

# **PHP Laravel Framework**

**Prerequisite: Strong knowledge of CORE PHP and OOPS concepts.**

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

- Overview of Laravel Framework
- Key features and benefits
- Comparison with other PHP frameworks
- Installing PHP and Composer
- Installing Laravel via Composer
- Creating a new Laravel project
- Understanding the project directory structure
- Configuring environment variables
- Overview of Artisan command-line tool
- Basic routing concepts
- Defining routes in web.php
- Route parameters and constraints

### **Lab 1: Setting Up a Laravel Project**

- Setting up a new Laravel project
- Exploring the directory structure
- Defining basic routes and running the development server

## **Day 2: Controllers, Views, and Blade Templating**

- Creating controllers using Artisan
- Understanding controller actions
- Route-Controller integration
- Introduction to Blade
- Creating and rendering views
- Template inheritance and sections
- Passing data from controllers to views
- Using Blade directives
- Creating and using Blade components
- Building layouts with Blade

### **Lab 2: Building a Simple Web Application**

- Creating controllers and views
- Passing data to views and rendering content
- Using Blade to create reusable templates and layouts

## **Day 3: Working with Databases and Eloquent ORM**

- Overview of Eloquent ORM
- Configuring the database connection

- Creating and migrating database tables
- Creating models using Artisan
- Defining relationships (one-to-one, one-to-many, many-to-many)
- Retrieving data using Eloquent
- Query scopes and aggregates
- Creating and running migrations
- Seeding the database with test data

### **Lab 3: Building a CRUD Application**

- Creating and migrating database tables
- Defining models and relationships
- Implementing CRUD operations (Create, Read, Update, Delete) using Eloquent

### **Day 4: Forms, Validation, and Authentication**

- Creating and processing forms
- CSRF protection
- Using Laravel's validation rules
- Custom validation messages and rules
- Setting up Laravel Breeze or Laravel Jetstream for authentication
- User registration and login
- Implementing roles and permissions
- Protecting routes and views based on roles

### **Lab 4: Creating and Validating Forms**

- Creating forms for user input
- Implementing validation and displaying error messages
- Setting up user authentication and role-based access control

### **Day 5: Advanced Topics and Final Project**

- Understanding middleware
- Creating and using custom middleware
- Introduction to Laravel events and listeners
- Broadcasting events with Laravel Echo
- Setting up task scheduling with Cron
- Using queues for background processing
- Preparing a Laravel application for deployment
- Configuring environment-specific settings
- Best practices for Laravel development

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

- Integrating all learned concepts into a final project
- Implementing advanced features such as events, queues, and middleware
- Preparing the application for deployment
- Final review and Q&A