Lab-1: Client-Side Scripting

1. Write html and JavaScript programs to embed JavaScript file in html file.
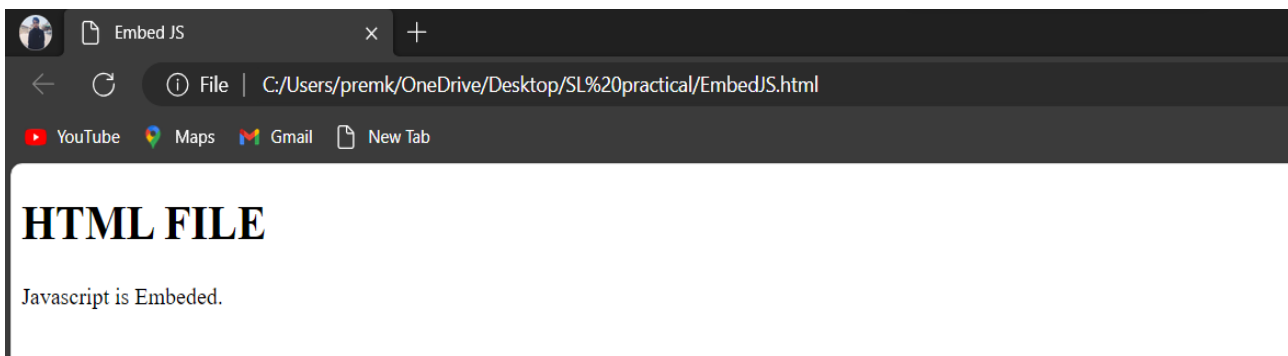
```
<!DOCTYPE html>
<html lang="en">

<head>
 <title>Embed JS</title>
</head>

<body>
 <h1>HTML FILE</h1>

 <script>
   document.write("Javascript is Embeded.")
 </script>
</body>
</html>
```

Output:

2. Write a JavaScript program which implements all the operators.

```
<!DOCTYPE html>
<html>
<head>
 <title>Document</title>
</head>

<body>
 <h1>Implementation of Operators </h1>
 <script>
   // operators

   let a = 53;
   let b = 10;

   let sum = a + b;
   let sub = a - b;
```
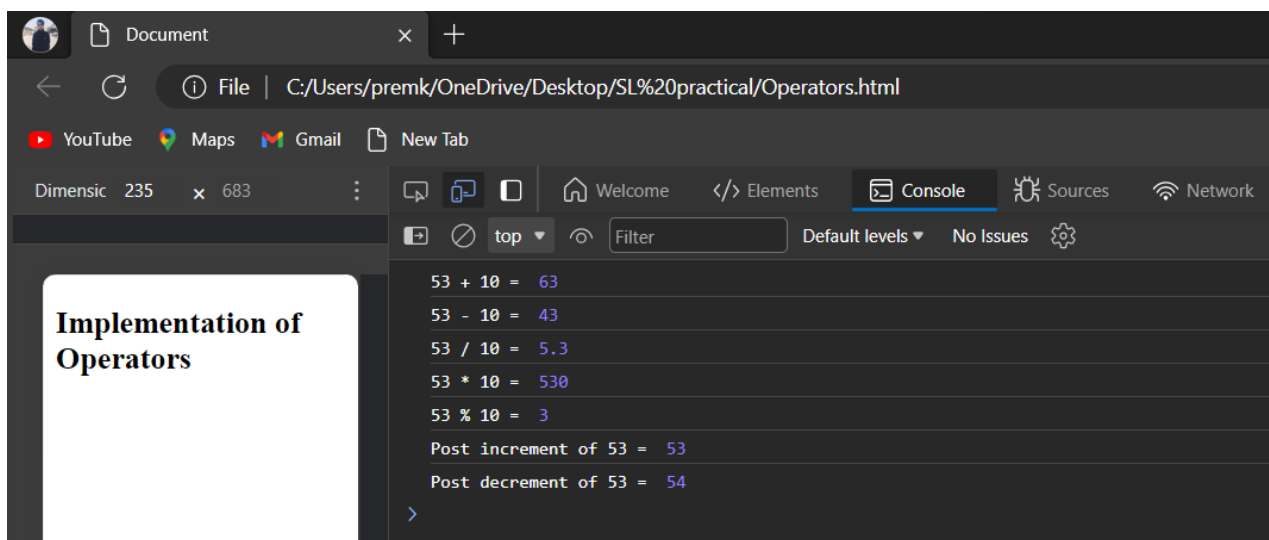
```
    let div = a / b;
    let mul = a * b;
    let rem = a % b;
    let inc = a++;
    let dec = a--;
    console.log("53 + 10 = ", sum);
    console.log("53 - 10 = ", sub);
    console.log("53 / 10 = ", div);
    console.log("53 * 10 = ", mul);
    console.log("53 % 10 = ", rem);
    console.log("Post increment of 53 = ", inc);
    console.log("Post decrement of 53 = ", dec);

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

Output:

3. Write a JavaScript program that converts temperature in centigrade into Fahrenheit. Hint: (c0)/100 = (f-32)/180

```
<!DOCTYPE html>
<html>
<head>
  <title>Converts Temperature</title>
</head>

<body>
  <script>
    let c = 36.5;
    let f = 1.8 * c + 32;
    console.log("Converts Temperature C to F")
    console.log("36.5C = ", f, "F")
  </script>
</body>
</html>
```
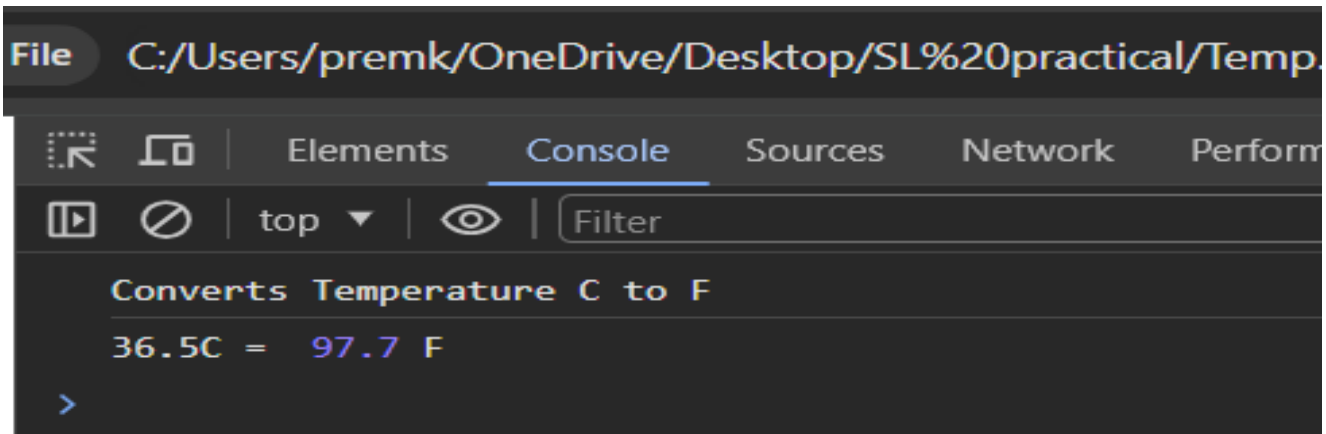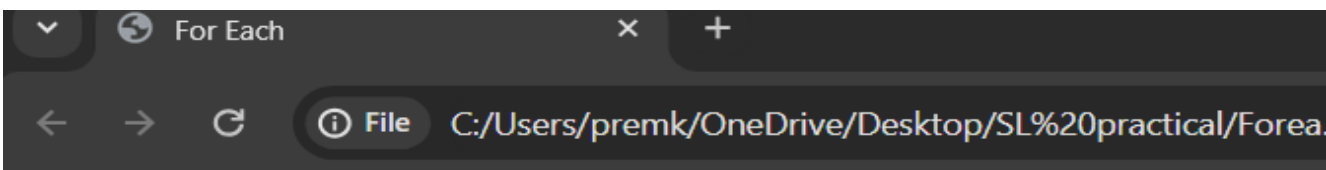
Output:

4. Write a JavaScript program to access 10 string elements of an array using foreach loop.

