

python™ Processing 1

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**.

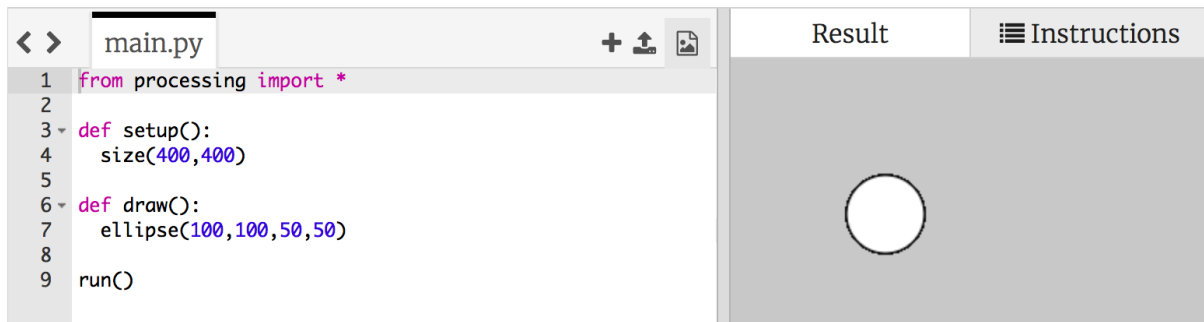
- 1) Create a **New Trinket > Python**
- 2) Import the Processing library, by adding the first line:

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

- 3) Every processing program must **define** 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
```

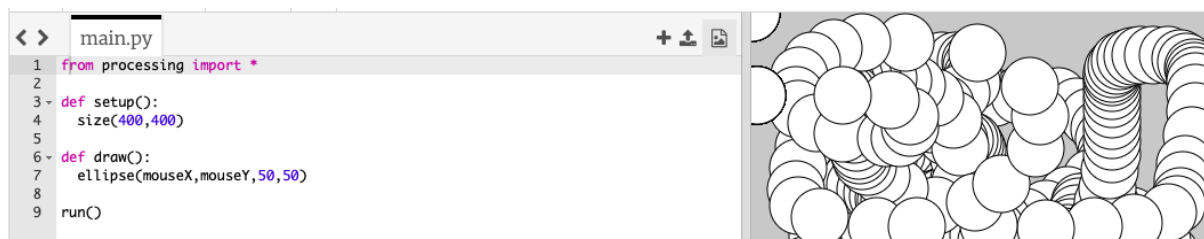
- 5) Your program must also **define** a **draw** function. This is where all the real work takes place.
- 6) Once the program has been initialised in setup, the draw function is called repeatedly.
- 7) This program defines a draw function that draws an ellipse at x,y coordinates 100,100. It will be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