CSCI 127: Joy and Beauty of Data

Lecture 3: Intro to Python and Data Types

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Snowmester 2020
https://reesep.github.io/classes/127/main.html

Announcements

Lab 1 has been posted
-> Due Wednesday 12/2 (tomorrow) 11:59 PM
-> After today, you will be able to start on it

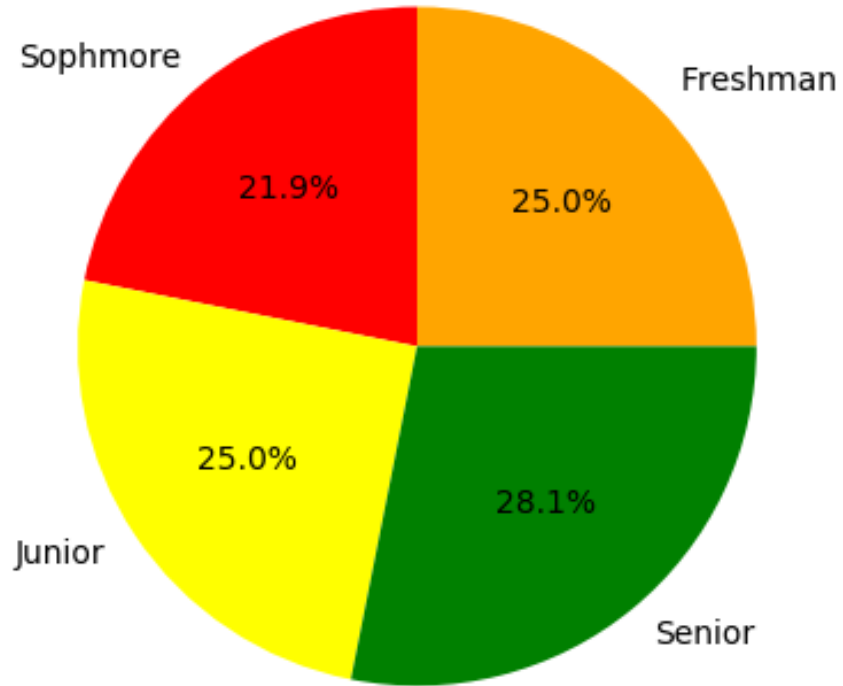-> A video has been posted that goes over the assignment

