Full-Stack Web Development

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Full-Stack Web Development

Full-stack web development refers to the practice of developing both the frontend (client-side) and backend (server-side) portions of a web application. A full-stack developer is someone who possesses the skills and knowledge to work on both sides of the development process, allowing them to create a complete and functional web application independently or as part of a team.

Frontend Development

Frontend development, referred to as client-side development, creates the UI and UX of a website or web application. It is the part of web development that users interact with directly.

Backend Development

Backend development involves building the server-side of web applications. It is responsible for handling data, and business logic.

Backend Web Development

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Outlines

Introduction	PHP Basics	Object-Oriented Programming (OOP)
PHP and MySQL Database	Error Handling	Web Features
GIT Version Control	Composer Dependency Manager for PHP	Laravel Framework

PHP

Introduction

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What is PHP?

PHP, which stands for Hypertext Preprocessor is a widely-used open source general-purpose scripting language, used for web development. It is a versatile and powerful tool that allows developers to create dynamic web pages and applications.

Why PHP?

1. Ease of Learning
2. Web Development Focus
3. Robust Ecosystem
4. Practical Applicability
5. Active Community
6. Integration Capabilities

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What can PHP do?

Anything. PHP is mainly focused on server-side scripting, such as collect form data, generate dynamic page content, or send and receive cookies. But PHP can do much more.

There are three main areas where PHP scripts are used.

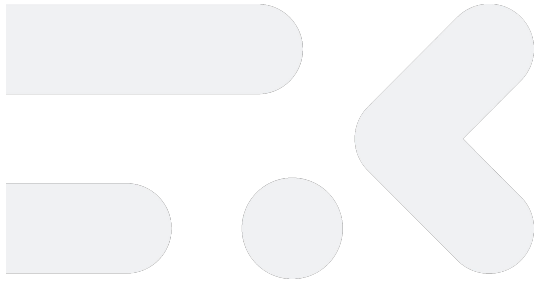
- **Server-side scripting**. This is the most traditional and main target field for PHP
- **Command line scripting (CLI)**. You can make a PHP script to run it without any server or browser. You only need the PHP parser to use it this way.
- **Writing desktop applications.** PHP is probably not the very best language to create a desktop application with a graphical user interface.

What can PHP do? (2)

- PHP can be used on all major operating systems, including Linux, many Unix, Microsoft Windows, macOS, RISC OS, and probably others.

- PHP also has support for most of the web servers today. This includes Apache, IIS, and many others.

Features of PHP



01 Easy Integration

PHP can be easily integrated with HTML, CSS, and JavaScript, making it flexible for creating interactive web pages.

02 Open Source

PHP is an open-source language, meaning it is freely available and constantly evolving through community contributions.

03 Cross-Platform Compatibility

PHP is compatible with various operating systems, including Windows, macOS, and Linux, making it highly accessible.

04 Database Support

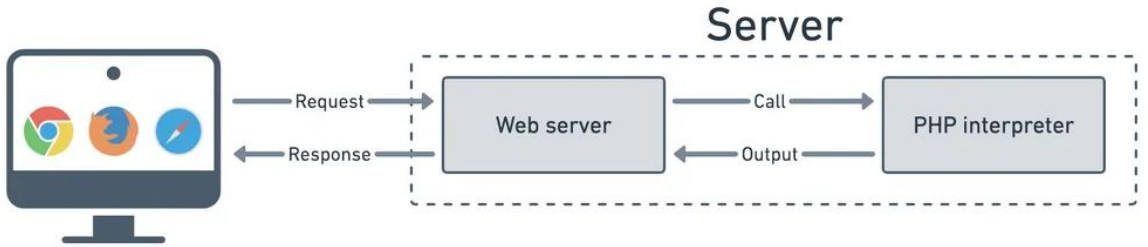
PHP provides excellent support for popular databases such as MySQL, Oracle, and PostgreSQL, enabling seamless data management.

PHP and Apache

Apache HTTP Server is a free and open-source web server that delivers web content through the internet. It is commonly referred to as Apache and after development, it quickly became the most popular HTTP client on the web.

How does a PHP application work?

PHP differs from most other programming languages because it's an interpreted language. You don't need to compile your code. You can just upload your PHP files to a web server, and that's it.



- The web server (nginx or apache most of the time) does the magic. It figures out what PHP file you're trying to access.

- The web server then sends this PHP file to the PHP interpreter. The interpreter reads the file, parses it and then executes it. Once the execution completes, it'll return some output. That output is the generated HTML that the web server sends back to your browser as an HTTP response.

Getting Started
What You Need?

- **Code Editor or IDE:**
  - Choose a code editor or Integrated Development Environment - IDE for writing your PHP code.
    - Examples: Visual Studio Code, Sublime Text.

- **Local Development Environment:**
  - Use XAMPP, MAMP, LAMP, or similar tools for local development.
  - These bundles include PHP, Apache, MySQL, and more.
  - Simplifies setup for testing on your machine.

- **Production Environment**
  - For hosting services, PHP and Apache are often pre-installed.
  - No manual installation required on hosting platforms.

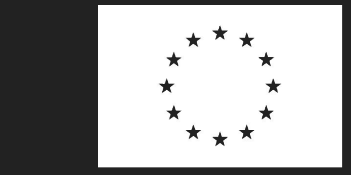
An introductory example

```
<!DOCTYPE html>
<html>
  <head>
      <title>Example</title>
  </head>
  <body>
      <?php
          echo "Hello Maharah World!";
      ?>
  </body>
</html>
```

```php
<?php

echo "Q&A";

echo "Let's get started!";
```



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