

**1. Create a shopping mall web page using HTML that lists various categories of items available in shopping mall using ordered and unordered list. Use the various types of ordered and unordered lists to list items in the web page.**

```
<!DOCTYPE html>
<html>
  <head>
    <title>Shopping Mall</title>
  </head>
  <body>
    <h1>Welcome to the Shopping Mall!</h1>
    <h2>Categories</h2>
    <ul>
      <li>Clothing</li>
      <li>Electronics</li>
      <li>Home Goods</li>
    </ul>
    <h3>Clothing</h3>
    <ul>
      <li>Men's Clothing</li>
      <ol>
        <li>T-Shirts</li>
        <li>Polo Shirts</li>
        <li>Dress Shirts</li>
        <li>Jeans</li>
        <li>Pants</li>
      </ol>
      <li>Women's Clothing</li>
      <ol>
        <li>Tops</li>
        <li>Dresses</li>
        <li>Jeans</li>
        <li>Skirts</li>
        <li>Pants</li>
      </ol>
    </ul>
    <h3>Electronics</h3>
    <ul>
      <li>Computers</li>
      <ol>
        <li>Laptops</li>
        <li>Desktops</li>
        <li>Tablets</li>
      </ol>
      <li>Phones</li>
      <ol>
        <li>Android</li>
        <li>iPhone</li>
        <li>Windows Phone</li>
      </ol>
    </ul>
  </body>
</html>
```

```
<li>TVs</li>
</ul>
<h3>Home Goods</h3>
<ul>
  <li>Furniture</li>
  <ol>
    <li>Sofas</li>
    <li>Chairs</li>
    <li>Tables</li>
    <li>Beds</li>
  </ol>
  <li>Appliances</li>
  <ol>
    <li>Refrigerators</li>
    <li>Washers</li>
    <li>Dryers</li>
    <li>Microwaves</li>
  </ol>
  <li>Decorations</li>
  <ol>
    <li>Curtains</li>
  </ol>
</ul>
</body>
</html>
```

Output:

## Welcome to the Shopping Mall!

### Categories

- Clothing
- Electronics
- Home Goods

### Clothing

- Men's Clothing
  1. T-Shirts
  2. Polo Shirts
  3. Dress Shirts
  4. Jeans
  5. Pants
- Women's Clothing
  1. Tops
  2. Dresses
  3. Jeans<
  4. Skirts/li>
  5. Pants

### Electronics

- Computers
  1. Laptops
  2. Desktops
  3. Tablets
- Phones
  1. Android
  2. iPhone
  3. Windows Phone
- TVs

### Home Goods

- Furniture
  1. Sofas
  2. Chairs
  3. Tables
  4. Beds
- Appliances
  1. Refrigerators
  2. Washers
  3. Dryers
  4. Microwaves
- Decorations
  1. Curtains

## 2. Create a web page demonstrating frameset.

### Content.html

```
<html>
  <head>
    <title>HTML Frames Example - Content</title>
    <style type="text/css">
      body{
        font-family:verdana,arial,sans-serif;
        font-size:10pt;
        margin:30px;
        background-color:#ffcc00;
      }
    </style>
  </head>
  <body>
    <h1>Content</h1>
    <h2>Replacing the Contents of the Current Frame</h2>
    <p>Clicking on these links will open the new page within the current frame.</p>
    <ul>
      <li><a href="white.html" target="content">Load white page</a></li>
      <li><a href="green.html" target="content">Load green page</a></li>
    </ul>
    <h2>Replacing the Whole Frameset</h2>
    <p>When you click on any of the following links, the whole frameset is replaced with the new website. This is because we're using <code>target="_top"</code> in the anchor links.</p>
    <ul>
      <li><a href="http://www.google.com" target="_top">Google</a></li>
      <li><a href="https://accounts.google.com/ServiceLogin/signinchooser?service=mail&passive=true&rm=false&continue=https%3A%2F%2Fmail.google.com%2Fmail%2F&ss=1&sc=1&ltmpl=default&ltmplcache=2&emr=1&osid=1&flowName=GlifWebSignIn&flowEntry=ServiceLogin" target="_top">Gmail</a></li>
    </ul>
    <h2>Open a New Window</h2>
    <p>These links open in a new browser window. This is because we use <code>target="_blank"</code>.</p>
    <ul>
      <li><a href="http://www.google.com" target="_blank">Google</a></li>
      <li><a href="https://accounts.google.com/ServiceLogin/signinchooser?service=mail&passive=true&rm=false&continue=https%3A%2F%2Fmail.google.com%2Fmail%2F&ss=1&sc=1&ltmpl=default&ltmplcache=2&emr=1&osid=1&flowName=GlifWebSignIn&flowEntry=ServiceLogin" target="_blank">Gmail</a></li>
    </ul>
  </body>
</html>
```

### **f1.html**

```
<html>
  <head>
    <title>Frame 1</title>
  </head>
  <body bgcolor="#ff9900">This is Frame 1...</body>
</html>
```

### **f2.html**

```
<html>
  <head>
    <title>Frame 2</title>
  </head>
  <body bgcolor="#a08029">This is Frame 2...</body>
</html>
```

### **f3.html**

```
<html>
  <head>
    <title>Frame 3</title>
  </head>
  <body bgcolor="#644f2d ">This is Frame 3...</body>
</html>
```

