

Shikshan Maharshi Dr. D. Y. Patil Shikshan Sanstha's

**Dr.D.Y. Patil Center for Management & Research,
Chikhali, Pune-412114.**

Subject : Advanced Internet Technologies

Roll No: _____

Division : _____

Name : _____

Assignment No - 1

Q.1 Write html code to design the following output?

Country	Population(in crores)	
India	2021	140
	2020	139
	2019	138
USA	2021	3319
	2020	32.95
	2019	32

Ans :

```
<html>
```

```
  <head>
```

```
    <title></title>
```

```
  <style>
```

```
    table, th, td{
```

```
      border: 2px solid black;
```

border-collapse: collapse;

margin-left: auto;

margin-right: auto;

margin-top: 15%;

padding: 8px;

text-align: center; }

</style>

</head><body>

<table>

<tr>

<th>Country </th>

<th colspan="2">Population(in crores)</th>

</tr>

<tr>

<td rowspan="3">India</td>

<td>2021</td>

<td>140</td>

</tr>

<tr>

<td>2020</td>

```
        <td>139</td>
    </tr>

    <tr>
        <td>2019</td>
        <td>138</td>
    </tr>

    <tr>
        <td rowspan="3">USA</td>
        <td>2021</td>
        <td>3319</td>
    </tr>

    <tr>
        <td>2020</td>
        <td>32.95</td>
    </tr>

    <tr>
        <td>2019</td>
        <td>32</td>
    </tr>
</table> </body>
</html>
```

Q.2 Write php script to check no. is palindrome or not.

Ans :

```
<body>
    <form method="post">
        Enter the Number : <input type="text" name="num"/><hr/>
        <input type="submit" value="Submit"/>
    </form>
</body>
<?php    function
palindrome($n){ $nu mber = $n;
$sum = 0;

while(floor($number))
{    $rem =
$number % 10;

        $sum = $sum * 10 + $rem;
        $number = $number/10;
    } return
    $sum;

}

$input = $_POST["num"];
$num = palindrome($input);
```

```

if($input == $num){ echo "<p> $input is a Palindrome
number </p>";

} else { echo "<p> $input is not a
Palindrome </p>";
}
?>

```

Q.3 Write php script which will find out character count of particular character in string.

Ans :

```

<body>

    <form method="post">

        Enter the String : <input type="text" name="inp1"/><hr/>

        Enter the Character to check : <input type="text"
name="inp2"/><hr/>

        <input type="submit" value="Check"/>

    </form>
</body>

<?php if
($_POST) {

    $string = $_POST['inp1'];

    $character = $_POST['inp2'];

```

```
$count = substr_count($string, $character);
```

```
    echo "The character $character appears $count times in the string  
$string.";  
}
```

?>

Q.4 Write php script to find sum of digits of given no?

Ans :

```
<body>
```

```
    <form method="post">
```

```
        Enter the Number : <input type="text" name="num"/><hr/>
```

```
        <input type="submit" value="Submit"/>  
    </form>
```

```
</body>
```

```
<?php
```

```
    $num = $_POST["num"];
```

```
    $sum = 0; $rem = 0; for ($i = 0;
```

```
$i <= strlen($num); $i++) { $rem
```

```
        = $num % 10;
```

```
        $sum = $sum + $rem;
```

```
$num = $num / 10; } echo  
"Sum of digits is $sum";  
  
?>
```

Q.5 Write php script to display the element along with key for an associative array.

Ans:

```
<body>  
  <form method="post">  
    Enter the Name : <input type="text" name="nm1"/><hr/>  
    Enter the Age : <input type="text" name="ky1"/> <br><br>  
  
    <!-- Enter the Name : <input type="text" name="nm2"/>  
    Enter the RollNo. : <input type="text" name="ky2"/><hr/>  
  
    Enter the Name : <input type="text" name="nm3"/>  
    Enter the RollNo. : <input type="text" name="ky3"/> -->  
    <input type="submit" value="Submit"/>  
  </form>  
</body>  
  
<?php  
$nm1 = $_POST["nm1"];  
$ky1 = $_POST["ky1"];
```

```
// $nm2 = $_POST["nm2"];
// $ky2 = $_POST["ky2"];

// $nm3 = $_POST["nm2"];
// $ky3 = $_POST["ky3"];
// $age = array($nm1 => $ky1, $nm2 => $ky2, $nm3 => $ky3);
$age = array($nm1 => $ky1); echo $nm1. "
is " . $age[$nm1]. " years old.";
// echo $nm2. " is " . $age[$nm2] . " years old.";

// echo $nm3. " is " . $age[$nm2] . " years old.";

?>
```

Q.6 Write php script to check given no is prime or not.

Ans :

```
<body>
```

```
<form method="post">
```

```
Enter the Number : <input type="text" name="nm1"/><hr/>
```



```
<input type="submit" value="Submit"/>
</form>
</body> <?php
function
check_prime($num)
{
    if ($num == 1) return 0;
    for ($i = 2; $i <= $num/2; $i++)
        { if ($num % $i == 0)
            return 0; }
    return 1; }

$num = $_POST["nm1"];
$flag_val = check_prime($num);

if ($flag_val == 1)    echo $num ." is a
prime number"; else  echo $num ." is
NOT a prime number"

?>
```

Q.7 write php function to find union of two arrays.

