Program 01

Create a form with the elements of Textboxes, Radio buttons, Checkboxes, and so on. Write JavaScript code to validate the format in email, and mobile number in 10 characters, if a textbox has been left empty, popup an alert indicating when email, mobile number and textbox has been left empty.

```
<!DOCTYPE html>
<html>
<head>
<title>Form Validation</title>
<script>
function validateForm()
{
const email = document. getElementById('email').value;
const mobile = document.getElementById('mobile').value;
const textbox = document.getElementById('textbox').value;
let isValid = true;
let errorMessage='';
// Validate email format
if(!validateEmail(email))
{
errorMessage+= "Invalid email format.\n";
isValid = false;
}
// Validate mobile number length
if(mobile.length!==10)
{
errorMessage+="Mobile number should be 10 characters.\n";
isValid=false;
}
// Check if any field is left empty
if(email===''||mobile===''||textbox==='')
{
errorMessage+="Please fill in all fields. \n";
isValid=false;
}
// Display error message in an alert if any validation fails
if(!isValid)
{
alert(errorMessage);
}
return isValid;
}
// Function to validate email format using a regular expression
function validateEmail(email)
{
```

```
const emailRegex=/^[^\s@]+@[^\s@]+\.[^\s@]+$/;
return emailRegex.test(email);
}
</script>
</head>
<body>
<h2>Form Validation</h2>
<form onsubmit="return validateForm()">
Email: <input type="text" id="email"><br><br>
Mobile Number: <input type="text" id="mobile"><br><br>
Address: <input type="text" id="textbox"><br><br>
Gender:
<input type="radio" id="male" name="gender" value="male">
<label for="male">Male</label>
<input type="radio" id="female" name="gender" value="female">
<label for="female">Female</label><br><br>
Interests:
<input type="checkbox" id="music" name="interest" value="music">
<label for="music">Music</label>
<input type="checkbox" id="sports" name="interest" value="sports">
<label for="sports">Sports</label><br><br>
<input type="submit" value="Submit">
</form>
</body>
</html>
```
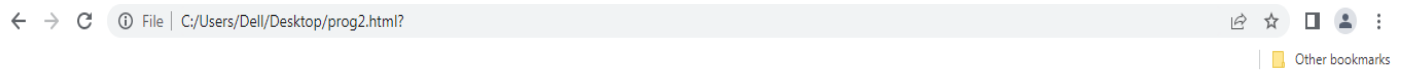
Program 02

Develop an HTML form which accepts any mathematical expression. Write a JavaScript code to evaluate the expression and display the result.

```
<html>
<head>
<title>
Math Expression Evaluator
</title>
<script>
function evaluateExpression()
{
const expression = document.getElementById('expression').value;
try
{
const result=eval(expression);
document.getElementById('result').textContent=`Result:${result}`;
}
catch(error)
{
document.getElementById('result').textContent="invalid Expression or operation.";
}
}
</script>
</head>
<body>
<h2>Math Expression Evaluator</h2>
<form>
Enter a Mathematical Expression:
<input type="text" id="expression">
<input type="button" value="Evaluate" onclick="evaluateExpression()">
</form>
<p id="result"></p>
</body>
</html>
```
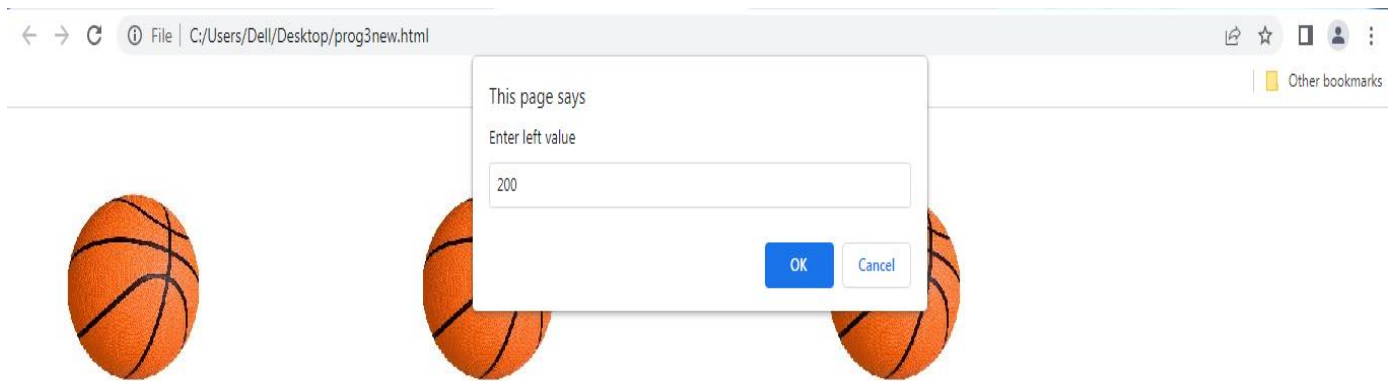
Output:

