A Laboratory Manual For

Web Based Application Development with PHP

(22619)

Semester –VI

Maharashtra State

Board of Technical Education, Mumbai

(Autonomous) (ISO 9001 : 2015) (lSO/IEC 27001 : 2013)

Maharashtra State Board of Technical Education, (Autonomous) (ISO 9001 : 2008)
(lSO/IEC 27001 : 2005)
4th Floor, Government Polytechnic Building, 49, Kherwadi, Bandra (East), Mumbai 400051.
(Printed on June, 2019)

MAHARASHTRA STATE
BOARD OF TECHNICAL EDUCATION

Certificate

This is to certify that Mr. / Ms:…….....

Roll No....., of Sixth Semester of Diploma in ……..…… of Institute ……

(Code:…….....) has attained predefined practical outcomes (PROs) satisfactorily in course **Web Based Application Development with PHP (22619)** for the academic year 20…….. To 20…….…… as prescribed in curriculum.

Place:…… Enrollment No:……

Date: …….. Exam. Seat No:……...

Subject Teacher Head of Department Principal

Practical -Course Outcome Matrix

Course Outcomes(COs)

a. Develop program using control statement
b. Perform operation based on arrays and graphics
c. Develop programs by applying various object oriented concepts.
d. Use form controls with validation to collect user's input.
e. Perform database operations in PHP.

Sr. No.	Title of the Practical	CO a.	CO b.	CO c.	CO d.	CO e.
01	a. Install and configure PHP, web server, MYSQL b. Write a program to print "Welcome to PHP" c. Write a simple PHP program using expressions and operators.	√				
02	Write a PHP program to demonstrate the use of Decision making control structures using- a. If statement b. If-else statement c. Switch statement	√				
03	Write a PHP program to demonstrate the use of Looping structures using- a) While statement b) Do-while statement c) For statement d) Foreach statement	√				
04	Write a PHP program for creating and manipulating- a) Indexed array b) Associative array c) Multidimensional array		√			
05	A. Write a PHP program to- • Calculate length of string. • Count the number of words in string without using string functions. B. Write a simple PHP program to demonstrate use of various built-in string functions.		√			
06	Write a simple PHP program to demonstrate use of simple function and parameterized function.		√			
07	Write a simple PHP program to create PDF document buy using graphics concepts.		√			

08	Write a PHP program to a) Inherit members of super class in subclass. b) Create constructor to initialize object of class by using object oriented concepts.			√		
09	Write a simple PHP program on Introspection and Serialization.			√		
10	Design a web page using following form controls: a. Text box, b. Radio button, c. Check box, d. Buttons				√	
11	Design a web page using following form controls: a. List box, b. Combo box, c.Hidden field box				√	
12	Develop web page with data validation.				√	
13	Write simple PHP program to - a. Set cookies and read it. b. Demonstrate session management				√	
14	Write a PHP program for sending and receiving plain text message (e-mail).				√	
15	Develop a simple application to - a) Enter data into database b) Retrieve and present data from database					√
16	Develop a simple application to Update, Delete table data from database.					√

Content Page

List of Practicals and Progressive Assessment Sheet

Sr. No.	Practical Outcome	Page No.	Date of Performance	Date of Submission	Assessment Marks (25)	Dated sign of teacher	Remark
1	a. Install and configure PHP, web server, MYSQL b. Write a program to print "Welcome to PHP" c. Write a simple PHP program using expressions and operators.	1					
2	Write a PHP program to demonstrate the use of Decision making control structures using- a. If statement b. If-else statement c. Switch statement	17					
3	Write a PHP program to demonstrate the use of Looping structures using- a) While statement b) Do-while statement c) For statement d) Foreach statement	25					
4	Write a PHP program for creating and manipulating- a) Indexed array b) Associative array c) Multidimensional array	32					
5	A. Write a PHP program to- • Calculate length of string. • Count the number of words in string without using string functions. B. Write a simple PHP program to demonstrate use of various built-in string functions.	43					
6	Write a simple PHP program to demonstrate use of simple function and parameterized function.	49					
7	Write a simple PHP program to create PDF document buy using graphics concepts.	56					

Sr. No.	Title of The Pratical	Page No.	Date of Performance	Date of Submission	Assessment Marks (25)	Dated Sign. Of teacher	Remark
8	Write a PHP program to a) Inherit members of super class in subclass. b) Create constructor to initialize object of class by using object oriented concepts.	61					
9	Write a simple PHP program on Introspection and Serialization.	70					
10	Design a web page using following form controls: a. Text box, b. Radio button, c. Check box, d. Buttons	79					
11	Write a PHP program for sending and receiving plain text message (e-mail).	87					
12	Develop web page with data validation.	96					
13	Write simple PHP program to - a. Set cookies and read it. b. Demonstrate session management	102					
14	Write a PHP program for sending and receiving plain text message (e-mail).	111					
15	Develop a simple application to - a) Enter data into database b) Retrieve and present data from database	118					
16	Develop a simple application to Update, Delete table data from database.	127					
Total Marks							
Total Marks (Scaled to 25 Marks)							

Practical No. 1:

a. **Install and configure PHP, web server, MYSQL**
b. **Write a program to print "Welcome to PHP"**
c. **Write a simple PHP program using expressions and operators.**

I Practical Significance:

PHP is popular scripting language, which is used to develop various web applications. PHP is also object oriented programming language students will be able to setup PHP environment for executing PHP program or using different server like WAMP or XAMPP server.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

This practical is expected to develop the following skills.

1. Setup PHP environment for executing PHP program.
2. Execute simple program.

IV Relevant Course Outcome(s):

CO1 Develop a program using control statement.

V Practical Outcome (PrOs) :

1. Install and configure PHP, web server, MYSQL
2. Write a program to print "Welcome to PHP"
3. Write a simple PHP program using expressions and operators

VI Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII Minimum Theoretical Background:

PHP program is executed on web server.
Install XAMPP server on Windows 7 or above.

Step1:

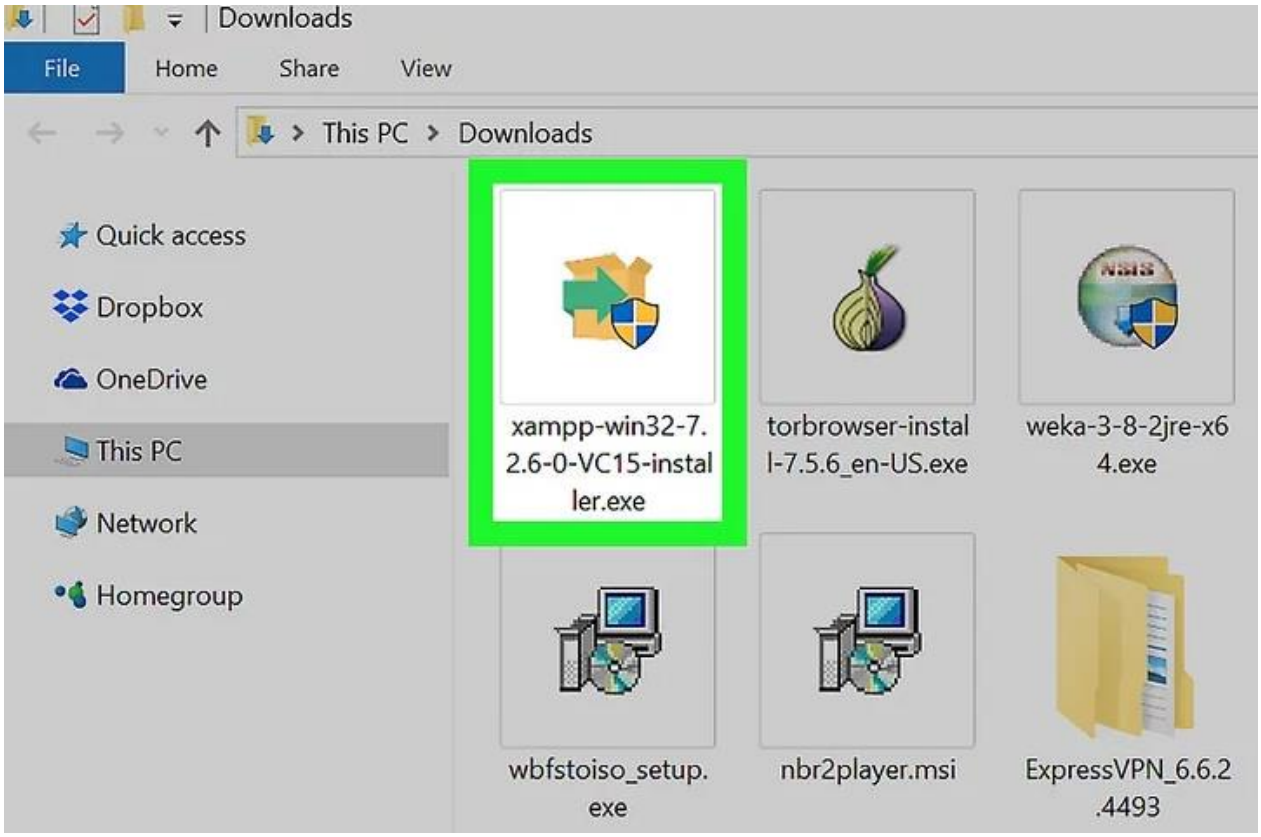
Open the XAMPP website. Go to https://www.apachefriends.org/index.html in your computer's web browser.

Step2:

Click XAMPP for Windows. It's a grey button near the bottom of the page. Depending on your browser, you may first have to select a save location or verify the download.

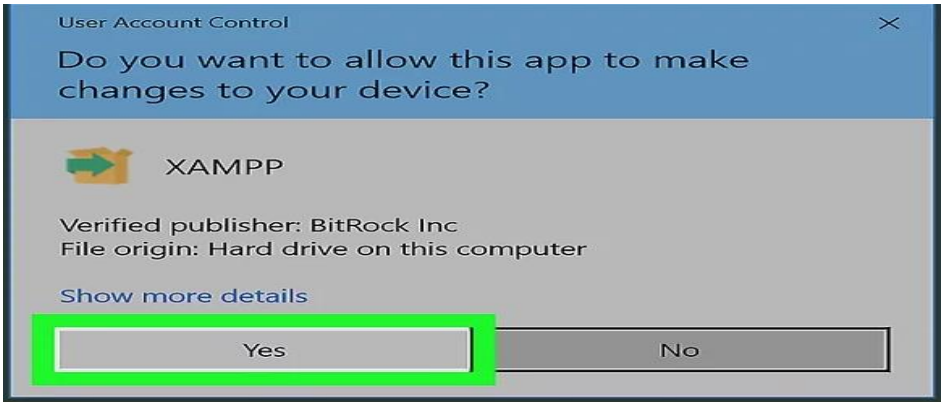
Step3:

Double-click the downloaded file. This file should be named something like xampp-win32-7.2.4-0-VC15-installer, and you'll find it in the default downloads location (e.g., the "Downloads" folder or the desktop).