### **f4.html**

```
<html>
  <head>
    <title>Frame 2</title>
  </head>
  <body bgcolor="#a08029">This is Frame 2...</body>
</html>
```

### **f5.html**

```
<html>
  <head>
    <title>Frame 2</title>
  </head>
  <body bgcolor="#ff9900">This is Frame 2...</body>
</html>
```

### **footer.html**

```
<html>
  <head>
    <title>HTML Frames Example - Footer</title>
    <style type="text/css">
      body{
```

```

        font-family:verdana,arial,sans-serif;
        font-size:10pt;
        margin:10px;
        background-color:black;
        color:white;
    }
    a {
        color:white;
    }
</style>
</head>
<body>
    <h3>Footer</h3>
    <p><a href="white.html" target="content">White Page</a> | <a href="green.html" target="content">Green
Page</a></p>
</body>
</html>

```

### **index.html**

```

<html>
<head>
<title>Frameset with rows and columns</title>
</head>
<frameset rows="100,*,80" frameborder=0>
    <frame name="topNav" src="top_nav.html">

<frameset cols="200,*,200" frameborder=0>
    <frame name="menu" src="menu_1.html" >
    <frame name="content" src="content.html" >
    <frame name="related" src="related.html" >
</frameset>

    <frame name="footer" src="footer.html">
</frameset>
</html>

```

### **green.html**

```

<html>
<head>
<title>HTML Frames Example - Content</title>
<style type="text/css">
    body {
        font-family: verdana, arial, sans-serif;
        font-size: 10pt;
        margin: 30px;
        background-color: #a1f861;
    }
</style>
</head>

```

```

<body>
  <h1>Green Page</h1>
  <p>
    <a href="content.html" target="content">Back to original page</a>
  </p>
</body>
</html>

```

## **menu 1.html**

```

<html>
  <head>
    <title>HTML Frames Example - Menu 1</title>
    <style type="text/css">
      body{
        font-family:verdana,arial,sans-serif;
        font-size:10pt;
        background-color:#ff9900;
      }
    </style>
  </head>
  <body>
    <h3>Menu</h3>
    <p><a href="white.html" target="content">White Page</a></p>

    <h4>More Examples:</h4>
    <a href="f1.html" target="content">Example 1</a><br />
    <a href="f2.html" target="content">Example 2</a><br />
    <a href="f3.html" target="content">Example 3</a><br />
    <a href="f4.html" target="content">Example 4</a><br />
    <a href="f5.html" target="content">Example 5</a><br />
  </body>
</html>

```

## **menu 2.html**

```

<html>
  <head>
    <title>HTML Frames Example - Menu 2</title>
    <style type="text/css">
      body{
        font-family:verdana,arial,sans-serif;
        font-size:10pt;
        margin:10px;
        background-color:#ff6600;
      }
    </style>
  </head>
  <body>
    <h3>Menu 2</h3>
    <p><a href="green.html" target="content">Green Page</a></p>

```

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

### **menu 3.html**

```
<html>
  <head>
    <title>HTML Frames Example - Menu 1</title>
    <style type="text/css">
      body{
        font-family:verdana,arial,sans-serif;
        font-size:10pt;
        margin:10px;
        background-color:#ff6600;
      }
    </style>
  </head>
  <body>
    <h3>Menu 1</h3>
    <p><a href="white.html" target="content">White Page</a></p>
  </body>
</html>
```

### **related.html**


```
<html>
  <head>
    <title>HTML Frames Example - Related</title>
    <style type="text/css">
      body{
        font-family:verdana,arial,sans-serif;
        font-size:10pt;
        margin:10px;
        background-color:#644f2d;
        color:white;
      }
      a{
        color:white;
      }
    </style>
  </head>
  <body>
    <h3>Related</h3>
    <p><a href="https://login.yahoo.com/?src=ym&lang=&done=https%3A%2F%2Fmail.yahoo.com%2F"
target="_top">Yahoo</a><br />
    <a href="https://twitter.com/login" target="_top">Twitter</a><br />
    <a href="https://www.instagram.com/accounts/login/?hl=en" target="_top">Instagram</a><br />
    <a href="https://www.facebook.com/" target="_top">Facebook</a><br />
    <a href="https://www.manoramaonline.com/home.html" target="_top">Manorama Online</a></p>
  </body>
</html>
```




## signup.html

```
<html>
  <head>
    <title>Sign Up
  </title>
  <body bgcolor="red">
    <h1>Your sign up was successful...</h1>
  </body>
</html>
```

