

Web programming

01) What is world wide web (www)?

- An internet-based hypertext project that allows global information sharing
- It's collection of interlinked multimedia documents that are stored in internet

02) Different between internet and www

Internet	www
1) It's global network connecting millions of computers	① System of internet serves that special documents
2) Decentralized	② Document are formatted in a markup language

03) Structural Components Of WWW

- Client
- Server
- Internet

04) Syntactic Components

- HTTP
- HTML (XML)
- URL

05) What is HTTP?

- Is an application layer protocol
- HTTP Communicate between Computer and web Server

06) Define HTML

- Standard Markup language for creating web pages and describes the structure of web page
- HTML element tell the browser how to display the content

07) URI

- uniform resource identifier is intended to identify abstract or physical resources on the internet

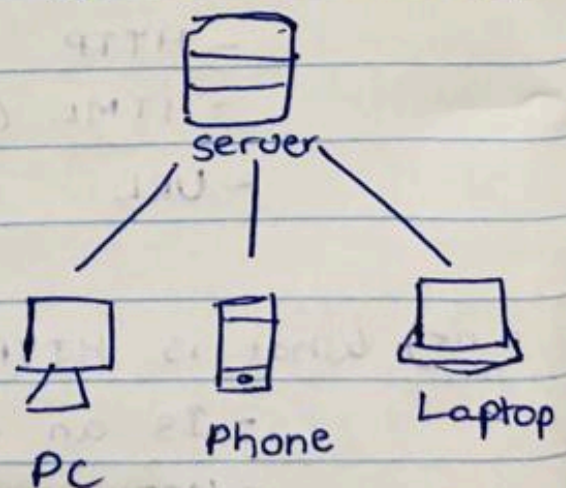
08) Define web architecture

- An application refers to the overall structure of an application, including designed, implemented and deployed.

09) Explain Client Server architecture

- A software architecture model consisting of two,
 - Client System
 - Server System

• both communicating over a computer network or on the same computer



10) What is Client

- The request of services and the server is defined as the provider of services

11) Characteristics of a Client

- Initiates requests
- waits for and receives replies

ex: Email Client, web browsers.

12) What is Server

- Host that is running one or more server programs that can share information or resources.

13) Characteristics of Server:

- passive (slave)
- wait for requests from client

ex: Web Server, mail Server

14) Explain Multi tier architecture?

- Is three-tier architecture
- A client-server architecture in which presentation application, processing and data management functions are logically separate.

15) Benefits Of three-tier architecture

- Faster development
- Improved Security
- Improved reliability

16) What is web application

- An application that uses web Technology including web browsers, web Servers and internet protocol is Called a web application

17) Web Oriented three-tier architecture.

- Presentation tier

- Browse Client
- Client Side Scripting (JavaScript)

- logical tier

- web Server (Apache)
- Scripting language (PHP)
- Programming language (Java, C#, c++)

- Data tier

- DBMS (Oracle, MySQL)
- XMLDB

Q8) 1-tier Architecture (All 3 layers are On the Same machine)

2 " (Database runs on a server)

• (Presentation and logic layers are still tightly Connected)

3-tier " (each layer Can potentially run On different Machine)

01) What is Scripting language

- A Script is a set of programming instructions that is interpreted at runtime.
- Do not require the compilation step and are rather interpreted.

02) Scripting Language Vs Programming language

① programming language

- All the features needed to develop complete applications
- The code has to be compiled before it can be executed.

② Scripting language

- Mostly used for routine tasks
- Code is usually executed without compiling

03) What is Client and Server side Scripting?

Client-side

- web browsers execute Client-Side Scripting
- It allows more interactivity
- Source Code is transfer from the web server to user's computer over the internet run directly on browsers

ex: JavaScript

Server - side

- Method of programming, web that runs Software on the Server rather than the browser
- ex: PHP, Ruby
- Customize a web page and dynamically Changes its Content

04) What is PHP?

