

1.Create a HTML page with Java Script (built in functions-(date, display, create date object etc.), user defined Functions- (passing parameter, recursive function))

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Date and Recursive Function Example</title>
<script>
    function displayCurrentDateTime() {
        let currentDate = new Date();
        let dateTimeString = currentDate.toLocaleString();
        document.getElementById("datetime").innerText = dateTimeString;
    }
    function factorial(n) {
        if (n === 0 || n === 1) {
            return 1;
        } else {
            return n * factorial(n - 1);
        }
    }
    function calculateFactorial() {
        let num = parseInt(document.getElementById("numInput").value);
        let result = factorial(num);
        document.getElementById("factorialResult").innerText = `Factorial of ${num} is ${result}`;
    }
</script>
</head>
<body>
    <h1>Date and Recursive Function Example</h1>
    <p>Click the button below to display the current date and time:</p>
    <button onclick="displayCurrentDateTime()">Display Date and Time</button>
    <p id="datetime"></p>
    <hr>
    <h2>Factorial Calculation</h2>
    <p>Enter a number to calculate its factorial:</p>
    <form onsubmit="event.preventDefault(); calculateFactorial();">
        <input type="number" id="numInput" required>
        <button type="submit">Calculate Factorial</button>
    </form>
    <p id="factorialResult"></p>
</body>
</html>
```

Date and Recursive Function Example

Click the button below to display the current date and time:

Display Date and Time

1/7/2025, 12:43:03 PM

Factorial Calculation

Enter a number to calculate its factorial:

5 Calculate Factorial

Factorial of 5 is 120

2: Create simple JavaScript programs.(Add two numbers, Factorial of a given no , Check if a string is palindrome or not)

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Add Two Numbers - JavaScript</title>
<script>
    function addNumbers() {
        let num1 = parseInt(document.getElementById("num1").value);
        let num2 = parseInt(document.getElementById("num2").value);
        let sum = num1 + num2;
        document.getElementById("result").innerText = `Sum: ${sum}`;
    }
</script>
</head>
<body>
    <h2>Add Two Numbers</h2>
    <label for="num1">Number 1:</label>
    <input type="number" id="num1"><br><br>
    <label for="num2">Number 2:</label>
    <input type="number" id="num2"><br><br>
    <button onclick="addNumbers()">Add</button><br><br>
    <p id="result"></p>
</body>
</html>
```

Add Two Numbers

Number 1:

Number 2:

Sum: 300

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Factorial of a Number - JavaScript</title>
<script>
    function calculateFactorial() {
        let num = parseInt(document.getElementById("num").value);
        let result = factorial(num);
        document.getElementById("result").innerText = `Factorial of ${num} is ${result}`;
    }

    function factorial(n) {
        if (n === 0 || n === 1) {
            return 1;
        } else {
            return n * factorial(n - 1);
        }
    }
</script>
</head>
<body>
    <h2>Factorial of a Number</h2>
    <label for="num">Enter a number:</label>
```

```
<input type="number" id="num"><br><br>
<button onclick="calculateFactorial()">Calculate Factorial</button><br><br>
<p id="result"></p>
</body>
</html>
```

Factorial of a Number

Enter a number:

Factorial of 10 is 3628800

3. Check if a String is Palindrome (JavaScript)

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Palindrome Check - JavaScript</title>
<script>
function checkPalindrome() {
    let inputString = document.getElementById("inputString").value;
    let result = isPalindrome(inputString);
    if (result) {
        document.getElementById("result").innerText = `${inputString} is a palindrome.`;
    } else {
        document.getElementById("result").innerText = `${inputString} is not a palindrome.`;
    }
}
function isPalindrome(str) {
    str = str.toLowerCase().replace(/[^a-zA-Z0-9]/g, ""); // Remove non-alphanumeric characters and convert to lowercase
    let len = str.length;
    for (let i = 0; i < len/2; i++) {
        if (str[i] !== str[len - 1 - i]) {
            return false;
        }
    }
    return true;
}
</script>
</head>
<body>
<h2>Palindrome Check</h2>
<label for="inputString">Enter a string:</label>
<input type="text" id="inputString"><br><br>
<button onclick="checkPalindrome()">Check Palindrome</button><br><br>
<p id="result"></p>
</body>
</html>
```

Palindrome Check

Enter a string:

555 is a palindrome.

3: Write a PHP program to demonstrate simple tasks (such as: to display 'hello') and basic PHP syntax (includes defining variable, constant, data type and basic arithmetic Operations with operators) .