## terms.html

```
<html>
  <head>
    <title>Terms and Conditions</title>
  </head>
  <body>
    <p>Terms and Conditions ("Terms")</p>
    <p>
      Last updated: (add date)
    </p>
    <p>
      Please read these Terms and Conditions ("Terms", "Terms and Conditions")
      carefully before using the http://www.mywebsite.com (change this) website
      and the My Mobile App (change this) mobile application (the "Service")
      operated by My Company (change this) ("us", "we", or "our"). Your access
      to and use of the Service is conditioned on your acceptance of and
      compliance with these Terms. These Terms apply to all visitors, users and
      others who access or use the Service. By accessing or using the Service
      you agree to be bound by these Terms. If you disagree with any part of the
      terms then you may not access the Service.
    </p>
    <p>Purchases</p>
    <p>
      If you wish to purchase any product or service made available through the
      Service ("Purchase"), you may be asked to supply certain information
      relevant to your Purchase including, without limitation, your  The
      Purchases section is for businesses that sell online (physical or
      digital). For the full disclosure section, create your own Terms and
      Conditions. Subscriptions
    </p>
    <p>
      Some parts of the Service are billed on a subscription basis
      ("Subscription(s)"). You will be billed in advance on a recurring ... The
      Subscriptions section is for SaaS businesses. For the full disclosure
      section, create your own Terms and Conditions.
    </p>
    <p></p>
    <p>Content</p>
    <p>
```

Our Service allows you to post, link, store, share and otherwise make available certain information, text, graphics, videos, or other material ("Content"). You are responsible for the  The Content section is for businesses that allow users to create, edit, share, make content on their websites or apps. For the full disclosure section, create your own Terms and Conditions.

</p>

<p>

Links To Other Web Sites

</p>

<p>

Our Service may contain links to third-party web sites or services that are not owned or controlled by My Company (change this).

</p>

<p>

My Company (change this) has no control over, and assumes no responsibility for, the content, privacy policies, or practices of any third party web sites or services. You further acknowledge and agree that My Company (change this) shall not be responsible or liable, directly or indirectly, for any damage or loss caused or alleged to be caused by or in connection with use of or reliance on any such content, goods or services available on or through any such web sites or services.

</p>

<p>Changes</p>

<p>

We reserve the right, at our sole discretion, to modify or replace these Terms at any time. If a revision is material we will try to provide at least 30 (change this) days' notice prior to any new terms taking effect. What constitutes a material change will be determined at our sole discretion.

</p>

<p>Contact Us</p>

<p>If you have any questions about these Terms, please contact us.</p>

</body>

</html>

## top\_nav.html

<html>

<head>

<title>HTML Frames Example - Top Nav</title>

<style type="text/css">

body{

font-family:verdana,arial,sans-serif;

font-size:10pt;

background-color:#a08029;

}

</style>

</head>

<body>

<h3>Top Navbar</h3>

```
                <p><a href="menu_3.html" target="menu">Menu 1</a> | <a href="menu_2.html" target="menu">Menu
2</a></p>
                </body>
</html>
```

### **white.html**

```
<html>
<head>
  <title>HTML Frames Example - Content</title>
  <style type="text/css">
    body{
      font-family: verdana, arial, sans-serif;
      margin: 30px;
      background-color: #ffffff;
    }
  </style>
</head>
<body>
  <h1>White Page</h1>
  <p>
    <a href="content.html" target="content">Back to original page</a>
  </p>
</body>
</html>
```

## Output:

**Top Navbar**  
[Menu 1](#) | [Menu 2](#)

**Menu**  
[White Page](#)  
**More Examples:**  
[Example 1](#)  
[Example 2](#)  
[Example 3](#)  
[Example 4](#)  
[Example 5](#)

**Content**  

### Replacing the Contents of the Current Frame

Clicking on these links will open the new page within the current frame.

- [Load white page](#)
- [Load green page](#)

### Replacing the Whole Frameset

When you click on any of the following links, the whole frameset is replaced with the new website. This is because we're using target="\_top" in the anchor links.

- [Google](#)
- [Gmail](#)

### Open a New Window

These links open in a new browser window. This is because we use target="\_blank".

- [Google](#)
- [Gmail](#)

**Related**  
[Yahoo](#)  
[Twitter](#)  
[Instagram](#)  
[Facebook](#)  
[Manorama Online](#)

**Footer**  
[White Page](#) | [Green Page](#)

**3. Create an examination application form using HTML and table. The table should be created in such a way that it should be able to display the current BCA SEM 4 subjects and other appropriate details.**

```
<!DOCTYPE html>
<html>
  <head>
    <title>Examination Application Form</title>
  </head>
  <body>
    <h1>Examination Application Form</h1>
    <table>
      <tr>
        <th>Subject Code</th>
        <th>Subject Name</th>
        <th>Exam Date</th>
        <th>Exam Time</th>
      </tr>
      <tr>
        <td>BCA401</td>
        <td>Computer Networks</td>
        <td>June 15, 2023</td>
        <td>10:00 AM - 1:00 PM</td>
      </tr>
      <tr>
        <td>BCA402</td>
        <td>Operating Systems</td>
        <td>June 17, 2023</td>
        <td>10:00 AM - 1:00 PM</td>
      </tr>
      <tr>
        <td>BCA403</td>
        <td>Database Management Systems</td>
        <td>June 20, 2023</td>
        <td>10:00 AM - 1:00 PM</td>
      </tr>
      <tr>
        <td>BCA404</td>
        <td>Software Engineering</td>
        <td>June 22, 2023</td>
        <td>10:00 AM - 1:00 PM</td>
      </tr>
    </table>
  </body>
</html>
```

**Output:**

## **Examination Application Form**

<b>Subject Code</b>	<b>Subject Name</b>	<b>Exam Date</b>	<b>Exam Time</b>
BCA401	Computer Networks	June 15, 2023	10:00 AM - 1:00 PM
BCA402	Operating Systems	June 17, 2023	10:00 AM - 1:00 PM
BCA403	Database Management Systems	June 20, 2023	10:00 AM - 1:00 PM
BCA404	Software Engineering	June 22, 2023	10:00 AM - 1:00 PM