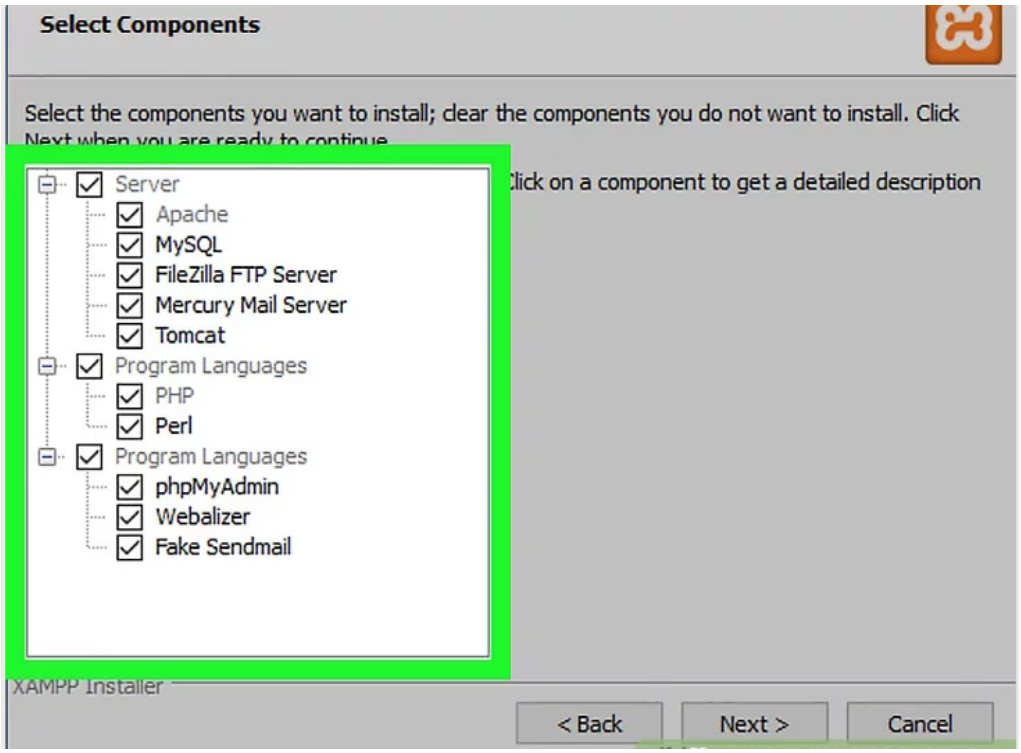
Step 4

Click Yes when prompted. This will open the XAMPP setup window. You may have to click OK on a warning if you have User Account Control (UAC) activated on your computer.



Step 5:
Click Next. It's at the bottom of the setup window.

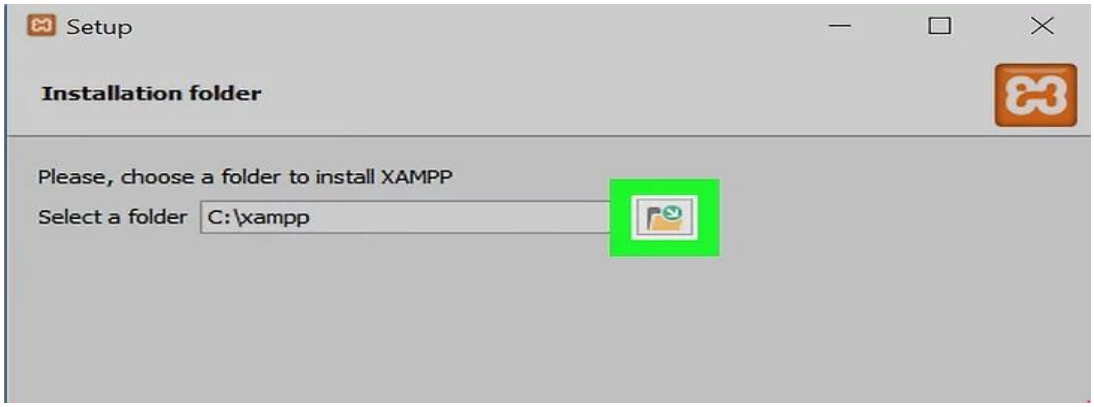
Step 6:
Select aspects of XAMPP to install. Review the list of XAMPP attributes on the left side of the window; if you see an attribute that you don't want to install as part of XAMPP, uncheck its box. By default, all attributes are included in your XAMPP installation.



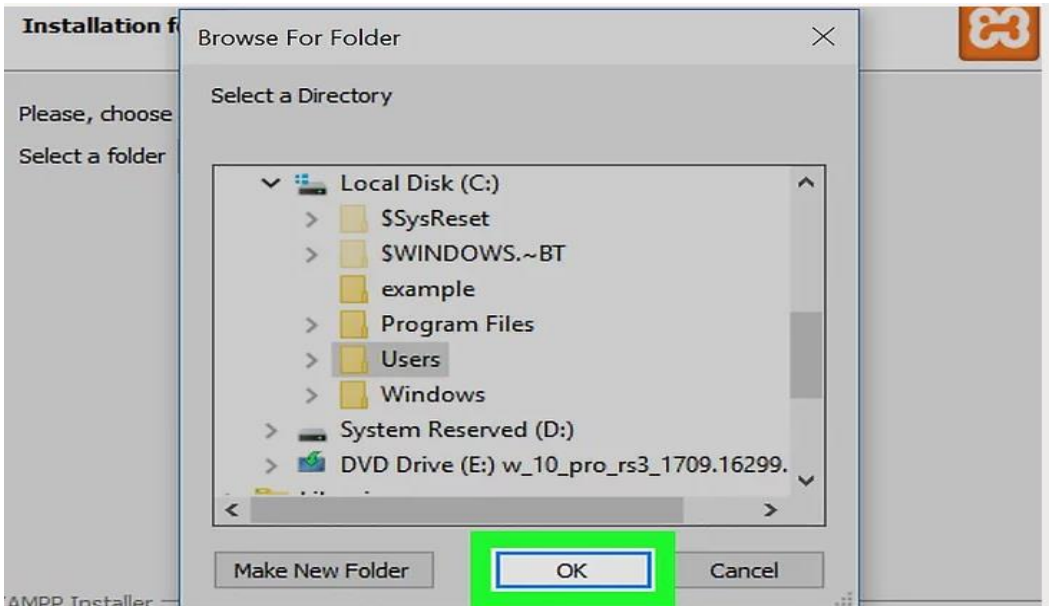
Step7: Click Next. It's at the bottom of the window.

Step 8:

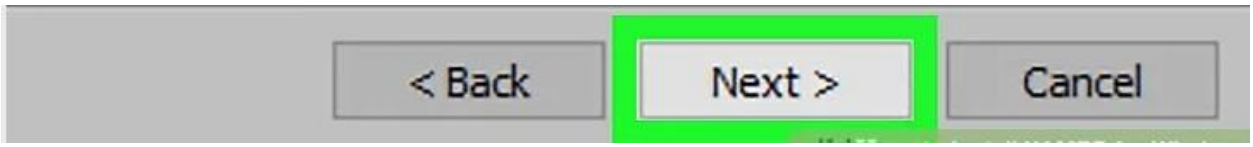
Select an installation location. Click the folder-shaped icon to the right of the current installation destination, then click a folder on your computer. If you have the UAC activated on your computer, avoid installing XAMPP in your hard drive's folder (e.g., OS (C:)). You can select a folder (e.g., Desktop) and then click Make New Folder to create a new folder and select it as the installation destination.



Step 9: Click OK. Doing so confirms your selected folder as your XAMPP installation location.

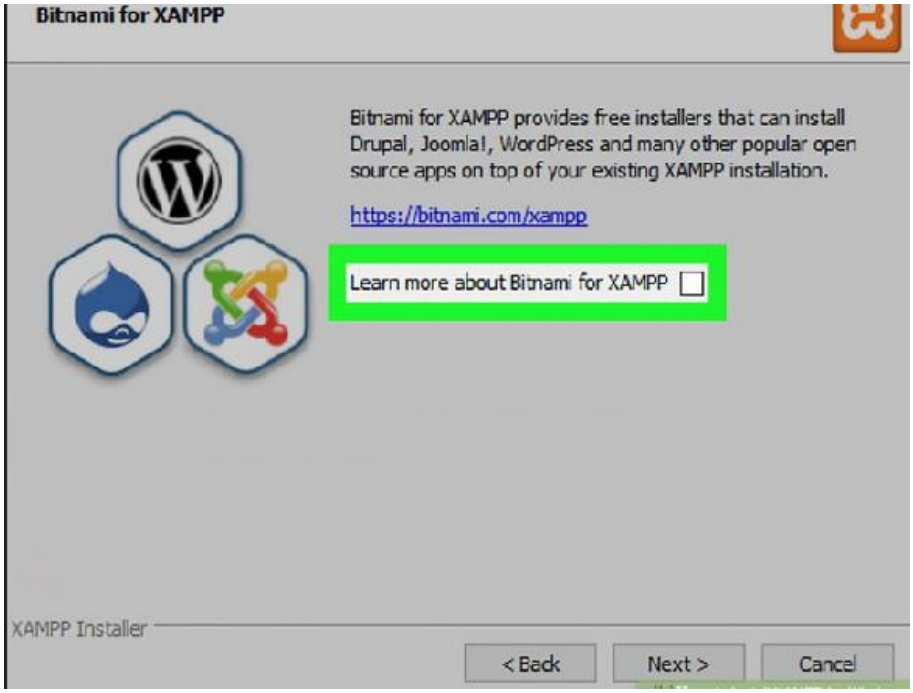


Step 10: Click Next. It's at the bottom of the window.



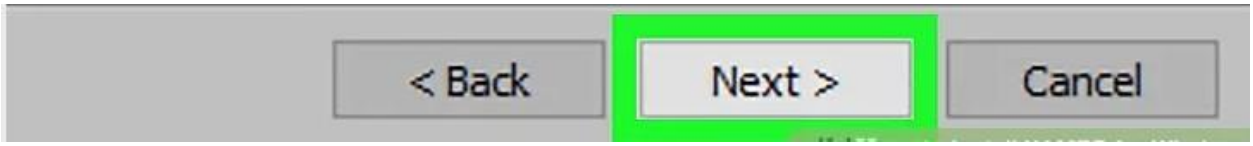
Step11:

Uncheck the "Learn more about Bitnami" box, then click Next. The "Learn more about Bitnami" box is in the middle of the page.



Step 12:

Begin installing XAMPP. Click Next at the bottom of the window to do so. XAMPP will begin installing its files into the folder that you selected.