```html
<!DOCTYPE html>
<html lang="en">
<head>
 <title>For Each</title>
</head>

<body>
 <script>
   let name = ["Ram", "Hari", "Shyam", "Rita", "GIta", "Mohan", "Ramesh", "Harish", "Gagan", "Sita"];
   name.forEach(function (value, index) {
     document.write(" Name  " + index + ": " + value + "<br>");
   });

 </script>
</body>
</html>
```
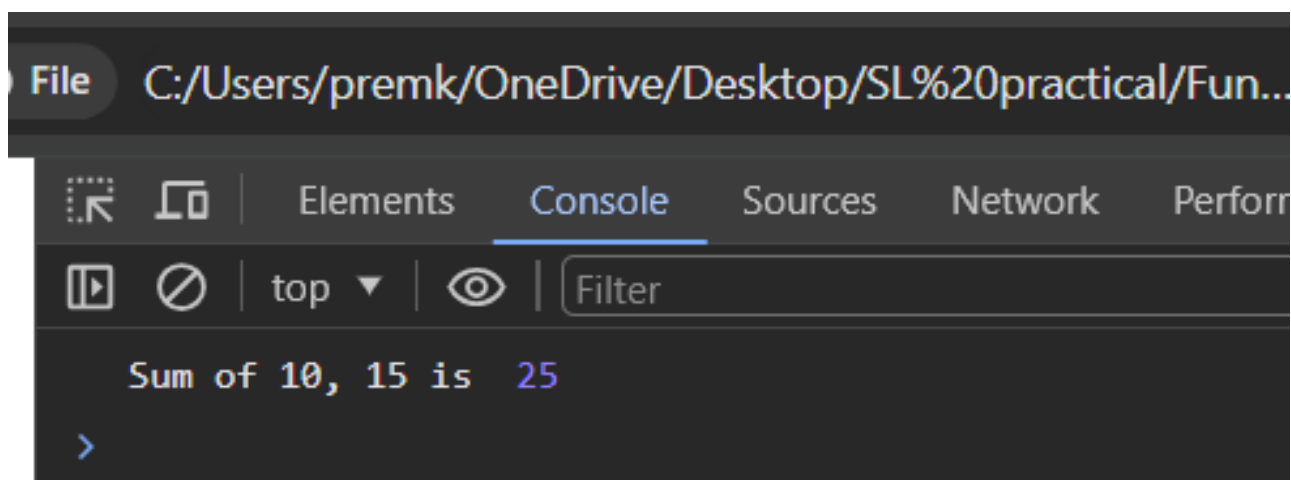
Output:

Name 0: Ram
Name 1: Hari
Name 2: Shyam
Name 3: Rita
Name 4: GIta
Name 5: Mohan
Name 6: Ramesh
Name 7: Harish
Name 8: Gagan
Name 9: Sita

5. Write a JavaScript program to implement functions in JavaScript.

```
<body>
 <script>
   function Sum(a, b) {
     // let a = 10;
     // let b = 5;
     let s = a + b;
     return s;
   }
   console.log("Sum of 10, 15 is ", Sum(10, 15));
 </script>
</body>
```

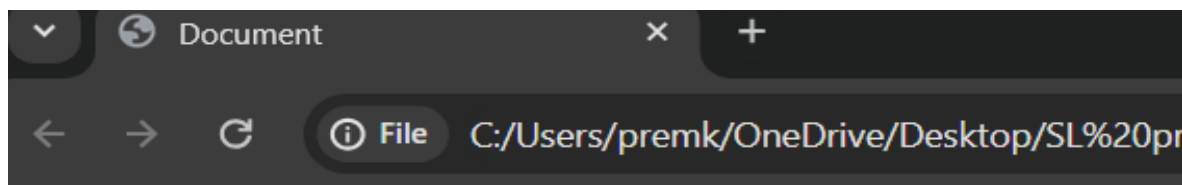**Output:**

6. Write a JavaScript program to implement Date objects.

```
<body>
 <h1>Date Object</h1>
 <script>
   let today = new Date();
   document.write(today);
 </script>
</body>
```
Output:

Date Object

Tue Mar 26 2024 19:56:55 GMT+0545 (Nepal Time)

7. Write a JavaScript program to implement windows and frames.

```
<body>
 <h1>Windows and Frames</h1>

 <button onclick="myFunction()">Open</button>

 <script>

  function myFunction() {
    open("DateObject.html", "myWindow", "width=400, height=600");
  }

 </script>
</body>
```
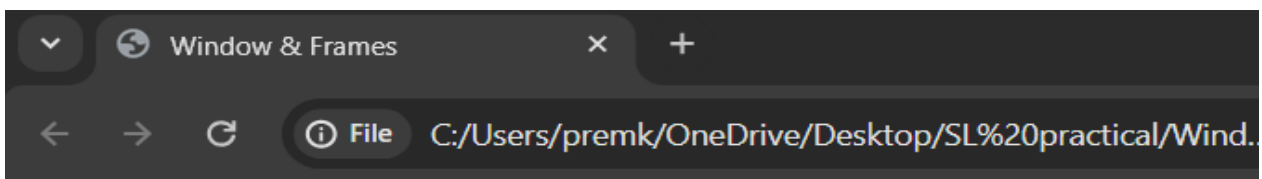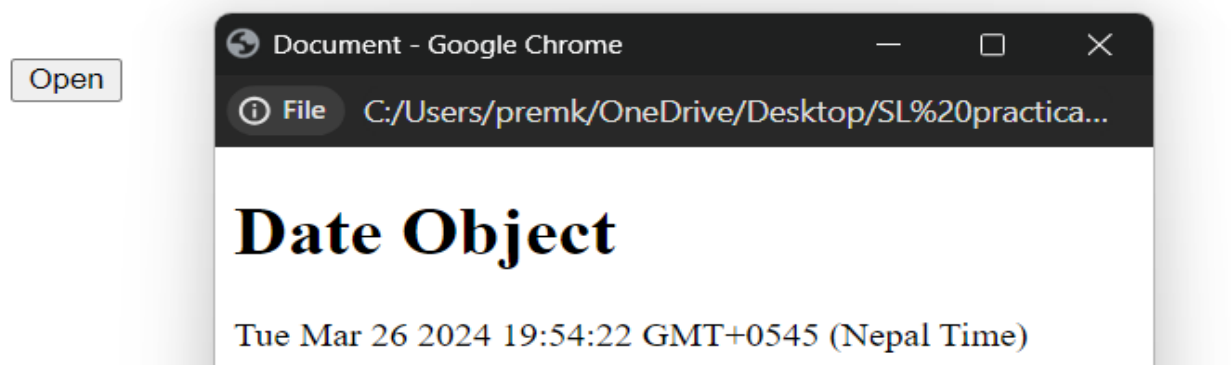
Output:

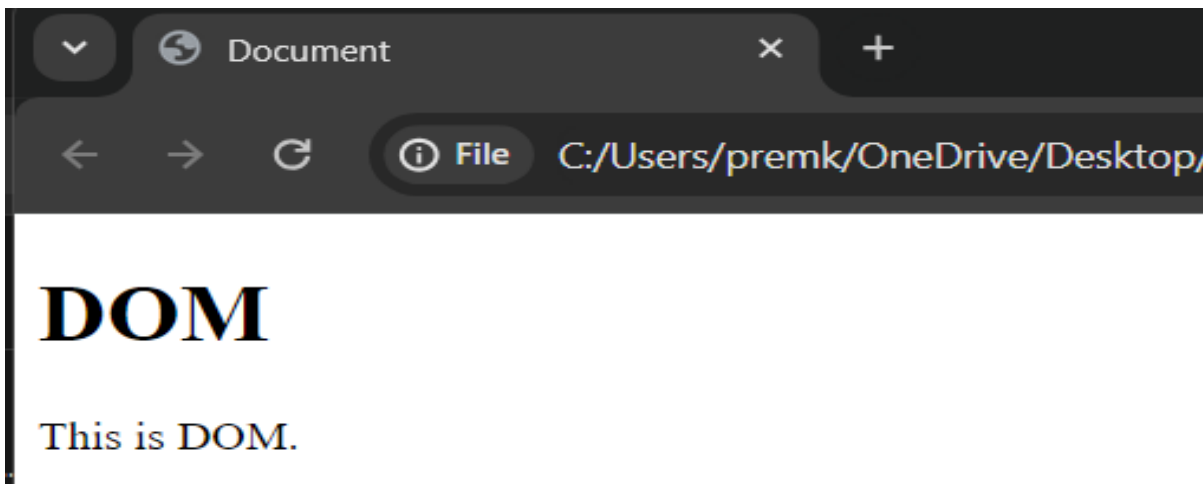**8. Write a JavaScript program to implement Document Object Model.**

