



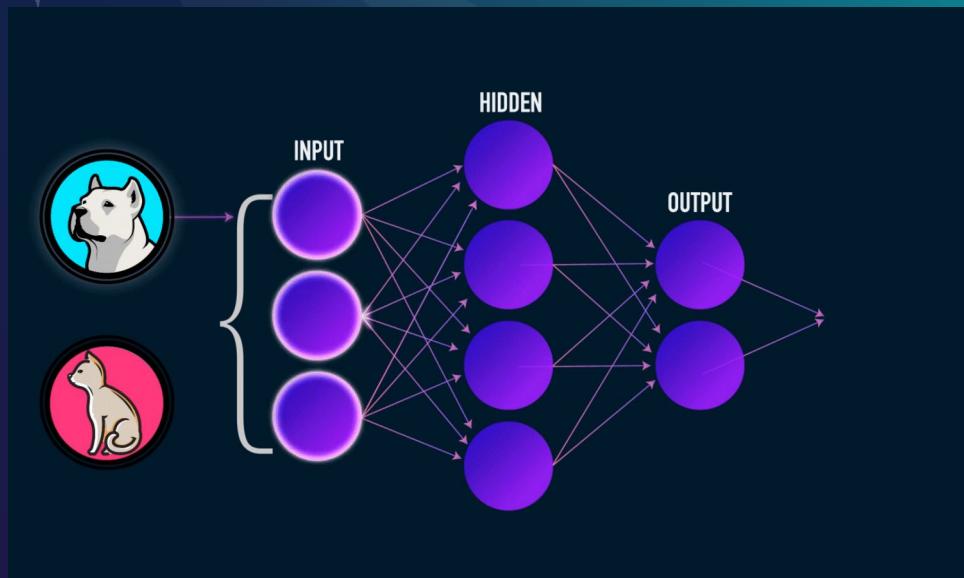
CODE FOR CHINA

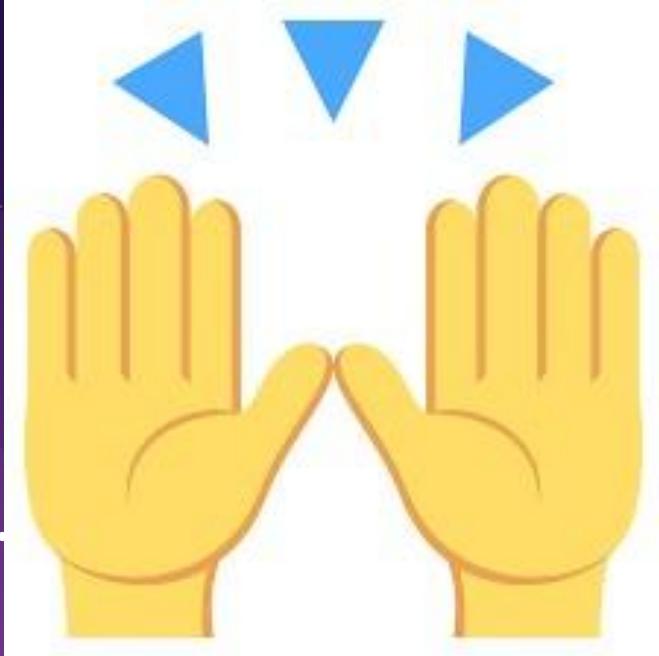
LESSON 2



Intros Part 2

- ★ Favorite Emoji
- ★ What do you want to do when you grow up?





