Lab program 7

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

```html
<!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>

<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 data in JSON format"></textarea>
        <button onclick="convertJsonToObject()">Convert to JS Object</button>

        <h2>b) Convert JSON to Date</h2>
        <textarea id="jsonDateInput" placeholder='Enter JSON date'></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"></textarea>
        <button onclick="convertJsonToCsv()">Convert JSON to CSV</button>

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

        <h2>d) Create Hash from String</h2>
        <textarea id="hashInput" placeholder="Enter string"></textarea>
        <button onclick="generateHash()">Generate Hash</button>

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

function convertJsonToObject() {
        try {
```

```javascript
            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() {
        const jsonInput = document.getElementById('dataInput').value;
        try {
            const json = JSON.parse(jsonInput);
            const csv = jsonToCsv(json);
            document.getElementById('result').innerHTML = `<pre>${csv}</pre>`;
        } catch (error) {
            alert('Invalid JSON format!');
        }
    }

function jsonToCsv(json) {
        const array = Array.isArray(json) ? json : [json];
        const header = Object.keys(array[0]);
        const rows = array.map(obj =>
            header.map(fieldName => JSON.stringify(obj[fieldName] || '')).join(',')
        );
        return [header.join(','), ...rows].join('\n');
    }


    function convertCsvToJson() {
        const csvInput = document.getElementById('dataInput').value;
```

```
        try {
           const json = csvToJson(csvInput);
                console.log(JSON.stringify(json));
              document.getElementById('result').innerHTML = `<pre>${JSON.stringify(json, null,
2)}</pre>`;
        } catch (error) {
           alert('Invalid CSV format!');
        }
     }

     function csvToJson(csv) {
        const lines = csv.split('\n');
        const headers = lines[0].split(',');
        const result = [];

        for (let i = 1; i < lines.length; i++) {
           const obj = {};
           const currentLine = lines[i].split(',');

           if (currentLine.length === headers.length) {
              for (let j = 0; j < headers.length; j++) {
                 obj[headers[j]] = currentLine[j].trim();
              }
              result.push(obj);
           }
        }
        return result;
     }

async function generateHash() {
        const inputString = document.getElementById('hashInput').value;
        const encoder = new TextEncoder();
        const data = encoder.encode(inputString);
        const hashBuffer = await crypto.subtle.digest('SHA-256', data);
        const hashArray = Array.from(new Uint8Array(hashBuffer));
        const hexString = hashArray.map(byte => byte.toString(16).padStart(2, '0')).join('');

        document.getElementById('result').textContent = hexString;
     }

  </script>

</body>
</html>
```

Lab program 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.

```
<!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
<?php
// File that stores the visitor count
$counterFile = 'visitor_count.txt';

// Check if the file exists, if not, create it and set initial count to 0
if (!file_exists($counterFile)) {
    file_put_contents($counterFile, '0');
}

// Read the current count from the file
$currentCount = (int)file_get_contents($counterFile);

// Increment the count
$currentCount++;

// Write the new count back to the file
file_put_contents($counterFile, $currentCount);

// Display the current visitor count
echo "Visitor Count: " . $currentCount;
?>
</body>
</html>
```