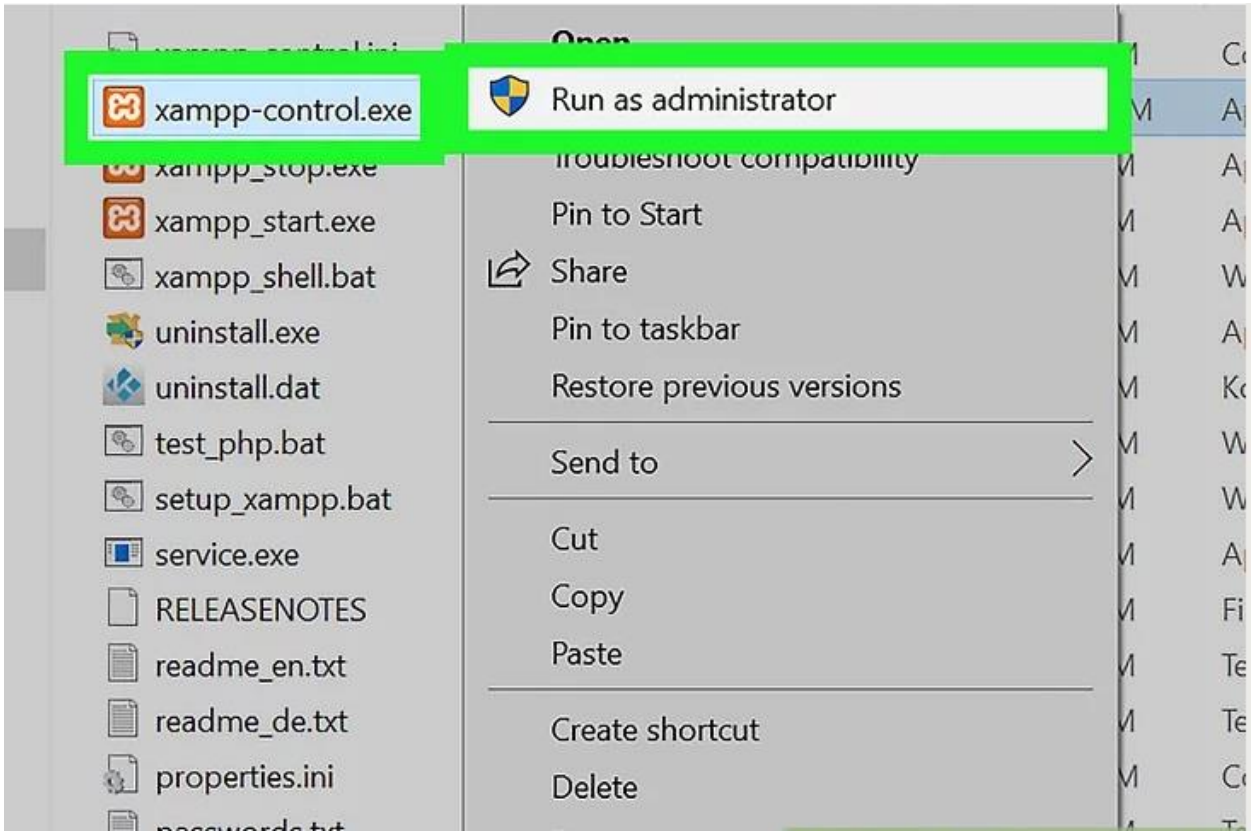
Step 13:

Click Finish when prompted. It's at the bottom of the XAMPP window. Doing so will close the window and open the XAMPP Control Panel, which is where you'll access your servers.

Step 14:
Select a language. Check the box next to the American flag for English, or check the box next to the German flag for German.

Step 15:
Click Save. Doing so opens the main Control Panel page.

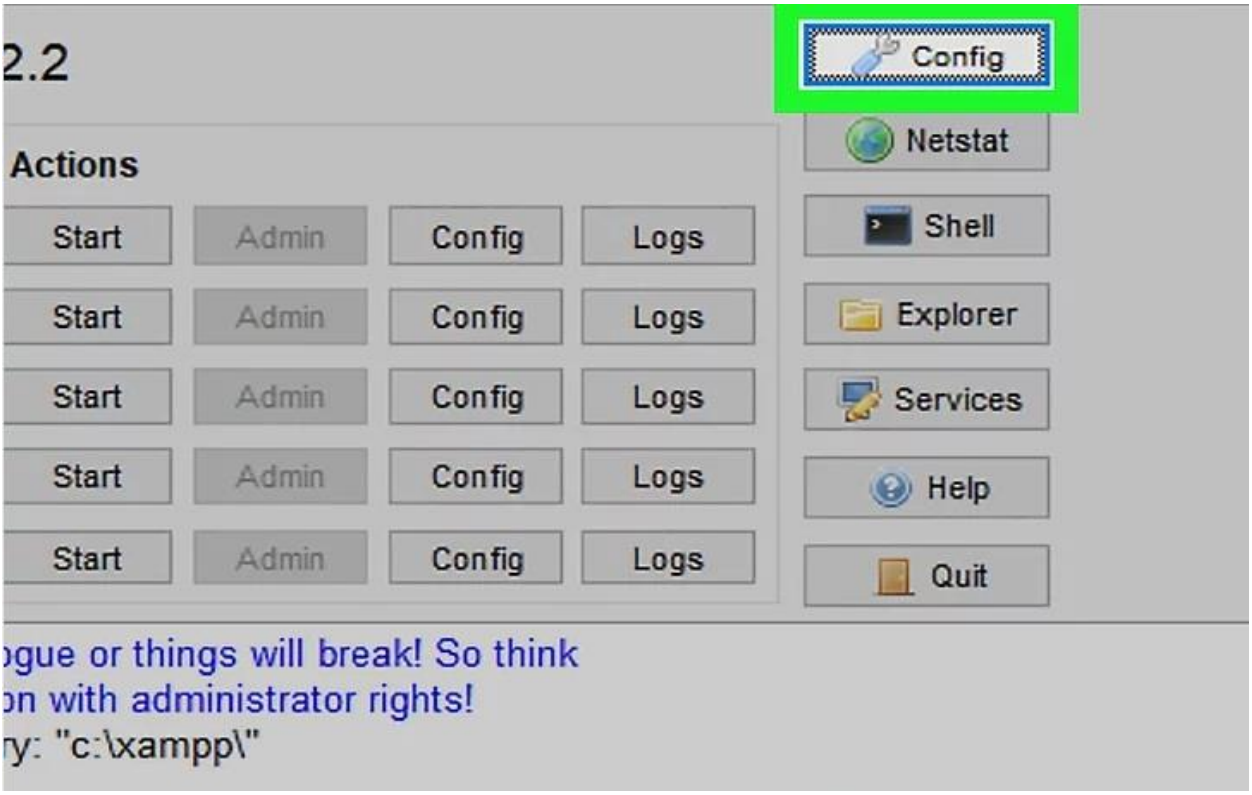
Step 16: Start XAMPP from its installation point. If you need to open the XAMPP Control Panel in the future, you can do so by opening the folder in which you installed XAMPP, right-clicking the orange-and-white xampp-control icon, clicking Run as administrator, and clicking Yes when prompted. When you do this, you'll see red X marks to the left of each server type (e.g., "Apache"). Clicking one of these will prompt you to click Yes if you want to install the server type's software on your computer.
Counter intuitively, double-clicking the xampp_start icon doesn't start XAMPP.



Step 17:

Resolve issues with Apache refusing to run. On some Windows 10 computers, Apache won't run due to a "blocked port". This can happen for a couple of reasons, but there's a relatively easy fix:
Click Config to the right of the "Apache" heading.
Click Apache (httpd.conf) in the menu.
Scroll down to the "Listen 80" section (you can press Ctrl+F and type in listen 80 to find it faster).
Replace 80 with any open port (e.g., 81 or 9080).
Press Ctrl+S to save the changes, then exit the text editor.

Restart XAMPP by clicking Quit and then re-opening it in administrator mode from its folder.



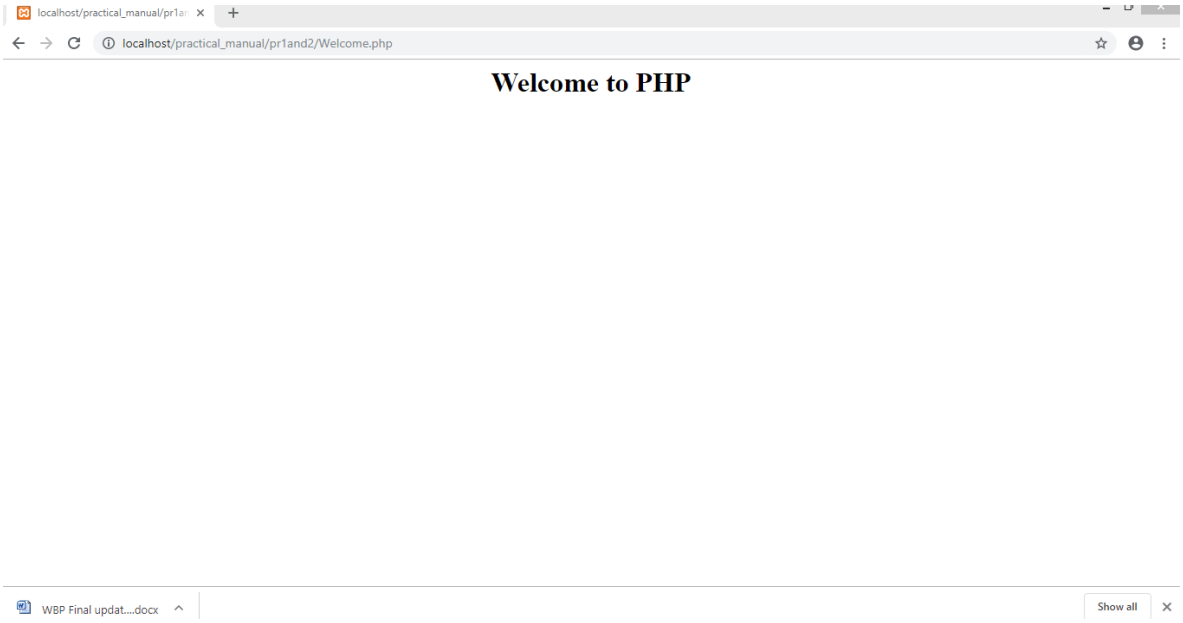
Step 18:
Click on Start button of (Apache Server, PHP, and MySql). Now Web server is ready to execute PHP and MySql program.

B: Write a program to print "Welcome to PHP"

Program:

```
<?php
   echo("<h1><b>Welcome to PHP</b></h1> ");
?>
```

Output screen:



C: Write a simple PHP program using expressions and operators.

