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IT FDN 110 A

Assignment 05

Lists & Dictionaries

Intro

This week's lesson is around creating a list and how helpful they can be. List hold data in a computer's memory. This is different as it's a temporary storage as when the application is closed, the data is lost. List's are also used to recall stored data for example, showing the user specific data that was stored in a file. Data may be split using the spit command. Dictionaries keys help with columns within a spreadsheet or database. The dictionary class has special built-in methods to help sort and locate the specific data that is needed. Using both lists and dictionaries are essential with data storing, reading and writing.

Background

The objective of this assignment is to modify a python file that has already been started with the "bones" of the file. The rest had to be coded. Essentially, the program is supposed to display a menu of options. The main purpose of the program is supposed to store a task and its priority.

Intro

The first part of the code is where all the processing is and creates the todolist text file where the data will be stored. Extra needed variables are created such as creating the list row and splitting it to input the task and priority.

```
24  try:
25      objFile = open("ToDoList.txt", "r")
26      for row in objFile:
27          lstRow = row.split(",")
28          dicRow = {"Task": lstRow[0].strip(), "Priority": lstRow[1].strip()}
29          lstTable.append(dicRow)
30      objFile.close()
31  except FileNotFoundError:
32      print("ToDoList.txt not found. Creating a new file.")
33
```

Step 2 displays the menu to the user.

```
# -- Input/Output -- #
# Step 2 - Display a menu of choices to the user
while (True):
    print("""
    Menu of Options
    1) Show current data
    2) Add a new item.
    3) Remove an existing item.
    4) Save Data to File
    5) Exit Program
    """)
    strChoice = str(input("Which option would you like to perform? [1 to 5] - ")).strip()
    print()  # adding a new line for looks
```

Step 3 is the 1st option from the menu and shows the current data from the list. There are measures in place such as ensuring there is data and being able to split the data to be displayed and organized for the user to know what is the task and what is the priority for the task.

```
48      # Step 3 - Show the current items in the table
49      if strChoice == '1':
50          print("Current Data:")
51          if len(lstTable) > 0:
52              for row in lstTable:
53                  print("Task:", row["Task"], "\tPriority:", row["Priority"])
54          else:
55              print("No data found.")
56          continue
```

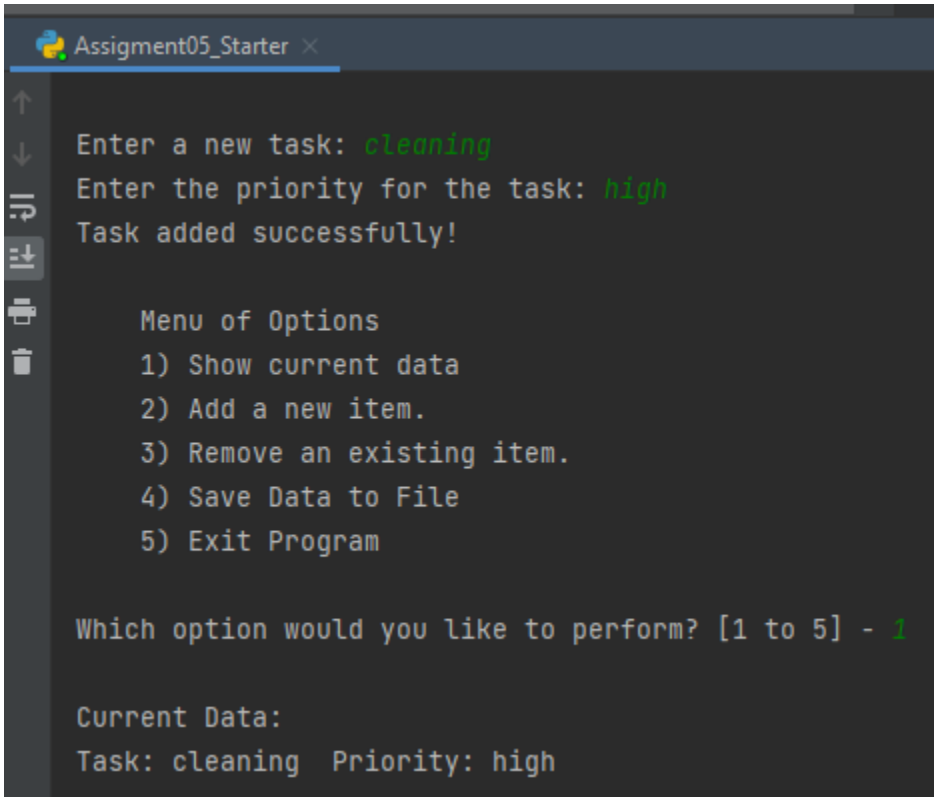
Step 4 adds an item to the list. It asks the user to input a priority which it then asks to input a priority. The data is then added to the text file and is stored.

```
58      # Step 4 - Add a new item to the list/Table
59      elif strChoice == '2':
60          task = input("Enter a new task: ")
61          priority = input("Enter the priority for the task: ")
62          dicRow = {"Task": task, "Priority": priority}
63          lstTable.append(dicRow)
64          print("Task added successfully!")
65          continue
```