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>PHP Simple Tasks and Syntax</title>
</head>
<body>
    <h1>PHP Simple Tasks and Syntax</h1>
    <?php
    echo "<p>Hello, World!</p>";
    $name = "Debasish Barman";
    $age = 21;
    $height = 171;
    $isStudent = true;
    echo "<p>Name: " . $name . "</p>";
    echo "<p>Age: " . $age . "</p>";
    echo "<p>Height: " . $height . " cm</p>";
    echo "<p>Is Student: " . ($isStudent ? 'Yes' : 'No') . "</p>";
    define('PI', 3.14159);
    define('GREETING', 'Welcome to PHP!');
    echo "<p>Value of PI: " . PI . "</p>";
    echo "<p>Greeting Message: " . GREETING . "</p>";
    $num1 = 10;
    $num2 = 5;
    echo "<h2>Arithmetic Operations</h2>";
    echo "<p>Addition: " . ($num1 + $num2) . "</p>";
    echo "<p>Subtraction: " . ($num1 - $num2) . "</p>";
    echo "<p>Multiplication: " . ($num1 * $num2) . "</p>";
    echo "<p>Division: " . ($num1 / $num2) . "</p>";
    echo "<p>Modulus: " . ($num1 % $num2) . "</p>";
    ?>
</body>
</html>
```

PHP Simple Tasks and Syntax

Hello, World!

Name: Debasish Barman

Age: 21

Height: 171 cm

Is Student: Yes

Value of PI: 3.14159

Greeting Message: Welcome to PHP!

Arithmetic Operations

Addition: 15

Subtraction: 5

Multiplication: 50

Division: 2

Modulus: 0

4. Write a PHP program to demonstrate condition/decision making and loop statement

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>PHP Condition and Loop Statements</title>
</head>
<body>
    <h1>PHP Condition and Loop Statements</h1>
    <?php
    $num = 15;
    echo "<h2>Condition/Decision Making</h2>";
    if ($num > 10) {
        echo "<p>$num is greater than 10.</p>";
    } elseif ($num == 10) {
        echo "<p>$num is equal to 10.</p>";
    } else {
        echo "<p>$num is less than 10.</p>";
    }
    echo "<h2>Loop Statements</h2>";
    echo "<h3>While Loop:</h3>";
    $i = 1;
    while ($i <= 5) {
        echo "Iteration $i<br>";
        $i++;
    }
    echo "<h3>For Loop:</h3>";
    for ($j = 1; $j <= 5; $j++) {
        echo "Iteration $j<br>";
    }
    echo "<h3>Do-While Loop:</h3>";
    $k = 1;
    do {
        echo "Iteration $k<br>";
        $k++;
    } while ($k <= 5);
    ?>
</body>
</html>

```

PHP Condition and Loop Statements

Condition/Decision Making

15 is greater than 10.

Loop Statements

While Loop:

Iteration 1
Iteration 2
Iteration 3
Iteration 4
Iteration 5

For Loop:

Iteration 1
Iteration 2
Iteration 3
Iteration 4
Iteration 5

Do-While Loop:

Iteration 1
Iteration 2
Iteration 3
Iteration 4
Iteration 5

5: Write a PHP program to demonstrate mixing of decisions and looping statements with HTML script.

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>PHP Mixing Decisions and Looping with HTML</title>
  <style>
    .odd {
      background-color: #f0f0f0;
    }
    .even {
      background-color: #cccccc;
    }
  </style>
</head>
<body>
  <h1>PHP Mixing Decisions and Looping with HTML</h1>
  <?php
  $numbers = [1, 2, 3, 4, 5];
  foreach ($numbers as $num) {
    if ($num % 2 == 0) {
      $class = 'even';
    } else {
      $class = 'odd';
    }
    echo "<div class=\"$class\">Number: $num</div>";
  }
  ?>
</body>
</html>

```

PHP Mixing Decisions and Looping with HTML

```

Number: 1
Number: 2
Number: 3
Number: 4
Number: 5

```

6: Write a PHP program to demonstrate call by value, call by reference and recursive function.

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>PHP Call by Value, Call by Reference, Recursive Function</title>
</head>
<body>
  <h1>PHP Call by Value, Call by Reference, Recursive Function</h1>
  <?php
  function incrementByValue($num) {
    $num += 10;
    echo "<p>Inside incrementByValue function: \$num = $num</p>";
  }
  $value = 5;
  echo "<p>Before calling incrementByValue function: \$value = $value</p>";
  incrementByValue($value);
  echo "<p>After calling incrementByValue function: \$value = $value</p>"; // $value remains unchanged
  function incrementByReference(&$num) {
    $num += 10;
    echo "<p>Inside incrementByReference function: \$num = $num</p>";
  }

