< Sara Lam >

< 11/13/2021 >

< Foundations of Programming (Python) >

< Assignment05 >

How I performed Assignment05

# Introduction

Assignment05 asks us to take the CDInventory\_Starter.py file which has the solution from previous assignment using list as inner data structure, replace the data structure with dictionaries. Also add the functionalities of loading existing data and deleting an entry. We should not create user defined functions.

We will start using GitHub. We will upload the python script and knowledge document on the GitHub repository named “Assignment\_05”, commit changes, share a link on canvas, add link to this knowledge document. We will also perform a peer review of another student’s assignment.

We then save the script file as CDIntentory.py into folder “Assignment05”. Submit this folder as a zip file, including the python script as well as this knowledge document.

# Step 1 – examine CDInventory\_Starter.py

The script contains the solution of Assignment04. Additionally, it provides the structure for us to add code to create the load and delete functionalities.

# Step 2 – add code based on requirements

I create the statements for the following:

* For the loading section, used exists function to check if file exists.
* For the deleting section, used for loop and conditional statement to check if CD number is in inventory for deletion.
* Converted inner data structure from list to dict.

I save the script as CDInventory.py to the Assignment05 folder.

# Step 3 – run the python script file in Spyder, and verify it worked

Click the run button to run the file. It describes what the program does, allows the user to choose from menu, and performs the functions based on user choice. It repeats till user enters exit. Screenshot is below:

Graphical user interface, application

Description automatically generated

Text

Description automatically generated

Figure 1 - Script run in Spyder – when selecting “l” to load while file does not exist, it correctly displays “File CDInventory.txt does not exist.”

Text

Description automatically generated

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Figure 2- Script run in Spyder – adding 3 CDs, saving to CDInventory.txt, loading to list and displaying the 3 CDs

Text

Description automatically generated

Figure 3 – Deleting CD

Text

Description automatically generated

Text

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Figure – Saving to file. File displays updated CD records

# Step 4 – run the python script file in a terminal window, and verify it worked

In Windows search, I type cmd to open the Command Prompt. Then I change to the directory with my python script, which is C:\\_FDProgramming\Assignment05. I type CDInventory.py to run the program.

Text

Description automatically generated

Text

Description automatically generated

Figure 5 - Script run in terminal window – loading CDInventory.txt created in Spyder, added CD1, deleted CD3

Graphical user interface, text, application

Description automatically generated

Figure 6 - Script run in terminal window updated CDInventory.txt

Graphical user interface, text

Description automatically generated

Figure 7 - CDInventory.txt correctly shows CDs 2 and 1 remaining, and CD 3 has been deleted.

# Step 5 – upload script and knowledge document to GitHub

<https://github.com/Lamcloud/Assignment_05>

# Summary

In this assignment we practiced the following -

* Using dictionary to store data
* Using the dictionary values function to get the values
* Using while loop and for loop
* Using conditional statement to control the flow
* Using break to break out of a section
* Reading from and writing to file

# Challenges

Below are the challenges I encountered and how I handled them -

* When I tried to load CDInventory.txt but it did not exist, it gave an error message. So I Googled and found how to check if file exists.
* For the delete functionality, I thought of letting user know if CD number is not in inventory for deletion. I tried several ways, and finally used a “found” variable which is Boolean type, set it to False, and if CD number is found in inventory, switched it to True. Otherwise it stays as False and I printed the message that CD number is not in inventory.

# Appendix – the code

I used this syntax highlighting application, <http://hilite.me/>.

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54  55  56  57  58  59  60  61  62  63  64  65  66  67  68  69  70  71  72  73  74  75  76  77  78  79  80  81  82  83  84  85  86 | *#------------------------------------------#*  *# Title: CDInventory.py*  *# Desc: Starter Script for Assignment 05*  *# Change Log: (Who, When, What)*  *# DBiesinger, 2030-Jan-01, Created File*  *# SLam, 2021-Nov-13, Modified File*  *#------------------------------------------#*  **import** **os.path** *# to use exists function to check if file exists for loading*  *# Declare variables*  strChoice = '' *# User input*  lstTbl = [] *# list of dictionaries to hold data*  dicRow = {} *# dict of data row*  strFileName = 'CDInventory.txt' *# data storage file*  objFile = None *# file object*  *# Get user Input*  **print**('The Magic CD Inventory**\n**')  **while** True:  *# 1. Display menu allowing the user to choose:*  **print**('**\n**[l] load Inventory from file**\n**[a] Add CD**\n**[i] Display Current Inventory')  **print**('[d] delete CD from Inventory**\n**[s] Save Inventory to file**\n**[x] exit')  strChoice = input('l, a, i, d, s or x: ').lower() *# convert choice to lower case at time of input*  **print**()  **if** strChoice == 'x':  *# 5. Exit the program if the user chooses so*  **break**  **if** strChoice == 'l':  *# Check if file exists*  **if** os.path.exists(strFileName) == True:  *# Load existing data if file exists*  lstTbl = []  objFile = open(strFileName, 'r')  **for** row **in** objFile:  lstRow = row.strip().split(',')  dicRow = {'id': int(lstRow[0]), 'title': lstRow[1], 'artist': lstRow[2].strip()}  lstTbl.append(dicRow)  objFile.close()  *# If file doesn't exist, tell user*  **else**:  **print**('File', strFileName, 'does not exist.')    **elif** strChoice == 'a': *# no elif necessary, as this code is only reached if strChoice is not 'exit'*  *# 2. Add data to the table of dicts each time the user wants to add data*  strID = input('Enter an ID: ')  strTitle = input('Enter the CD**\'**s Title: ')  strArtist = input('Enter the Artist**\'**s Name: ')  intID = int(strID)  dicRow = {'id': intID, 'title': strTitle, 'artist': strArtist}  lstTbl.append(dicRow)  **elif** strChoice == 'i':  *# 3. Display the current data to the user each time the user wants to display the data*  **print**('ID, CD Title, Artist')  **for** row **in** lstTbl:  **print**(\*row.values(), sep = ', ')  **print**()  **elif** strChoice == 'd':  *# Delete an entry*  found = False  cd = int(input('Enter CD number to delete: '))  *# If CD number is found in inventory, then delete it*  **for** row **in** lstTbl:  **if** row['id'] == cd:  lstTbl.remove(row)  **print**('CD', cd, 'has been deleted.')  found = True  **break**  *# If CD number is not found, tell the user*  **if** found == False:  **print**('CD', cd, 'is not in inventory.')    **elif** strChoice == 's':  *# 4. Save the data to a text file CDInventory.txt if the user chooses so*  objFile = open(strFileName, 'w') *# overwrite file to prevent duplicating records*  **for** row **in** lstTbl:  strRow = ''  **for** item **in** row.values():  strRow += str(item) + ','  strRow = strRow[:-1] + '**\n**'  objFile.write(strRow)  objFile.close()  **else**:  **print**('Please choose either l, a, i, d, s or x!') |