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Foundations of Programming, Python
Assignment 05

Assignment 05 Enduser Inputs CD/Album Names and Artist Script - CDInventory

Introduction

The purpose of this assignment was to:

- Display a menu of options to the end user - add data, display current data, save to file, exit the program.
- Allow the user to add new data to the inventory.
- Allow the user to display the inventory.
- Allow the user to save the inventory to a text file.
- Allow the user to delete entries.
- Allow the user to exit the program at will.

Drafting the Code

The code was written initially in IDLE and completed using Spyder. Data from Assignment 04 was used to populate the 2D list, lstTbl.

A While True loop was created to display menu options via the variable strChoice which then moved the program to the designated 'if' statements based on the input entered:

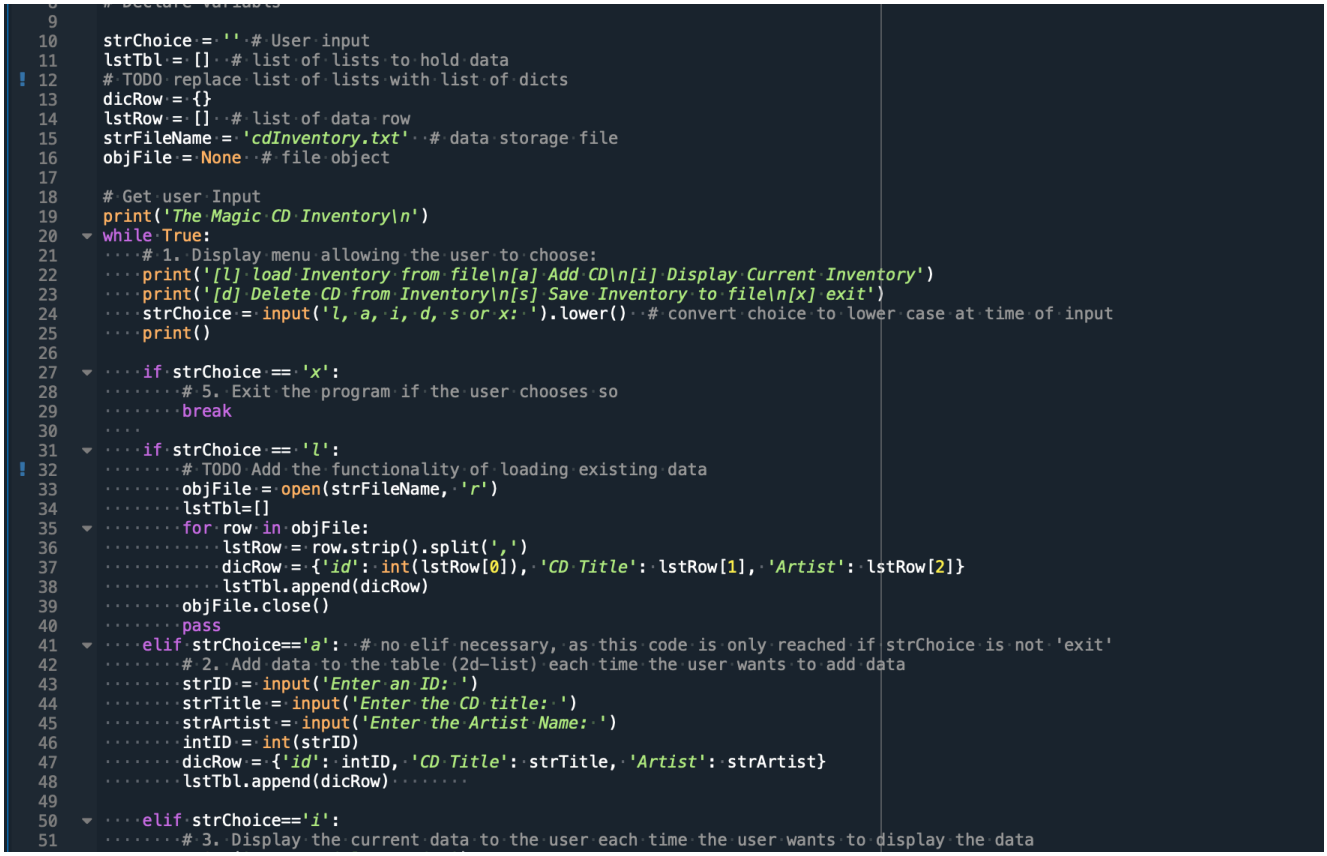
- l - load inventory from file into lstTbl
- a - add a new entry to the inventory appending to lstTbl
- i - display the inventory unpacking lstTbl
- d - delete an item from inventory using the ID entered into removeID
- s - save the data to file cdinventory.txt.
- x - exit the program

Stack Overflow (https://stackoverflow.com 2020-Feb-24) was used to help answer questions regarding loops and format.

