**Overview**

In this activity you will recap and deepen your understanding of the material you have been learning. Some new concepts will be introduced but you should focus on reinforcing the skills and knowledge you have been developing. Remember to use AI as a learning assistant and not 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 results. Spend some time asking follow-up questions about any part of the code you do not understand. Make sure the code can run successfully on your computer:

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| Can you please give me a single file that demonstrates how to use 7 to 10 of the most used built-in Python functions? Please be as concise as possible and use a main function to invoke the other functions from your demonstration. |

1. In the same conversation you have been having ask the following:

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| --- |
| Can you now give me a single file that demonstrates at least 3 of these built-in functions being used by other functions. You should still have a main function which now invokes these new functions. Please be concise and prefer creating functions with more parameters than less or none. |

Again, spend some time asking follow-up questions about any part of the code you do not understand. Make sure the code can run successfully on your computer before continuing.

1. In the same conversation you have been having ask the following:

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| Recreate the demonstration of at least 3 built-in functions being used by other functions. This time be a little more verbose, follow PEP 257 and PEP 287 standards, and prefer documenting functions according to the Google Python style guide with typing (type hints). |

The code you will be given by the AI will look very different from what you have seen so far this semester. Please spend some time analyzing what you see, asking follow-up questions to the AI, and exploring online documentation or forums.

**You are not expected to use typing (type hints) in this course**, but you are expected to include a document comment for every function you create. This comment must briefly explain what the function does, document the expected arguments and their types, and when necessary, document the expected return value.

1. At this point in the semester, you should understand the following concepts. If any topic is unfamiliar to you or you feel your grasp of a concept is lacking, please find time this week to have a study session with your teammates, visit with the class TA, and then if needed, explore these concepts further with an AI:
   * What is a function.
   * What is a function header/signature.
   * What is a built-in function.
   * How to document (comment) a function.
   * The difference between arguments and parameters.
   * Why do we not (typically) redeclare/redefine a function parameter.
   * What *return* does and what we can return from a function.
   * Terms like define/declare and call/invoke.
   * Code typing (type hints).
   * A high overview of the PEP 257 and PEP 287 standards and the Google Python style guide.