**Lab7**

**Develop JavaScript program (with HTML/CSS) for:**

**a) Converting JSON text to JavaScript Object**

**b) Convert JSON results into a date**

**c) Converting From JSON To CSV and CSV to JSON**

**d) Create hash from string using crypto.createHash() method**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

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

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

**<title>JSON/CSV Converter and Hash Generator</title>**

**<script src="https://cdnjs.cloudflare.com/ajax/libs/crypto-js/4.1.1/crypto-js.min.js"></script>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**line-height: 1.6;**

**margin: 0;**

**padding: 20px;**

**background-color: #f4f4f4;**

**}**

**.container {**

**max-width: 800px;**

**margin: auto;**

**background: white;**

**padding: 20px;**

**border-radius: 5px;**

**box-shadow: 0 0 10px rgba(0,0,0,0.1);**

**}**

**h1 {**

**color: #333;**

**}**

**textarea {**

**width: 100%;**

**height: 100px;**

**margin-bottom: 10px;**

**}**

**button {**

**background-color: #4CAF50;**

**color: white;**

**padding: 10px 15px;**

**border: none;**

**border-radius: 4px;**

**cursor: pointer;**

**margin-right: 10px;**

**}**

**button:hover {**

**background-color: #45a049;**

**}**

**#result {**

**margin-top: 20px;**

**padding: 10px;**

**background-color: #e7e7e7;**

**border-radius: 4px;**

**}**

**</style>**

**</head>**

**<body>**

**<div class="container">**

**<h1>JSON/CSV Converter and Hash Generator</h1>**

**<h2>a) Convert JSON to JavaScript Object</h2>**

**<textarea id="jsonInput" placeholder="Enter JSON here"></textarea>**

**<button onclick="convertJsonToObject()">Convert to Object</button>**

**<h2>b) Convert JSON to Date</h2>**

**<textarea id="jsonDateInput" placeholder='Enter JSON date string (e.g., {"date": "2023-05-15T12:00:00Z"})'></textarea>**

**<button onclick="convertJsonToDate()">Convert to Date</button>**

**<h2>c) Convert JSON to CSV and CSV to JSON</h2>**

**<textarea id="dataInput" placeholder="Enter JSON or CSV here"></textarea>**

**<button onclick="convertJsonToCsv()">JSON to CSV</button>**

**<button onclick="convertCsvToJson()">CSV to JSON</button>**

**<h2>d) Create Hash from String</h2>**

**<textarea id="hashInput" placeholder="Enter string to hash"></textarea>**

**<button onclick="createHash()">Generate Hash</button>**

**<div id="result"></div>**

**</div>**

**<script>**

**function convertJsonToObject() {**

**try {**

**const jsonInput = document.getElementById('jsonInput').value;**

**const jsObject = JSON.parse(jsonInput);**

**document.getElementById('result').innerText = 'Converted Object: ' + JSON.stringify(jsObject, null, 2);**

**} catch (error) {**

**document.getElementById('result').innerText = 'Error: ' + error.message;**

**}**

**}**

**function convertJsonToDate() {**

**try {**

**const jsonInput = document.getElementById('jsonDateInput').value;**

**const jsObject = JSON.parse(jsonInput);**

**const date = new Date(jsObject.date);**

**document.getElementById('result').innerText = 'Converted Date: ' + date.toString();**

**} catch (error) {**

**document.getElementById('result').innerText = 'Error: ' + error.message;**

**}**

**}**

**function convertJsonToCsv() {**

**try {**

**const jsonInput = document.getElementById('dataInput').value;**

**const jsObject = JSON.parse(jsonInput);**

**const headers = Object.keys(jsObject[0]);**

**const csvRows = [**

**headers.join(','),**

**...jsObject.map(row => headers.map(fieldName => JSON.stringify(row[fieldName])).join(','))**

**];**

**const csvString = csvRows.join('\n');**

**document.getElementById('result').innerText = 'Converted CSV:\n' + csvString;**

**} catch (error) {**

**document.getElementById('result').innerText = 'Error: ' + error.message;**

**}**

**}**

**function convertCsvToJson() {**

**try {**

**const csvInput = document.getElementById('dataInput').value;**

**const lines = csvInput.split('\n');**

**const headers = lines[0].split(',');**

**const jsonArray = lines.slice(1).map(line => {**

**const values = line.split(',');**

**return headers.reduce((obj, header, index) => {**

**obj[header] = values[index];**

**return obj;**

**}, {});**

**});**

**document.getElementById('result').innerText = 'Converted JSON:\n' + JSON.stringify(jsonArray, null, 2);**

**} catch (error) {**

**document.getElementById('result').innerText = 'Error: ' + error.message;**

**}**

**}**

**function createHash() {**

**try {**

**const input = document.getElementById('hashInput').value;**

**const hash = CryptoJS.SHA256(input);**

**document.getElementById('result').innerText = 'Generated Hash (SHA-256): ' + hash;**

**} catch (error) {**

**document.getElementById('result').innerText = 'Error: ' + error.message;**

**}**

**}**

**</script>**

**</body>**

**</html>**

**Ouput**

**1a. json to java object**

**Input**

**{"name": "Alice", "age": 25}**

**Output**

Converted Object: {  
"name": "Alice",  
"age": 25  
}

1b.json to date

Input

**{"date": "2023-05-15T12:00:00Z"}**

**Ouput**

Converted Date: Mon May 15 2023 17:30:00 GMT+0530 (India Standard Time)

