
Learning OOP in PHP

A collection of resources to learn object-oriented programming and related concepts for PHP developers. Please see CONTRIBUTING for details and contribute. ;)

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Tutorials

OOP Fundamentals

Object-oriented programming fundamentals tutorials.

- Object Introduction (►) - An introduction about objects and related concepts.
- Intro To Object Associations (►) - An introduction about object associations.
- Object-Oriented Programming (►) - An introduction about object-oriented programming in general.
- Getting Started with OOP in PHP (►) - Object-oriented programming introduction in PHP.
- Beginning OOP in PHP (►) - Another object-oriented programming introduction in PHP.
- Intermediate OOP in PHP (►) - Intermediate concepts about object-oriented programming in PHP.
- PHP OOP Tutorials (►) - Tutorials about OOP, Design Patterns and MVC.
- PHP Object Oriented Programming Fundamentals (►\$) - An introduction course about object-oriented programming in PHP.
- OOP Official PHP Reference - PHP official reference about object-oriented programming.
- Object-Oriented PHP for Beginners - A tutorial about OOP in PHP for beginners.

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- Introduction to OOP Concepts and More - A tutorial about OOP and an introduction to UML and Design Patterns.
 - From Procedural to Object Oriented PHP - A tutorial from procedural to object-oriented programming in PHP.
 - OOP vs Procedural Code - Difference between OOP and procedural code.

OOP Advanced

Object-oriented programming advanced tutorials.

- What Are Abstract Classes? - A tutorial explaining abstract classes in PHP.
- Abstract Classes and Interfaces (►) - Introduction about abstract classes and interfaces.
- When should I code to an Interface? - A tutorial explaining what is and when to use interfaces in PHP.
- Understanding and Applying Polymorphism in PHP - A tutorial explaining about abstract classes, interfaces and polymorphism in PHP.
- Inheritance and Polymorphism Concepts (►) - An introduction about inheritance and polymorphism.
- Beyond Inheritance - A tutorial explaining what is inheritance and its types.
- The Clean Code Talks - Inheritance, Polymorphism, & Testing (►) - A tutorial about polymorphism and how it affects testing.
- PHP Namespaces Explained - A tutorial explaining how namespaces works in PHP.
- PHP Namespaces - A tutorial explaining what is and how namespaces works in PHP.
- PHP Namespaces in 120 Seconds Tutorial (►) - A 120 seconds long tutorial explaining what is and how to use namespaces in PHP.
- PSR-Huh? - An introduction about PSR standards.
- Autoloading in PHP and the PSR-0 Standard - An introduction about what is autoloading in PHP and the PSR-0 standard.
- Battle of the Autoloaders: PSR-0 vs. PSR-4 - A tutorial explaining the difference between PSR-0 and PSR-4 autoloader standards.
- PSR-4 Autoloading (►\$) - A tutorial explaining PSR-4 autoloader standard.
- How Static Works in PHP (►) - An introduction on how static members work in PHP.
- When to Use Static Methods - A tutorial explaining when to use static methods in PHP.
- PHP Exceptions - An introduction about exceptions in PHP.
- When should you use an Exception? - A tutorial explaining when to use exceptions in PHP.
- Error Handling in PHP - An introduction about error handling in PHP and exceptions.
- What are PHP Magic Methods? - A tutorial explaining what is magic methods and examples on how to use them in PHP.

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- Magic Methods and Predefined Constants in PHP - A tutorial about magic methods and predefined constants in PHP.
 - What are PHP Traits? - A tutorial explaining what is and how to use traits in PHP.
 - Using Traits in PHP 5.4 - Another tutorial explaining what is and how to use traits in PHP.
 - The PHP Reflection API (►) - A tutorial explaining the PHP Reflection API.
 - What is Reflection in PHP? - A tutorial explaining what is, when to use and some samples about reflection in PHP.
 - Reflection in PHP - Another tutorial about reflection in PHP.
 - UML 2.0 Tutorial (►) - An introduction tutorial about UML.
 - UML - Another introduction tutorial about UML.
 - Composer Primer - A complete tutorial about what is and how to use Composer.
 - Easy Package Management With Composer - An introduction about Composer.
 - Better Workflow in PHP With Composer, Namespacing, and PHPUnit - An introduction tutorial explaining how to use Composer, namespaces and PHPUnit in a PHP project.
 - PHP Testing Basics (►) - An introduction about tests in PHP.
 - Test-Driven PHP in Action (►\$) - An introduction about test-driven development in PHP.
 - OOP in PHP With Tests (►\$) - A tutorial about OOP in PHP with tests.
 - Introduction to PhpDoc - An introduction about code documentation in PHP.
 - PHP & Enums (►) - An introduction about enums in PHP.
 - Type Hinting in PHP - An introduction about type hinting in PHP.
 - Introduction to Static and Dynamic Typing - A tutorial explaining static and dynamic typing in programming.
 - Annotations in PHP: They Exist! (►) - An introduction to annotations in PHP.