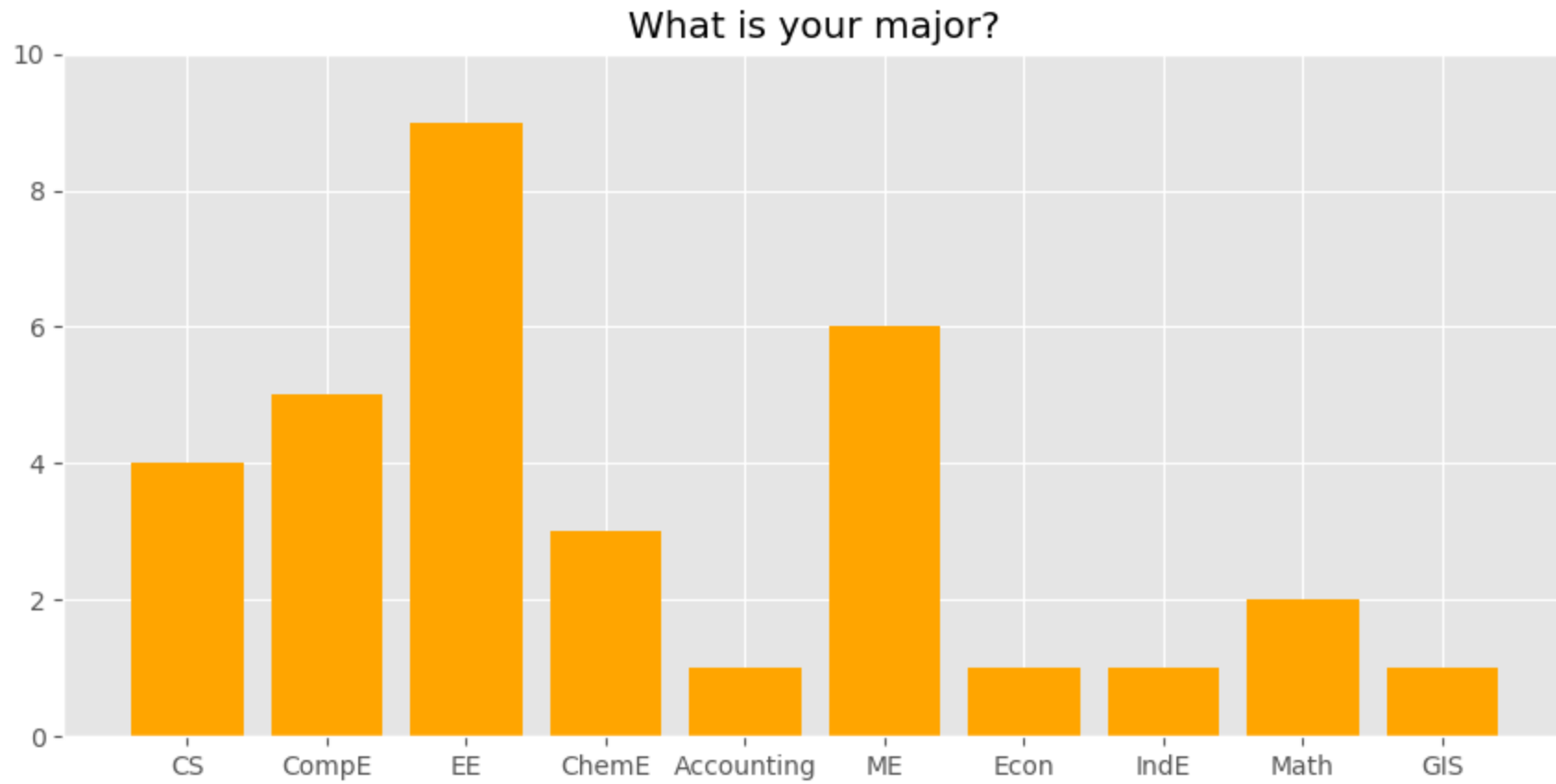Lab 2 is due on Friday 12/4 @ 11:59 PM
-> will be posted soon

Today

Installing Python, Data Types, Variables, User Input

Questionnaire Results
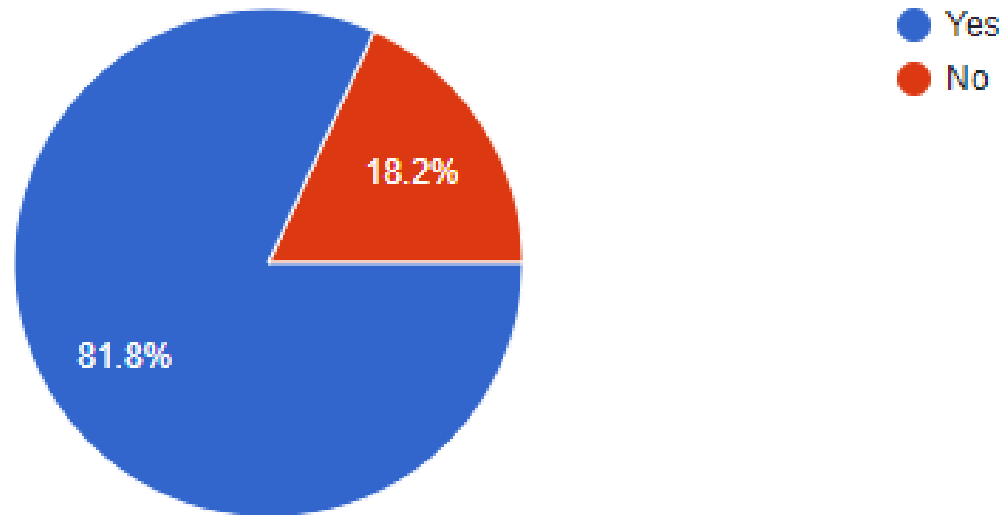
Questionnaire Results

Questionnaire Results

Have you taken a computer programming class before?

