<?php ?>

PHP 8.x EDITION

PHP Programming Mastery

The Complete Beginner to Expert Guide

Modern PHP 8 · OOP · MySQL & PDO · Security · APIs · Laravel · 10 Real Projects



WRITTEN BY
Suman Biswas

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PHP Programming Mastery

The Ultimate Beginner to Expert Guide to Modern PHP Development

Suman Biswas

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Beginner ➜ Intermediate ➜ Advanced ➜ Expert

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PHP Programming Mastery

The Ultimate Beginner to Expert Guide to Modern PHP Development

Author: **Suman Biswas**
Publisher: Amazebazaar.com · https://amazebazaar.com

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Every effort has been made to make the code and information accurate at the time of writing. The author and publisher accept no liability for loss or damage caused by the use of this material. Always test code in a safe environment before deploying it to production, and consult the official documentation for the version you use.

Code in this book targets PHP 8.2 and later (most examples run on PHP 8.0+).

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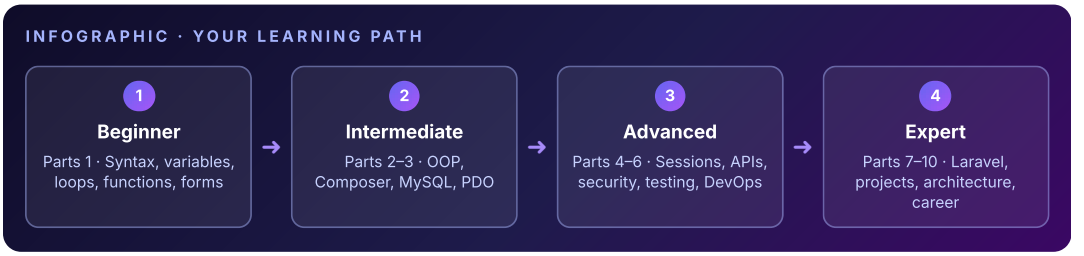
WELCOME

How to Use This Book

This book takes you from your very first `echo "Hello"` to designing secure, scalable PHP applications and shipping them to production. It is organised as a staircase: every chapter assumes only what came before it.



What every chapter contains

◎ Learning Objectives
What you will be able to do by the end.

☕ Real-World Analogy
An everyday picture that makes the idea stick.

▣ Infographics & Diagrams
Flows, architectures and comparison charts.

⌨ Example Cards
Code with explanation, output, why it works, a common mistake, a better version, and performance, security and best-practice notes.

◈ Interview Questions
The questions employers actually ask, with model answers.

? MCQ Quiz
Self-check with an answer key.

✎ Exercise & ⚙ Mini Project
Practice that turns reading into skill.

☰ Summary, Key Points, Tips
Best practices, common mistakes and tricks to revise fast.

Conventions

Dark code panels hold PHP, SQL or terminal commands; green-on-navy panels show **output**. Inline code looks like `$variable`. Each callout colour has a meaning: red means a mistake or danger, green means a best practice, amber means an analogy and cyan means a tip.

★ Learn by typing

Do not copy and paste. Type every example, run it, then change one thing and predict the result before running it again. That habit is the fastest route from reader to developer.

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Table of Contents

Part 1 Getting Started ..... Page 8

Chapter 1 Introduction to PHP ..... Page 9
Chapter 2 Installing Your Development Environment ..... Page 17
Chapter 3 Your First PHP Program ..... Page 25
Chapter 4 Variables, Data Types and Scope ..... Page 32
Chapter 5 Operators ..... Page 41
Chapter 6 Control Statements and Loops ..... Page 48
Chapter 7 Functions ..... Page 55
Chapter 8 Arrays ..... Page 62
Chapter 9 Strings and Regular Expressions ..... Page 68
Chapter 10 Forms and User Input ..... Page 74

