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Foundations of Programming (Python)

Assignment 5

# CD Inventory + Dictionaries

## Introduction

This week we focused on expanding the code started last week to include a different inner data structure – dictionaries. This functionality allows for additional data manipulation such as loading existing data, or deleting an entry.

## Topic 1: Change the Structure to Dictionaries

We begin by changing the sample code from a list to a dictionary because of its mapping structure. This includes changing the list of “lists” to a list of dictionaries, including the key by which they are recognized and specifying the type of data in each column.

## Topic 2: Loading Existing Data

To add existing data, I first ran the script without changing anything to create a file to load. Once this was complete, I set about parsing the file with the “,” separator so that the loaded file could be sorted into the three columns of the dictionary. For some reason, I had to create a copy of the dictionary to avoid errors with later viewing, I think this is some mistake where I have not make something distinct.

## Topic 3: Deleting an Entry

To delete a entry, in case of mistake or otherwise, I used a simple for loop with a nested if statement. These are contingent on user input specifying an ID to be deleted. The for loop removes the row corresponding to the input ID. I could have changed this to be robust to a user’s choice of album name or artist. In some scenarios, it might be useful to have the script be robust to all three.

Figures 1 and 2 show the code running in Spyder and the terminal, respectively.

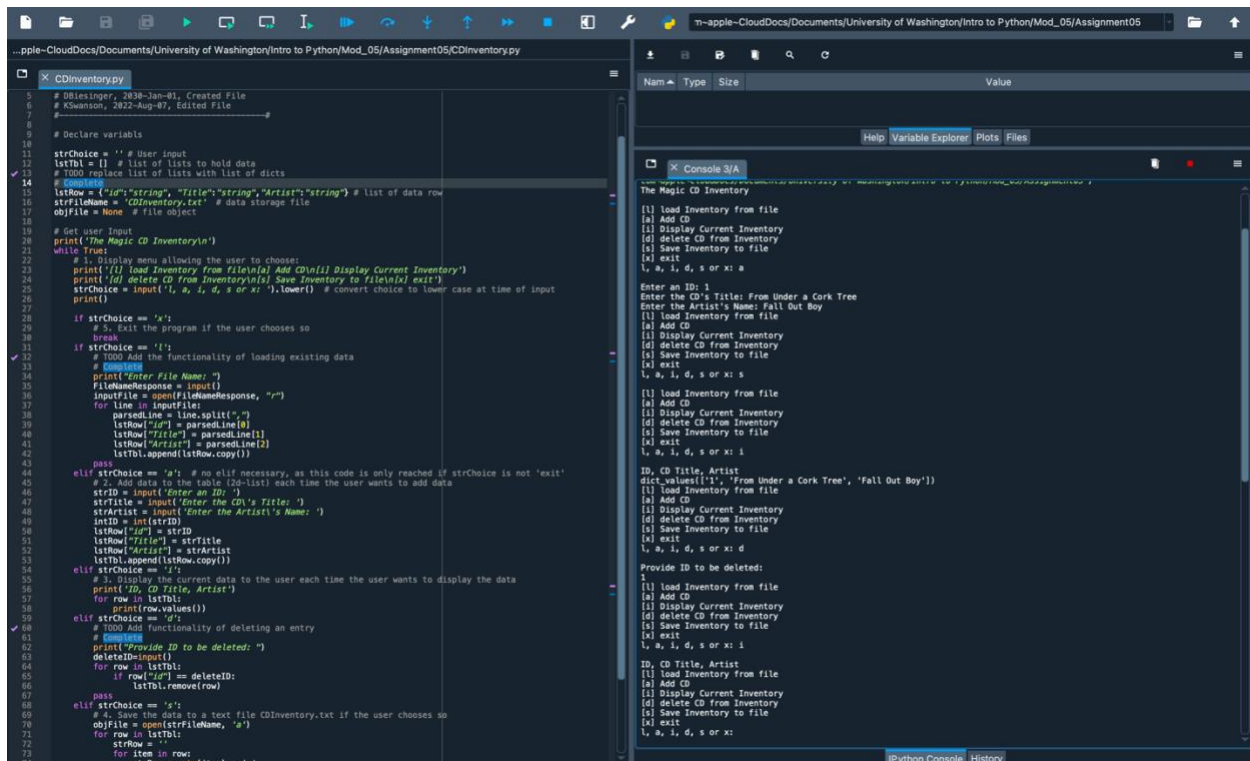


Figure 1: Spyder executing the `CDInventory.py` script

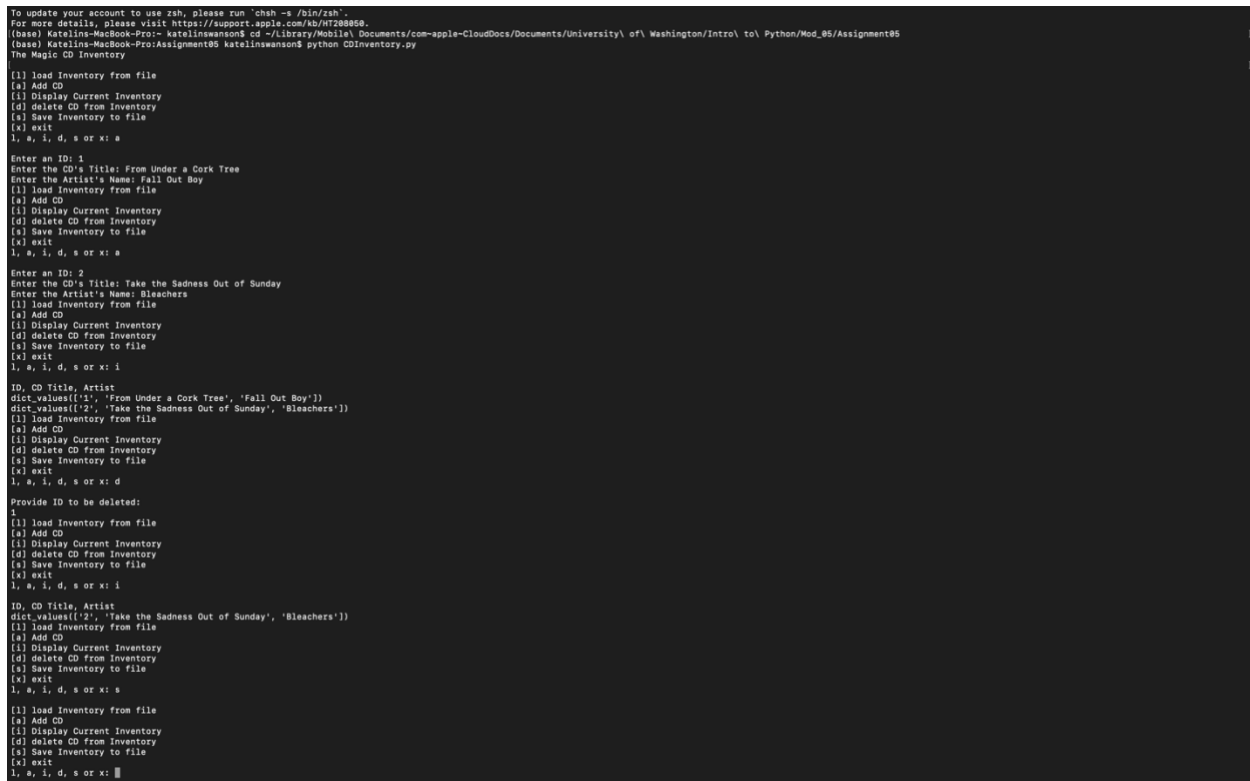


Figure 2: Terminal execution of `CDInventory.py`

## Summary

In summary, I have immensely improved my understanding of dictionaries. I have also become familiar with many baseline functions in python. It was very helpful to have an example of a “sufficient” example of homework 4 to start with.