- "PHP: Hypertext preprocessor"
- Is a widely used open-source general-purpose Server-side Scripting language
- It's especially Suited for web development

05) How PHP works

1) Client page request



If file Contains PHP Script

yes ↓

NO

HTML Output return

Decision Making based on requested page Code Content to browser

06) To run PHP web Pages three vital Components need

- 1) web server (freely available Apache Server)
- 2) PHP parser (Process PHP Script instructions)
- 3) Database (optional) (MySQL using)

07) What are the Software use for setting up Development Server

- WAMP (windows, Apache, MySQL, PHP)
- LAMP (Linux, Apache, " " " ")
- MAMP (Mac, Apache, MySQL, PHP)

08) Write PHP Syntax

- It's Case Sensitive language "VAR NOT The Same
"var"

<? php - - - ?>

- It's extension ".php"

09) How to Print Hello world in PHP

<DOCTYPE html>

<html>

<body>

← HTML Code

<h1> My 1st PHP page </h1>

<? php

echo "Hello world!" ;

← PHP Code

Print "Hello world" ;

?>

</body>

</html>

← HTML Code

Output //

Hello world!

Hello world

Basics Of PHP

01) What is PHP Variable

- you must place \$ in front of all variables
- Variable names in PHP are Case-Sensitive
- PHP automatically determines variable type
 - Integer
 - Floating
 - String

02) What are the rules for Choosing a name for you Variable Give 2 examples. (Variable naming Convention)

- 1) PHP variable must Start with a letter or underscore "_".
- 2) Variable with more than one word Should be Separated with underscore
 - \$My_variable
 - \$MyVariable

03) PHP Data types

- String : Alphabetical Characters
- Integer : Whole Number
- Float : Numbers with decimal points
- Boolean : True or false

04) Variable Assignments

- Variable = Value
- Variable = Variable (reassign the value another Variable)

10) What is echo and Print

- echo and Print, both used to Output Data On Screen
- Two Statments can be used with or without parenthese :

ex: print or print()

11) Comments

// One line Comment

/* Two line Comment */

12) Discuss declaring variables and assigning values in PHP

① Declaring a variable

\$myVariable;

② Assigning a value to variable

\$myVariable = 10;

③ Declaration and Assignment in a Single Line

\$anotherVariable = "Hello, World!";

05) What is Constants

- A Constants is a variable whose value cannot be changed at runtime

06) What is Operators

- Operators are the mathematical, String, Comparison and logical commands such as plus, minus, multiply and divide

07) Types Of Operators

- Arithmetic Operators (+, -, *, /, ++)
- Assignment Operators (=, +=, /=, %=)
- Comparison " (==, !=, >=, <=)
- Logical " (&&, ||, or, and)

• example :

<?Php

\$a = 10;

\$b = 5;

echo \$a++;

echo "
";

echo ++\$b;

?>

Output // 10
6

• example :

<?Php

\$b = 50;

\$a = 10;

\$b% = \$a;

echo \$b;

Output // \$50

No: _____

Expressions

Date: ____ / PDP 04

01) What is an expression?

- Is a Combination of values, variables, Operators and Functions that result a value
- An expression is a literal, which something that evaluates to itsent

ex: 73, "Hello"

example

<? PHP

\$a = 10; // is an expression

\$a = \$b + \$c; // is an expression

\$ans = sqrt(100); // is an expression

02) What are the Conditions (Non-looping)

- If Statment
- Switch Statment
- ? Operator

03) If Statment

Syntax

<? PHP

\$t = date('d');

if (\$t < "20") {

echo "Have a good day!";

}

?> Output // Have a good day

04) Else Statment

<? Php

```
$num1 = 10;
```

```
$num2 = 20;
```

```
if ( $num1 > $num2 ) {
```

```
    echo "$num1 is grater than $num2";
```

```
} else {
```

```
    echo "$num2 is grater than $num1";
```

```
}
```

?>

```
// Output num2 is grater than $num1
```

```
// Output 20 is grater than 10
```

05) Elseif Statment

<? Php

```
$num1 = 10;
```

```
$num2 = 20;
```

```
if ( $num1 > $num2 ) {
```

```
    echo "$num1 is grater than $num2";
```

```
} else if ( $num1 == $num2 ) {
```

```
    echo "$num1 is equal to $num2";
```

```
} else {
```

```
    echo "$num2 is grater than $num1";
```

```
}
```

?>

```
Output // Same on else
```

```
20 is grater than 10
```


06) Switch Statment

<? PHP

Switch (\$page)

{

Case "Home":

echo "you selected Home";

break;

Case "about":

echo "you Selected about";

Case "News":

echo "you Selected News";

}

?>

07) ? Operator

- Compact version of if...else

- It must evaluate, along with two Statment to execute

- One for TRUE

- Other one for FALSE

ex:

<? PHP

\$ enough = \$fuel <= ? "fill tank now" : "Ther's enough fuel";

?>

08) What is looping

- They can repeat Calculating task quickly and tirelessly
- Same Sequence Of Code again and again until reaching a natural end

09) Types Of looping

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

10) <? Php (While loop) }

\$num = 1 ;

While (\$num <= 5) {

echo "Hello
" ;

\$num++ ;

}

?> Output // Hello

Hello

Hello

Hello

Hello

(Print 5 hello)

11) Do --- while loop

ex: <?php

```

    $num = 1;
    do {
        echo "Hello <br/> ";
        $num++;
    } while ($num < 5);
?>

```

Output

```

// Hello
// Hello
// Hello
// Hello

```

(If its <=5 Print Hello)

12) For loop

<?php

```

for ($num = 1; $num <= 5; $num++) {
    echo "Hello <br/> ";
}

```

?> // Output (Hello for five times)

13) Break

<?php

```

for ($i = 1; $i < 10; $i++) {
    if ($i == 5) {
        break;
    }
}

```

echo \$i. "
 ";

```

}
?>

```

Output //

No: _____

Date: ____/____/____ 16

14) ~~Break~~ Continue

<? php

```
for ($i=1; $i<10; $i++) {
```

```
    if ($i == 5) {
```

```
        continue;
```

```
    }
```

```
    echo $i. "<br />";
```

```
}
```

(01) ?>

Output //

11
11
11
11

12) for loop

<? php

```
for ($num=1; $num<=5; $num++) {
```

```
    echo "Hello <br />";
```

```
}
```

13) Break

14) Break

<? php

```
for ($i=1; $i<10; $i++) {
```

```
    if ($i == 5) {
```


01) What is An Array?

- Is a Special Variable, Which Can hold more than One value at a time
- each element has its Own location.

02) Create an array?

⊙ <?php

```
$Student_list[] = "kamal";
```

```
$Student_list[] = "Sanduni";
```

```
$Student_list[] = "kasum";
```

```
?>
```

⊙ <? php

```
$Student_list = array("kamal", "Sanduni", "kasum");
```

```
?>
```

03) What is numerically index array with example?

- Array which has numerical indices called as Numeric Arrays.

| | | | | |
|----|----|----|----|-----------|
| 0 | 1 | 2 | 3 | ↑ ← Index |
| 20 | 50 | 34 | 56 | 100 |

<? php

```
$Student_list = array("kamal", "Sanduni", "kasum", "Geetha");
```

```
print_r($Student_list);
```

```
?>
```

//Output Array ([0] => kamal [1] => Sanduni [2] => kasum => [3] Geetha)

04) kamal, Sanduni, kusum, Namal print this Names in array

<? PHP

```
$Student_list = array("kamal", "Sanduni", "kusum", "Namal");  
for each ( $Student_list as $Student ) {  
    echo $Student. "br/";  
}
```

?>

Output

| |
|---------|
| kamal |
| Sanduni |
| kusum |
| Namal |

05) What is Associative Arrays

- Arrays which Can Contain Alphanumeric identifiers

Index m1 m2 m3 m4

06) What is Multidimensional Arrays

- A Simple design features in PHP's array

Syntax makes it possible to create arrays of more than one dimension

- 2D (Two Dimensional array)

07) What are the Array Functions

- is_array()

- count()

- sort()

01) Explain File handling

- powerful as it is, MySQL is not the only way to store all data on a web server
- Sometimes it can be quicker and more convenient to directly access files on the hard disk.

02) How to Check Whether a File exists

```
> <? PHP
```

```
if (file_exists ("testfile.txt"))
```

```
    echo "yes";
```

```
else {
```

```
    echo "No";
```

```
}
```

```
?> Output // No
```

03) File reading fread() Functions

update file fwrite Function

File uploading \$_FILES [" "][" "];

04) Write file uploading Syntax

```
move_uploaded_file (Temporary file, Target_file)
```


01) What is function?

- Set of Statements that perform a particular function and optionally return a value.
- To use function, call it by name.
- PHP comes with hundreds of ready-made, built-in functions.

02) Write Syntax for function

```
function function_name ([Parameter [,...]])  
{  
    // Statements  
}
```

03) Write down PHP function to print "Hello world"

```
function printHelloWorld () {  
    echo "Hello world!";  
}  
printHelloWorld ();
```

04) What are the PHP Superglobal variables?

