DS2000
1/13 - Fri :)

Admin

- HW 1 - due 1/20 9pm

Agenda

1. Variables + data types
2. Arithmetic operators
3. Python

1. Variables + Data Types

Every program
1. Gather data → from user (input)
2. Computations
3. Communicate → to user (print)

Variables remember things

Label 
Value 

Phone } Tom (label)
415-559-2760 (value)

Last time...

```
grizz = 9
  ↳ label  ↳ value
carol = 4
avg = (grizz + carol) / 2
```

↳ Right hand side first.

Data Types

			value
int	(whole number)	x = 2	2
		x = x + 3	5
float	(decimal number)	y = 5.5	5.5
		z = y + x	10.5
string	(word, phrase) Python default	name = "Zoey"	
Boolean	(true / false)	b = True	

String as default

```
a = input("Enter")          string
a = int(input("Enter"))     int
```

2. Arithmetic Operators

- ints and floats
- right-hand side first
- Python uses PEMDAS
  parenthesis add clarity!

Basic Arithmetic

+	add
-	subtraction
/	division
*	multiply

Extras

**	exponent
//	int division
%	modulo

x = (2 ** 3) + 2

/

```
x = 10 / 3
print(x)
print(round(x, 2))
```

3.33333333

3.33

2 past dec.

only in communication!

```
print("x is", round(x, 2))
```

// int. division

Price is Right!

15 // 10 → 1

15 // 7 → 2

15 // 2 → 7

% mod

Remainder

15 % 10 → 5

15 % 7 → 1

15 % 2 → 1

```
  1R5
10|15
 -10
  5
```

3. Python

- Grizz
- Carol

} avg

Just Carol

friendliness, energy } weighted avg
Friendly 75%
energy 25%

How long at the dog park?

minutes → hours, minutes

What variables do we need?

friendliness, energy, minutes } from the user

Test Cases

Group #1 - weighted avg if friend = 9.5
energy = 9.4

Group # 2 - hours/minutes if minutes = 102