Math Expression Evaluator

Enter a Mathematical Expression: [5+2*4] [Evaluate]

Result:13

Program 03

Create a page with dynamic effects. Write the code to include layers and basic animations.

```html
<html>
 <head>
    <title> Basic Animation </title>
        <style>
         #layer1{position:absolute; top:50px;left:50px;}
         #layer2{position:absolute; top:50px;left:400px;}
         #layer3{position:absolute; top:50px;left:800px;}
      </style>

       <script type="text/javascript">
       function moveImage(layer)
       {
        var top = window.prompt("Enter top value");
        var left = window.prompt("Enter left value");
      document.getElementById(layer).style.top =top+'px';
        document.getElementById(layer).style.left =left+'px';
       }
        </script>
 </head>

<body>
        <div id="layer1"><img src="ball.jpg" onclick="moveImage('layer1')" alt="My Image."/></div>
        <div id="layer2"><img src="ball.jpg" onclick="moveImage('layer2')" alt="My Image."/></div>
        <div id="layer3"><img src="ball.jpg" onclick="moveImage('layer3')" alt="My Image."/></div>
</body>
</html>
```

Output:

Program 04

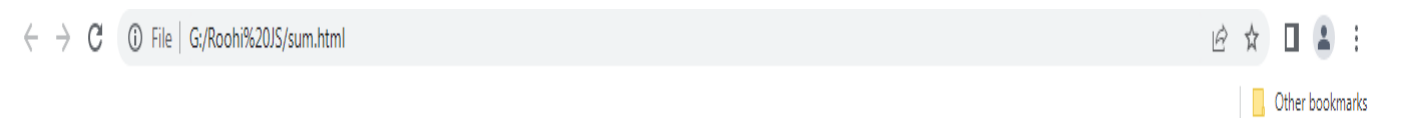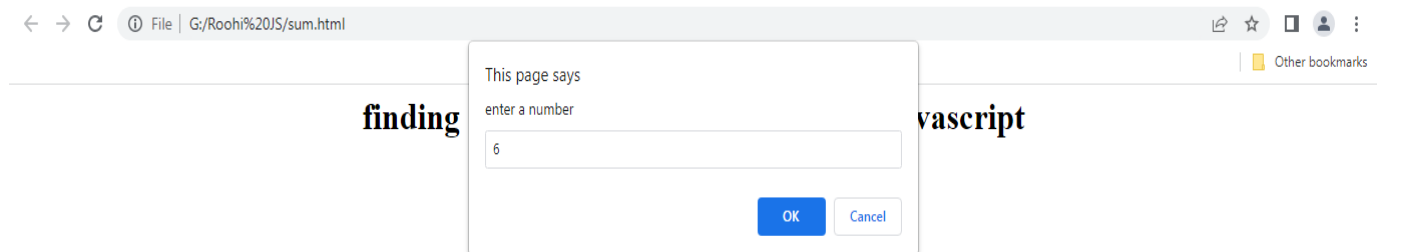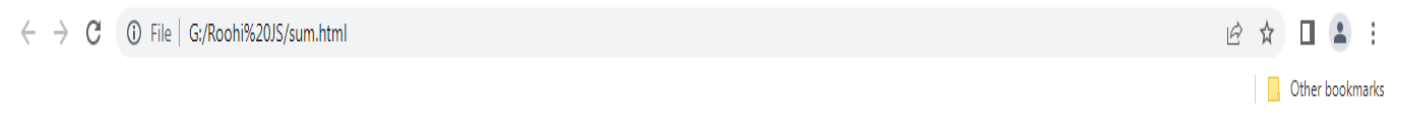**Write a JavaScript code to find the sum of N natural numbers. (use userdefined function)**

```html
<html>
<head>
 <title>sum of n numbers</title>
 <script type="text/javascript">
 function sum()
 {
        var n=prompt("enter a number",0);
        var num=parseInt(n);
        var sum=0;
        for(i=1;i<=num;i++)
        {
                sum=sum+i;
        }
        document.writeln("sum of "+num+" natural numbers: "+sum);
 }
 </script>

 </head>
<body>
<center><h1> finding sum of natural numbers using javascript </h1>
<input type="button" onclick="sum()" value="sum"/>
 </center>
 </body>
</html>
```
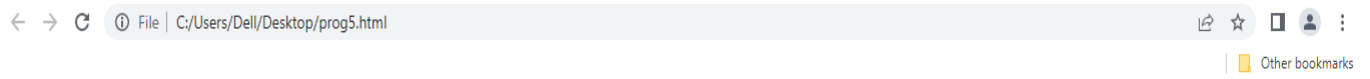
Output:

Program 05

Write a JavaScript code block using arrays and generate the current date in words, this should include the day, month and year.

```
<!DOCTYPE html>
<html>
<title>Current Date in Words</title>
<head>
</head>
<body>
<h2>Current Date in Words</h2>
<p id="dateInWords"></p><script>
// Arrays to hold day, month, and year names
const daysOfWeek = [
"Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday",
"Saturday"
];
const monthsOfYear = [
"January", "February", "March", "April", "May", "June", "July", "August", "September", "October",
"November", "December"];
// Get current date
const currentDate = new Date();
// Extract day, month, and year components
const day = daysOfWeek [currentDate.getDay()]; const month = monthsOfYear [currentDate.getMonth()];
const year = currentDate.getFullYear();
// Construct the date in words
const currentDateInWords = `${day}, ${month} ${currentDate.getDate()},
${year}`;
// Display the date in words
document.getElementById('dateInWords').textContent = "Current date in words: " + currentDateInWords;
</script>
</body>
</html>
```
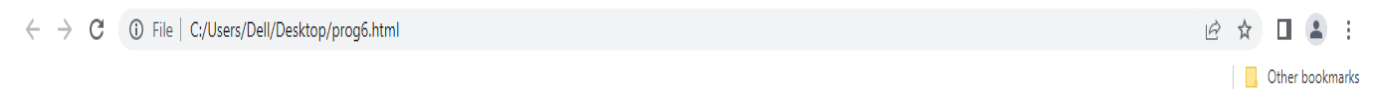
Program 06

Create a form for Student information. Write JavaScript code to find Total, Average, Result and Grade.

```
<html>
<head>
<title>Student Information Form</title>
<script>
function calculateResult() {
// Get input values from the form
var math=parseFloat(document.getElementById('math').value);
var science=parseFloat(document.getElementById('science').value);
var english=parseFloat(document.getElementById('english').value);
// Calculate Total marks and Average
var totalMarks=math+science+english;
var average=totalMarks/3;
var result=(math>=35 && science>=35 && english>=35)?"Pass":"Fail";
// Calculate Grade based on the average marks
var grade;
if(average>=90)
{
grade='A+';
}
else if(average>=80)
{
grade='A';
}
else if(average>=70)
{
grade='B';
}
else if(average>=60)
{
grade='C';
}
else if(average>=50)
{
grade='D';
}
else
{
grade='F';
}
// Display the calculated values
document.getElementById('totalMarks').value=totalMarks.toFixed(2);
document.getElementById('average').value=average.toFixed(2);
```

```
document.getElementById('result').value=result;
document.getElementById('grade').value=grade;
}
</script>
</head>
<body>
<h2>Student Information</h2>
<form>
Math: <input type="number" id="math"><br><br>
Science: <input type="number" id="science"><br><br>
English: <input type="number" id="english"><br><br>
<input type="button" value="Calculate" onclick="calculateResult()">
</form>
<br>
<h2>Result Details</h2>
Total Marks: <input type="text" id="totalMarks" readonly><br><br>
Average: <input type="text" id="average" readonly><br><br>
Result: <input type="text" id="result" readonly><br><br>
Grade: <input type="text" id="grade" readonly>
</body>
</html>
```

Output:

Student Information

Math: [70]

Science: [80]

English: [90]

[Calculate]

Result Details

Total Marks: [240.00]

Average: [80.00]

Result: [Pass]

Grade: [A]