- \$GLOBALS
- \$_POST
- \$_FILES
- \$_SESSION

05) What is Cookies ?

- An item of data that a web server saves to your computer's hard disk via web browser
- Can be retrieved from your computer and returned to the server.

06) Common uses of Cookies?

- Session tracking
- Storing login details

07) What is Sessions

- Sometimes want to track what your users are doing from one web page to another.
- A session starts with the Session_Start() Function

Working with Database

01) What is MySQL

- Popular Database Management System for web server
- It's free to use
- Powerful and exceptionally fast
- MySQL Contains one or more tables, which contain record or rows
- Column or fields that contain the data

02) What are the Terminology SQL,

- ✗ Database - Collection of MySQL Data
- ✗ Table - Sub Container that Stores actual data
- ✗ Row - A single record within a table
- ✗ Column - Name of field within a row

03) How to Connecting to MySQL
MySQL_Connect()

04) What are the parameters

- Server (localhost)
- username (root)
- password (password, given to MySQL)

05) ~~Connect to database~~ Closing a Connection
- MySQL_close(\$con);

05) How to inserting Data MySQL (PHP)

```
① $query = "INSERT INTO Student (StuID, StuName,
    email)
    VALUES ('0073', 'Nimal', 'Nimal@gmail.com');"
```

```
$result = mysql_query ($connection, $query);
}
```

```
echo "inserted Successfully"; }
```

06) How to update Data MySQL

```
update
$query = "UPDATE Student SET email='kamal@gmail'
WHERE Student ID = '0073'";
```

```
$result = mysql_query ($connection, $query);
```

```
} {
```

```
echo "updated Successfully"; }
```

07) How to delete Data MySQL

```
$deletequery = "delete FROM Student WHERE StuID =
    '0073'";
```

```
$result = mysql_query ($connection, $deletequery);
```

```
{
```

```
echo "delete Successfully"; }
```


01) How to inserting form values

- Step 1 > Established the Connection
- Step 2 > Collecting the user-entered values
- Step 3 > pass the Collected values into an SQL INSERT query
- Step 4 > Execute the query in PHP

02) Explain Fetching Data

- When you want to fetch data from a database you need to run a SELECT query

- It will return a result set

03) How to fetch Data

- `mysqli_fetch_row()`

- `mysqli_fetch_array()`

- `mysqli_fetch_assoc()`

- `mysqli_num_rows()`

04) Create database

- Syntax

"CREATE DATABASE 'databas-name'"

01) What is Oop ?

- Object Oriented programming is stands for oop
- Creating Objects that contain both data and functions

02) What is Object ?

- x Attributes - Characteristics or properties of the Object
- x Methods - things that the Object can do

03) What is Class ?

- Class represent a collection of Objects having same characteristic properties that exhibit common behavior
- Object is an instance of a class

04) Oop Concepts

- Encapsulation
- Abstraction
- Inheritance
- Polymorphism

04) Syntax Class

<? PHP

```
Class Student {  
    }
```

?>

05) How to Defining Objects

\$st1 = new Student () ; // Create an Object

06) What is Constructor ?

- A Constructor allows you to initialize an Object's properties upon creation of the Object

Syntax

```
function_Construct () {
}
```

07) What is Destructors ?

- A destructor is called when the Object is destuted or the Script is stopped or exited

Syntax

```
function_destruct () {
}
```

08) What is Access Modifiers

- public (Property or method can be access from everywhere)
- Protected (accessd within the Class)
- private (ONLY accessed within the Class)