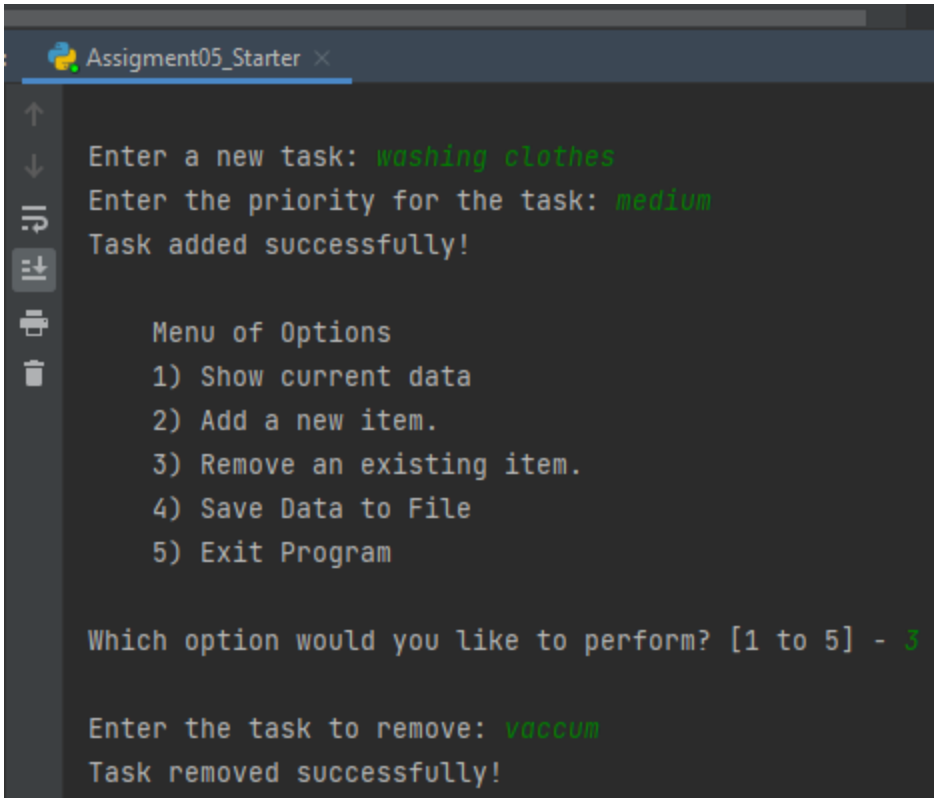
Step 5 modifies the data so that tasks can be removed. This is done by the dictionaries that were learned this week where specific tasks and be removed by selecting the appropriate column.

```python
    # Step 5 - Remove a new item from the list/Table
    elif strChoice == '3':
        if len(lstTable) > 0:
            task = input("Enter the task to remove: ")
            found = False
            for row in lstTable:
                if row["Task"].lower() == task.lower():
                    lstTable.remove(row)
                    found = True
                    print("Task removed successfully!")
                    break
            if not found:
                print("Task not found.")
        else:
            print("No data found.")
        continue
```

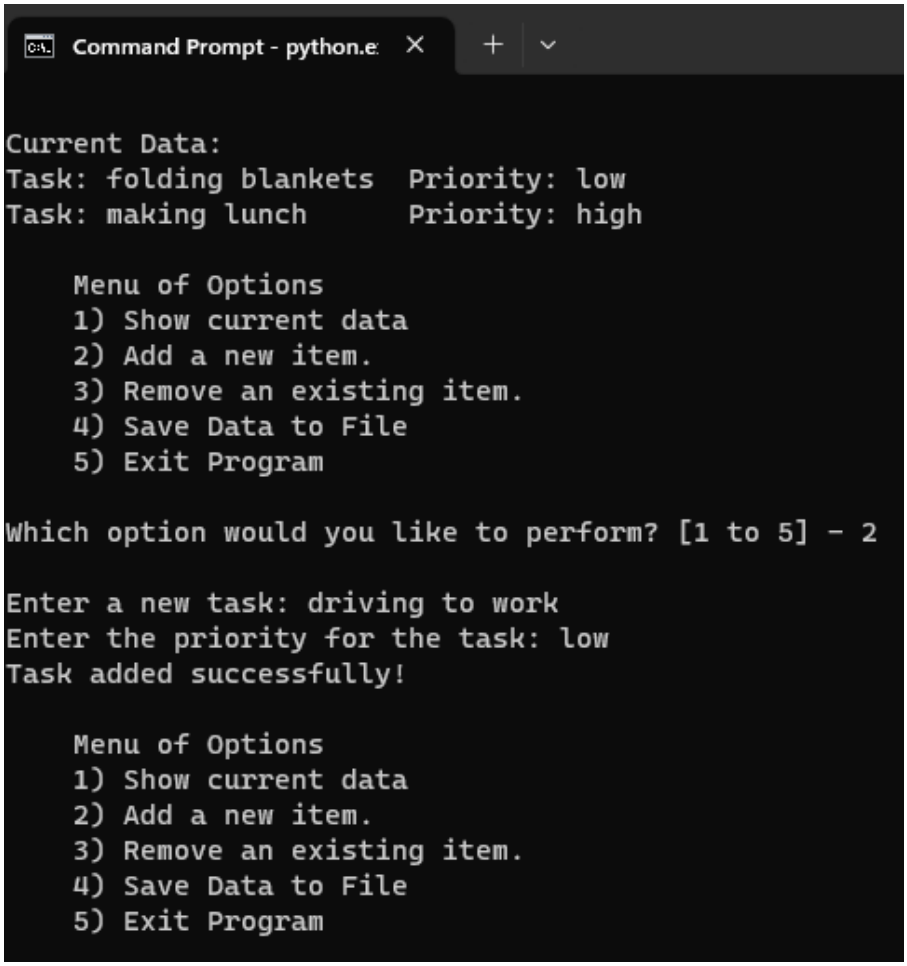
Running the script within PyCharm. The task is cleaning, and the priority is high.



Checking to see if the code that removes the tasks works.



Here is the program being ran in a shell window.



Summary

This week's lesson is very crucial with most programs in today's world as data is always being stored. Being able to read, write and modify the data when it is plentiful is difficult to manage. Using the dictionaries available, the data can be manipulated in any ways that the programmer would like to do with it.