COMP 110

Fall 2021 - Section 002 - In-person - 11am

Class 02 - Variables and User Input

Today's Goals

1. Practice and review data types and expressions.

2. Learn how to ask the user for input.

3. Learn how to store values in memory via variables.

4. Practice environment / memory diagrams with variables.

But first, announcements!

- Office Hours Update
  - Over 120 of you have come to work with us in Office Hours!
  - Average wait time: 2 minutes
  - It's OK to come with conceptual questions!
  - Tutoring hours will start next week

- Today's Lesson and Homework on Gradescope: Practice with a diagram upload.
  - Instructions for scanning via an app on your phone: http://bit.ly/110-scanning
  - Must submit scans of pen(cil) and paper following the instructions above. Digital tools (such as iPad) will be penalized 25%.

- Monday Week-in-Review with Kaki @ 3pm EST: In-person SN014 - Zoom Link on Itinerary

- Tuesday: Quiz 00
  - Will open on Gradescope at the start of the official course time
  - Standard amount of time to complete: 75 minutes, but designed for 60 minutes
    - Why? So you can begin scanning and submitting diagrams at 60 minutes to avoid any time crunch.
  - Synchronous during the official course time, but you do not need to join Zoom or be In-person.
  - No collaboration - easy to detect in on-line Gradescope assignments. No outside resources.
  - You may use: notes, VSCode, course materials on the course website.
  - Content: From Syllabus through today. Good prep: complete EX01 before the quiz.
  - More details e-mailed out tomorrow.

Practice question #0

What does the expression evaluate to?
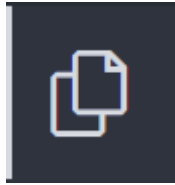
2 + 4 / 2 * 2

Practice question #1

What does the expression evaluate to?

```
220 >= int(("1" + "1" + "0") * 2)
```

Follow-along...

- Open your workspace in VSCode > File > Open Recent > comp110-...
- Open the File Explorer:

- Right click on the **lessons** directory, select **New File**, name it: **input.py**

```
1    """A program to demonstrate user input and variables."""
2
3    print("Wow, " + input("Who are you? ") + ", you rock!")
4    print(input("Who are you? ") + " have a great day!")
```

- **Save your work!**
- Close any open terminals (Trash can) and open a new terminal to run:

  `python -m lessons.input`

Diagram Problem

Given the following code listing, trace a memory diagram where the **first user input value is your current age** and the second input value is **2021**.

```python
1    """Example diagram problem."""
2
3    age: int = int(input("How old are you? "))
4    year: int = int(input("What year is it? "))
5    age_in_2041: int = 2041 - year + age
6    print("In 2041, you'll be " + str(age_in_2041))
7
8    age = age + 1
9    year = year + 1
10   print("In " + str(year) + ", you'll be " + str(age))
```

```python
"""Example diagram problem."""

age: int = int(input("How old are you? "))
year: int = int(input("What year is it? "))
age_in_2041: int = 2041 - year + age
print("In 2041, you'll be " + str(age_in_2041))


age = age + 1
year = year + 1
print("In " + str(year) + ", you'll be " + str(age))
```