Instructions: Odd no's (Q1, Q3), Even no's (Q2, Q4)
**Note: Apply your creativity to design the templates**
Note: Use External JavaScript file

Aim:
Create a web application using JavaScript to manipulate the CSS Styles and Animation.

Q1) Create a web page to perform various style modification using for the "DIV" box such as background color, text color, font size, width, height and border radius using JavaScript code.

   a. Change the color of the text for the heading of the page (<h1>) for every 2 seconds. (setInterval)
   b. For background color and text color, use color chooser html element <input type=color>, trigger the JavaScript function when changing color and apply necessary style changes in "DIV". (onchange event)
   c. For border radius, use HTML range element using <input type=range>, trigger the JavaScript function when changing the radius and apply necessary style changes in "DIV". (onchange event)
   d. Select the text size in dropdown and enter the width & height, trigger the JavaScript function when pressing the button and apply necessary style changes in "DIV". (onsubmit event)
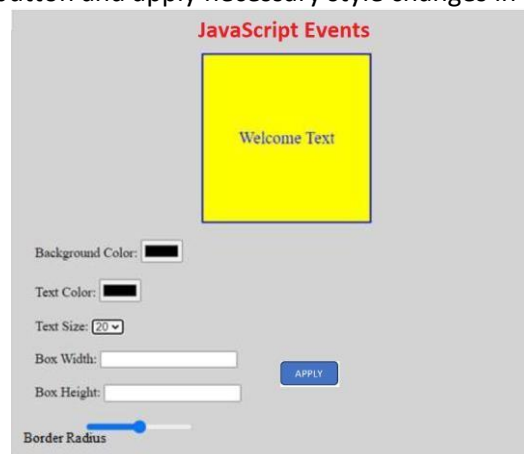

Q2) Create a web page to perform various style modification using JavaScript code.
   a. Change the background color of the webpage for every 2 seconds. (setInterval)
   b. For background color and text color of <DIV>, use color chooser html element <input type=color>, trigger the JavaScript function when changing color and apply necessary style changes in "DIV". (onchange event)
   c. Display an image, for changing the opacity, use HTML range element using <input type=range>, trigger the JavaScript function when changing the radius and apply necessary style changes in "DIV". (onchange event)
   d. Create event handlers that will increase the font size when a mouse moves over a paragraph and decrease the size when the mouse moves off the paragraph.
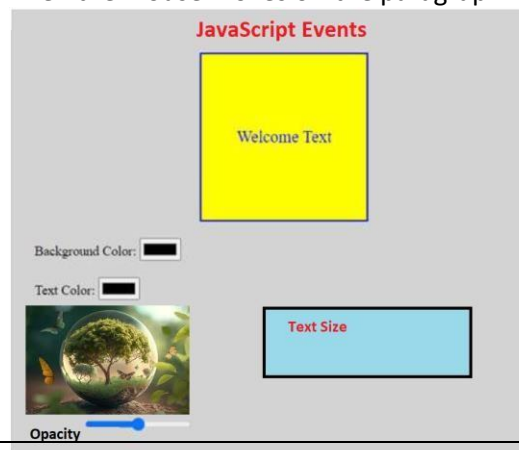
Q3) Create a web page with JavaScript code to move absolutely-positioned car object (or any image as per your choice) when user clicks the start button and stop the car image when a user clicks the stop button. [Note: Use JavaScript timer functions such as setInterval() or setTimeout()]
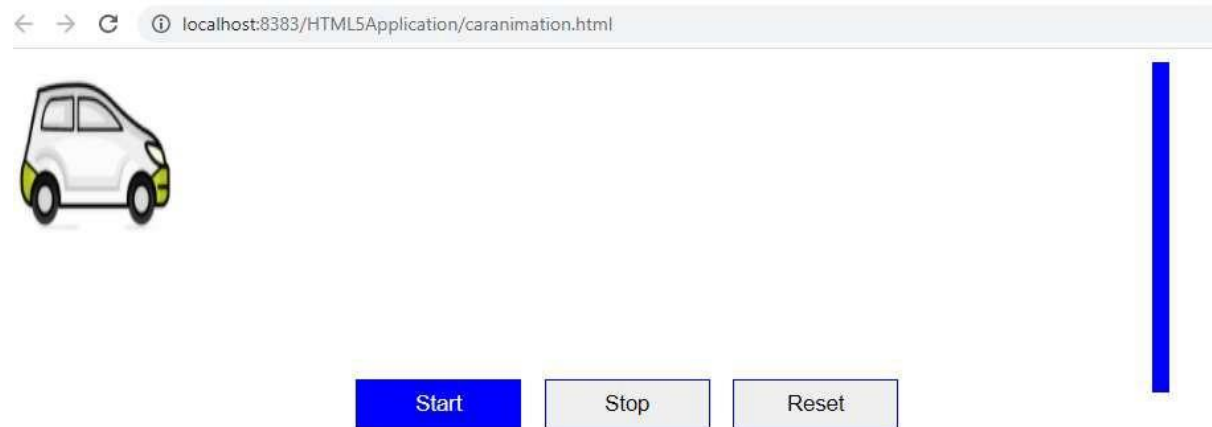
Q4) Write JavaScript code to develop an animation game to move a ball image. When the ball moves out of the play area, display an alert message "out of play".
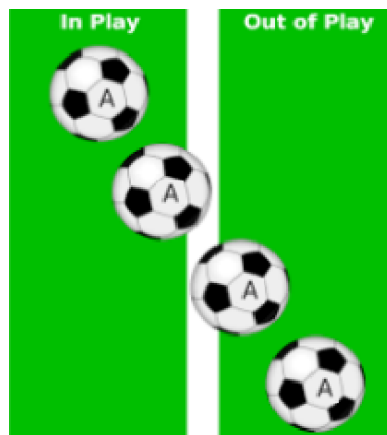
Source code :

