





Duration 04 months

In this course, you will learn how to build powerful, interactive web applications using React and Next.js, two of the most popular JavaScript libraries and frameworks for front-end development. Whether you're just starting out with React or looking to strengthen your existing knowledge, this course will guide you through everything you need to create dynamic and efficient user interfaces.

Following are the tools and technologies used in this course.

React JS, Next JS Framework, JavaScript, TailwindCSS, Shadon UI, MongoDB, GitHub, Vercel, VS Code

Course Conducted By

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Module 1: JavaScript Fundamentals

1. Introduction to JavaScript

- Overview of JavaScript: What it is and how it works
- Setting up the development environment
- Console and debugging basics

2. JavaScript Fundamentals

- JavaScript Versions
- JavaScript Variables
 - Global and Local Variables
 - (let, const, var)
- JavaScript Comments
- JavaScript Data Types
 - JavaScript Strings
 - JavaScript Numbers
 - JavaScript Arrays
 - JavaScript JSON
- Type Conversion and Type of
- JavaScript Functions:

- JavaScript Promise
- JavaScript Callbacks
- JavaScript Async and Await
- Arrow Functions
- JavaScript Events
- Expressions and Operators
 - Arithmetic Operators
 - Assignment Operators
 - Comparison Operators
 - Logical Operators
 - Ternary Operators
 - Bitwise Operators
- JavaScript Math
- Control Structures: Conditionals
 - If-else
 - Switch
- Control Structures: Loops
 - For loops
 - While loops
 - For In
 - For Of
 - Do While Loops
 - Break and Continue
 - JavaScript Maps
- Object Oriented Programming
 - Classes
 - Objects
 - Encapsulation
 - Inheritance
 - Polymorphism
- Object Constructor
- this Keyword
- JavaScript Arrays Methods
 - JavaScript Arrays Search
 - JavaScript Arrays Sort
 - JavaScript Arrays Iteration
- Error Handling with Try/Catch

Module 2: Version Control with Git

3. Introduction to Git

- What is a Version Control System (VCS)
- Major git providers (Github, Gitlab, Bitbucket)

4. How Git Works

- Create a new Github Repository
- Basic git commands
- Add current project to existing GitHub repository

Module 3: React.js Basics

5. Introduction to React

- What is React and why use it?
- Setting up the dev environment with Create Next App
- Next.js Project Structure
- Understanding JSX: JavaScript Syntax Extension
- Node.js Runtime and Node Package Manager (npm)
- Dependencies vs DevDependencies
- NPM Commands (Ex: npm install, npm run dev, npm run build)
- Running the project on Local Dev Server

6. React Components

- Functional vs Class Components
- Props: Passing data between components
- State Management: useState Hook
- Component Lifecycle (Intro to useEffect)
- Client vs Server Components

7. Styling with React

- CSS Modules and Inline Styles
- Config TailwindCSS properly with Next.js
- Styling with TailwindCSS

8. React Events & Forms

- Handling Events in React
- Controlled vs Uncontrolled Components
- Building Forms and Form Validation

Module 4: Advanced React.js 19 and Next.js 15

9. Component Architecture

- Component Composition and Reusability
- Lifting State Up
- Context API for State Management

10. Hooks in Depth

- useEffect: Handling Side Effects
- useContext: Managing Global State
- useState: State ManagementHook
- Custom Hooks: Building Your Own Hooks

11. Next.js App Router

- App Router and Folder Structure
- Nested Routes and Route Parameters
- Dynamic Routing
- Handling Navigation and Redirection

12. Next.js Built-in Features

- Metadata
- Browser vs Server Caching
- Static and Dynamic Rendering

13. Optimizing Performance with Next.js

- Image Optimization
- Font Optimization
- Script Optimization
- Lazy Loading

Module 5: Dealing with UI Components

14. Introduction of UI Components

- What is a UI Component Library and Its Use ?
- Importance of using Shadon Reusable UI Primitives
- Setting up Shadon with Next.js 15
- Customizing Shaden UI Primitives
- Integrating Shaden UI components with Next.js

Module 6: REST APIs and Database Integration

15. REST API Integration with Next.js

- Introduction to RESTful API's
- Retrieving Backend Data with fetch and ky
- Error Handling and Loading States
- Integrating CRUD operations with Next.js Route Handlers

16. Database Integration with Next.js

- What is a Database Management System (MySQL, MongoBD)?
- Relational Databases vs Non-Relational Databases
- Overview of MongoDB: What it is and how it works?
- Integration MongoDB with Next.js

Module 7: Authentication with Next.js

17. Authentication Basics

- Introduction to Authentication
- Next-Auth vs Better-Auth?
- Authentication Providers and Their Usage
- Integrating Auth Providers with Next.js

Module 8: Full-Stack Next.js Application

18. Finalizing Next.js Full-Stack Application

- Complete User Authentication
- Finalizing Dashboard UI
- Complete CRUD Operations with Dashboard
- Deploy Application to Vercel Hosting Platform

Students are required to submit a final web application project for evaluation as part of the course requirements

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