Lesson 1: FizzBuzz

Programming Fundamentals in Python

Welcome to class!

Introductions

- Name

- Why you are learning to program?

- How are you feeling?

Today's Goal

- Code FizzBuzz!

FizzBuzz

The Rules

- For all the numbers from 1 to 100:

  - If a number is divisible by 3, print "Fizz"

  - If a number is divisible by 5, print "Buzz"

  - If divisible by both 3 and 5, print "FizzBuzz"

  - For all other numbers, print the number itself

FizzBuzz Demo

1

2

Fizz

4

Buzz

Fizz

7

8

Fizz

Buzz

11

Fizz

13

14

FizzBuzz

Breakdown

- "Hello World"

- Assignment vs Equality

- If / Else

- For

- Modulus

1: Hello World

Hello World

```
print("hello world")
```

Hello World Demo

2: Assignment vs Equality

Assignment

```
x = 1

print(x) # prints 1

x = 2

print(x) # prints 2
```
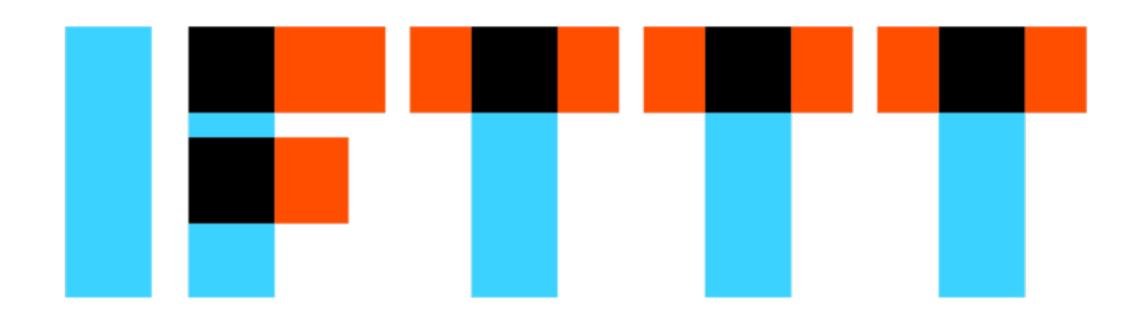
Equality

```
1 == 1

# True

1 == 2

# False
```

Assignment vs Equality

```
x = 1 == 1

print(x) # prints True

x = 1 == 2

print(x) # prints False
```

3: If / Else

IFTTT

IFTTT

ifthisthenthat

If

```
if has_coupon:

  apply_discount()
```

Else

```
if light.color == "red":

   stop()

else:

   go()
```

If / Else Demo

4: For

For

- "For each element of a list, do this thing"

```
for vegetable in vegetables:

    cut(vegetable)
```

Asian mom: "Each of my children must attend Harvard"

Asian mom: "Each of my children must attend Harvard"

```
for child in ["Samantha", "Charles"]:

    apply_to_harvard(child)
```

$$\{ x \mid x \in \mathbb{R} \wedge x > 0 \}$$

The set of X where:
1. X is an element of the real numbers
2. x is greater than zero

"Give me an X, where X is a positive real number"

```
for x in positive_real_numbers:
  print(x)
```

For Demo

5: Modulus

Modulus

- Remainder Operation

- % symbol in Python

```
x = 3 % 2

print(x)

# x is now 1
```

Modulus Demo

Homework Assignment

- Write Fizzbuzz on your own

- Email it to me

Bonus Assignment

- Find the sum of all prime numbers below one million

- Email me the sum and attach your source code

Next Week

What Number Am I Thinking Of?