

# Laravel & React js - Full Stack Web App Development

## Part 1: Backend with Laravel and MVC Architecture

### 1. Introduction to Laravel

- What is Laravel?
- Features and advantages of Laravel
- Laravel ecosystem and community support

### 2. Understanding MVC Architecture

- What is MVC?
- Model, View, Controller components
- Separation of concerns
- Benefits of MVC in web development

### 3. Getting Started with Laravel

- Installing Laravel
- Laravel directory structure
- Artisan command-line interface

### 4. Routing and Controllers

- Basic routing
- Route parameters
- Controller structure and creation
- Middleware for request handling

### 5. Views and Blade Templating

- Creating views
- Blade templating syntax
- Passing data to views
- Blade directives and includes

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## 6. Database Operations with Eloquent ORM

- Introduction to Eloquent ORM
- Model creation and conventions
- CRUD operations with Eloquent
- Relationships in Eloquent

## 7. Authentication and Authorization

- Setting up authentication
- User registration and login
- Authorization with Gates and Policies
- Authentication scaffolding

## 8. Validation and Error Handling

- Form validation
- Custom validation rules
- Error handling and error messages
- Form request validation

## 9. RESTful APIs

- Introduction to RESTful APIs
- Creating API routes
- Building API controllers
- API resource transformations

## 10. Middleware and Service Providers

- Understanding middleware
- Creating custom middleware
- Service providers and dependency injection
- Registering service providers

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## Part 2: Mastering Frontend with React.js & Redux

### 1. Introduction to React.js

- What is React.js?
- Benefits of using React.js
- React.js ecosystem

### 2. Setting Up React.js Environment

- Installing Node.js and npm
- Creating a new React.js project
- Project structure

### 3. JSX and Components

- Understanding JSX syntax
- Creating functional and class components
- Component lifecycle methods
- Props and state

### 4. Handling Events and Forms

- Event handling in React.js
- Form handling and controlled components
- Handling user input

### 5. Conditional Rendering and Lists

- Conditional rendering in React.js
- Rendering lists with map()
- Keys in lists and their importance

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## 6. React Router

- Introduction to React Router
- Setting up routes in React.js
- Nested routes and route parameters
- Programmatic navigation

## 7. State Management with Redux

- Introduction to Redux
- Three principles of Redux
- Setting up Redux in a React.js application
- Actions, reducers, and the store

## 8. Advanced Redux Concepts

- Middleware in Redux
- Asynchronous actions with Redux Thunk
- Redux DevTools for debugging

## 9. Using Redux with React

- Connecting React components to Redux store
- mapStateToProps and mapDispatchToProps
- Selector functions for data retrieval

## 10. Testing and Debugging

- Testing React.js components
- Debugging React.js applications
- Using React Developer Tools

## 11. Deployment Strategies

- Building React.js for production

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- Deployment options
- Continuous integration and deployment (CI/CD)