#### 4. Design an HTML program to create an image gallery.

```
<html>
<head>
  <h1><center>computer devices</center></h1>
  <style>
    div.gallery {
      margin: 10px;
      border: 1px solid #ccc;
      float: left;
      width: 380px;
    }
    div.gallery:hover {
      border: 10px solid #999;
    }
    div.gallery img {
      width: 100%;
      height: auto;
    }
    div.desc {
      padding: 15px;
      text-align: center;
    }
  </style>
</head>
<body>
  <div class="gallery">
    <a target="_blank" href="scanner.jpg"></a>
    <div class="desc">scanner</div>
  </div>
  <div class="gallery">
    <a target="_blank" href="macbook.jpg"></a>
    <div class="desc">macbook</div>
  </div>
  <div class="gallery">
    <a target="_blank" href="keyboard.jpg"></a>
    <div class="desc">keyboard</div>
  </div>
  <div class="gallery">
    <a target="_blank" href="mouse.jpg"></a>
    <div class="desc">mouse</div>
  </div>
</body>
</html>
```

## Output:

---

### computer devices





## 5. Design a web page to demonstrate internal, external, and inline CSS.

### Index.html

```
<!DOCTYPE html>
<html>
  <head>
    <title>CSS Demo</title>
    <style>
      /* Internal CSS */
      h1 {
        color: blue;
        font-size: 30px;
        text-align: center;
      }
      h4 {
        color: yellow;
        font-size: 15px;
        text-align: center;
      }
    </style>
    <link rel="stylesheet" type="text/css" href="style.css" />
  </head>
  <body>
    <h1>Internal, External, and Inline CSS Demo</h1>
    <h4>This is an example of internal CSS.</h4>
    <p style="color: green;">This is an example of inline CSS.</p>
    <p class="external">This is an example of external CSS.</p>
  </body>
</html>
```

### style.css

```
.external {
  color: red; font-size: 30px;
  text-align: center;
}
```

Output:

This is an example of inline CSS.

**Internal, External, and Inline CSS Demo**

This is an example of internal CSS.

This is an example of external CSS.

## 6. Design a web page to create forms and apply CSS to it.

```
<html>
<head>
  <title>Form Example</title>
  <style>
    /* Apply CSS to the form */
    form {
      background-color: #f2f2f2;
      padding: 20px;
      border-radius: 5px; }
    /* Style the input fields */
    input[type='text'],
    select {
      width: 100%;
      padding: 12px 20px;
      margin: 8px 0;
      display: inline-block;
      border: 1px solid #ccc;
      border-radius: 4px;
      box-sizing: border-box; }
    /* Style the submit button */
    input[type='submit'] {
      background-color: #4caf50;
      color: white;
      padding: 12px 20px;
      border: none;
      border-radius: 4px;
      cursor: pointer; }
    /* Change the color of the submit button on hover */
    input[type='submit']:hover {
      background-color: #45a049; }
  </style>
</head>
<body>
  <h1>Form Example</h1>
  <form>
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" placeholder="Enter your name" />
    <label for="email">Email:</label>
    <input type="text" id="email" name="email" placeholder="Enter your email"/>
    <label for="gender">Gender:</label>
    <select id="gender" name="gender">
      <option value="male">Male</option>
      <option value="female">Female</option>
    </select>
    <input type="submit" value="Submit" />
  </form>
</body>
</html>
```

**Output:**

## Form Example

Name:

Enter your name

Email:

Enter your email

Gender:

Male

Submit

## 7. Design a JavaScript program to demonstrate form validation.

```
<html>
<head>
<title>Form Validation</title>
<script type="text/javascript">
function validate() {
    var emailID = document.myForm.Email.value
    atpos = emailID.indexOf('@')
    dotpos = emailID.lastIndexOf('.')
    var regName = /^[a-zA-Z]+ [a-zA-Z]+$/
    var name = document.getElementById('Name').value
    var mob = /^\\d{10}$/
    var mobno = document.getElementById('Mobile').value
    if (document.myForm.Name.value == "") {
        alert('Please provide your name!')
        document.myForm.Name.focus()
    }
    if (!regName.test(name)) {
        alert(
            'Please enter your name correctly without using digits and special characters...Also, provide your first and last name...',)
        document.myForm.Name.focus()
    }
    if (document.myForm.Email.value == "") {
        alert('Please provide your Email!')
        document.myForm.Email.focus()
    }
    if (atpos < 1 || dotpos - atpos < 2) {
        alert('Please enter correct email ID...')
        document.myForm.Email.focus()
    }
    if (document.myForm.Mobile.value == "") {
        alert('Please provide your Mobile Number!')
        document.myForm.Mobile.focus()
    }
    if (!mob.test(mobno)) {
        alert('Please enter your correct mobile number using 10 digits...')
        document.myForm.Mobile.focus()}
    var uname = document.getElementById('Name').value
    var uemail = document.getElementById('Email').value
    var umob = document.getElementById('Mobile').value
    alert('Your Name is : ' + uname + '\\n' + 'Your EMail is : ' + uemail + '\\n' + 'Your Mobile is : ' + umob,)}
</script>
</head>
<body>
<form action="" " method="POST" name="myForm" onsubmit="validate();">
<table cellpadding="2" cellspacing="2" border="1">
<tr>
<td align="right">Name</td>
<td><input type="text" id="Name" /></td>
</tr>
```

```
<tr>
  <td align="right">EMail</td>
  <td><input type="text" id="EMail" /></td>
</tr>
<tr>
  <td align="right">Mobile Number</td>
  <td><input type="text" id="Mobile" /></td>
</tr>
<tr>
  <td align="right"></td>
  <td><input type="submit" value="Submit" /></td>
</tr>
</table>
</form>
</body>
</html>
```