Part 2 Object-Oriented PHP ..... Page 80

Chapter 11 Classes and Objects ..... Page 81
Chapter 12 Inheritance, Polymorphism, Encapsulation, Abstraction and Interfaces ..... Page 88
Chapter 13 Traits, Namespaces, Autoloading and Composer ..... Page 94
Chapter 14 Dependency Injection and Design Patterns ..... Page 102

Part 3 Databases with MySQL and PDO ..... Page 109

Chapter 15 MySQL and SQL Fundamentals ..... Page 110
Chapter 16 PDO, Prepared Statements and Transactions ..... Page 117
Chapter 17 Relationships, Indexes, Optimisation and Database Security ..... Page 125

Part 4 Advanced PHP ..... Page 132

Chapter 18 Sessions and Cookies ..... Page 133
Chapter 19 Authentication, Authorization and Password Hashing ..... Page 138
Chapter 20 File Uploads, Image Processing and Email ..... Page 144
Chapter 21 REST APIs, JSON, XML, cURL, Webhooks and JWT ..... Page 151
Chapter 22 Caching, Logging, Error Handling and Performance ..... Page 160

Part 5 Security ..... Page 168

Chapter 23 Web Attacks and How to Stop Them ..... Page 169
Chapter 24 Defensive Engineering ..... Page 176

Part 6 Modern PHP Engineering ..... Page 183

Chapter 25 PSR Standards, MVC, SOLID and Clean Code ..... Page 184
Chapter 26 Testing with PHPUnit ..... Page 192
Chapter 27 Git, GitHub, Docker, Deployment and CI/CD ..... Page 198

Part 7 Laravel Introduction ..... Page 205

Chapter 28 Laravel Foundations ..... Page 206

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Chapter 29 Eloquent, Migrations, Authentication, APIs and Deployment Page 215

Part 8 Real Projects Page 224

How the Projects Are Built Page 225
Project 1 Student Management System Page 228
Project 2 Blog CMS Page 234
Project 3 Authentication System Page 238
Project 4 Inventory Management System Page 242
Project 5 Employee Portal Page 245
Project 6 E-Commerce Website Page 249
Project 7 Shopping Cart Page 255
Project 8 Online Book Store Page 259
Project 9 REST API Backend Page 262
Project 10 Complete Admin Dashboard Page 266

Part 9 Expert Topics Page 271

Chapter 30 Application Architecture Page 272
Chapter 31 Queues, Events, Redis and WebSockets Page 278
Chapter 32 Microservices, Scaling, Performance and Security Auditing Page 284

Part 10 Career Guide Page 293

Chapter 33 Portfolio, Resume and GitHub Page 294
Chapter 34 PHP Interview Questions Page 297
Chapter 35 100 Coding Challenges Page 302
Chapter 36 Freelancing, Remote Jobs, Salaries and Your Roadmap Page 308

Appendix Special Appendix Page 312

PHP Syntax Cheat Sheet Page 313
Functions Cheat Sheet Page 314
Array Cheat Sheet Page 315
String Cheat Sheet Page 316
PDO Cheat Sheet Page 317
Security Checklist Page 318
Coding Standards Page 319
Error Codes and Messages Page 320
HTTP Status Codes Page 323
Keyboard Shortcuts Page 325
Useful VS Code Extensions Page 326
Composer Commands Page 327
Laravel Artisan Commands Page 328
php.ini Guide Page 329
Deployment Checklist Page 331
Glossary Page 332

End Of Book Final Exam and Certification Page 337

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Final Exam: Section A ..... Page 338
Final Exam: Section B ..... Page 343
Final Exam: Section C ..... Page 348
Final Exam: Section D ..... Page 353
Practical Assignments ..... Page 358
Certification Challenge ..... Page 359
100 Mini Coding Challenges ..... Page 360
Capstone Project ..... Page 363
Resources ..... Page 365
Conclusion ..... Page 367
About the Author ..... Page 368
Copyright Notice ..... Page 369

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PART 1

Getting Started

Install your tools, write your first scripts and master the core language: variables, operators, control flow, functions, arrays, strings and forms.

```
<?php /* Getting Started */ ?>
```

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CHAPTER 1

Introduction to PHP

What PHP is, where it came from, and how it turns a request into a web page

Learning Objectives

- Explain what PHP is and why it still powers most of the web
- Describe PHP's history and the major version milestones
- Trace a request from the browser to the PHP engine and back
- Identify real-world use cases and career paths for PHP developers

What Is PHP?