```

```

$value = 5;
echo "<p>Before calling incrementByReference function: \$value = $value</p>";
incrementByReference($value);
echo "<p>After calling incrementByReference function: \$value = $value</p>"; // $value is modified
function factorial($n) {
    if ($n <= 1) {
        return 1;
    } else {
        return $n * factorial($n - 1);
    }
}
$num = 5;
echo "<p>Factorial of $num is " . factorial($num) . "</p>";
?>
</body>
</html>

```

PHP Call by Value, Call by Reference, Recursive Function

Before calling incrementByValue function: \$value = 5

Inside incrementByValue function: \$num = 15

After calling incrementByValue function: \$value = 5

Before calling incrementByReference function: \$value = 5

Inside incrementByReference function: \$num = 15

After calling incrementByReference function: \$value = 15

Factorial of 5 is 120

7. Write a PHP Program for String Creating and accessing, String Searching & Replacing String, Formatting String and demonstrating String Related Library function.

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>PHP String Operations</title>
</head>
<body>
    <h1>PHP String Operations</h1>
    <?php
        $str1 = "Hello, World!";
        $str2 = 'PHP is awesome!';
        echo "<h2>Creating and Accessing Strings</h2>";
        echo "<p>String 1: $str1</p>";
        echo "<p>String 2: $str2</p>";
        $len1 = strlen($str1);
        $len2 = strlen($str2);
        echo "<p>Length of String 1: $len1</p>";
        echo "<p>Length of String 2: $len2</p>";
        $concatenatedStr = $str1 . ' ' . $str2;
        echo "<p>Concatenated String: $concatenatedStr</p>";
        $searchStr = "PHP";
        $replaceStr = "JavaScript";
        $newStr = str_replace($searchStr, $replaceStr, $concatenatedStr);
        echo "<h2>String Searching and Replacing</h2>";
        echo "<p>Original String: $concatenatedStr</p>";
        echo "<p>After replacing '$searchStr' with '$replaceStr': $newStr</p>";
    }

```

```

$price = 49.99;
echo "<h2>Formatting Strings</h2>";
echo "<p>Price: $" . number_format($price, 2) . "</p>";
echo "<h2>String Related Library Functions</h2>";
$uppercaseStr = strtoupper($str1);
$lowercaseStr = strtolower($str2);
echo "<p>Uppercase of '$str1': $uppercaseStr</p>";
echo "<p>Lowercase of '$str2': $lowercaseStr</p>";
$strWithWhitespace = " Trim Test ";
$trimmedStr = trim($strWithWhitespace);
echo "<p>Original String with whitespace: '$strWithWhitespace'</p>";
echo "<p>Trimmed String: '$trimmedStr'</p>";
$searchSubstring = "World";
$pos = strpos($str1, $searchSubstring);
if ($pos !== false) {
    echo "<p>Position of '$searchSubstring' in '$str1': $pos</p>";
} else {
    echo "<p>'$searchSubstring' not found in '$str1'</p>";
}
$repeatStr = str_repeat('PHP ', 3);
echo "<p>Repeated String: $repeatStr</p>";
?>
</body>
</html>

```

PHP String Operations

Creating and Accessing Strings

String 1: Hello, World!

String 2: PHP is awesome!

Length of String 1: 13

Length of String 2: 15

Concatenated String: Hello, World! PHP is awesome!

String Searching and Replacing

Original String: Hello, World! PHP is awesome!

After replacing 'PHP' with 'JavaScript': Hello, World! JavaScript is awesome!

Formatting Strings

Price: \$49.99

String Related Library Functions

Uppercase of 'Hello, World!': HELLO, WORLD!

Lowercase of 'PHP is awesome!': php is awesome!

Original String with whitespace: ' Trim Test '

Trimmed String: 'Trim Test'

Position of 'World' in 'Hello, World!': 7

Repeated String: PHP PHP PHP

8: Write a PHP program for creating index based and associative arrays. Also demonstrate accessing the array and element looping with Index based array

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>PHP Arrays</title>
</head>
<body>
  <h1>PHP Arrays</h1>
  <?php
    $indexArray = array("Apple", "Banana", "Cherry", "Date", "Fig");
    $assocArray = array(
      "fruit1" => "Apple",
      "fruit2" => "Banana",
      "fruit3" => "Cherry",
      "fruit4" => "Date",
      "fruit5" => "Fig"
    );
    echo "<h2>Accessing Index Based Array</h2>";
    echo "<p>First element: " . $indexArray[0] . "</p>";
    echo "<p>Third element: " . $indexArray[2] . "</p>";
    echo "<h2>Looping through Index Based Array</h2>";
    echo "<ul>";
    foreach ($indexArray as $fruit) {
      echo "<li>$fruit</li>";
    }
    echo "</ul>";
  ?>
</body>
</html>
```