After each function is completed, the user is prompted to select what they would like to do next with option x exiting the while loop using break.

Saving the Script

I used the provided script CDInventory_Starter.py and saved it in Documents/ UW_Python_Class/Mod_05/Assignment05.



```
# Declare variables

strChoice = '' # User input
lstTbl = [] # list of lists to hold data
# TODO replace list of lists with list of dicts
dicRow = {}
lstRow = [] # list 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('[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':
        # TODO Add the functionality of loading existing data
        objFile = open(strFileName, 'r')
        lstTbl=[]
        for row in objFile:
            lstRow = row.strip().split(',')
            dicRow = {'id': int(lstRow[0]), 'CD Title': lstRow[1], 'Artist': lstRow[2]}
            lstTbl.append(dicRow)
        objFile.close()
        pass
    elif strChoice=='a': # no elif necessary, as this code is only reached if strChoice is not 'exit'
        # 2. Add data to the table (2d-list) each time the user wants to add data
        strID = input('Enter an ID: ')
        strTitle = input('Enter the CD title: ')
        strArtist = input('Enter the Artist Name: ')
        intID = int(strID)
        dicRow = {'id': intID, 'CD 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
```

FIGURE 1: CODE IN SPYDER

Running from Spyder

After completing the code and saving the .py file, I ran the script in Spyder. I followed the prompts and the script was successfully executed.

```
UW_Python_Class/Mod_05/Assignment05/CDInventory_Starter.py
wdir='/Users/tcunningham/Documents/UW_Python_Class/Mod_05/
Assignment05')
The Magic CD Inventory

[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] Delete CD from Inventory
[s] Save Inventory to file
[x] exit

l, a, i, d, s or x: l

[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] Delete CD from Inventory
[s] Save Inventory to file
[x] exit

l, a, i, d, s or x: i

ID, CD Title, Artist
1,Purple Rain,Prince and the Revolution
[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] Delete CD from Inventory
[s] Save Inventory to file
[x] exit
```

