

# **CodeIgniter PHP Framework**

**Prerequisites: Strong Knowledge of CORE PHP and OOPS concepts.**

## **Day 1: Introduction to CodeIgniter and Basic Setup**

- Overview of CodeIgniter
- Features and benefits
- Understanding MVC architecture
- Installing XAMPP/WAMP/MAMP
- Downloading and installing CodeIgniter
- Configuring the CodeIgniter framework
- Understanding the directory structure
- Configuring base URL and autoload
- Setting up database configurations
- Creating a basic controller
- Creating views and models
- Understanding routing in CodeIgniter

### **Lab 1: Basic Setup and First Application**

- Set up the CodeIgniter environment
- Create a simple application with a controller, view, and model
- Configure routes and test the application

## **Day 2: Working with Controllers, Views, and Models**

- Creating and using controllers
- Passing data to views
- Loading models and helpers in controllers
- Creating and loading views
- Passing data to views
- Using view templates and partials
- Creating and using models
- Performing database operations with models
- Loading models in controllers
- Using built-in helpers and libraries
- Loading and using custom helpers and libraries
- Understanding and using form and URL helpers

### **Lab 2: Controllers, Views, and Models**

- Create controllers, views, and models for a sample application
- Pass data between controllers and views
- Use helpers and libraries in the application

## **Day 3: Database Operations and Form Handling**

- Configuring database settings
- Connecting to a database
- Running basic SQL queries
- Using Active Record for database operations
- Performing CRUD operations
- Query binding and result handling
- Creating and processing forms
- Form validation rules
- Displaying validation errors
- Working with sessions in CodeIgniter
- Setting and retrieving session data
- Flash data and its usage

### **Lab 3: Database Operations and Forms**

- Set up a database and configure CodeIgniter to use it
- Perform CRUD operations using Active Record
- Create and validate forms, manage sessions

### **Day 4: Advanced Features and Security**

- Uploading files
- Validating file types and sizes
- Manipulating images using Image Manipulation library
- Configuring email settings
- Sending emails with CodeIgniter
- Using email templates
- Data sanitization and validation
- Preventing SQL injection and XSS
- Using CSRF protection
- Creating a user authentication system
- Login and registration processes
- Protecting routes with authentication

### **Lab 4: Advanced Features and Security**

- Implement file upload and image manipulation
- Configure and send emails using CodeIgniter
- Implement user authentication and secure the application

### **Day 5: Testing, Optimization, and Deployment**

- Introduction to unit testing
- Writing and running unit tests
- Using PHPUnit with CodeIgniter
- Caching strategies

- Database optimization techniques
- Minimizing and compressing assets
- Configuring error logging
- Handling exceptions
- Debugging techniques and tools
- Preparing the application for deployment
- Deploying to a web server
- Best practices for CodeIgniter development

#### **Lab 5: Final Project**

- Implement a comprehensive application with all learned features
- Perform testing and optimisation
- Deploy the application.