Program 07

Create a form for Employee information. Write JavaScript code to find DA, HRA, PF, TAX, Gross pay, Deduction and Net pay.

```html
<html>
 <head>
 <script type="text/javascript">
 function show()
 {
        var name=document.getElementById("txtname").value;
        var num=document.getElementById("txtnum").value;
        var sal=parseInt(document.getElementById("txtsal").value);
        var hra=(sal*40)/100;
        var da=(sal*60)/100;
        var gross=sal+hra+da;
        var pf=(sal*13)/100;
        var tax=(sal*20)/100;
        var deduct=pf+tax;
        var net=gross-deduct;
        document.writeln("<b>Employee Name:"+name+"</b>"+"<br>"+"<br>");
        document.writeln("<b>Employee Number:"+num+"</b>"+"<br>"+"<br>");
        document.writeln("<b>Basic salary:"+sal+"</b>"+"<br>"+"<br>");
        document.writeln("<b>HRA:"+hra+"</b>"+"<br>"+"<br>");
        document.writeln("<b>DA:"+da+"</b>"+"<br>"+"<br>");
        document.writeln("<b>Gross Salary:"+gross+"</b>"+"<br>"+"<br>");
        document.writeln("<b>PF:"+pf+"</b>"+"<br>"+"<br>");
        document.writeln("<b>Tax:"+tax+"</b>"+"<br>"+"<br>");
        document.writeln("<b>Deduction:"+deduct+"</b>"+"<br>"+"<br>");
        document.writeln("<b>Net Salary:"+net+"</b>"+"<br>"+"<br>");
 }
</script>
 </head>
 <body bgcolor="pink" text="blue">
<center>
 <h1> Employee Detail Form</h1>
<form name="emp">
<table border="2">
<tr><td colspan="2" align="center"> Employee Detail:</td></tr><br>
<tr><td>Employee Name:</td><td><input type="text" id="txtname"></td></tr><br>
<tr><td>Employee Number:</td><td><input type="text" id="txtnum"></td></tr><br>
<tr><td> Basic Salary:</td><td><input type="text" id="txtsal"></td></tr><br>
<tr><td><input type="button" onclick="show()" value="Salary Report"></td>
<td><input type="reset" value="Reset"></td></tr>
</table>
</form>
</center>
```

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

Output:

Employee Detail Form

Employee Detail:	
Employee Name:	Abc
Employee Number:	001
Basic Salary:	40000
Salary Report	Reset

