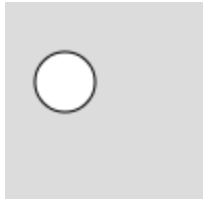# CS106 W2020 - Lab 05

Due: Wednesday, February 5, 2020, 11:59 PM

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1) SINGLES

a) Write a function "drawCircFromVec()" that accepts a vector and draws a circle with the x and y from the vector as the centre of the circle, and a size of 30. Test your program using the following code. The resulting canvas is below.

```
let myVec;
function setup() {
  createCanvas(100, 100);
  background(220);
  myVec = createVector(30, 40);
  drawCircFromVec(myVec);
}
```

Save this sketch as L05Q1a in a directory "CS106_L05".

b) Write a function "drawLineUsingTwoVecs()" that accepts two vectors as arguments and draws a line between the points specified by the two vectors. Test your program using the following code. A resulting canvas is below.
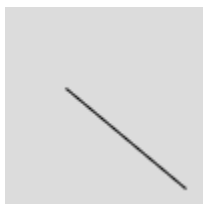
```
let myVec1;
let myVec2;

function setup() {
  createCanvas(100, 100);
  background(220);
  myVec1 = createVector(30, 40);
  myVec2 = createVector(90, 90);
  drawLineUsingTwoVecs(myVec1, myVec2);
}
```

Save this sketch as L05Q1b in the directory "CS106_L05".

2) Modify JitterBug Game

    a) The starter code contains a little game which we call "JitterBug Game". In the game a ball moves randomly around the canvas. A user scores a point by pressing the mouse on the ball. The score is displayed at the top of the canvas.

- Play the game and examine the code to understand how the code.
- Save the starter code as "L05_JitterBugGame" in a directory called "CS106_L05".

Modify the game as described in the following steps:

    b) Add a "h1" header above the canvas with the heading "JitterBug Game".

- Hint: use createElement()

    c) Add a paragraph below the canvas with the instructions on how to play the game. The instructions are: "Click on the ball to score points. Have fun. Hope you enjoy the JitterBug Game."

- Hint: Use createP()

    d) Add a button below the canvas to change the colour of the ball to a random colour.

- Use createButton() and a callback function which you create "changeColour()".

    e) Add a slider below the canvas to change the size of the ball. The ball can vary between 10 and 100, with a default of 30.

- Hint: Use createSlider() to create a slider named mySlider. Then check the value of "mySlider.value()".

    f) Ask the user for a word or phrase, and when the user presses a button that word or phrase appears on the canvas.

- Use createInput() to allow the user to enter text. Use createButton() to create another button. When the user presses that button the word or phrase appears on the canvas, and the text input box becomes empty again.

    g) Set up radio buttons to control the sound. The user can chose either Sound On, or Sound Off. If sound is on it plays the "horn.wav" file when the user's score becomes 3. The "horn.wav" sound file is loaded into the variable "horn" in the starter code.

- Hint: Use createRadio() to create a radio named myRadio, and in updateGame() check myRadio.value() to determine if the horn sound should be played or not when the score reaches 3. If the score just became 3 and sound is on, then the horn sound should play.

See screen shot below. Save this sketch as L05Q2 in the directory "CS106_L05".

Submitting

ZIP your directory CS106_L05 and submit it to the lab dropbox on LEARN. Consult "How to Submit: Handing in Code for Labs and Assignments" on LEARN for more information how to create a ZIP.

It is your responsibility to submit to the correct dropbox with the correct files before the deadline. Otherwise you will receive a mark of 0.