**Documentation for Code's Design and Functionality**

1. **Introduction:**

* This program takes in a file of unsorted items and sorts its and lets the user view it in different format

2. **File Handling:**

* The program uses two files: "CS210\_Project\_Three\_Input\_File.txt" as input and "Storage.txt" as output. (screen shot – 1)
* A "Memory.txt" file is created and used temporarily during the execution. (screen shot – 2)
* A “storage.txt” file is created to store the newly sorted data with their frequency. (screen shot -3 )

3. **Functions:**

* **print\_menu:** Displays the main menu with options 1 to 4. (screen shot – 4)
* **trim:** Trims leading and trailing spaces from a string. (screen shot – 5)
* **check\_for\_memory\_file:** Checks and creates "Memory.txt" if not present. If not preset it creates the memory file (screen shot – 6)
* **check\_for\_storage\_file:** Checks and creates "Storage.txt" if not present. If not preset it creates the storage file (screen shot – 7)
* **Sort\_file:** Reads from an input file, sorts the lines alphabetically, and writes to "Memory.txt".(screen shot – 8)
* **Add\_frequency:** Reads from "Memory.txt," counts item frequencies, and writes to "Storage.txt." (screen shot – 9)
* **LookUpWord:** Searches for a word in "Storage.txt" and prints its frequency. (screen shot – 10)
* **PrintAllItems:** Prints all items and their frequencies from "Storage.txt." (screen shot – 11)
* **PrintAllItemsVolume:** Prints items and a visual representation of their frequencies. (screen shot – 12)

4. **Execution Flow:**

* The program begins by checking and creating necessary files and sorting the input file. (screen shot – 13)
* Frequencies are then added to the "Storage.txt" file. ((screen shot – 14)
* The temporary "Memory.txt" file is deleted.( (screen shot – 15)
* The user is presented with a menu for various options (lookup, print frequencies, print volumes, or exit). (screen shot – 16)

5. **User Interaction:**

* The program continuously prompts the user for input until they choose to exit. (screen shot – 17)
* It validates user input, ensuring it is a valid integer within the specified range. (screen shot – 18)

6. **Cleanup:**

* After the program completes, it attempts to delete the temporary "Memory.txt" file. (screen shot – 19)

7. **Error Handling:**

* The program outputs relevant error messages if it fails to open files. (screen shot – 20)

SCREEN SHOTS

**File Handling:**

**1.** The program uses two files: "CS210\_Project\_Three\_Input\_File.txt" as input and "Storage.txt" as output.

A screen shot of a computer program

Description automatically generated

* 2. A "Memory.txt" file is created and used temporarily during the execution. (screen shot – 2)

2.

A screen shot of a computer program

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3. A “storage.txt” file is created to store the newly sorted data with their frequency. (screen shot -3 )

3.

A screen shot of a computer program

Description automatically generated

Functions

**print\_men**

**4.**

A screen shot of a computer program

Description automatically generated

5. **trim**

A screen shot of a computer code

Description automatically generated

6. **check\_for\_memory\_file**

20. The program outputs relevant error messages if it fails to open files.

A computer screen shot of code

Description automatically generated

7. **check\_for\_storage\_file**

20. The program outputs relevant error messages if it fails to open files.

A screen shot of a computer program

Description automatically generated

8. **check\_for\_storage\_file**

20. The program outputs relevant error messages if it fails to open files.

A screen shot of a computer program

Description automatically generated

9. **Add\_frequencyA screen shot of a computer program

Description automatically generated**

**10. LookUpWord**

**A screen shot of a computer program

Description automatically generated11.PrintAllItems**

**A computer screen shot of text

Description automatically generated**

**12. PrintAllItemsVolumeA screen shot of a computer program

Description automatically generated**

**Execution Flow:**

**13.** The program begins by checking and creating necessary files and sorting the input file.

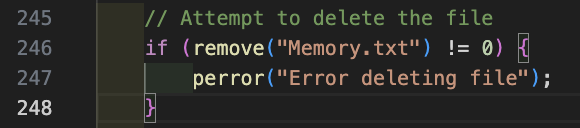
14. Frequencies are then added to the "Storage.txt" file.

A computer code on a black background

Description automatically generated

15. The temporary "Memory.txt" file is deleted.

19. After the program completes, it attempts to delete the temporary "Memory.txt" file.



16. The user is presented with a menu for various options (lookup, print frequencies, print volumes, or exit).

17. The user is presented with a menu for various options (lookup, print frequencies, print volumes, or exit)



**User Interaction**

18. It validates user input, ensuring it is a valid integer within the specified range.

A screen shot of a computer program

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