File | G:/JS/empinfo.html

Employee Name:Abc

Employee Number:001

Basic salary:40000

HRA:16000

DA:24000

Gross Salary:80000

PF:5200

Tax:8000

Deduction:13200

Net Salary:66800

Program 08

Write a program in PHP to change background color based on day of the week using if else if statements and using arrays
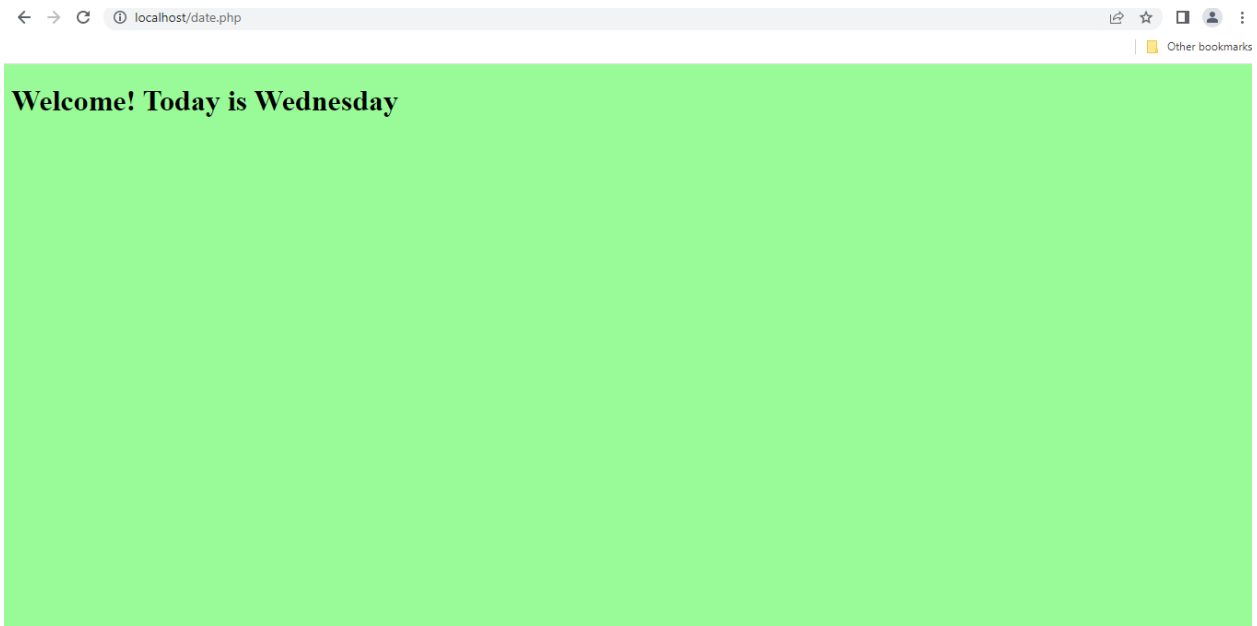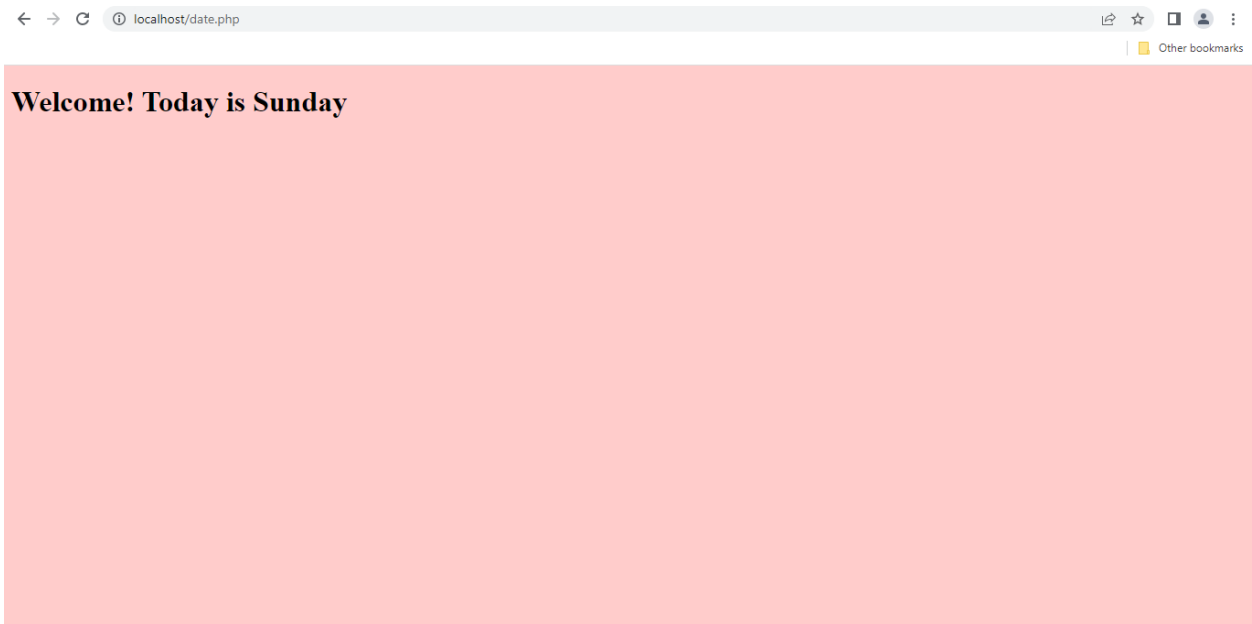
```php
<?php
// Define an array to map days of the week to background colors
$dayColors = [
    'Sunday' => '#ffcccb',
    'Monday' => '#ffebcd',
    'Tuesday' => '#add8e6',
    'Wednesday' => '#98fb98',
    'Thursday' => '#f0e68c',
    'Friday' => '#dda0dd',
    'Saturday' => '#c0c0c0'
];

// Get the current day of the week
$currentDay = date('l');

// Set a default color in case the day is not found
$backgroundColor = '#ffffff'; // Default white color

// Check if the current day exists in the array
if (array_key_exists($currentDay, $dayColors)) {
    // If the day exists, set the background color based on the day
    $backgroundColor = $dayColors[$currentDay];
}
?>
<!DOCTYPE html>
<html>
<head>
    <title>Background Color Based on Day of the Week</title>
    <style>
        body {
            background-color: <?php echo $backgroundColor; ?>;
        }
    </style>
</head>
<body>
    <h1>Welcome! Today is <?php echo $currentDay; ?></h1>
</body>
</html>
```
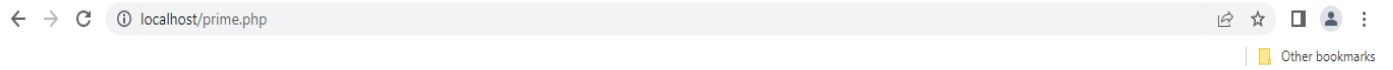
Output:

Program 09

Write a simple program in PHP for
1) Generating prime number.
2) Generate Fibonacci series.

```php
<?php
$count = 0;
$num = 2;
echo "<h3>Prime numbers from 1 to 50: </h3>";
echo "\n";
while ($count < 15 )
{
$div_count=0;
for ( $i=1; $i<=$num; $i++)
{
if (($num%$i)==0)
{
$div_count++;
}
}
if ($div_count<3)
{
echo $num." , ";
$count=$count+1;
}
$num=$num+1;
}
?>
<?php
$num = 0;
$n1 = 0;
$n2 = 1;
echo "<h3>Fibonacci series for first 12 numbers: </h3>";
echo "\n";
echo $n1.' '.$n2.' ';
while ($num < 10 )
{
   $n3 = $n2 + $n1;
   echo $n3.' ';
   $n1 = $n2;
   $n2 = $n3;
   $num = $num + 1;
}
?>
```