Event :

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Style Modification</title>
<style>
  body {
    font-family: Arial, sans-serif;
    text-align: center;
    background-color: white; /* Set default background color to white */
  }
  #content {
    background-color: lightblue;
    padding: 20px;
    margin-top: 20px;
    border-radius: 8px;
```

```
        display: inline-block; /* Make the blue area inline-block to center it */
    }
    img {
        max-width: 100%;
        height: auto;
        margin-top: 20px;
        transition: opacity 0.5s ease-in-out;
    }

    .box {
        width: 200px;
        height: 200px;
        background-color: lightblue;
        border: 1px solid #ccc;
        padding: 20px;
        margin: 20px auto;
        text-align: center;
        transition: font-size 0.3s ease;
    }
</style>
</head>
<body>

<h2>Style Modification</h2>

<div id="content">
    <p>Change the background color of the webpage:</p>
        <input type="button" id="startButton" value="Start Background Color Change"
onclick="toggleBackgroundColorChange()">
            <input type="button" value="Stop Background Color Change"
onclick="stopBackgroundColorChange()">
    <br><br>
    <label for="backgroundColorPicker">Choose background color:</label>
    <input type="color" id="backgroundColorPicker" onchange="changeBackgroundColor()">
    <br><br>
    <label for="textColorPicker">Choose text color:</label>
    <input type="color" id="textColorPicker" onchange="changeTextColor()">
    <br><br>
    <label for="opacityRange">Adjust image opacity:</label>
        <input type="range" id="opacityRange" min="0" max="1" step="0.1" value="1"
onchange="changeOpacity()">
    <br><br>
    <img id="image" src="example.jpeg" alt="Example Image">

                    <div        class="box"        onmouseover="increaseFontSize(this)"
onmouseout="decreaseFontSize(this)">
        <p>This is a paragraph inside the box.</p>
    </div>
</div>
```

```html
<script>
  var backgroundColorInterval;

  function toggleBackgroundColorChange() {
    if (!backgroundColorInterval) {
      backgroundColorInterval = setInterval(changeBackgroundColor, 2000);
      document.getElementById("startButton").value = "Stop Background Color Change";
    } else {
      clearInterval(backgroundColorInterval);
      backgroundColorInterval = null; // Reset interval variable
      document.getElementById("startButton").value = "Start Background Color Change";
    }
  }

  function stopBackgroundColorChange() {
    clearInterval(backgroundColorInterval);
    backgroundColorInterval = null; // Reset interval variable
    document.getElementById("startButton").value = "Start Background Color Change";
  }

  function changeBackgroundColor() {
    var color = document.getElementById("backgroundColorPicker").value;
    document.getElementById("content").style.backgroundColor = color;
  }

