

# **Advanced PHP Developer**

**Prerequisites: Strong Knowledge of PHP Programming**

## **Day 1: Advanced PHP Features and Best Practices**

- PHP 7+ new features overview (e.g., anonymous classes, scalar type declarations, return type declarations)
- PHP 8 new features (e.g., match expressions, JIT compiler, union types, named arguments)
- Custom error handlers
- Exception hierarchy and best practices
- Handling fatal errors and shutdown functions
- Advanced pattern matching
- Lookaheads and lookbehinds
- Complex validation examples
- Coding standards and PSR guidelines
- Design principles (SOLID)
- Code refactoring techniques

### **Lab 1: Implementing Advanced Features**

- Utilizing new PHP 7+ and 8 features in a sample project
- Creating custom error handlers and handling complex exceptions
- Writing complex regular expressions for data validation

## **Day 2: In-Depth Object-Oriented Programming (OOP)**

- Traits and late static bindings
- Namespaces and autoloading
- Abstract classes and interfaces
- Singleton, Factory, Strategy, and Observer patterns
- Practical implementation of design patterns
- Principles of dependency injection
- Creating and using a dependency injection container
- Using the Reflection API
- Dynamically invoking classes and methods
- Analyzing and modifying classes at runtime

### **Lab 2: Advanced OOP and Design Patterns**

- Implementing and using traits and late static bindings in a project
- Applying design patterns to solve real-world problems
- Creating a dependency injection container and using reflection

## **Day 3: Advanced Database Interaction and ORM**

- Writing complex SQL queries
- Transactions, indexing, and query optimization
- Advanced relationships and mappings

- Using Doctrine migrations
- Optimizing database queries with Doctrine
- Implementing caching strategies (e.g., Redis, Memcached)
- Introduction to NoSQL databases
- Integrating MongoDB with PHP

### **Lab 3: Advanced Database Operations**

- Writing and optimizing complex SQL queries
- Using Doctrine for advanced ORM operations
- Implementing caching and using a NoSQL database

### **Day 4: Web Services, APIs, and Asynchronous PHP**

- Building RESTful APIs with Laravel/Lumen
- Implementing GraphQL APIs
- Advanced cURL techniques
- Handling API rate limiting and errors
- Introduction to asynchronous programming
- Using ReactPHP and Swoole for async tasks
- Implementing WebSockets with Ratchet
- Building real-time applications

### **Lab 4: Building and Consuming APIs**

- Developing a RESTful API with advanced features
- Consuming and handling external APIs
- Creating a real-time application with WebSockets

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

- Advanced techniques for preventing SQL injection, XSS, CSRF
- Securing APIs and handling authentication/authorization
- Writing unit tests with PHPUnit
- Mocking and stubbing dependencies
- Test-driven development principles
- Setting up CI/CD pipelines with Jenkins/GitHub Actions
- Automating testing and deployment processes
- Profiling PHP applications with Xdebug and Blackfire
- Code optimization techniques
- Implementing advanced caching strategies

### **Lab 5: Final Project and Best Practices**

- Integrating security features in a web application
- Writing and running comprehensive tests
- Setting up a CI/CD pipeline and optimizing performance