Functions, Part One
CMPT 140

Demo 1

What does this code do?

```
1  def secret():
2      line(40, 30, 75, 60)
3      line(75, 30, 40, 60)
4
5  size(300, 300)
6  secret()
```

Exercise 1

```
1  def draw_moon():
2      ellipse(250,250,300,300)
3
4  def draw_crater(x,y):
5      ellipse(x,y,30,30)
6
7  def draw_flag():
8      line(205,205,205,295)
9      rect(205,205,50,30)
```

Write code that **calls** the functions above to:

(a) **Draw the moon with a flag planted on its surface**

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Write code that **calls** the functions above to:

(a) Draw the moon with a flag planted on its surface

(b) **Draw the moon with three craters anywhere on its surface**

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Write code that **calls** the functions above to:

(a) Draw the moon with a flag planted on its surface

(b) Draw the moon with three craters anywhere on its surface

(c) **Draw the moon with a at least three craters; plant the flag in the centre of one of the craters and such that the flag is (partially) hiding another crater**

Exercise 2

Insert appropriate **single-line comments** into the following code.

```
1  def draw_something ():
2      ellipse (50 ,50 ,100 ,100)
3      ellipse (25 ,35 ,20 ,20)
4      ellipse (75 ,35 ,20 ,20)
5      line (28 ,65 ,38 ,75)
6      line (38 ,75 ,48 ,80)
7      line (48 ,80 ,52 ,80)
8      line (52 ,80 ,62 ,75)
9      line (62 ,75 ,72 ,65)
```

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Define Python functions for the following scenarios:

(a) `draw_fixed_square()`: **takes no parameters and draws a 50x50 square at coordinate (50,50)**

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(b) `draw_circle()`: **takes parameters** `x,y,d` **and draws a circle centered at** `(x,y)` **with diameter** `d`

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Define Python functions for the following scenarios:

(a) `draw_fixed_square()`: takes no parameters and draws a 50x50 square at coordinate (50,50)

(b) `draw_circle()`: takes parameters `x,y,d` and draws a circle centered at `(x,y)` with diameter `d`

(c) `draw_concentric_circles()`: **takes parameters** `x,y` **and draws three circles on top of one another such that they all have centre coordinate** `(x,y)`. **The circles should have radius 90, 60, 30 in that order.**

Exercise 4

Write a **docstring** for the following function.

```python
def draw_concentric_circles(x, y):
    draw_circle(x, y, 180)
    draw_circle(x, y, 120)
    draw_circle(x, y, 60)
```