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IT FDN 100 A

Assignment04

Coding an Advanced Home Inventory Script

Introduction

In this paper I am going to go through the steps that I took in creating the advanced home inventory script in Python that presents the user with a menu of options and depending on the option that they choose will either create a new list, present the current list to the user or print out the list of information into a file named “HomeInventory.txt”.

Steps Taken in Creating the Home Inventory Script

I started out the process by launching PyCharm and creating a new project called Assignment04 in my _PythonClass folder on my C: drive using a virtual Python interpreter. After the project was created, I created a Python file in the project called “HomeInventory.py”.

With the file created in PyCharm, the first thing I added to the document was the header as a comment with the Title, Dev name, Change Log, and my first Change Log entry of file creation as the assignment instructions had outlined.

```
1  #------------------------------------------#
2  # Title: Home Inventory Script with Menu
3  # Dev: Dima Alexandrov
4  # Date: 10/28/2019
5  # Change Log: (Who, When, What)
6  #   DAlexandrov, 10/28/2019, Created Script
7  #------------------------------------------#
```

I copied over the pseudocode from the assignment on the 4 steps that needed to be accomplished by the code to give me structure.

Beginning with Step #1, I first created the lstTable variable to store lists and begin the creation of the two-dimensional list and also, I created the strUserChoice variable as an empty string. After these two variables were defined, I went ahead and created the “Menu of Options” that the user would see with the following print statements and stored the user input in the strUserInput variable:

```
print("\tMenu of Options")
print("\t1) Add Data to List")
print("\t2) Display Current Data")
print("\t3) Exit and Save to File")
strUserChoice = input("Which option would you like to perform? [1 to 3] ")
```

I also made sure to wrap all of this in a while loop that checked to ensure that the strUserInput variable was not equal to 3 (meaning the user chose to exit and save) and to check if the strUserChoice variable was empty to make it jump back to the top of the loop for further user input (incase they wanted to add multiple items to the list).

Now that we had a constant loop, I moved onto Step #2 which was to take user input and add an item to the two-dimensional list that was created earlier if they chose option #1 from the menu. First off, started off with telling the user to type in a Name and Value for an item through a print statement followed up by 2 inputs that were stored in the strItem and strValue variables. After the user input the information, the stored variables were then transferred into a newly created list called “lstNewRow” and then this new list was appended to the overall list called lstTable. Followed by the strUserChoice variable being set back to empty to bring the loop back to the top.

```
# Step 2
# Add a new item to the List(Table) each time the user makes that choice
    if strUserChoice == "1":
        print("Type in a 'Name' and Value for your household items")
        strItem = input("Enter a Name: ")
        strValue = input("Enter a Value: ")
        lstNewRow = [strItem, strValue]
        lstTable.append(lstNewRow)
        strUserChoice = ""# Get the user back to the menu
```

After verifying that the add list function was working properly through multiple tests with print statements. I moved onto Step 3 which was to create the code that would display the items that were stored in the list back to the user if they chose option #2 from the menu. Using an if-statement, I verified that the user has chosen menu item #2 and began the code with a print statement which just said “Your Current Data is: “. Then with a for loop, the code cycles through every row in the lstTable list and prints it out to the user with the first value (row[0]) follow by the second value (row[1]) separated by a “,”. This for loop cycles through all the entries in the lstTable list and prints them out to the user. Lastly, again I reset the strUserChoice variable back to nothing so that the loop can continue to cycle through and take more user input.

```
# Step 3
# Display the data in the List(Table) each time the user makes that choice

    elif strUserChoice == "2":
        print("Your Current Data is:")
        for row in lstTable:
            print(row[0], row[1], sep=",")
        strUserChoice = "" # Get the user back to the menu
```

Lastly, coding Step 4 which was the case where the user has chosen that they want to exit and are given the choice to save their data to a file. This is the portion of the code where we break out of the while loop that kept the menu cycling for us because now the strUserChoice is set to 3, and we do 1 more check for that upfront to ensure that the user has chosen the 3rd menu option. After that we ask the user if they would like their data saved with a print statement followed by another input that is now saved in the strAnswer variable. Since the user has to make a 'y' (yes) or 'n' (no) option here, I started another while loop that checks if the lower strAnswer string variable is anything besides 'y' or 'n' and if it's not 'y' or 'n' tells the user to choose either 'y' or 'n' with a print statement.

```
if strUserChoice == "3":
    print("Would you like to save your Data?")
    strAnswer = input("Enter 'y' or 'n': ")

    # Make sure that the user chose either the Y or N option
    while strAnswer.lower() != "y" and strAnswer.lower() != "n":
        print("Please choose either y or n")
        strAnswer = input("Enter 'y' or 'n': ")
```