Output:

Prime numbers from 1 to 50:

2 , 3 , 5 , 7 , 11 , 13 , 17 , 19 , 23 , 29 , 31 , 37 , 41 , 43 , 47 ,

Fibonacci series for first 12 numbers:
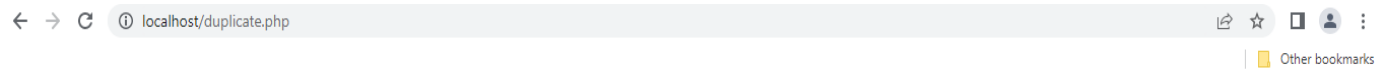
0 1 1 2 3 5 8 13 21 34 55 89

Program 10

Write a PHP program to remove duplicates from a sorted list.

```
<html>
<head>
<title> Remove duplicates from sorted list</title>
</head>
<body>
<h2> Enter a sorted list of numbers separated by spaces</h2>
<form method="post">
<input type="text" name="numbers" placeholder="enter numbers">
<input type="submit" name="submit" value="remove duplicates">
</form>
<?php
function removeDuplicates($arr){
$n=count($arr);
if($n==0||$n==1){
return $arr;
}
$unique=[];
$unique[]=$arr[0];
for($i=1;$i<$n;$i++){
if($arr[$i]!=$arr[$i-1]){
$unique[]=$arr[$i];
}
}
return $unique;
}
if($_SERVER["REQUEST_METHOD"]=="POST"){
$input=$_POST["numbers"];
$inputArray=explode(" ",$input);
$sortedList=array_map('intval',$inputArray);
sort($sortedList);
echo"<h2> Entered List:</h2>";
echo "<pre>".print_r($sortedList,true)."</pre>";
$result=removeDuplicates($sortedList);
echo"<h2>List after removing duplicates:</h2>";
echo"<pre>".print_r($result,true)."</pre>";
}
?>
</body>
</html>
```

Output:

```
←  →  C    ⓘ localhost/duplicate.php                              🖻  ☆  ▢  ⚫  ⋮
                                                              |  📁 Other bookmarks
```

Enter a sorted list of numbers seperated by spaces

```
enter numbers    remove duplicates
```

Entered List:

```
Array
(
    [0] => 0
    [1] => 1
    [2] => 2
    [3] => 3
    [4] => 4
    [5] => 4
    [6] => 4
    [7] => 5
    [8] => 6
)
```

List after removing duplicates:

```
Array
(
    [0] => 0
    [1] => 1
    [2] => 2
    [3] => 3
    [4] => 4
    [5] => 5
    [6] => 6
)
```

Program 11

Write a PHP Script to print the following pattern on the Screen:
```
*****
 ****
  ***
   **
    *
```
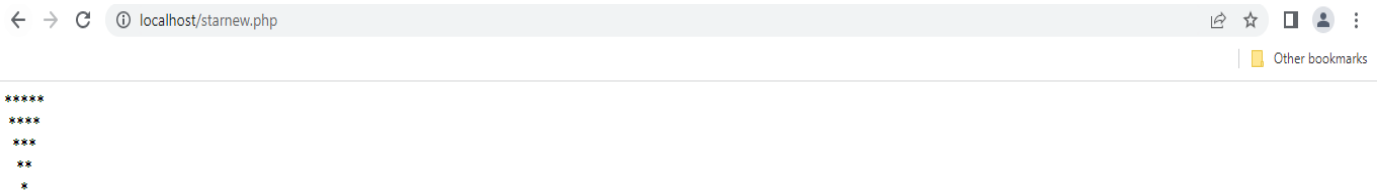
```php
<?php
$rows=5;
for($i=$rows;$i>=1;$i--){
for($j=$rows;$j>$i;$j--){
echo" ";
}
for($k=1;$k<=$i;$k++){
echo"*";
}
echo"<br>";
}
?>
```

Output:

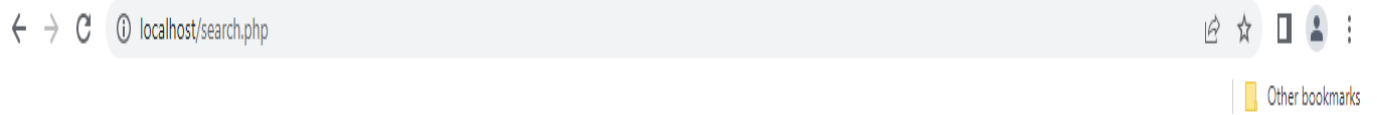

```
*****
****
 ***
  **
   *
```

Program 12

Write a simple program in PHP for Searching of data by different criteria.

```php
<?php
$user=[
['id'=>1,'name'=>'Anjali','age'=>20,'email'=>'anjali@example.com'],['id'=>2,'name'=>'Neena','age'=>19,'email'=>'Neena@example.com'],['id'=>3,'name'=>'Madhu','age'=>22,'email'=>'madhu@example.com'],['id'=>4,'name'=>'Vinay','age'=>21,'email'=>'vinay@example.com']];
function searchdata($data,$criteria,$value){
$results=[];
foreach($data as $item){
if($item[$criteria]==$value){
$results[]=$item;
}
}
return $results;
}
$searchCriteria='age';
$searchValue=19;
$searchResults=searchData($user,$searchCriteria,$searchValue);
echo "Search Results for $searchCriteria=$searchValue:<br>";
if(count($searchResults)>0){
foreach($searchResults as $result){
echo "ID:".$result['id'].".Name:".$result['name'].",Age:".$result['age'].",Email:".$result['email']."<br>";
}
}else {
echo " No results found.";
}
?>
```
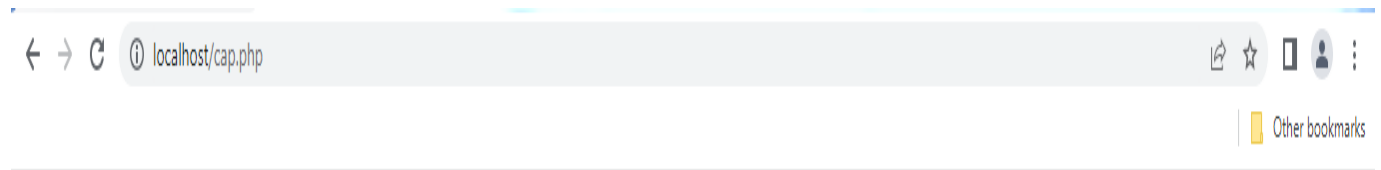
Output:

Search Results for age=19:
ID:2.Name:Neena,Age:19,Email:Neena@example.com

Program 13

Write a function in PHP to generate a captcha code.

```php
<?php
function generateCaptcha($length=6){
$characters='ABCDEFGHIJKLOMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789';
$captcha='';
$charLength=strlen($characters);
for($i=0;$i<$length;$i++){
$captcha.=$characters[rand(0,$charLength-1)];
}
$_SESSION['captcha']=$captcha;
return $captcha;
}
session_start();
$captchaCode=generateCaptcha(6);
echo "Generated Captcha: $captchaCode";
?>
```
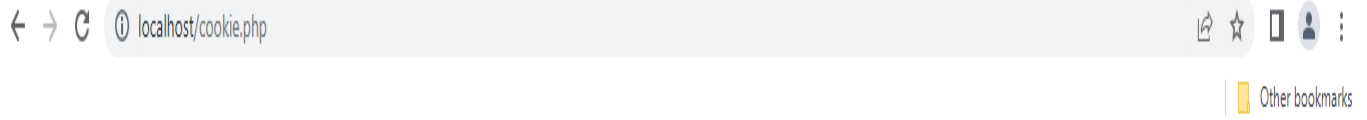
Output:

Generated Captcha: O4912b

Program 14:

Write a program in PHP for setting and retrieving a cookie.

```php
<?php
$cookie_name="UserID";
$cookie_value="ABCD";
$expiration_time=time()+(24*3600);
setcookie($cookie_name,$cookie_value,$expiration_time,"/");
echo "cookie '$cookie_name' is set.<br><br><br>";
if(isset($_COOKIE[$cookie_name]))
{
echo "value of cookie '$cookie_name' is:".$_COOKIE[$cookie_name];
}
else
{
echo "Cookie named '$cookie_name' is not set.";
}
?>
```

Output:

cookie 'UserID' is set.

