Guela Parker

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Foundations of Programming (Python)

Assignment 05

To do List Python Script

Introduction

This assignment is about adding code to a given Python script that performs different actions from a list of menu. The program works on an existing text file and shows the current data, adds new rows to the file, deletes entries, saves the information in the text file, and exits the program. The data storage is based in dictionaries.

Creating the Python Script

1. Loading existing data. Give values to the keys "Task" and "Priority" to a row of data separated into its elements of the dictionary "dicRow".

```
dicRow = {'Task':'wash windows', 'Priority':'medium'}
objFile = open(File_str, 'w')
objFile.write(dicRow['Task'] + ',' + dicRow['Priority'] + '\n')
lstTable = [dicRow]
objFile.close()
```

2. Displaying menu options. Using the function "while" create a menu with options to perform according to the user's selection.

```
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] - "))
    print()  # adding a new line for looks
```

3. Displaying the current data. If the user selects option 1, "show current data", the script displays the current data from ToDoList.txt.

```
if (strChoice.strip() == '1'):
    for row in lstTable:
        print(row)
    continue
```

4. Adding data. Collect the data in separate variables for task and priority, then append the data to the dictionary.

```
elif (strChoice.strip() == '2'):
    Task_str = input('Enter a new task: ')
    Priority_str = input('Enter a priority: high, medium or low: ')
    lstTable.append({'Task': Task_str, 'Priority': Priority_str})
    continue
```

5. Removing data. Using the "if" functions, match the name of the task to be removed to existing entries, if there is a match, the value will be removed, if not, the menu will be shown to the user.

```
Remove_str = input('Enter the name of the task you want to remove: ')
for row in lstTable:
    if row['Task'].lower() == Remove_str.lower():
        lstTable.remove(row)
        print('The task has been removed from the list.')
continue
```

6. Saving changes. To save the changes made by the user to the text file objFile.write function is used calling the "task" and the "priority" keys.

```
elif (strChoice.strip() == '4'):
    objFile = open(File_str, 'w')
    for row in lstTable:
        objFile.write(str(row['Task']) + ',' + str(row['Priority']) +
'\n')
    objFile.close()
    print('Your data has been saved to ', File_str,'.', sep='')
    continue
```

7. Exiting program.

```
elif (strChoice.strip() == '5'):
    print ("Exiting the program. Good bye.")
    break  # and Exit the program
```

```
C:\Users\Parke\_PythonClass\Assignment05>Python.exe Assigment05_Starter.py

    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

Which option would you like to perform? [1 to 5] - 1

{'Task': 'wash windows', 'Priority': 'medium'}

    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

Which option would you like to perform? [1 to 5] - 2

Enter a new task: laundry
Enter a priority: high, medium or low: medium

    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

Which option would you like to perform? [1 to 5] - 1

{'Task': 'wash windows', 'Priority': 'medium'}
{'Task': 'laundry', 'Priority': 'medium'}

    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

Which option would you like to perform? [1 to 5] - 3

Enter the name of the task you want to remove: laundry
The task has been removed from the list.
```

```
    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

Which option would you like to perform? [1 to 5] - 4

Your data has been saved to ToDoList.txt.

    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

Which option would you like to perform? [1 to 5] - 5

Exiting the program. Good bye.

C:\Users\Parke\_PythonClass\Assignment05>
```

Figure 1. Script running from command prompt.


```
C:\Users\Parke\_PythonClass\Assignment05\Scripts\python.exe C:/Users/Parke/_PythonClass/Assignment05/Assigment05_Starter.

    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

Which option would you like to perform? [1 to 5] - 1

{'Task': 'wash windows', 'Priority': 'medium'}

    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

Which option would you like to perform? [1 to 5] - 2

Enter a new task: laundry
Enter a priority: high, medium or low: medium
```

```
    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

Which option would you like to perform? [1 to 5] - 1


{'Task': 'wash windows', 'Priority': 'medium'}
{'Task': 'laundry', 'Priority': 'medium'}

    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

Which option would you like to perform? [1 to 5] - 3


Enter the name of the task you want to remove: laundry
The task has been removed from the list.
```

```
    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

Which option would you like to perform? [1 to 5] - 1

{'Task': 'wash windows', 'Priority': 'medium'}

    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

Which option would you like to perform? [1 to 5] - 4

Your data has been saved to ToDoList.txt.

    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

Which option would you like to perform? [1 to 5] - 5

Exiting the program. Good bye.

Process finished with exit code 0
```

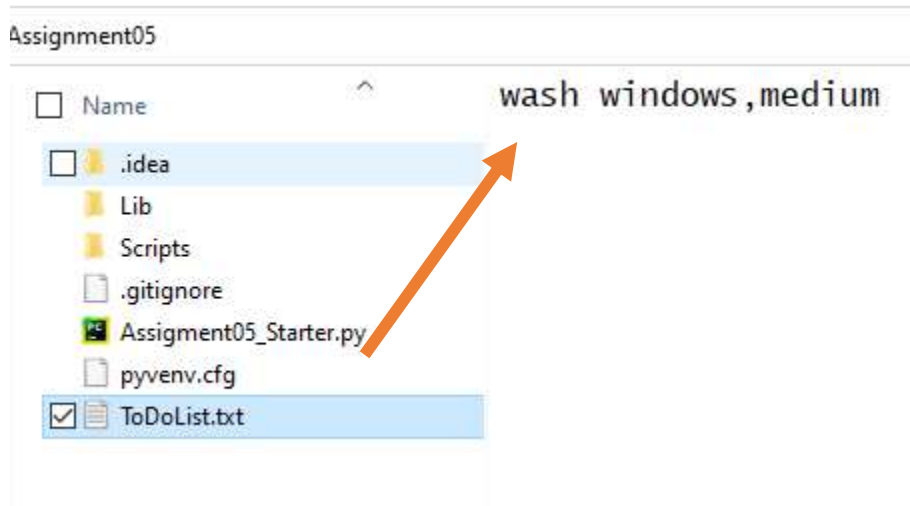*Figure 2. Script running in PyCharm.*

Figure 3. Data stored in file.

Summary

This assignment was about adding code to a given Python script that performs different actions from a list of menu. The program uses an existing text file, shows the current data, adds new rows to the file, deletes entries, saves the information in the text file, and exits the program. The data storage is based in dictionaries. The highlight of this assignment is to store data as a dictionary in a text file.