```
<body>
 <h1>DOM</h1>
 <p id="content"></p>

 <script>
  document.getElementById('content').innerHTML = "This is DOM.";
 </script>
</body>
```

Output:

9. Write a JavaScript program to implement all Event Handling.

```html
<body>
 <div>
  <button id="btn">Click</button>
  <br>
  <button id="btn1">Click1</button>
  <br>
  <button id="btn2">Click2</button>
  <br>
  <button id="btn3">Click3</button>
 </div>

 <script>
  document.getElementById("btn").addEventListener("mousemove", function fun1() {
   console.log("mousemove event occure.");
  });

  document.getElementById("btn1").addEventListener("click", function fun2() {
   console.log("Click event occure.");
  });

  document.getElementById("btn2").addEventListener("mouseover", function fun3() {
   console.log("Mouseover event occure.");
  });

  document.getElementById("btn3").addEventListener("dblclick", function fun4() {
   console.log("Mouse double click event occure.");
  });

 </script>
</body>
```
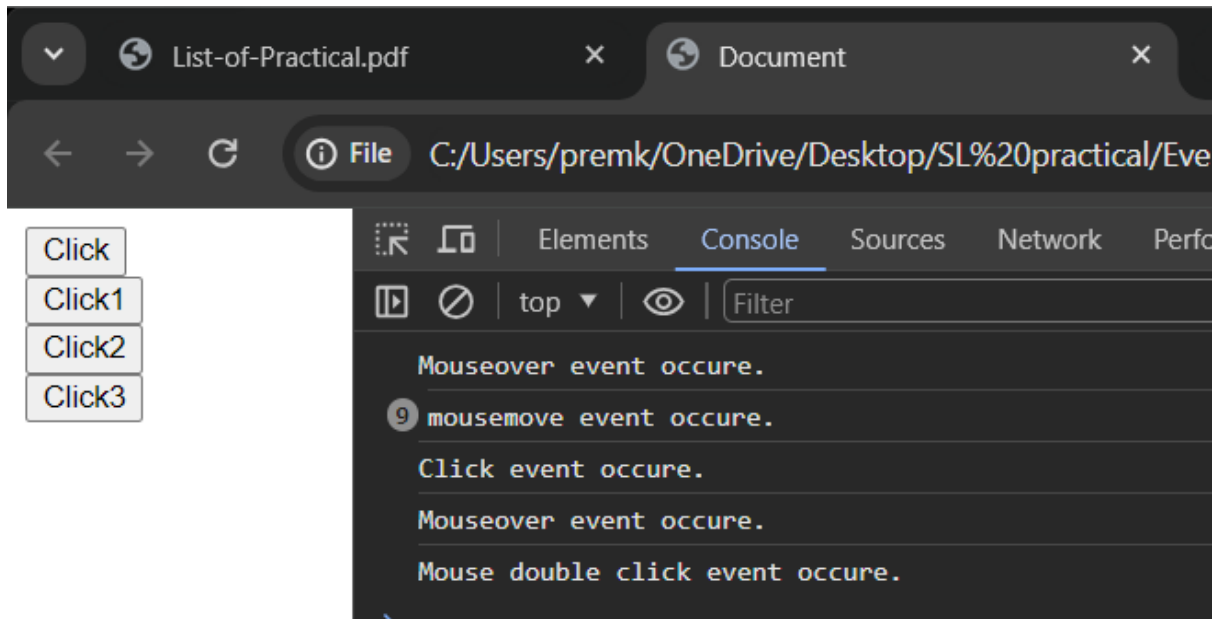
Output:

10. Write a JavaScript program to implement Form Handling.

```html
<body>
 <form>
  <!-- checkbox -->
  <p id="para">Javascript is client side scripting </p>
  <input type="checkbox" class="abc" onclick="fun1()">Color:Red

  <!-- radio button -->
  <input id="rd1" name="group1" type="radio" value="male">Male<br>
  <input id="rd2" name="group1" type="radio" value="female">Female<br>
  <button onclick="fun2()">Clickme</button>

  <!-- Select box -->
  <select id="sbox">
   <option value="Nepal">Nepal</option>
   <option value="China">China</option>
   <option value="India">India</option>
  </select>
  <button onclick="fun3()">Press Me</button>
 </form>
 <p id="content"></p>

 <script>
  function fun1() {
   var chkbx = document.getElementsByClassName("abc");
   if (chkbx[0].checked == true) {
    document.getElementById("para").style.color = "Red";
   }
   else {
    document.getElementById("para").style.color = "black";
   }
  }
```
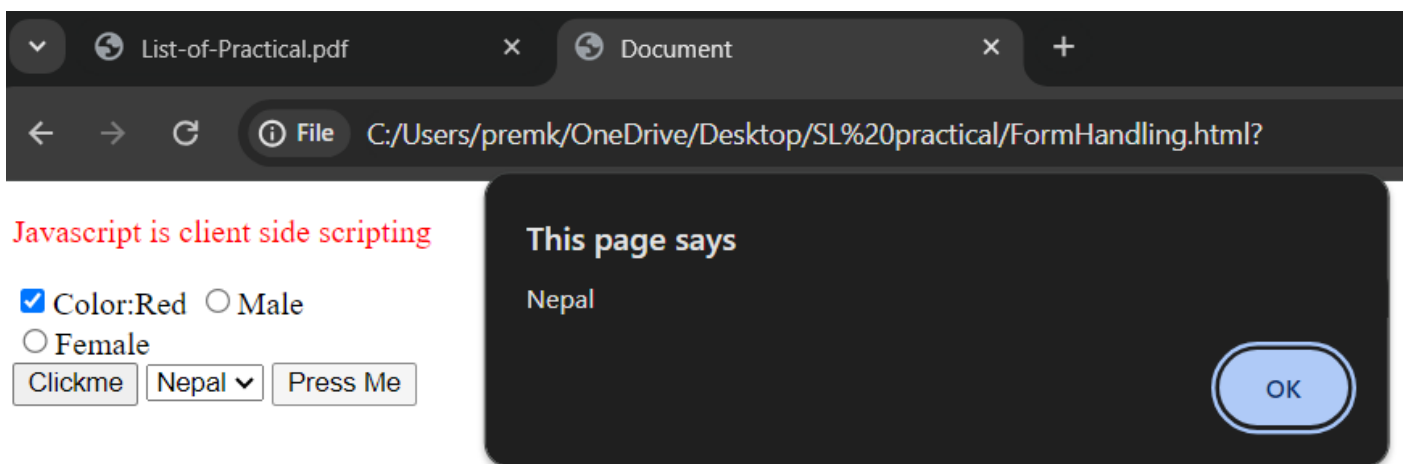
```javascript
    function fun2() {
      let rd1 = document.getElementById("rd1");
      let rd2 = document.getElementById("rd2");
      if (rd1.checked)
        alert(rd1.value + " is checked");
      else if (rd2.checked)
        alert(rd2.value + " is checked");
      else
        alert("nothing is selected");
    }