If the user does end up choosing 'y' (yes) to save their data to a file, a file object is created that creates a file in the same directory as the code is running called "HomeInventory.txt" with a write function meaning that every time that the code is run this .txt file is overwritten. With this file object created, the code then exports the data from the lstTable list into the text document and prints out a statement to the user stating that the file is saved.

```
# If Y is chosen, save the file
if strAnswer.lower() == "y":
        objF = open("HomeInventory.txt", "w")
        for row in lstTable:
            objF.write(row[0] + "," + row[1] + "\n")
        print("File saved!")
        objF.close()
```

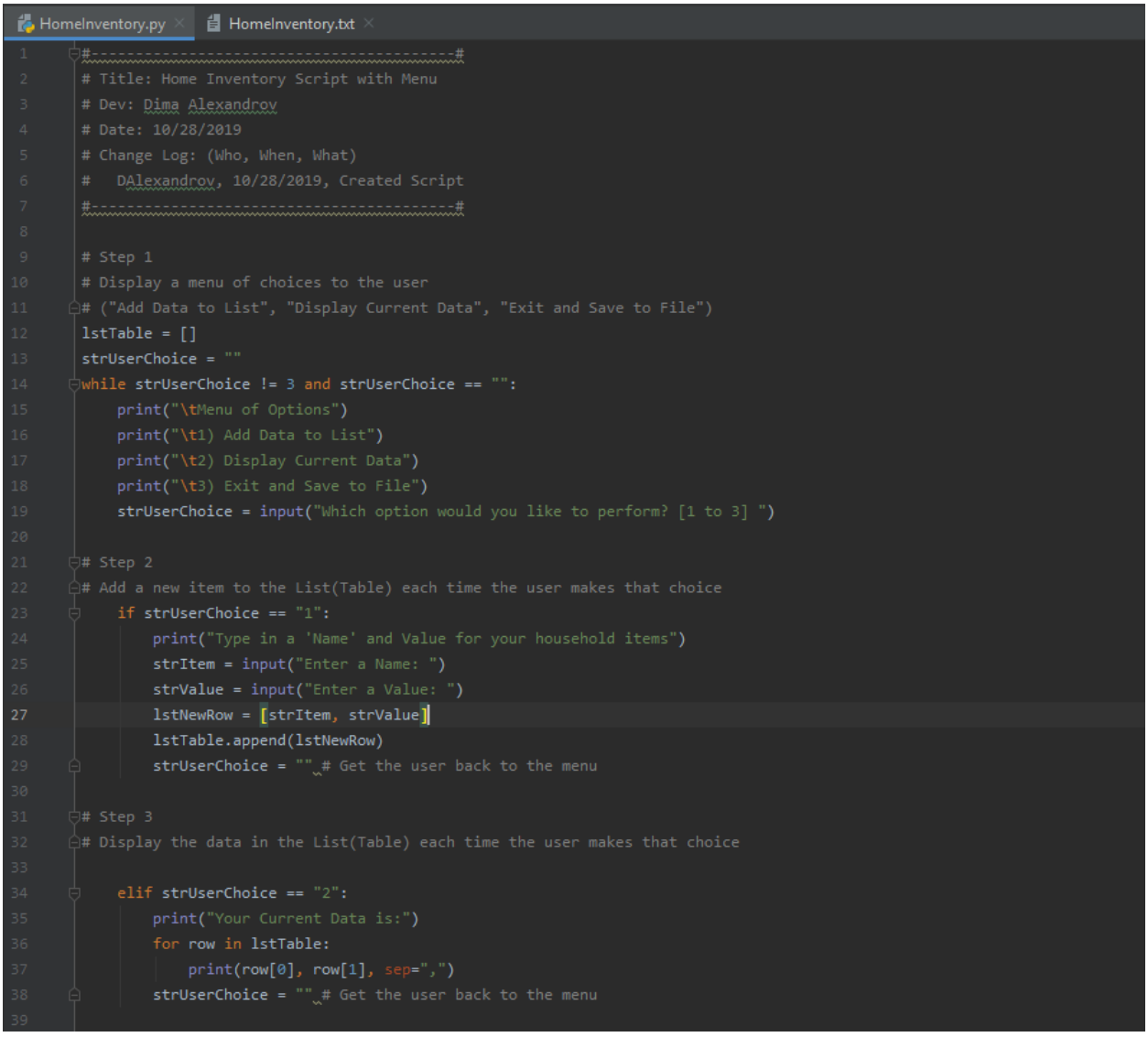
But, if the user chose the ‘n’ (no) option to save their file then the code just simply shows a print statement to the user stating that it is exiting, followed by an exit() command run to exit out of the script.

```
# If the user decides to not save, exit
elif strAnswer.lower() == "n":
    print("Exiting...")
    exit()
```

Summary

Overall, the script worked as intended and reflected what was being asked for in the assignment. I added the extra while loop at the end of the script to check for the ‘y’ or ‘n’ input from the user because I thought it was important to include since the user could put anything there and it would in theory break the script.