33 responses

- Yes
- No

81.8%

18.2%

Questionnaire Results

Most people seem to prefer asynchronous (I am glad to hear this ☺)

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Lots of people seem to not enjoy online classes (hard time learning, focusing, procrastination, motivation, …)

I understand your concerns (I feel the same way!)… I will keep this in mind ☺

Questionnaire Results

Most people seem to prefer asynchronous (*I am glad to hear this* ☺)

Lots of people seem to not enjoy online classes (hard time learning, focusing, procrastination, motivation, …)

I understand your concerns (I feel the same way!)… I will keep this in mind ☺

Lots of people seem to be looking forward to this class… (*me too!*)

Python Installation

I will on Windows, but the process on Mac is very similar

(Wednesday) Announcements

Lab 1 has been posted
-> Due TONIGHT @ 11:59 PM (**this is mountain time**)

-> A video has been posted that goes over the assignment

Lab 2 is due on Friday 12/4 @ 11:59 PM
-> will be posted soon (today sometime)

-> You will have everything you need to complete it after Thursday's lecture

Today

More formatting output and more examples!

When you learn how display hello world in Python

Integers (whole numbers) `int`

Floating Point Numbers (decimals) `float`

Strings (words, or anything surrounded in " ") `str`

There are more Data types we will talk about later

Data Types

7

Data Types

7   Integer

Data Types

7   Integer

"Reese"

Data Types

7   Integer

"Reese"   String

Data Types

7   Integer

"Reese"   String

4.1111

Data Types

7   Integer

"Reese"   String

4.1111   Float

Data Types

7   Integer

"Reese"   String

4.1111   Float

100

Data Types

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"The FitnessGram Pacer Test is a multistage aerobic capacity test that progressively gets more difficult as it continues. The 20-meter pacer test will begin in 30 seconds. Line up at the start. The running speed starts slowly but gets faster each minute after you hear this signal bodeboop. A sing lap should be completed every time you hear this sound. ding Remember to run in a straight line and run as long as possible. The second time you fail to complete a lap before the sound, your test is over. The test will begin on the word start. On your mark. Get ready!… Start. ding "

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"Reese"   String

4.1111   Float

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Data Types

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"Reese"   String

4.1111   Float

100   Integer

"100"   String

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difficult as it continues. The 20-meter pacer test
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reese

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3.0   Float

reese   ?????

This is a variable, it could be int, string, or float

Add / Concatenation (+)

Subtraction (-)

Multiplication (*)

Division (/)

Integer Division (//)

Power (**)

Modulus (%) (Remainder)

Increment (+=)   x += 1   <->   x = x + 1

Decrement (-=)   x -= 1   <->   x = x - 1

```
variable_name = input("Enter prompt here")
```

Note: the resulting value will **always** be a string

User Input

```
variable_name = input("Enter prompt here")
```

Note: the resulting value will **always** be a string

More practice

Change Counter Program

Write a program that will ask for the number of quarters, dimes, nickels and pennies. The program will calculate the total value of that change.

Cost per square inch for a Pizza

Write a program that will calculate the cost per square inch of a circular pizza, given its diameter (inches) and price.

The formula for area of a circle is (pi)*r^2

Formatting

Formatting

	1	2	3	4	5	6	7	8	9	10
Left align with 10 spaces of padding `{:<10}.format("hello")`	h	e	l	l	o					
Right align with 10 spaces of padding `{:>10}.format("hello")`						h	e	l	l	o
Center with 10 spaces of padding `{:^10}.format("dogs")`				d	o	g	s			

Formatting

	1	2	3	4	5	6	7	8	9	10

Left align with 10 spaces of padding `"{:<10}".format("hello")`

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Right align with 10 spaces of padding `"{:>10}".format("hello")`

					h	e	l	l	o

Center with 10 spaces of padding `"{:^10}".format("dogs")`

			d	o	g	s			

Truncating decimal places

```
num = 37.22222222
```

Only allow 3 decimal places: `"{:.3f}".format(num)`