Ans:

```
<body>

    <form method="post">
        Enter the Name : <input type="text" name="nm1"/><hr/>
        Enter the Age : <input type="text" name="ky1"/> <br><br>

        Enter the Name : <input type="text" name="nm2"/> <hr/>
        Enter the RollNo. : <input type="text" name="ky2"/> <br><br>
        <input type="submit" value="Submit"/>
    </form>
</body>

<?php
$nm1 = $_POST["nm1"];
$ky1 = $_POST["ky1"];

$nm2 = $_POST["nm2"];
$ky2 = $_POST["ky2"];

$a1 = array("$nm1", "$ky1");
$a2 = array("$nm2", "$ky2");

print_r(array_merge($a1, $a2));
```

?>

Q.8 write php script to generate Fibonacci series.

Ans:

```
<body>
```

```
    <h3>Fibonacci series using recursive function:</h3>
```

```
    <form method="post">
```

```
        Enter the no. of sequence to show : <input type="text"
name="num"/><hr/>
```

```
        <input type="submit" value="Submit"/>
```

```
    </form>
```

```
</body>
```

```
<?php
```

```
$num = $_POST["num"];  echo
```

```
"\n";
```

```
function series($num){
```

```
if($num == 0){ return
```

```
0;
```

```
    } else if( $num
```

```
    ==
```

```

1){ return 1;
   } else { return (series($num-1) + series($num-2));
}

}
for ($i = 0; $i < $num;
$i++){ echo
series($i); echo "\n"; }

?>

```

Q.9 Write html code to design following output.

Train Time Table			
TNO	TNAME	Arrival Time	Departure Time
T001	Mumbai	2:00PM	2:30 PM
	Express		

Ans:

```

<html>
  <head>

```

```
<title></title>
```

```
<style>    table, th, td {  
border: 2px solid  
whitesmoke;    border-collapse: collapse;  
margin-left: auto; margin-right: auto;  
margin-top: 15%; padding: 8px;  
  
text-align: center;  
    }  
    .tr1  
{    font-size:  
30px;  
    }  
    .tr2, th, tr  
{    padding: 10px;  
    }  
    .col  
{    background-color:  
cyan;  
    }  
    .col2 {    background-  
color: aquamarine;  
    }
```

```
.col3 { background-  
color: cadetblue;  
}
```

```
</style>  
</head>
```

```
<body>
```

```
<table>
```

```
<tr class="tr1">  
  <th colspan="4" class="col">Train Time Table</th>  
</tr>
```

```
<tr class="tr2">  
  <th class="col">TNO</th>  
  <th class="col2">TNAME</th>  
  <th class="col2">Arrival Time</th>  
  <th class="col2">Departure Time</th>  
</tr>
```

```
<tr>  
  <td class="col">T001</td>
```

```
<td class="col3">Mumbai Express</td>
<td class="col3">2:00 PM</td>
<td class="col3">2:30 PM</td>
</tr>
</table>
```

```
</body>
```

```
</html>
```

Q.10 Write php program to update the name of the student to 'xyz' whose roll no. is 1(Table stud(rollno,name)).

Ans:

```
<?php
```

```
$serv = "localhost";
```

```
$un = "root";
```

```
$pass = "";
```

```
$db = "test2";
```

```
$con = mysqli_connect($serv, $un, $pass, $db);
```

```
if($con){ echo "Connection Success";
```

```
} else {    die("Connection  
Failed".mysqli_connect_error());  
}
```

```
$sql = "UPDATE stud SET Name = 'XYZ' WHERE RollNo = '1' ";
```

```
if($con -> query($sql) === true)  
{    echo "Record Updated  
Successfully";  
} else {    echo "Error Update Record : "  
.$con -> error; }
```

```
?>
```


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Assignment 2

Q.1 Write CSS Source code using internal style sheet,Class, pseudo-classes , pseudo-element ,list style,link to obtain the following output.

style.css:-

```
*{  
margin: 0;  
padding: 0;  
}  
body{  
font-family: lato;  
}  
#box{  
width: 100%;  
height: 100vh;  
scroll-behavior: smooth;  
overflow-y: scroll;  
}  
#box div{  
position: relative;  
height: 100%;  
}  
.content {
```

```
position: absolute;
top: 50%;
left: 50%;
transform: translate(-50%,-50%);
text-align: center;
padding: 0 40px;
}
.content h1 {
font-size: 70px;
font-weight: bold;
color: #262626;
text-transform: uppercase;
margin-bottom: 40px;
}
#about .content h1,
#portfolio .content h1,
#services .content h1,
#contact .content h1
{
color: #5b5b5b;
}
.content p {
line-height: 1.5;
margin: auto;
color: #000;
}
ul {
padding: 0;
text-align: center;
position: fixed;margin: 2% auto;
z-index: 1;
width: 1100px;
left: 0;
right: 0;
font-family: lato;
}
ul li{
list-style: none;
display: inline-block;
}
```

```

ul li a {
display: block;
text-decoration: none;
height: 45px;
font-size: 20px;
background: #fff;
width: 200px;
color: #262626;
margin: 4px 0;
text-transform: uppercase;
line-height: 45px;
}
ul li a:hover{background: deeppink;
text-decoration: none;
color: #fff;
}
#home{
background-image: url(DYPLOGO.jpg);
-webkit-background-size: cover;
background-size: cover;
background-position: center center;
}
#portfolio,
#contact
{
background: #f3f3f3;
}

```

index.html:-

```

<html>
<head>
<title>CSS Selector example</title>
<link rel="stylesheet"
href="style.css">
</head>
<div id="box"><ul>
<li><a href="diveg.html"><i
class=""> Home</i></a></li>
<li><a href="#about"><i
class=""> about</i></a></li>