  function changeTextColor() {
    var color = document.getElementById("textColorPicker").value;
    document.getElementById("content").style.color = color;
  }

  function changeOpacity() {
    var opacity = document.getElementById("opacityRange").value;
    document.getElementById("image").style.opacity = opacity;
  }

  var content = document.getElementById("content");
  content.onmouseover = function() {
    this.style.fontSize = "20px";
  };
  content.onmouseout = function() {
    this.style.fontSize = "inherit";
  };

  function increaseFontSize(element) {
    element.style.fontSize = "24px";
  }

  function decreaseFontSize(element) {
    element.style.fontSize = "16px";
  }
</script>
</body>
</html>
```

Ball:

```html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Ball Animation Game</title>
<style>
  #playArea {
     width: 500px;
     height: 300px;
     border: 2px solid black;
     position: relative;
     overflow: hidden;
     background-color: rgb(20, 105, 114);
  }
  #ball {
     width: 50px;
     height: 50px;
     background-image: url('ball.png'); /* Replace 'ball_image.png' with the path to your image */
     background-size: cover; /* Adjusts the size of the background image to cover the entire element */
     position: absolute;
  }
</style>
</head>
<body>

<div id="playArea">
   <div id="ball"></div>
</div>

<script src="script.js"></script>

</body>
</html>
```

Script:

```javascript
var ball = document.getElementById("ball");

var posX = 0;
var posY = 0;
ball.style.left = posX + "px";
ball.style.top = posY + "px";

var maxX = 450;
var maxY = 250;
```

```
var speedX = 2;
var speedY = 2;

function moveBall() {
   posX += speedX;
   posY += speedY;

   ball.style.left = posX + "px";
   ball.style.top = posY + "px";

   if (posX < 0 || posY < 0 || posX > maxX || posY > maxY) {
      alert("Out of play");
      clearInterval(animation);
   }
}

