



## Processing 3

# Cookie Cutter

Open **trinket.io** in the browser. You will need an email address to **sign-up**.

- 1) Rectangles can be drawn with the **rect** function. The first two *arguments* set the x,y location of the upper-left corner of a rectangle, the third sets the width, and the fourth sets the height.

*For example, `rect(0,0,100,100)` draws a 100x100 pixel square at the **origin** (0,0).*

- 2) Create a new Python Trinket and create this “cookie cutter” code that draws a shape at the mouse cursor position when you press a key.

```
< > main.py + ⬆️ 📄
1 from processing import *
2
3 def setup():
4     size(400,400)
5     background(0,0,255)
6
7 def keyPressed():
8     rect(mouseX,mouseY,50,50)
9
10 def draw():
11     pass
12
13 run()
```

- 3) When you press a key, the **keyPressed** function is called. This leaves nothing to do in the draw function. In Python, you can have an empty function that *passes* on doing anything, by adding the word **pass** in the function body (see line 11).
- 4) Make the **keyPressed** function draw different shapes by looking at what key is pressed. This value is stored in a variable called **key**.

- 5) Use an **if** statement to check to see if the key is equal to 'r' for 'rectangle' using the test, `Key=="r"`



- 6) Add another test that checks for 'e' and draws an ellipse.
- 7) Notice that the `mouseX,mouseY` gives the top-left corner of the rectangle/square, but the centre of the circle/ellipse. We can make rectangles use this position as the centre by adding **`rectMode(CENTER)`** to the setup function (CENTER is the American spelling of centre).
- 8) There is also a **`triangle`** function, but we have to work out the x,y coordinates of each **vertex**.
- 9) The **`triangle`** function takes 6 arguments, the x,y coordinates of three *vertices*, **`triangle(x1,y1,x1,y2,x3,y3)`**
- 10) The order of the three vertices doesn't matter.
- 11) You can use the following to draw a small equilateral triangle:  
`triangle(mouseX-25,mouseY+20,mouseX+25,mouseY+20,mouseX,mouseY-20)`
- 12) Add another "cookie cutter" option to your code to draw a triangle when you press "t"
- 13) **SAVE your code.**