    function fun3() {
      var select = document.getElementById("sbox");
      alert(select.options[select.selectedIndex].
        value);
    }
  </script>
</body>
```

Output:

11. Write a JavaScript program to implement Regular expressions.
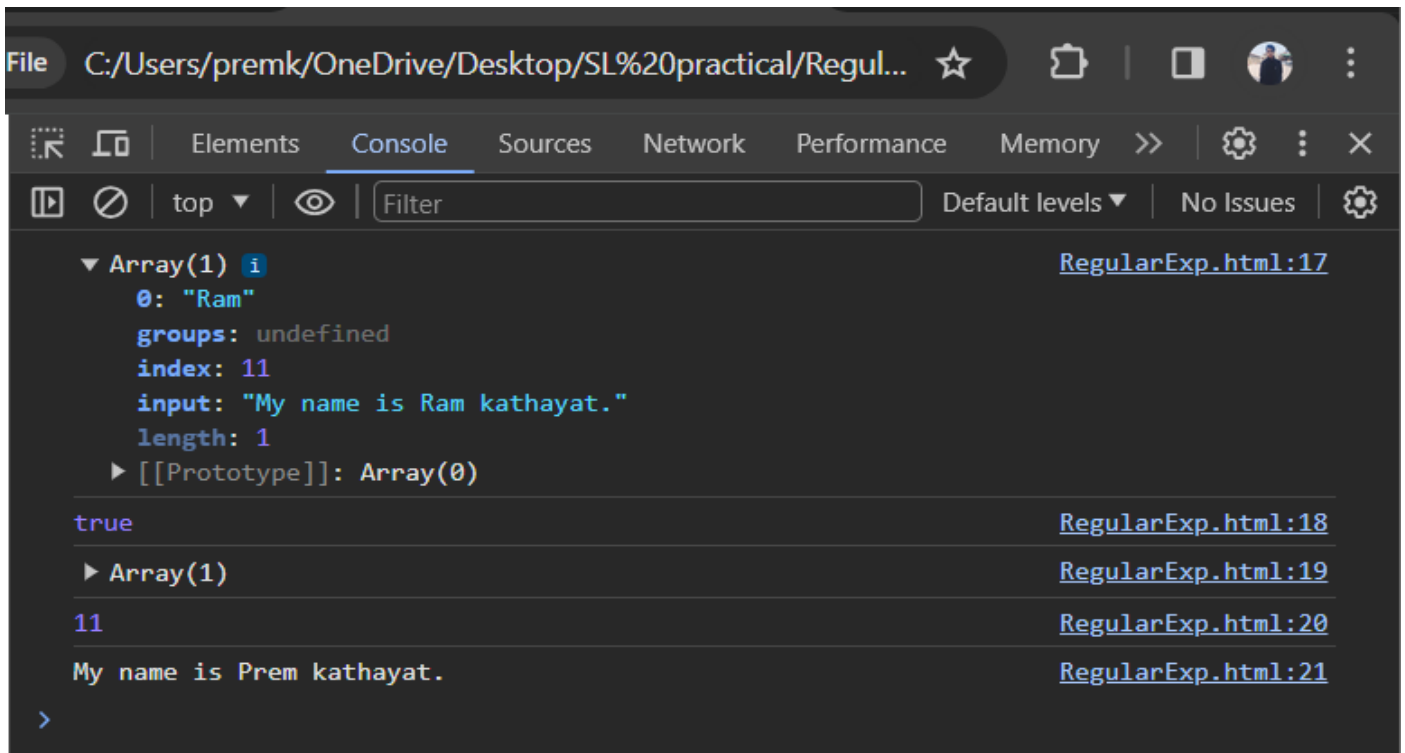
```html
<body>
 <script>
   let regex = /Ram/;

   let str = "My name is Ram kathayat.";

   console.log(regex.exec(str));

   console.log(regex.test(str));

   console.log(str.match(regex));

   console.log(str.search(regex));

   console.log(str.replace(regex, 'Prem'));
```

```
    </script>
</body>
```

Output:

12. Write a JavaScript program to implement Client-Side Validations.

```
<style>
   .error {
    color: red;
   }
 </style>
</head>
<body>
 <h2>Registration Form</h2>
 <form id="registrationForm" onsubmit="return validateForm()">
  <label for="username">Username:</label>
  <input type="text" id="username" name="username"><br>
  <span id="usernameError" class="error"></span><br>

  <label for="email">Email:</label>
  <input type="email" id="email" name="email"><br>
  <span id="emailError" class="error"></span><br>

  <label for="password">Password:</label>
  <input type="password" id="password" name="password"><br>
  <span id="passwordError" class="error"></span><br>

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

 <script>
```
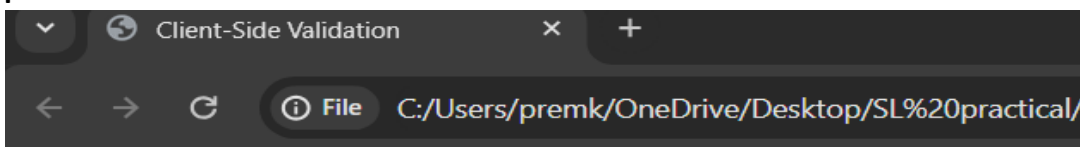
```javascript
    function validateForm() {
      var username = document.getElementById('username').value;
      var email = document.getElementById('email').value;
      var password = document.getElementById('password').value;
      var usernameError = document.getElementById('usernameError');
      var emailError = document.getElementById('emailError');
      var passwordError = document.getElementById('passwordError');
      var isValid = true;

      usernameError.textContent = '';
      emailError.textContent = '';
      passwordError.textContent = '';

      if (username.trim() === '') {
        usernameError.textContent = 'Username is required';
        isValid = false;
      }
      if (email.trim() === '') {
        emailError.textContent = 'Email is required';
        isValid = false;
      } else if (!isValidEmail(email)) {
        emailError.textContent = 'Invalid email format';
        isValid = false;
      }
      if (password.trim() === '') {
        passwordError.textContent = 'Password is required';
        isValid = false;
      }
      return isValid;
    }
    // Function to validate email format
    function isValidEmail(email) {
      var emailRegex = /^[^\s@]+@[^\s@]+\.[^\s@]+$/;
      return emailRegex.test(email);
    }
  </script>
</body>
```

Output:

Lab-2: Server-Side Scripting Language

13. Write a PHP program to implement all Control Structures.