```

```
<li><a href="#courses"><i
class=""> Courses</i></a></li>
<li><a href="#seminar"><i
class=""> Seminar</i></a></li>
<li><a href="#contact"><i
class=""> contact</i></a></li>
</ul>
<div id="home">
<section class="content">
<h1>
Home</h1>
</section>
</div>
<div id="about">
<section class="content">
<h1>
About</h1>
<p>
About...“There are only two ways to
live your life.<br> One is as though nothing is a miracle. <br>The other is as
though
everything is a miracle.”
</p>
</section>
</div>
<div id="courses">
<section class="content">
<h1>
Courses</h1>
<p>
“There are only two ways to live your
life.<br> One is as though nothing is a
miracle. <br>The other is as though
everything is a miracle.”
</p>
</section>
</div>
<div id="seminar">
<section class="content">
<h1>
```

```

Seminar</h1>
<p>
“There are only two ways to live your
life.<br> One is as though nothing is a miracle. <br>The other is as though
everything is a miracle.”
</p></section>
</div>
<div id="contact">
<section class="content">
<h1>
Contact</h1>
<p>
“There are only two ways to live your
life.<br> One is as though nothing is a
miracle. <br>The other is as though
everything is a miracle.”
</p></section>
</div>
</div>
</html>

```

Q.2 Write CSS Source code using height and width property to obtain the following output.

Ans:-

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>
<body>

```

```

<h1>height:auto;</h1>
<div style="height: auto; border: solid blue 1px; width: 220px;">
  
  <center><p>Welcome to the css</p></center>
  <center><p>The height this div element is set to auto</p></center>
</div>
<h1>height:320px;</h1>
  <div style="height: 320px; border: solid blue 1px; width: 211px;">
    
    <center><p>Welcome to the css</p></center>
    <center><p>The height this div element is set to 320px</p></center>
  </div>
</body>
</html>

```

Q.3 Write CSS Source code using id and element selector, span attribute property to obtain the following output.

Ans:-

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Save the Earth</title>
  <style>

```

```
body{
    background-color: green;
}
h1{
    color: yellow;
}
h2{
    color: rgb(226, 195, 117);
}
ul{
    color: whitesmoke;
}
ol{
    color: yellow;
}
.content{
    font-family: Georgia, serif;
    color: blue;
}
</style>
</head>
<body>
    <center><h1>Save the Earth</h1></center>
    <center><h2>NGO Group dedicated to saving the Earth's natural
    Enviornment</h2></center>
    <center></center>
```

```

<div>
  <ul>
    <li>Home</li>
    <li>FAQ'S</li>
    <li>Controlling</li>
    <ol>
      <li>Pollution</li>
      <li>Deforestation</li>
    </ol>
    <br>
    <li>Saving</li>
    <ol>
      <li>Forest</li>
      <li>Endangered Species</li>
    </ol>
  </ul>
</div>
<h1 class="content">Tips to Save Enviornment</h1>
</body>
</html>

```

Q. 4 Write CSS Source code using overflow, padding, background property and class selector, div tag to obtain the following output.

index.html:-

```

<html>
<head>
<title>CSS Selector example</title>

```



```

<link rel="stylesheet"
href="style.css">
</head>
<center><h1>Do Yoga anywhere,anytime
with our Live Online Classes</h1></center><div id="box">
<ul>
<li><a href="onlineyoga.html"><i
class="">Online Yoga Class</i></a></li>
<li><a href="onlinemeditation.html"><i
class="">Online Meditation
Class</i></a></li>
<li><a href="nutrition.html"><i
class="">Nutrition</i></a></li>
<li><a href="aboutus.html"><i class="">About
US</i></a></li>
<li><a href="blog.html"><i
class="">Blog</i></a></li>
</ul>
<div id="onlineyoga">
<section class="content">
<h1>Online Yoga Course</h1>
</section>
</div>
<div id="onlinemeditation">
<section class="content">
<h1>Online Meditation Course</h1>
<p>
About....“There are only two ways to
live your life.<br> One is as though nothing is a miracle. <br>The other is as
though
everything is a miracle.”
</p>
</section>
</div>
<div id="nutrition">
<section class="content">
<h1>Nutrition</h1>
<p>
“There are only two ways to live your
life.<br> One is as though nothing is a

```

```
miracle. <br>The other is as though
everything is a miracle.”
</p>
</section>
</div>
<div id="aboutus">
<section class="content">
<h1>About US</h1>
<p>
“There are only two ways to live your
life.<br> One is as though nothing is a
miracle. <br>The other is as though
everything is a miracle.”
</p></section></div>
<div id="contact">
<section class="content">
<h1>Contact</h1>
<p>
“There are only two ways to live your
life.<br> One is as though nothing is a
miracle. <br>The other is as though
everything is a miracle.”
</p></section>
</div>
</div>
</html>
```

style.css:-

```
*{
margin: 0;
padding: 0;
}
body{
font-family: 'Lucida Sans';
font-weight: 200px;width: auto;
}
#box{
width: 100%;
height: 100vh;
scroll-behavior: smooth;
```

```
overflow-y: scroll;
}
#box div{
position: relative;
height: 100%;
}
.content {
position: absolute;
top: 50%;
left: 50%;
transform: translate(-50%,-50%);
text-align: center;
padding: 0 40px;
}
.content h1 {
font-size: 70px;
font-weight: bold;
color: #262626;
text-transform: uppercase;margin-bottom: 40px;
}
#onlineyoga .content h1,
#onlinemeditation .content h1,
#nutrition .content h1,
#aboutus .content h1
{
color:black;
}
.content p
{
line-height: 1.5;
margin: auto;
color: #000;
}
ul {
padding: 0;
text-align: center;
position: fixed;
margin: 2% auto;
z-index: 1;
width: 1100px;
```

```
left: 0;
right: 0;
font-family: lato;}
ul li{
list-style: none;
display: inline-block;
}
ul li a {
display: block;
text-decoration: none;
height: 45px;
font-size: 20px;
background: #fff;
width: 300px;
color: #262626;
margin: 5px 5px;
text-transform: uppercase;
line-height: 45px;
}
ul li a:hover{
background: deeppink;
text-decoration: none;
color: #fff;
width: fit-content;
}
#onlineyoga{background-image:url(yoga2.png);
/* -webkit-background-size: cover;*/
background-size: cover;
background-position: center center;
}
#onlinemeditation
{
background-image: url(meditation2.jpeg);
background-repeat: no-repeat;
align-items: center;
background-size: cover;
}
#nutrition
{
background-image: url(nutrition.jpeg);
```

```
background-repeat: no-repeat;
align-items: center;
background-size: cover;
}
```

