

# Web Design and Programming (0107558) Internet Programming (0107571)<sup>1</sup>

PHP Introduction

Dr. Naeem Odat

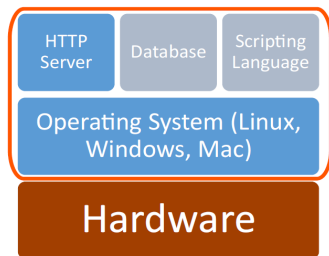


College of Engineering  
Department of Computer and Communications Engineering

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<sup>1</sup>Michael Mendez. *The Missing Link: An Introduction to Web Development and Programming*. Open SUNY Textbooks 2014.

# Web server



A typical web server today contains four elements in addition to the physical hardware:

- ▶ The operating system. (Linux, Windows, Mac)
- ▶ Web server. (Apache)
- ▶ A database. (MySQL)
- ▶ A scripting language. (PHP)

. Popular combinations of these systems has been abbreviated:

- ▶ **LAMP**, standing for Linux, Apache, MySQL, and PHP.
- ▶ **WAMP**.
- ▶ **MAMP**. For Mac and Windows OS.

# Create Your Own Server

1. Download and install MAMP. "  
"https://downloads.mamp.info/MAMP-PRO-WINDOWS/releases/5.0.5/MAMP\_MAMP\_PRO\_5.0.5.exe"
2. Follow the installation instructions for your system to complete the installation.
3. Select the option, if available, to use an alternate port like :8080 if required by your campus network policy.
4. Test your installation by navigating to "http://127.0.0.1:8080" (remove :8080 if you skipped step 3).
5. Click on the phpinfo and phpmyadmin links to ensure PHP and MySQL are operational.

# PHP

## What is PHP?

- ▶ PHP used to mean "Personal Home Page".
- ▶ PHP is an acronym for "PHP: Hypertext Preprocessor".
- ▶ PHP is a widely-used, open source scripting language.
- ▶ PHP scripts are executed on the server.
- ▶ PHP is free to download and use.

## PHP is an amazing and popular language!

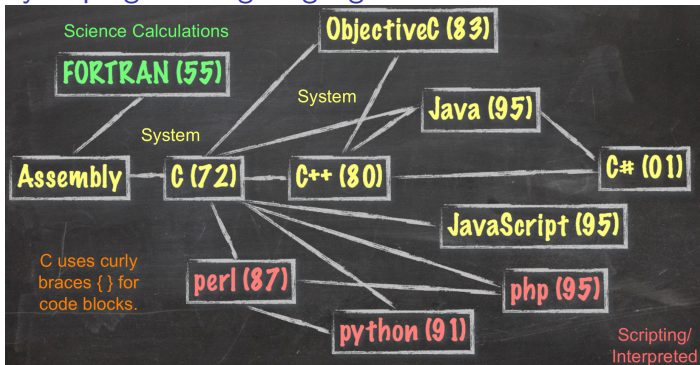
- ▶ It is powerful enough to be at the core of the biggest blogging system on the web (WordPress)!
- ▶ It is deep enough to run the largest social network (Facebook)!
- ▶ It is also easy enough to be a beginner's first server side language!

# PHP: Hypertext Preprocessor

It is a server-side language with the following proprieties

- ▶ with object-oriented capabilities.
- ▶ high extensibility.
- ▶ interpreted language.

## History of programming languages



# PHP

## File types

- ▶ Text file with a `.php` extension.
- ▶ Inside the file we can have html code.

## Tags

- ▶ PHP code starts with `<?php` or `<?.`
- ▶ PHP code ends with `? >.`
- ▶ Another form for including PHP is:  
`< script language='php'>< /script >`
- ▶ Better to use longhand `<?php` to start writing php code.

# PHP

## Output

- ▶ echo.

```
<?php
    echo "hello world";
    echo ("helo world");
?>
```

- ▶ print.

```
<?php
    print "hello world";
    print ("helo world");
?>
```

- ▶ print has a return while echo does not have a return.

# PHP

## Variables

- ▶ Should begin with \$.
- ▶ Cannot contain spaces.
- ▶ Can start with any letter or \_.
- ▶ Can contain numbers but cannot start with a number.
- ▶ Case matters.

## Variables

### Good

- ▶ `$abc=2;`
- ▶ `$_first=103.5;`
- ▶ `$first_lesson=101;`

### Bad

- ▶ `abc=3;`
- ▶ `$1st=12.4;`
- ▶ `$first lesson=0;`



## Predefined variables

- ▶ `$_GET`, `$_POST` and `$_FILES`. Hold items a user has typed or submitted using forms.
- ▶ `$_COOKIE` and `$_SESSION`. Hold information throughout a user's visit.
- ▶ `$_ENV`. Holds information about the server.

