Assignment # 05
Foundations of Programming, Python

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1 Introduction

In this document, I will outline the steps I took to create a Python program as part of the fifth assignment for *Foundations of Programming, Python*. This program, like the fourth assignment, serves as data storage for CD information, but builds on top of the features of the fourth assignment.

2 Code Design

2.a Outline

In the previous assignment, we were supposed to use a list of lists to store the CD information. This time, we are to convert to a list of dictionaries instead. In addition, we are to implement loading from a text file as well as deleting entries from our database.

The change from using lists to dictionaries was not too difficult. Syntax had to change in some areas where code was written to use lists, and to instead use the keys of the dictionary of each entry. Loading was fairly straightforward as well, since information in the module document was sufficient to explain how to implement that. The same applied for deleting. I implemented deleting to strictly match for ID, title, and artist, because I think it could be problematic if the same artist has multiple CDs. I could have added a more in-depth confirmation option, or even another selector to iterate over the possible deletions, but I didn't opt to do so here.

I did encounter one small issue when loading and saving from the text file. At one point I ended up writing the newlines into the file, which I think was a side effect of loading and saving repeatedly. This would cause a bug where it attempted to convert newline to an integer, which would fail. I just ensured that loading would strip the newlines to prevent this. An alternative approach would be to just skip lines that failed to parse correctly, and continue loading the rest, which seems like a better choice for the user.

3 Script Results

```
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, Island, Seven Lions
3, Awake, Illenium
[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: a


Enter an ID: 9

Enter the CD's Title: Language

Enter the Artist's Name: Porter Robinson
[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
```

Figure 1: Results of running program in Spyder

```
Anaconda Prompt (anaconda3)
[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, Island, Seven Lions
3, Awake, Illenium
[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: a

Enter an ID: 121
Enter the CD's Title: Chimera
Enter the Artist's Name: Caster
[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, Island, Seven Lions
3, Awake, Illenium
121, Chimera, Caster
[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: s

[r] Replace file contents
[a] Append to file contents
[c] Cancel
r, a, or c: r
```

Figure 2: Results of running program in terminal

4   Conclusion

Much of what was needed for this program was introduced in previous modules or the current module. There wasn't too much new information that was difficult, so I feel like I was well-prepared for this assignment from the given materials. I do think this and the fourth assignment are much more complex than the previous ones, which I appreciate.