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**Module:** Developing backend using PHP

#### 1. Explain php programing beyond definition?

 Php is the most widely used open source and general purpose server side scripting language used mainly in web development to create dynamic websites and applications.

It is not only used to web app of many tech giants like facebook but also used to build many CMS(Content Management System) like WordPress ,Drupal Shopify, WooCommerce.

PHP code is usually processed on a web server by a PHP interpreter implemented as a module, a daemon or as a Common Gateway Interface (CGI) executable. On a web server, the result of the interpreted and executed PHP code – which may be any type of data, such as generated HTML or binary image data – would form the whole or part of an HTTP response.

#### 2. Why do we need to use php programming?

* It allows web developers to create dynamic content and interact with databases.
* **The use of PHP makes website pages load faster** as compared to many other web development technologies. For example, PHP is about three times faster than Python for most use scenarios. Higher application speed keeps customers satisfied and, in combination with other advantages, helps build and retain the client base.
* **Wide selection of databases**

PHP allows connection to almost any type of database. Other solid options of database management systems compatible with PHP are mSQL, MS-SQL, SQLite, PostgreSQL, etc. Besides, PHP can be equally well used with ElasticSearch, Redis, MongoDB, and other non-relational databases. So the developers are not limited to using a particular database and may select the most optimal one for a future app.

* **Inexpensive open-source software**

This mean the PHP is a free-to-use technology that presents considerable savings for the development budget and it used of free of charge also reduce project cost.

* **Cheaper hosting services:**

The cost for PHP hosting is comparatively less than other hosting environments because it is an open-source language. Compatibility: Since PHP is a universal language, the websites are compatible with almost all devices including iPhones, iPads and Android.

* **Excellent combinability with html: you** can embed php programming in html document.
* **Good flexibility:** php is able to effectively combine with other programming languages so that the software product could use the effective technology for each particular feature and also php is cross platform language that meandeveloper may use any operating system
* Compatibility with cloud services: application written in php are supported by different cloud service like AWS Lambda ,can be deployed on cloud server

**3. What is the latest php version we have today and list the updated features for the latest 3 Release?**

**The latest php version is PHP 8.2** is the latest PHP version which brings readonly classes, DNF types, null, false, and true types, sensitive parameter redaction support, a new random extension, and several new features along with a few deprecations.

**It** is released in dec 2022

**The 3 latest release and their features are:**

 **PHP 8.1,** released in 2021

**The major new features are:**

* Enums
* Fibers
* never return type
* Intersection Types
* readonly properties

 **PHP 8.0,** released in 2020.11.16

**The major features:**

* Union Types,
* JIT
* Constructor Property Promotion
* Match Syntax
* Named Parameters
* Several more performance,
* Syntax
* Quality-of-life improvements.

##  PHP 7.4

The final release in the PHP 7.x series. PHP 7.4 brings

* typed properties,
* underscore numeric separator  Other minor improvements to PHP.

#### 4. What is different between new release vs stable release of a software product?

**Release software** is the distribution of the final version or the newest version of a software application. A software release may be public or private and generally signifies of a new or upgraded version of the application.

Stable software product: it means the products behavior does not change anymore.

the resistance to the amplification of changes in software.

#### 5. What are the main features of php programming?

**Simple:** It is very simple and easy to use, compare to other scripting language.

**Interpreted:** It is an interpreted language, it mean there is no need for compilation.

**Faster:** It is faster than other scripting language e.g. asp and jsp.

**Open Source:** means you don’t need to pay for use php, you can free download and use freely.

**Platform Independent:** PHP code will run on every platform, Linux, Unix, Mac OS X, Windows.

**Case Sensitive:** PHP is case sensitive scripting language at time of variable declaration.

**Error Reporting:** PHP have some predefined error reporting constants to generate a warning.

**Loosely Typed Language:** you can use variable without declaring its data type it take data type when you enter values.

**Real-Time Access Monitoring:** it provides access logging by creating the summary of recent accesses for the user.

**6. With a help of examples explain why php is case sensitive?**

|  |
| --- |
| <?php  $number=78;// is difference to $Number  $NUMBER=90;//90  echo $number+$NUMBER;//the output will be 168  ?> |

#### 7. What and why do we use comments while writing php codes, With a help of example explain different types of php comments?

Comment is an explanation added to php script.

A comment in PHP code is a line that is not executed as a part of the program. Its only purpose is to be read by someone who is looking at the code.

We need comment in order to make code maintenance much easy as well as helping make finding bugs faster

|  |
| --- |
| <?php  $n=5;// thi is single line comment $o=90;/\*this is mult line comment\*/ echo $number+$number;  ?> |

#### 8. Differentiate with real example the following php output functions:

 echo() and print()

**echo()**

**?php**

$fname = "Gunjan";

$lname = "Garg"; echo "My name is: ".$fname,$lname; // It will not generate any syntax error.

