

PHP Developer: OOP, MySQL/PDO & REST APIs

Learn to build PHP applications with OOP, MySQL/PDO, sessions, and RESTful APIs, from setup to deployment.

5 Days

DURATION

75

TOPICS

19

HANDS-ON ACTIVITIES

COURSE OVERVIEW

This course begins with PHP fundamentals, environment setup, control structures, arrays, functions, and form handling. It then covers database interaction with MySQL and PDO, sessions, cookies, file handling, and Doctrine ORM, followed by object-oriented programming including classes, inheritance, interfaces, traits, and exception handling. It concludes with consuming and building RESTful APIs, securing applications against common vulnerabilities, unit testing with PHPUnit, debugging, and preparing a project for deployment with version control.

WHO THIS COURSE IS FOR

PHP Developers

Web Developers

Backend Developers

Database Developers

API Developers

PREREQUISITES

- Knowledge of Programming (Any Language)

LEARNING OBJECTIVES

- Explain PHP syntax, data types, and control structures
- Configure a local PHP and Apache development environment
- Apply array and string functions to manipulate data
- Validate and sanitize user input from forms and superglobals
- Implement database operations using MySQL and PDO
- Manage sessions, cookies, and file handling in PHP
- Design classes and objects using OOP principles in PHP
- Develop RESTful APIs and secure them against common vulnerabilities

75 Topics

DAY 1 PHP Fundamentals and Environment Setup

TOPICS

3 Activities

- Overview of PHP
- PHP versions and history
- Role of PHP in web development
- Installing XAMPP/WAMP/MAMP
- Setting up a local server
- Configuring PHP and Apache
- PHP syntax and tags
- Variables and data types
- Echo and print statements
- Conditional statements (if, else, elseif, switch)
- Looping statements (for, while, do-while, foreach)

DAY 2 Working with Data and Functions

TOPICS

3 Activities

- Indexed arrays
- Associative arrays
- Multidimensional arrays
- String functions
- Regular expressions
- Handling and validating user input
- Defining and calling functions
- Function parameters and return values
- Variable scope and global variables
- Understanding superglobals (\$_GET, \$_POST, \$_SESSION, \$_COOKIE)
- Handling form data
- Validating and sanitizing user input

DAY 3 Working with Databases and Sessions

TOPICS

7 Activities

- Setting up a MySQL database
- Using PHPMyAdmin for database management
- Basic SQL commands (SELECT, INSERT, UPDATE, DELETE)
- Connecting to a database with PDO
- Executing SQL queries with PDO
- Prepared statements and parameter binding
- Understanding sessions
- Starting and managing sessions
- Setting and retrieving cookies
- Reading and writing files
- File functions (fopen, fread, fwrite, fclose)
- File upload handling
- Setting up Doctrine ORM
- Defining entities and relationships
- Using the QueryBuilder
- Advanced DQL (Doctrine Query Language)
- Indexing and query optimization
- Caching strategies

TOPICS

3 Activities

- Advanced array functions (array_map, array_filter, array_reduce)
- Sorting arrays (usort, uasort, ksort)
- Regular expressions in PHP
- Using preg_match, preg_replace, and preg_split
- Using json_encode and json_decode
- Working with serialize and unserialize
- Classes and objects
- Properties and methods
- Constructors and destructors
- Inheritance and polymorphism
- Interfaces and abstract classes
- Traits and namespaces
- Using try-catch blocks
- Custom exception handling
- Error reporting and logging
- Designing classes and objects
- Implementing OOP principles in a project
- Refactoring code to use OOP

TOPICS

3 Activities

- Consuming RESTful APIs
- Using cURL to make API requests
- Parsing JSON responses
- Creating RESTful routes in PHP
- Handling different HTTP methods (GET, POST, PUT, DELETE)
- Implementing API key-based authentication
- Using OAuth for secure API access
- Data validation and sanitization
- Preventing SQL injection
- XSS and CSRF protection
- Using PHPUnit for unit testing
- Debugging techniques and tools
- Profiling PHP applications
- Preparing an application for deployment
- Using version control (Git)
- Best practices for PHP development

Practise What You Learn

MODULE	ACTIVITY
PHP Fundamentals and Environment Setup	LAB 1: SETTING UP AND WRITING BASIC SCRIPTS ■ Setting up the development environment ■ Writing basic PHP scripts ■ Using control structures in simple programs
Working with Data and Functions	LAB 2: DATA HANDLING AND FUNCTIONS ■ Creating and manipulating arrays ■ Writing functions for various tasks ■ Handling form submissions and validating input
Working with Databases and Sessions	LAB 3: DATABASE INTERACTION AND SESSIONS ■ Setting up and interacting with a MySQL database ■ Using PDO for database operations ■ Implementing sessions and handling files ■ Writing complex SQL queries and optimizing them ■ Setting up Doctrine ORM and defining entities ■ Performing advanced queries with Doctrine ■ Implementing caching for database queries
Object-Oriented Programming (OOP) in PHP	LAB 4: OBJECT-ORIENTED PROGRAMMING ■ Creating and using classes and objects ■ Implementing inheritance and interfaces ■ Building a simple application using OOP
Advanced Topics and Project Deployment	LAB 5: FINAL PROJECT ■ Building a comprehensive PHP application ■ Implementing security measures ■ Deploying the application to a live server

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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