

PHP (Hypertext Preprocessor) is a popular, open-source, server-side scripting language that is primarily used to develop dynamic and interactive web applications. Originally created by Rasmus Lerdorf in 1993 and officially released in 1995, PHP is one of the foundational technologies of the web, commonly used in combination with HTML, CSS, and JavaScript.

Key Features of PHP:

1. **Server-Side Scripting:**

- PHP is executed on the **server**, meaning the code runs on the server, and the result (usually HTML) is sent to the client's web browser. This makes it ideal for building dynamic websites where content can change depending on user input, database queries, or other conditions.

2. **Open Source:**

- PHP is **free** and open-source, which means developers can use, modify, and distribute it without restrictions. It has a large and active community that contributes to its development.

3. **Database Integration:**

- PHP can connect to a wide range of databases, with **MySQL** being the most commonly used. This makes it a powerful tool for building data-driven web applications, like content management systems (CMS), e-commerce platforms, and social networks.

4. **Cross-Platform Compatibility:**

- PHP runs on many different operating systems, including **Windows, Linux, and macOS**. It also works with most web servers, such as **Apache** and **Nginx**.

5. **Embedded into HTML:**

- PHP can be embedded directly within **HTML**. This allows developers to insert dynamic content into static web pages easily. The PHP code is executed on the server, and only the resulting HTML is sent to the client browser.

6. **Large Ecosystem & Frameworks:**

- There are numerous PHP frameworks, such as **Laravel, Symfony, and CodeIgniter**, which provide developers with pre-built modules and tools to accelerate web development and enforce good coding practices.

7. **Object-Oriented Programming (OOP):**

- Starting from PHP 5, PHP supports **Object-Oriented Programming**, allowing for better structure, reusability, and maintainability of code.

8. **Built-in Security Features:**

- PHP has built-in security features like **data encryption, input validation, and password hashing** to protect websites from common threats like SQL injection and cross-site scripting (XSS).

9. **Session Management:**

- PHP is capable of handling **sessions** and **cookies**, which allows for the creation of user login systems, personalization, and state management on websites.