Review of Topics

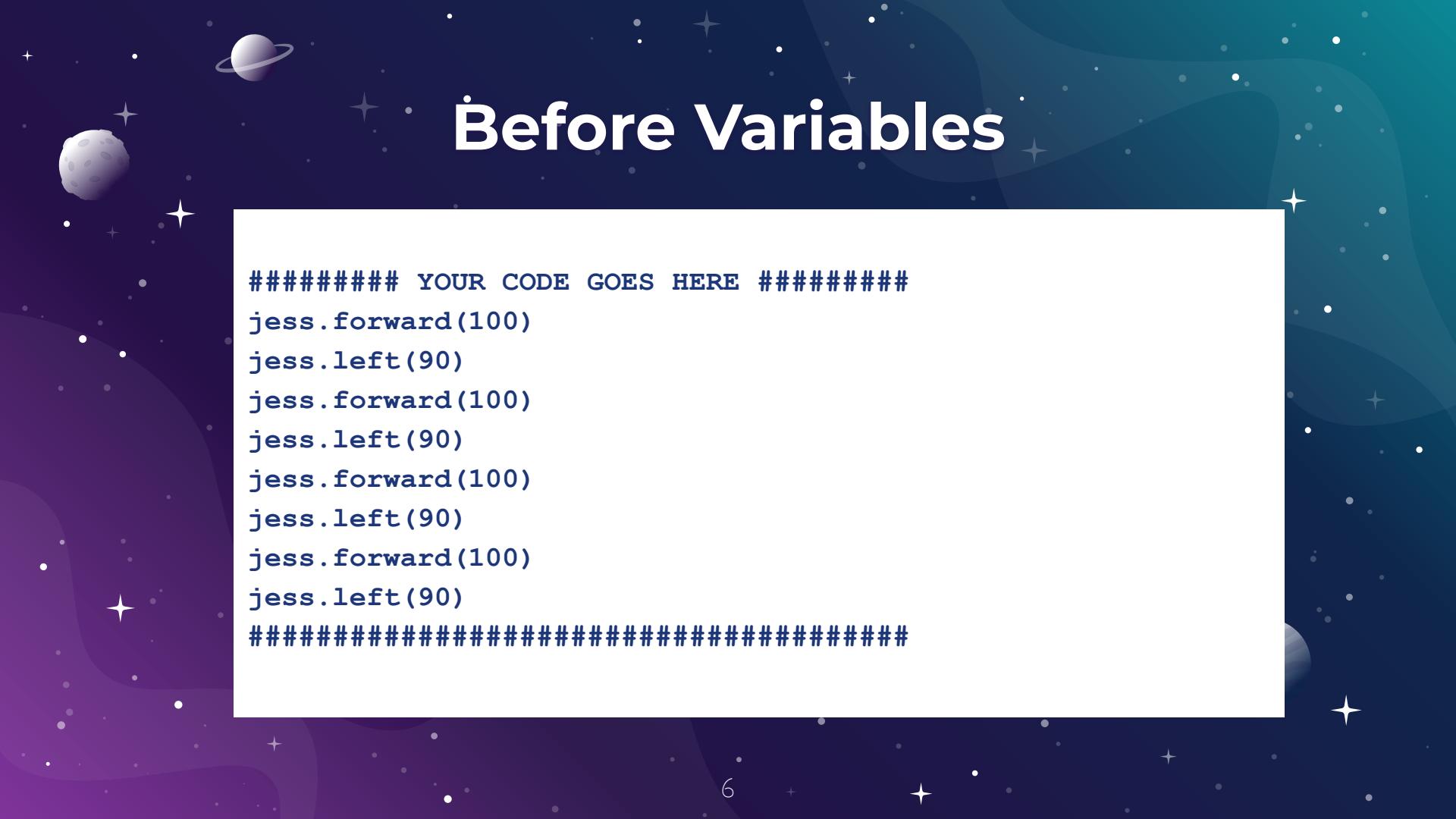
Variables

For Loops

Random Integers

Color

Coordinates(

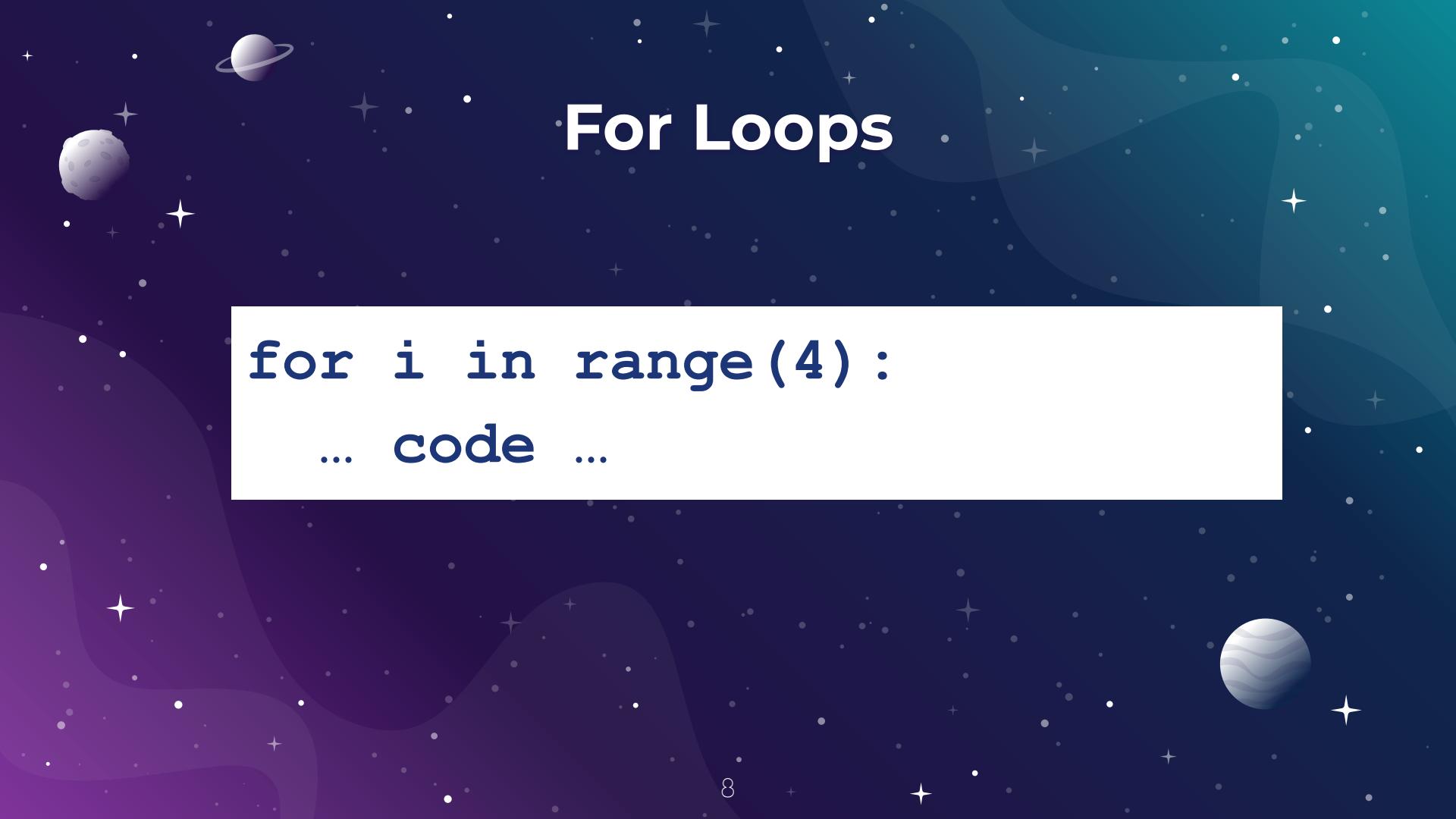


Before Variables

```
##### YOUR CODE GOES HERE #####
jess.forward(100)
jess.left(90)
jess.forward(100)
jess.left(90)
jess.forward(100)
jess.left(90)
jess.forward(100)
jess.left(90)
#####
#####
```

After Variables

```
....  
##### YOUR CODE GOES HERE #####  
distance = 100           ← Variables  
angle = 90  
jess.forward(distance)  
jess.left(angle)  
jess.forward(distance)  
jess.left(angle)  
jess.forward(distance)  
jess.left(angle)  
jess.forward(distance)  
jess.left(angle)  
#####  
....
```



For Loops

```
for i in range(4):  
    ... code ...
```

Random Integers

```
n = random.randint(a, b)
```

a <= n <= b

(inclusive)

Colors

```
jess.color(r, g, b)
```

r, g, b are numbers between 0 and 255

Coordinates

```
jess.goto(x, y)
```

x, y are variables that are numbers

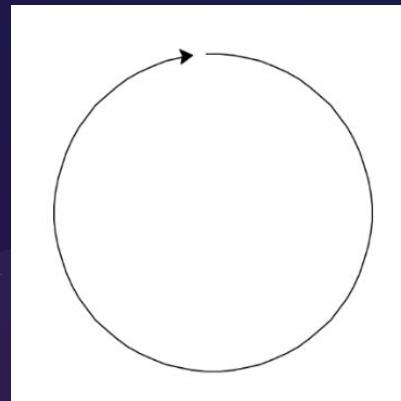
```
jess.penup()
```

```
jess.pendown()
```

