- Types of middleware
  - Application
  - Router
  - Error
  - Built-in
  - Third-party
- Error middleware
- Body parser, cors , cookie parser, session management

## Template Engines

- What are template engines
- EJS
- Jade
- Handlebars

## Expressjs security

- Authentication
- JWT
- Securing routes
- Debugging in Express
- Realtime programming with Socket.io

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# MongoDB

## Introduction to MongoDB

- Installing MongoDB
- The current SQL/NoSQL landscape
- Document-oriented vs. other types of storage
- Mongo's featureset
- Common use-cases
- MongoDB databases
- MongoDB Collections
- MongoDB Documents

## CRUD Operations in MongoDB

- Creating documents
  - insert()
  - update()
  - save()
- Querying documents
  - find()
  - Working with equality
  - Query operators
  - Building complex queries
- Updating documents
- Deleting documents
- Limit
- Order By

## Introduction to Mongoose

- Word on ORM/ODM
- Installing mongoose
- Connecting to MongoDB from mongoose

## Core concepts of Mongoose

- Understanding mongoose schemas and datatypes
- Working with Models
- Using modifiers in schema
- Using virtual fields
- Optimizing query performance by enabling indexes

## Mern Application Deployment

- Build Application
- Deploy Project

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