UNIVERSITY MALAYSIA TERENGGANU
FACULTY OF OCEAN ENGINEERING TECHNOLOGY & INFORMATICS

[CSM3103]
FRONT-END PROGRAMMING

LAB REPORT 3

[Javascript]

Prepared by:
[WAN ABDUL AZIM BIN WAN MALEK (S63190)]

Prepared for:
DR RABIEI B MAMAT

[***MOBILE COMPUTING***]
SEMESTER II 2022/2023

Task 1 – JavaScript Function

1. Write a function to find the square of a given number

```
function square(number) {
  return number * number;
}
```

2. Write a function to find sum of cubes of two numbers

```
function sumOfCubes(a, b) {
  var cubeA = Math.pow(a, 3);
  var cubeB = Math.pow(b, 3);
  return cubeA + cubeB;
}
```

3. Write a function to reverse a number
   [Hint n =12345 output : 54321]

```
function reverseNumber(number) {
  var reversed = 0;
  while (number !== 0) {
    reversed = reversed * 10 + number % 10;
    number = Math.floor(number / 10);
  }
  return reversed;
}
```

4. Write a function to print all numbers between 1 and 100 which is divisible by given number z

```
function printDivisibleNumbers(z) {
  for (var i = 1; i <= 100; i++) {
    if (i % z === 0) {
      console.log(i);
    }
  }
}
printDivisibleNumbers(5);
```

Task 2 - JavaScript Recursion Function

1. Write a JavaScript function to find sum of digits of a number

```
function sumOfDigits(number) {
  var sum = 0;
  var num = Math.abs(number); // Convert negative number to positive

  while (num > 0) {
    sum += num % 10; // Add the last digit to the sum
    num = Math.floor(num / 10); // Remove the last digit from the number
  }

  return sum;
}
```

2. Write a JavaScript program to compute x raise to the power y using recursion

```
function power(x, y) {
  if (y === 0) {
    return 1;
  } else if (y < 0) {
    return 1 / power(x, -y);
  } else {
    return x * power(x, y - 1);
  }
}
```

Task 3 – JavaScript Object and Prototype

1. Write a JavaScript program to create object product,
    a. Add the property Product Name, Quantity and price.
    b. Access all the properties and display them.

```
// Create the product object
var product = {
  productName: 'Example Product',
  quantity: 10,
  price: 19.99
};

// Access and display the properties
console.log('Product Name:', product.productName);
console.log('Quantity:', product.quantity);
console.log('Price:', product.price);
```

2. Write a JavaScript program to create object book
    a. Add the property book name, author name
    b. Add the prototype property price .
    c. Display all the properties.

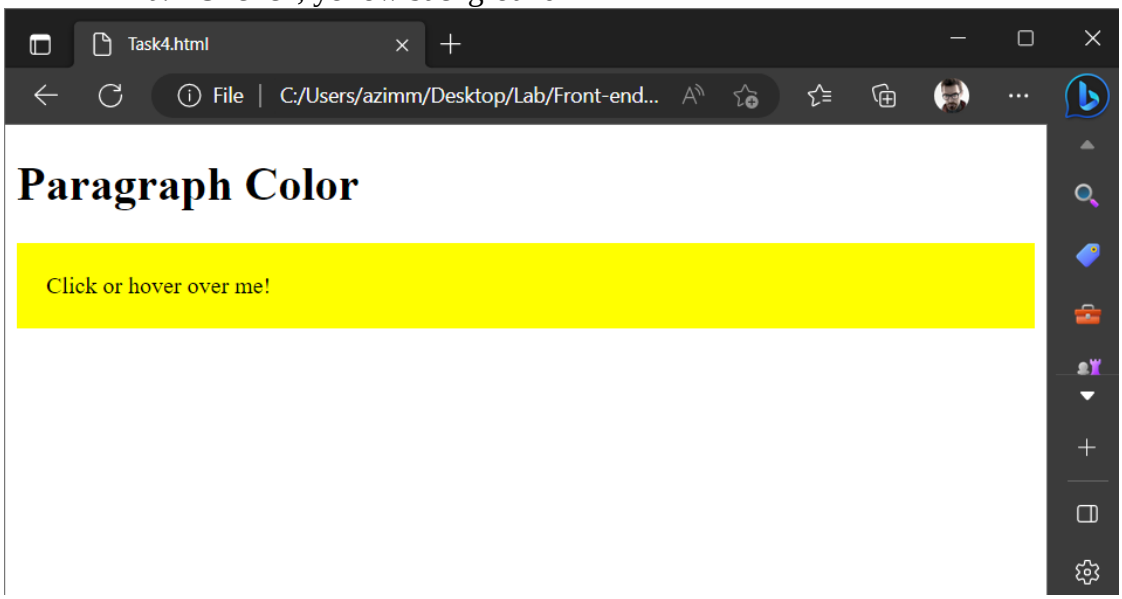
```
// Create the book object
var book = {
  bookName: 'Example Book',
  authorName: 'John Doe'
};

// Add prototype property
book.__proto__.price = 19.99;

// Display all the properties
console.log('Book Name:', book.bookName);
console.log('Author Name:', book.authorName);
console.log('Price:', book.price);
```

