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Introduction to Programming (Python)

Assignment05

**Adding Functionality to CD Inventory Script**

**Introduction**

During this assignment, I took previously written, partially functional code and added sections to improve and add to user options.

**Planning the Additions**

This project involved adding multiple components to a pre-existing script, with the main goal be replacing the core data structure, a list of lists, with a list of dictionaries. The first section, where we declare the variables, therefore needed to be changed from declaring a list of lists to a list of dictionaries.

The menu existed and was functional, but a few of the options you could take didn't lead anywhere. Specifically, I had to add functionality for loading existing data into the list of dictionaries from the text document CDInventory.txt, displaying the current data in memory, and deleting a row out of the list. Finally, the save option was set up to save the list of lists - it would have to change with the new list of dictionaries. With these goals in mind, I started each sub-segment.

**Loading Data**

To load data into our list of dictionaries, I decided to have a for loop iterate through our text document, and for each row use .strip() and .split(',') to seperate it out into individual sections. These then get placed into a variable called dictRow, as a dictionary, set up to add ID, Album, and Band as keys, and assign the values taken from the row as values in the dictionary. Then, that row is appended to lstTbl, the list of dictionaries. Since I used appending to the dictionary here, I went back and made it so whenever you load data, it empties the table first, so you don't add more and more duplicates whenever you load data.

**Displaying the Current Data**

To display our list of dictionaries, I decided to keep it simple and iterate through lstTbl with a for loop, and on each row use .get(key) for each key, pulling out the data from the dictionaries in a print().

**Deleting a Row**

The last of the functionality additions, I handled deleting a row by using a .pop() on the table[1]. To do so, I needed to find the user-inputed line. When the user is prompted with an input for 'Which item ID do you want to delete?', they input a number. The script then iterates through the table, on each row using an if statement to find if that number is in the 'id' key of the dictionary. Upon reaching the row that has the ID value in it, it uses .index() to set the variable 'delRow' with the index of the proper line, and uses lstTbl.pop(delRow) to delete that specific row.

As a small user experience bonus, I added 'deleted' as a False variable at the beginning of the section, which turns to True if the row gets deleted. Then, before going back to the menu, it prints for the user whether or not which the row was deleted.

**Updating the Save Option**

Updating the save option to work for dictionaries was actually very simple. I used a for loop to iterate through the list, and for each dictionary, I unpacked the values with row.values(), and used the same code for writing the lines back into the text file. With that

**Running the Script and Summary**

With all the pieces built and in place, I ran the script, going through each of the options and testing different ways to do it. I settled on this version of the final code, and saved it into my folder and uploaded the documents to GitHub. I was able to update the code given to me, creating a full program with all the TODO items explored and given functionality.

[1]: <https://docs.python.org/3/tutorial/datastructures.html>

[2]: <https://www.programiz.com/python-programming/methods/string/split>