

MERN STACK WEB DEVELOPMENT

Course Title:	<ul style="list-style-type: none">• MERN STACK Web development	
Duration:	<ul style="list-style-type: none">• 5 Days	
Timings:	<ul style="list-style-type: none">• 9AM to 5PM	
No. of Students:	<ul style="list-style-type: none">• 25 students per batch	
Pre-requisites:	<ul style="list-style-type: none">• HTML, CSS , JAVASCRIPT, REACTJS, NODEJS	
Mode of Training:	<ul style="list-style-type: none">• Online	
Language:	<ul style="list-style-type: none">• Training will be delivered in Urdu language	
Training Content:	<i>First Day</i>	<p>Web Development</p> <ul style="list-style-type: none">• Overview of Web and web development• What is MERN Stack development <p>Introduction to HTML</p> <ul style="list-style-type: none">• What is HTML?• Role of HTML in web development• Tools for HTML development <p>Basic HTML Structure</p> <ul style="list-style-type: none">• Document structure.• Page title• Meta data <p>Text Formatting and Styles</p> <ul style="list-style-type: none">• Headings and paragraphs• Text formatting tags, <p>Links and Navigation</p> <ul style="list-style-type: none">• Anchor tag, <p>Image</p> <ul style="list-style-type: none">• image,• Image attributes: src, alt, width, height <p>Lists</p> <ul style="list-style-type: none">• Ordered lists () and unordered lists ()

		<p>Tables</p> <ul style="list-style-type: none"> • Basic table structure, <p>Inline Elements and Block Elements</p> <ul style="list-style-type: none"> • Understanding inline elements: • Examples: , <a>, , , • Understanding block elements: • Examples: <div>, <p>, <h1> to <h6>, <section>, <article> <p>Introduction to CSS</p> <ul style="list-style-type: none"> • What is CSS? • Role of CSS in web design <p>CSS Syntax and Selectors</p> <ul style="list-style-type: none"> • Types of selectors: • Element selectors: div, p, h1 • Class selectors: .class-name • ID selectors: #id-name • Universal selector: * <p>CSS Styling Basics</p> <ul style="list-style-type: none"> • Color: color, background-color, • Fonts: font-family, font-size, font-weight, line-height • Text styling: text-align, text-decoration, text-transform • Backgrounds: background-image, background-position, background-size <p>Layout Techniques</p> <ul style="list-style-type: none"> • Display property: block, inline, inline-block, none • Positioning: static, relative, absolute, fixed, sticky • Flexbox: • display: flex, justify-content, align-items, flex-wrap, flex-direction <p>CSS Advance</p> <ul style="list-style-type: none"> • 2D Transform: rotate, translate, scale • Transitions: property, duration, timing function and delay. • Media Queries.
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		Project Work <ul style="list-style-type: none"> Creating a portfolio or landing page
	<i>Second Day</i>	JavaScript <ul style="list-style-type: none"> Introduction to JavaScript What can JavaScript do? Basic programming constructs <ul style="list-style-type: none"> Variables Data types (Primitive and reference type) Operators and expressions Conditional Statements Functions Loops Arrays and objects <ul style="list-style-type: none"> Creating and Accessing Objects Adding, Modifying, and Deleting object Properties Working with Arrays Array Methods. Array high order methods Common string methods. Object and Array destructuring. Modern JavaScript ES6+ Features <ul style="list-style-type: none"> Template literals Rest operator and Spread operator Default vs Named Exports DOM Manipulation Asynchronous JavaScript <ul style="list-style-type: none"> Promises and Async/Await Async and await for Asynchronous Code Error handling Tasks: <ul style="list-style-type: none"> Problems related to JavaScript
	<i>Third Day</i>	Introduction to React / NextJS <ul style="list-style-type: none"> What is React? Virtual DOM & Actual DOM

		<ul style="list-style-type: none">• Setting up the environment and Installation• NextJS Overview• Understanding folder structure <p>JSX (JavaScript XML)</p> <ul style="list-style-type: none">• Writing JSX <p>Components</p> <ul style="list-style-type: none">• Functional Components• Props (Properties)• Client vs Server side component. <p>Styling in React</p> <ul style="list-style-type: none">• Inline Styles• setup Tailwind css <p>Hooks</p> <ul style="list-style-type: none">• useState• useEffect• useRef <p>Event Handling</p> <ul style="list-style-type: none">• Handling Events in React <p>Conditional Rendering</p> <ul style="list-style-type: none">• Ternary Operators• Logical AND (&&), OR (), NOT (!), Nullish(??) <p>Lists and Keys</p> <ul style="list-style-type: none">• Rendering Lists• Understanding Keys in React <p>Forms in React</p> <ul style="list-style-type: none">• Handling form inputs• Form validation <p>Project Work Creating 2 pages design with React</p>
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	<i>Fourth Day</i>	<p>APIs integration</p> <ul style="list-style-type: none"> • APIs integration Overview • Axios Library • Fake API • Fetching data • Displaying Data from APIs <p>Introduction to Node.js</p> <ul style="list-style-type: none"> • What is Node.js? • Setting up the Node.js environment <p>Introduction to Express.js</p> <ul style="list-style-type: none"> • What is Express.js? • Setting up a basic Express server • Routing in Express • Middleware <p>Understanding HTTP Basics</p> <ul style="list-style-type: none"> • HTTP methods (GET, POST, PUT, DELETE) • Request and Response objects • Status codes <p>Project Structure</p> <ul style="list-style-type: none"> • Organizing the project (MVC architecture) • Folder structure for routes, controllers, models, and configuration <p>Project Work Handling the existing design form and list</p>
	<i>Fifth Day</i>	<p>Introduction to DBMS</p> <ul style="list-style-type: none"> • Database • Concept of data modeling • Relational vs non-relational databases • Introduction to MongoDB • Setting up MongoDB compass locally • Introduction to Mongoose ODM

		<p>CRUD Operations with Mongoose</p> <ul style="list-style-type: none">• Creating records (INSERT)• Reading records (SELECT)• Updating records (UPDATE)• Deleting records (DELETE) <p>Building RESTful APIs with Express and MongoDB</p> <ul style="list-style-type: none">• Creating API endpoints for CRUD operations• Handling query parameters and request body• Sending JSON responses• Complete the project.
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