3. Write a JavaScript program to create Parent object employee (Property : Employee Name , Employee Id , Salary) and Child object Manager (Property : Manager Name , Branch). Inherit all the properties of employee and display all the properties.

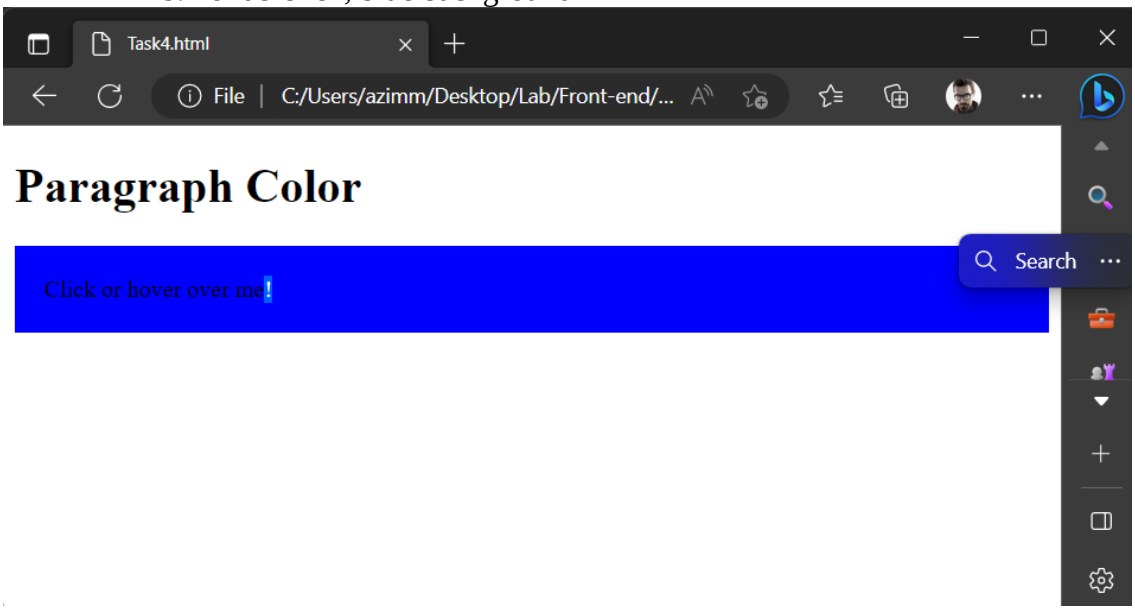
```
// Create the parent object 'employee'
var employee = {
  employeeName: 'John Doe',
  employeeId: 12345,
  salary: 50000
};

// Create the child object 'manager'
var manager = Object.create(employee);
manager.managerName = 'Jane Smith';
manager.branch = 'New York';

// Display all the properties
console.log('Employee Name:', manager.employeeName);
console.log('Employee ID:', manager.employeeId);
console.log('Salary:', manager.salary);
console.log('Manager Name:', manager.managerName);
console.log('Branch:', manager.branch);
```