Operators in PHP

PHP Arithmetic Operators			
Operator	**Name**	**Example**	**Result**
+	Addition	$x + $y	Sum of $x and $y
-	Subtraction	$x - $y	Difference of $x and $y
*	Multiplication	$x * $y	Product of $x and $y
/	Division	$x / $y	Quotient of $x and $y
%	Modulus	$x % $y	Remainder of $x divided by $y
**	Exponentiation	$x ** $y	Result of raising $x to the $y'th power

PHP Assignment Operators		
Assignment	**Same as...**	**Description**
x = y	x = y	The left operand gets set to the value of the expression on the right
x += y	x = x + y	Addition
x -= y	x = x – y	Subtraction
x *= y	x = x * y	Multiplication
x /= y	x = x / y	Division
x %= y	x = x % y	Modulus

PHP Increment / Decrement Operators		
Operator	**Name**	**Description**
++$x	**Pre-increment**	**Increments $x by one, then returns $x**
$x++	**Post-increment**	**Returns $x, then increments $x by one**
- -$x	**Pre-decrement**	**Decrements $x by one, then returns $x**
$x--	**Post-decrement**	**Returns $x, then decrements $x by one**

PHP Comparison Operators			
Operator	**Name**	**Example**	**Result**
==	**Equal**	**$x == $y**	**Returns true if $x is equal to $y**
===	**Identical**	**$x === $y**	**Returns true if $x is equal to $y, and they are of the same type**
!=	**Not equal**	**$x != $y**	**Returns true if $x is not equal to $y**
<>	**Not equal**	**$x <> $y**	**Returns true if $x is not equal to $y**
!==	**Not identical**	**$x !== $y**	**Returns true if $x is not equal to $y, or they are not of the same type**
>	**Greater than**	**$x > $y**	**Returns true if $x is greater than $y**
<	**Less than**	**$x < $y**	**Returns true if $x is less than $y**
>=	**Greater than or equal to**	**$x >= $y**	**Returns true if $x is greater than or equal to $y**
<=	**Less than or equal to**	**$x <= $y**	**Returns true if $x is less than or equal to $y**
<=>	**Spaceship**	**$x <=> $y**	**Returns an integer less than, equal to, or greater than zero, depending on if $x is less than, equal to, or greater than $y. Introduced in PHP 7.**

PHP Logical Operators			
Operator	**Name**	**Example**	**Result**
And	**And**	**$x and $y**	**True if both $x and $y are true**
Or	**Or**	**$x or $y**	**True if either $x or $y is true**
Xor	**Xor**	**$x xor $y**	**True if either $x or $y is true, but not both**
&&	**And**	**$x && $y**	**True if both $x and $y are true**
||	**Or**	**$x || $y**	**True if either $x or $y is true**
!	**Not**	**!$x**	**True if $x is not true**

PHP String Operators			
Operator	**Name**	**Example**	**Result**
.	**Concatenation**	**$txt1 . $txt2**	**Concatenation of $txt1 and $txt2**
.=	**Concatenation assignment**	**$txt1 .= $txt2**	**Appends $txt2 to $txt1**

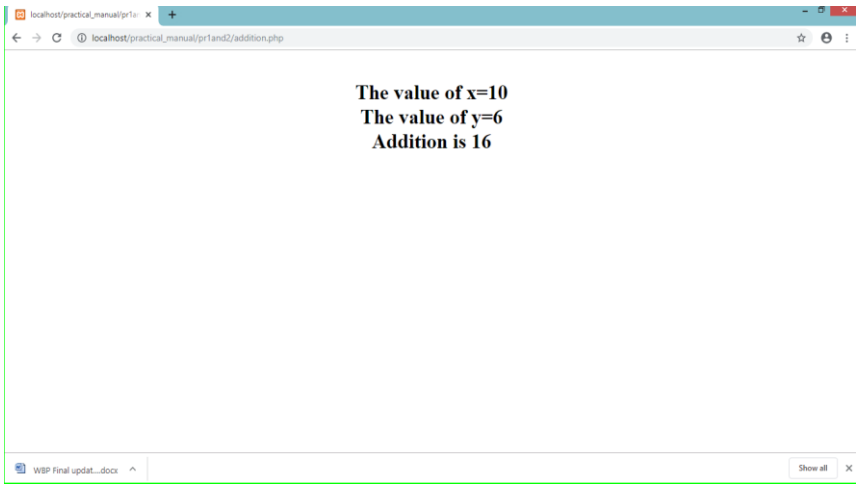
PHP Array Operators			
Operator	**Name**	**Example**	**Result**
+	**Union**	**$x + $y**	**Union of $x and $y**
==	**Equality**	**$x == $y**	**Returns true if $x and $y have the same key/value pairs**
===	**Identity**	**$x === $y**	**Returns true if $x and $y have the same key/value pairs in the same order and of the same types**
!=	**Inequality**	**$x != $y**	**Returns true if $x is not equal to $y**

PHP Conditional Assignment Operators			
Operator	**Name**	**Example**	**Result**
?:	**Ternary**	**$x = expr1 ? expr2 : expr3**	**Returns the value of $x.** **The value of $x is expr2 if expr1 = TRUE.** **The value of $x is expr3 if expr1 = FALSE**
??	**Null coalescing**	**$x = expr1 ?? expr2**	**Returns the value of $x.** **The value of $x is expr1 if expr1 exists, and is not NULL.** **If expr1 does not exist, or is NULL, the value of $x is expr2.** **Introduced in PHP 7**

Sample Program

```
<html>

<body>

<center>

<h1>

<b>

<?php

$x = 10;

$y = 6;

echo("<br>The value of x=".$x);

echo("<br>The value of y=".$y);

echo("<br>Addition is ".($x + $y));

?>

</b>

</h1>

</body>

</html>
```

Output Screen.



VII. Resources Required:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Hardware: Computer System	Computer (i3-i5 preferable), RAM minimum 2 GB and onwards	As per batch size	For all Experiments
2	Operating System	Windows/ Linux		
3	Software	PHP 7.3.12 or above		

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Practical Related Questions.

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. How to execute PHP program.(Steps)
2. What are the different operators supported by PHP with example? (any TWO types)

(Space for Answer)

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XI. Exercise

1. Write a various comparison operators in PHP with example.
2. Write a various Logical operators in PHP with example.

XII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial-introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 02

Write a PHP program to demonstrate the use of Decision making control structures using-

a. **If statement**
b. **If-else statement**
c. **Switch statement**

I Practical Significance:

In computer science, conditional statements, expressions and constructs are perform different computations or actions depending on whether Boolean condition evaluates to true or false. Students will be able to use various forms of if statements to check the condition.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

This practical is expected to develop the following skills.

Write a program to use simple if statements to check conditions

Develop a program to use different forms of if to check multiple condition

Write a program to using switch statement.

IV Relevant Course Outcome(s):

CO1 Develop a program using control statement.

V Practical Outcome (PrOs) :

Write a program to use simple if statements to check conditions.

Develop a program to use different forms of if to check multiple conditions.

Write a program to using switch statement.

VI Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII Minimum Theoretical Background:

Controls statements are used to control are used to control the flow of execution of program based on certain conditions. These are used to cause the flow of execution to advance and branch based on changes to the state of program.

1. if statement
2. if-else statement
3. If..elseif..else statement

1. **if:** if statement is simple decision making statement. It is used to decide whether a certain statement or block of statements will be executed or not. i.e. if a certain condition is true then the block will be executed otherwise not.
   Syntax:

```
if(condition)
{
        //Statement to execute if the condition is true.
}
```

2. **if-else statement:** The if statement alone tells us that if a condition is true it will execute a block of statements and if the condition false, else block will be executed.

```
if( condition)
{
//Statement to execute if the condition is true
}
else
{
//Statement to execute if the condition is false
}
```

3. switch statement

The switch statement is used to perform different actions based on different conditions. Use the switch statement to select one of many blocks of code to be executed.

```
switch(n)

{
  case label1:
     //code to be executed if n=label1;
     break;
   case label2:
     //code to be executed if n=label2;
     break;
   case label3:
     //code to be executed if n=label3;
     break;
   ...
   default:
     //code to be executed if n is different from all labels;
}
```

VII. Resources Required

Nill

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

Write a program to find given number is even or odd.

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. List operators used in if conditional statement.
2. In if-else construct which part will be executed if condition is true.
3. State the condition when the else part will be executed with example.

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XI. Exercise

1. Write a program to make the use of logical operators.
2. Write a program to check no is positive or negative.
3. Write a calendar program using switch statement.

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XII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial-introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 03

Write a PHP program to demonstrate the use of Looping structures using-

a) **While statement**
b) **Do-while statement**
c) **For statement**
d) **Foreach statement**

I Practical Significance:

Loop is used in programming to repeat a specific block of code until certain condition is true. Students will be able to use while and do-while loop to replace the repetition of statements.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

This practical is expected to develop the following skills.

1. Develop a program to using for loop.
2. Develop a program to using foreach loop.
3. Develop a program to using while and do-while loop.

IV Relevant Course Outcome(s):

CO1 Develop a program using control statement.

V Practical Outcome (PrOs) :

1. Develop a program to using for loop.
2. Develop a program to using foreach loop.
3. Develop a program to using while and do-while loop

VI Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII Minimum Theoretical Background:

1. **While loop**

```
while (condition is true)

{
        //code to be executed;
}
```

2. **Do..While loop**

```
do

{

   //code to be executed;

} while (condition is true);
```

3. **For loop**

```
for (init counter; test counter; increment counter)

 {
    //code to be executed for each iteration;
  }
```

4.

VII. Resources Required

Nill

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

Write a program to print first 30 even numbers. (Using for, while, do..while)

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. When for loop will be terminated?
2. Difference between for and for-each loop

(Space for Answer)

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XI. Exercise

1. Write any program using if condition with for loop.
2. Write a program to display pyramids of star/patterns using increment/decrement.

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XII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial-introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		70%
1	Logical formation	30%
2	Debugging ability	30%
3	Follow ethical practices	10%
Product related (15 marks)		30%
4	Expected output	10%
5	Timely submission of report	10%
6	Answer to sample questions	10%
Total (50 Marks)		100%

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	Product Related(15)	Total(50)	

Practical No: 04

Write a PHP program for creating and manipulating-

a) **Indexed array**
b) **Associative array**
c) **Multidimensional array**

I Practical Significance:

Array in PHP is a type of data structure that allows us to store multiple elements of similar data types under a single variable thereby saving us the effort of creating a different variable for every data.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

Write a PHP program for creating and manipulating-

a. Indexed array
b. Associative array
c. Multidimensional array

IV Relevant Course Outcome(s):

CO2 : Perform operations based on arrays and graphics.

V Practical Outcome (PrOs) :

1. Develop a program to using Indexed array.
2. Develop a program to using Associative array.
3. Develop a program to using Multidimensional array.

VI Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII Minimum Theoretical Background:

There are basically three types of arrays in PHP:

Indexed or Numeric Arrays: An array with a numeric index where values are stored linearly.