Q.5 Write CSS Source code using Class and ID selector, Element Selector, pseudo-classes, pseudo-element, list style, link to obtain the following output.

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
  <meta charset="UTF-8">
```

```
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
```

```
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
  <title>Document</title>
```

```
  <style>
```

```
    table,th,td{
```

```
      border: 1px solid black;
```

```
    }
```

```
    .nav {
```

```
      display: flex;
```

```
      gap: 60px;
```

```
      list-style-type: none;
```

```
      text-decoration: none;
```

```
      background-color: rgb(160, 159, 159);
```

```
      color: white;
```

```
}
```

```
li a {  
    display: inline-block;  
    padding: 10px 20px;
```

```
}
```

```
li a:hover {  
    background-color: black;  
    color: white;  
}
```

```
h2 {  
    background-color: bisque;  
    height: 99px;  
}
```

```
.main {  
    background-color: bisque;  
    margin-top: -16px;  
    height: 501px;  
}
```

```
.sidebar {  
    background-color: rgb(39, 229, 229);  
    width: 25%;  
    display: flex;  
    margin-top: -501px;  
    height: 484px;  
}
```

```
img{  
    margin-left: 363px;  
}
```

```
.footer{  
    height: 52px;  
    margin-top: -19px;  
    background-color: black;  
    color: whitesmoke;  
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div>
```

```
<center>
```

```
<h1>Dr.D.Y.Patil center of Research and Management</h1>
```

```
</center>
```

```
<ul class="nav">
```

```
<li><a href="">Home</a></li>
```

Python

Adbms

AIT

</div>

<div class="main">

<li style="margin-left: 336px;"> Online Web
Technology

<center></center>

<h1 style="margin-left: 336px;">MCA I SEM RESULT</h1>

<center>

<table style="margin-left: 340px;">

<tr>

<th>Roll No</th>

<th>Student Name</th>

<th>Subject</th>

<th>Marks</th>

</tr>

<tr>

<td>122162</td>

<td>abc</td>

<td>AIT</td>

<td>73</td>

</tr>

</table>

</center>

</div>

<div class="sidebar">

<h1 style="color: blue;">Menu List</h1>

INBOX

Sent

Trash

INBOX

</div>

<div class="footer">

<center><h3>dyp@copyright2023</h3></center>

</div>

</body>

</html>

**Dr.D.Y. Patil Center for Management &Research,
Chikhali, Pune-412114.**

Subject : Advanced Internet Technologies

Roll No: _____

Division : _____

Name : _____

Assignment No – 3 & 4

Q.1 Program to implement Audio and Video features for your web page .

Ans :

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
  <title>Audio and Video Example</title>
```

```
</head>
```

```
<body>
```

```
  <h1>Audio and Video Example</h1>
```

```
  <!-- Audio Element -->
```

```
  <h2>Audio:</h2>
```

```
  <audio controls>
```

```
    <source src="English Song ! Duniya ! English.mp3" type="audio/mpeg">
```

Your browser does not support the audio element.

```
  </audio>
```

```
<!-- Video Element -->
<h2>Video:</h2>
<video width="640" height="360" controls>
  <source src="IPL-2021-Is-Back-4k-Full-Screen-Status-Video.mp4"
type="video/mp4">
  Your browser does not support the video element.
</video>

</body>
</html>
```

Q.2. Program to design form using HTML5 elements, attributes and Semantics.

Ans :

```
<!DOCTYPE html>
<html>
<head>
  <title>Form Example</title>
</head>
<body>
  <h1>Form Example</h1>

  <form action="/submit-form" method="post">
    <fieldset>
      <legend>Personal Information</legend>

      <label for="name">Name:</label>
      <input type="text" id="name" name="name" required>
```

<label for="email">Email:</label>

<input type="email" id="email" name="email" required>

<label for="phone">Phone:</label>

<input type="tel" id="phone" name="phone" pattern="[0-9]{10}" required>

<label for="birthdate">Date of Birth:</label>

<input type="date" id="birthdate" name="birthdate" required>

</fieldset>

<fieldset>

<legend>Address</legend>

<label for="street">Street:</label>

<input type="text" id="street" name="street">

<label for="city">City:</label>

<input type="text" id="city" name="city">

<label for="zipcode">Zip Code:</label>

<input type="text" id="zipcode" name="zipcode" pattern="[0-9]{5}"
required>

</fieldset>

<fieldset>

<legend>Preferences</legend>

```
<label for="color">Favorite Color:</label>
<input type="color" id="color" name="color">

<label for="animal">Favorite Animal:</label>
<input type="text" id="animal" name="animal">

<label for="hobby">Hobby:</label>
<input type="text" id="hobby" name="hobby">
</fieldset>

<button type="submit">Submit</button>
</form>
</body>
</html>
```

Q.3 Programs using Canvas and SVG.

