

Writing Simple Programs (part 1)

CMSC 104 Section 2
September 9, 2025

Administrative Notes

Remember that Classwork 1 must be submitted by no later than 11:59 pm tomorrow night!

Classwork 2 will be assigned tomorrow

Quizzes in this class will be done on paper!! Yeah, I know the syllabus says you'll use the lockdown browser, but I'm not a fan of that. I talked to our TF and she and I agree that paper quizzes are better.

- You will still get “sample quizzes” before the actual quizzes.

A bit about how computers work internally

You can think of the computer's memory as a long set of places to store bits

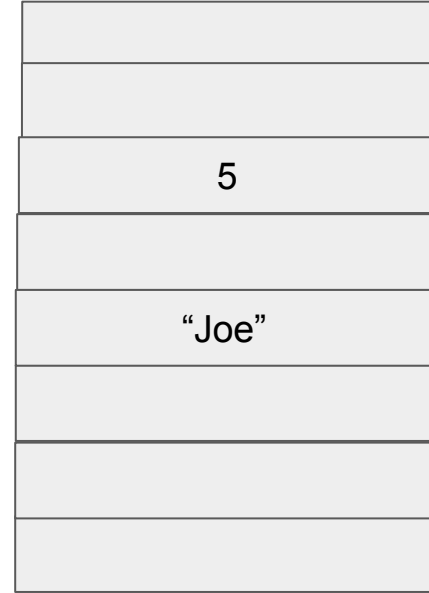
- Each place has an internal address (that we don't care about - it depends on what else is running on your computer at the time)
- How many bits can be stored depends on your computer; 32 and 64 are typical
- What those bits mean depend on what type of data we're talking about

140733399356328

5

140733399356344

"Joe"



Python helps us manage this

Python creates a “symbol table” with every identifier (variable name) you use in your program

- It allocates a location in memory
- Identifies what type it's supposed to hold (integer, real number, string,...)
- Maps your name to the location's address

When you use that variable in your program, Python goes to that address in memory and gets the value



A simplified illustration

Symbol`	Type	Address
index	integer	140733399356328
name	string	140733399356344

The fact that Python manages this
means we don't have to!!!

What's a “symbol?”

Okay, we have a “symbol table”. What's a “symbol?”

- It's any name you use in your program
- Right now, we've only learned about “variables”
 - There will be more later
- Why is it a “variable?”
 - Because its value can change in the program
- What are the rules on variable names, again?
 - Start with an underscore (`_`) or letter - upper or lower case are both fine
 - Contains underscores, upper & lower case letters, and digits
 - Can be as long as you want

So, let's walk through the programs we did last week

```
for i in range(1, 11, 1):  
    print("Hello, world")
```

```
for i in range(1, 11, 1):  
    print("the number is", i)
```