```php
<?php
// If-Else Control Structure
$age = 25;
if ($age >= 18) {
    echo "You are an adult.<br>";
} else {
    echo "You are a minor.<br>";
}

// Switch-Case Control Structure
$day = "Monday";
switch ($day) {
    case "Monday":
        echo "It's Monday! Start of the week.<br>";
        break;
    case "Friday":
        echo "It's Friday! Almost weekend.<br>";
        break;
    default:
        echo "It's neither Monday nor Friday.<br>";
}

// While Loop Control Structure
$count = 1;
echo "Numbers using While Loop: ";
while ($count <= 5) {
    echo $count . " ";
    $count++;
}
echo "<br>";

// For Loop Control Structure
echo "Numbers using For Loop: ";
for ($i = 1; $i <= 5; $i++) {
    echo $i . " ";
}
echo "<br>";

// Foreach Loop Control Structure
$colors = array("Red", "Green", "Blue");
echo "Colors using Foreach Loop: ";
foreach ($colors as $color) {
    echo $color . " ";
}
echo "<br>";
?>
```
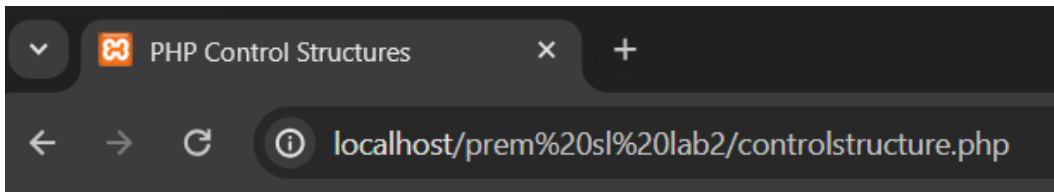
Output:

You are an adult.
It's Monday! Start of the week.
Numbers using While Loop: 1 2 3 4 5
Numbers using For Loop: 1 2 3 4 5
Colors using Foreach Loop: Red Green Blue

14. Write a PHP program to implement Form Handling using Super Global.

```php
<!DOCTYPE html>
<html>
<head>
   <title>Super Global</title>
</head>
<body>
<h2>Form Handling using Super Global</h2>

<form method="POST" action="">
   Name: <input type="text" name="name"><br><br>
   Email: <input type="email" name="email"><br><br>
   <input type="submit" name="submit" value="Submit">
</form>

<?php
if ($_SERVER["REQUEST_METHOD"] == "POST") {
   // Retrieving form data using $_POST superglobal
   $name = $_POST['name'];
   $email = $_POST['email'];

   // Validate the input (for demonstration purpose only)
   if (!empty($name) && !empty($email)) {
      echo "<h3>Form Submitted Successfully</h3>";
      echo "Name: " . $name . "<br>";
      echo "Email: " . $email . "<br>";
   } else {
      echo "<h3>Please fill in all fields</h3>";
   }
}
?>
</body>
</html>
```
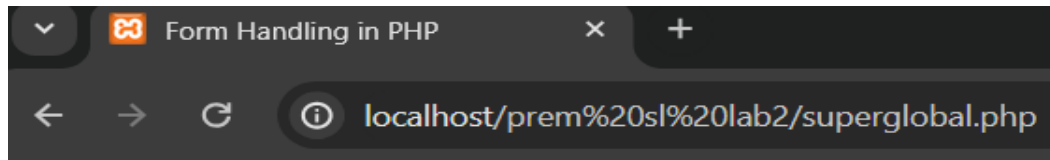
Output:

15. Write a PHP program to implement date () function.

```php
<?php
echo "<p>Current Date and Time: " . date("Y-m-d H:i:s") . "</p>";

echo "<p>Current Date: " . date("d/m/Y") . "</p>";
echo "<p>Current Time: " . date("h:i:sa") . "</p>";

echo "<p>Today is: " . date("l") . "</p>";
echo "<p>Timezone: " . date_default_timezone_get() . "</p>";

date_default_timezone_set("America/New_York");
echo "<p>Date and Time in New York: " . date("Y-m-d H:i:s") . "</p>";
?>
```

Output:
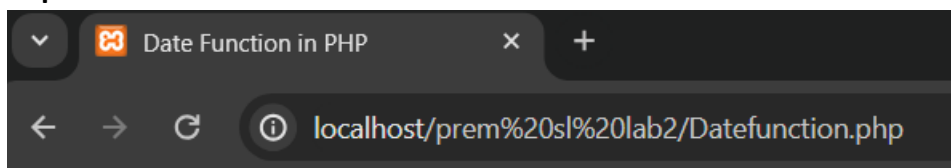
Current Date and Time

Current Date and Time: 2024-03-27 18:39:10

Current Date: 27/03/2024

Current Time: 06:39:10pm

Today is: Wednesday

Timezone: Europe/Berlin

Date and Time in New York: 2024-03-27 13:39:10

16. Write a PHP program to implement include and require file.

//Header.php

```
<body>
  <header>
    <h1>Header </h1>
    <nav>
      <ul>
        <li><a href="#">Home</a></li>
        <li><a href="#">Products</a></li>
        <li><a href="#">About Us</a></li>
        <li><a href="#">Contact Us</a></li>
      </ul>
    </nav>
  </header>
</body>
```

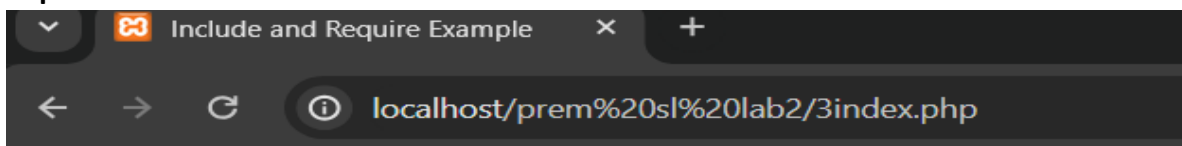**//Footer.php**
```
<body>
<footer>
    <p>&copy; 2024 Our Website. All rights reserved.</p>
  </footer>
</body>
```

//Index.php
```
<?php
  // Include header file
  include 'header.php';
?>
<main>
  <h2>Welcome to Our Website</h2>
</main>
<?php
  // Require footer file
  require 'footer.php';
?>
```
Output:

17. Write a PHP program to implement File handling.

```php
<?php
$filename = "prem.txt";

$file = fopen($filename, "w") or die("Unable to open file!");

$text = "Hello, I am Prem Kathayat.";
fwrite($file, $text);

fclose($file);

$file = fopen($filename, "r") or die("Unable to open file!");

echo "Contents of $filename:<br>";
while (!feof($file)) {
    echo fgets($file) . "<br>";
}

// Close the file
fclose($file);
?>
```

Output:

Contents of prem.txt:
Hello, I am Prem Kathayat.

18. Write a PHP program to implement File uploading.

```html
<body>
<h2>Upload a File</h2>

<form action="" method="post" enctype="multipart/form-data">
    <input type="file" name="fileToUpload" id="fileToUpload">
    <input type="submit" value="Upload File" name="submit">
</form>

</body>
</html>
```
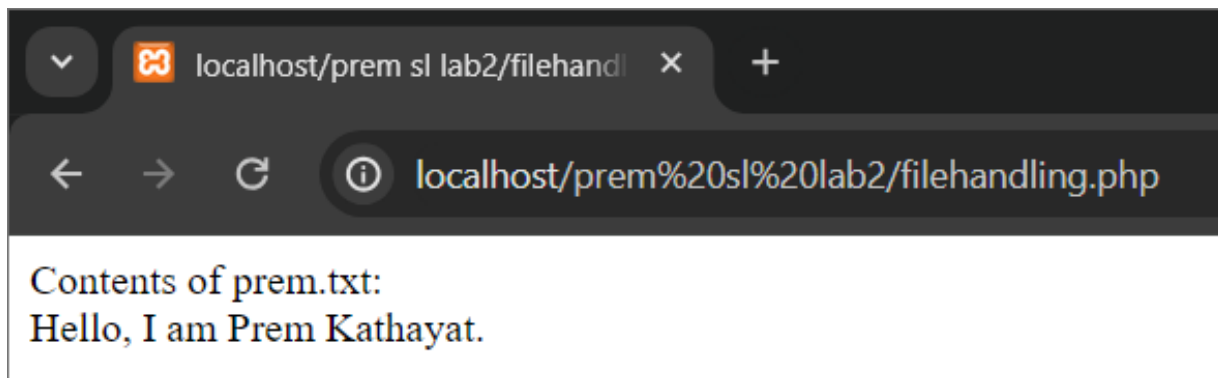
```php
<?php
if(isset($_POST["submit"])) {
    $targetDirectory = "uploads/";
```

