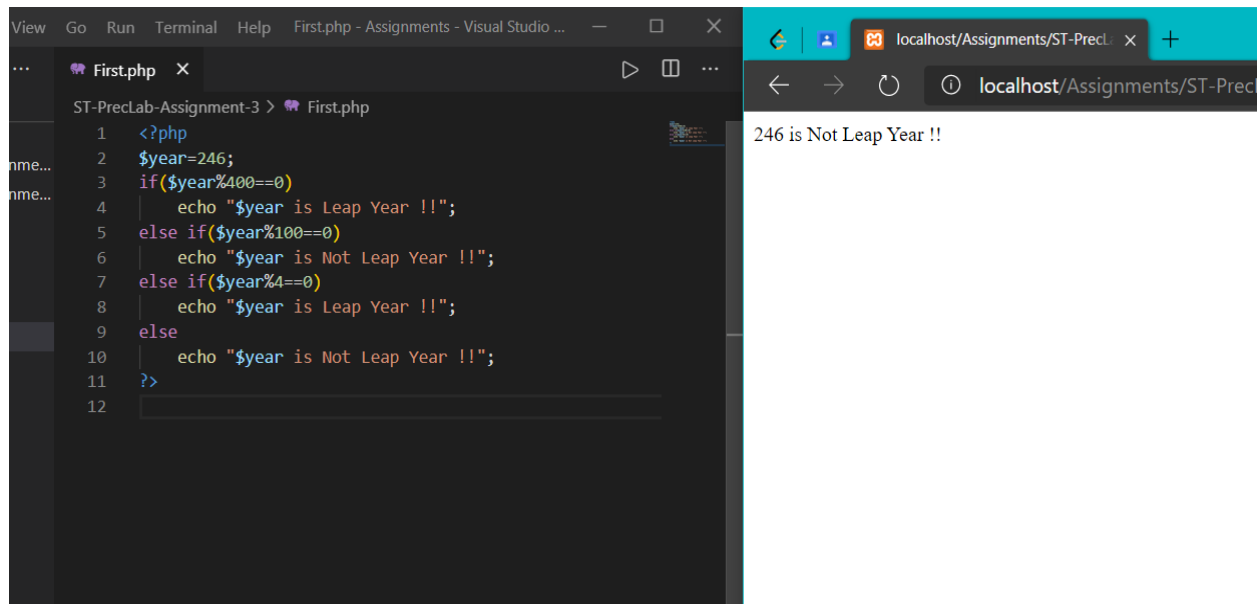


**U18CO018**  
**Shubham Shekhaliya**  
**Assignment-3 (ST)**

1-> Write a PHP Program to check if a given year is leap year or not.

```
<?php
$year=246;
if($year%400==0)
    echo "$year is Leap Year !!";
else if($year%100==0)
    echo "$year is Not Leap Year !!";
else if($year%4==0)
    echo "$year is Leap Year !!";
else
    echo "$year is Not Leap Year !!";
?>
```



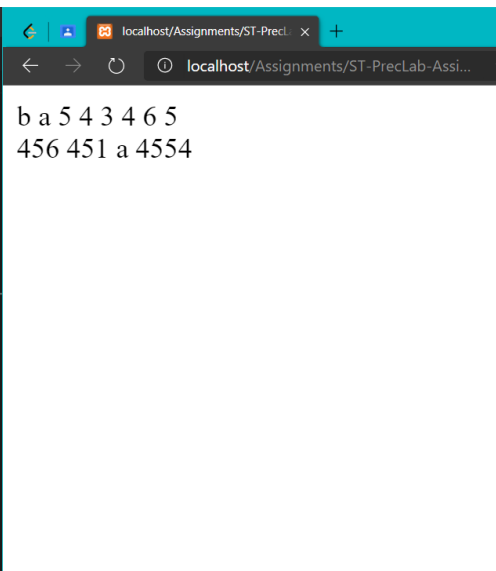
2-> Write a PHP Program to demonstrate use of Indexed arrays.

```
<?php

// we not required to give any data type at declaration
$a=array(5,6,4,3,4,5,'a','b');
$n=count($a);

for($x=$n-1;$x>=0;$x--){
    echo "$a[$x] ";
}
echo "<br>";
// we can provide value at any index in array
$b[3]=4554;
$b[2]='a';
$b[0]=456;
$b[1]=451;

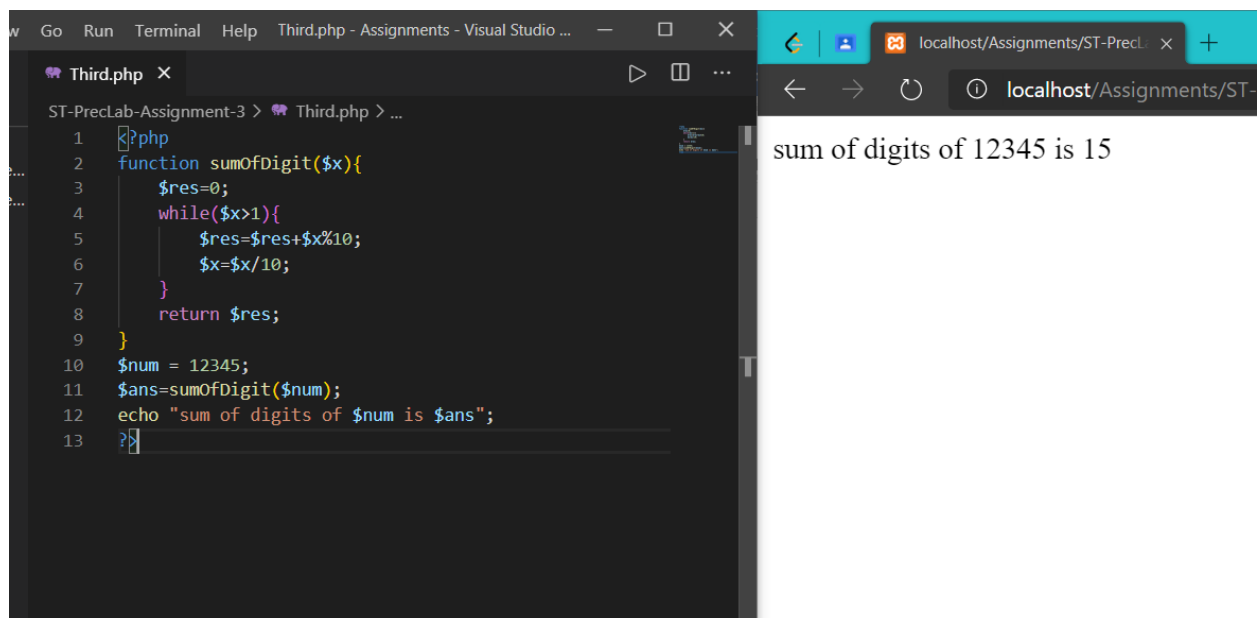
$n=count($b);
for($x=0;$x<$n;$x++){
    echo "$b[$x] ";
}
```