Object-Oriented Design

Object-oriented design tutorials.

- Object-Oriented Design in PHP (►\$) - An introduction to object-oriented design in PHP.
- Object Oriented Design Cheat Sheet - A cheat sheet about object-oriented design.
- Principles Of Object Oriented Design - An introduction to some principles about object-oriented design.
- Foundations Of OO Design - Some thoughts about object-oriented design.
- How to Write Code That Embraces Change - An introduction to OOD principles like cohesion, orthogonality, coupling, SOLID and others.
- Build seven good object-oriented habits in PHP - A tutorial about good habits in OOP in PHP.
- 3 Key Software Principles You Must Understand - An introduction to DRY, KISS and YAGNI principles.

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- From STUPID to SOLID Code! - An introduction to SOLID principles.
 - Don't be STUPID: GRASP SOLID! - An introduction to SOLID principles in PHP.
 - Don't Be Stupid, Grasp Solid - Slides - An introduction to SOLID and other OOD principles in PHP.
 - The SOLID Principles - A series of tutorials about SOLID principles in PHP.
 - The Single Responsibility Principle - An introduction to Single Responsibility Principle in PHP.
 - The Open/Closed Principle - An introduction to Open/Closed Principle in PHP.
 - Constructors and Breaking the Liskov Substitution Principle - An introduction to Liskov Substitution Principle in PHP.
 - Inversion of Control – The Hollywood Principle - An introduction to Inversion of Control Principle in PHP.
 - The Dependency Inversion Principle - An introduction to Dependency Inversion Principle in PHP.
 - SRP: The Single Responsibility Principle - An article explaining the Single Responsibility Principle.
 - The Open-Closed Principle - An article explaining the Open/Closed Principle.
 - The Liskov Substitution Principle - An article explaining the Liskov Substitution Principle.
 - The Interface Segregation Principle - An article explaining the Interface Segregation Principle.
 - The Dependency Inversion Principle - An article explaining the Dependency Inversion Principle.
 - Inversion of Control Containers and the Dependency Injection Pattern - An article about Inversion of Control Containers and the Dependency Injection Pattern.
 - DIP in the Wild - An article about Dependency Inversion Principle.
 - Reducing Coupling - An article about reducing coupling.
 - Tell Don't Ask - An introduction to Tell Don't Ask principle.
 - Introduction to the Law of Demeter - An introduction to the Law of Demeter.
 - You Aren't Gonna Need It - An introduction to YAGNI principle.
 - Premature Optimization - An introduction to Premature Optimization anti-pattern.
 - Primitive Obsession - An introduction to Primitive Obsession anti-pattern.
 - God Class - An introduction to God Class anti-pattern.
 - Object Calisthenics - An introduction to Object Calisthenics.
 - Your code sucks, let's fix it! - An introduction to Object Calisthenics in PHP.
 - Domain-Driven Design - An introduction to Domain-Driven Design.
 - The Null Object Pattern - Polymorphism in Domain Models - An introduction to the Null Object Pattern in PHP.
 - An Introduction to Services - An introduction to Services in PHP.
 - Evolving Toward a Persistence Layer - An introduction to Persistence Layer implementation in PHP.
 - Building a Domain Model – An Introduction to Persistence Agnosticism and Building a Domain Model – Integrating Data Mappers - A tutorial about creating a Domain Model in PHP.