var animation = setInterval(moveBall, 20);
```
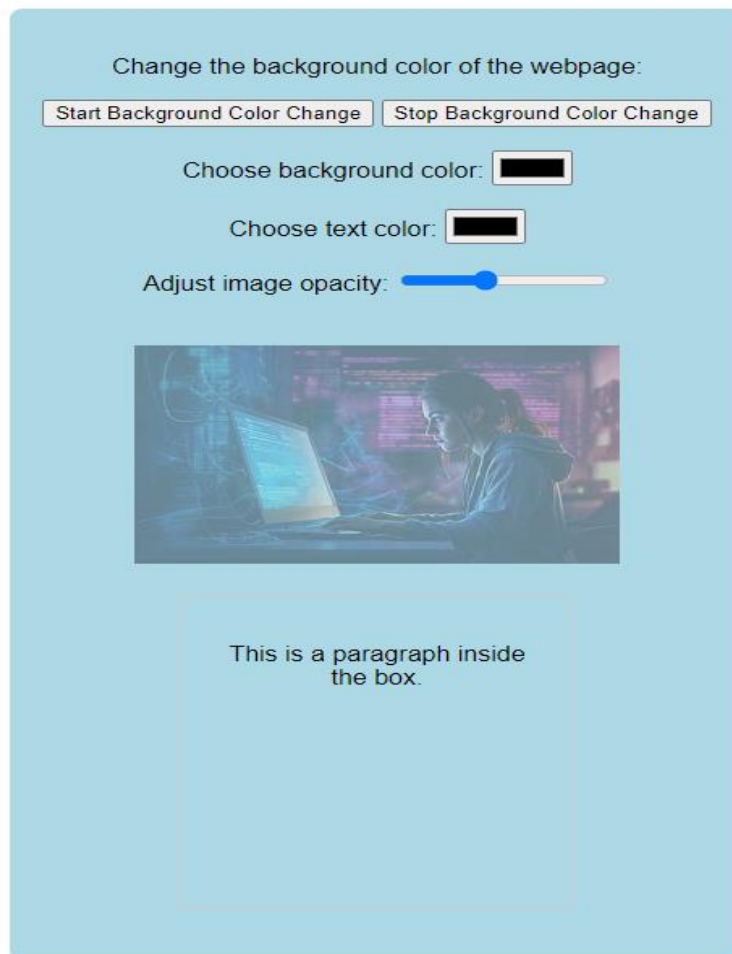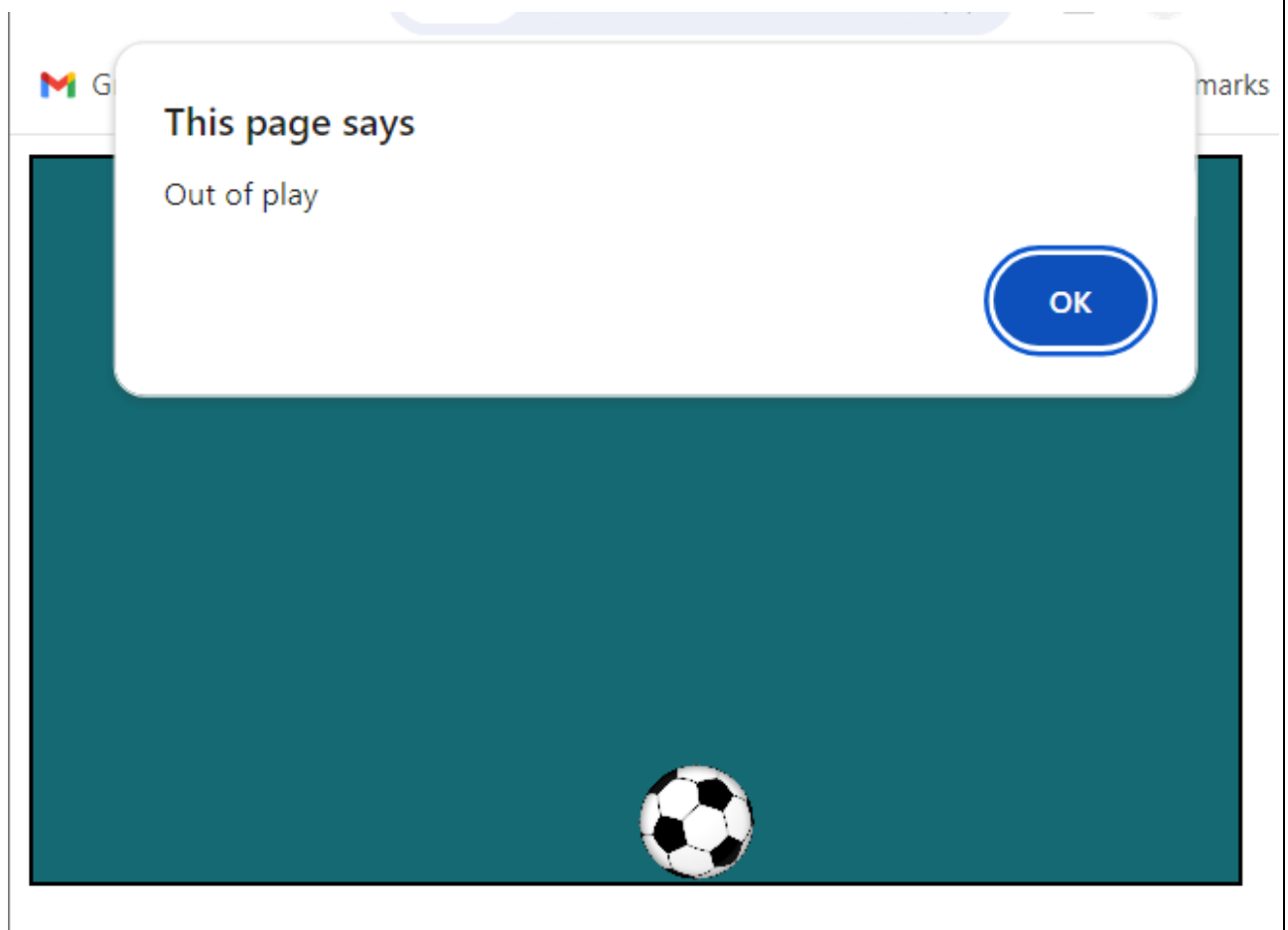
Output :
Event:

Style Modification

Change the background color of the webpage:

Start Background Color Change   Stop Background Color Change

Choose background color: ▮

Choose text color: ▮

Adjust image opacity: ●━━━━

This is a paragraph inside
the box.

Ball:

Result:

    Successfully Created a web application using JavaScript to manipulate the CSS Styles and Animation