Associative Arrays: An array with a string index where instead of linear storage, each value can be assigned a specific key.

Multidimensional Arrays: An array which contains single or multiple array within it and can be accessed via multiple indices.

Indexed or Numeric Arrays:

These type of arrays can be used to store any type of elements, but an index is always a number. By default, the index starts at zero.

$cars = array("Volvo","BMW","Toyota");

OR

The index can be assigned manually:

$cars[0] = "Volvo";

$cars[1] = "BMW";

$cars[2] = "Toyota";

The following example creates an indexed array name $cars, assigns three elements to it, and then prints a text containing the array values:

```
<?php
$cars= array("Volvo", "BMW", "Toyota");
echo "I like " . $cars[0] . ", " . $cars[1] . " and " . $cars[2] . ".";
?>
```

Loop Through an Indexed Array

To loop through and print all the values of an indexed array, you could use loop, like this:

```
<?php
$cars= array("Volvo", "BMW", "Toyota");
$arrlength=count($cars);

for($x= 0;$x<$arrlength;$x++)

 {
   echo $cars[$x];
   echo "<br>";
}
?>
```

Associative arrays:

Associative arrays are arrays that use named keys that you assign to them.

There are two ways to create an associative array:

$total = array(“fyif”=> “58”, “syif” => “61”, “tyif”=> “46”);

OR

$total[‘fyif’]= “58”;

$total[‘syif’]= “61”;

$total[‘tyif’]= “46”;

The named keys can then be used in a script

<html>

<body>

<?php

$total = array("fyif"=>"58", "syif"=>"58", "tyif"=>"46");

echo "Total student in TYIF:".$total['tyif'];

?>

</body>

</html>

Loop Through an Associative Array

To loop through and print all the values of an associative array, you could use a foreach loop, like this:

```
<html>
<body>
<?php
$total = array("fyif"=>"58", "syif"=>"61", "tyif"=>"46");
foreach($total as $x => $x_value)
{
   echo "Key=" . $x . ", Value=" . $x_value;
   echo "<br>";
}
?>
</body>
</html>
```

PHP Multidimensional Array

A two-dimensional array is an array of arrays (a three-dimensional array is an array of arrays of arrays).

Example:

```
$student = array
 (
 array("xyz",3401,86.45),
 array("abc",3402,87.42),
 array("pqr",3403,85.43),
 );
```

```
<html>

<body>


<?php

$student = array

 (

 array("XYZ",3401,86.45),

 array("ABC",3402,87.42),

 array("PQR",3403,85.43),

 );

echo "Student Name:".$student[0][0].": Roll No: ".$student[0][1].", Percentage: ".$student[0][2].".<br>";

echo "Student Name:".$student[1][0].": Roll No: ".$student[1][1].", Percentage: ".$student[1][2].".<br>";

echo "Student Name:".$student[2][0].": Roll No: ".$student[2][1].", Percentage: ".$student[2][2].".<br>";

?>


</body>

</html>
```

We can also put a for loop inside another for loop to get the elements of the $student array:

```
<html>

<body>

<?php

$student = array

 (
```

```
array("XYZ",3401,86.45),
  array("PQR",3402,87.42),
  array("ABC",3403,85.43),
  );

for ($row = 0; $row < 3; $row++) {
  echo "<p><b>Row number $row</b></p>";
  echo "<ul>";
  for ($col = 0; $col < 3; $col++) {
    echo "<li>".$student[$row][$col]."</li>";
  }
  echo "</ul>";
}
?>
</body>
</html>
```

VII. Resources Required

Nill

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

Develop a program to using Indexed array.

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. How to create an array in PHP with syntax and small example.

2. List the types of array used in PHP.

(Space for Answer)

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XI. Exercise

1. Develop a program to using Associative array.
2. Develop a program to using Multidimensional array.

(Space for Answer)

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XII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial-introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 05

A. Write a PHP program to-

- **Calculate length of string.**
- **Count the number of words in string without using string functions.**

B. Write a simple PHP program to demonstrate use of various built-in string functions.

I Practical Significance:

String is a sequence of characters. Students will be able to perform various operations on String using different methods.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

- Write a PHP program to-
  - Calculate length of string.
  - Count the number of words in string without using string functions.
- Write a simple PHP program to demonstrate use of various built-in string functions.

IV Relevant Course Outcome(s):

CO2 : Perform operations based on arrays and graphics.

V Practical Outcome (PrOs) :

1. Write a PHP program to-
   - Calculate length of string.
   - Count the number of words in string without using string functions.
2. Write a simple PHP program to demonstrate use of various built-in string functions.

VI Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII Minimum Theoretical Background:

PHP String function.

Sr. No.	PHP function	Use	Example
1	strlen()	The PHP strlen() function returns the length of a string.	echo strlen("Hello world!");
2	str_word_count()	The PHP str_word_count() function counts the number of words in a string.	`echo str_word_count("Hello world!");`
3	strrev()	The PHP strrev() function reverses a string.	echo strrev("Hello world!");
4	strpos()	The PHP strpos() function searches for a specific text within a string. If a match is found, the function returns the character position of the first match. If no match is found, it will return FALSE.	`echo strpos("Hello world!", "world"); // outputs 6`
5	str_replace()	The PHP str_replace() function replaces some characters with some other characters in a string.	echo str_replace("world", "bvit", "Hello world!"); // outputs Hello bvit!
6	ucwords()	Convert the first character of each word to uppercase	echo ucwords("Welcome to php world");// Welcome To Php World
7	strtoupper()	Convert a string a uppercase letters	echo strtoupper("information technology");// INFORMATION TECHNOLOGY
8	strtolower()	Convert a string to lowercase letters	echo strtolower("INFORMATION TECHNOLOGY")// information technology
9	str_repeat()	Repeating a string with a specific number of times	echo str_repeat("*",10);//**********
10	strcmp()	Compare two strings (case-sensitive). If this function return 0, the two strings are equals. If this function returns any negative or positive nubers, the two strings	echo strcmp("Hello world!", "Hello world"); //0

VII. Resources Required

Nill

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

1. Write a PHP program to-
    - Calculate length of string.
    - Count the number of words in string without using string functions.

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

List **string functions** with syntax and small example.

Space for Answer)

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XI. Exercise

Write a program to demonstrate PHP maths function.

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XII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial-introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 06

Write a simple PHP program to demonstrate use of simple function and parameterized function.

I Practical Significance:

The real power of PHP comes from its functions. PHP has more than built-in functions, and in addition you can create your own custom functions. PHP has over 1000 built-in functions that can be called directly, from within a script, to perform a specific task.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

- Write a simple PHP program to demonstrate use of simple function and parameterized function.

IV Relevant Course Outcome(s):

CO2: Perform operations based on arrays and graphics.

V Practical Outcome (PrOs) :

- Write a simple PHP program to demonstrate use of simple function and parameterized function.

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VI Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII Minimum Theoretical Background:

Functions and types.

- PHP functions are similar to other programming languages. A function is a piece of code which takes one more input in the form of parameter and does some processing and returns a value.
- They are built-in functions but PHP gives you option to create your own functions as well. A function will be executed by a call to the function. You may call a function from anywhere within a page.
- Syntax:

```
function function_name()
{
    //body of function.
}
```

Function Types

1. Simple function
2. Function with parameter
3. Anonymous function.

Example of Simple function:

```
<html>
<body>
<?php
        // Defining a PHP functions
  function writeMessage()
  {
    echo "Welcome to PHP world";
   }
// Calling a PHP function.
writeMessage();
?>
</body>
</html>
```

Example of PHP function with Parameters:

```
<?php
function addfunc($num1,$num2)
{
  $num=$num1+$num2;
 echo “Sum of the two numbers is ”.$sum;
}
addfunc(50,20);
?>
```

Anonymous function

Anonymous functions allow to creation of functions which have no specified name.

Example:

```
<?php
 //Defining Anonymous function
$a=function() {
      echo "Anonymous function";
  };
  //Calling Anonymous function
$a();
?>
```

VII. Resources Required

Nill

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

- Write a program to demonstrate anonymous function.

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Define anonymous function.
2. Write a syntax of anonymous function.

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XI. Exercise

1. Write a program to demonstrate parameterized function.

(Space for Answer)

XII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial-introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 07

Write a simple PHP program to create PDF document buy using graphics concepts

I Practical Significance:

PHP uses a standard code to display the pdf file in web browser. The process of displaying pdf involves location of the PDF file on the server and it uses various types of headers to define content composition in form of type, Disposition, Transfer-Encoding etc

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

- Write a simple PHP program to create PDF document buy using graphics concepts

IV Relevant Course Outcome(s):

CO2: Perform operations based on arrays and graphics.

V Practical Outcome (PrOs) :

- Write a simple PHP program to create PDF document buy using graphics concepts

VI Relevant Affective domain related Outcome(s)

5. Follow safety practices.
6. Practice good housekeeping
7. Demonstrate working as a leader/ a team member.
8. Follow ethical practices.

VII Minimum Theoretical Background:

- PHP uses a standard code to display the pdf file in web browser. The process of displaying pdf involves location of the PDF file on the server and it uses various types of headers to define content composition in form of type, Disposition, Transfer-Encoding etc. PHP passes the PDF files to read it on the browser. Browser either shows it or download it from local host server then display pdf.
- Note: PHP is not actually reading the PDF file. It does not recognize File as pdf. It only passes the PDF file to the browser to be read there. If copy the pdf file inside htdocs folder of XAMPP then it does not need to specify the file path.
- FPDF is a PHP class which allows to generate PDF files with pure PHP, that is to say without using the PDFlib library. F from FPDF stands for Free: you may use it for any kind of usage and modify it to suit your needs.
- FPDF has other advantages: high level functions. Here is a list of its main features:
    1. Choice of measure unit, page format and margins
    2. Page header and footer management
    3. Automatic page break
    4. Automatic line break and text justification
    5. Image support (JPEG, PNG and GIF)
    6. Colors
    7. Links
    8. TrueType, Type1 and encoding support
    9. Page compression

Example:

```
<?php

require('fpdf.php');

$pdf = new FPDF();

$pdf->AddPage();

$pdf->SetFont('Arial','B',16);

$pdf->Cell(40,10,'Hello World!');

$pdf->Output();

?>
```

Note: Before executing program download fpdf.php and put into current working directory.

Download link: http://www.fpdf.org/

VII. Resources Required

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

- Write a program to create pdf file using PHP.

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write use of various graphics function.

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XI. References/ Suggestions for Futher Reading.

- https://www.w3schools.com/php/default.asp
- https://www.guru99.com/what-is-php-program.html
- https://www.tutorialspoint.com/php/
- https://tutorialehtml.com/en/php-tutorial-introduction/
- www.tizag.com/phpT/
- https://books.goalkicker.com/PHPBook/
- https://codecourse.com/watch/php-basics

XII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1……
2……
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Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 08

Write a PHP program to

a) Inherit members of super class in subclass.
b) Create constructor to initialize object of class by using object oriented concepts.