The screenshot shows a web browser window with the URL `localhost/Assignments/ST-PrecLab-Assi...`. The output of the PHP script is displayed on two lines: `b a 5 4 3 4 6 5` and `456 451 a 4554`. The browser window also shows the file explorer and the code editor for `Second.php`, which contains the PHP code shown in the previous block.

3-> Write a PHP program to compute the sum of the digits of a number using function.

```
<?php
function sumOfDigit($x){
    $res=0;
    while($x>1){
        $res=$res+$x%10;
        $x=$x/10;
    }
    return $res;
}
$num = 12345;
$ans=sumOfDigit($num);
echo "sum of digits of $num is $ans";
?>
```



4 -> Write a PHP program to print out the following table

1 2 3 4 5 6 7 8 9 10

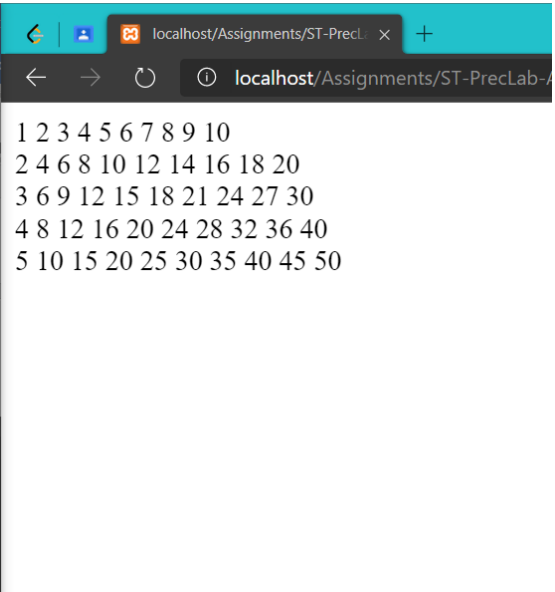
2 4 6 8 10 12 14 16 18 20

3 6 9 12 15 18 21 24 27 30

4 8 12 16 20 24 28 32 36 40

5 10 15 20 25 30 35 40 45 50

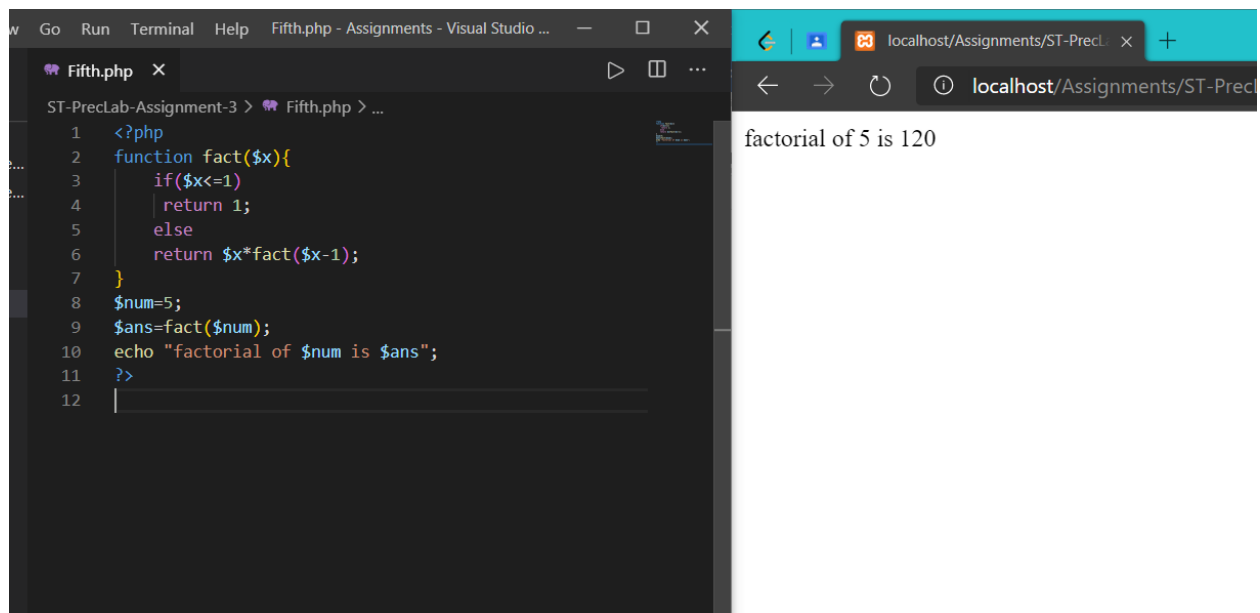
```
<?php
$num=5;
for($i=1;$i<=$num;$i++){
    $ans=$i;
    for($j=1;$j<=10;$j++){
        echo "$ans ";
        $ans=$ans+$i;
    }
    echo "<br>";
}
?>
```