PHP Arrays

Accessing Index Based Array

First element: Apple

Third element: Cherry

Looping through Index Based Array

- Apple
- Banana
- Cherry
- Date
- Fig

9: Write a PHP Program to demonstrate associative arrays using each () and for each() and a few related Library functions. Enhance the array program by including decision and loop statements.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>PHP Associative Arrays and Functions</title>
</head>
<body>
  <h1>PHP Associative Arrays and Functions</h1>
```

```

<?php
$studentScores = array(
    "Debasish" => 85,
    "Sayan" => 92,
    "Srijit" => 78,
    "Subhadeep" => 88,
    "Rounak" => 95
);
echo "<h2>Demonstrating each() Function</h2>";
reset($studentScores); // Resetting array pointer
while ($pair = each($studentScores)) {
    echo "<p>{$pair['key']} scored {$pair['value']} marks.</p>";
}
echo "<h2>Demonstrating foreach() Loop</h2>";
foreach ($studentScores as $name => $score) {
    echo "<p>{$name} scored {$score} marks.</p>";
}
echo "<h2>Using Library Functions</h2>";
$numStudents = count($studentScores);
echo "<p>Number of students: $numStudents</p>";
$keyToCheck = "Doe";
if (array_key_exists($keyToCheck, $studentScores)) {
    echo "<p>{$keyToCheck} exists in the array.</p>";
} else {
    echo "<p>{$keyToCheck} does not exist in the array.</p>";
}
$maxScore = max($studentScores);
echo "<p>Maximum score: $maxScore</p>";
$totalScore = array_sum($studentScores);
$averageScore = $totalScore / $numStudents;
echo "<p>Average score: " . round($averageScore, 2) . "</p>";
echo "<h2>Using Decision and Loop Statements</h2>";
$passingScore = 80;
foreach ($studentScores as $name => $score) {
    if ($score >= $passingScore) {
        echo "<p>{$name} has passed with a score of $score.</p>";
    } else {
        echo "<p>{$name} has failed with a score of $score.</p>";
    }
}
?>
</body>
</html>

```

PHP Associative Arrays and Functions

Demonstrating foreach() Loop	Using Library Functions	Using Decision and Loop Statements
Debasish scored 85 marks.	Number of students: 5	Debasish has passed with a score of 85.
Sayan scored 92 marks.	Doe does not exist in the array.	Sayan has passed with a score of 92.
Srijit scored 78 marks.	Maximum score: 95	Srijit has failed with a score of 78.
Subhadeep scored 88 marks.	Average score: 87.6	Subhadeep has passed with a score of 88.
Rounak scored 95 marks.		Rounak has passed with a score of 95.

10: Write a PHP Program to demonstrate Capturing Form and to handle Data Dealing with Multi-value field, Match, Search and Split function.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>PHP Form Handling</title>
</head>
<body>
    <h1>PHP Form Handling</h1>
    <form action="process_form.php" method="post">
        <label for="name">Name:</label>
        <input type="text" id="name" name="name" required><br><br>
        <label for="email">Email:</label>
        <input type="email" id="email" name="email" required><br><br>
        <label for="interests">Interests:</label><br>
        <input type="checkbox" id="interest1" name="interests[]" value="Sports">
        <label for="interest1">Sports</label><br>
        <input type="checkbox" id="interest2" name="interests[]" value="Music">
        <label for="interest2">Music</label><br>
        <input type="checkbox" id="interest3" name="interests[]" value="Books">
        <label for="interest3">Books</label><br><br>
        <label for="message">Message:</label><br>
        <textarea id="message" name="message" rows="4" cols="50"></textarea><br><br>
        <input type="submit" value="Submit">
    </form>
</body>
</html>
```

//-----Processing PHP File-----//

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>PHP Form Processing</title>
</head>
<body>
    <h1>PHP Form Processing</h1>
    <?php
    $name = $_POST['name'];
    $email = $_POST['email'];
    $interests = isset($_POST['interests']) ? $_POST['interests'] : array();
    $message = $_POST['message'];
    echo "<h2>Form Data:</h2>";
    echo "<p>Name: $name</p>";
    echo "<p>Email: $email</p>";
    if (!empty($interests)) {
        echo "<p>Interests:</p>";
        echo "<ul>";
        foreach ($interests as $interest) {
            echo "<li>$interest</li>";
        }
        echo "</ul>";
    } else {
        echo "<p>No interests selected.</p>";
    }
    echo "<p>Message:</p>";
    echo "<p>$message</p>";
    echo "<h2>Using preg_match</h2>";
    $pattern = "[0-9]+/";
```