Ans :

```
<html>
<head>
  <title>Canvas Example</title>
</head>
<body>
  <h1>SVG Example</h1>

  <svg width="400" height="200">
    <rect x="50" y="50" width="200" height="100" fill="red" />
    <line x1="300" y1="50" x2="350" y2="150" stroke="blue" stroke-
width="5" />
```

```
<text x="100" y="180" font-family="Arial" font-size="24"
fill="black">Hello, SVG!</text>

</svg>
```

```
<h1>Canvas Example</h1>
```

```
<canvas id="myCanvas" width="400" height="200"></canvas>
```

```
<script>
```

```
// Get the canvas element
```

```
const canvas = document.getElementById('myCanvas');
```

```
// Check if the browser supports canvas
```

```
if (canvas.getContext) {
```

```
    // Get the 2D drawing context
```

```
    const ctx = canvas.getContext('2d');
```

```
    // Draw a rectangle
```

```
    ctx.fillStyle = 'red';
```

```
    ctx.fillRect(50, 50, 200, 100);
```

```
    // Draw a line
```

```
    ctx.strokeStyle = 'blue';
```

```
    ctx.lineWidth = 5;
```

```
    ctx.beginPath();
```

```
    ctx.moveTo(300, 50);
```

```
    ctx.lineTo(350, 150);
```

```
    ctx.stroke();
```

```
    // Draw text
```

```
    ctx.font = '24px Arial';
```

```
    ctx.fillStyle = 'black';
```

```
    ctx.fillText('Hello, Canvas!', 100, 180);
```

```
    } else {  
        // Canvas is not supported  
        console.log('Canvas is not supported in this browser.');
```



```
    }  
</script>  
</body>  
</html>
```

Q.4. Programs to demonstrate external and internal styles in the web page using font, text, background, borders, opacity and other CSS 3 properties.

Ans :

External Styles:

HTML file:

```
<!DOCTYPE html>  
  
<html>  
  
<head>  
    <title>External Styles Example</title>  
    <link rel="stylesheet" type="text/css" href="styles.css">  
</head>  
  
<body>  
    <h1>External Styles Example</h1>  
    <p>This is a paragraph with external styles applied.</p>  
    <div class="box">This is a div with a red background.</div>  
</body>  
</html>
```

CSS file (styles.css):

```
/* CSS styles for the HTML file */  
  
body {
```

```
font-family: Arial, sans-serif;
color: #333;
}
```

```
p {
  font-size: 18px;
  font-weight: bold;
}
```

```
.box {
  background-color: red;
  color: white;
  padding: 10px;
}
```

Internal Styles:

```
<!DOCTYPE html>
<html>
<head>
  <title>Internal Styles Example</title>
  <style>
    /* CSS styles for the HTML file */
    body {
      font-family: Arial, sans-serif;
      color: #333;
    }
    p {
```



```
    font-size: 18px;
    font-weight: bold;
}

.box {
    background-color: red;
    color: white;
    padding: 10px;
}
</style>
</head>
<body>
    <h1>Internal Styles Example</h1>
    <p>This is a paragraph with internal styles applied.</p>
    <div class="box">This is a div with a red background.</div>
</body>
</html>
```

Q.5. Implement Transformation using Translation, Rotation and Scaling in your web page.

Ans :

```
<!DOCTYPE html>
<html>
<head>
    <title>Transformation Example</title>
    <style>
        .box {
```

```

width: 100px;
height: 100px;
background-color: red;
transform-origin: center center;
transition: transform 0.3s ease;
}
.box:hover {
  transform: translate(50px, 50px) rotate(45deg) scale(1.5);
}
</style>
</head>
<body>
  <h1>Transformation Example</h1>
  <div class="box"></div>
</body>
</html>

```

Q.6. Program to show current date and time using user defined module

Ans :

datetime.js

```

exports.getCurrentDateTime = function() {
  const currentDate = new Date();
  return currentDate.toLocaleString();
};

```

main.js

```

const dateTimeModule = require('./datetime');

```

```
// Call the function to retrieve the current date and time  
const dateTime = dateTimeModule.getCurrentDateTime();
```

```
// Display the current date and time  
console.log('Current Date and Time:', dateTime);
```

Q.7. Program using built-in modules to split the query string into readable parts

Ans :

```
const querystring = require('querystring');  
  
const queryString = 'name=John&age=30&city=New+York';  
const parsedQuery = querystring.parse(queryString);  
  
console.log('Name:', parsedQuery.name);  
console.log('Age:', parsedQuery.age);  
console.log('City:', parsedQuery.city);
```

Q.8. Program using NPM which will convert entered string into either case

Ans :

Step 1 :

npm init

Step 2 :

npm install readline-sync

Step 3 :

Create a new JavaScript file, let's call it case-converter.js.

```

const readlineSync = require('readline-sync');

const input = readlineSync.question('Enter a string: ');
const option = readlineSync.question('Convert to (U)ppercase or (L)owercase? ');

let convertedString;
if (option.toLowerCase() === 'u') {
    convertedString = input.toUpperCase();
} else if (option.toLowerCase() === 'l') {
    convertedString = input.toLowerCase();
} else {
    console.log('Invalid option!');
    process.exit(1);
}
console.log('Converted String:', convertedString);

```

Step 4 :

Run the command :

```
node case-converter.js
```

Q.9. Write a program to create a calculator using Node JS. (install and configure Node JS and Server)

Ans :

```

const express = require('express');
const app = express();