The screenshot shows a web browser window with the URL `localhost/Assignments/ST-PrecLab-4/`. The browser displays the output of the PHP program, which is a table of numbers arranged in 5 rows and 10 columns. The numbers in each row are: Row 1: 1 2 3 4 5 6 7 8 9 10; Row 2: 2 4 6 8 10 12 14 16 18 20; Row 3: 3 6 9 12 15 18 21 24 27 30; Row 4: 4 8 12 16 20 24 28 32 36 40; Row 5: 5 10 15 20 25 30 35 40 45 50.

5-> Write a PHP program to find the factorial of a number using a recursive function.

```
<?php
function fact($x){
    if($x<=1)
        return 1;
    else
        return $x*fact($x-1);
}
$num=5;
$ans=fact($num);
echo "factorial of $num is $ans";
?>
```



6-> You need to write a PHP program to calculate electricity bills using if-else conditions.

Conditions:

For first 50 units – Rs. 3.50/unit

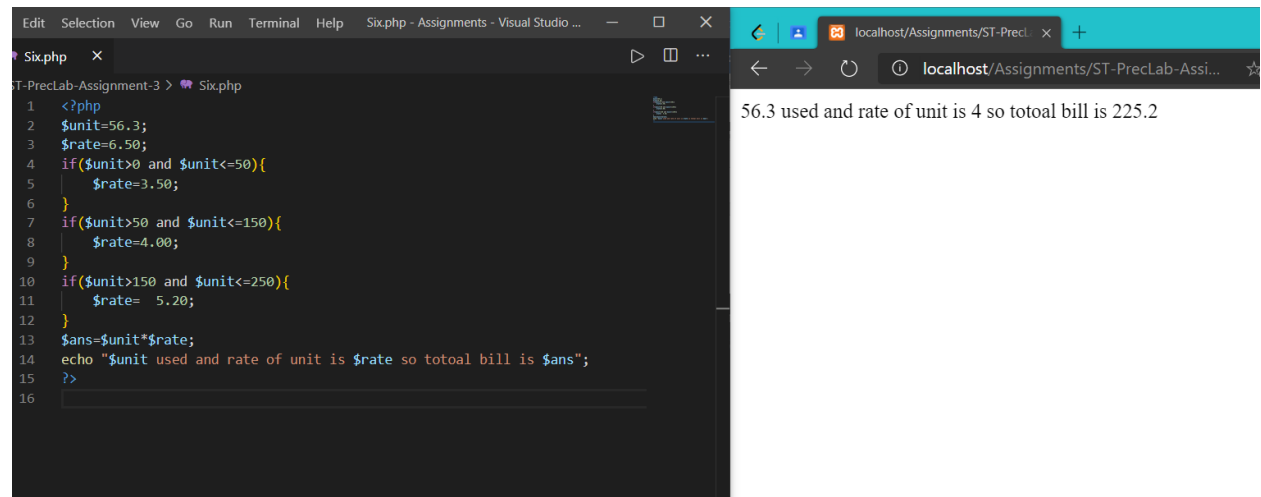
For next 100 units – Rs. 4.00/unit

For next 100 units – Rs. 5.20/unit

For units above 250 – Rs. 6.50/unit

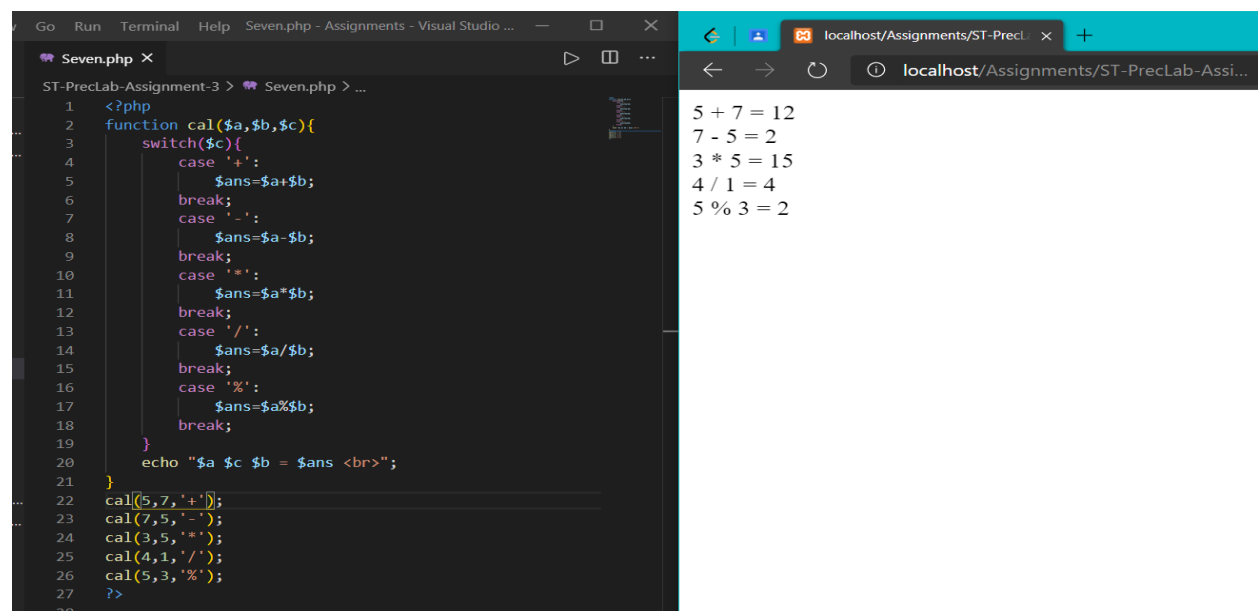
You can use conditional statements.

```
<?php
$unit=56.3;
$rate=6.50;
if($unit>0 and $unit<=50){
    $rate=3.50;
}
if($unit>50 and $unit<=150){
    $rate=4.00;
}
if($unit>150 and $unit<=250){
    $rate= 5.20;
}
$ans=$unit*$rate;
echo "$unit used and rate of unit is $rate so totoal bill is $ans";
?>
```



7-> Write a simple calculator program in PHP using a switch case.

```
<?php
function cal($a,$b,$c){
    switch($c){
        case '+':
            $ans=$a+$b;
            break;
        case '-':
            $ans=$a-$b;
            break;
        case '*':
            $ans=$a*$b;
            break;
        case '/':
            $ans=$a/$b;