PHP (a recursive acronym for *PHP: Hypertext Preprocessor*) is an open-source, general-purpose scripting language designed for building websites and web applications. PHP code runs **on the server**. The visitor never sees your PHP source; they only receive the HTML, JSON or file that your script produces.

That single idea is the key to everything in this book. A browser speaks HTML, CSS and JavaScript. A server running PHP can read databases, check passwords, send email, process payments and then *generate* the HTML the browser needs, fresh for every visitor.

According to W3Techs' 2026 surveys, PHP runs roughly **seven out of every ten websites** whose server-side language is known. That includes WordPress, which powers a large share of all websites on its own, plus Laravel, Symfony, Drupal, Magento and Moodle applications.

Real-World Analogy

Think of a restaurant. The **browser** is the customer at the table. The **web server** (Apache or Nginx) is the waiter who takes the order. **PHP** is the chef in the kitchen: it reads the recipe (your code), fetches ingredients from the pantry (the database) and plates a finished dish (HTML). The customer never walks into the kitchen and never sees the recipe; they only get the meal.

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A Short History of PHP

TIMELINE · From personal tool to web workhorse

- **1994** Rasmus Lerdorf writes a set of C programs to track visitors to his online résumé: "Personal Home Page Tools".
- **1995** PHP Tools 1.0 is released publicly.
- **1998** **PHP 3**: Andi Gutmans and Zeev Suraski rewrite the parser and the name becomes *PHP: Hypertext Preprocessor*.
- **2000** **PHP 4** introduces the Zend Engine and sessions.
- **2004** **PHP 5** brings a real object model, PDO and exceptions.
- **2015** **PHP 7** roughly doubles performance and adds scalar type declarations and return types. (PHP 6 was abandoned.)
- **2020** **PHP 8.0**: JIT compiler, named arguments, `match`, union types, attributes, nullsafe operator.
- **2021** **PHP 8.1**: enums, readonly properties, fibers, first-class callables.
- **2022–23** **8.2** readonly classes, DNF types · **8.3** typed class constants, `json_validate()`.
- **2024** **PHP 8.4**: property hooks, asymmetric visibility, `array_find()`.
- **2025** **PHP 8.5**: pipe operator `|>`, URI extension, clone-with, `array_first()` / `array_last()`.
- **2026** **PHP 8.6** (19 Nov): partial function application, `clamp()`, readonly property defaults.

PHP now ships a new feature release every November. Each release gets two years of active support and then security fixes only. **Always build new projects on a supported version.** This book's code targets PHP 8.2 and later.

Key Features of PHP

Why developers choose PHP

Server-side execution
Your code and secrets stay on the server; only output reaches the visitor.

Easy to start
Drop a `.php` file on almost any host and it runs. No build step needed.

Huge ecosystem
Composer and Packagist give you hundreds of thousands of ready-made packages.

Database friendly
First-class support for MySQL, MariaDB, PostgreSQL, SQLite and more through PDO.

Modern language
Strict types, enums, attributes, readonly objects, closures and a JIT compiler.

Cheap hosting
Shared hosting, VPS, cloud and containers all support PHP out of the box.

Mature frameworks
Laravel, Symfony, CodeIgniter, Slim, plus CMSs like WordPress and Drupal.

Cross-platform
Runs on Linux, Windows and macOS, with Apache, Nginx, Caddy or its built-in server.

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