

# CSCI 127: Joy and Beauty of Data

Lecture 3: Intro to Python and Data Types

Reese Pearsall  
Summer 2021

<https://reese.github.io/classes/summer2021/127/main.html>

# Announcements

Lab 1 due Wednesday 5/12 (tomorrow) 11:59 PM

-> After today, you will be able to finish it

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

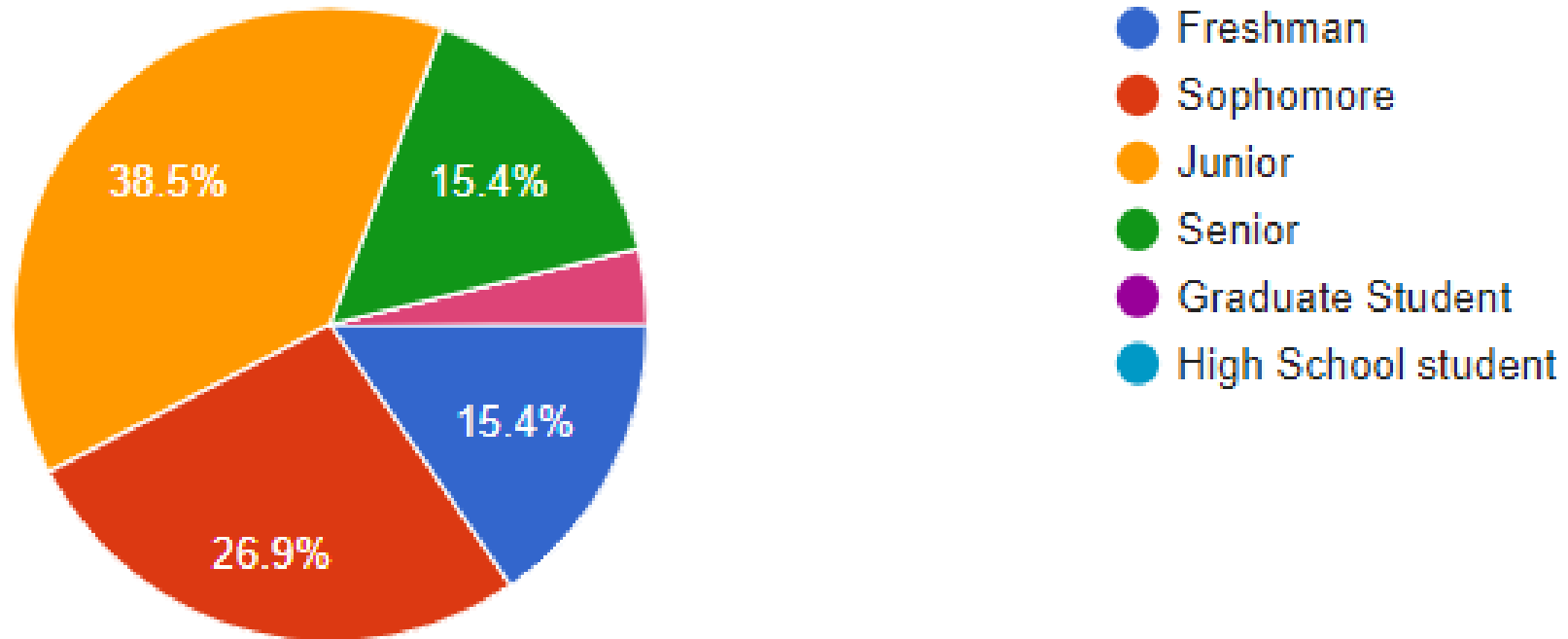
Office Hours and Virtual Help Sessions moving to Zoom instead of Webex

All times and due dates are in **MOUNTAIN TIME**

## Today

Installing Python, Data Types, Variables, User Input

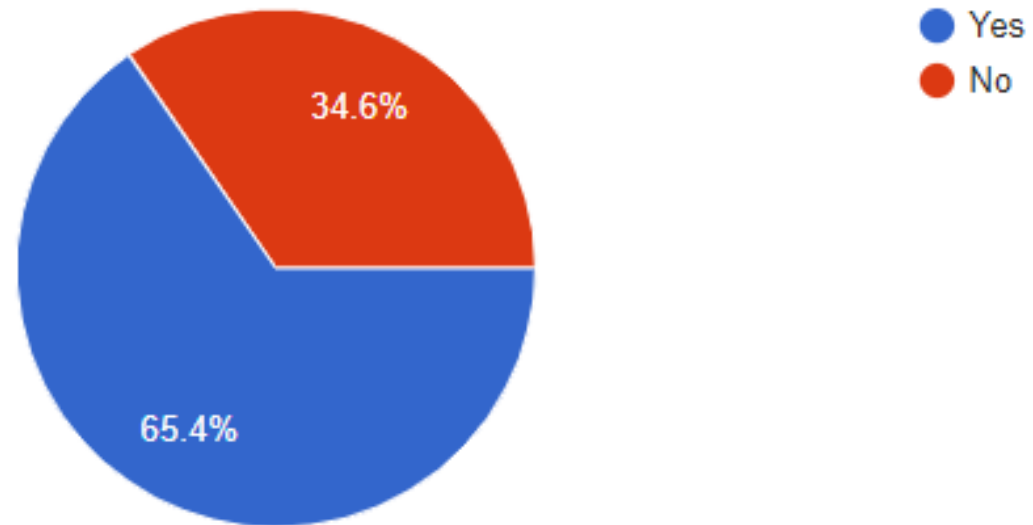
## Questionnaire Results



# Questionnaire Results

Have you taken a computer programming class before?

26 responses



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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 in this class are also working full time or part time jobs

*I don't want this class to interfere with that!*

# Python Installation

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



## (Wednesday) Announcements

Lab 1 Due TONIGHT @ 11:59 PM (**this is mountain time**)  
-> A video has been posted that goes over the assignment

You can find me on Zoom today at 1:00 – 4:20

I'll be making a Discord server for this course soon. Stay tuned

## Today

Formatting Outputs, Intro to Functions

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

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Integer

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“Reese”

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“Reese” String

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Integer

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

"100"

String

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# Operators

**Add / Concatenation (+)**

**Subtraction (-)**

**Multiplication (\*)**

**Division (/)**

**Integer Division (//)**

**Power (\*\*)**

**Modulus (%) (Remainder)**

**Increment (+=)**      $x += 1 \quad \leftrightarrow \quad x = x + 1$

**Decrement (-=)**      $x -= 1 \quad \leftrightarrow \quad x = x - 1$

## User Input

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

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

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## 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



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1 2 3 4 5 6 7 8 9 10

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

<b>h</b>	<b>e</b>	<b>l</b>	<b>l</b>	<b>o</b>					
----------	----------	----------	----------	----------	--	--	--	--	--

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					<b>h</b>	<b>e</b>	<b>l</b>	<b>l</b>	<b>o</b>
--	--	--	--	--	----------	----------	----------	----------	----------

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

			<b>d</b>	<b>o</b>	<b>g</b>	<b>s</b>			
--	--	--	----------	----------	----------	----------	--	--	--

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

			d	o	g	s			
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## Truncating decimal places

```
num = 37.22222222
```

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