```

$str = "Hello 123 World";
if (preg_match($pattern, $str, $matches)) {
    echo "<p>Numbers found in '$str': " . implode(" ", $matches) . "</p>";
} else {
    echo "<p>No numbers found in '$str'.</p>";
}
echo "<h2>Using preg_split</h2>";
$str = "apple, banana, cherry, date";
$array = preg_split("/[\\s,]+/", $str);
echo "<p>Splitting '$str': " . implode(" ", $array) . "</p>";
?>
</body>
</html>

```

<h2>PHP Form Processing</h2> <h3>Form Data:</h3> <p>Name: Debasish Barman</p> <p>Email: mail4barman@gmail.com</p> <p>Interests:</p> <ul style="list-style-type: none"> Books <p>Message:</p> <p>I Love to read science-fiction books on my study leave.</p>	<h3>Using preg_match</h3> <p>Numbers found in 'Hello 123 World': 123</p> <h3>Using preg_split</h3> <p>Splitting 'apple, banana, cherry, date': apple, banana, cherry, date</p>
--	--

11: Write a PHP Program for Generating File uploaded form and redirecting a form after submission.

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>File Upload Form</title>
</head>
<body>
    <h1>File Upload Form</h1>
    <form action="11.php" method="post" enctype="multipart/form-data">
        <label for="file">Select File:</label>
        <input type="file" id="file" name="file" required><br><br>
        <input type="submit" value="Upload File">
    </form>
</body>
</html>

```

//-----Upload Handling PHP File-----//

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>File Upload Processing</title>
</head>
<body>
    <h1>File Upload Processing</h1>
    <?php

```

```

if ($_SERVER["REQUEST_METHOD"] == "POST" && isset($_FILES["file"])) {
    $uploadDir = "uploads/"; // Directory where uploaded files will be stored
    $uploadFile = $uploadDir . basename($_FILES["file"]["name"]); // Path to store uploaded file
    if (move_uploaded_file($_FILES["file"]["tmp_name"], $uploadFile)) {
        echo "<p>The file ". htmlspecialchars(basename($_FILES["file"]["name"])) . " has been uploaded.</p>";
        echo "<p><a href='upload_success.php'>Go to Upload Success Page</a></p>";
    } else {
        echo "<p>Sorry, there was an error uploading your file.</p>";
    }
}
?>
</body>
</html>

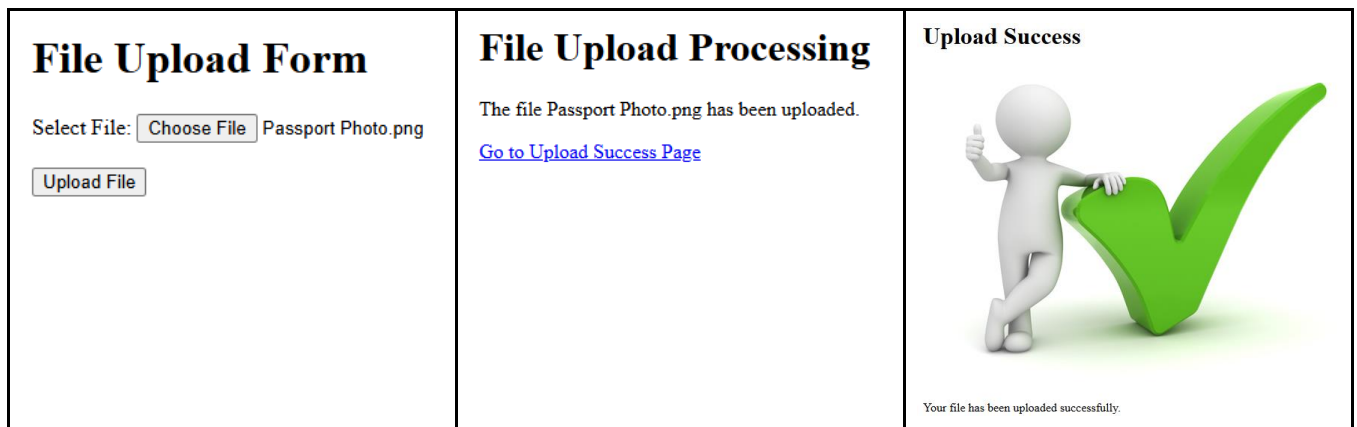
```

//-----UploadSuccess PHP File-----//

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Upload Success</title>
</head>
<body>
    <h1>Upload Success</h1>
    
    <p>Your file has been uploaded successfully.</p>
</body>
</html>

```



12: Write a PHP Program to demonstrate how to handle file & directory, Opening and closing a file, Copying, renaming and deleting a file, working with directories, Creating and deleting folder, File Uploading & Downloading.

