# Front End

## PHP

**PHP** is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP is now installed on more than 244 million websites and 2.1 million web servers. Originally created by RasmusLerdorf in 1995, the reference implementation of PHP is now produced by The PHP Group While PHP originally stood for *Personal Home Page*. it now stands for *PHP: Hypertext Preprocessor*, a recursive backacrynm.

PHP code is interpreted by a web server with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evolved to include a command-line interface capability and can be used in standalone graphical applications.

PHP is free software released under the PHP License. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge.

### History

PHP development began in 1994 when the developer RasmusLerdorf wrote a series of Common Gateway Interface (CGI) Perl scripts, which he used to maintain his personal homepage. The tools performed tasks such as displaying his résumé and recording his web traffic. He rewrote these scripts in C for performance reasons, extending them to add the ability to work with web forms and to communicate with databases, and called this implementation "Personal Home Page/Forms Interpreter" or PHP/FI.

PHP/FI could be used to build simple, dynamic web applications. Lerdorf initially announced the release of PHP/FI as "Personal Home Page Tools (PHP Tools) version 1.0" publicly to accelerate bug location and improve the code, on the comp.infosystems.www.authoring.cgi Usenet discussion group on June 8, 1995. This release already had the basic functionality that PHP has as of 2013. This included Perl-like variables, form handling, and the ability to embed HTML. The syntax resembled that of Perl but was simpler, more limited and less consistent.

Early PHP was not intended to be a new programming language, and grew organically, with Lerdorf noting in retrospect: "I don’t know how to stop it, there was never any intent to write a programming language. I have absolutely no idea how to write a programming language, I just kept adding the next logical step on the way."[12] A development team began to form and, after months of work and beta testing, officially released PHP/FI 2 in November 1997.

ZeevSuraski and AndiGutmans rewrote the parser in 1997 and formed the base of PHP 3, changing the language's name to the recursive acronym PHP:

Hypertext Preprocessor. Afterwards, public testing of PHP 3 began, and the official launch came in June 1998. Suraski and Gutmans then started a new rewrite of PHP's core, producing the Zend Engine in 1999.They also founded Zend Technologies in Ramat Gan, Israel.

On May 22, 2000, PHP 4, powered by the Zend Engine 1.0, was released. As of August 2008 this branch reached version 4.4.9. PHP 4 is no longer under development nor will any security updates be released.

On July 13, 2004, PHP 5 was released, powered by the new Zend Engine II. PHP 5 included new features such as improved support for object-oriented programming, the PHP Data Objects (PDO) extension (which defines a lightweight and consistent interface for accessing databases), and numerous performance enhancements. In 2008 PHP 5 became the only stable version under development. Late static binding had been missing from PHP and was added in version 5.3.

A new major version has been under development alongside PHP 5 for several years. This version was originally planned to be released as PHP 6 as a result of its significant changes, which included plans for full Unicode support. However, Unicode support took developers much longer to implement than originally thought, and the decision was made in March 2010 to move the project to a branch, with features still under development moved to trunk.

Changes in the new code include the removal of register_globals, magic quotes, and safe mode. The reason for the removals was that register_globals had opened security holes by intentionally allowing runtime data injection, and the use of magic quotes had an unpredictable nature. Instead, to escape characters, magic quotes may be replaced with the addslashes() function, or more appropriately an escape mechanism specific to the database vendor itself like mysql_real_escape_string() for MySQL. Functions that will be removed in future versions and have been deprecated in PHP 5.3 will produce a warning if used.

Many high-profile open-source projects ceased to support PHP 4 in new code as of February 5, 2008, because of the GoPHP5 initiative, provided by a consortium of PHP developers promoting the transition from PHP 4 to PHP 5.

PHP interpreters are available on most existing 32-bit and 64-bit operating systems, either by building them from the PHP source code, or by using pre-built binaries. For the PHP versions 5.3 and 5.4, the only available Microsoft Windows binary distributions were 32-bit x86 builds,[27][28] requiring Windows 32-bit compatibility mode while using Internet Information Services (IIS) on a 64-bit Windows platform. PHP version 5.5 made the 64-bit x86-64 builds available for Microsoft Windows.

