

PHP Introduction

What is a web application and
how can PHP help us



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What are PHP, CGI and Web Server?



What is PHP

- "PHP Hypertext Preprocessor"
 - Scripting language
 - Creation of dynamic content – i.e. HTML and JSON
 - Interaction with databases (CRUDs)
 - Server side, or via command line (CLI)
 - Can be embedded in HTML
 - First introduced in 1995 as module for Apache
 - Open source, written in C
 - Similar to Perl and C

What is CGI?

- "Common Gateway Interface"
 - Unified specification for interaction between web server and a CGI program
 - The CGI program accepts data from the web server and usually returns generated HTML content
 - CGI programs are used to generate also XML files, images, video streams and any other content, understandable by the browser
 - The very code of the CGI program is not visible for the client, only it's output

What is web server?

- Computer program that is responsible for handling HTTP requests and returning responses
 - Receives HTTP request
 - Finds the requested resource or executes CGI program
 - Returns the resource or program output to the browser
 - Most common web servers are Apache, IIS, NodeJS, nginx, ligHttpd and others
- "LAMP" – Linux, Apache, MySQL, PHP/Perl – the most common software on a web server

Web Applications



Web application

- Application that can be accessed over the web
 - Relies on web servers
 - Usually written in server-side scripting languages like PHP, Perl, Java, ASP
 - Has dynamically generated content
 - Commonly structured as three-tier application - web server, CGI Program (s) and database
 - Not just web pages

Web application - Examples

- Google Docs
- ESET Online Virus Scanner
- One Drive
- Prezi
- Any web application or web app software that runs in a web browser or is created in a browser-supported **programming** language

PHP Hello World



PHP Hello World

- PHP code file extension usually is “.php”.
 - Can be configured
- PHP code can be nested in HTML document

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

End of php code

“?>”

“HelloPHP”

Start of php code
“<?php ”

PHP Hello World

Live Demo



PHP Syntax



PHP Syntax

- The PHP code starts with `<?php` and ends with `?>`
- Depending on server configuration may also start with:
 - Short style –Start with `"<?"` ; end with `"?>"` (not recommended)
 - HTML Script Tags – Start with `<script language="php">` “, end with `</script>` “
 - ASP Style Start with `"<% "`, end with `"%>"`
- PHP follows the Perl syntax
 - Simplified
 - Procedural (Now has OOP too)
 - PHP is c based language

PHP Statement separation

- PHP Script contains one or more statements
 - Statement are handed to the PHP Preprocessor one by one
 - Each statement ends in semicolon ";"
- Our first script contains only one statement:

```
<?php  
    echo "Hello SoftUni Students";  
?>
```

End with ";"
semicolon

- call of the function echo

PHP Statements

- PHP script can contain unlimited number of statements

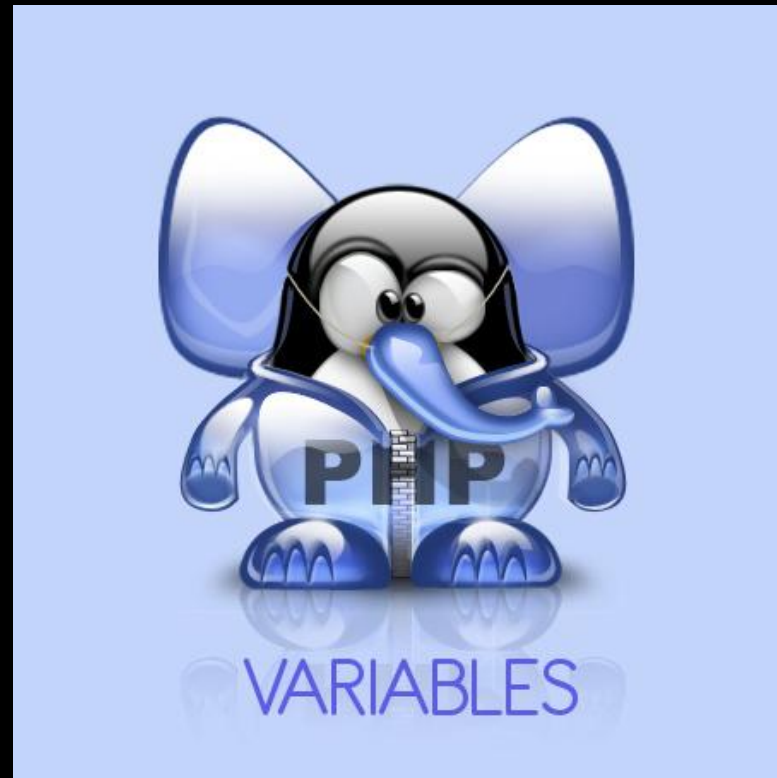
```
<?php
    echo "<h1>";
    echo "Hello SoftUni Students";
    echo "</h1>";
?>
```