## Single and double quotes

- ▶ "." is used as a concatenation operator for strings.
- ▶ Single quote.
  - ▶ Single quote string treated as plain text.
  - ▶ Everything inside stays as is. Two escapes are there:
    - ▶ "\" to have single quote inside.
    - ▶ "\\" to have a backslash inside.
- ▶ Double quote.
  - ▶ Backslash "\" can be used as an escape character.
  - ▶ New line is treated as a new line.
  - ▶ Variables are expanded.

## Comments

- ▶ "#". Single line comment.
- ▶ "//". Single line comment.
- ▶ "/\* comment \*/". Multi-line comments.

## Expressions

- ▶ Arithmetic operators (\*, /, +, -).
- ▶ Implicit type conversion:

```
<?php
    $x="7"+6;
    echo($x); # 13
?>
```

## Some operators

- ▶ Increment/Decrement (`++/- -`)
- ▶ String concatenation (`.`).
- ▶ Equality (`==, !=`). With type conversion.
- ▶ Strict equality (`===, !==`).
- ▶ Ternary operator (`?:`).
- ▶ Assignment operators (`+=, -=, .=`).
- ▶ Bit-wise operators (`>>, <<, ^, |, &`).

## Conversion/casting

- ▶ PHP does implicit conversion (casting).
- ▶ You can make explicit type conversion (casting).

## String position

- ▶ Syntax:  
`strpos(string,find,start)`  
It is a case sensitive.
- ▶ Return value:  
The position of the first occurrence of a string inside another string, or FALSE if the string is not found.
- ▶ Example:  
`echo strpos("I love php, I love php too!","php");`  
This prints 7, which is the first occurrence of "php" in the first string.

# PHP

## Nested if

```
$x=6;  
if ($x==1){  
    echo "1\n";  
}elseif ($x<1){  
    echo "Less than 1\n";  
}else{  
    echo "Greater than 1\n";  
}
```



## Loops

- ▶ For loop.
- ▶ While loop.
- ▶ Do while loop.

## Break and continue

- ▶ Break. Leave the loop.
- ▶ Continue. Start from top of the loop.

# PHP

Demo

1-phpintro.php

# PHP

## Quiz - 1

- ▶ What does PHP stand for?
  - ▶ Personal Home Page
  - ▶ Private Home Page
  - ▶ PHP: Hypertext Preprocessor
  - ▶ Personal Hypertext Processor
- ▶ PHP Server scripts are surrounded by?
  - ▶ `<?php > ... < /? >`
  - ▶ `< script >...< /script >`
  - ▶ `<?php ... ? >`
  - ▶ `< & >...< /& >`
- ▶ The PHP syntax is most similar to:
  - ▶ Perl and C
  - ▶ VBScript
  - ▶ JavaScript
  - ▶ Fortran

# PHP

## Quiz - 2

- ▶ Which of the following are operators in PHP?

- ▶ ===
- ▶ ++
- ▶ .+
- ▶ !=
- ▶ --
- ▶ .:

- ▶ What is the output of the following?

```
$x = 12;  
$y = 12 + $x++;  
echo "y = $y x = $x";
```

- ▶ y = 24 x = 12
- ▶ y = 25 x = 13
- ▶ y = 24 x = 13
- ▶ y = yx = x

## Quiz - 3

- ▶ What value will `var_dump` show that `echo` will not show?
- ▶ What is a correct way to add a comment in PHP?
  - ▶ `/* ... */`
  - ▶ `< comment > ... < /comment >`
  - ▶ `*\...\*`
  - ▶ `<!-- ... -- \ >`
- ▶ All variables in PHP start with ( ) symbol.
- ▶ What is the value returned by: `(int) 9.9 - 1` ?
- ▶ Use the ( ) operator to test if two values are identical in both value and type.

# PHP

## Quiz - 4

- ▶ What is the value of \$x?

`$x = 1200 + "34";`

- ▶ In PHP you can use both single quotes ( ' ' ) and double quotes ( " " ) for strings.
  - ▶ True
  - ▶ False
- ▶ PHP and HTML cannot be intermingled in the same file.
  - ▶ True
  - ▶ False
- ▶ Which escape sequences can be used in single quoted ( ' ) strings in PHP?
  - ▶ `\\`
  - ▶ `\"`
  - ▶ `\r`
  - ▶ `\'`
  - ▶ `\n`

## Quiz - 5

- ▶ You cannot run PHP files from the command line.
  - ▶ True
  - ▶ False
- ▶ You can run PHP files on a server.
  - ▶ True
  - ▶ False
- ▶ In PHP, variable names are case sensitive.
  - ▶ True
  - ▶ False
- ▶ In PHP, functions names are not case sensitive.
  - ▶ True
  - ▶ False