```

```
// Serve static files from the public directory
```

```
app.use(express.static('public'));

// Define the route for the calculator form
app.get('/', (req, res) => {
  res.sendFile(__dirname + '/public/index.html');
});

// Handle the calculator form submission
app.get('/calculate', (req, res) => {
  const num1 = parseFloat(req.query.num1);
  const num2 = parseFloat(req.query.num2);
  const operator = req.query.operator;

  let result;
  switch (operator) {
    case 'add':
      result = num1 + num2;
      break;
    case 'subtract':
      result = num1 - num2;
      break;
    case 'multiply':
      result = num1 * num2;
      break;
    case 'divide':
      result = num1 / num2;
      break;
```

```

    default:
      result = 'Invalid operator';
    }

    res.send(`The result is: ${result}`);
  });

// Start the server
const port = 3000;
app.listen(port, () => {
  console.log(`Server started on port ${port}`);
});

```

Create a **public** directory in the project directory and create an **index.html** file inside it with the following code:

```

<!DOCTYPE html>
<html>
<head>
  <title>Calculator</title>
</head>
<body>
  <h1>Calculator</h1>
  <form action="/calculate" method="GET">
    <label for="num1">Number 1:</label>
    <input type="number" id="num1" name="num1" required>
    <br>
    <label for="operator">Operator:</label>
    <select id="operator" name="operator">
      <option value="add">+</option>
      <option value="subtract">-</option>
      <option value="multiply">*</option>
      <option value="divide">/</option>
    </select>
    <br>
    <label for="num2">Number 2:</label>
    <input type="number" id="num2" name="num2" required>
    <br>

```

```
<button type="submit">Calculate</button>
</form>
</body>
</html>
```

Q. 10. Write Program for Form validation in Angular

Ans :

```
@Component({
  selector: 'app-root',
  templateUrl: './app.component.html',
  styleUrls: ['./app.component.css']
})
export class AppComponent {
  myForm: FormGroup;

  constructor(private fb: FormBuilder) {
    this.myForm = this.fb.group({
      name: ['', Validators.required],
      email: ['', [Validators.required, Validators.email]],
      password: ['', [Validators.required, Validators.minLength(6)]],
    });
  }

  // Accessor for easier form control access
  get formControls() {
    return this.myForm.controls;
  }

  onSubmit() {
    // Check if the form is valid
    if (this.myForm.valid) {
      // Perform form submission logic
      console.log('Form submitted successfully!');
    } else {
      // Mark all form fields as touched to display validation errors
      this.myForm.markAllAsTouched();
    }
  }
}
```

4. In your component's template file (e.g., **app.component.html**), bind the form group and add validation messages:

```
<form [formGroup]="myForm" (ngSubmit)="onSubmit()">
  <div>
    <label for="name">Name</label>
    <input type="text" id="name" formControlName="name" />
    <div *ngIf="formControls.name.touched &&
formControls.name.errors?.required">
      Name is required.
    </div>
  </div>

  <div>
    <label for="email">Email</label>
    <input type="email" id="email" formControlName="email" />
    <div *ngIf="formControls.email.touched &&
formControls.email.errors?.required">
      Email is required.
    </div>
    <div *ngIf="formControls.email.touched &&
formControls.email.errors?.email">
      Please enter a valid email.
    </div>
  </div>

  <div>
    <label for="password">Password</label>
    <input type="password" id="password" formControlName="password" />
    <div *ngIf="formControls.password.touched &&
formControls.password.errors?.required">
      Password is required.
    </div>
    <div *ngIf="formControls.password.touched &&
formControls.password.errors?.minlength">
      Password should be at least 6 characters long.
    </div>
  </div>

  <button type="submit">Submit</button>
</form>
```


Q.11. Program to demonstrate the ngIf, ngfor, ngswitch statements.

Ans :

```
import { Component } from '@angular/core';
@Component({
  selector: 'app-demo',
  template: `
    <h1>ngIf Example</h1>
    <div *ngIf="showMessage">
      This message is displayed using ngIf directive.
    </div>

    <h1>ngFor Example</h1>
    <ul>
      <li *ngFor="let item of items">{{ item }}</li>
    </ul>

    <h1>ngSwitch Example</h1>
    <div [ngSwitch]="value">
      <div *ngSwitchCase="'A'">Value is A</div>
      <div *ngSwitchCase="'B'">Value is B</div>
      <div *ngSwitchCase="'C'">Value is C</div>
      <div *ngSwitchDefault>Value is not A, B, or C</div>
    </div>
  `
})
export class DemoComponent {
  showMessage: boolean = true;
  items: string[] = ['Apple', 'Banana', 'Orange'];
  value: string = 'B';
}
```

Q.12. Create angular project which will demonstrate the usage of component directive, structural directive and attribute directives

Ans :

1.highlight.directive.ts (Attribute Directive):

```
import { Directive, ElementRef, HostListener, Input } from '@angular/core';
```

```
@Directive({
```

```

    selector: '[appHighlight]'
  })
  export class HighlightDirective {
    @Input('appHighlight') highlightColor: string;

    constructor(private el: ElementRef) { }

    @HostListener('mouseenter') onMouseEnter() {
      this.highlight(this.highlightColor || 'yellow');
    }

    @HostListener('mouseleave') onMouseLeave() {
      this.highlight(null);
    }

    private highlight(color: string) {
      this.el.nativeElement.style.backgroundColor = color;
    }
  }

```

2. **repeat.directive.ts** (Structural Directive):

```

import { Directive, Input, TemplateRef, ViewContainerRef } from
'@angular/core';

@Directive({
  selector: '[appRepeat]'
})
export class RepeatDirective {
  @Input('appRepeat') repeatTimes: number;

```

```

constructor(
  private templateRef: TemplateRef<any>,
  private viewContainer: ViewContainerRef
) {}