Task 4 – Event Manager

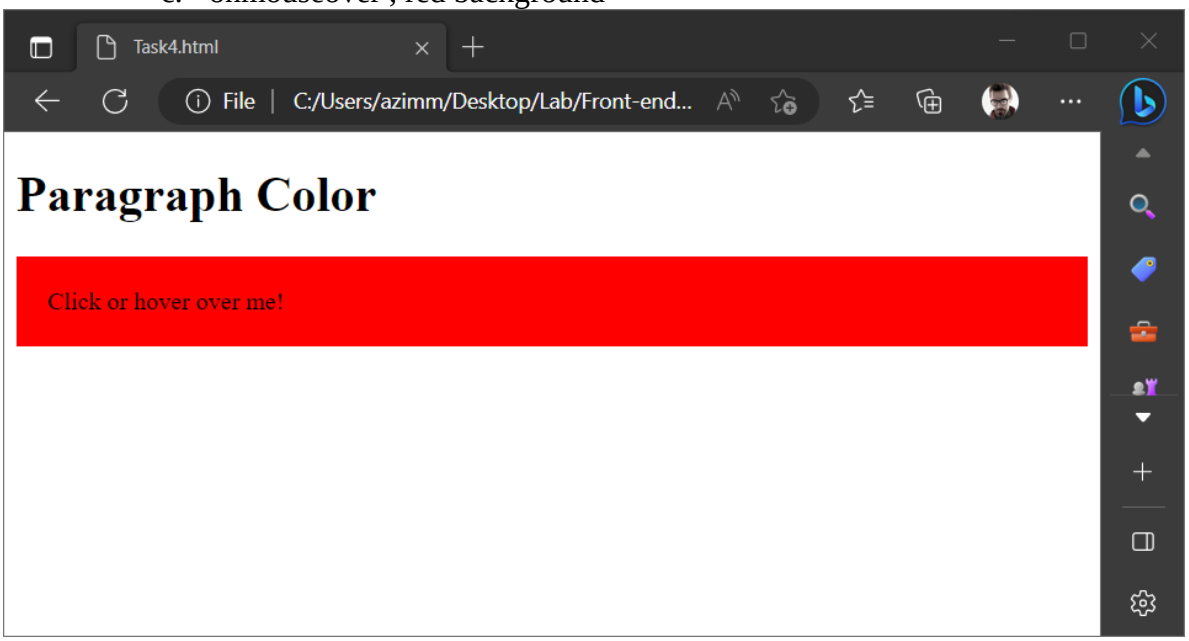
1. Create a HTML page with <p> paragraph. Change the paragraph color according to the following mouse events
    a. Onclick, yellow background