            break;
        case '%':
            $ans=$a%$b;
            break;
    }
    echo "$a $c $b = $ans <br>";
}
cal(5,7,'+');
cal(7,5,'-');
cal(3,5,'*');
cal(4,1,'/');
cal(5,3,'%');
?>
```

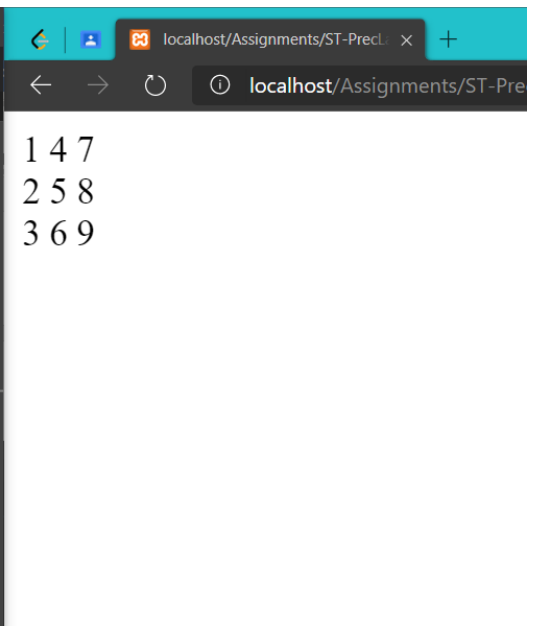


The screenshot displays a web browser window on the right and a code editor on the left. The browser window shows the output of the PHP script:  $5 + 7 = 12$ ,  $7 - 5 = 2$ ,  $3 * 5 = 15$ ,  $4 / 1 = 4$ , and  $5 \% 3 = 2$ . The code editor shows the PHP script being executed, which uses a switch case to perform arithmetic operations based on the operator provided as the third argument to the `cal` function.

```
ST-PrecLab-Assignment-3 > Seven.php > ...
1  <?php
2  function cal($a,$b,$c){
3      switch($c){
4          case '+':
5              $ans=$a+$b;
6              break;
7          case '-':
8              $ans=$a-$b;
9              break;
10         case '*':
11             $ans=$a*$b;
12             break;
13         case '/':
14             $ans=$a/$b;
15             break;
16         case '%':
17             $ans=$a%$b;
18             break;
19     }
20     echo "$a $c $b = $ans <br>";
21 }
22 cal(5,7,'+');
23 cal(7,5,'-');
24 cal(3,5,'*');
25 cal(4,1,'/');
26 cal(5,3,'%');
27 ?>
```

8-> Write a PHP Program to perform following Operations of a Matrix  
a-> Transpose of matrix

```
<?php
$a=array(array(1,2,3),array(4,5,6),array(7,8,9));
for($x=0;$x<count($a);$x++){
    for($y=0;$y<count($a[$x]);$y++){
        $b[$y][$x]=$a[$x][$y];
    }
}
for($x=0;$x<count($b);$x++){
    for($y=0;$y<count($b[$x]);$y++){
        echo $b[$x][$y];
        echo " ";
    }
    echo "<br>";
}
?>
```