Output:

Name	Paul
EMail	example@mail.com
Mobile Number	1234567890
	<input type="button" value="Submit"/>

This page says

Your Name is :Paul

Your EMail is :example@mail.com

Your Mobile is :1234567890

## 8. Design a PHP program to demonstrate different types of arrays.

```
<?php
$arr = [1, 2, 3, 4, 5];
echo '<br><b>Demonstrating 1D indexed array...</b><br>';
foreach ($arr as $value) {
    echo $value . '&nbsp;';
}
$arr = [0 => 2, 1 => 4, 2 => 1, 3 => 7, 4 => 6];
$s = sizeof($arr);
$i = 0;
echo '<br><br><b>Demonstrating 1D associative array...</b><br>';
foreach ($arr as $key => $value) {
    echo $key . '=>' . $value;
    $i++;
    if ($i != sizeof($arr)) {
        echo ',';
    }
}
$arr = [[1, 2, 3], [4, 5, 6], [7, 8, 9]];
echo '<br><br><b>Demonstrating 2D indexed array...</b><br>';
for ($i = 0; $i < 3; $i++) {
    for ($j = 0; $j < 3; $j++) {
        echo $arr[$i][$j] . '&nbsp;';
    }
    echo '<br>';
}
$arr = [
    0 => [0 => 1, 1 => 2, 2 => 3],
    1 => [0 => 4, 1 => 5, 2 => 6],
    2 => [0 => 7, 1 => 8, 2 => 9],
];
echo '<br><b>Demonstrating 2D associative array...</b><br>';
for ($i = 0; $i < 3; $i++) {
    for ($j = 0; $j < 3; $j++) {
        echo $arr[$i][$j] . '&nbsp;';
    }
    echo '<br>';
}
?>
```



## Output:

**Demonstrating 1D indexed array...**

1 2 3 4 5

**Demonstrating 1D associative array...**

0=>2,1=>4,2=>1,3=>7,4=>6

**Demonstrating 2D indexed array...**

1 2 3

4 5 6

7 8 9

**Demonstrating 2D associative array...**

1 2 3

4 5 6

7 8 9

## 9. Design a PHP program to demonstrate various string operations.

```
<?php
$str = "Welcome to SCMS";
echo "<br><br>";
// using strlen in echo method
echo "Length of the string is: ". strlen($str);
echo "<br><br>";
// using str_word_count in echo method
echo "Number of words in the string are: ". str_word_count($str);
echo "<br><br>";
// using strrev in echo method
echo "Reverse: ". strrev($str);
echo "<br><br>";
// using strpos in echo method
echo "Position of 'SCMS' in string: ". strpos($str, 'SCMS');
echo "<br><br>";
// using str_replace
$str = str_replace("SCMS", "SSTM", "Welcome to SCMS");
echo $str;
echo "<br><br>";
// using ucwords in echo method
$str = "welcome to sstm";
echo ucwords($str);
echo "<br><br>";
// using strtoupper in echo method
$str = "welcome to sstm";
echo strtoupper($str);
echo "<br><br>";
// using strtolower in echo method
$str = "WELCOME TO SSTM";
echo strtolower($str);
echo "<br><br>";
$str = "SSTM";
// using str_repeat in echo method
echo str_repeat($str, 4);
echo "<br><br>";
$str1 = "SSTM";
$str2 = "SSTM";
// using strcmp in echo method
echo strcmp($str1, $str2);
echo "<br><br>";
$str = "Welcome to SSTM";
// using substr in echo method
echo substr($str, 11, 4);
echo "<br><br>";
// using trim in echo method
$str1 = " Hello World ";
echo trim($str1) . "<br>";
echo "<br>";
$str2 = "Hello Hello";
```

```
echo trim($str2,"Heo");  
echo "<br><br>";  
//using explode  
$str = "WELCOME TO SSTM";  
print_r(explode(" ", $str));  
echo "<br><br>";  
//using implode  
$arr = array("Welcome", "to", "SSTM");  
echo implode(" ", $arr) . "<br>";  
?>
```

## Output:

```
Length of the string is: 15
Number of words in the string are: 3
Reverse: SMCS ot emocleW
Position of 'SCMS' in string: 11
Welcome to SSTM
Welcome To Sstm
WELCOME TO SSTM
welcome to sstm
SSTMSSTMSSTMSSTM
0
SSTM
Hello World
llo Hell
Array ( [0] => WELCOME [1] => TO [2] => SSTM )
Welcome to SSTM
```