Today's Overview

- More For Loop Practice
- Comments, print statements
- Updating and changing variables
- Variable Puzzle
- Nested For Loops
- Final Exercise

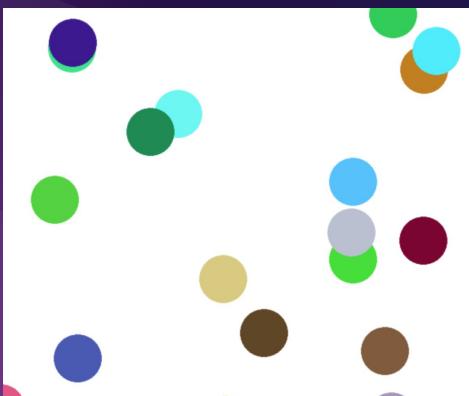
How could we draw a circle?



CODING TIME!

Random Circles

[www.repl.it/@jessicae5/randomCircles](https://repl.it/@jessicae5/randomCircles)



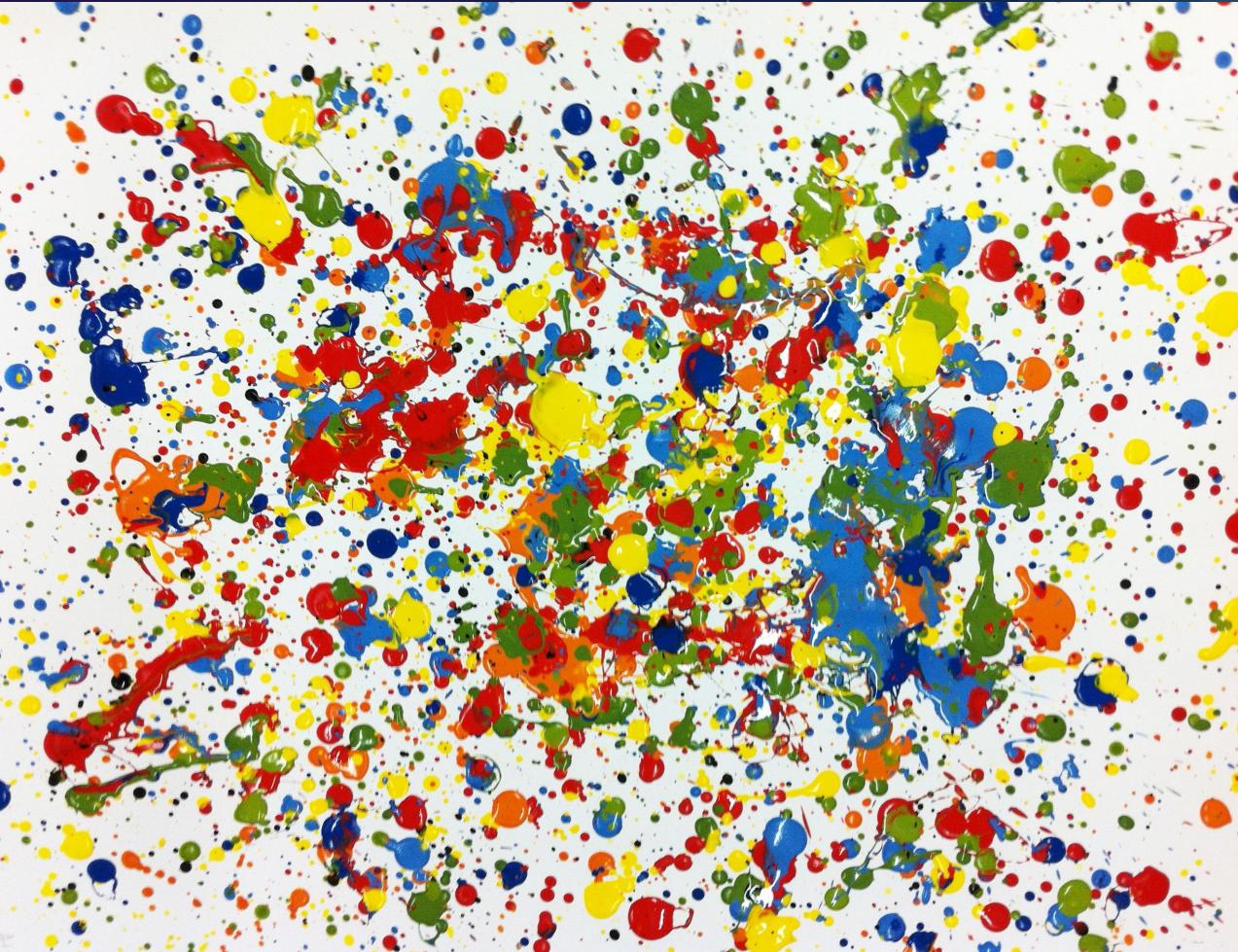
Create new file
random_circles.py
Circles should have:

- Random Size
- Random Color
- Random Location

Extra 1: Look up how to fill in circles:

<https://docs.python.org/3.3/library/turtle.html?highlight=turtle>

Extra 2: Draw Random Shapes



Jackson
Pollock,
American
Artist

Comments

```
#any line that starts with '#' is a comment  
#it will not affect the code  
#comments are good for notes
```

Adding Variables

```
age = 5  
#age is now 5  
age = age + 5  
#age is now 10  
age += 5  
#age is now 15
```

Adding Variables

Addition: + or +=

Subtraction: - or --

Division: / or /=

Multiplication: * or * =



Examples (both give the same solution)

```
x = 5
```

```
y = 2
```

```
x *= y
```

```
#x is now 10, y  
is still 2
```

```
x = 5
```

```
y = 2
```

```
x = x*y
```

```
#x is now 10, y  
is still 2
```

Variable Quiz

```
Time = 60
```

```
#Time += 10
```

```
Time = Time * 2
```

#What is the value of time?

Print Statements

```
x = 5
```

```
print(x)
```

#5 is printed to the console

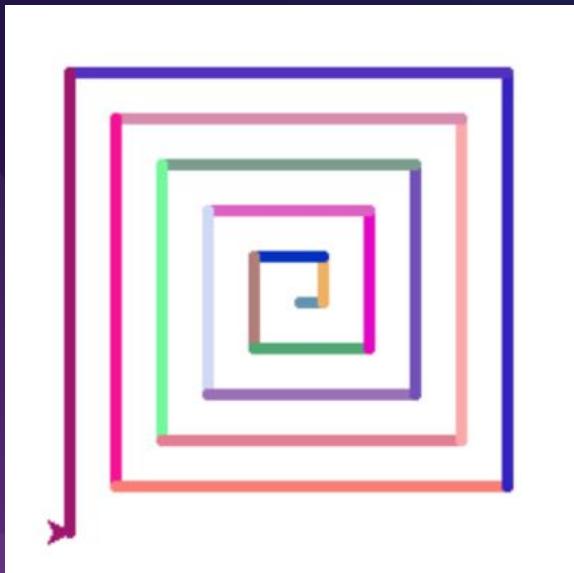
```
print(x + 5)
```

#10 is printed to the console

15-MIN BREAK

:)

How do we draw this?



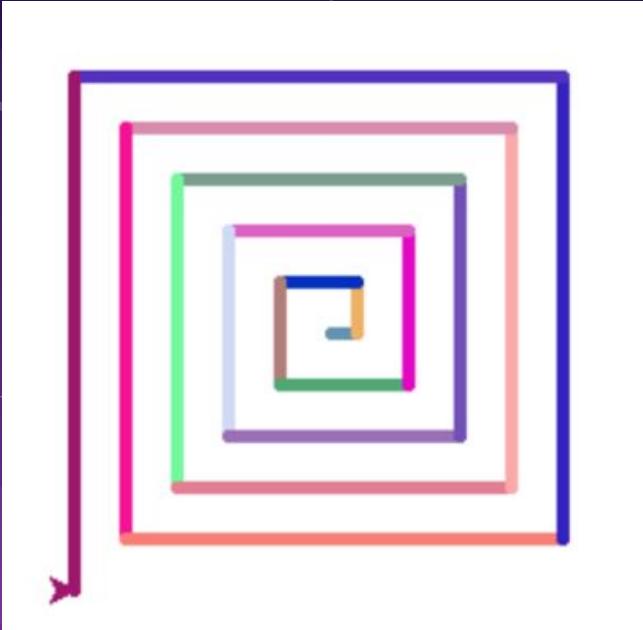
Distance of line gets
longer each turn

CODING TIME!