**Features:**

- HTTP authentication with PHP
- Cookies
- Sessions
- Dealing with XForms
- Handling file uploads
- POST method uploads
- Error Messages Explained
- Common Pitfalls
- Uploading multiple files
- PUT method support
- Using remote files
- Connection handling
- Persistent Database Connections
- Safe Mode
- Security and Safe Mode
- Functions restricted/disabled by safe mode
- Command line usage — Using PHP from the command line
- Options — Command line options
- Usage — Executing PHP files
- I/O streams — Input/output streams
- Interactive shell
- Built-in web server
- INI settings
- Garbage Collection
- Reference Counting Basics

- Collecting Cycles
- Performance Considerations

**Syntax:**

```
<!DOCTYPE html>
<title>PHP Test</title>
<?php
echo'Hello World';
?>
```

The PHP interpreter only executes PHP code within its delimiters. Anything outside its delimiters is not processed by PHP (although non-PHP text is still subject to control structures described in PHP code). The most common delimiters are <?php to open and ?> to close PHP sections. <script language="php"> and </script> delimiters are also available, as are the shortened forms <? or<?= (which is used to echo back a string or variable) and ?> as well as ASP-style short forms <% or <%= and %>. While short delimiters are used, they make script files less portable as support for them can be disabled in the PHP configuration, and they are therefore discouraged. The purpose of all these delimiters is to separate PHP code from non-PHP code, including HTML.

The first form of delimiters, <?php and ?>, in XHTML and other XML documents, creates correctly formed XML "processing instructions".[44] This means that the resulting mixture of PHP code and other markup in the server-side file is itself well-formed XML.

Variables are prefixed with a dollar symbol, and a type does not need to be specified in advance. Unlike function and class names, variable names are case sensitive. Both double-quoted ("") and strings provide the ability to interpolate a variable's value into the string. PHP treats newlines as whitespace in the manner of a free-form language (except when inside string quotes), and statements are terminated by a semicolon.PHP has three types of comment syntax: /* */ marks block and inline comments; // as well as # are used for one-line comments. The echo statement is one of several facilities PHP provides to output text, e.g., to a web browser.

In terms of keywords and language syntax, PHP is similar to most high level languages that follow the C style syntax. if conditions, for and while loops, and function returns are similar in syntax to languages such as C, C++, C#, Java and Perl.

# Back End

**MySQL**

MySQL officially, but also called "My Sequel") is (as of July 2013) the world's most widely used open-source relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases, though SQLite probably has more total embedded deployments. It is named after co-founder Michael Widenius's daughter, My. The SQL phrase stands for Structured Query Language.

The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation.

MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks). LAMP is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python." Free-software-open source projects that require a full-featured database management system often use MySQL.

**History**

MySQL was created by a Swedish company, MySQL AB, founded by David Axmark, Allan Larsson and Michael "Monty" Widenius. The first version of MySQL appeared on 23 May 1995. It was initially created for personal usage from mSQL based on the low-level language ISAM, which the creators considered too slow and inflexible. They created a new SQL interface, while keeping the same API as mSQL. By keeping the API consistent with the mSQL system, many developers were able to use MySQL instead of the (commercially licensed) mSQL .

**Features:**

- A broad subset of ANSI SQL 99, as well as extensions
- Cross-platform support
- Stored procedures, using a procedural language that closely adheres to SQL/PSM
- Triggers
- Cursors
- Updatable Views
- Information schema

- Strict mode (ensures MySQL does not truncate or otherwise modify data to conform to an underlying data type, when an incompatible value is inserted into that type)
- X/Open XA distributed transaction processing (DTP) support; two phase commit as part of this, using Oracle's InnoDB engine
- Independent storage engines (MyISAM for read speed, InnoDB for transactions and referential integrity, MySQL Archive for storing historical data in little space)
- Transactions with the InnoDB and NDB Cluster storage engines; savepoints with InnoDB
- SSL support
- Query caching
- Sub-SELECTs (i.e. nested SELECTs)
- Replication support (i.e. Master-Master Replication & Master-Slave Replication) with one master per slave, many slaves per master.[36] Multi-master replication is provided in MySQL Cluster, and multi-master support can be added to unclustered configurations using Galera Cluster.
- Full-text indexing and searching using MyISAM engine
- Embedded database library
- Unicode support (however prior to 5.5.3 UTF-8 and UCS-2 encoded strings are limited to the BMP, in 5.5.3 and later use utf8mb4 for full unicode support)
- ACID compliance when using transaction capable storage engines (InnoDB and Cluster)
- Partitioned tables with pruning of partitions in optimizer
- Shared-nothing clustering through MySQL Cluster
- Hot backup (via mysqlhotcopy) under certain conditions
- Multiple storage engines, allowing one to choose the one that is most effective for each table in the application (in MySQL 5.0, storage engines must be compiled in; in MySQL 5.1, storage engines can be dynamically loaded at run time):
- Native storage engines (MyISAM, Falcon, Merge, Memory (heap), Federated, Archive, CSV, Blackhole, Cluster, EXAMPLE, Aria, and InnoDB, which was made the default as of 5.5)
- Partner-developed storage engines (solidDB, NitroEDB, ScaleDB, TokuDB, Infobright (formerly Brighthouse),Kickfire, XtraDB, IBM DB2).InnoDB used to be a partner-developed storage engine, but with recent acquisitions, Oracle now owns both MySQL core and InnoDB.

- Community-developed storage engines (memcache engine, httpd, PBXT, Revision Engine)
- Custom storage engines