**Learning Outcomes Addressed**

 2.Build web pages using JavaScript, HTML, and CSS

 4.Write conditional statements to define when a program should take certain actions

 5.Define functions to store specific actions that a program can execute upon new data

 7.Write a program that executes after some criteria are met

**Simulation - Detecting Screen Edge on the x- and y-axes**

#### Adding Screen Edge Detection on the y-axis

Now that you have added edge detection and the ball can bounce between two specific points on the x-axis on the page, it is time to increase the complexity.

Now add edge detection so that the ball can bounce between two specific areas on both the x-axis and y-axis on the page.

**Your task is to add JavaScript code that will allow the ball to move between two fixed positions on the x-axis and y-axis on the page.**

To accomplish this task, you need to do the following:

* Define a global variable called positionY and set its value to 0.
* Inside the moveBall() function, note the two variables called Ymin and Ymax. These variables define the two points on the y-axis of the page where the ball should bounce.
* Update the logic you created in step 3 to include checks for the y-axis position of the ball.

After implementing these changes, the ball should bounce diagonally between the defined points on both the x-axis and y-axis.

Task

Add an HTML and a JavaScript code that will allow the ball to move between two fixed positions on the x-axis and y-axis on the page.

<!DOCTYPE html>

<html>

<head>

  <title>Simulation - ball movement</title>

</head>

<body>

  <p>Refresh this page to see your code changes in action</p>

  <!-- YOUR CODE STARTS HERE -->

  <div

      id="ball"

      style="z-index:5;

      position:absolute;

      top:200px;

      left:0px;

      top:200px;

      width:100px;

      height:100px;

      border-radius:50%;

      background:black;">

      </div>

  <!-- YOUR CODE ENDS HERE -->

</body>

<!-- DO NOT EDIT PAST THIS POINT -->

<script src="./ball.js"></script>

</html>

<!DOCTYPE html>

<html>

<head>

  <title>Simulation - ball movement</title>

</head>

<body>

  <p>Refresh this page to see your code changes in action</p>

  <!-- YOUR CODE STARTS HERE -->

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      id="ball"

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      top:200px;

      width:100px;

      height:100px;

      border-radius:50%;

      background:black;">

      </div>

  <!-- YOUR CODE ENDS HERE -->

</body>

<!-- DO NOT EDIT PAST THIS POINT -->

<script src="./ball.js"></script>

</html>

//Set global variable that would contain the position, velocity and the html element "ball"

//write a function that can change the position of the html element "ball"

function moveBall() {

  // two fixed x-axis coordinates (you will use these variable in step 3)

// This call the moveBall function every 100ms

setInterval(moveBall, 100);

<!DOCTYPE html>

<html>

<head>

  <title>Simulation - ball movement</title>

</head>

<body>

  <!-- YOUR CODE STARTS HERE -->

    <div

     id="ball"

     style="z-index:5;

position:absolute;

top:200px;

left:0px;

top:200px;

width:100px;

height:100px;

border-radius:50%;

background: rgb(65, 226, 16);">

      </div>

<script src="Ball.js">

</script>

</html>

Javascript

positionX = 0;

var positionY = 0;

var velocity = 50;

var reverse=true

var ball = document.getElementById('ball');

//write a function that can change the position of the html element "ball"

function moveBall() {

// two fixed x-axis coordinates (you will use these variable in step 3)

var xmin =0;

var xmax =500;

if(reverse ===true){

positionX=positionX + velocity;

ball.style.left=positionX +"px";

positionY=positionY + velocity;

ball.style.top=positionY +"px";

if(positionX >=xmax)

{

reverse=false;

}

}

else{

positionX=positionX - velocity;

ball.style.left=positionX +"px";

positionY=positionY - velocity;

ball.style.top=positionY +"px";

if(positionX==xmin)

{

reverse=true;

}

}

}

// This call the moveBall function every 100ms

setInterval(moveBall, 100);