1c json to csv

Input

**[**

**"volley-ball",**

**"badminton"**

**]**

**Output**

"v","o","l","l","e","y","-","b","a","l","l"  
"b","a","d","m","i","n","t","o","n",,

**LAB 8**

**a. Develop a PHP program (with HTML/CSS) to keep track of the number of visitors visiting the web page and to display this count of visitors, with relevant headings.**

**VISITOR.PHP**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

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

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

**<title>Visitor Counter</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**line-height: 1.6;**

**margin: 0;**

**padding: 20px;**

**background-color: #f4f4f4;**

**}**

**.container {**

**max-width: 600px;**

**margin: auto;**

**background: white;**

**padding: 20px;**

**border-radius: 5px;**

**box-shadow: 0 0 10px rgba(0,0,0,0.1);**

**}**

**h1 {**

**color: #333;**

**text-align: center;**

**}**

**.counter {**

**font-size: 24px;**

**text-align: center;**

**margin-top: 20px;**

**}**

**</style>**

**</head>**

**<body>**

**<div class="container">**

**<h1>Welcome to Our Website</h1>**

**<div class="counter">**

**<?php**

**$counterFile = 'visitor\_count.txt';**

**// Read the current count**

**if (file\_exists($counterFile)) {**

**$count = (int)file\_get\_contents($counterFile);**

**} else {**

**$count = 0;**

**}**

**// Increment the count**

**$count++;**

**// Save the new count**

**file\_put\_contents($counterFile, $count);**

**// Display the count**

**echo "<h2>Visitor Count</h2>";**

**echo "<p>You are visitor number: $count</p>";**

**?>**

**</div>**

**</div>**

**</body>**

**</html>**

**Steps**

**1.Save the code with visitor.php in htdocs folder (XAMPP)**

**2.save another file as visitor\_count ( inside write 1 number save it)**

**3.open xampp go to mysql admin**

**Give path localhost/visitor.php (refresh to increase count)**

**4.same count is updated in visitor\_count text file**

**b. Develop a PHP program (with HTML/CSS) to sort the student records which are stored in the database using selection sort**

**student\_record.php**

**<!DOCTYPE html>**

**<html lang="en">**

**<head>**

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

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

**<title>Student Record Sorter</title>**

**<style>**

**body {**

**font-family: Arial, sans-serif;**

**line-height: 1.6;**

**margin: 0;**

**padding: 20px;**

**background-color: #f4f4f4;**

**}**

**.container {**

**max-width: 800px;**

**margin: auto;**

**background: white;**

**padding: 20px;**

**border-radius: 5px;**

**box-shadow: 0 0 10px rgba(0,0,0,0.1);**

**}**

**h1 {**

**color: #333;**

**text-align: center;**

**}**

**table {**

**width: 100%;**

**border-collapse: collapse;**

**margin-top: 20px;**

**}**

**th, td {**

**padding: 10px;**

**border: 1px solid #ddd;**

**text-align: left;**

**}**

**th {**

**background-color: #f2f2f2;**

**}**

**</style>**

**</head>**

**<body>**

**<div class="container">**

**<h1>Student Records</h1>**

**<?php**

**// Database connection details**

**$host = 'localhost';**

**$dbname = 'student\_records';**

**$username = 'root';**

**$password = '';**

**try {**

**$pdo = new PDO("mysql:host=$host;dbname=$dbname", $username, $password);**

**$pdo->setAttribute(PDO::ATTR\_ERRMODE, PDO::ERRMODE\_EXCEPTION);**

**// Fetch student records**

**$stmt = $pdo->query("SELECT \* FROM students");**

**$students = $stmt->fetchAll(PDO::FETCH\_ASSOC);**

**// Selection sort function**

**function selectionSort(&$arr, $n) {**

**for ($i = 0; $i < $n - 1; $i++) {**

**$min\_idx = $i;**

**for ($j = $i + 1; $j < $n; $j++) {**

**if ($arr[$j]['cgpa'] < $arr[$min\_idx]['cgpa']) {**

**$min\_idx = $j;**

**}**

**}**

**if ($min\_idx != $i) {**

**$temp = $arr[$i];**

**$arr[$i] = $arr[$min\_idx];**

**$arr[$min\_idx] = $temp;**

**}**

**}**

**}**

**// Sort students by CGPA**

**selectionSort($students, count($students));**

**// Display sorted student records**

**echo "<table>";**

**echo "<tr><th>ID</th><th>Name</th><th>GPA</th></tr>";**

**foreach ($students as $student) {**

**echo "<tr>";**

**echo "<td>" . htmlspecialchars($student['id']) . "</td>";**

**echo "<td>" . htmlspecialchars($student['name']) . "</td>";**

**echo "<td>" . htmlspecialchars($student['cgpa']) . "</td>";**

**echo "</tr>";**

**}**

**echo "</table>";**

**} catch(PDOException $e) {**

**echo "Connection failed: " . $e->getMessage();**

**}**

**?>**

**</div>**

**</body>**

**</html>**

**Steps.**

**1.save the file student\_record.php**

**2.create database with name student\_records**

**3.create table name with students with 3 values id ,name, cgpa save**

**4.insert value in student table**

**5.mysql admin path localhost/student\_record.php**