I Practical Significance:

Inheritance is a mechanism in which one class acquire property of another class. In PHP, The child class will inherit all the public and protected properties and methods from the parent class. In addition, it can have its own properties and methods. Constructor is special member function whose task to initialize objects of class.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

- Inherit members of super class in subclass.
- Create constructor to initialize object of class by using object oriented concepts.

IV Relevant Course Outcome(s):

CO3: Develop programs by applying various object oriented concepts.

V Practical Outcome (PrOs) :

- Write a simple PHP program to demonstrate use of simple function and parameterized function.

VI Relevant Affective domain related Outcome(s)

Follow safety practices.
Practice good housekeeping
Demonstrate working as a leader/ a team member.

VII Minimum Theoretical Background:

Inheritance:

- Inheritance is mechanism of extending an existing class by inheriting class.
- When we inherit one class from another we say that inherited class is a subclass and the class who has inherits is called parent class.
- In order to declare that one class inherits the code from another class, we use the extends keyword.

Syntax:

```
class Parent
{
    // The parent's class code.
}
class child extends Parent
{
    // The class can use the parent's class code
}
```

Example:

```
<?php
class Shape
{
    public $length;
    public $width;
    public function_construct($length,$width)
    {
        $this->length=$length;
        $this->width=$width;
    }
}
```

```
class Rect extends Shape
{
public $height;
public function __construct($length,$width,$height)
{
  $this->length =$length;
  $this->width=$width;
  $this->height=$height;
}
public function intro()
{
      echo "This length is {$this->length}, the width is {$this->width}, and the height is {$this->height}";
}
$r=new Rect(10,20,30);
}
$->intro();
?>
```

Constructor:

- Constructors are special member functions for initialize variables on the newly created object instances from a class.
- When creating a new object, it's useful to setup certain aspects of the object at the same time. For example, you might want to set some properties to initial values fetch some information from a database to populate the object, or register the object in some way.
- Constructor hava two types
  Default and parameterized constructor.

Example:

```
class emp
{
        private $fname;
        private $lname;
        public function __construct($fname,$lname)
        {
                $this->fname=$fname;
                $this->lname=$lname;
        }
        public function showName()
        {
                echo “My name is”.$this->fname.”  ”.$this->lname;
        }
}

$sid=new emp(“Ramesh”,”Patil”);
$sid->showName();
?>
```

VII. Resources Required

Nill

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

- Write a program to implements multilevel inheritance.
- Write a program to implements multiple inheritance

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. How to create a sub class.
2 Define inheritance and its type with diagram.

(Space for Answer)

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XI. Exercise

2. Write a program to demonstrate parameterized constructor.
3. Write a program to demonstrate default constructor.

(Space for Answer)

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XII. References/ Suggestions for Futher Reading.

8. https://www.w3schools.com/php/default.asp
9. https://www.guru99.com/what-is-php-program.html
10. https://www.tutorialspoint.com/php/
11. https://tutorialehtml.com/en/php-tutorial-introduction/
12. www.tizag.com/phpT/
13. https://books.goalkicker.com/PHPBook/
14. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

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Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No. 9:

Write a simple PHP program on Introspection and Serialization.

I Practical Significance:

PHP introspection provides useful ability to examine an object's characteristics. Serialization technique preserves data in a format that can later be restored to its previous form.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to solve the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills: "Develop web page with data validation"

This practical is expected to develop the following skills.

1. Introspection.
2. Serialization.

IV Relevant Course Outcome(s):

CO3: Develop programs by applying various object oriented concepts.

V Practical Outcome (PrOs) :

1. Develop program on Introspection
2. Develop program on Serialization

VI Relevant Affective domain related Outcome(s)

1. Work collaboratively in team.
2. Follow ethical practices.

VII Minimum Theoretical Background:

Introspection

Introspection is the ability of a program to examine an object's characteristics such as object name, class name, parent class name, method names and so on. With introspection we can write code that operates on any class or object.

Table. Class/Object Functions

Function	Description
`get_class()`	Returns the name of the class an object belongs to.
`get_parent_class()`	Returns the name of the superclass of the given
`class_exists()`	Returns TRUE if the string argument is the name of a class, FALSE otherwise.
`get_declared_classes()`	Returns an array of strings representing names of classes defined in the current script.
`is_subclass_of()`	Returns TRUE if the class of its first argument (an object instance) is a subclass of the second argument (a class name), FALSE otherwise.
`get_class_vars()`	Returns an associative array of var/value pairs representing the name of variables in the class and their default values. Variables without default values will not be included.
`get_object_vars()`	Returns an associative array of var/value pairs representing the name of variables in the instance and their default values. Variables without values will not be included.
`method_exists()`	Returns TRUE if the first argument (an instance) has a method named by the second argument (a string) and FALSE otherwise.
`get_class_methods()`	Takes a string representing a method name, an instance that should have such a method, and additional arguments. Returns the result of applying the method (and the arguments) to the instance.

❖ **PHP Introspection program example:**

```
<? php

class Rectangle
{
   var $dim1 = 2;
   var $dim2 = 10;

 function Rectangle ($dim1,$dim2)
 {
  $this->dim1 = $dim1;
  $this->dim2 = $dim2;
 }

 function area()
 {
  return $this->dim1*$this->dim2;
 }

 function display ()
 {
  // any code to display info
 }
}

$S = new Rectangle(4,2);

//get the class varibale i.e properties
$class_properties = get_class_vars ("Rectangle");

//get object properties
$object_properties = get_object_vars ($S);

//get class methods
$class_methods = get_class_methods ("Rectangle");

//get class corresponding to an object
$object_class = get_class ($S);

print_r($class_properties);
```

```
print_r ($object_properties);
print_r ($class_methods);
print_r($object_class);
?>
```

Output of above code:-

```
Array
(
   [dim1] => 2
   [dim2] => 10
)
Array
(
   [dim1] => 4
   [dim2] => 2
)
Array
(
   [0] => Rectangle
   [1] => area
   [2] => display
)
Rectangle
```

- **Serialization**

Serialization of data means converting it into a string of bytes in such a way that you can produce the original data again from the string via a process as unserialization. After you have the ability to serialize/unserialize, you can store your serialized string anywhere and recreate a copy of the data again when needed.

PHP offers two functions, serialize() and unserialize(), which take a value of any type (except type resource) and encode the value into string form and decode again, respectively.

- **PHP Serialization program example:**

```
<!DOCTYPE html>
<html>
<body>

<?php
        echo " <h4>Serializing the array</h4></br>";
```

```
        $data = serialize(array("Red", "Green", "Blue"));
        echo $data . "<br>";

        echo " <h4>Unserialziing the array</h4></br>";
        $test = unserialize($data);
        var_dump($test);
?>

</body>
</html>
```

Output:

Serializing the array

a:3:{i:0;s:3:"Red";i:1;s:5:"Green";i:2;s:4:"Blue";}

Unserializing the array

array(3) { [0]=> string(3) "Red" [1]=> string(5) "Green" [2]=> string(4) "Blue" }

VII. Resources Required:

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Practical Related Questions.

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Explain the concept of introspection in PHP.
2. Explain serialization in PHP?

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XI. Exercise

1. Develop a PHP code for serialization.
2. Develop a PHP code for introspection.

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XII. References/ Suggestions for Further Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial- introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
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Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 10

Design a web page using following form controls:
a.Text box, b. Radio button, c. Check box, d. Buttons

I Practical Significance:

In this practical we will learn how to design a web page using different controls.

Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to solve the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

II Competency and Practical skills:

"Design a web page"
This practical is expected to learn following skill-

Design a web page using a.Text box, b. Radio button, c. Check box, d. Buttons

Relevant Course Outcome(s):

CO4 Use form controls with validation to collect user's input.

III Practical Outcome (PrOs) :

Write a program to design a web page using a.Text box, b. Radio button, c. Check box, d. Buttons

Relevant Affective domain related Outcome(s)

1. Work collaboratively in team.
2. Follow ethical practices

IV Minimum Theoretical Background:

a) Textbox:

A text input field allows a user to enter a single line of text.
Example: For welcome.html file and it has a text field and submit button.

```
<html>
<body>
    <form action=”welcome.php” method=”get”>
    <input type=”text” name=”user”/>
    <input type=”submit” value=”Submit” />
    </form>
</body>
</html>
```

b) Radio button:

Radio buttons let a user select only one of a limited number of choices:
Example:

```
<input type="radio" id="male" name="gender" value="male">
<label for="male">Male</label><br>
<input type="radio" id="female" name="gender" value="female">
<label for="female">Female</label><br>
<input type="radio" id="other" name="gender" value="other">
<label for="other">Other</label>
```

c) Check box:

```
<input type="checkbox" id="vehicle1" name="vehicle1" value="Bike">
<label for="vehicle1"> I have a bike</label><br>
<input type="checkbox" id="vehicle2" name="vehicle2" value="Car">
<label for="vehicle2"> I have a car</label><br>
<input type="checkbox" id="vehicle3" name="vehicle3" value="Boat">
<label for="vehicle3"> I have a boat</label><br>
```

d) Buttons :

```
<!DOCTYPE html>
<html>
<title>W3.CSS</title>
<meta name="viewport" content="width=device-width, initial-scale=1">
```

```
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<body>
<div class="w3-container">
  <h2>Buttons (w3-button)</h2>
  <input type="button" class="w3-button w3-black" value="Input Button">
  <button class="w3-button w3-black">Button Button</button>
  <a href="#" class="w3-button w3-black">Link Button</a>
</div>
</body>
</html>
```

VII. Resources Required

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

1. **Write a program to design a registration form using textbox, radio button, checkbox and button.**

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write a use and syntax of following controls:
   a. Textbox b. Radio button
   c. Check box d. Buttons

(Space for Answer)

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XII.Exercise

1. **Develop web page and do validation using control text box, radio button, check box and button.**

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References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial- introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		70%
1	Logical formation	30%
2	Debugging ability	30%
3	Follow ethical practices	10%
Product related (15 marks)		30%
4	Expected output	10%
5	Timely submission of report	10%
6	Answer to sample questions	10%
Total (50 Marks)		100%

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	Product Related(15)	Total(50)	

Practical No: 11

Design a web page using following form controls:

a. List box, b. Combo box, c. Hidden field box

V Practical Significance:

In this practical we will learn how to design a web page using different controls.

Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to solve the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

VI Competency and Practical skills:

"Design a web page"

This practical is expected to learn following skill-

Design a web page using a.List box, b. Combo box, c. Hidden field box

Relevant Course Outcome(s):

CO4. Use form controls with validation to collect user's input.