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>File and Directory Operations</title>
</head>
<body>
    <h1>File and Directory Operations</h1>
    <?php
    $file = "sample.txt";
    $fileHandle = fopen($file, "r") or die("Unable to open file!");
    echo "<p>Opened file '$file' successfully.</p>";
    fclose($fileHandle);
    $sourceFile = "sample.txt";
    $destinationFile = "copied_sample.txt";
    if (copy($sourceFile, $destinationFile)) {

```

```

        echo "<p>File '$sourceFile' copied to '$destinationFile' successfully.</p>";
    } else {
        echo "<p>Failed to copy file '$sourceFile'.</p>";
    }
    $oldName = "copied_sample.txt";
    $newName = "renamed_sample.txt";
    if (rename($oldName, $newName)) {
        echo "<p>File '$oldName' renamed to '$newName' successfully.</p>";
    } else {
        echo "<p>Failed to rename file '$oldName'.</p>";
    }
    $fileToDelete = "renamed_sample.txt";
    if (unlink($fileToDelete)) {
        echo "<p>File '$fileToDelete' deleted successfully.</p>";
    } else {
        echo "<p>Failed to delete file '$fileToDelete'.</p>";
    }
    $directoryToCreate = "uploads";
    if (!is_dir($directoryToCreate)) {
        mkdir($directoryToCreate);
        echo "<p>Directory '$directoryToCreate' created successfully.</p>";
    } else {
        echo "<p>Directory '$directoryToCreate' already exists.</p>";
    }
    $directoryToDelete = "uploads";
    if (is_dir($directoryToDelete)) {
        rmdir($directoryToDelete);
        echo "<p>Directory '$directoryToDelete' deleted successfully.</p>";
    } else {
        echo "<p>Directory '$directoryToDelete' does not exist.</p>";
    }
    ?>
</body>
</html>

```

//-----file_upload_download PHP File-----//

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>File Upload and Download</title>
</head>
<body>
    <h1>File Upload and Download</h1>

    <!-- File Upload Form -->
    <h2>File Upload</h2>
    <form action="file_upload_handler.php" method="post" enctype="multipart/form-data">
        <label for="file">Select File to Upload:</label>
        <input type="file" id="file" name="file" required>
        <br><br>
        <input type="submit" value="Upload File">
    </form>

    <!-- File Download Link -->
    <h2>File Download</h2>
    <?php
    $downloadFile = "sample.txt";
    if (file_exists($downloadFile)) {
        echo "<p><a href='12_file_download_handler.php?file=$downloadFile'>Download $downloadFile</a></p>";
    } else {

```

```

        echo "<p>File '$downloadFile' does not exist.</p>";
    }
    ?>
</body>
</html>

//-----file_upload_handler PHP File-----//

<?php
if ($_SERVER["REQUEST_METHOD"] == "POST" && isset($_FILES["file"])) {
    $uploadDir = "uploads/"; // Directory where uploaded files will be stored
    $uploadFile = $uploadDir . basename($_FILES["file"]["name"]); // Path to store uploaded file
    if (move_uploaded_file($_FILES["file"]["tmp_name"], $uploadFile)) {
        echo "<p>The file " . htmlspecialchars(basename($_FILES["file"]["name"])) . " has been uploaded.</p>";
    } else {
        echo "<p>Sorry, there was an error uploading your file.</p>";
    }
}
?>

//-----file_download_handler PHP File-----//

<?php
if (isset($_GET['file'])) {
    $file = $_GET['file'];
    if (file_exists($file)) {
        header('Content-Description: File Transfer');
        header('Content-Type: application/octet-stream');
        header('Content-Disposition: attachment; filename=' . basename($file));
        header('Content-Length: ' . filesize($file));
        header('Pragma: public');
        header('Cache-Control: must-revalidate, post-check=0, pre-check=0');
        header('Expires: 0');
        readfile($file); // Read the file to download
        exit;
    } else {
        echo "File '$file' not found.";
    }
}
?>

```

File and Directory Operations

Opened file 'sample.txt' successfully.

File 'sample.txt' copied to 'copied_sample.txt' successfully.

File 'copied_sample.txt' renamed to 'renamed_sample.txt' successfully.

File 'renamed_sample.txt' deleted successfully.

