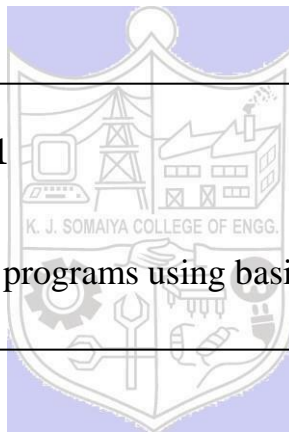**Experiment No. 1**

Title: Simple PHP programs using basic programming
Constructs

Batch: B2   **Roll No.: 16010420117**   **Experiment No.:1**

Aim: Write PHP programs using basic programming constructs.

Resources needed: Windows OS, Web Browser, Editor, XAMPP Server

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Pre Lab/ Prior Concepts:

Students should have prior knowledge of HTML/CSS/Basic Programming.

Theory: <u>PHP</u>

1. PHP is a server side scripting language.
2. It can be used to develop Static websites or Dynamic websites or Web applications.
3. PHP stands forHypertext Pre-processor, that earlier stood for Personal Home Pages.
4. PHP scripts can only be interpreted on a server that has PHP installed.
5. The client computers accessing the PHP scripts require a web browser only.
6. A PHP file contains PHP tags and ends with the extension ".php".
7. PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management system and webframeworks.

   PHP supports the following data types:

- String
- Integer
- Float (floating point numbers - also called double)
- Boolean
- Array
- Object
- NULL
- Resource

PHP String

A string is a sequence of characters, like "Hello world!".

A string can be any text inside quotes. You can use single or double quotes:

```php
<?php
$x = "Hello world!";
$y = 'Hello world!';
 echo $x;
echo "<br>";
echo $y;
```

```
        ?>
```

PHP has a set of math functions that allows you to perform mathematical tasks on numbers.
For Example : The pi() function returns the value of PI
              The abs() function returns the absolute (positive) value of a number
Other Examples: min(), max() etc..

PHP Conditional Statements
if statement - executes some code if one condition is true
if...else statement - executes some code if a condition is true and another code if that condition is false
if...elseif...else statement - executes different codes for more than two conditions
switch statement - selects one of many blocks of code to be executed

Sample Code: **if and if else example**

if (condition) {   code to be executed if

condition is true;

} else {   code to be executed if condition

is false;

}

```php
<?php
$t = date("H");
 if ($t < "10") {    echo "Have
a good morning!"; } elseif ($t
< "20") {    echo "Have a good
day!";
} else {    echo "Have a good
night!";
}
?>
```

Similarly all the conditional constructs such as for loop, switch case etc are available in PHP

Echo and Print echo and print are more or less the same. They are both used to output data to the screen. The differences are small: echo has no return value while print has a return value of 1 so it can be used in expressions. echo can take multiple parameters (although such usage is rare) while print can take one argument. echo is marginally faster than print.

We can use html tags in php e.g.
, <b> used in the above example.

Procedure:
How to Run a PHP File in XAMPP?
Step 1 : First Create PHP script using any editor like notepad, notepad++ etc.
    <?php echo "Welcome to the world of PHP."; ?>

Step 2 : Save file as following... firstProg.php
        In C:xampp/htdocs/myproject/firstProg.php
        Start XAMPP Apache server (first time only)
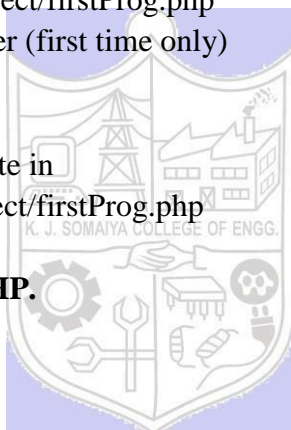
Step 3 : Run the PHP script
        Open Your browser and write in
        Type url : localhost/myproject/firstProg.php
Output:
    Welcome to the world of PHP.

Output(Code with result Snapshot)

Write a program to print prime numbers from 1 to 100: 2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97

Write a program to print prime numbers from 1 to 100

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

<?php
echo "Write a program to print prime numbers from 1 to 100: ";

$stop = 100;
$start = 2;

while(TRUE)
{
  $div = 2;
    if($start > $stop)
    {
      break;
    }
    while(TRUE)
    {
      if($div > sqrt($start))
      {
        echo $start."  ";
        break;
      }
      if($start % $div == 0)
      {
        break;
      }
      $div = $div + 1;
    }
    $start = $start + 1;
}

