

Full Stack Development MERN

Objectives

This course gives the learner a through knowledge of software development such as HTML, CSS, JavaScript, React Js, Mongo DB, Node.JS, Express.Js & REST API to build interactive web applications. This Course finishes by considering the integration of payment method and deployment of application to the cloud environment.

S.N	Title	Content
1	Pre-programming foundation	<ul style="list-style-type: none">• Computer Science Fundamentals• Problem Solving• Programming Logic and Techniques
2	Basic JavaScript Programming	<ul style="list-style-type: none">• Introduction• Variable• Data Types• Date• Math• Conditions• Function• Events• Arrays and Object• Loop• DOM and DOM Manipulation• BOM• JSON
3	ECMA Script	<ul style="list-style-type: none">• Let• Const• Map• Reduce• Filter• Arrow function• Template Literals
4	Object Oriented JavaScript	<ul style="list-style-type: none">• Class• Encapsulation• Abstraction• Reusability/inheritance• Polymorphism• Association• Aggregation• Composition
5	Async And Await	<ul style="list-style-type: none">• Callbacks

		<ul style="list-style-type: none"> • Asynchronous • Promises • Async/Await
6	Responsive Web Page	<ul style="list-style-type: none"> • HTML5 <ul style="list-style-type: none"> ♣ Heading, paragraph, list and table ♣ Img, video, audio and map ♣ form • CSS3 <ul style="list-style-type: none"> ♣ Color, margin, padding and font ♣ Background, display and opacity ♣ Position, Shadow and Box Sizing ♣ Flexbox ♣ Media query • Bootstrap
7	React Js (Redux, Axios and React Router)	<ul style="list-style-type: none"> • Components • Virtual DOM • Class and Functional Components • JSX • Props • Conditional Rendering • State Management • Lifecycle Methods • Npm • Event handling • Form handling • Hooks • React router • Server Side Rendering • Redux • Context API • Next Js (framework) • Integrating with other libraries • Connect with API • The Flux Architecture • Provider API • Dispatch Methods • Axios and its usage with REST API
8	Mongo DB (working with NoSQL)	<ul style="list-style-type: none"> • Introduction to NoSQL • Create and Drop Database • Create and Drop Collection • Data Types • Insert Document • Query Document • Update and Delete Document • Projection, Sorting and Limiting • Relationships

		<ul style="list-style-type: none"> • Aggregation and Replication • Indexing and Advance Indexing • Mongoose for Node Js
9	Node Js	<ul style="list-style-type: none"> • Simple Server • Understanding the flow of Request • Response Types –HTML,JSON • Routing • Express Introduction • Make a Call from frontend to Server • Node Core(Callbacks and Error Handling) • Understanding Node Modules • Exports and Require • Events and Events Emitter
10	Express Basic	<ul style="list-style-type: none"> • Simple Server • Routes and Responding • Sequencing Response by Routes • Small REST API Example • Static Files and Middleware • Structuring an App
11	API Development with Express	<ul style="list-style-type: none"> • Server • API Routes • Model • Controller • Middleware • JWT Authentication • Authorization • Request and Body Validation • Implementing JWT • Custom Auth Middleware and JWT Verify • Cookie • Nodemailer to send email • Express Validators • Relationship two or more Models • Mongoose • File upload using multer or any package • Test API with Postman • Understanding CORS
12	Deployment	<ul style="list-style-type: none"> • Git Repositories • Mongo DB • Heroku • The API Application • The UI Application • Proxy mode • Non-proxy
13	Project Assignment	<ul style="list-style-type: none"> • Ecommerce Application

		<ul style="list-style-type: none">• Food Delivery Application• Entertainment Application• Timeline Discussion• Weekly Progress Discussion
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