

Chapter 10

Server side Scripting using PHP

PHP

PHP is one of the most popular server side scripting languages and it is an open-source project and is completely free. It is used for creating dynamic web pages. PHP stands for PHP Hypertext Preprocessor. PHP script produces hypertext (HTML) as a result after its execution. PHP scripting should begin with `<?php` and end with `?>`. The PHP code containing text documents are saved with **.php** extension.

Output statements – `echo()` and `print()`

echo	print
Can take more than one parameter when used without parenthesis.	Takes only one parameter
Does not return any value.	Returns TRUE or 1 on successful output and FALSE if it was unable to print out the string.
Little faster than print.	Little bit slower than echo

`var_dump()` : To display both data type and value of variables.

Variables in PHP

A variable in PHP starts with the \$ sign, followed by the name of the variable. They are not declared.

The data type of a variable depends on the value stored in it.

`$x = 56;` `$y = "hello";` `$z = true;` `$a = null;` are examples.

Data Types in PHP

- (i) Core data types – Integer, Float/Double, String, Boolean
- (ii) Special data types – Null, Array, Object, Resource

Operators

Arithmetic operators	+ - * / %
Increment, decrement	++ --
Assignment operator	=
Relational operators	< <= > >= == !=
Logical operators	or && and xor
String concatenation	.
Combined operators	+= -= *= /= %= .=

An example for String concatenation:

```
$x = "PHP";
$y = "Script";
$z = $x.$y;
```

The . (dot) operator will add the two strings and the variable \$z will have the value

PHPScript.



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Control Statements

if statements	if (test_expression) Statement;
	if (test_expression) statement_1; else statement_2;
	if (test_expression1) statement_1; else if (test_expression2) statement_2; : : else statement_n;
switch statement	switch (variable/expression) { case value1: statement1; break; case value2: statement2; break; : : default: statement; }
for loop	for (initialization; test; update) body;
while loop	initialization; while (test_expression) { body; update; }
do – while loop	initialization; do { body; update; } while (test_expression);
continue	To skip the remaining statements in the loop body and continues the next iteration at the condition evaluation.
break	Ends the execution of the current loop.



Arrays

There are three types of arrays: (i) Indexed arrays, (ii) Associative arrays and (iii) Multi-dimensional arrays.

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Indexed arrays: Arrays with numeric index are called indexed arrays. They are almost similar to arrays in C++. By default array index (or subscript) starts from zero. The function **array()** can be used to create an array.

```
$array_name = array(value1,value2,value3,etc.);
```

Eg: \$marks = array(54, 45, 56, 60, 40);
 \$days = array("sun", "mon", "tue", "wed", "thu", "fri", "sat");
 echo \$marks[0]; gives 54 as output.
 echo \$days[3]; gives **wed** as output.

Associative arrays: Arrays with named keys are called associative arrays. Associative arrays have their index (or subscript) as string.

```
$array_name = array(key=>value, key=>value, key=>value, etc.);
```

Eg: \$marks = array("hari"=>54, "ravi"=>45, "mini"=>56);
 echo \$marks["hari"]; gives 54 as output.

foreach loop

It is used when we have an array with unknown number of elements. The foreach loop works only on arrays and has two formats.

```
foreach ($array as $value)
{
    //code to be executed;
}
```

and

```
foreach ($array as $key=>$value)
{
    //code to be executed;
}
```



Eg: <?php
 \$colors = array("red", "green", "blue", "yellow");
 foreach (\$colors as \$x)
 {echo "\$x "; }
 ?>

The output of this code will be: red green blue yellow

Built-in Functions

Function	Use	Syntax / Example
date()	To display a date in given format	date("d-m-y") displays a date as 09-11-2017
chr()	Returns a character from the specified ASCII value.	chr(65) returns A
strlen()	Returns the length of a string.	strlen("hello") returns 5
strpos()	Finds the position of the first occurrence of a string inside another string.	strpos("hello", "e") returns 1
strcmp()	Compares two strings	strcmp("he", "HE") returns False

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User-defined Functions

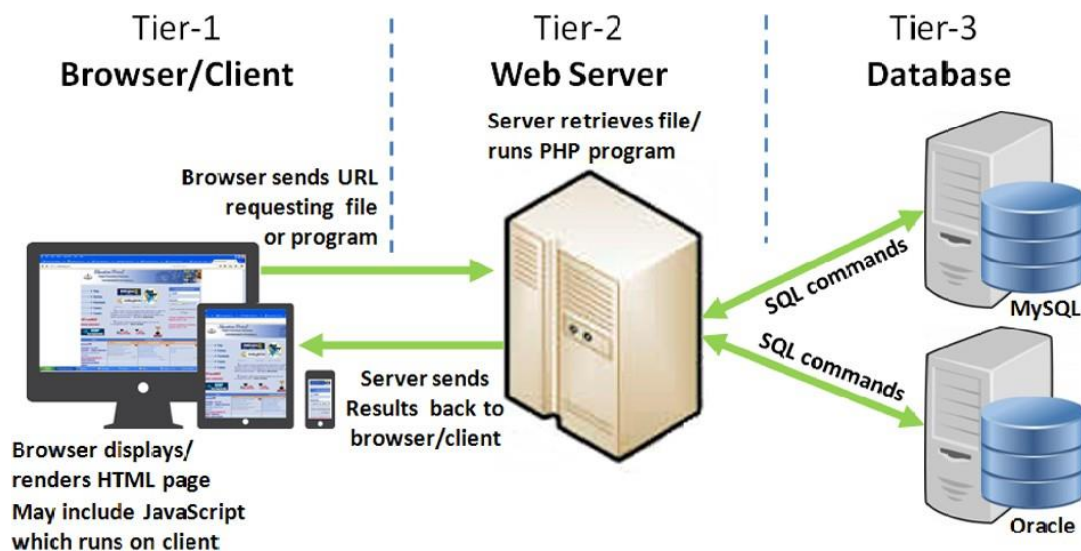
A user-defined function declaration starts with the keyword "function".

```
function functionName(arguments)
{
    //code to be executed;
}
```