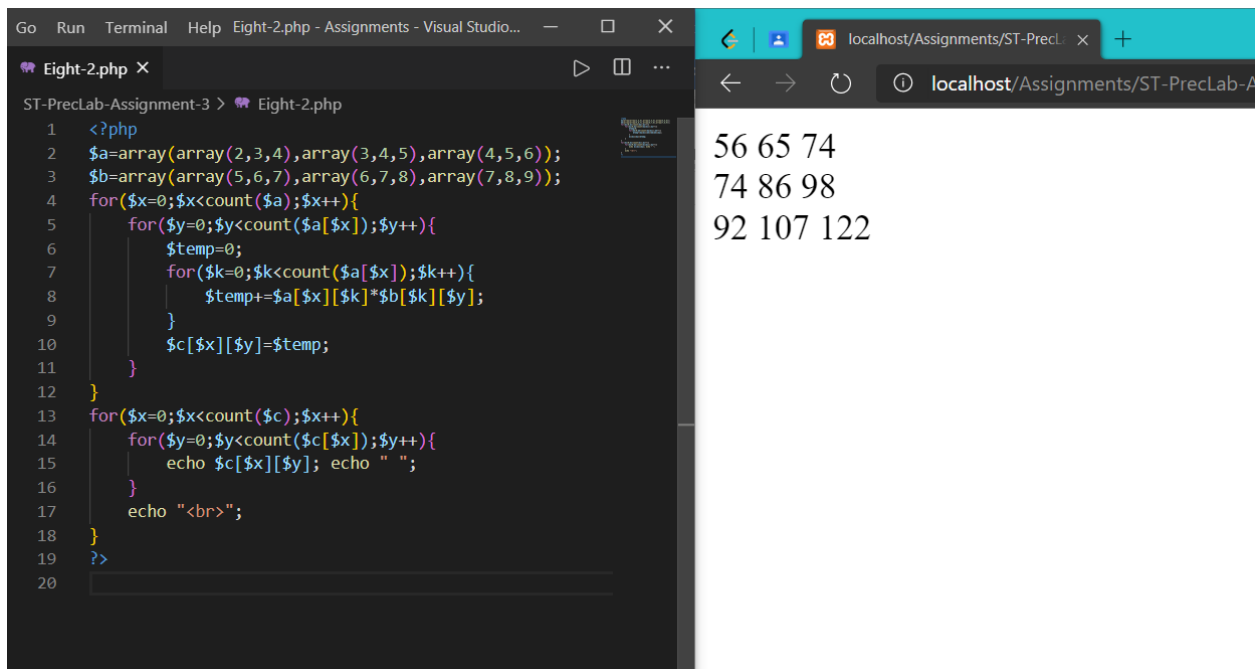
```
Go Run Terminal Help Eight-1.php - Assignments - Visual Studio...
Eight-1.php X
ST-PrecLab-Assignment-3 > Eight-1.php
1 <?php
2 $a=array(array(1,2,3),array(4,5,6),array(7,8,9));
3 for($x=0;$x<count($a);$x++){
4     for($y=0;$y<count($a[$x]);$y++){
5         $b[$y][$x]=$a[$x][$y];
6     }
7 }
8 for($x=0;$x<count($b);$x++){
9     for($y=0;$y<count($b[$x]);$y++){
10        echo $b[$x][$y];
11        echo " ";
12    }
13    echo "<br>";
14 }
15 ?>
16
```

1 4 7  
2 5 8  
3 6 9



b-> Multiplication of two matrix

```
<?php
$a=array(array(2,3,4),array(3,4,5),array(4,5,6));
$b=array(array(5,6,7),array(6,7,8),array(7,8,9));
for($x=0;$x<count($a);$x++){
    for($y=0;$y<count($a[$x]);$y++){
        $temp=0;
        for($k=0;$k<count($a[$x]);$k++){
            $temp+=$a[$x][$k]*$b[$k][$y];
        }
        $c[$x][$y]=$temp;
    }
}
for($x=0;$x<count($c);$x++){
    for($y=0;$y<count($c[$x]);$y++){
        echo $c[$x][$y]; echo " ";
    }
    echo "<br>";
}
?>
```



The screenshot displays a web browser window on the right and a code editor window on the left. The browser window shows the output of the PHP script, which is a 3x3 matrix of numbers. The code editor window shows the PHP code used to generate this output. The code defines two 3x3 matrices, \$a and \$b, and calculates their product, storing the result in matrix \$c. The output is displayed in a web browser window, showing the result of the matrix multiplication.