VII Practical Outcome (PrOs) :

Write a program to design a web page using a.List box, b. Combo box, c. Hidden field box

Relevant Affective domain related Outcome(s)

1. Work collaboratively in team.
2. Follow ethical practices

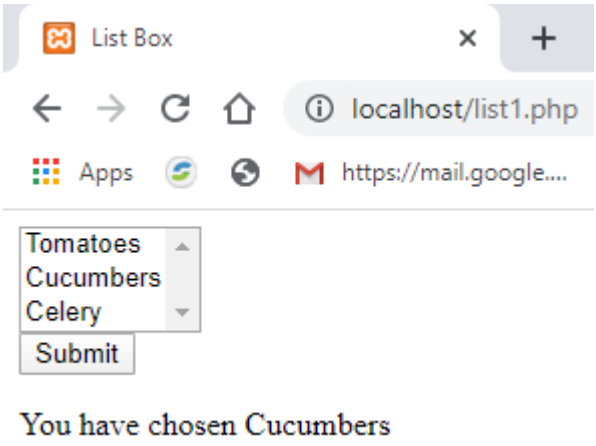
VIII Minimum Theoretical Background:

a) List box:

A text input field allows a user to enter a single line of text.

Example: For welcome.html file and it has a text field and submit button.

```
<html>
<head>
<title>List Box</title>
</head>
<body>
<form action="" method="post">
<select name="foods[]" size="3">
<option value="Tomatoes">Tomatoes</option>
<option value="Cucumbers">Cucumbers</option>
<option value="Celery">Celery</option>
</select><br>
<input type="submit" name="submit" value="Submit"/>
</form>
<?php
$c= $_POST['foods'];
if(isset($c))
{
echo 'You have chosen ';
foreach($c as $key => $value)
{
echo $value;
}
}
else
{
echo "You haven't selected any foods";
}
?>
</body>
</html>
```

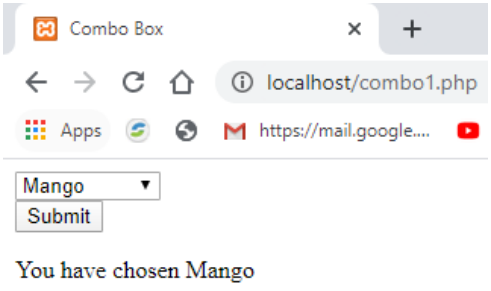


b) Combo box:

Radio buttons let a user select only one of a limited number of choices:

Example:

```
<html>
<head>
<title>Combo Box</title>
</head>
<body>
<form action="" method="post">
<select name="foods[]">
<option value="Mango">Mango</option>
<option value="Banana">Banana</option>
<option value="Watermelon">Watermelon</option>
<option value="Grapes">Grapes</option>
</select><br>
<input type="submit" name="submit" value="Submit"/>
</form>
<?php
$c= $_POST['foods'];
if(isset($c))
{
echo 'You have chosen ';
foreach($c as $key => $value)
{
    echo $value;
 }
 }
else
{
echo "You haven't selected any fruit";
}
    ?>
    </body>
    </html>
```



c) Hidden field box:

A hidden field is not displayed on the page. It simply stores the text value specified in the value attribute. Hidden fields are great for passing additional information from the form to the server.

Syntax:

<input type="**hidden**" name="**hiddenField**" id="**hiddenField**" value="" />

```
<html>
  <head>
<title>List Box</title>
</head>
<body>
      <form action="" method="post">
          <select name="foods[]" size="3">
          <option value="Tomatoes">Tomatoes</option>
          <option value="Cucumbers">Cucumbers</option>
          <option value="Celery">Celery</option>
          </select><br>
          <input type="submit" name="submit" value="Submit"/>
      </form>
<?php
          $c= $_POST['foods'];
          if(isset($c))
          {
          echo 'You have chosen ';
          foreach($c as $key => $value)
          {
          echo $value;
          }
          }
          else
          {
          echo "You haven't selected any foods";
          }
?>
</body>
</html>
```

IX. Resources Required

X. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

XI. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

1. Write a program to design a form using list box, combo box and Hidden field box.

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XII. Result (Output of code)

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XIII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

a. Write a use and syntax of following controls:
b. List box b. Hidden field box
c. Combo box

(Space for Answer)

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XIV. Exercise

a. Write a program to design a form using list box, combo box.

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References/ Suggestions for Futher Reading.

b. https://www.w3schools.com/php/default.asp
c. https://www.guru99.com/what-is-php-program.html
d. https://www.tutorialspoint.com/php/
e. https://tutorialehtml.com/en/php-tutorial- introduction/
f. www.tizag.com/phpT/
g. https://books.goalkicker.com/PHPBook/
h. https://codecourse.com/watch/php-basics

XV. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 12

Develop web page with data validation.

I Practical Significance:
Form validation is required to prevent web form abuse by malicious users. Improper validation of form data is one of the main causes of security vulnerabilities. PHP provides some inbuilt function using these functions that input data can be validated.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to solve the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

- Develop web page with data validation

IV Relevant Course Outcome(s):

CO4: Use form controls with validation to collect user's input.

V Practical Outcome (PrOs) :

- Develop web page with data validation.

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VI Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII Minimum Theoretical Background:

- Form validation is required to prevent web form abuse by malicious users. Improper validation of form data is one of the main causes of security vulnerabilities. It exposes your website to attacks such as header injections, cross-site scripting, and SQL injections.
- header injection attacks can be used to send email spam from your web server
- cross-site scripting may allow an attacker to post any data to your site
- SQL injection may corrupt your database backend

PHP provides some inbuilt function, using these functions that input data can be validated.

- **empty()** function will ensure that text field is not blank it is with some data, function accepts a variable as an argument and returns. It TRUE when the text field have filled with some data otherwise it return FALSE.
- **is_numeric()** function will ensure that data entered in a text field is a numeric value, the function accepts a variable as an argument and returns TRUE when the text field is submitted with numeric value otherwise it return FALSE.
- **preg_match()** function is specifically used to performed validation for entering text in the text field, function accepts a "regular expression" argument and a variable as an argument which has to be in specific pattern. Typically it is for validating email, IP address and Pin code information in a form.

Example:

A php page fromvalidation.php is having three text field name, mobile number and email from user, on clicking submit button a data will be submitted to PHP script validate.php on the server, which will perform three different validation on these three text fields, it will check that name should not be blank, mobile number should be in numeric form and the email is validated with an email pattern.

Formvalidation.php

```
<html>
<body>
<form method="post" action="validdata.php">
<center>
<br><br>Enter Name <input type="text" name="sname">
<br><br>Mobile Number <input type="text" name="mobileno" maxlength=10>
<br><br>Email id <input type="text" name="email">
<br><br><input type="submit" name="submit" value="Submit">
</center>
</form>
</body>
</html>
```

validate.php

```
<?php
$msg=0;
if($_SERVER['REQUEST_METHOD']=="POST")
{
	if(empty($_POST['sname'] ))
	{
		echo "<br>Name can't be blank";
		$msg=1;
	}
	if(!is_numeric($_POST['mobileno']))
	{
		echo "<br>Enter valid Mobile Number";
		$msg=1;
	}

	$pattern= '/\b[\w.-]+@[\w.-]+\.[A-Z a-z]{2,6}\b/';

	if(!preg_match($pattern,$_POST['email']))
	{
		echo "<br>Enter valid Email id";
		$msg=1;
	}

	if($msg==0)
	{
		echo "Data has been recorded successfully";
	}
}
?>
```

VII. Resources Required

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

- Write a simple PHP program to check that emails are valid.

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

Enlist and explain different method provided by php for web page validation.

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XIII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial-introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIV Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 13

Write simple PHP program to -

b. Set cookies and read it.

c. Demonstrate session management

I Practical Significance:

In this practical we will learn how to create cookie, modify it and delete it.Also we will learn how to start a session, get session variables and destroy a session.

Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

II Competency and Practical skills:

a ."Set cookies and read it"

This practical is expected to develop the following skills.

1. Write a program to create cookies

2. Develop a program to modify cookies value

3. Write a program to delete cookies.

b."Demonstrate session management"

This practical is expected to develop the following skills.

1. Write a program to start a session
2. Develop a program get session variables
3. Write a program to destroy a session

III Relevant Course Outcome(s):

CO4 Use form controls with validation to collect user's input.

IV Practical Outcome (PrOs) :

- Write a program to create cookies.
- Develop a program to modify cookies value
- Write a program to delete cookies.
- Write a program to start a session
- Develop a program get session variables
- Write a program to destroy a session

V Relevant Affective domain related Outcome(s)

1. Work collaboratively in team.
2. Follow ethical practices

VI Minimum Theoretical Background:

A cookie is a small file with the maximum size of 4KB that the web server stores on the client computer. They are typically used to keeping track of information such as a username that the site can retrieve to personalize the page when the user visits the website next time.

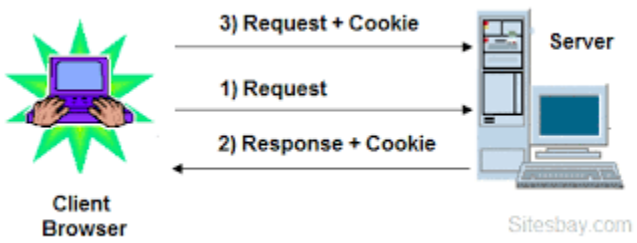

Fig. PHP Cookie

a. Create Cookies With PHP

A cookie is created with the setcookie() function.

Syntax:
setcookie(name, value, expire, path, domain, secure);

Only the *name* parameter is required. All other parameters are optional.

Program for creating cookie

```
<?php
      $cookie_name = "Teacher";
      $cookie_value = "Kimaya";
      setcookie($cookie_name, $cookie_value, time() + (86400 * 30), "/");  // 86400 = 1 day
?>

<html>
<body>
<?php
      if (!isset($_COOKIE[$cookie_name]))
      {
      echo "Cookie named '" . $cookie_name . "' is not set!";
       }
      Else
      {
      echo "Cookie '" . $cookie_name . "' is set! <br>";
      echo "Value is: " . $_COOKIE[$cookie_name];
      }
?>

</body>
</html>
```

Output:
Cookie ' Teacher ' is set!
Value is: Kimaya

b. Session in PHP

A session is a way to store information (in variables) to be used across multiple pages. Unlike a cookie, the information is not stored on the users computer.

What is a PHP Session?

When you work with an application, you open it, do some changes, and then you close it. This is much like a Session. The computer knows who you are. It knows when you start

the application and when you end. But on the internet there is one problem: the web server does not know who you are or what you do, because the HTTP address doesn't maintain state. Session variables solve this problem by storing user information to be used across multiple pages (e.g. username, favorite color, etc). By default, session variables last until the user closes the browser. So,Session variables hold information about one single user, and are available to all pages in one application.

Start a PHP Session

A session is started with the session_start () function.

Session variables are set with the PHP global variable: $_SESSION.