Arguments are optional and they are variables. Functions are invoked by function calls.

Three tier architecture in PHP



Superglobal arrays

A superglobal array is a special variable that are always available in scripts. `$GLOBALS`, `$SERVER`, `$REQUEST`, `$GET`, `$POST` are some examples for superglobal arrays.

`$GLOBALS` is a PHP super global variable which is used to access global variables from anywhere in the PHP script.

`$_SERVER` is a PHP super global variable which holds information about headers, paths, and script locations.

`$_REQUEST` superglobal is an array that contains the contents of the `$_GET`, `$_POST`, and `$_COOKIE` superglobals.

`$_POST` is widely used to collect form data after submitting an HTML form with `method="post"`.

`$_GET` is also used to collect form data after submitting an HTML form with `method="get"`.

Form Methods – Get and Post

Method = GET	Method = POST
The data remains visible in the address bar since contents are passed as part of the URL	The data is not visible as contents are passed to the script as an input file.
Page link can be bookmarked.	Page link can never be book marked.
Data is submitted as part of the URL.	Data is submitted as part of an http request.
Data sending is fast but not secure.	Data sending secure but slow as compared to get.
GET can only send 2000 characters.	No limit.

Connecting PHP to Database (MySQL)



Connection to a MySQL database is done through the following steps:

1. Open a connection to MySQL. → `mysql_connect()`
2. Specify the database we want to open. → `mysql_select_db()`
3. Retrieve data from or insert data into database. → `mysql_query()`
→ `mysql_fetch_array()`
4. Close the connection. → `mysql_close()`

Questions from Previous Years' Question Papers (Computer Science)

1. PHP is
(a) freeware (b) proprietary (c) both (d) none (1) (March 2016)
2. (a) Compare Indexed and Associative arrays in PHP. (2) (March 2016)
(b) Write a PHP program to display prime numbers below 50. (3) (March 2016)
(c) Write a PHP program to display the perfect numbers below 100. (3) (March 2016)
3. An array in PHP is given as follows:
\$family = array("Father"=>"Ajay", "Son"=>"Arjun", "Daughter" =>"Archana").
Name the type of this array. Write a foreach loop that prints all the array elements.
(2) (SAY 2016)
4. (a) What are the differences between GET and POST methods in form submitting?
(2) (SAY 2016)
(b) Study the following steps and determine the correct order:
(1) Open a connection to MySQL server
(2) Execute the SQL query
(3) Fetch the data from query.
(4) Select database
(5) Close connection
(a) 4, 1, 2, 3, 5 (b) 1, 4, 2, 3, 5
(c) 1, 5, 4, 2, 3 (d) 4, 1, 3, 2, 5 (1) (SAY 2016)
5. A web server that supports PHP on any operating system is _____. (1) (March 2017)

6. Discuss about special data types used in PHP. (2) (March 2017)
7. Create an HTML form in PHP showing the difference between GET and POST method. (3) (March 2017)
8. Write a function in PHP to find the factorial of a number. (3) (March 2017)
9. Write a PHP program to find the biggest of three numbers. (3) (SAY 2017)
10. (a) What are the differences between echo and print statements? (2) (SAY 2017)
- (b) What is the difference between PHP and JavaScript? (2) (SAY 2017)

Answers of some questions:

7. GET and POST are the values used with Method attribute of <FORM> tag. The skeleton of the HTML form with these methods will be as follows:

```
<FORM Action= "data.php" Method= "get">
```

```
.....
```

```
</FORM>
```

```
<FORM Action= "data.php" Method= "post">
```

```
.....
```

```
</FORM>
```

When we use GET method, the data remains visible in the address bar since contents are passed as part of the URL. GET can send only 2000 characters.

But if we use POST method, the data is not visible as contents are passed to the script as an input file. There is no limit in the size of data.

8.

```
<? php
    $n = $_GET['num'];
    $f=1;
    for ($i=1; $i<=$n; $i++)
        $f = $f * $i;
    echo $f;
?>
```



9. Assume that num1, num2, num3 are the names of the textboxes in the HTML Form submitted to the php program.

```
<? php
    $n1 = $_GET['num1'];
    $n2 = $_GET['num2'];
    $n3 = $_GET['num3'];
    if ($n1>$n2)
        $big = $n1;
    else
        $big = $n2;
    if ($n3>$big)
        $big = $n3;
    echo "Biggest Number is ".$big;
?>
```