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- Handling Collections of Aggregate Roots – the Repository Pattern - An introduction to the Repository Pattern in PHP.
 - Value Objects - An introduction to Value Objects in PHP.
 - What is the difference between Entities and Value Objects? - A tutorial explaining the difference between Entities and Value Objects.
 - What's the difference between Active Record and Data Mapper? - A tutorial explaining the difference between Active Record and Data Mapper patterns.
 - Managing Class Dependencies: An Introduction to Dependency Injection, Service Locators, and Factories, Part 1 and Managing Class Dependencies: An Introduction to Dependency Injection, Service Locators, and Factories, Part 2 - An introduction to Dependency Injection, Service Locators and Factories.
 - Money Pattern: The Right Way to Represent Value-Unit Pairs - An introduction to the Money Pattern in PHP.
 - Working with Money and Currency in PHP - A tutorial about how to work with Money and Currency in PHP.
 - Working with Products, Orders and Sales in PHP - A tutorial about how to work with Products, Orders and Sales in PHP.
 - Reusing Implementation – a Walk-through of Inheritance, Composition, and Delegation - A tutorial about code reusing and OOP in PHP.
 - Design Tech Talk Series Presents: OO Design for Testability (►) - A talk about Object-Oriented Design a testability.
 - The Clean Code Talks - Don't Look For Things! (►) - Another talk about Object-Oriented Design a testability.
 - Programming With Anthony - Paradigm Soup (►) - An introduction to programming paradigms and its differences.
 - Programming With Anthony - Dependency Injection (►) - An introduction to Dependency Injection.
 - What is Dependency Injection? - An introduction to Dependency Injection in PHP.
 - Dependency Injection with PHP 5.3 - Slides about Dependency Injection in PHP.
 - Why use a Dependency Injection Container? - A tutorial of what is and when to use a Dependency Injection Container.
 - Dependency Injection with Pimple - An introduction to Dependency Injection and how use Pimple for that.
 - Dependency Injection Is Not The Same As The Dependency Inversion Principle - A tutorial explaining the difference between Dependency Injection and Dependency Inversion Principle.
 - Catalog of Patterns of Enterprise Application Architecture - A catalog of Patterns of Enterprise Application Architecture.

Design Patterns

Design patterns tutorials.

- Design Patterns - A complete tutorial about design patterns.
- A Beginner's Guide to Design Patterns - An introduction tutorial to design patterns.
- Design Patterns - Programming With Anthony (►) - An introduction to design patterns.
- Beyond Design Patterns - Another introduction tutorial to design patterns.
- The Whens and Whys for PHP Design Patterns - A tutorial explaining why and when use design patterns in PHP.
- Design Patterns Workshop (►) - A workshop about design patterns in PHP.
- Design Patterns Video Tutorial (►) - A series about design patterns.
- PHP Design Patterns - Elements of Reusable Object-Oriented Software (►) - A series about design patterns in PHP.
- Agile Design Patterns (►\$) - A series about design patterns in PHP.
- Design Patterns in PHP (►\$) - Another series about design patterns in PHP.
- Introduction to Design Patterns with PHP - An introduction slide to SOLID and design patterns in PHP.
- Database Design Patterns - A slide about database design patterns in PHP.
- Design Patterns PHP - A collection of design patterns and some code implementation in PHP.
- Anti Patterns - A complete tutorial about anti patterns.
- Design Patterns with PHP - Adapters - A tutorial about Adapter pattern in PHP.
- Practical Aspects of the Adapter Pattern - Another tutorial about Adapter pattern in PHP.
- Understanding the Command Design Pattern - A tutorial about Command pattern in PHP.
- Understanding the Observer Pattern - A tutorial about Observer pattern in PHP.
- Iterators - Programming With Anthony (►) - An introduction to Iterator pattern in PHP.
- Iterators in PHP (►) - A talk about iterators in PHP.
- Mediators - Programming With Anthony - An introduction to Mediator pattern.
- Manage Complexity with the Facade Pattern - An introduction to Facade pattern in PHP.
- What are the benefits of using Repositories? - An introduction to Repository pattern in PHP.
- The Repository Design Pattern - A complete tutorial about Repository pattern in PHP.
- An Introduction to the Front Controller Pattern, Part 1 and An Introduction to the Front Controller Pattern, Part 2 - An introduction to Front Controller pattern in PHP.
- The Template Method Pattern - Override Strategy Logic - An introduction to Template method in PHP.
- What is the Factory Method Design Pattern? - An introduction to Factory pattern in PHP.
- What is the Decorator Pattern? - An introduction to Decorator pattern in PHP.

Refactoring

Refactoring tutorials.

- Refactoring - A complete tutorial guide about refactoring.
- Code Refactoring (►) - A series about code refactoring.
- Clean Code Refactoring (►) - A talk about refactoring and clean code in PHP.
- Refactoring Legacy Code - A tutorial series about refactoring legacy code with examples.
- Detecting Code Smells (►\$) - A series about code smells in PHP.
- Techniques for Refactoring Code (►\$) - A series about refactoring code in PHP.
- Workflows of Refactoring (►) - A talk about workflows of refactoring.
- Beyond Clean Code - An introduction about clean code.
- Catalog of Refactorings - A catalog of refactorings.