Now, let's create a new page called "demo_session1.php". In this page, we start a new PHP session and set some session variables:

Program to Start the session

```
<?php
// Start the session
session_start();
    ?>
<!DOCTYPE html>
<html>
<body>

<?php
// Set session variables
$_SESSION["favcolor"] = "green";
$_SESSION["favanimal"] = "cat";
echo "Session variables are set.";
?>

</body>
</html>
```

Output:

Session variables are set.

VII. Resources Required

VIII Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1.	Computer System with board specifications			
2	Software			
3	Any other resource Used			

IX Program Code: Teacher must assign a separate program statement to group of 3-4 students.

1.Write a program to create, modify and delete a cookie.

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X Result (Output of code)

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XVI. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

a. Define cookie.
b. Define session.
c. Write difference between cookie and session **.**

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XI Exercise

Write a program to start and destroy a session.

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References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial-introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XII Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……

2. ……

3. ……

4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 14

Write a PHP program for sending and receiving plain text message (e-mail).

I Practical Significance:

Students will be able to send and receive e-mail using PHP.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application to send and receive e-mail using PHP"

This practical is expected to develop the following skills.

1. Develop a program to send e-mail.
2. Develop a program to receive e-mail.

IV Relevant Course Outcome(s):

CO4 Use form controls with validation to collect user's input.

V Practical Outcome (PrOs) :

1. Develop a program to send e-mail.
2. Develop a program to receive e-mail.

VI Relevant Affective domain related Outcome(s)

1. Work collaboratively in team.
2. Follow ethical practices.

VII Minimum Theoretical Background:

PHP *mail:*

PHP *mail()* is an inbuilt PHP function which is used to send emails from PHP scripts.
Syntax:

mail (to,subject,message,headers,parameters)

This *mail()* function accepts five parameters as follows and (the last two are optional).

Parameters	Details
To	The recipient's email address.
subject	The email's subject line.
message	The actual email body where you can insert main messages.
headers	Additional parameters such as "From", "Cc", "Bcc" etc.
parameters	Optional parameters.

Simple program to use mail function :

```
<html>
<head>
<title> Email using PHP</title>
</head>
<body>
<?php
        $to=”xyz@example.com”;
        $subject=”Test mail”;
        $message=”This is HTML message”;
        $header=”From: abc@gmail.com”;
        $header .= “Cc:pqr@xyzdomain.com”;
        $retvalue=mail($to,$subject,$message,$header);
        If($retvalue == true)
        {
           Echo “ Message sent successfully”;
        }
        Else
        {
           Echo “ Message could not be sent”;
        }
?>
</body>
</html>
```

VII. Resources Required

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

Write a program to send and receive mail using PHP.

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XI. Result (Output of code)

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XII. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Explain the use of mail() function in PHP.
2. Write a simple program to check that emails are valid.

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XI. Exercise

1. Describe mail function parameter in detail.

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XII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial- introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 15

Develop a simple application to -

a) **Enter data into database**
b) **Retrieve and present data from database**

I Practical Significance:

In PHP using MYSQL data can be enter into database . Also we can retrieve and present data from database.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills:

"Develop application using PHP"

Write a PHP program to -

a. Enter data into database
b. Retrieve and present data from database

IV Relevant Course Outcome(s):

CO5 : Perform database operations in PHP.

V Practical Outcome (PrOs) :

1. Develop a program to enter data into database
2. Develop a program to retrieve and present data from database

VI Relevant Affective domain related Outcome(s)

2. Follow safety practices.
3. Practice good housekeeping
4. Demonstrate working as a leader/ a team member.
5. Follow ethical practices.

VII Minimum Theoretical Background:

- **Insert Data Into MySQL Using MySQLi**

After a database and a table have been created, we can start adding data in them.

Here are some syntax rules to follow:

- The SQL query must be quoted in PHP
- String values inside the SQL query must be quoted
- Numeric values must not be quoted
- The word NULL must not be quoted
- The INSERT INTO statement is used to add new records to a MySQL table:

Syntax:

```
INSERT INTO table_name (column1, column2, column3,...)
VALUES (value1, value2, value3,...)
```

The following examples add a new record to the "MyGuests" table:

Example (MySQLi Object-oriented)

```
<?php
    $servername = "localhost";
    $username = "username";
    $password = "password";
    $dbname = "myDB";

// Create connection
    $conn = new mysqli_connect($servername, $username, $password, $dbname);
// Check connection
    if (!$conn)
     {
```

```
        die ("Connection failed: ". $conn->connect_error);
      }
     Echo "Connected successfully";
     $sql = "INSERT INTO MyGuests (firstname, lastname, email)
     VALUES ('Kimaya', 'Gaikwad', 'kimaya123@example.com')";

if (mysqli_query($conn,$sql))
     {
      echo "New record inserted successfully";
     } else {
      echo "could not insert record: " . mysqli_error ($conn);
     }

     Mysqli_close ($conn);
?>
```

- **Retrieve Data From a MySQL Database:**

The SELECT statement is used to select data from one or more tables:

SELECT column_name(s) FROM table_name
or we can use the * character to select ALL columns from a table:

SELECT * FROM table_name

Select Data With MySQLi

The following example selects the id, firstname and lastname columns from the MyGuests table and displays it on the page:

```
<?php
     $servername = "localhost";
     $username = "username";
     $password = "password";
     $dbname = "myDB";

// Create connection
     $conn = new mysqli_connect ($servername, $username, $password, $dbname);
// Check connection
     if (!$conn)
     {
      die ("Connection failed: " . mysqli_connect_error ( ));
     }

     Echo "Connected successfully <br/> ";
     $sql = "SELECT id, firstname, lastname FROM MyGuests";
```

```
        $result = mysqli_query($conn,$sql);

        if (mysqli_num_rows($result) > 0) {
  // output data of each row
         while ($row = mysqli_fetch_assoc($result))
        {
          echo "id: " . $row["id"] . " . Name: " . $row["firstname"]. " " . $row["lastname"]. "<br>";
         }
        } else
        {
         echo "0 results";
        }
        Mysqli_close ($conn);
?>
```

VII. Resources Required

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Hardware: Computer System	Computer (i3-i5 preferable), RAM minimum 2 GB and onwards	As per batch size	For all Experiments
2	Operating System	Windows/ Linux		
3	Software	PHP 7.3.12 or above		

IX. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

Develop a program to retrieve and present data from database.

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XI. Result (Output of code)

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Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. What is MYSQL? How it is used in PHP?
2. How to create database in MYSQL?
3. Name to functions of PHP to connect MYSQL database.
4. Explain mysqli_connect () function.

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XII.Exercise

Write a PHP code to insert data into employee table.

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XIII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial- introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIV. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	

Practical No: 16

Develop a simple application to Update, Delete table data from database.

I Practical Significance:

Data from table can be updated or deleted using MYSQL.

II Relevant Program Outcomes (POs)

- **Basic Knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problem.
- **Discipline Knowledge:** Apply computer programming knowledge to slove the computer group related problems.
- **Experiments and practices:** Plan to perform experiments and practices to use the result to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Teamwork:** Function effectively as a leader and the team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III Competency and Practical skills: "Develop application using PHP"

- Write a PHP program to Update, Delete table data from database.

IV Relevant Course Outcome(s):

CO5: Perform database operations in PHP.

V Practical Outcome (PrOs) :

1. Write a PHP program to-
    - Update table data from database.
    - Delete table data from database.

VI Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII Minimum Theoretical Background:

PHP MySQL Update Query

The update keyword is basically used to modify or edit the existing records in the database table. It usually need a where clause to find out in which record change is to be done. It is must to specify the where clause otherwise all records of that table got modify.
Syntax:
UPDATE table_name SET column1=value1,column2=value2... WHERE column = value

Previous records in empInfo table are:

Emp_id	Name	Email	Mobile
1	devesh	devesh@gmail.com	9910099100
2	deepak	deepak@gmail.com	9210053520
3	ravi	ravi@gmail.com	9810098100

This example updates some data in the "empInfo" table

```
 <?php
//connect database
$con=mysqli_connect ("localhost","root","","Employee") ;
If(!$con)
{
 die('error in connection'.mysqli_error());
}
//select the database
mysqli_select_db("mydb",$con);

//update values of empInfo table
$data="UPDATE empInfo SET name='dev',mobile=9015501256 WHERE email='devesh@gmail.com'";
mysqli_query ($con,$data);
mysqli_close($con);
?>
```

PHP MySQL: Delete Data

The DELETE statement is used to delete records from a table:
Syntax:
DELETE FROM table_name
WHERE some_column = some_value

This example deleted one row from "empInfo" table

```
<?php
//connect database
$con=mysqli_connect("localhost","root","","Employee")
// Check connection
if (!$con)
{
   die("Connection failed: " . (mysqli_error()));
};

// sql to delete a record
$data="delete from empInfo WHERE email='devesh@gmail.com"';
mysqli_query($con,$data);
mysqli_close($con);
 ?>
```

After deletion , the "empInfo" table will look like this:

Emp_id	Name	Email	Mobile
2	deepak	deepak@gmail.com	9210053520
3	ravi	ravi@gmail.com	9810098100

VII. Resources Required

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Hardware: Computer System	Computer (i3-i5 preferable), RAM minimum 2 GB and onwards	As per batch size	For all Experiments
2	Operating System	Windows/ Linux		
3	Software	PHP 7.3.12 or above		

VIII. Resources used:

Sr. no.	Name of Resources	Suggested Broad Specification	Quantity	Remark
1	Computer System with board specifications			
2	Software			
3	Any other resource used			

IX. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

1. Write a PHP program to Update table data from student database.

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X. Result (Output of code)

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XI. Practical Related Questions:

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1.Write a syntax for update and delete data in PHP.

(Space for Answer)

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XI. Exercise

1. Write a PHP program to Update table data from student database.

(Space for Answer)

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XII. References/ Suggestions for Futher Reading.

1. https://www.w3schools.com/php/default.asp
2. https://www.guru99.com/what-is-php-program.html
3. https://www.tutorialspoint.com/php/
4. https://tutorialehtml.com/en/php-tutorial- introduction/
5. www.tizag.com/phpT/
6. https://books.goalkicker.com/PHPBook/
7. https://codecourse.com/watch/php-basics

XIII. Assessment Scheme

Performance Indicators		Weightage
Process related (35 marks)		**70%**
1	**Logical formation**	**30%**
2	**Debugging ability**	**30%**
3	**Follow ethical practices**	**10%**
Product related (15 marks)		**30%**
4	**Expected output**	**10%**
5	**Timely submission of report**	**10%**
6	**Answer to sample questions**	**10%**
Total (50 Marks)		**100%**

List of Students/ Team Members

1. ……
2. ……
3. ……
4. ……

Marks obtained			Dated signature of Teacher
Process Related(35)	**Product Related(15)**	**Total(50)**	