```

```

ngOnInit() {
  for (let i = 0; i < this.repeatTimes; i++) {
    this.viewContainer.createEmbeddedView(this.templateRef);
  }
}
}

```

2. **alert.component.ts** (Component Directive):
import { Component } from '@angular/core';

```

@Component({
  selector: 'app-alert',
  template: `
    <div class="alert">
      <ng-content></ng-content>
    </div>
  `,
  styles: [
    `
    .alert {
      background-color: #f8d7da;
      color: #721c24;
      padding: 10px;
      border: 1px solid #f5c6cb;
      border-radius: 4px;
      margin-bottom: 10px;
    }
  `
  ]
})

```

```
  })  
  export class AlertComponent { }
```

3. Modify the AppModule In **app.module.ts**, import the directives and comp

```
import { NgModule } from '@angular/core';  
import { BrowserModule } from '@angular/platform-browser';
```

```
import { AppComponent } from './app.component';  
import { HighlightDirective } from './highlight.directive';  
import { RepeatDirective } from './repeat.directive';  
import { AlertComponent } from './alert.component';
```

```
@NgModule({  
  declarations: [  
    AppComponent,  
    HighlightDirective,  
    RepeatDirective,  
    AlertComponent  
  ],  
  imports: [  
    BrowserModule  
  ],  
  providers: [],  
  bootstrap: [AppComponent]  
})  
export class AppModule { }
```

4. Update the AppComponent Template

```
<h1>Attribute Directive: Highlight</h1>
```

```
<p appHighlight highlightColor="lightblue">Mouse over this text to  
highlight it.</p>
```

```
<h1>Structural Directive: Repeat</h1>
```

```
<ng-container *appRepeat="3">
```

```
  <p>This paragraph will be repeated three times.</p>  
</ng-container>
```

```
<h1>Component Directive: Alert</h1>
```

```
<app
```

Q.13. Create angular project which has HTML template and handle the click event on click of the button (Installation of Angular and Bootstrap 4 CSS Framework)

Ans :

```
import { Component } from '@angular/core';
@Component({
  selector: 'app-root',
  templateUrl: './app.component.html',
  styleUrls: ['./app.component.css']
})
export class AppComponent {
  showMessage: boolean = false;
  message: string = "";
  handleClick() {
    this.showMessage = true;
    this.message = 'Button clicked!';
  }
}
```

Q.14. Program for basic operations, array and user interface handling.

Ans :

```
<!DOCTYPE html>
<html>
<head>
  <title>Basic Operations</title>
  <link rel="stylesheet" type="text/css" href="styles.css">
</head>
```

```
<body>
<h1>Basic Operations</h1>

<div class="container">
  <div class="operation">
    <h2>Addition</h2>
    <input type="number" id="num1" placeholder="Enter first number">
    <input type="number" id="num2" placeholder="Enter second number">
    <button onclick="add()">Add</button>
    <p id="result"></p>
  </div>

  <div class="operation">
    <h2>Array Manipulation</h2>
    <input type="text" id="arrayInput" placeholder="Enter elements (comma-separated)">
    <button onclick="processArray()">Process Array</button>
    <p id="arrayResult"></p>
  </div>
</div>

<script src="script.js"></script>
</body>
</html>

body {
  font-family: Arial, sans-serif;
}

.container {
```

```
display: flex;
  justify-content: space-around;
  margin-top: 50px;
}
```

```
.operation {
  text-align: center;
}
```

```
h1 {
  text-align: center;
}
```

```
h2 {
  margin-bottom: 10px;
}
```

```
input {
  margin-bottom: 10px;
}
```

```
button {
  margin-bottom: 10px;
}
```

```
p {
  font-weight: bold;
}
```

```
}  
function add() {  
    var num1 = parseFloat(document.getElementById('num1').value);  
    var num2 = parseFloat(document.getElementById('num2').value);  
    var result = num1 + num2;  
    document.getElementById('result').innerText = 'Result: ' + result;  
}
```

```
function processArray() {  
    var input = document.getElementById('arrayInput').value;  
    var elements = input.split(',').map(function(item) {  
        return parseFloat(item.trim());  
    });  
  
    var sum = 0;  
    for (var i = 0; i < elements.length; i++) {  
        sum += elements[i];  
    }  
  
    var average = sum / elements.length;  
    var max = Math.max.apply(null, elements);  
    var min = Math.min.apply(null, elements);  
  
    var arrayResult = 'Sum: ' + sum.toFixed(2) + ', Average: ' + average.toFixed(2)  
    + ', Max: ' + max.toFixed(2) + ', Min: ' + min.toFixed(2);  
    document.getElementById('arrayResult').innerText = 'Array Result: ' +  
    arrayResult;  
}
```


Q.15. Program to demonstrate session management using various techniques.