Architecture

Architecture tutorials.

- Create Your Own PHP Framework - A series of articles on how to create your own PHP framework.
- Creating Your Own MVC Series (►) - Another series on how to create your own PHP framework.
- A Beginner's Guide To MVC For The Web - A tutorial about MVC for the web.
- The MVC Pattern and PHP, Part 1 and The MVC Pattern and PHP, Part 2 - An introduction tutorial about MVC pattern.
- Alternatives To MVC - An introduction to alternative architectures to MVC.
- N-Tier Architecture - An Introduction - An introduction to n-tier architecture.
- Hexagonal Architecture - An introduction to Hexagonal Architecture in PHP.

Miscellaneous

Not related to OOP but interesting resources.

- Awesome PHP - A curated list of amazingly awesome PHP libraries, resources and shiny things.
- PHP The Right Way - A complete guide about the best practices and tutorials in PHP.
- PHP Lecture Slides - A complete and concise slide about PHP fundamentals, OOP, REST, Composer, MVC, Design Patterns, ORM, Security, OOD and testing in PHP.
- Functional Programming in PHP - An introduction to functional programming in PHP.
- Functional Programming and PHP - Another introduction to functional programming and concepts in PHP.

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- What's In A Type - A tutorial about types and PHP.
 - Data Structures for PHP Devs: Stacks and Queues - A tutorial about Stacks and Queues data structures in PHP.
 - Data Structures for PHP Devs: Trees - A tutorial about Tree data structure in PHP.
 - Data Structures for PHP Devs: Heaps - A tutorial about Heap data structure in PHP.
 - Data Structures for PHP Devs: Graphs - A tutorial about Graph data structure in PHP.
 - PHP Security Pitfalls (►\$) - A series about security in PHP.

Videos

Videos about object-oriented programming and related concepts.

- ...more to come...

Slides

Slides about object-oriented programming and related concepts.

- The OOP in PHP - An introductory tutorial to OOP concepts and terminology using PHP's object model as an example.

Courses

Courses about object-oriented programming and related concepts.

- ...more to come...

Books

Fantastic and must-read books about object-oriented programming, analysis, design and related concepts.

- PHP Objects, Patterns, and Practices
- Head First Design Patterns
- Design Patterns: Elements of Reusable Object-Oriented Software
- Head First Object-Oriented Analysis and Design
- Agile Principles, Patterns, and Practices in C#
- Growing Object-Oriented Software, Guided by Tests
- Test Driven Development: By Example

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- Clean Code: A Handbook of Agile Software Craftsmanship
 - Refactoring: Improving the Design of Existing Code
 - UML Distilled: A Brief Guide to the Standard Object Modeling Language
 - Patterns of Enterprise Application Architecture
 - Domain-Driven Design: Tackling Complexity in the Heart of Software
 - The Pragmatic Programmer: From Journeyman to Master
 - The Passionate Programmer: Creating a Remarkable Career in Software Development

People

Some fantastic and influential PHP and non-PHP developers.

- Adam Culp - Consultant at Zend Technologies and Sunshine PHP organizer.
- Alvaro Videla - Creator of PHP library for RabbitMQ and co-author of RabbitMQ in Action.
- Andi Gutmans - CEO and co-founder of Zend and PHP co-architect.
- Andy Hunt - One of the original authors of Agile Manifesto and co-author of The Pragmatic Programmer book.
- Anthony Ferrara - Co-author of PHP Internals book and Developer Advocate for Google.
- Benjamin Eberlei - Project-leader of Doctrine ORM and contributor to the Symfony2 Framework.
- Bernhard Schussek - Member of Symfony2 core development and creator of Puli library.
- Bruno Skvorc - Web developer and PHP editor in Sitepoint.
- Cal Evans - PHP developer and open source contributor.
- Chad Fowler - Developer, speaker and author of The Passionate Programmer book.
- Christophe Coevoet - Member of Symfony2 core development and open source contributor to projects like Doctrine ORM.
- David Zuelke - PHP developer at Heroku and regular speaker.
- Dayle Rees - Laravel evangelist and author of Laravel Code Bright and Code Happy books.
- Derick Rethans - Author of Xdebug and PHP engineer/evangelist on MongoDB.
- Erika Heidi - Author of Vagrant Cookbook and Phansible project and developer evangelist at Digital Ocean.
- Fabien Potencier - CEO and co-founder of SensioLabs and founder and project lead of Symfony Framework.
- Guilherme Blanco - PHP developer and open source contributor to projects like Doctrine ORM and Zend and Symfony frameworks.
- Hugo Hamon - PHP developer and head of training in SensioLabs.
- Igor Wiedler - Creator of Silex micro-framework and open-source contributor to projects like Symfony and Composer.
- Javier Eguiluz - Symfony evangelist in SensioLab and creator of easybook project.