FIGURE 2: LOADING DATA FROM FILE AND DISPLAYING IT

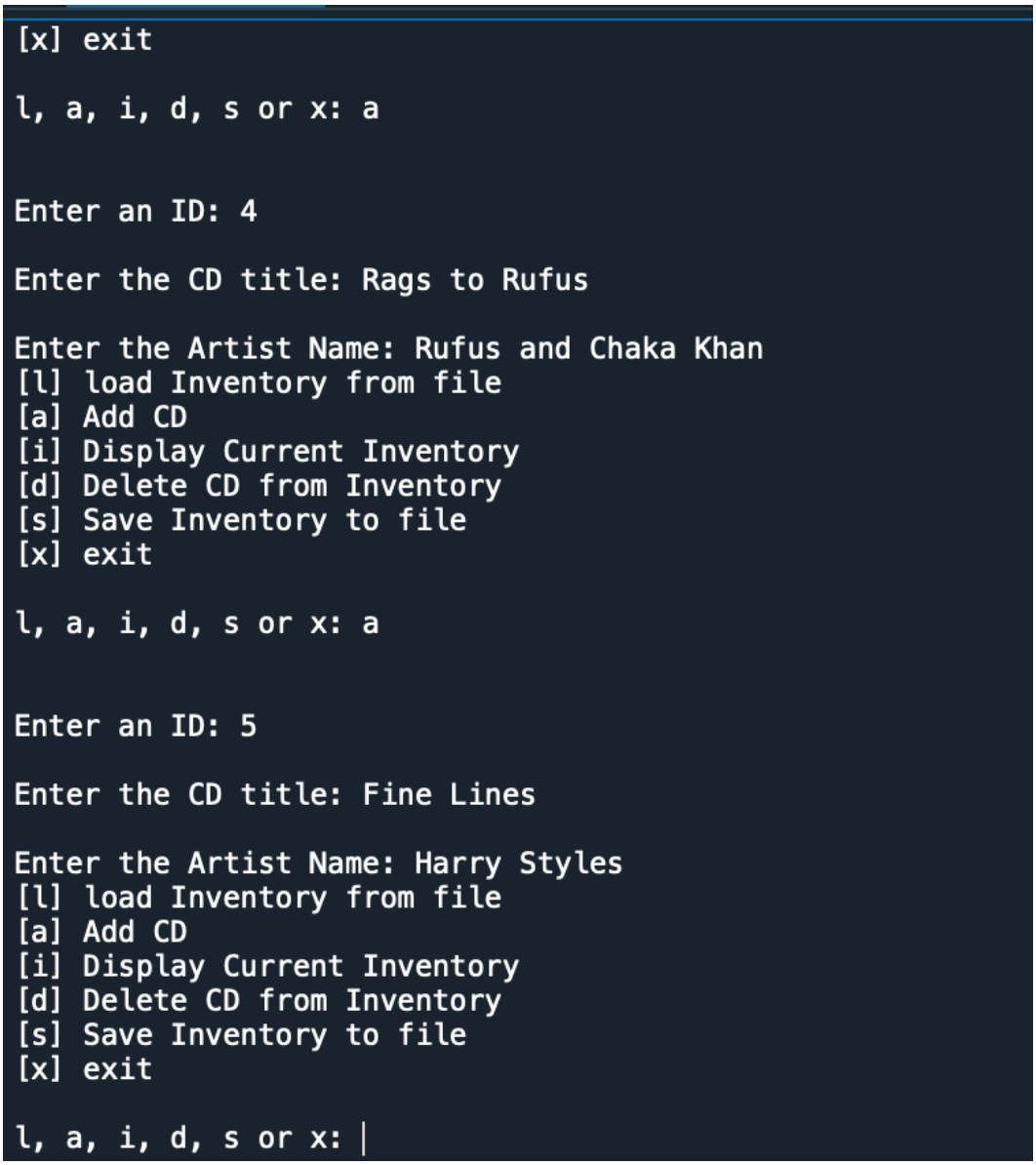


FIGURE 3: ADDING NEW ITEMS TO INVENTORY

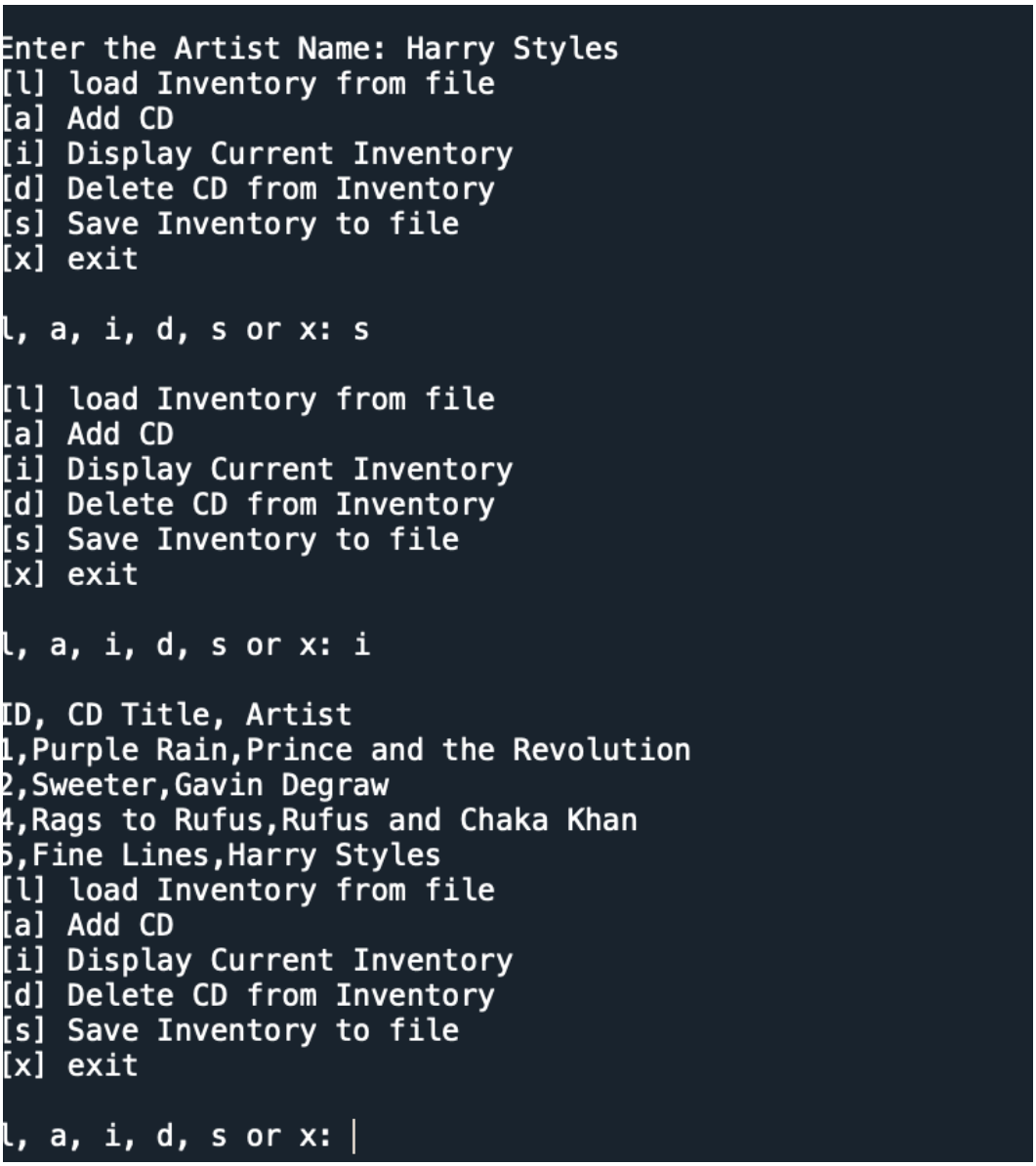


