**Level 1: File Handling Definitions**

Use the following resources to answer the questions about file handling in Python.

* <https://www.pythonforbeginners.com/files/reading-and-writing-files-in-python>
* <https://www.pythonforbeginners.com/cheatsheet/python-file-handling>

1. Explain the function of each of the following file handling commands
   1. The open() function
   2. The read() method

This displays the whole text that is in the file and the program asks to read the whole thing.

* 1. The readline() method

This function is used to display the test with the line number mentioned.

* 1. The write() method
  2. The close() method

1. Research and explain the “Mode” used to open files in a Python program.
   1. ‘r’ mode

This mode is called Read mode which is used when the file is only being read. This value does not always need to be included as ‘r’ is the default mode of the open() function.

* 1. ‘w’ mode

This mode is called Write mode which is used to edit and write new information to the file. This mode erases all past information and only adds new information.

* 1. ‘a’ mode

This mode is called Appending mode, which is used to add new data to the end of the file. No information is erased, and new information is added on top of past information.

* 1. ‘r+’ mode

This mode is used to read and write code at the same time.

* 1. Explain when and where the mode is used in a Python program

This mode is used in the open() function as a second argument.

1. Provide example code which opens a text file for reading and prints the contents of the file to the console display.
2. f = open('text.txt', 'r')
3. print(f.read())
4. f.close()
   1. Explain what each line of the program does.

The first line opens the file text.txt and turns into a file object called f. When opening the file, the file is in reading mode because the ‘r’ mode was used. In the 3rd line the file is read and printed by the program. The f.read() function reads the entire file and to show what’s in the file, we must use the print command. In the 5th line the f.close() function is used to close the file to avoid file and syntax errors.

1. Provide example code which opens a text file for writing and writes some data to the file.
2. f = open('text.txt', 'a')
3. f.write('11 eleven')
4. f.close()
   1. Explain what each line of the program does.

The first line opens the file text.txt and turns into a file object called f. When opening the file, the file is in writing mode because the ‘w’ mode was used. By using the mode, all previous information on the file will be erased and only what I decide to add will be added. On the 3rd line, the write() function is used to add information to the file. I have added “11 eleven” to the file by using the function. In the 5th line the f.close() function is used to close the file to avoid file and syntax errors.

1. Research and explain the difference between a “File Name” (type Python string) and   
   a File Object (type Python object).

**Level 2: Reading & Writing Files**

1. Add a text file to your project as follows:
   * Click on “Add File” icon in the files pane/window.
   * Type “myfile.txt” and return.
   * “myfile.txt” is now open in the editor pane/window.
   * Type some text into “myfile.txt”
   * Make sure to add several lines of text. A sample file contents could look like:

*Hello kind student*

*This is a message from your computer*

*I hope you are having fun learning to program*

*Remember to ask Mr. Nestor questions when you don’t understand*

Myfile.txt

A for Apple

B for Bat

C for Cat

D for Dog

E for Elephant

F for Fan

G for Grape

H for Honey

1. Write a program that opens “myfile.txt” for reading and prints the contents to the file to the console display.
   1. The program should also print out the number of lines in the file
   2. Provide a listing of your program below

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14 | f = open('myfile.txt', 'r')  n = 0  while True:    n = n+1  if n >= 9:  print('The file has', 8, 'lines in total')  break;  print("Line #", n, 'is', f.readline())  f.close() |

1. Write a program that opens “myfile.txt” for appending new contents to the file.
   1. You can “hard code” some commands to write new text to the file
   2. Make sure to use the close() method when your are finished.   
      (What happens if you don’t?)
   3. How can you tell that your program worked? (That the contents changed?)
   4. Provide a listing of your program below

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17 | f = open('myfile.txt', 'a')  f.write('\n')  f.write('I for Igloo')  f.write('\n')  f.write('J for Jeep')  f.write('\n')  f.write('K for Kite')  f.write('\n')  f.write('L for Lion')  f.write('\n')  f.write('M for Money')  f.write('\n')  f.write('N for Nose')  f.close() |

1. Write a program that opens “myfile.txt” for writing new contents to the file.
   1. You can “hard code” some commands to write new text to the file
   2. Explain the difference between appending and writing to a file.
   3. Provide a listing of your program below

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  2627  28  29  30  31  32 | f = open('myfile.txt', 'w')  f.write('A for Apple')  f.write('\n')  f.write('B for Bat')  f.write('\n')  f.write('C for Cat')  f.write('\n')  f.write('D for Dog')  f.write('\n')  f.write('E for Elephant')  f.write('\n')  f.write('F for Fan')  f.write('\n')  f.write('G for Grape')  f.write('\n')  f.write('H for Honey')  f.write('\n')  f.write('I for Igloo')  f.write('\n')  f.write('J for Jeep')  f.write('\n')  f.write('K for Kite')  f.write('\n')  f.write('L for Lion')  f.write('\n')  f.write('M for Money')  f.write('\n')  f.write('N for Nose')  f.close() |

**Level 3: TBD**

Level 3 TBD