

Scripting with Python

Write a program which allows the user to read a list of numbers from a data file. If the user specifies a data file which does not currently exist, then the program will create it.

The program should present the user with a GUI including the main label "UNH Scripting w/Python", buttons to select the following options:

A Label with Current data file being processed, and the name of the file currently being worked on.

- (1) Select / create data file (.txt file extension will be added automatically) – *Select File*
- (2) Display all the numbers in the data file, along with their total and average. – *Display all*
- (3) Display all the numbers in the data file sorted from smallest to largest. – *Largest*
- (4) Search for a number in the data file and display how many times the number occurs in the file. – *Search/Occurs*
- (5) Display the largest number in the data file. – *Largest*
- (6) Append one or more random numbers to the data file. – *Append Number*
- (7) Encrypt the selected file. (Use any encryption method including Space Odyssey 2001) – *Encrypt*
- (8) Decrypt the selected file. – *DeCrypt*
- (9) Exit the program. – *Exit*

Select one of nine buttons to pick a choice from the menu options above.

Options 1 through 8 will be written as separate functions.

When asking the user which data file they wish to process, ask the user to only enter the part of the filename preceding the .txt extension and automatically add the .txt extension for the user. Create an empty data file if the file does not already exist.

Options (2) - (8) should test whether a data file has been specified before calling the function. If a data file has not yet been specified, the option should not call the function and an error message should be displayed.

When a data file is first created it will be empty. The functions which process the data file will need to handle the special case when the file exists but does not contain any numbers. To make the program easier to write, you may opt to ignore this special case and assume that the user will immediately add numbers to the file once it has been created.

When adding a number, append it to the end of the data file.

A good approach to working on this project is to write the code for the easiest menu options first.

**** Global variables are **NOT** allowed. ****