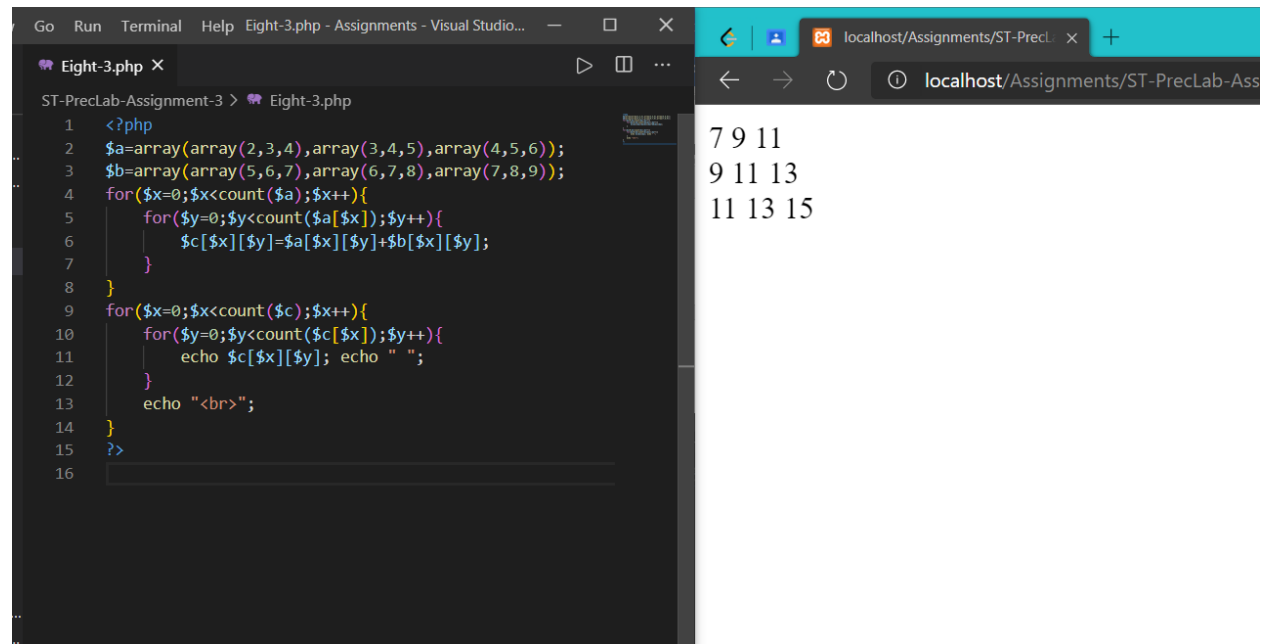
```
ST-PrecLab-Assignment-3 > Eight-2.php
1  <?php
2  $a=array(array(2,3,4),array(3,4,5),array(4,5,6));
3  $b=array(array(5,6,7),array(6,7,8),array(7,8,9));
4  for($x=0;$x<count($a);$x++){
5      for($y=0;$y<count($a[$x]);$y++){
6          $temp=0;
7          for($k=0;$k<count($a[$x]);$k++){
8              $temp+=$a[$x][$k]*$b[$k][$y];
9          }
10         $c[$x][$y]=$temp;
11     }
12 }
13 for($x=0;$x<count($c);$x++){
14     for($y=0;$y<count($c[$x]);$y++){
15         echo $c[$x][$y]; echo " ";
16     }
17     echo "<br>";
18 }
19 ?>
20
```

localhost/Assignments/ST-PrecLab-A  
localhost/Assignments/ST-PrecLab-A

56 65 74  
74 86 98  
92 107 122

c-> Addition of two matrix

```
<?php
$a=array(array(2,3,4),array(3,4,5),array(4,5,6));
$b=array(array(5,6,7),array(6,7,8),array(7,8,9));
for($x=0;$x<count($a);$x++){
    for($y=0;$y<count($a[$x]);$y++){
        $c[$x][$y]=$a[$x][$y]+$b[$x][$y];
    }
}
for($x=0;$x<count($c);$x++){
    for($y=0;$y<count($c[$x]);$y++){
        echo $c[$x][$y]; echo " ";
    }
    echo "<br>";
}
?>
```



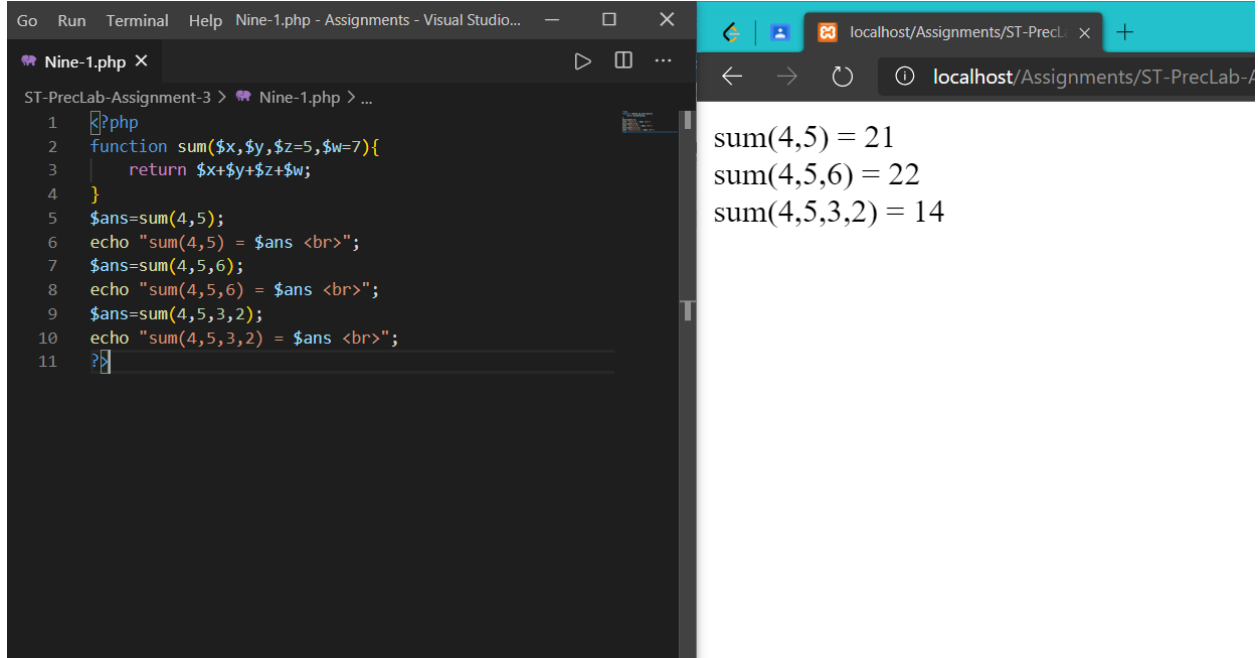
The screenshot displays a web browser window on the right and a code editor on the left. The browser shows the output of the PHP script at the URL `localhost/Assignments/ST-PrecLab-Ass`. The output is a 3x3 matrix of numbers:

7	9	11
9	11	13
11	13	15

The code editor on the left shows the PHP code for `Eight-3.php`, which defines two 3x3 matrices `$a` and `$b`, adds them element-wise into matrix `$c`, and prints the result using `echo` statements.