```php
$fileName = basename($_FILES["fileToUpload"]["name"]);
$targetFilePath = $targetDirectory . $fileName;
$fileType = pathinfo($targetFilePath, PATHINFO_EXTENSION);

$allowTypes = array('jpg', 'jpeg', 'png', 'gif', 'pdf');

if(in_array($fileType, $allowTypes)) {
    if(move_uploaded_file($_FILES["fileToUpload"]["tmp_name"], $targetFilePath)) {
        echo "The file ".$fileName. " has been uploaded.";
    } else {
        echo "Sorry, there was an error uploading your file.";
    }
} else {
    echo "Sorry, only JPG, JPEG, PNG, GIF, and PDF files are allowed.";
}
}
?>
```

Output:
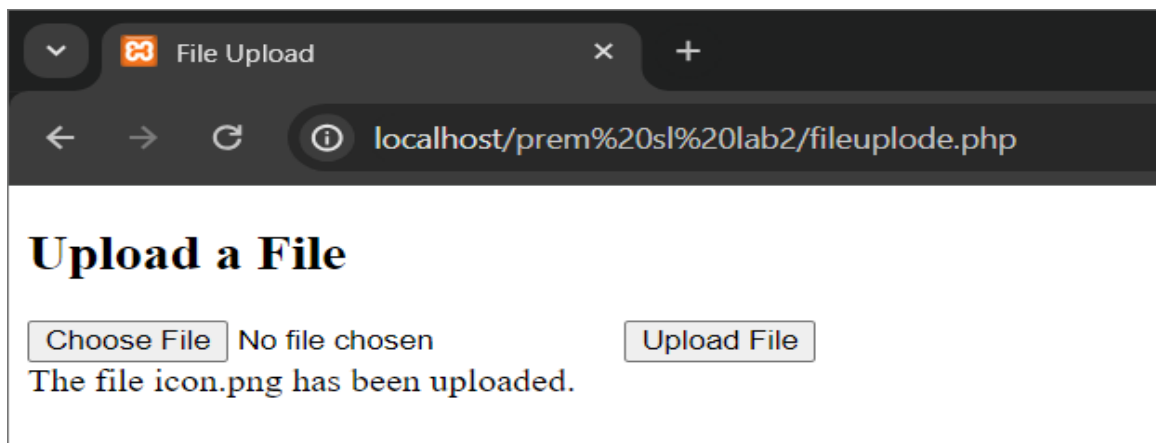
20. Write a PHP program to implement Cookies and Sessions.

```php
<?php
// Start the session
session_start();

$cookie_name = "user";
$cookie_value = "prem kathayat";
setcookie($cookie_name, $cookie_value, time() + 3600, "/");

if(!isset($_COOKIE[$cookie_name])) {
    echo "Cookie named '" . $cookie_name . "' is not set!";
} else {
    echo "Cookie '" . $cookie_name . "' is set!<br>";
    echo "Value is: " . $_COOKIE[$cookie_name] . "<br>";
}

// Set session variables
```
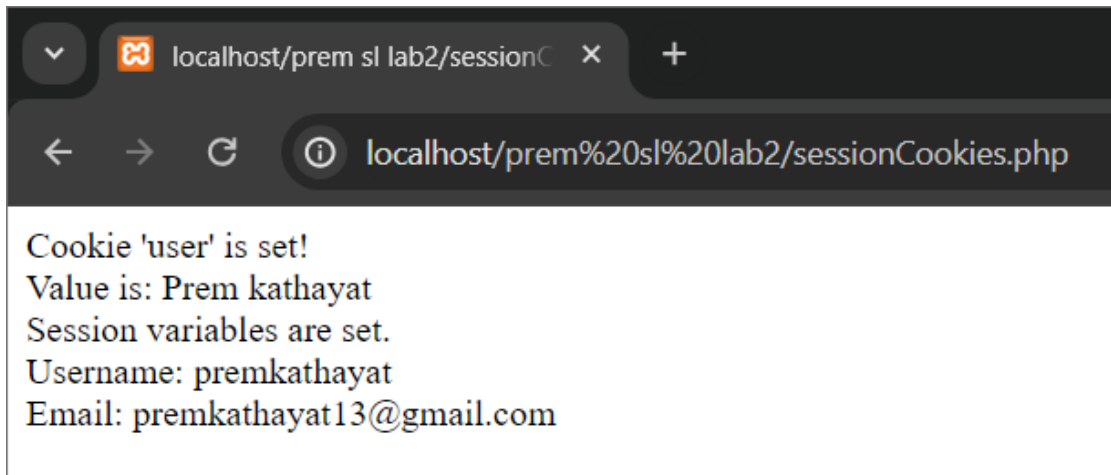
```php
$_SESSION["username"] = "premkathayat";
$_SESSION["email"] = "premkathayat13@gmail.com";

echo "Session variables are set.";

// Display session variables
echo "<br>Username: " . $_SESSION["username"];
echo "<br>Email: " . $_SESSION["email"];
?>
```

Output:

21. Write a PHP program to connect php source code to a mysql database.

```php
<?php
$servername = "localhost"; // Replace with your MySQL server hostname
$username = "root"; // Replace with your MySQL username
$password = ""; // Replace with your MySQL password
$database = "Lab2"; // Replace with the name of your MySQL database

// Create connection
$conn = new mysqli($servername, $username, $password, $database);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
} else {
    echo "Connected successfully!<br>";
}
// Close connection
$conn->close();
?>
```

Output:

localhost/prem sl lab2/connecti ✕ +

← → C ⓘ localhost/prem%20sl%20lab2/connection.php

Connected successfully!
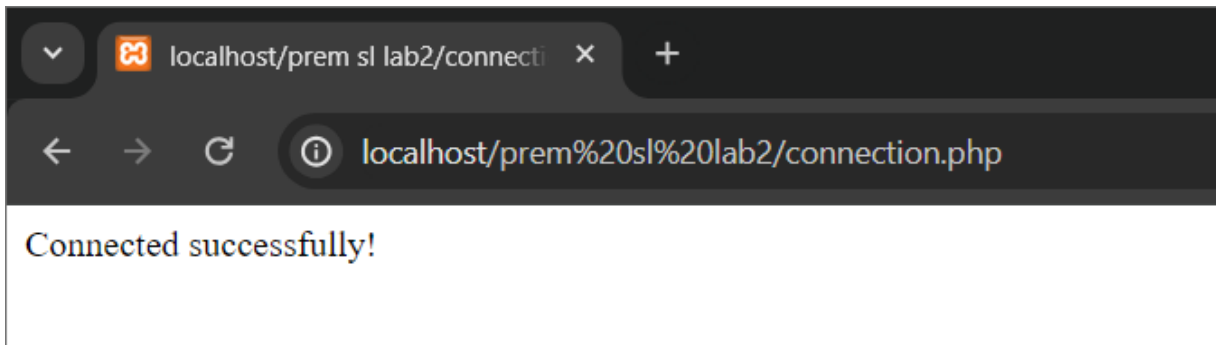
22. Write a PHP program to create a table and insert into table in a database.