value of cookie 'UserID' is:ABCD

Program 15

Write a PHP program to create a simple webpage of a College.
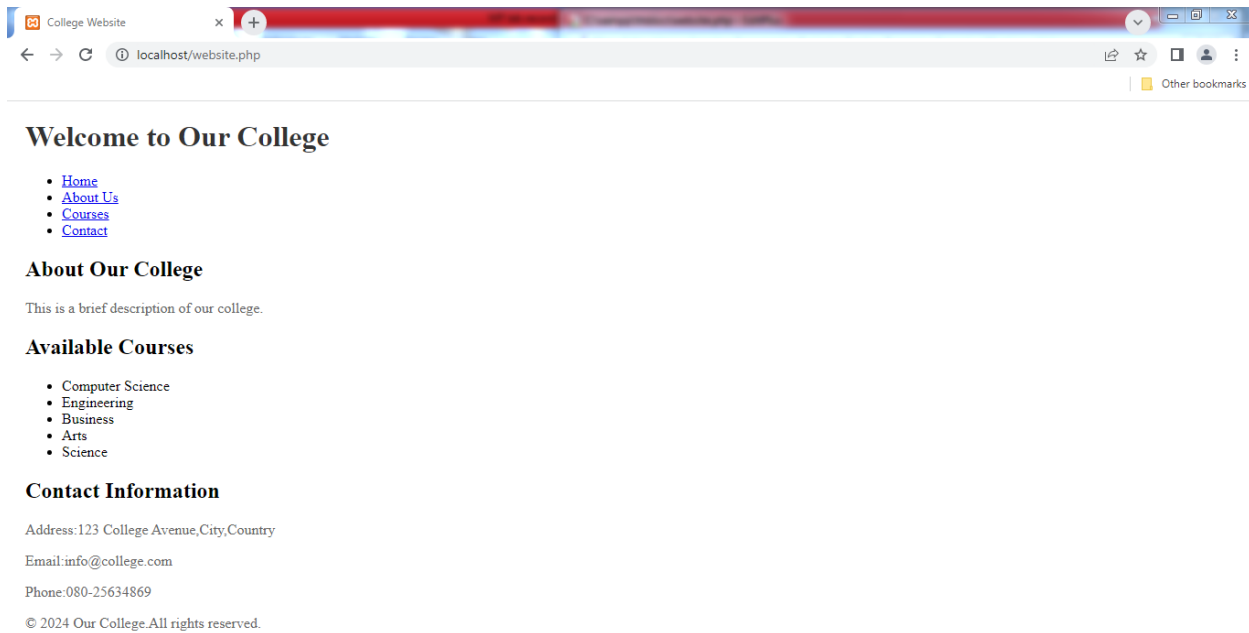
```
<html>
<head>
<title>College Website</title>
<!__CSS styles can be added here__>
<style>
body   {
   font_family:Arial,sans-serif;
        margin:20px;
}
h1   {
   color:#333;
}

p    {
   color:#666;
        }
</style>
</head>
<body>
<header>
<h1>Welcome to Our College</h1>
</header>
<nav>
<ul>
     <li><a href="#">Home</a></li>
             <li><a href="#">About Us</a></li>
         <li><a href="#">Courses</a></li>
             <li><a href="#">Contact</a></li>
</ul>
</nav>
<main>
<section>
<h2>About Our College        </h2>
<p>This is a brief description of our college.</p>
</section>
<h2>Available Courses</h2>
<?php
$courses=['Computer Science', 'Engineering', 'Business', 'Arts', 'Science'];
echo"<ul>";
foreach($courses as $course)
{
        echo"<li>$course</li>";
 }
```

```
            echo"</ul>";
?>
</section>
<section>
<h2>Contact Information</h2>
<p>Address:123 College Avenue,City,Country</p>
<p>Email:info@college.com</p>
<p>Phone:080-25634869</p>
</section>
</main>
<footer>
<p>&copy;
<?php
echo date("Y");
?>
Our College.All rights reserved.</p>
</footer>
</body>
</html>
```

Output:

Welcome to Our College

- Home
- About Us
- Courses
- Contact

About Our College

This is a brief description of our college.

Available Courses

- Computer Science
- Engineering
- Business
- Arts
- Science

Contact Information

Address:123 College Avenue,City,Country

Email:info@college.com

Phone:080-25634869

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Program 16

Write a program in PHP for exception handling for :
i) Divide by zero
ii) Checking date format.

```php
<?php
try {
$numerator=10;
$denominator=2;
if($denominator===0) {
    throw new Exception("Division by zero error");
}
$result=$numerator/$denominator;
echo"Result of division:".$result."<br>";
$dateString='2023-12-25';
$dateFormat='Y-m-d';
$date=DateTime::createFromFormat($dateFormat,$dateString);
if(!$date||$date->format($dateFormat)!==$dateString) {
    throw new Exception("Invalid date format");
}
    echo"Date is valid:".$dateString;
} catch(Exception $e) {
    echo"Error:".$e->getMessage();
}
?>
```

Output:

Result of division:5
Date is valid:2023-12-25