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Python Script Assignment 5

Working with dictionaries and Files

Introduction

In this assignment, I'm going to explain the steps that I have used to create a Python Program to read Todo list from an input text file and load data into Python list of dictionaries, where each row in the input file is stored as a python dictionary.

Program steps

First, I displayed the menu of options to the user such as Showing the current data, Adding the new item, Remove save and exit the program to the text file when user makes that choice. User options are shown the following image:

```
[[{"Task": "Walk", "Priority": "High"}, {"Task": "TV", "Priority": "Low"}]]

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, Priority
walk, High
Tv, Low
```

Picture 1: Displaying the menu of options to the user and displaying the current data

```
/Users/nagaanushaperali/Documents/_Pythonclass/Assignment5/venv/  
[{'Task': 'walk', 'Priority': 'High'}, {'Task': 'Tv', 'Priority':
```

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 new Task: *clean*

enter new priority:*high*

Picture2: adding the new list of items.

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

enter Task to remove: *clean*

Row removed

```
[{'Task': 'walk', 'Priority': 'High'}, {'Task': 'Tv', 'Priority': 'Low'}]
```

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

Picture 3: Removing the data of Existing item.

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

The current items in the Todo are: [{'Task': 'walk', 'Priority': 'High'}, {'Task': 'Tv', 'Priority': 'Low'}]
Data saved to file! press the enter key to return to the menu.

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

Picture 4: Saving the data to file.

```
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

Process finished with exit code 0
```

Picture 5: Exiting the Program.

Code Implementation

Step1: I read the input text file, iterated through each row in the input text file and stored each row data into a dictionary. All the data available in the input text file is stored in list of dictionaries. (Picture 6)

```
# -- Processing -- #
# Step 1 - When the program starts, load the any data you have
try:
    todo_file = open(objFile, "r")
    for index, row in enumerate(todo_file):
        if index > 0:
            row_values = row.split(",")
            dicRow = {
                TASK: row_values[0].strip(),
                PRIORITY: row_values[1].strip(), # Saving the current data in Dictionary
            }
            lstTable.append(dicRow)
    todo_file.close()
except FileNotFoundError:
    print('file not found , will create one when saved')
print(lstTable)
```

Picture 6: Reading from file

Step 2: Displaying the options to user. (Picture7)

```

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

```

Picture 7: displayed options

Step 3: When user selects the option#1, all the data available in the list of dictionaries will be displayed. Using the for loop I showed the current list of items in the table. (picture8)

```

# Step 3 - Show the current items in the table
if strChoice.strip() == '1':
    print(TASK + ", " + PRIORITY)
    for dataRow in lstTable:
        print(dataRow[TASK] + ", " + dataRow[PRIORITY])
    continue

```

Picture 8: current items displayed

Step 4: When user selects the option#2, new input is taken from the user and added to list. (Picture 9)

```

# Step 4 - Add a new item to the list/Table
elif strChoice.strip() == '2':
    newTask = input("enter new Task: ")
    newPriority = input("enter new priority:")
    dicRow = {
        TASK: newTask,
        PRIORITY: newPriority
    }
    lstTable.append(dicRow)
    continue

```

Picture 9: Adding the task

Step 5: when user selects the option#3 input is taken from the user to remove the existing item. (Picture10)

```
# Step 5 - Remove a new item from the list/Table
elif strChoice.strip() == '3':
    newTask = input("enter Task to remove: ")
    for dataRow in lstTable:
        if dataRow[TASK] == newTask:
            lstTable.remove(dataRow)
            print("Row removed")
    print(lstTable)
    continue
```

Picture 10: Removing data

Step 6: When user select option#4 entered data is saved to file. (Picture 11)

```
# Step 6 - Save tasks to the ToDoToDoList.txt file
elif strChoice.strip() == '4':
    print("The current items in the Todo are: ", lstTable)
    newFile = open("ToDoToDoList.txt", "w")
    newFile.write(TASK + ", " + PRIORITY + "\n")
    for dataRow in lstTable:
        newFile.write(dataRow[TASK] + ", " + dataRow[PRIORITY] + "\n")
    print("Data saved to file! press the enter key to return to the menu. ")
    newFile.close()
    continue
```

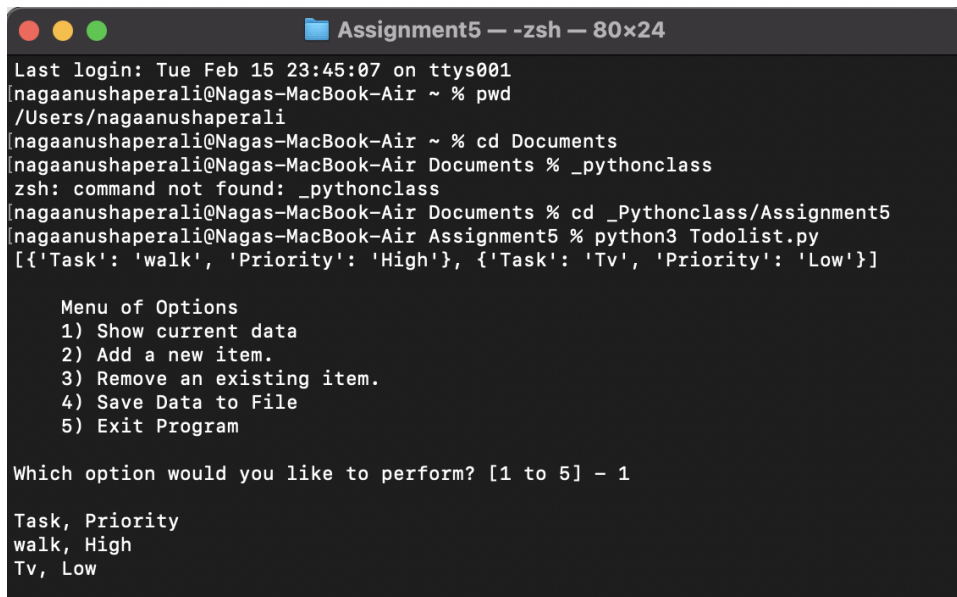
Picture 11: saving to file

In Step 7: When user select option#5 Exit the program. (Picture 12)

```
# Step 7 - Exit program
elif strChoice.strip() == '5':
    break # and Exit the program
```

Picture 12: EXIT Program.

I also ran the same program in the Terminal window result below.



```
Assignment5 --zsh-- 80x24
Last login: Tue Feb 15 23:45:07 on ttys001
[nagaanushaperali@Nagas-MacBook-Air ~ % pwd
/Users/nagaanushaperali
[nagaanushaperali@Nagas-MacBook-Air ~ % cd Documents
[nagaanushaperali@Nagas-MacBook-Air Documents % _pythonclass
zsh: command not found: _pythonclass
[nagaanushaperali@Nagas-MacBook-Air Documents % cd _Pythonclass/Assignment5
[nagaanushaperali@Nagas-MacBook-Air Assignment5 % python3 Todolist.py
[{'Task': 'walk', 'Priority': 'High'}, {'Task': 'Tv', 'Priority': 'Low'}]

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, Priority
walk, High
Tv, Low
```

Summary

In this Assignment by referring to module 5 video and by referring the information in the text book I learned to work with Dictionaries and perform some operations to remove and save the data to file, I was able to create the program successfully.