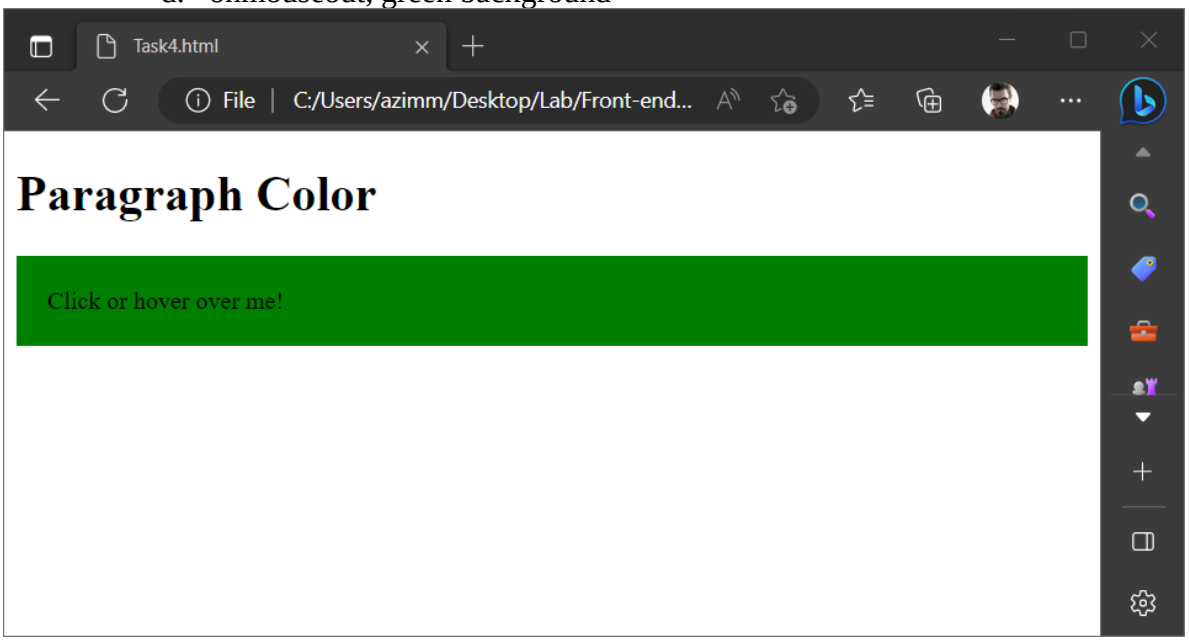
    b. ondblclick, blue background



c. onmouseover , red background



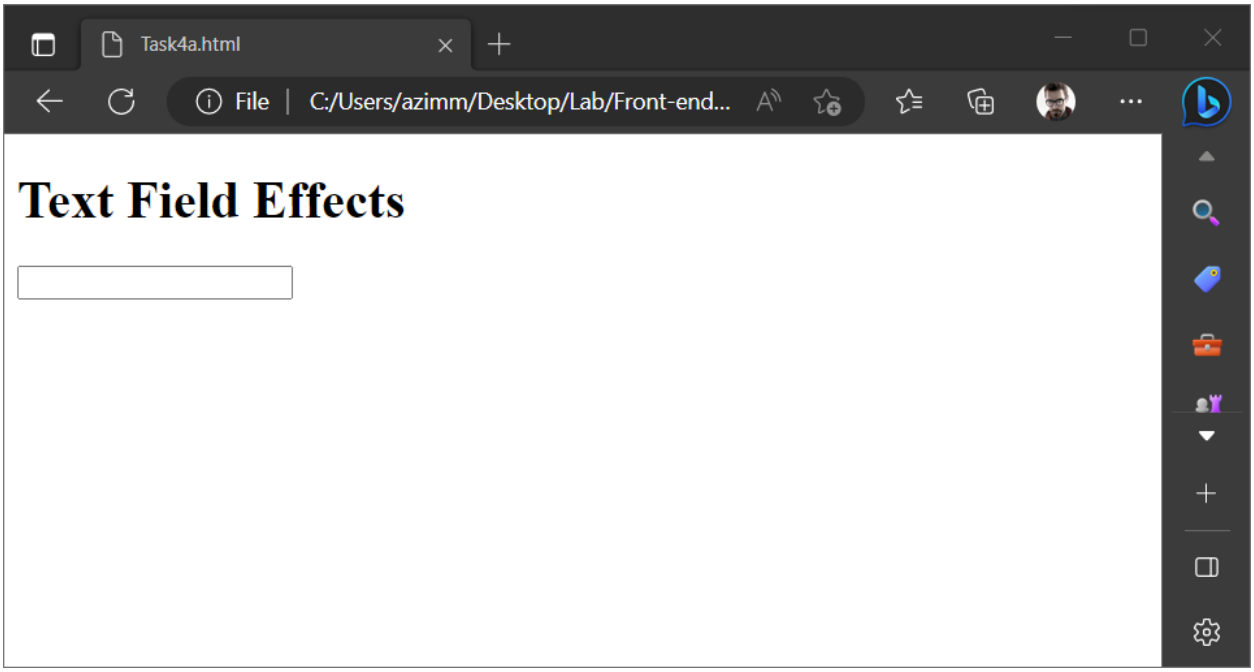
d. onmouseout, green background

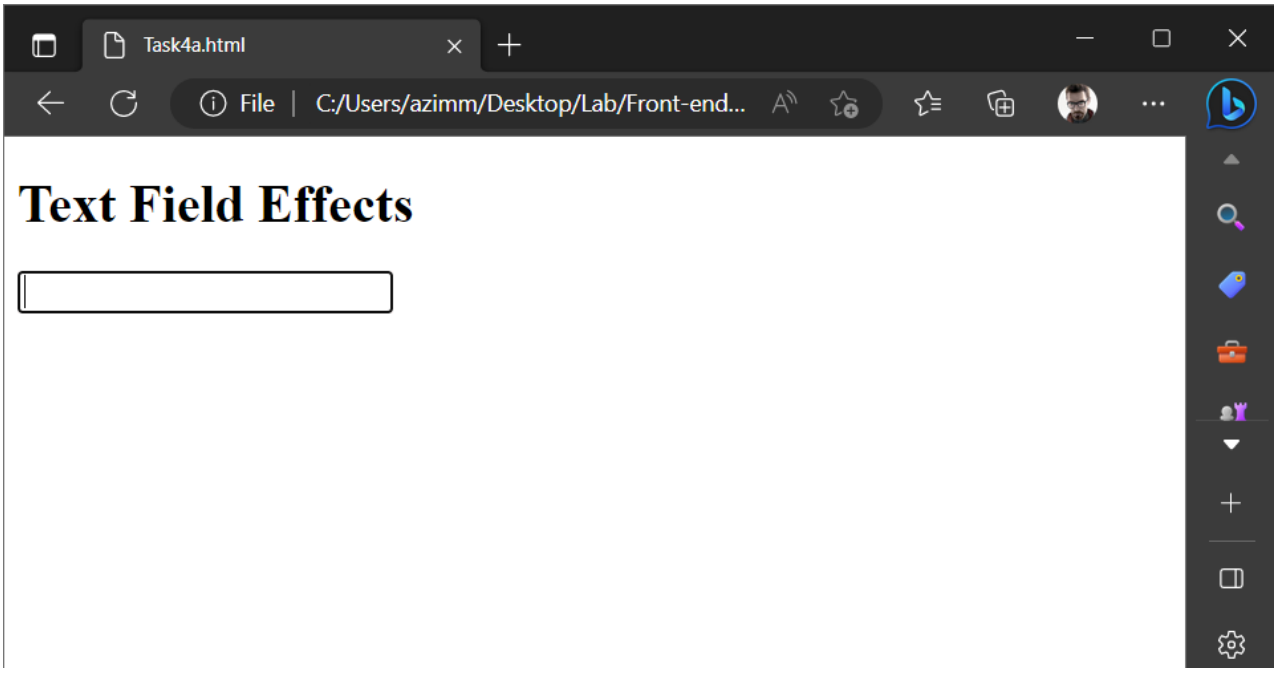


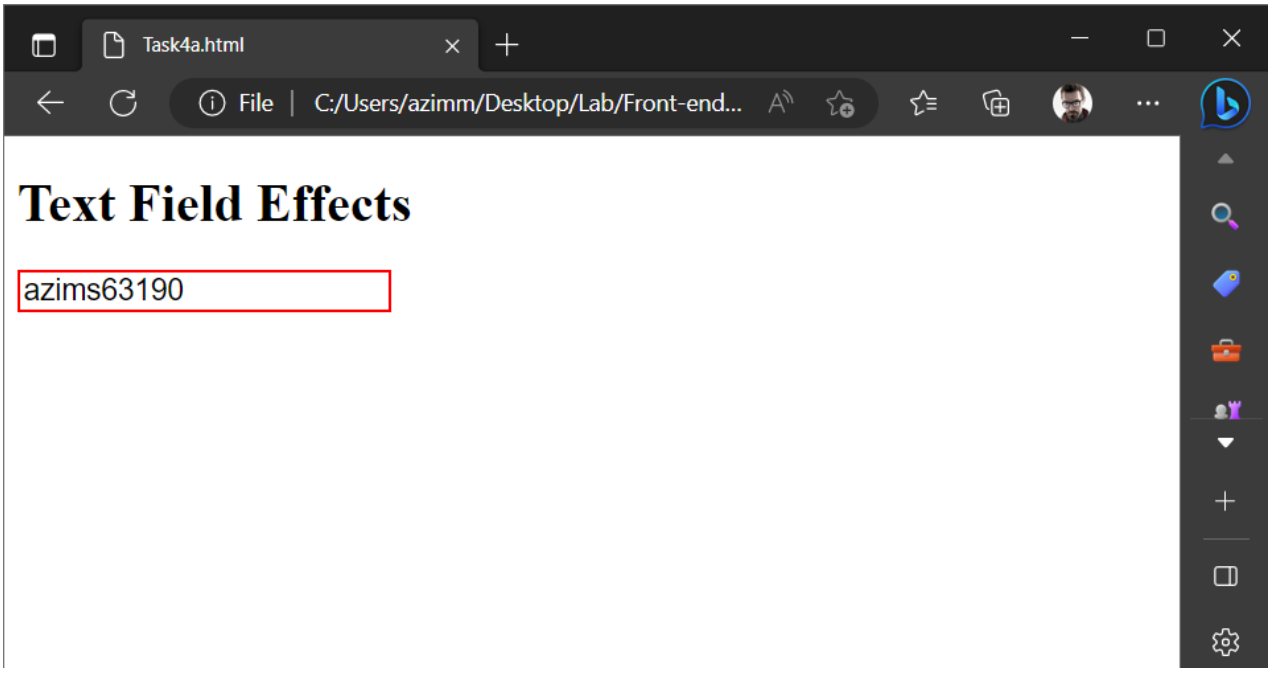
Code :

```
<!DOCTYPE html>
<html>
<head>
  <style>
    p {
      padding: 20px;
      cursor: pointer;
    }
  </style>
</head>
<body>
  <h1>Paragraph Color</h1>

  <p id="myParagraph" onclick="changeColor('yellow')" ondblclick="changeColor('blue')" onmouseover="changeColor('red')" onmouseout="changeColor('green')">Click or hover over me!</p>

  <script>
    function changeColor(color) {
      var paragraph = document.getElementById('myParagraph');
      paragraph.style.backgroundColor = color;
    }
  </script>
</body>
</html>
```

2. Create a HTML page with textfield. Show some effects on the textfield when the following events occurred:
    a. Onchange
    b. Onfocus
    c. Onblur








```
<!DOCTYPE html>
<html>
<head>
  <style>
    .highlight {
      border: 2px solid red;
    }
    .enlarge {
      font-size: 18px;
    }
  </style>
</head>
<body>
  <h1>Text Field Effects</h1>

  <input type="text" id="myTextField" onchange="applyEffect(this)"
onfocus="applyEffect(this)" onblur="applyEffect(this)">

  <script>
    function applyEffect(element) {
      element.classList.toggle('highlight');
      element.classList.toggle('enlarge');
    }
  </script>
</body>
</html>
```

Task 5

Given the following HTML table

1	Ahmad Faisal	ahmadfaisal@gmail.com	0199088888
2.	Ismail Sabri	isabri@mail.com	0199076760
3	Fateh Yakin	ffateh@hotmail.com	0176067762