Square Spiral

<https://repl.it/@jessicae5/squareSpiral>

- Create new file
square_spiral.py



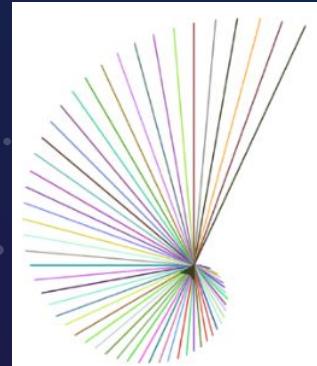
Extra 1:

Draw Triangle Spiral



Extra 2:

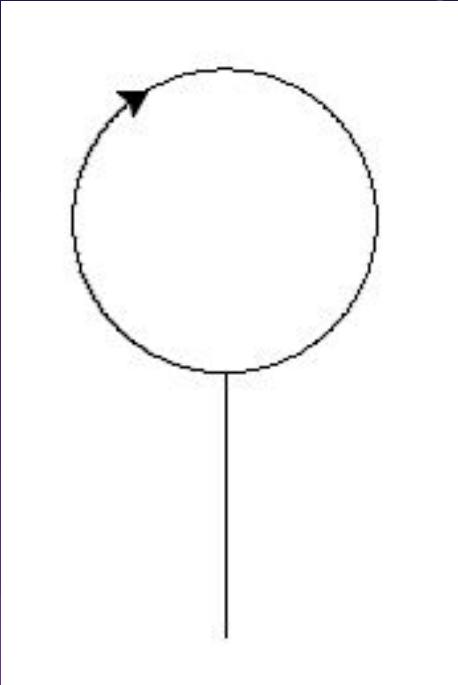
Draw Firework



CODING TIME!

Quidditch Hoop

<https://repl.it/@jessicae5/quidditchHoop>



10-MIN BREAK

:)

Nested For Loop

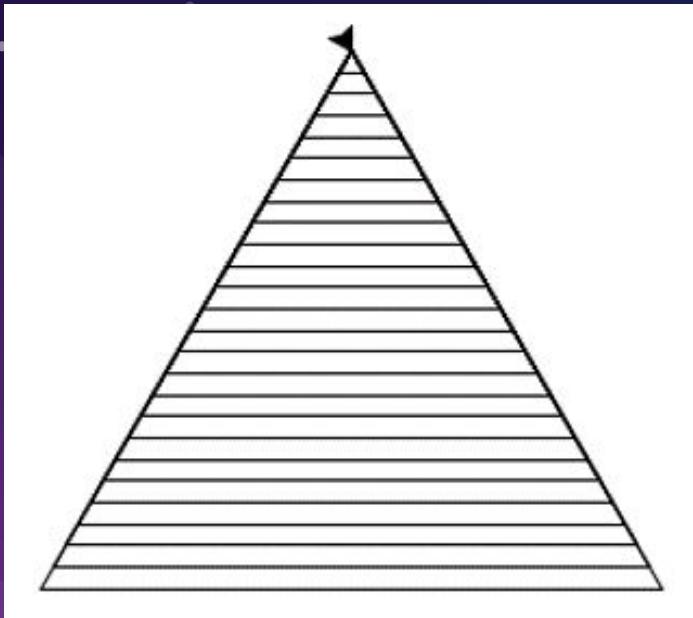
```
num = 1  
for i in range(3):  
    for j in range(4):  
        num = num + 1  
print(num)
```



CODING TIME!

Egyptian Pyramid

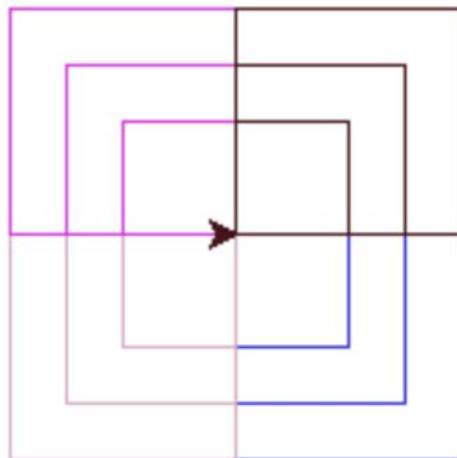
<https://repl.it/@jessicae5/pyramid>



CODING TIME!

Window Pane

<https://repl.it/@jessicae5/windowpane>



Today's Overview

- More For Loop Practice
- Comments, print statements
- Updating and changing variables
- Nested For Loops
- Various pictures: spirals, pyramids, windows