FIGURE 4: SAVING TO FILE AND DISPLAYING THE UPDATED INVENTORY

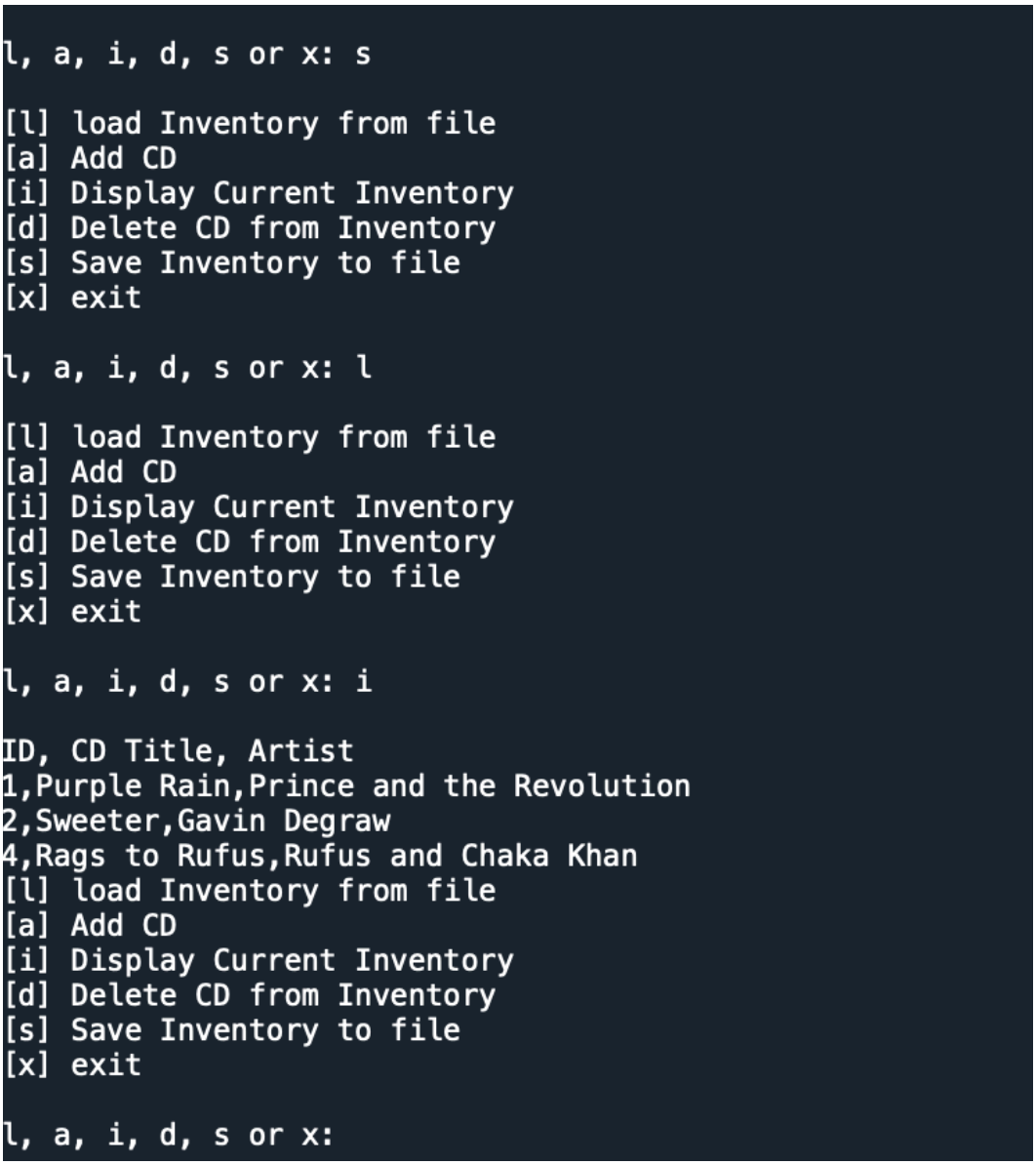


FIGURE 5: DISPLAYS UPDATED INVENTORY AFTER DELETION

Running from Terminal

I opened Terminal, navigated to the Assignment05 folder, and typed python3 CDInventory.py to execute the script. I followed the prompts and the script was successfully executed.