9-> Write a PHP Program to demonstrate  
a-> Functions with Default Argument Value

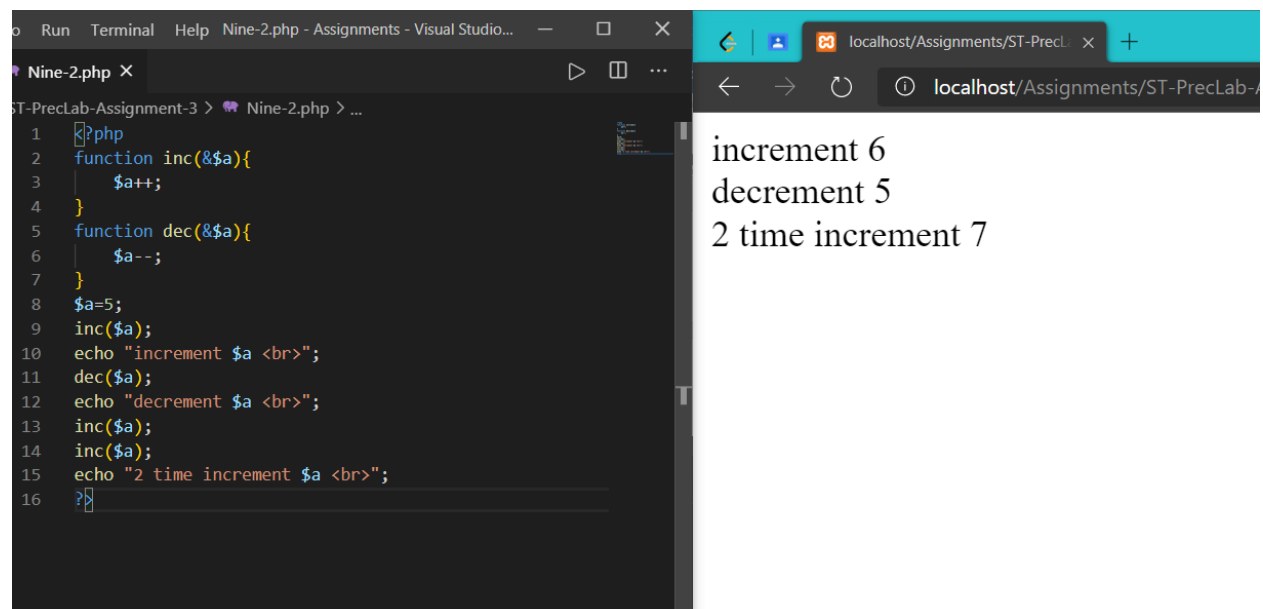
```
<?php
function sum($x,$y,$z=5,$w=7){
    return $x+$y+$z+$w;
}
$ans=sum(4,5);
echo "sum(4,5) = $ans <br>";
$ans=sum(4,5,6);
echo "sum(4,5,6) = $ans <br>";
$ans=sum(4,5,3,2);
echo "sum(4,5,3,2) = $ans <br>";
?>
```



The screenshot shows a web browser window on the right displaying the output of a PHP program:   
sum(4,5) = 21  
sum(4,5,6) = 22  
sum(4,5,3,2) = 14  
On the left, a code editor window titled 'Nine-1.php' shows the source code of the program, which is identical to the code block above. The code defines a function 'sum' with default arguments for the third and fourth parameters, and then calls the function three times with different argument sets, echoing the results.

## b-> Passing Arguments by Reference

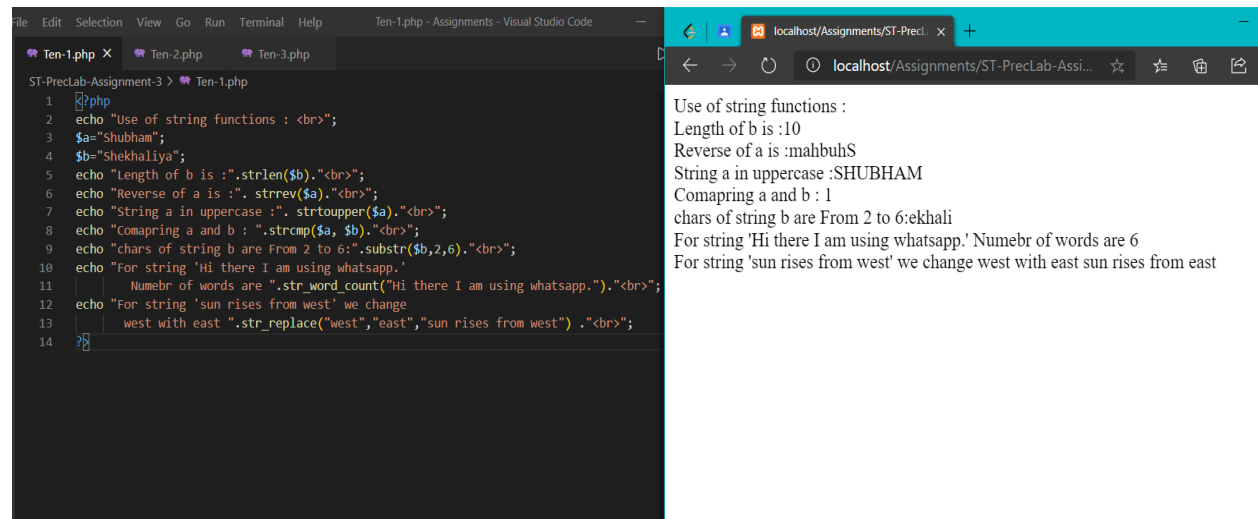
```
<?php
function inc(&$a){
    $a++;
}
function dec(&$a){
    $a--;
}
$a=5;
inc($a);
echo "increment $a <br>";
dec($a);
echo "decrement $a <br>";
inc($a);
inc($a);
echo "2 time increment $a <br>";
?>
```