1. Using javascript add the following record into table
    a. Name: Mukhriz Jamil Asoka
    b. Email: mukriz@corp.jo
    c. Phone: 651181187223
2. Using javascript add the table header as follow:
    a. #, Name, Email, Phone #
3. Using javascript, delete any row from table when clicked on that row

```
<!DOCTYPE html>
<html>
<head>
  <style>
    table {
      border-collapse: collapse;
    }
    th, td {
      border: 1px solid black;
      padding: 5px;
    }
  </style>
</head>
<body>
  <h1>Records Table</h1>

  <table id="recordsTable">
    <tr>
      <th>#</th>
      <th>Name</th>
      <th>Email</th>
      <th>Phone</th>
    </tr>
    <tr>
      <td>1</td>
      <td>Ahmad Faisal</td>
      <td>ahmadfaisal@gmail.com</td>
      <td>0199088888</td>
    </tr>
    <tr>
      <td>2</td>
      <td>Ismail Sabri</td>
```

```
      <td>isabri@mail.com</td>
      <td>0199076760</td>
    </tr>
    <tr>
      <td>3</td>
      <td>Fateh Yakin</td>
      <td>ffateh@hotmail.com</td>
      <td>0176067762</td>
    </tr>
  </table>

  <button onclick="addRecord()">Add Record</button>

  <script>
    // Get the table reference
    var table = document.getElementById('recordsTable');

    // Add the table header
    var headerRow = table.insertRow(0);
    var headers = ['#', 'Name', 'Email', 'Phone'];

    for (var i = 0; i < headers.length; i++) {
      var headerCell = document.createElement('th');
      headerCell.textContent = headers[i];
      headerRow.appendChild(headerCell);
    }

    // Add a new record to the table
    function addRecord() {
      var newRow = table.insertRow(-1);
      var data = ['Mukhriz Jamil Asoka', 'mukriz@corp.jo', '651181187223'];

      for (var i = 0; i < data.length; i++) {
        var cell = newRow.insertCell(i);
        cell.textContent = data[i];
      }

      // Attach click event listener to delete row
      newRow.addEventListener('click', function() {
        table.deleteRow(this.rowIndex);
      });
    }
  </script>
</body>
</html>
```

Task 6

Write a JavaScript program to move two small squares inside one big square in a random manner. User should be able to start and stop this animationusing button based events

Math.floor(Math.random() * Math.floor(max)) will give you a random number that is less than max value

```
<!DOCTYPE html>
<html>
<head>
  <style>
    #container {
      position: relative;
      width: 400px;
      height: 400px;
      border: 2px solid black;
    }

    .square {
      position: absolute;
      width: 50px;
      height: 50px;
      background-color: red;
    }

    #square1 {
      top: 0;
      left: 0;
    }

    #square2 {
      bottom: 0;
      right: 0;
    }
  </style>
</head>
<body>
  <h1>Square Animation</h1>

  <div id="container">
    <div id="square1" class="square"></div>
    <div id="square2" class="square"></div>
  </div>

  <button id="startBtn">Start</button>
```

```
  <button id="stopBtn">Stop</button>

  <script>
    var square1 = document.getElementById('square1');
    var square2 = document.getElementById('square2');
    var startBtn = document.getElementById('startBtn');
    var stopBtn = document.getElementById('stopBtn');
    var animationId;

    startBtn.addEventListener('click', startAnimation);
    stopBtn.addEventListener('click', stopAnimation);

    function startAnimation() {
      animationId = requestAnimationFrame(moveSquares);
    }

    function stopAnimation() {
      cancelAnimationFrame(animationId);
    }

    function moveSquares() {
      var maxX = 350; // Maximum x-coordinate for square movement
      var maxY = 350; // Maximum y-coordinate for square movement

      // Generate random values for square movement
      var x1 = Math.floor(Math.random() * Math.floor(maxX));
      var y1 = Math.floor(Math.random() * Math.floor(maxY));
      var x2 = Math.floor(Math.random() * Math.floor(maxX));
      var y2 = Math.floor(Math.random() * Math.floor(maxY));

      // Move the squares
      square1.style.transform = `translate(${x1}px, ${y1}px)`;
      square2.style.transform = `translate(${x2}px, ${y2}px)`;

      animationId = requestAnimationFrame(moveSquares);
    }
  </script>
</body>
</html>
```