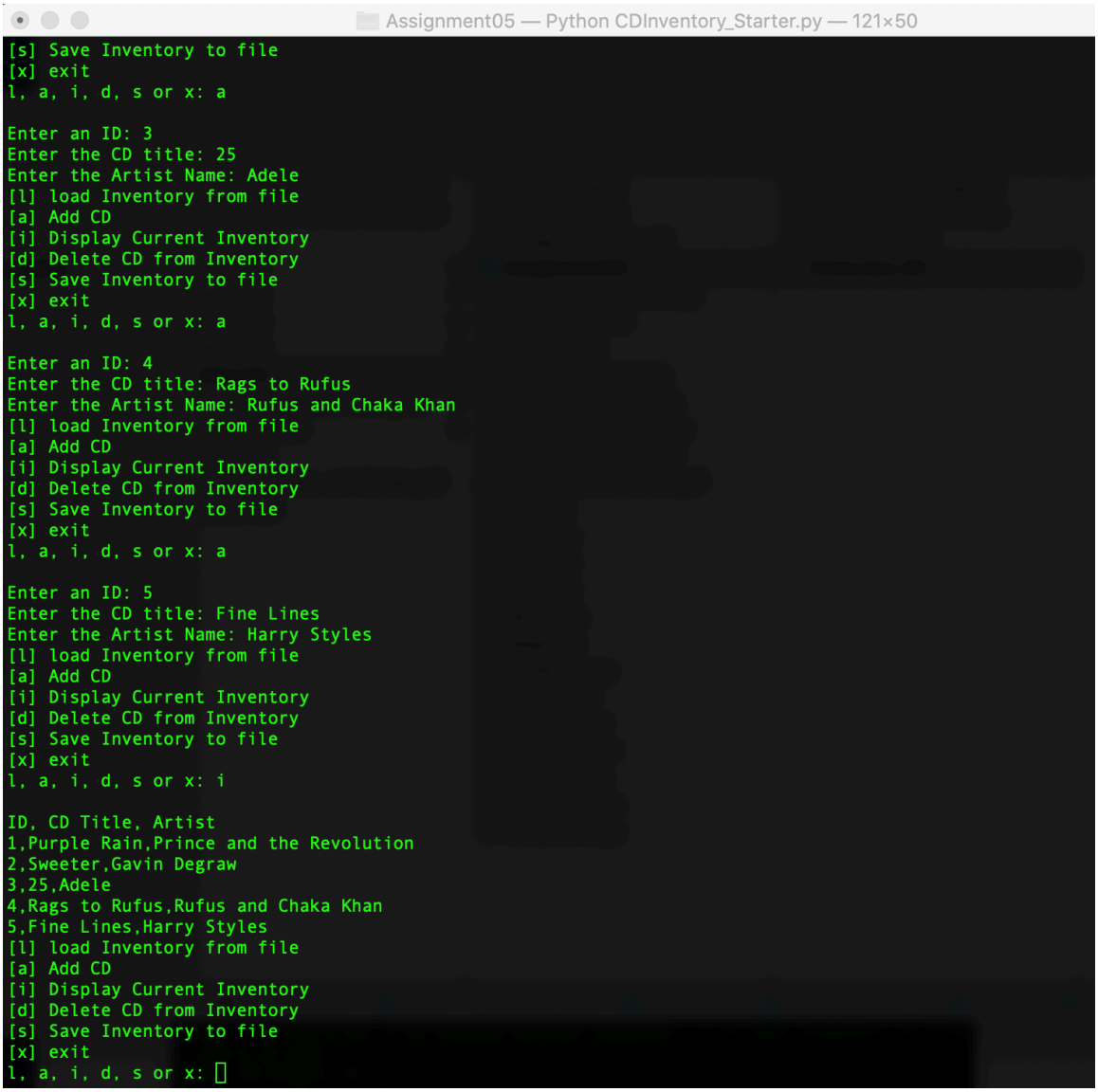


FIGURE 6: DEMONSTRATING CODE IN TERMINAL

Summary

Using the videos and textbook, I was able to create and successfully run CDInventory.py

Appendix

Listing CDInventory.py using http://www.planetb.ca/projects/syntaxHighlighter/popup.php

```
1.  #------------------------------------------#
2.  # Title: CDInventory.py
3.  # Desc: Starter Script for Assignment 05
4.  # Change Log: (Who, When, What)
5.  # TCunningham, 2020-Feb-24, Created File
6.  #------------------------------------------#
7.
8.  # Declare variabls
9.
10. strChoice = '' # User input
11. lstTbl = []  # list of lists to hold data
12. # TODO replace list of lists with list of dicts
13. dicRow = {}
14. lstRow = []  # list of data row
15. strFileName = 'cdInventory.txt'  # data storage file
16. objFile = None  # file object
17.
18. # Get user Input
19. print('The Magic CD Inventory\n')
20. while True:
21.     # 1. Display menu allowing the user to choose:
22.     print('[l] load Inventory from file\n[a] Add CD\n[i] Di
    splay Current Inventory')
23.     print('[d] Delete CD from Inventory\n[s] Save Inventory
     to file\n[x] exit')
24.     strChoice = input('l, a, i, d, s or x: ').lower()  # co
    nvert choice to lower case at time of input
25.     print()
26.
27.     if strChoice == 'x':
28.         # 5. Exit the program if the user chooses so
29.         break
30.
31.     if strChoice == 'l':
32.         # TODO Add the functionality of loading existing da
    ta
33.         objFile = open(strFileName, 'r')
34.         lstTbl=[]
35.         for row in objFile:
36.             lstRow = row.strip().split(',')
37.             dicRow = {'id': int(lstRow[0]), 'CD Title': lst
    Row[1], 'Artist': lstRow[2]}
```

```
38.             lstTbl.append(dicRow)
39.         objFile.close()
40.         pass
41.     elif strChoice=='a':  # no elif necessary, as this code
 is only reached if strChoice is not 'exit'
42.         # 2. Add data to the table (2d-
list) each time the user wants to add data
43.         strID = input('Enter an ID: ')
44.         strTitle = input('Enter the CD title: ')
45.         strArtist = input('Enter the Artist Name: ')
46.         intID = int(strID)
47.         dicRow = {'id': intID, 'CD Title': strTitle, 'Artis
t': strArtist}
48.         lstTbl.append(dicRow)
49.
50.     elif strChoice=='i':
51.         # 3. Display the current data to the user each time
 the user wants to display the data
52.         print('ID, CD Title, Artist')
53.         for row in lstTbl:
54.             print(*row.values(),sep=',')
55.
56.     elif strChoice == 'd':
57.         # TODO Add functionality of deleting an entry
58.         print('Your current inventory is...')
59.         for row in lstTbl:
60.             print(*row.values(),sep=', ')
61.         print('CDs available to be removed: 1 through ',len
(lstTbl))
62.         removeID=int(input('Enter an ID: '))
63.         magic=0
64.         for row in lstTbl:
65.             if removeID in row.values():
66.                 #print(magic)
67.                 del lstTbl[magic]
68.             else:
69.                 magic=magic+1
70.         pass
71.
72.     elif strChoice =='s':
73.         # 4. Save the data to a text file CDInventory.txt i
f the user chooses so
74.         objFile = open(strFileName, 'w')
75.         for row in lstTbl:
76.             strRow=''
77.             for item in row.values():
```

```
78.                 strRow+=str(item)+','
79.             strRow = strRow[:-1]+ '\n'
80.             objFile.write(strRow)
81.         objFile.close()
82.
83.     else:
84.         print('Please chose either l, a, i, d, s, or x!')
```