## 10-> Write a PHP Program to demonstrate a-> String Functions

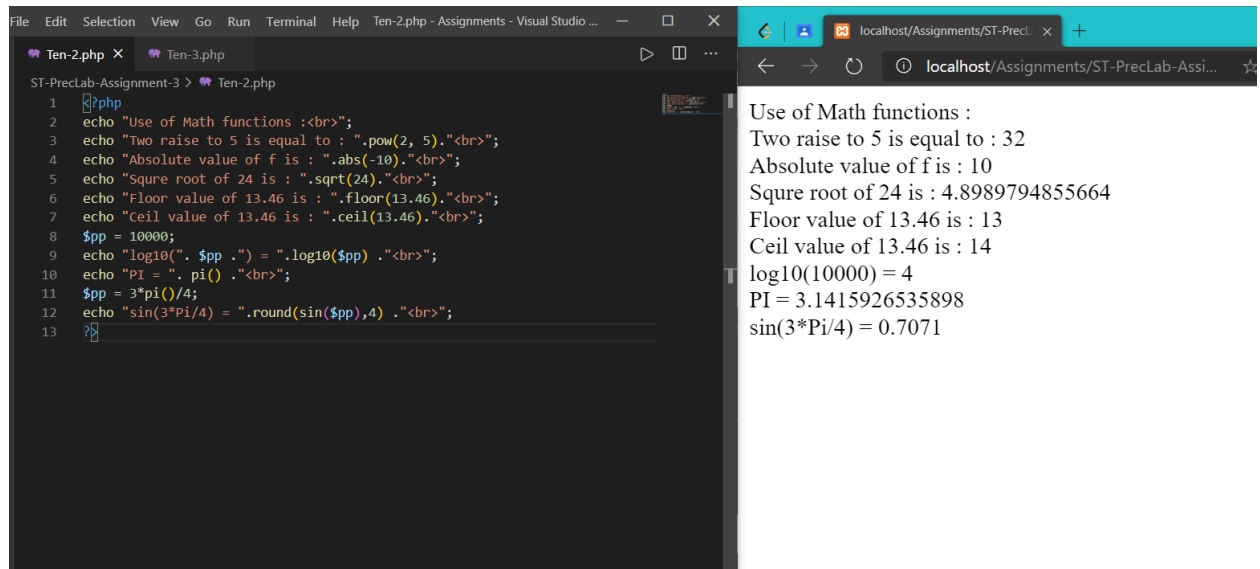
```
<?php

echo "Use of string functions : <br>";
$a="Shubham";
$b="Shekhaliya";
echo "Length of b is :".strlen($b)."<br>";
echo "Reverse of a is :". strrev($a)."<br>";
echo "String a in uppercase :". strtoupper($a)."<br>";
echo "Comapring a and b : ".strcmp($a, $b)."<br>";
echo "chars of string b are From 2 to 6:".substr($b,2,6)."<br>";
echo "For string 'Hi there I am using whatsapp.'
    Numebr of words are ".str_word_count("Hi there I am using whatsapp.")."<br>";
echo "For string 'sun rises from west' we change
    west with east ".str_replace("west","east","sun rises from west") ."<br>";
?>
```



## b-> Math Functions

```
<?php
echo "Use of Math functions :<br>";
echo "Two raise to 5 is equal to : ".pow(2, 5)."<br>";
echo "Absolute value of f is : ".abs(-10)."<br>";
echo "Squire root of 24 is : ".sqrt(24)."<br>";
echo "Floor value of 13.46 is : ".floor(13.46)."<br>";
echo "Ceil value of 13.46 is : ".ceil(13.46)."<br>";
$pp = 10000;
echo "log10(" . $pp . ") = ".log10($pp) . "<br>";
echo "PI = ". pi() . "<br>";
$pp = 3*pi()/4;
echo "sin(3*Pi/4) = ".round(sin($pp),4) . "<br>";
?>
```



## c-> Date and Time Functions

```
<?php
echo "<br><br>Date and Time function usage :<br>";
$d=date("d/m/y");
echo "Today's date is :". $d."<br>";
echo "Time at present is :".date("h:i:s")."<br>";
echo "To get the current Date : getDate()= ";
print_r(getdate());
echo "<br>";
$date1 = date_create("01-01-2020");
$date2 = date_create();
$interval = date_diff($date1, $date2);
echo "Differnce between 01-01-2020 and Today\'s date " ;
print($interval->format('%Y years %m months %d days'));
echo '<br>';
?>
```