**?>** **print()**

**<?php**

$fname = "Gunjan"; $lname = "Garg";

print "My name is: ".$fname,$lname; // it generate syntax error

**?>**

**print() and printf()**

|  |
| --- |
| <?php  $val = 2976; printf("%f",$val);// return length of outputted string  ?> |

**<?php**

$fname = "Gunjan"; $lname = "Garg";

print "My name is: ".$fname,$lname; // it generate syntax error

**?>**

### c. Printf() vs print\_r()

|  |
| --- |
| <?php  $s = "Welcome"; printf("[%s]<b>",$s); |

?>

**print\_r()**

print\_r(variable, isStore)

<?php

$str = "This is a string"; //string print\_r($str);

?>

# Print\_r vs var\_dump()

<?php

// PHP program to illustrate

// the print\_r() function

// string variable

$var1 = "Welcome to GeeksforGeeks";

print\_r($var1); ?>

**Var\_dump()**

<?php

$a = 32; echo var\_dump($a) . "<br>";//used to dump information about a variable.

$b = "Hello world!"; echo var\_dump($b) . "<br>";

?>

#### 9. List and Describe different datatype we have in php by categorizing them in scalar, compound and special datatypes.

**There are 4 scalar data types in PHP.**

* Boolean is data type only has two values, It can be either true or false.
* Integer is data type used in php to return integer values
* Float is data type used for decimal number
* String is data type used for set of characters (string).

**There are 2 compound data types in PHP.**

* Array is data type used for holding more than one values at time (variable) with the same type.
* Object: is a compound data type (along with arrays) , data type that hold data of difference data type

**There are 2 special data types in PHP:**

* resource: a special data type that refers to any external resource. acts as a reference to external source of data such as stream, file, database. When you want to include external resource in php script
* NULL: a special data type which can have only one value, there is no value assigned to it

#### 10. What is php variable, list the variable naming rules you have to obey while defining a variable in php?

 **Php variable** is container for storing information.

#####  list the variable naming rules in php

* variable star with the $ sign, followed by the name of the variable
* variable name must start with letter or the underscore character
* variable name cannot start with number.
* Variable name can only contain alpha-numic character and underscore.
* Variable names are case sensitive ($age and $AGE).

## 11.List and explain at least 10 super global variables?

**Super global variables** are built-in variables that are always available in all scopes.

**$GLOBALS** is php super global variable which is used to access global variables from anywhere in php script also within function or methods.

PHP stores all global variables in an array called $GLOBALS[index]. The index holds the name of the variable

Ex: function addition() {

$GLOBALS['z'] = $GLOBALS['x'] + $GLOBALS['y'];

}

**$\_SERVER** php super global variable which hold information about headers, path, and script locations.

The entries in this array are created by the web server, therefore there is no guarantee that every web server will provide any of these; servers may omit some, or provide others not listed here.

Ex: echo $\_SERVER['SERVER\_NAME'];

**$\_REQUEST** is a PHP super global variable which is used to collect data after submitting an HTML form.

<form method="post" action="<?php echo $\_SERVER['PHP\_SELF'];?>">

**$\_POST** is php super global variable which is used to collect form data after submitting an HTML form with method=”POST”.

<form method="post" action="<?php echo $\_SERVER['PHP\_SELF'];?>">

**$\_GET** IS PHP super global variable which is used to collect form data after submitting an HTML form with method=”GET”.

$\_GET can also collect data sent in the URL.

<form method="get" action="<?php echo $\_SERVER['PHP\_SELF'];?>">

**$\_FILES** is an associative array containing items uploaded via HTTP POST method.

echo "Type : " . $\_FILES['file']['type'] ."<br>";

**$\_ENV** is an associative array in php. It stores environment available to current script.

**$HTTP\_ENV\_VARS** also contains the same information, but is not a superglobal, and now been deprecated.

Environment variables are imported into global namespace. Most of these variables are provided by the shell under which PHP parser is running. Hence, list of environment variables may be different on different platforms.

PHP library has getenv()function to retrieve list of all environment variables or value of a specific environment variable.

<?php

$arr=getenv();// this script display all environment available

foreach ($arr as $key=>$val)

echo "$key=>$val

";

?>

**PHP also has putenv()** function to create a new environment variable. The environment variable will only exist for the duration of the current request.

**$\_COOKIE**: it stores variables passed to current script along with HTTP request in the form of cookies.

Cookies are text files stored by a server on the client computer and they are kept of use tracking purpose.

PHP contains setcookie function to create a cookie object to be sent to the client along with HTTP response.

setcookie(name, value, expire, path, domain, security);

echo 'Hello ' . htmlspecialchars($\_COOKIE["name"]) . '!';

**$\_SESSION** is an associative array that contains all session variable.

A session creates a file in a temporary directory on the server where registered session variables and their values are stored. This data will be available to all pages on the site during that visit.

A PHP session is easily started by making a call to the session\_start() function.

Session variables are stored in associative array called $\_SESSION[].

$\_SESSION["favcolor"] = "green";