```php
<?php
include ('connection.php');
$sql_create_table = "CREATE TABLE IF NOT EXISTS student (
    id INT(6) UNSIGNED AUTO_INCREMENT PRIMARY KEY,
    firstname VARCHAR(30) NOT NULL,
    lastname VARCHAR(30) NOT NULL,
    email VARCHAR(50)
)";
if ($conn->query($sql_create_table) === TRUE) {
    echo "Table 'student' created successfully!<br>";
} else {
    echo "Error creating table: " . $conn->error . "<br>";
}
$sql_insert_data = "INSERT INTO student (firstname, lastname, email)
VALUES ('Ram', 'Bhatta', 'rambhatta12@gmail.com'),
    ('prem', 'kathayat', 'premkathayat13@gmail.com'),
    ('Sita', 'KC', 'sitakc11@gmail.com')";
if ($conn->query($sql_insert_data) === TRUE) {
    echo "Data inserted successfully!<br>";
} else {
    echo "Error inserting data: " . $conn->error . "<br>";
}
$conn->close();
?>
```
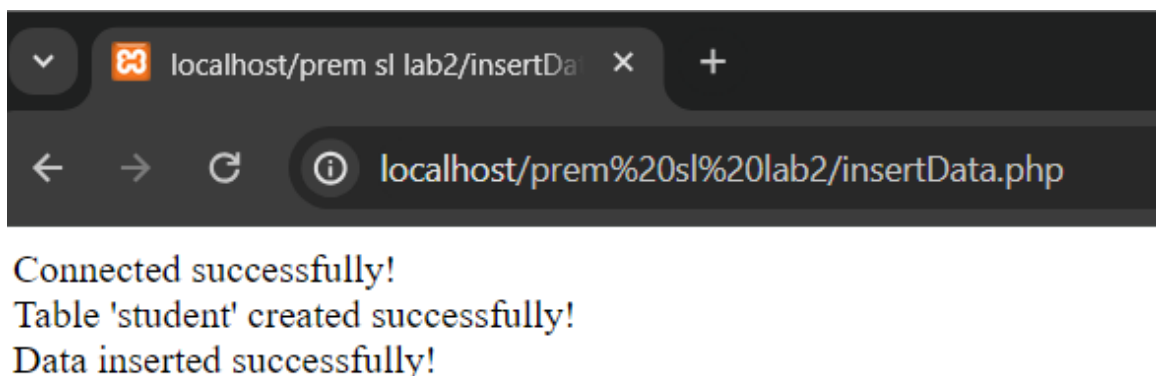
Output:

localhost/prem sl lab2/insertDa ✕ +

← → C ⓘ localhost/prem%20sl%20lab2/insertData.php

Connected successfully!
Table 'student' created successfully!
Data inserted successfully!

23. Write a PHP program to implement CRUD operations related with mysql.

```php
<?php
include ('connection.php');
$sql_create = "INSERT INTO student (firstname, lastname, email) VALUES ('Shyam', 'Joshi',
'shyam134@gmail.com')";
if ($conn->query($sql_create) === TRUE) {
   echo "New record created successfully!<br>";
} else {
   echo "Error: " . $sql_create . "<br>" . $conn->error;
}
$sql_read = "SELECT * FROM student";
$result = $conn->query($sql_read);
if ($result->num_rows > 0) {
   echo "<br>Records retrieved successfully:<br>";
   while($row = $result->fetch_assoc()) {
      echo "ID: " . $row["id"]. " - Name: " . $row["firstname"]. " " . $row["lastname"]. " - Email: " .
$row["email"]. "<br>";
   }
} else {
   echo "<br>No records found.";
}
$sql_update = "UPDATE student SET email='premupdatedemail@gmail.com' WHERE firstname='Prem'";
if ($conn->query($sql_update) === TRUE) {
   echo "<br>Record updated successfully!<br>";
} else {
   echo "<br>Error updating record: " . $conn->error;
}
$sql_delete = "DELETE FROM student WHERE firstname='Shyam'";
if ($conn->query($sql_delete) === TRUE) {
   echo "Record deleted successfully!<br>";
} else {
   echo "Error deleting record: " . $conn->error;
}
$conn->close();
?>
```

Output:
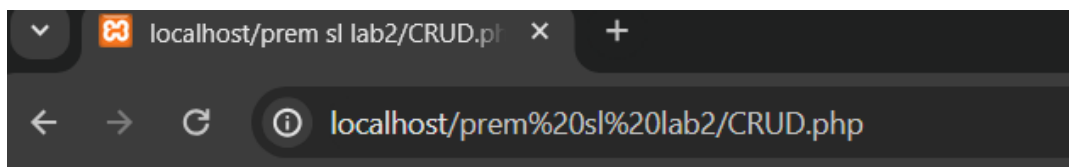
Connected successfully!
New record created successfully!

Records retrieved successfully:
ID: 1 - Name: Ram Bhatta - Email: rambhatta12@gmail.com
ID: 2 - Name: prem kathayat - Email: premkathayat13@gmail.com
ID: 3 - Name: Sita KC - Email: sitakc11@gmail.com
ID: 4 - Name: Shyam Joshi - Email: shyam134@gmail.com

Record updated successfully!
Record deleted successfully!

24. Write a PHP program to implement Aggregate Functions(sum,avg,count).

```php
<?php
// Database connection parameters
$servername = "localhost";
$username = "root";
$password = "";
$database = "Lab2";

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

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
$sql_sum = "SELECT SUM(salary) AS total_salary FROM employees";
$result_sum = $conn->query($sql_sum);
$row_sum = $result_sum->fetch_assoc();
$total_salary = $row_sum["total_salary"];
echo "Total Salary: " . $total_salary . "<br>";

$sql_avg = "SELECT AVG(salary) AS avg_salary FROM employees";
$result_avg = $conn->query($sql_avg);
$row_avg = $result_avg->fetch_assoc();
$avg_salary = $row_avg["avg_salary"];
echo "Average Salary: " . $avg_salary . "<br>";

