python™ Processing

We've created some Python introductory exercises for you to work through. We will use a web-site called Trinket to run Python. Type **trinket.io** in the browser. You will need an email address to **sign-up**.

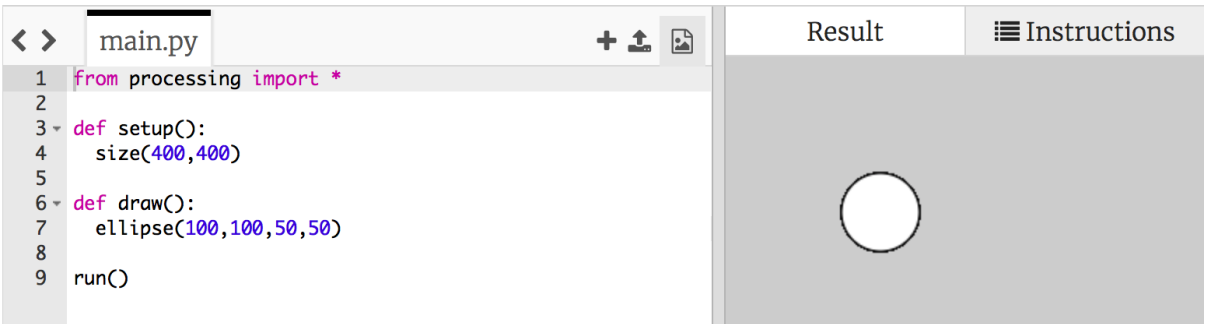
1) Create a **New Trinket** > **Python**
2) Import the Processing library, by adding the first line:

```
main.py
1  from processing import *
2
```

3) Every processing program must **def**ine a **setup** function that is called just once when the program is run. The setup function is used for **initialisation**.
4) Use it to create a drawing area, or canvas, of a given **size**. In the example below we create a square 'canvas' of 400 pixels wide by 400 pixels high.

```
main.py
1  from processing import *
2
3  def setup():
4    size(400,400)
5
```

5) Your program must also **def**ine a **draw** function. This is where all the real work takes place.
6) Once the program has been initialised in setup, the draw function is called repeatedly.
7) This program defines a draw function that draws an ellipse at x,y coordinates 100,100. It will be 50 pixels high by 50 wide.



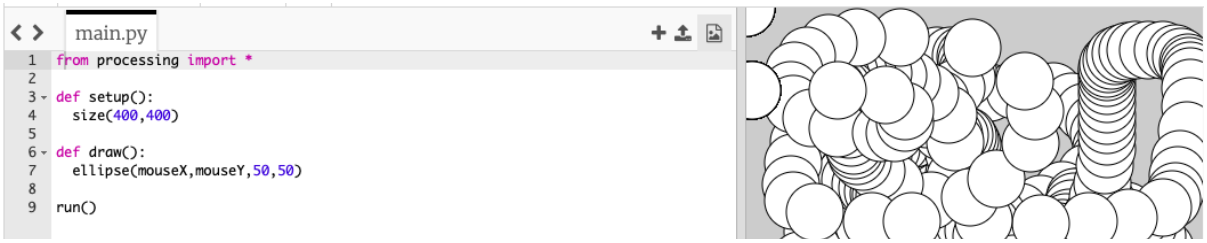
8) To run this in Python it must call **run**. This calls setup once, then draw repeatedly.

9) Click on the Run button (triangle) to start the program then press the stop button (the square) to stop it.

10) Now this program draws the ellipse in the same place each time, at 100,100.

Can you move the circle around?

11) Change the ellipse coordinates to mouseX,mouseY so you can control it with the mouse or touchpad. Now you can create some zany patterns



12) Give your trinket a name by changing **Untitled** to something descriptive, then click **Save.**

Summary

The *arguments* to the **ellipse** function are (in order):

- The x-coordinate of the ellipse centre
- The y-coordinate of the ellipse centre
- The width of the ellipse
- The height of the ellipse

We called ellipse like this: ellipse(100,100,50,50) and the units are pixels (picture elements). The ellipse is circular because its width = height.
The canvas has its **origin** (where x,y = 0,0) at the top-left hand corner of the screen. The value of x increases as we move to the right, and y increases as we move down.

Reference: https://py.processing.org/reference/