## 10. Design a PHP program to demonstrate classes and objects.

```
<?php
class X
{
    public $a,$b,$c;

    function get() {
        $this->a=30;
        $this->b=40;
        $this->c=$this->a+$this->b;
    }

    function disp() {
        echo "<br>Result = ".$this->c;
    }
}

$obj = new X();
$obj->get();
$obj->disp();
?>
```

## Output:

Result = 70

## 11. Design a PHP program to demonstrate constructors and destructors.

```
<?php
class A
{
    var $name;
    var $course;
    function __construct($name, $course)
    {
        $this->name = $name;
        $this->course = $course;
    }
    function __destruct()
    {
        echo 'The name of the institution is ' .
            $this->name .
            ' and the course is ' .
            $this->course;
    }
}
$obj = new A('SCMS', 'BCA');
?>
```

## Output:

The name of the institution is SCMS and the course is BCA



## 12. Design a PHP program to demonstrate inheritance.

```
<?php

// Parent class
class Number {
    protected $value;

    public function __construct($value) {
        $this->value = $value;
    }

    public function getValue() {
        return $this->value;
    }

    public function add($number) {
        return new Number($this->value + $number->getValue());
    }

    public function subtract($number) {
        return new Number($this->value - $number->getValue());
    }

    public function multiply($number) {
        return new Number($this->value * $number->getValue());
    }

    public function divide($number) {
        if ($number->getValue() == 0) {
            return new Number("Division by zero is undefined.");
        }
        return new Number($this->value / $number->getValue());
    }

    public function isEven() {
        return $this->value % 2 == 0;
    }

    public function isOdd() {
        return $this->value % 2 != 0;
    }
}

// Single inheritance
class Integer extends Number {
    public function square() {
        return new Integer($this->value * $this->value);
    }
}
```

```

// Multilevel inheritance
class PositiveInteger extends Integer {
    public function increment() {
        return new PositiveInteger($this->value + 1);
    }
}

// Hierarchical inheritance
class NegativeInteger extends Integer {
    public function absolute() {
        return new PositiveInteger(abs($this->value));
    }
}

// Hybrid inheritance (mix of single and multiple)
class PositiveEvenInteger extends Integer {
    public function increment() {
        return new PositiveEvenInteger($this->value + 2);
    }
}

// Create objects and demonstrate inheritance
$number = new Number(10);
echo "Original number: " . $number->getValue() . "<br>";

$integer = new Integer(5);
echo "Squared number: " . $integer->square()->getValue() . "<br>";

$positiveInteger = new PositiveInteger(7);
echo "Incremented positive number: " . $positiveInteger->increment()->getValue() . "<br>";

$negativeInteger = new NegativeInteger(-9);
echo "Absolute value of negative number: " . $negativeInteger->absolute()->getValue() . "<br>";

$positiveEvenInteger = new PositiveEvenInteger(6);
echo "Incremented positive even number: " . $positiveEvenInteger->increment()->getValue() . "<br>";

// Check if a number is even or odd
$numberToCheck = new Number(11);
echo "Is {$numberToCheck->getValue()} even? " . ($numberToCheck->isEven() ? "Yes" : "No") . "<br>";

$numberToCheck = new Number(8);
echo "Is {$numberToCheck->getValue()} odd? " . ($numberToCheck->isOdd() ? "Yes" : "No") . "<br>";
?>

```

## Output:

```
Original number: 10  
Squared number: 25  
Incremented positive number: 8  
Absolute value of negative number: 9  
Incremented positive even number: 8  
Is 11 even? No  
Is 8 odd? No
```

### 13. Design a PHP program to demonstrate method overloading.

```
<?php
class shape
{
    function __call($name, $args)
    {
        if ($name == 'area') {
            switch (count($args)) {
                case 1:
                    return 3.14 * $args[0] * $args[0];
                case 2:
                    return $args[0] * $args[1];
            }
        }
    }
}

$obj = new Shape();
echo '<br>Area of Circle = ';
echo $obj->area(2);
echo '<br><br>';
echo '<br>Area of Rectangle = ';
echo $obj->area(4, 2);
?>
```

## Output:

Area of Circle = 12.56

Area of Rectangle = 8

#### 14. Design a PHP program to demonstrate method overriding.

```
<?php
class P
{
    public $x = 10;
    public $y = 20;
    public $z;

    function calc()
    {
        $this->z = $this->x + $this->y;
        echo '<br>Addition = ' . $this->z;
    }
}

class C extends P
{
    function calc()
    {
        $this->z = $this->x * $this->y;
        echo '<br>Multiplication = ' . $this->z;
    }
}

$p = new P();
$c = new C();
$p->calc();
$c->calc();
?>
```

## Output:

```
Addition = 30  
Multiplication = 200
```

## 15. Design a PHP program to demonstrate a class implementing more than one interfaces.

```
<?php
interface A {
    public function sub();
}
interface B extends A {
    public function mul();
}
interface C {
    public function div();
}
class X {
    public $x,$y,$z;
}
class Y extends X implements B, C
{
    function add() {
        $this->x=20;
        $this->y=10;
        $this->z=$this->x+$this->y;
        echo "<br>Result of addition =".$this->z;
    }
    function sub() {
        $this->x=20;
        $this->y=10;
        $this->z=$this->x-$this->y;
        echo "<br>Result of Subtraction =".$this->z;
    }
    function mul() {
        $this->x=20;
        $this->y=10;
        $this->z=$this->x*$this->y;
        echo "<br>Result of Multiplication =".$this->z;
    }
    function div() {
        $this->x=20;
        $this->y=10;
        $this->z=$this->x/$this->y;
        echo "<br>Result of Division =".$this->z;
    }
}
$obj = new Y();
$obj->add();
$obj->sub();
$obj->mul();
$obj->div();
?>
```