Directory 'uploads' already exists.

Warning: rmdir(uploads): Directory not empty in C:\Xampp_Server\htdocs\IT\12.php on line 45

Directory 'uploads' deleted successfully.

13: Write a PHP Program to Connect PHP with MySQL Database and Perform basic database operation (DML, like Insert, Delete, Update, Select)

Run SQL query/queries on database testdb: ?

```
1 use testdb;
2
3 CREATE TABLE users (
4     id INT AUTO_INCREMENT PRIMARY KEY,
5     name VARCHAR(50) NOT NULL,
6     email VARCHAR(50) NOT NULL,
7     created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
8 );
```

Create a PHP script (database_operations.php) that connects to MySQL, performs Insert, Delete, Update, and Select operations on the users table.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>PHP MySQL Database Operations</title>
</head>
<body>
    <h1>PHP MySQL Database Operations</h1>
    <?php
        $servername = "localhost";
        $username = "root";
        $password = "";
        $dbname = "testdb";
        $conn = new mysqli($servername, $username, $password, $dbname);
        if ($conn->connect_error) {
            die("Connection failed: " . $conn->connect_error);
        }
        echo "<p>Connected successfully to database '$dbname'.</p>";
        $name = "Debasish Barman";
        $email = "mail4barman@gmail.com";
        $sql = "INSERT INTO users (name, email) VALUES ('$name', '$email')";
        if ($conn->query($sql) === TRUE) {
            echo "<p>New record created successfully.</p>";
        } else {
            echo "<p>Error: " . $sql . "<br>" . $conn->error . "</p>";
        }
        echo "<h2>Users List:</h2>";
        $selectSql = "SELECT id, name, email, created_at FROM users";
        $result = $conn->query($selectSql);
        if ($result->num_rows > 0) {
            echo "<ul>";
            while ($row = $result->fetch_assoc()) {
                echo "<li>ID: " . $row["id"] . " - Name: " . $row["name"] . " - Email: " . $row["email"] . " - Created At: " . $row["created_at"] . "</li>";
            }
            echo "</ul>";
        } else {
            echo "<p>No users found.</p>";
        }
        $updateSql = "UPDATE users SET email='mail4barman@gmail.com' WHERE name='Debasish Barman';
        if ($conn->query($updateSql) === TRUE) {
```



```

        echo "<p>Record updated successfully.</p>";
    } else {
        echo "<p>Error updating record: " . $conn->error . "</p>";
    }
    $deleteSql = "DELETE FROM users WHERE name='Debasish Barman'";
    if ($conn->query($deleteSql) === TRUE) {
        echo "<p>Record deleted successfully.</p>";
    } else {
        echo "<p>Error deleting record: " . $conn->error . "</p>";
    }
    $conn->close();
?>
</body>
</html>

```

PHP MySQL Database Operations

Connected successfully to database 'testdb'.

New record created successfully.

Users List:

- ID: 1 - Name: Debasish Barman - Email: mail4barman@gmail.com - Created At: 2025-01-07 17:03:36

Record updated successfully.

Record deleted successfully.

14: Write a PHP Program to demonstrate Setting query parameter, Executing query- Join (Cross joins, Inner, Outer, Self joins)

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>PHP SQL Joins</title>
</head>
<body>
    <h1>PHP SQL Joins</h1>
    <?php
    $servername = "localhost";
    $username = "root";
    $password = "";
    $dbname = "testdb";
    $conn = new mysqli($servername, $username, $password, $dbname);
    if ($conn->connect_error) {
        die("Connection failed: " . $conn->connect_error);
    }
    echo "<p>Connected successfully to database '$dbname'.</p>";
    $sql_create_tables = "
    CREATE TABLE IF NOT EXISTS employees (
        id INT AUTO_INCREMENT PRIMARY KEY,
        name VARCHAR(50) NOT NULL,
        department_id INT NOT NULL
    );
    CREATE TABLE IF NOT EXISTS departments (
        id INT AUTO_INCREMENT PRIMARY KEY,
        name VARCHAR(50) NOT NULL
    );

    INSERT INTO departments (name) VALUES

