## Creative Coding 1

## P5.js Lab 2

## Velocity

**Note:** Use the properties and functions of the Ball class (in my folder).

**Question 1:**

Write a script that moves a ball object along the x and y axes simultaneously.

**DETAILS:**

* Create ball object – setting x and y to left hand side position, vx and vy to 2 and 3 respectively, radius to 10, and colour of your choice.
* In draw():
  + Draw the ball
  + Move the ball

**Question 2:**

Write a script which moves a ball object along the x and y axes simultaneously, given the speed = 5, and direction = 45 degrees.

**DETAILS:**

* Initialise angle and speed to given values (from question).
* Create ball object – setting x and y to left hand side position, vx and vy to relevant trigonometric equations (using ratios and RA triangle based on given angle and speed), radius to 10, and colour of your choice.
* In draw():
  + Draw the ball
  + Move the ball

**Question 3:**

1. Write a script that creates the following animation: Two balls objects ‘bouncing’ around the screen.

* The balls have a similar initial speed of 15 pixels per iteration.
* The first ball starts at the point (200, 240) – travelling at an angle of 25 degrees.
* The second ball starts at the point (100, 240) – travelling at an angle of 47 degrees.
* The balls should have different colours, and each have a radius of 20.

1. Use condition checking to make sure that the balls stay within the 4 canvas walls. This is known as collision detection. (**Hint**: use a series of if statements combined with logical OR (||)) . The balls should not overlap the edges of the stage. Otherwise the ‘bouncing’ effect will be lost.

**DETAILS:**

* Create ball objects – setting x and y to given positions, vx and vy to relevant trigonometric equations (using ratios and RA triangle based on given angle and speed), radius to 20, and colour of your choice.
* In draw() function:
  + Test against the 4 walls (using 4 if statements) to give bouncing effect.
  + Draw the ball
  + Move the ball