

Overview

The purpose of this assignment is twofold:

1. Review the concepts you learned and should remember from CSE 110 or a similar introduction to programming course.
2. Begin practicing how to leverage AI as a learning assistant instead of an automatic code generator.

Instructions

Using your AI of choice (ChatGPT or Claude is preferred) complete the following steps:

1. Give the following prompt to your learning assistant and review the result. If any part of the code does not make sense, ask follow-up questions but ensure the Assistant always returns a single document (code block):

I would like you to create a cheat sheet document in Python that in a concise way covers the fundamentals of programming with Python. You should cover topics like data types, variables, expressions, conditionals, loops, lists, dictionaries, input/output, and reading/writing to a file. Please keep everything in one large document and add appropriate comments directly into the code explaining what everything is.

2. Copy-paste the cheat sheet into VS Code and run it.
 - a. Did your code encounter any errors? If so, why did you encounter errors? Before asking your Assistant for help see if you can answer this question with a traditional internet search first. Share with your learning assistant what is wrong with the code and ask it to suggest solutions to fixing the code so it will run on your machine.

3. Return to your Learning assistant and in the same conversation ask the following:

I would like to learn more about logical operators and shorthand operators, can you please add some examples to the cheat sheet. Make sure to add code comments explaining what everything is and/or what is happening.

4. Continue to explore these concepts with your assistant. If you do not understand something or would like a deeper understanding of a concept, ask your assistant. Remember your goal is to have an exploratory conversation with the assistant. You may consider exploring the following topics, but remind the assistant these are new to you and the conversation should stay at the introductory level:
 - a. Python dictionaries:
 - i. What is a dictionary?

- ii. How are they like and different than a list?
 - iii. Demo code to practice using them.
- b. File operations:
 - i. What does *mode* mean? Why the letter “r” and “w” for example.
 - ii. How to check if a file exists first.