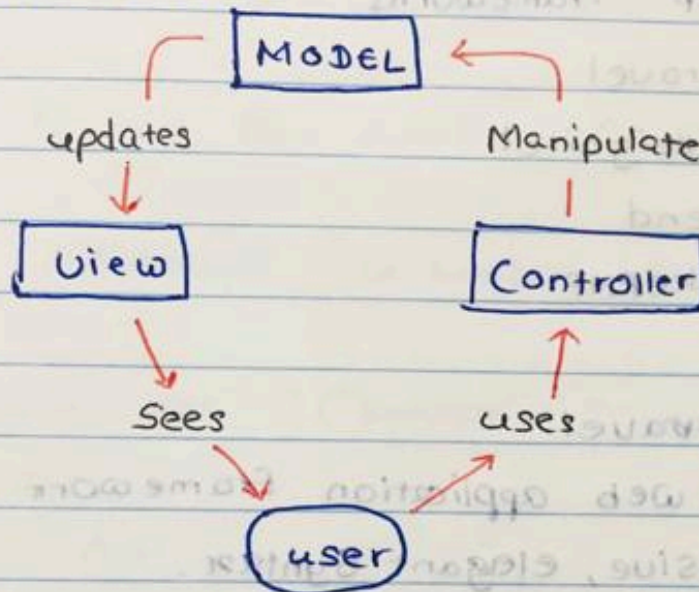
09) What is inheritance

- Deriving Classes using an existing Class
- It can have its own properties and Method

01) What are the parts of MVC

- Model
- View
- Controller

02) Cycle of MVC



03) Explain MVC

- Model * The model is the name given to the permanent storage of the data used in the overall design
- View * The view is where data, requested from the model, is viewed and its final output is determined
- Controller * Its job is to handle data that the user inputs or submits and update the model accordingly

Q3) Explain MVC Framework?

- prepackaged Set of Software libraries that provide generic functionality and Can be Customized by User Code.

Q4) Popular PHP Frameworks

- Laravel
- Codeigniter
- Zend
- CakePHP

Q5) Explain Laravel

- Is a web application framework with expressive, elegant Syntax.
- MVC Architecture used in Laravel
- Laravel application follows design patterns

- Controller

- Models

- View

01) Write down PHP Code Segment to print whether a given number is odd or even (ඔබගේ ඔබගේ)

```
<?php
```

```
$number = 10; // can add any Number
```

```
if ($number % 2 == 0) {
```

```
    echo "The number $number is Even";
```

```
} else {
```

```
    echo "The number $number is odd";
```

```
}
```

```
?> Output // The number 10 is Even
```

02) Example for ? Operator (Ternary Operator)

```
<?php
```

```
$s = 0;
```

```
$a = $s >= 1 ? "Monday" : "Tuesday";
```

```
echo $a;
```

```
?>
```

```
Output // Tuesday
```

03) Write down PHP Code Segment to print a given number is odd or even using ternary Operator

```
<?php
```

```
$number = 7;
```

```
$result = ($number % 2 == 0) ? "Even" : "Odd";
```

```
echo "The number $number is $result";
```

```
?>
```

```
Output // The number 7 is odd
```


04) Write a Small PHP Code to print multiplication table of 5

```
<?php
```

```
$multiplier = 5;
```

```
for ($i = 1; $i <= 10; $i++) {
```

```
    $result = $multiplier * $i;
```

```
    echo "$multiplier x $i = $result <br>";
```

```
}
```

?> output //

5 x 1 = 5

5 x 2 = 10

5 x 3 = 15

5 x 4 = 20

5 x 5 = 25

5 x 6 = 30

5 x 7 = 35

5 x 8 = 40

5 x 9 = 45

5 x 10 = 55

05) Write down PHP Code to display the number from 1-10 using for loop and while loop

For loop

```
<?php
```

```
for ($i = 1; $i <= 10; $i++) {
```

```
    echo $i "<br>";
```

```
} ?> output //
```

1

2

3

4

5

6

7

8

9

10

While loop

```
<? php
```

```
    $i = 1;
```

```
    do {
```

```
        echo $i "<br>";
```

```
        $i++;
```

```
    } while ($i <= 10);
```

```
?>
```

Output //

1
2
3
4
5
6
7
8
9
10

6)

username:
 password:

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title> Login </title>
```

```
</head>
```

```
<body>
```

```
<form action = "login.php" method = "post" >
```

```
<label for = "username" > Username: </label>
```

```
<input type = "text" id = "username" >
```

```
<br><br>
```

```
<label for "password" > password: </label>
```

```
<input type = "password" id "password" >
```

```
<input type = "Submit" value = "Login" >
```

```
</form>
```



```
</body>
```

```
</html>
```

```
<?php
```

```
if
```

```
( $server [ "REQUEST METHOD " ] == "post" ) {
```

```
    $entered_username = $POST [ 'username' ] ;
```

```
    $entered_password = $POST [ 'password' ] ;
```

```
    echo "Entered username : " $entered_username . "<br>
```

```
    echo "Entered password : " $entered_password . "<br>
```

```
}
```

```
?>
```