KOENIG SOLUTIONS · COURSE OUTLINE

Symfony: Doctrine ORM, Twig & Forms

Learn to build web applications with Symfony, using routing, Twig templates, forms, Doctrine ORM and security features.

5 Days	45	15
DURATION	TOPICS	HANDS-ON ACTIVITIES

COURSE OVERVIEW

This course covers the Symfony framework, starting with project setup, directory structure and Symfony components. It then moves through routing, controllers and Twig templates, followed by building and validating forms, including file uploads. It covers database interaction with Doctrine ORM, including entities, migrations, DQL and the repository pattern, before finishing with security, services, the event system and caching.

WHO THIS COURSE IS FOR

- **PHP Developers**
- **Web Developers**
- **Back-End Developers**
- **Software Engineers**
- **Full-Stack Developers**

PREREQUISITES

- Strong Knowledge of CORE PHP and OOPS Concepts

LEARNING OBJECTIVES

- Describe the Symfony framework and its core components
- Configure a new Symfony project and its directory structure
- Define routes and build controllers with dependency injection
- Create Twig templates using inheritance, filters and functions
- Build and validate forms, including file uploads
- Map entities to database tables using Doctrine ORM
- Apply DQL and the Query Builder to retrieve data
- Implement authentication, services, event listeners and caching

COURSE SYLLABUS

45 Topics

DAY 1 Introduction to Symfony and Basic Setup

TOPICS

3 Activities

- Overview of Symfony Framework
- Key features and benefits
- Comparison with other PHP frameworks
- Installing PHP and Composer
- Installing Symfony CLI
- Creating a new Symfony project
- Understanding the project directory structure
- Configuring environment variables
- Overview of Symfony Flex
- Introduction to Symfony components
- Using Symfony components in projects

DAY 2 Routing, Controllers, and Templates

TOPICS

3 Activities

- Understanding Symfony routing
- Defining routes in YAML, annotations, and PHP files
- Creating controllers
- Understanding controller actions
- Dependency injection in controllers
- Introduction to Twig
- Creating and rendering templates
- Template inheritance and blocks
- Rendering dynamic content
- Using Twig filters and functions

DAY 3 Forms and Validation

TOPICS

3 Activities

- Introduction to Symfony forms
- Creating form types and rendering forms
- Handling form submissions
- Validating form data
- Custom form fields and types
- Dynamic forms and form events
- Implementing file uploads
- Validating and processing uploaded files

DAY 4 Database Interaction and Doctrine ORM

TOPICS

3 Activities

- Overview of Doctrine ORM
- Setting up Doctrine in Symfony
- Creating entity classes
- Mapping entities to database tables
- Generating and running migrations
- Updating database schema
- Using Doctrine Query Language (DQL)
- Query Builder and Repository pattern

DAY 5 Advanced Topics and Project

TOPICS

3 Activities

- Configuring security in Symfony
- Implementing user authentication and authorization
- Creating and using services
- Understanding the service container and dependency injection
- Introduction to Symfony event system
- Creating and registering event listeners and subscribers
- Using Symfony Cache component
- Optimizing application performance

HANDS-ON ACTIVITIES

Practise What You Learn

MODULE	ACTIVITY
Introduction to Symfony and Basic Setup	**LAB 1: CREATING YOUR FIRST SYMFONY PROJECT** ■ Setting up a new Symfony project ■ Exploring the directory structure ■ Running the Symfony development server
Routing, Controllers, and Templates	**LAB 2: BUILDING A SIMPLE WEB APPLICATION** ■ Defining routes and creating controllers ■ Passing data to templates and rendering views ■ Using Twig to create reusable templates
Forms and Validation	**LAB 3: CREATING AND VALIDATING FORMS** ■ Creating a complex form with multiple fields ■ Implementing validation rules ■ Handling form submissions and displaying validation errors
Database Interaction and Doctrine ORM	**LAB 4: BUILDING A CRUD APPLICATION** ■ Creating entities and database tables ■ Implementing CRUD operations (Create, Read, Update, Delete) ■ Using forms and templates to manage data
Advanced Topics and Project	**LAB 5: FINAL PROJECT** ■ Integrating all learned concepts into a final project ■ Implementing user authentication and authorization ■ Adding caching and performance optimizations

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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