?>

</body>
</html>
```

Write a program to display grade of students

```php
<?php
$marks = 60;

if ($marks>=80)
{
    $grade = "Grade: O";
}
else if($marks>=75)
{
    $grade = "Grade: A";
}
else if($marks>=65)
{
    $grade = "Grade: B";
}
else if($marks>=40)
{
    $grade = "Grade: C";
}
else
{
    $grade = "FAIL";
}

echo "Student grade: $grade";
?>
```

Student grade: Grade: C

Write a program to display day of the week

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

<?php
date('w'); //gets day of week as number(0=sunday,1=monday...,6=sat)

//note:returns 0 through 6 but as string so to check if monday do
this:
if(date('w') == 0){
    echo "its Sunday!";
}
else if(date('w') == 1){
    echo "its Monday!";
}
else if(date('w') == 2){
    echo "its Tuesday!";
}
else if(date('w') == 3){
    echo "its Wednesday!";
}
else if(date('w') == 4){
    echo "its Thursday!";
}
else if(date('w') == 5){
    echo "its Friday!";
}
else if(date('w') == 6){
    echo "its Saturday!";
}
else{
    echo "its Sunday!";
}

?>

</body>
</html>
```

Today is : Sunday!

Write a program to calculate average salary of an employee
Write a program a print Fibonacci series

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

<?php
$employee = array (
  array("Seema",24,"Data Engeineer",35000),
  array("Pratap",32,"Data Science",40000),
  array("Venkat",38,"Senior Data Engineer",38000),
  array("Priyansha",31,"Specialist-Machine Learning",45000)
);

echo "Name: ".$employee[0][0]." Age: ".$employee[0][1]."
Profession: ".$employee[0][2].".<br>";
echo "Name: ".$employee[1][0]." Age: ".$employee[1][1]."
Profession: ".$employee[1][2].".<br>";
echo "Name: ".$employee[2][0]." Age: ".$employee[2][1]."
Profession: ".$employee[2][2].".<br>";
echo "Name: ".$employee[3][0]." Age: ".$employee[3][1]."
Profession: ".$employee[3][2].".<br>";

$sum_Salary = 0;
for($i = 0; $i < 4; $i++){
    $sum_Salary = $sum_Salary + $employee[i][3];
};
echo $sum_Salary;
$avg_salary = $sum_Salary / 4;
echo $avg_salary;
echo "<br>";

 echo "3. Program to print fibonacci series:" ,"\n", "  <br>";
 $num = 0;
 $n1 = 0;
 $n2 = 1;
 echo $n1.' '.$n2.' ';
```

```php
while ($num < 20 )
 {
    $n3 = $n2 + $n1;
    echo $n3.' ';
    $n1 = $n2;
    $n2 = $n3;
    $num = $num + 1;
 }


?>
</body>
</html>
```

Program to calculate average salary of employees
Name: Seema Age: 24 Profession: Data Engeineer.
Name: Pratap Age: 32 Profession: Data Science.
Name: Venkat Age: 38 Profession: Senior Data Engineer.
Name: Priyansha Age: 31 Profession: Specialist-Machine Learning.
Average Salary is: 1580000
Program to print fibonacci series:
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765 10946

Write a program to calculate average score of a batsman
playing in a test series

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

<?php
$runs = 1000;
$matches = 250;
$notout = 50;

$out = $matches - $notout;
$avg = $runs / $out;
echo "Average runs are : " ,$avg;
?>
</body>
</html>
```

Average runs are : 5

Questions:-

1. Explain Loops in PHP with example
2. Why chose PHP over other programming languages.

Ans 1: Loops are used to execute the same block of code again and again, as long as a certain condition is true. In PHP, we have the following loop types:

while - loops through a block of code as long as the specified condition is true

do...while - loops through a block of code once, and then repeats the loop as long as the specified condition is true

for - loops through a block of code a specified number of times

foreach - loops through a block of code for each element in an array

Program to display the numbers from 1 to 5:

Using while:

```php
<?php
$x = 1;
while($x <= 5) {
  echo "The number is: $x <br>";
  $x++;
}
?>
```

Using do while:

```php
<?php
$x = 1;
do {
  echo "The number is: $x <br>";
  $x++;
} while ($x <= 5);
?>
```

Using for loop:

```php
<?php
for ($x = 1; $x <= 5; $x++) {
  echo "The number is: $x <br>";
}
?>
```

Foreach loop:

To print output the values of the given array ($colors):

```php
<?php
$colors = array("red", "green", "blue", "yellow");
foreach ($colors as $value) {
  echo "$value <br>";
}
?>
```

Ans 2: The simplicity of coding, easy learning, and a faster approach makes PHP a lot better than the other complex programming languages. PHP is an open source language, making web development an efficient and more interactive task for the developers.

Outcomes: CO1 : Illustrate use of basic PHP concepts to develop applications

Conclusion: : We wrote PHP programs using various types of problem statements

Signature of faculty in-charge with date

References:

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2. Peter MacIntyre, Kevin Tatroe Programming PHP O'Reilly Media, Inc, 4th Edition 2020
3. Frank M. Kromann Beginning PHP and MySQL: From Novice to Professional, Apress 1st Edition, 2018