CS50P Notes

Avid David

June 30, 2025

Contents

1 Functions, Variables

We first learnt how to write a Python function. The function takes in an input, called an argument, and outputs something. In the argument, we may have variables that we can change - as in assigning different values to them.

When coding, it's helpful to leave some comments along the way to better understand the code when re-reading it. And before coding, to generally get the gist of the workflow, it's helpful to write out pseudocode first.

In this lecture we also learnt how to handle string inputs: `strip()`, `replace()`, etc. We also learnt how to tweak Python's built-in functions by changing their parameters. These can be found by looking in their official document.

2 Conditionals

This lecture gave an all around overview of conditional statements. Basically the code only runs `if` something happens. We also have `elif` and `else`, which are a bit self explanatory. They help keep the code cleaner and reduce unnecessary steps. `if`, `elif` and `else` statements also have `and` and `or`. Same as in other languages, these boolean expressions help you in manipulating your conditions. We also learnt about `match-case`, which is relatively new in Python. I think it'll be useful when I work with large databases, but right now, I just don't quite see the point.

3 Loops

And then we have loops. `while` loops will run as long as the condition remains `True`. We learnt how to manipulate it by adding a counter, but it seems `for` loops have that built in and are just better.

With conditionals and loops, we can do quite a lot of thing now. They go along the lines of "if stuff like this happens, then keep doing that". Also we learnt about lists. They're different from arrays.

Insight

Arrays are homogeneous (all elements of the same type), while lists are heterogeneous (elements can be different). Size: Arrays have a fixed size, whereas lists are dynamic. Functionality: Lists in Python have more built-in functions than arrays, making them more versatile for various operations.

And finally we learn about `dictionaries`, and even `lists` of `dictionaries`. I thought they were oddly similar to `match-case`, but they're better! I can store an entire spreadsheet in there. Would be nicer if they weren't such a hassle to implement in code though.