$sql_count = "SELECT COUNT(*) AS total_employees FROM employees";
$result_count = $conn->query($sql_count);
$row_count = $result_count->fetch_assoc();
$total_employees = $row_count["total_employees"];
echo "Total Employees: " . $total_employees . "<br>";
$conn->close();
?>
```
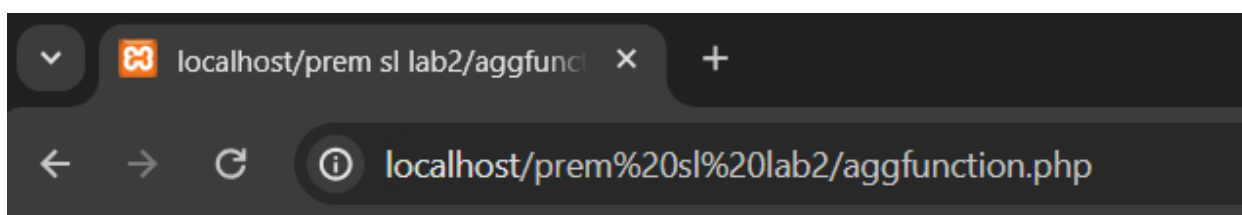
Output:

localhost/prem sl lab2/aggfunc ☒ +

← → C ⓘ localhost/prem%20sl%20lab2/aggfunction.php

Total Salary: 59000
Average Salary: 11800.0000
Total Employees: 5

25. Write a PHP program to implement MySQL orderby and groupby clause.

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$database = "Lab2";

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

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

// ORDER BY clause
$sql_order_by = "SELECT * FROM employees ORDER BY salary DESC";
$result_order_by = $conn->query($sql_order_by);

if ($result_order_by->num_rows > 0) {
    echo "Employees sorted by salary in descending order:<br>";
    while($row_order_by = $result_order_by->fetch_assoc()) {
        echo "ID: " . $row_order_by["eid"]. " - Name: " . $row_order_by["name"]. " - Salary: " .
$row_order_by["salary"]. "<br>";
    }
} else {
    echo "No employees found.";
}

// GROUP BY clause
$sql_group_by = "SELECT department, COUNT(*) AS num_employees FROM employees GROUP BY
department";
$result_group_by = $conn->query($sql_group_by);

if ($result_group_by->num_rows > 0) {
    echo "<br>Number of employees in each department:<br>";
    while($row_group_by = $result_group_by->fetch_assoc()) {
        echo "Department: " . $row_group_by["department"]. " - Number of Employees: " .
$row_group_by["num_employees"]. "<br>";
    }
} else {
    echo "<br>No departments found.";
}

// Close connection
$conn->close();
?>
```
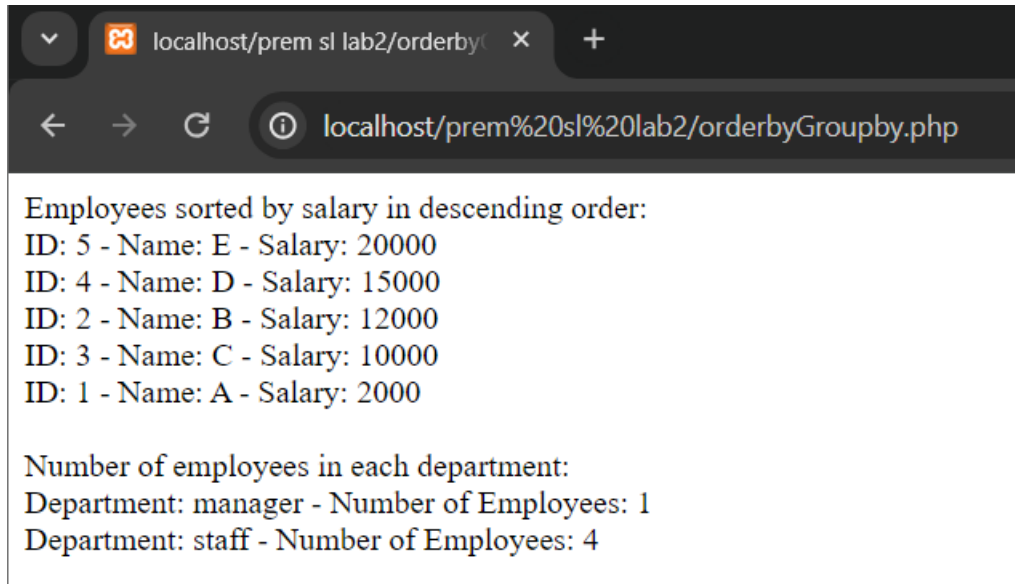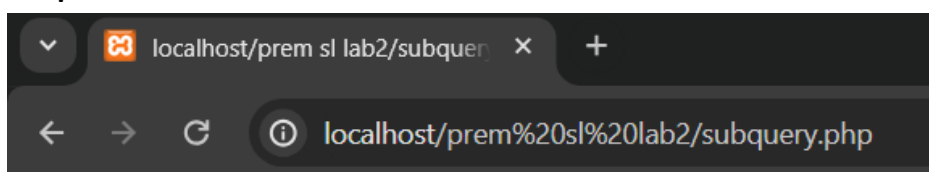
Output:

Employees sorted by salary in descending order:
ID: 5 - Name: E - Salary: 20000
ID: 4 - Name: D - Salary: 15000
ID: 2 - Name: B - Salary: 12000
ID: 3 - Name: C - Salary: 10000
ID: 1 - Name: A - Salary: 2000

Number of employees in each department:
Department: manager - Number of Employees: 1
Department: staff - Number of Employees: 4

26. Write a PHP program to implement MySQL sub queries.

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$database = "Lab2";

$conn = new mysqli($servername, $username, $password, $database);
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
$sql_subquery = "SELECT * FROM employees WHERE salary > (SELECT AVG(salary) FROM employees)";
$result_subquery = $conn->query($sql_subquery);

if ($result_subquery->num_rows > 0) {
    echo "Employees with salary higher than the average salary:<br>";
    while($row_subquery = $result_subquery->fetch_assoc()) {
        echo "ID: " . $row_subquery["eid"]. " - Name: " . $row_subquery["name"]. " - Salary: " .
$row_subquery["salary"]. "<br>";
    }
} else {
    echo "No employees found with salary higher than the average.";
}
$conn->close();
?>
```
Output:

Employees with salary higher than the average salary:
ID: 2 - Name: B - Salary: 12000
ID: 4 - Name: D - Salary: 15000
ID: 5 - Name: E - Salary: 20000

**27. Write a PHP program to implement MySQL Joins.**

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$database = "Lab2";

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

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
// INNER JOIN
$sql_inner_join = "SELECT employees.eid, employees.name, department.dname
            FROM employees
            INNER JOIN department ON employees.did = department.eid";
$result_inner_join = $conn->query($sql_inner_join);

if ($result_inner_join->num_rows > 0) {
    echo "Inner Join Results:<br>";
    while($row_inner_join = $result_inner_join->fetch_assoc()) {
        echo "ID: " . $row_inner_join["eid"]. " - Name: " . $row_inner_join["name"]. " - Department: " .
$row_inner_join["dname"]. "<br>";
    }
} else {
    echo "No results found.";
}
// Close connection
$conn->close();
?>
```
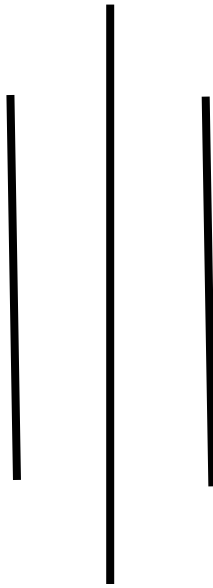
Output:
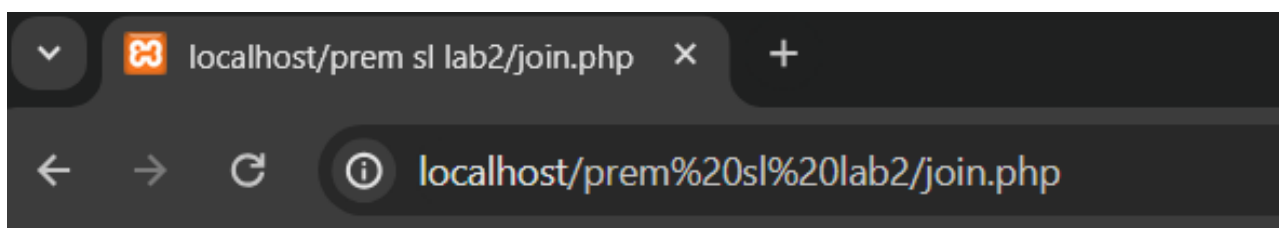
Inner Join Results:
ID: 1 - Name: A - Department: staff
ID: 2 - Name: B - Department: manager
ID: 3 - Name: C - Department: staff
ID: 4 - Name: D - Department: staff
ID: 5 - Name: E - Department: staff

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Lokanthali-16, Bhaktapur

Lab Report-1 on SL(Client-Side Scripting)

Submitted By:

Prem Kathayat

Roll No: 19

Program: BCA (4th *Semester*)

Subject: SL (*Scripting Language*)

Submitted To:

Mr. Dipendra Rai

Samriddhi College
[T.U. Affiliated]
Lokanthali-16, Bhaktapur

Samriddhi
Estd. 2013 AD
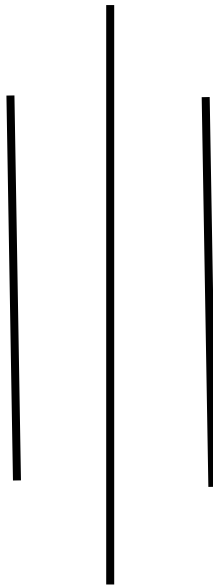
Lab Report-2 on SL(Server-Side Scripting Language)

Submitted By: **Submitted To:**

Prem Kathayat   **Mr. Dipendra Rai**

 Roll No: 19

Program: BCA (4th *Semester*)

Subject: SL (*Scripting Language*)