Ans :

```
const express = require('express');
```

```
const cookieParser = require('cookie-parser');
```

```
const app = express();
```

```
app.use(cookieParser());
```

```
// Set a cookie on login
```

```
app.post('/login', (req, res) => {
```

```
  // Perform user authentication
```

```
  // ...
```

```
// Set session cookie
```

```
res.cookie('session', 'sessionID123', { maxAge: 3600000, httpOnly: true });
```

```
res.send('Logged in successfully!');
```

```
});
```

```
// Access protected routes
```

```
app.get('/dashboard', (req, res) => {
```

```
  // Check if session cookie exists
```

```
  if (req.cookies.session) {
```

```
    // User is authenticated
```

```
    res.send('Welcome to the dashboard!');
```

```
  } else {
```

```
    res.status(401).send('Unauthorized');
  }
});

// Logout and clear session cookie
app.post('/logout', (req, res) => {
  res.clearCookie('session');
  res.send('Logged out successfully!');
});

// Start the server
app.listen(3000, () => {
  console.log('Server is running on port 3000');
});

const express = require('express');
const jwt = require('jsonwebtoken');

const app = express();
app.use(express.json());

const secretKey = 'secretkey123';

// Generate JWT on login
app.post('/login', (req, res) => {
  // Perform user authentication
  // ...

  // Generate JWT token
```

```
    const token = jwt.sign({ username: req.body.username }, secretKey, {  
      expiresIn: '1h' });
```

```
    res.json({ token: token });  
  });
```

```
// Access protected routes
```

```
app.get('/dashboard', (req, res) => {  
  const token = req.headers.authorization;
```

```
  // Verify JWT token
```

```
  jwt.verify(token, secretKey, (err, decoded) => {
```

```
    if (err) {
```

```
      res.status(401).send('Unauthorized');
```

```
    } else {
```

```
      // User is authenticated
```

```
      res.send('Welcome to the dashboard!');
```

```
    }
```

```
  });
```

```
});
```

```
// Start the server
```

```
app.listen(3000, () => {
```

```
  console.log('Server is running on port 3000');
```

```
});
```

Q.16. Program to perform the CRUD Operations using PHP Script.

Ans :

1. Connect to the Database

```
<?php

$servername = "localhost";
$username = "root";
$password = "your_password";
$dbname = "your_database";

// Create a connection

$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

?>
```

2. Create a Record (Create Operation):

```
<?php

// Insert a new record

$sql = "INSERT INTO users (name, email) VALUES ('John Doe', 'john@example.com')";

if ($conn->query($sql) === TRUE) {
    echo "New record created successfully";
} else {
    echo "Error: " . $sql . "<br>" . $conn->error;
}
```

?>

3. Read Records (Read Operation):

```
<?php
```

```
// Retrieve records
```

```
$sql = "SELECT * FROM users";
```

```
$result = $conn->query($sql);
```

```
if ($result->num_rows > 0) {
```

```
    while ($row = $result->fetch_assoc()) {
```

```
        echo "Name: " . $row["name"] . " - Email: " . $row["email"] . "<br>";
```

```
    }
```

```
} else {
```

```
    echo "No records found";
```

```
}
```

```
?>
```

4. Update a Record (Update Operation):

```
<?php
```

```
// Update a record
```

```
$sql = "UPDATE users SET email='johndoe@example.com' WHERE id=1";
```

```
if ($conn->query($sql) === TRUE) {
```

```
    echo "Record updated successfully";
```

```
} else {
```

```
    echo "Error updating record: " . $conn->error;
```

```
}
```

```
?>
```

5. Delete a Record (Delete Operation)

```

<?php
// Delete a record

$sql = "DELETE FROM users WHERE id=1";

if ($conn->query($sql) === TRUE) {
    echo "Record deleted successfully";
} else {
    echo "Error deleting record: " . $conn->error;
}
?>

```

Q.17. illustrate example of Cookie and session.

Ans :

➤ Example of Cookie-

```

<?php
// Set a cookie
setcookie("username", "John Doe", time() + 3600); // Expires in 1 hour

// Retrieve the cookie value
if (isset($_COOKIE["username"])) {
    $username = $_COOKIE["username"];
    echo "Welcome back, $username!";
} else {
    echo "Cookie not set.";
}
?>

```

➤ Example of Session-

```

<?php
// Start a session
session_start();

// Set session variables
$_SESSION["username"] = "John Doe";
$_SESSION["email"] = "john@example.com";

```

```
// Retrieve session variables
if (isset($_SESSION["username"])) {
    $username = $_SESSION["username"];
    $email = $_SESSION["email"];
    echo "Welcome, $username! Your email is $email.";
} else {
    echo "Session not set.";
}

// Destroy the session
session_destroy();
?>
```

Q.18 Write a program to show current data at time using define Module in Node js?

Ans :

```
const define = require('define');

// Get the current date and time
const currentDate = define('DATE_CURRENT');
const currentTime = define('TIME_CURRENT');

// Display the current date and time
console.log('Current Date:', currentDate);
console.log('Current Time:', currentTime);
```

Q.19 Write PHP Script design a form reschedule journey data of flight & display updated information of New Web Page?

Ans :

```
<!DOCTYPE html>

<html>

<head>

    <title>Reschedule Flight Journey</title>

</head>
```

```
<body>
  <h1>Reschedule Flight Journey</h1>

  <form action="reschedule.php" method="post">
    <label for="flightNumber">Flight Number:</label>
    <input type="text" id="flightNumber" name="flightNumber" required><br>

    <label for="newDate">New Date:</label>
    <input type="date" id="newDate" name="newDate" required><br>

    <label for="newTime">New Time:</label>
    <input type="time" id="newTime" name="newTime" required><br>

    <input type="submit" value="Reschedule">
  </form>
</body>
</html>
```

Create a file `reschedule.php`

```
<!DOCTYPE html>
<html>
<head>
  <title>Reschedule Journey - Confirmation</title>
</head>
<body>
  <h1>Reschedule Journey - Confirmation</h1>

  <?php
```



```
if ($_SERVER["REQUEST_METHOD"] == "POST") {  
    // Retrieve form data  
    $flightNumber = $_POST["flightNumber"];  
    $newDate = $_POST["newDate"];  
    $newTime = $_POST["newTime"];  
  
    // Process and display updated information  
    echo "Flight Number: " . $flightNumber . "<br>";  
    echo "New Date: " . $newDate . "<br>";  
    echo "New Time: " . $newTime . "<br>";  
}  
?>  
</body>  
</html>
```