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IT FDN 110 A Wi 22: Foundations of Programming: Python

Assignment 05

Read and Write Lists and Dictionaries

# INTRODUCTION

This is a program which updates a file for tasks and their priorities, allowing the user to see, add, and remove tasks.

# PROCESSING

The first step in the code was to open the file and load any pre-existing data into lstTable object. This is accomplished by creating a try block where the file first tries to open and read the ToDoList.txt file. If it cannot do so, because the file does not yet exist then it creates the file by opening the file with the write function.

If the except function of the try block is not triggered then the code goes on to read the file. Using a for loop, the program goes through each row of the text file, splits the elements by “,” and then loads each of the elements into the dicRow, defining the first element as the Task and the second element as the Priority. Finally, the code inserts the dicRow into the lstTable.

Once all the rows are loaded, the file is closed.

A screenshot of a computer

Description automatically generated

Figure 1.1

# INPUT/OUTPUT

## Show the Current Items in the Table

In a while loop the user is offered a menu of options. This is followed in the code by a series of conditionals. If the user selects option “1”, then a for loop is called which prints each dicRow in the table.

Text

Description automatically generated

Figure 1.2

## Add a New Item to the List/Table

If option “2” is selected from the menu then the code requests, two inputs one for a task and the second for a priority, it adds them into the dicRow dictionary variable and then inserts the dictionary row into the lstTable.

Text

Description automatically generated

Figure 1.3

## Remove a New Item from the List/Table

If option “3” is selected from the menu then the zero indexed dicRow from lstTable is removed and the loop moves back to the beginning.

Graphical user interface, text

Description automatically generated

Figure 1.4

## Save Tasks to the ToDoList.txt File and Close

If the user selects option 4 from the menu then the code opens the file with the “write” instruction. This means that when information is added to the file, it overwrites any old information so that duplicates are not created.

After the file is open, a for loop is triggered which writes each of the dicRow elements in the lstTable to a new line in the file.

Once all rows of the lstTable have been written to the file, the file closes and saves.

Text

Description automatically generated

Figure 1.5

Finally if the user select “5”, then the program ends.

# CONCLUSION

This program uses, loops, conditionals, lists, and dictionaries to read and write to a file giving the user some flexibility to amend the list.