## Output:

```
Result of addition =30  
Result of Subtraction =10  
Result of Multiplication =200  
Result of Division =2
```

## 16. Design a PHP program to demonstrate sessions.

```
<?php
session_start();
if (isset($_POST['s'])) {
    $name = $_POST['t1'];
    if (isset($_SESSION[$name])) {
        $_SESSION[$name] += 1;
    } else {
        $_SESSION[$name] = 1;
    }
}
$msg =
    '<b>Welcome ' .
    $name .
    '!!!<br>' .
    'You have visited this page ' .
    $_SESSION[$name] .
    ' time(s)!!!</b>';
echo $msg;
}
?>
<form method='post' action=' '>
<br><br>Enter the user name: <input type='text' name='t1'><br><br>
<input type='submit' name='s'><br>
</form>
```

## Output:

Welcome Name!!!  
You have visited this page 5 time(s)!!!

Enter the user name:

## 17. Design a PHP program to demonstrate cookies.

```
<?php

if(isset($_POST['s']))
{
    $name=$_POST['t1'];
    if(strcmp($name,'Administrator')==0)
    {
        setcookie("username", "$name", time()+30*24*60*60);

        $msg = "<b>Welcome ".$_COOKIE['username']. "!!!<br>". "You have been registered!!!</b>";
        echo $msg;
    }
    else
    {
        echo "Welcome Guest!";
    }
}
?>

<form method='post' action=' '>
<br><br>Enter the user name: <input type='text' name='t1'><br><br>
<input type='submit' name='s'><br>
</form>
```

## Output:

Welcome Guest!

Enter the user name:

## 18. Design a PHP program to demonstrate error handling.

```
<?php
// PHP program to demonstrate the use of multiple catch blocks.
class MyException extends Exception
{

function findexception($A,$B)
{

try
{

    if ($B == 0)
        throw new MyException("Divide by Zero exception");
    if ($B == - 1)
        throw new Exception("Negative exception");

    $C = $A / $B;
    echo "Value of C: $C";

}
catch(MyException $e)
{
    echo "MyException: </b>". $e->getMessage();
}
catch(Exception $e)
{
    echo "<br><b>Exception: </b>". $e->getMessage();
}
finally
{
    echo "<br><br><br>End of all exception evaluations...";
}
}

}

echo "<form method=post action=' '>";
echo "First Number: <input type='text' name='t1'>";
echo "<br><br>Second Number: <input type='text' name='t2'>";
echo "<br><br><input type='submit' name='s' value=SUBMIT>";
echo "</form>";
if(isset($_POST['s']))
{
    $a=$_POST['t1'];
    $b=$_POST['t2'];
    $obj=new MyException();
    $obj->findexception($a,$b);
}
?>
```

## Output:

First Number:

Second Number:

Value of C: 0.666666666666667

End of all exception evaluations...

## 19. Design a PHP program to demonstrate form validation.

```
<form method='POST' action=' '>
Enter the name: <input type='text' name='t1'><br>
Enter the mobile no.: <input type='text' name='t2'><br>
Enter the email id: <input type='text' name='t3'><br><br>
<input type='submit' name='s'>
</form>
<?php
if(isset($_POST['s']))
{
$name = $_POST['t1'];
if(empty($_POST['t1']))
echo "<br>You should enter a value for name...<br>";
else if (!preg_match ("/^[a-zA-z ]*$/", $name) )
{
$ErrMsg = "<br>Only alphabets and whitespace are allowed.<br>";
echo $ErrMsg;
}
else
{
echo "<br>The name ".$name." is valid<br>";
}
$mobilenos = $_POST['t2'];
if(empty($_POST['t2']))
echo "<br>You should enter a value for mobile no...<br>";
else if (!preg_match ("/^([9]{1}[0-9]{9})+$/", $mobilenos) ){
$ErrMsg = "<br><b>Error!!!. Possible causes are you may have entered a value other than numeric value. Only numeric value is
allowed. <br>Other cause may be that you may not have entered a 10 digit number. Enter 10 digit mobile number. <br>Another
cause may be that you have not entered a mobile number starting with the digit 9. Please ensure that you have entered a mobile
number starting with the digit 9</b><br>";
echo $ErrMsg;
}
else {
echo "<br>The mobile number ".$mobilenos." is valid<br>";
}
$email = $_POST['t3'];
$pattern = "^[_a-z0-9-]+(\\.[_a-z0-9-]+)*@[a-z0-9-]+(\\.[a-z0-9-]+)*(\\.[a-z]{3})$^";
if(empty($_POST['t3']))
echo "<br>You should enter a value for email...<br>";
else if (!preg_match ($pattern, $email) )
{
$ErrMsg = "<br>Email is not valid.<br>";
echo $ErrMsg;
}
else {
echo "<br>The email id ".$email." is valid<br>";
}
}
?>
```



## Output:

Enter the name:

Enter the mobile no.:

Enter the email id:

The name Name is valid

Error!!!. Possible causes are you may have entered a value other than numeric value. Only numeric value is allowed.