```

```
('HR'),
('IT'),
('Finance');
```

```
INSERT INTO employees (name, department_id) VALUES
('Debasish Barman', 1),
('Sayan Maity', 2),
('Srijit Bera', 1),
('Subhadeep Mondal', 3);
```

```
",";
```

```
if ($conn->multi_query($sql_create_tables) === TRUE) {
    echo "<p>Tables created and initial data inserted successfully.</p>";
} else {
    echo "<p>Error creating tables: " . $conn->error . "</p>";
}
```

```
$conn->close();
$conn = new mysqli($servername, $username, $password, $dbname);
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
```

```
echo "<h2>SQL Joins</h2>";
```

```
echo "<h3>Cross Join</h3>";
```

```
$sql_cross_join = "
SELECT e.name AS employee_name, d.name AS department_name
FROM employees e
CROSS JOIN departments d;
```

```
",";
```

```
executeAndDisplayQuery($conn, $sql_cross_join);
```

```
echo "<h3>Inner Join</h3>";
```

```
$sql_inner_join = "
SELECT e.name AS employee_name, d.name AS department_name
FROM employees e
INNER JOIN departments d ON e.department_id = d.id;
```

```
",";
```

```
executeAndDisplayQuery($conn, $sql_inner_join);
```

```
echo "<h3>Left Outer Join</h3>";
```

```
$sql_left_outer_join = "
SELECT e.name AS employee_name, d.name AS department_name
FROM employees e
LEFT JOIN departments d ON e.department_id = d.id;
```

```
",";
```

```
executeAndDisplayQuery($conn, $sql_left_outer_join);
```

```
echo "<h3>Right Outer Join</h3>";
```

```
$sql_right_outer_join = "
SELECT e.name AS employee_name, d.name AS department_name
FROM employees e
RIGHT JOIN departments d ON e.department_id = d.id;
```

```
",";
```

```
executeAndDisplayQuery($conn, $sql_right_outer_join);
```

```
echo "<h3>Self Join</h3>";
```

```
$sql_self_join = "
SELECT e1.name AS employee_name, e2.name AS manager_name
FROM employees e1
LEFT JOIN employees e2 ON e1.manager_id = e2.id;
```

```
",";
```

```
executeAndDisplayQuery($conn, $sql_self_join);
```

```
function executeAndDisplayQuery($conn, $sql) {
```

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

```
    if ($result === FALSE) {
```

```
        echo "<p>Error executing query: " . $conn->error . "</p>";
```

```

    } else {
        if ($result->num_rows > 0) {
            echo "<ul>";
            while ($row = $result->fetch_assoc()) {
                echo "<li>" . $row["employee_name"] . " - " . $row["department_name"] . "</li>";
            }
            echo "</ul>";
        } else {
            echo "<p>No results found.</p>";
        }
    }
}
$conn->close();
?>
</body>
</html>

```

<h2>PHP SQL Joins</h2> <p>Connected successfully to database 'testdb'.</p> <p>Tables created and initial data inserted successfully.</p> <h3>SQL Joins</h3> <h4>Cross Join</h4> <p>No results found.</p>	<h4>Inner Join</h4> <p>No results found.</p> <h4>Left Outer Join</h4> <ul style="list-style-type: none"> Debasish Barman - HR Sayan Maity - IT Srijit Bera - HR Subhadeep Mondal - Finance <h4>Right Outer Join</h4> <ul style="list-style-type: none"> Debasish Barman - HR Sayan Maity - IT Srijit Bera - HR Subhadeep Mondal - Finance
--	---

15: Write a PHP Program to demonstrate statement/process like exception and error, Try, catch, throw, Error tracking and debugging
 PHP Program Demonstrating Exception Handling and Error Tracking

```

<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <title>PHP Exception Handling</title>
</head>

<body>
    <h1>PHP Exception Handling</h1>

    <?php

function divideNumbers($numerator, $denominator)
{
    if ($denominator == 0) {
        throw new Exception("Division by zero error.");
    }
    return $numerator / $denominator;
}

try {

```

```

$result = divideNumbers(10, 0); // Intentionally set to cause an exception
echo "<p>Result of division: $result</p>";
} catch (Exception $e) {
    echo "<p>Caught exception: " . $e->getMessage() . "</p>";
}

error_reporting(E_ALL);
ini_set('display_errors', 1); // Enable error display for debugging (not for production)
$array = [1, 2, 3];
$index = 5;
if (array_key_exists($index, $array)) {
    $undefinedVariable = $array[$index];
    var_dump($undefinedVariable);
} else {
    echo "<p>Index $index does not exist in the array.</p>";
}
$logFile = "error.log";
if (is_writable(__DIR__)) {
    error_log("Error: Attempted to access an undefined index in exception_handling.php", 3, $logFile);
    echo "<p>Check $logFile for logged errors.</p>";
} else {
    echo "<p>Unable to log errors. Ensure the directory is writable.</p>";
}
?>
</body>

</html>

```

PHP Exception Handling

Caught exception: Division by zero error.

Index 5 does not exist in the array.

Check error.log for logged errors.