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1/31/24

**Lab1 Report**

Problem #1:

We were asked to create a program that adds numbers together. The numbers are determined by the user in a space separated list. Decimals values should also be valid.

A screen shot of a computer

Description automatically generated

Here my program starts off by asking the user to input numbers separated by a space. If the user enters less than 2 numbers, an error is thrown saying there should be at least 2 numbers entered. The numbers are technically one giant string so we must first separate the numbers into separate strings and convert them to floats. They are all added together, and the sum is returned to the user.

Problem #2:

We were asked to write a program that asks the user to type a sentence and the number of times they want the sentence repeated.

A screen shot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Here my program is asking the user to enter a sentence which is being stored in the sentence variable and they are also being asked to enter the number of times they want that sentence repeated. That value is being stored in the count variable. The program then opens the CompletedPunishment.txt file so that we can write data in it. A while loops is completed a user defined number of times based off of the number they previously entered. Each iteration of the loop writes the user entered sentence to the file.

Problem #3:

We were asked to write a word count program that counts the number of times a user entered word comes up in a predetermined text file.

A screenshot of a computer screen

Description automatically generated

Here my program starts out by asking the user to input a word they wish to search for. The program then opens the PythonSummary.txt file and goes through each line and makes everything lowercase. It also replaces and punctuation with a blank space. The lines are split so that we are left with just words. The user entered word is compared to all the words from the text file and each time a match comes up, the total variable is increased by one. The total is then printed to the user.

Problem #4:

We were asked to view the information in the classesInput.txt file and automatically format the data in a specified way.

A screenshot of a computer screen

Description automatically generated

A screenshot of a computer

Description automatically generated

Here my program has a Course class which houses a class\_schedule\_formatter function that automatically formats the class data from the classesInput.txt file. We start out by opening the classesInput.txt file and reading the first line which tells us how many courses there are. Each course’s data takes up 8 lines in the text file. Each of the 8 lines is read and stored in a corresponding variable. These variables are then passed to the Course class. We now open the file, but this time we plan on writing to the file. The program calls the class\_schedule\_formatter which takes all of the variables within the course object and formats them in a specified way according to the lab instructions.

Problem #5:

We were asked to write a program that allows for the following features:

* Create a new student with a grade.
* View a student’s grade when searched by full name.
* Edit a student’s grade.
* Delete a student’s grade.

A screen shot of a computer

Description automatically generated

A screen shot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Here, my program is running on an infinite loop that outputs some options to the user based on the required features. If 1 is entered, the user can create a student. If 2 is entered, the user can look up a student’s grade. If 3 is entered, the user can edit a student’s grade. If 4 is entered, the user can delete a student’s grade. And lastly, if 5 is entered, the program ends. A student class has been created that contains various functions that assist with the required features. There are create\_student, view\_grade, edit\_grade, and delete\_grade functions. Each function does exactly what the name implies. They all usually start out by opening the grades.txt file and reading the data within it. The data is loaded to the python program as a dictionary and edited according to the specific needs.