- Some function can be called without brackets
- You can add comments to the code
 - One line comments: "//", "#"
 - Multi line comments "/*" – "*/"
 - DocBlock comments "/* */" – "/* */"
 - Comments are NOT executed

PHP Syntax

Live Demo

PHP Variables



PHP Variables

- Variables in PHP are represented by a dollar “\$” sign
- PHP supports eight types:
 - Boolean, Integer, Float, Double, Array, Object, resource and NULL

```
<?php
    $variable = "<p> PHP Variable </p>";
    echo $variable;
?>
```

- PHP is "type-less" language
 - Variables are not linked with type – they can store value with different types
 - No **int a = 5;** Just **\$a = 5;**

PHP Variables Types

- PHP Variable Types are:
 - Numeric (real or integer)
 - The decimal separator is dot ".", not comma ","
 - Boolean (true or false)
 - PHP defines the constants as true, TRUE, True and false, FALSE, False
 - Empty string, zero and some other values are implicitly converted to "false" in Boolean expressions
 - May cause problems when Boolean not used properly

- String values
 - Strings may be in single or double quotes

```
<?php
$hello = 'Hello SoftUni ';
$welcome = 'Hello Students';
echo $hello . $welcome; // string concatenation is with "." not with "+"
?>
```

- Start and end quote type should match
- Difference between two types of quotes is the escape sequences

- Arrays are aggregate values – combination of values, each assigned a key in the array
 - PHP supports associative arrays – keys may be numeric, strings or any other scalar data types
 - Keys must be unique across the array
 - Values in the array may be with different types
 - PHP Arrays are dynamic – they don't require explicit size when created

PHP Arrays

- PHP Array is declared with keyword `array`

```
<?php
//Indexed arrays without key
$array = array("foo", "bar", "hello", "world");
print_r ($variable);
//Array with index from PHP 5.4
$array = [ "foo" => "bar", "bar" => "foo"];
?>
```

- "`=>`" means "points to"
- If keys are not supplied they are assigned automatically, starting from 0

PHP Array accessing

- Array elements can be accessed using the *array[key]* syntax.

```
<?php
//Indexed arrays without key
$array = array("foo", "bar", "hello", "world");
echo $array[0];
//Array with index from PHP 5.4
$array = [ "foo" => "bar", 1 => "foo"];
echo $array["foo"];
?>
```

- Arrays are flexible and types of values and keys may be mixed

PHP NULL

- The special NULL value represents a variable with no value. NULL is the only possible value of type null.
- A variable is considered to be null if:
 - it has been assigned the constant NULL.
 - it has not been set to any value yet.
- Different from “undefined” and empty string.

```
<?php  
$var = NULL;  
?>
```

PHP Variables

Live Demo

Summary

- PHP syntax
 - Variables, variable types
 - Basic functions
 - Some predefined variables
 - Using basic PHP concepts



PHP & MySQL

Questions?

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