Other cause may be that you may not have entered a 10 digit number. Enter 10 digit mobile number.

Another cause may be that you have not entered a mobile number starting with the digit 9. Please ensure that you have entered a mobile number starting with the digit 9

The email id example@gmail.com is valid

## 20. Design a student database application using MySQL and perform insertion, selection, deletion, updating and search operations in it.

```
<html>
<body style='height:1000px;background-color: coral; display:flex;flex-direction:column;align-items: center'>
<form method='POST' action=' '>

<h1 style=' margin-top: 25px'>Student details</h1><br>
<br>

<input type='text' placeholder="Roll No" name='rollno'><br><br>

<input type='text' placeholder="Name" name='sname'><br><br>

<input type='number' placeholder="Marks" name='mark' ><br><br>
<input type='submit' name='insert' value='INSERT'>
<input type='submit' name='select' value='SELECT'>
<input type='submit' name='delete' value='DELETE'>
<input type='submit' name='update' value='UPDATE'>
<input type='submit' name='search' value='SEARCH'>

</body>

</html>

<?php
if (isset($_POST['insert'])) {
    $rno = $_POST['rollno'];
    $nam = $_POST['sname'];
    $mark = $_POST['mark'];
    $con = mysqli_connect('localhost', 'root', '', 'student');
    if (!$con) {
        die('Connection failed' . mysqli_connect_error());
    }
    $sql = "insert into student values($rno,$nam,$mark)";
    try {
        if (mysqli_query($con, $sql)) {
            echo '</br>Inserted Successfully';
        } else {
            echo '</br>Error in inserting';
        }
    } catch (Exception $e) {
        echo '</br></br> Enter the values in textbox to insert';
    }
    mysqli_close($con);
}

if (isset($_POST['select'])) {
    $con = mysqli_connect('localhost', 'root', '', 'student');
    if (!$con) {
```

```

        die('Connection failed' . mysqli_connect_error());
    }
    $sql = 'select RollNo,Name,Marks from student';
    $result = mysqli_query($con, $sql);
    if (mysqli_num_rows($result) > 0) {
        echo '</br></br></br>Selected Details Are ';
        while ($row = mysqli_fetch_assoc($result)) {
            echo '</br></br>Rollno:' .
                $row['RollNo'] .
                '</br>Name:' .
                $row['Name'] .
                '</br>Marks:' .
                $row['Marks'] .
                '<br>';
        }
    } else {
        echo '</br>0 Results';
    }
    mysqli_close($con);
}

if (isset($_POST['delete'])) {
    $rno = $_POST['rollno'];

    $con = mysqli_connect('localhost', 'root', '', 'student');
    if (!$con) {
        die('Connection failed' . mysqli_connect_error());
    }
    $sql = "delete from student where RollNo=$rno";
    try {
        mysqli_query($con, $sql);
        if (mysqli_affected_rows($con)) {
            echo '</br>Deleted Successfully';
        } else {
            echo '</br>Deletion Failed';
        }
    } catch (Exception $e) {
        echo '</br></br> Enter the id of student to be deleted';
    }

    mysqli_close($con);
}

if (isset($_POST['update'])) {
    $rno = $_POST['rollno'];
    $nam = $_POST['sname'];
    $mark = $_POST['mark'];
    $con = mysqli_connect('localhost', 'root', '', 'student');
    if (!$con) {
        die('Connectionfailed' . mysqli_connect_error());
    }
}

```

```

$sql = "update student set Name='$nam',Marks=$mark where RollNo=$rno";
try {
    mysqli_query($con, $sql);
    if (mysqli_affected_rows($con)) {
        echo '</br>Updated Successfully';
    } else {
        echo '</br>Error in Updating';
    }
} catch (Exception $e) {
    echo '</br>Error in Updating';
}
mysqli_close($con);
}

if (isset($_POST['search'])) {
    $rno = $_POST['rollno'];
    $nam = $_POST['sname'];
    $mark = $_POST['mark'];
    $con = mysqli_connect('localhost', 'root', '', 'student');
    if (!$con) {
        die('Connection failed' . mysqli_connect_error());
    }
    $sql = "select RollNo,Name,Marks from student where RollNo=$rno";

    try {
        $result = mysqli_query($con, $sql);
        if (mysqli_num_rows($result) > 0) {
            while ($row = mysqli_fetch_assoc($result)) {
                echo '</br></br></br>Details of Roll No: ' .
                    $row['RollNo'] .
                    ' are </br></br>Rollno:' .
                    $row['RollNo'] .
                    '</br>Name:' .
                    $row['Name'] .
                    '</br>Marks:' .
                    $row['Marks'];
            }
        } else {
            echo '</br>0 Results';
        }
    } catch (Exception $e) {
        echo '<br></br>Enter id of student to be Searched in text box';
    }
    mysqli_close($con);
}

?>

```

## Output:

### Student details

Selected Details Are

Rollno:1  
Name:Name 1  
Marks:10

Rollno:2  
Name:Name 2  
Marks:9

Rollno:3  
Name:Name 3  
Marks:8