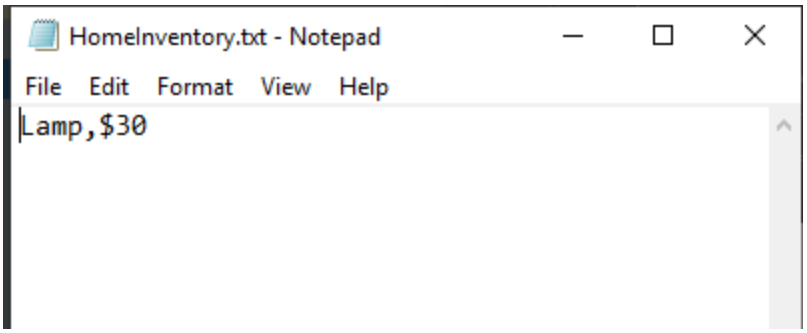
The full script looked as such when finished:



```python
# Step 4
# Exit the program and save the data to a text file when the user makes that choice
if strUserChoice == "3":
    print("Would you like to save your Data?")
    strAnswer = input("Enter 'y' or 'n': ")

    # Make sure that the user chose either the Y or N option
    while strAnswer.lower() != "y" and strAnswer.lower() != "n":
        print("Please choose either y or n")
        strAnswer = input("Enter 'y' or 'n': ")

    # If Y is chosen, save the file
    if strAnswer.lower() == "y":
            objF = open("HomeInventory.txt", "w")
            for row in lstTable:
                objF.write(row[0] + "," + row[1] + "\n")
            print("File saved!")
            objF.close()

    # If the user decides to not save, exit
    elif strAnswer.lower() == "n":
        print("Exiting...")
        exit()
```

And the results from running the script from PyCharm were:

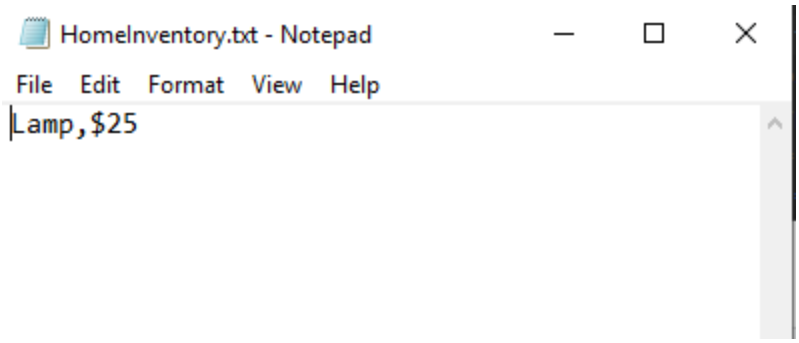
```
HomeInventory
C:\_PythonClass\Assignment04\venv\Scripts\python.exe C:/_PythonClass/Assignment04/HomeInventory.py
    Menu of Options
    1) Add Data to List
    2) Display Current Data
    3) Exit and Save to File
Which option would you like to perform? [1 to 3] 1
Type in a 'Name' and Value for your household items
Enter a Name: Lamp
Enter a Value: $30
    Menu of Options
    1) Add Data to List
    2) Display Current Data
    3) Exit and Save to File
Which option would you like to perform? [1 to 3] 2
Your Current Data is:
Lamp,$30
    Menu of Options
    1) Add Data to List
    2) Display Current Data
    3) Exit and Save to File
Which option would you like to perform? [1 to 3] 3
Would you like to save your Data?
Enter 'y' or 'n': z
Please choose either y or n
Enter 'y' or 'n': y
File saved!

Process finished with exit code 0
```



And running the script from the OS shell looked like this:

Command Prompt

```
C:\Users\dimaa>cd c:\_PythonClass\Assignment04\

c:\_PythonClass\Assignment04>Python HomeInventory.py
        Menu of Options
        1) Add Data to List
        2) Display Current Data
        3) Exit and Save to File
Which option would you like to perform? [1 to 3] 1
Type in a 'Name' and Value for your household items
Enter a Name: Lamp
Enter a Value: $25
        Menu of Options
        1) Add Data to List
        2) Display Current Data
        3) Exit and Save to File
Which option would you like to perform? [1 to 3] 2
Your Current Data is:
Lamp,$25
        Menu of Options
        1) Add Data to List
        2) Display Current Data
        3) Exit and Save to File
Which option would you like to perform? [1 to 3] 3
Would you like to save your Data?
Enter 'y' or 'n': z
Please choose either y or n
Enter 'y' or 'n': y
File saved!

c:\_PythonClass\Assignment04>
```


HomeInventory.txt - Notepad
File Edit Format View Help
Lamp,$25