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- Jeffrey Way - Creator of Laracasts and Laravel contributor and evangelist.
 - Jeremy Mikola - Engineer at MongoDB, open source contributor to projects like Doctrine ODM and Symfony Framework, and co-organizer of WurstCon.
 - Johannes Schmitt - Founder of Scrutinizer CI and open source contributor to projects like Symfony.
 - Jordi Boggiano - Founder of Toran Proxy, co-creator and project lead of Composer and Monolog and Symfony core developer.
 - Josh Lockhart - Creator of Slim Framework and PHP The Right Way site.
 - Julien Pauli - Co-author of PHP Internals book and open source contributor.
 - Kent Beck - One of the original authors of Agile Manifesto and creator of Extreme Programming and Test Driven Development.
 - Konstantin Kudryashov - Creator of Behat and PhpSpec test frameworks.
 - Kris Wallsmith - PHP developer and creator of Assetic framework and Buzz library.
 - Larry Garfield - PHP developer and core contributor of Drupal.
 - Lukas Kahwe Smith - PHP developer and open source contributor to projects like Doctrine ORM and Symfony Framework.
 - Marcello Duarte - PHP developer and co-creator of PhpSpec test framework.
 - Martin Fowler - One of the original authors of Agile Manifesto and author of the best selling books about software engineering like Patterns of Enterprise Application Architecture and Refactoring books.
 - Matthew Weier O'Phinney - Principal Engineer at Zend Technologies and project lead for Zend Framework and Apigility.
 - Matthias Noback - PHP developer and author of books like A Year with Symfony and Principles of Package Design.
 - Marco Pivetta - PHP developer and core team member of Doctrine ORM and team member of Zend Framework.
 - Michael Dowling - Software engineer at Amazon Web Services and creator of Guzzle library.
 - Mike van Riel - PHP developer and lead developer of phpDocumentor and Cilex projects.
 - Nikita Popov - Co-author of PHP Internals book, open source contributor and creator of PHP Parser library.
 - Nils Adermann - PHP developer and co-creator of Composer.
 - Pablo Godel - PHP developer, open source contributor and co-organizer of Sunshine PHP.
 - Paul Jones - PHP developer, creator of Aura PHP, open source contributor and author of Modernizing Legacy Applications in PHP.
 - Phil Sturgeon - Founder of PyroCMS, open source contributor and author of Build APIs You Won't Hate book.
 - Philip Brown - PHP developer and writer in Culttt website.

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- Pádraic Brady - Creator of Mockery library and open source contributor to projects like Zend Framework.
 - Rafael Dohms - PHP developer and evangelist, open source contributor and organizer of Amsterdam PHP.
 - Rasmus Lerdorf - Creator of PHP and open source contributor.
 - Rob Allen - PHP developer, Zend Framework contributor and co-author of Zend Framework in Action book.
 - Robert C. Martin - One of the original authors of Agile Manifesto and author of the best selling books about software engineering like Clean Code and Agile Principles, Patterns, and Practices in C# books.
 - Ryan Weaver - PHP developer, trainer and consultant at KnpLabs and member of Symfony core team.
 - Sara Golemon - Open source contributor to projects like PHP runtime and HHVM and author of Extending and Embedding PHP book.
 - Sebastian Bergmann - PHP developer, open source contributor and creator of PHPUnit test framework.
 - Taylor Otwell - PHP developer and creator of Laravel Framework.
 - Ward Cunningham - Programmer pioneer in Design Patterns and Extreme Programming.
 - William Durand - PHP developer, open source contributor and creator of Geocoder library.
 - Zeev Suraski - CTO and co-founder of Zend and PHP co-architect.

Some Questions

I found not related to PHP resources. Is this correct?

The project name is “Learning OOP in PHP”. But, despite the name, object oriented programming is a concept related to a lot of other languages like C++, Java, C#, Python, Ruby and so on. That said, exists a lot of fantastic resources like videos and tutorials about object-oriented programming made in another programming languages and I considered reasonable include them here in this reference.

There are some tutorials that aren't in the correct section?

I tried to keep this reference as simple as possible and divided it in a few areas. But there are some problems! Feel free to make any suggestions and contribute.