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IT FDN 110 B

Assignment 08

Introduction

Week 8's focused on object oriented programming, which reinforced the use of classes and functions, but introduced additional elements to create objects.

Assignment

In this weeks assignment, we are provided a starter code, and asked to write the program according to whats in the starter. Basically, we are revising the previous weeks program to use objects in a list, instead of dictionaries or a list of lists.

For the most part, this task was fairly straight forward, but working with objects is a new concept. Objects as described in the online link (<https://realpython.com/python3-object-oriented-programming/>) make sense. However, the application of using objects within our CD inventory program took a while to figure out. And honestly, it was just an absurd amount of trial, error, and googling to get things to work.

The primary focus of this program, was creating a CD class, which allowed us to instantiate CD objects. The class initialized 3 parameters (id, title, and artist). And, the class required a display function to make sure the user inputs would display correctly when called. See figure 1.

```
class CD:
    """Stores data about a CD:

    Properties:
        cd_id: (int) with CD ID
        cd_title: (string) with the title of the CD
        cd_artist: (string) with the artist of the CD
    Methods:
        """
    cd_id = 0
    cd_title = ''
    cd_artist = ''

    def __init__(self, cd_id, cd_title, cd_artist):
        self.cd_id = cd_id
        self.cd_title = cd_title
        self.cd_artist = cd_artist

    def display(self):
        """
        Returns a list of arguments (id, title, artist) for each CD entry.

        Returns
        -----
        List of arguments.
        """
        return '{}\t{} (by:{}'.format(self.cd_id, self.cd_title, self.cd_artist)
```

Figure 1 - CD Class

The rest of the code was leveraged from past weeks assignments, and revised (where applicable) to support objects instead of lists or dictionaries.

Figure 2 shows the program running properly in Spyder.

```
In [1]: runfile('/Users/gregeisele/Documents/Python_Class_(IT_FDN_110_B)/Assignment08/
CD_Inventory.py', wdir='/Users/gregeisele/Documents/Python_Class_(IT_FDN_110_B)/Assignment08')

Data has been loaded from file....

----- Menu -----
[l] Load Current Inventory
[a] Add CD to Inventory
[d] Display Current Inventory
[s] Save Inventory to file
[x] Exit the Program
-----

Please choose from the menu? [l, a, d, s or x]: d

===== The Current Inventory: =====
ID  CD Title (by: Artist)
-----
1   Midnights (by:Taylor Swift)
2   A Song for You (by:Luke Evans)
3   Harry's House (by:Harry Styles)
4   The Car (by:Arctic Monkeys)
5   The Highlights (by:Weeknd)
6   Diamonds (by:Elton John)
=====

----- Menu -----
[l] Load Current Inventory
[a] Add CD to Inventory
[d] Display Current Inventory
[s] Save Inventory to file
[x] Exit the Program
-----

Please choose from the menu? [l, a, d, s or x]: a

Enter ID: 7
What is the CD's title? Last to Speak
What is the Artist's name? Allen Stone
===== The Current Inventory: =====
ID  CD Title (by: Artist)
-----
1   Midnights (by:Taylor Swift)
2   A Song for You (by:Luke Evans)
3   Harry's House (by:Harry Styles)
4   The Car (by:Arctic Monkeys)
5   The Highlights (by:Weeknd)
6   Diamonds (by:Elton John)
7   Last to Speak (by:Allen Stone)
=====

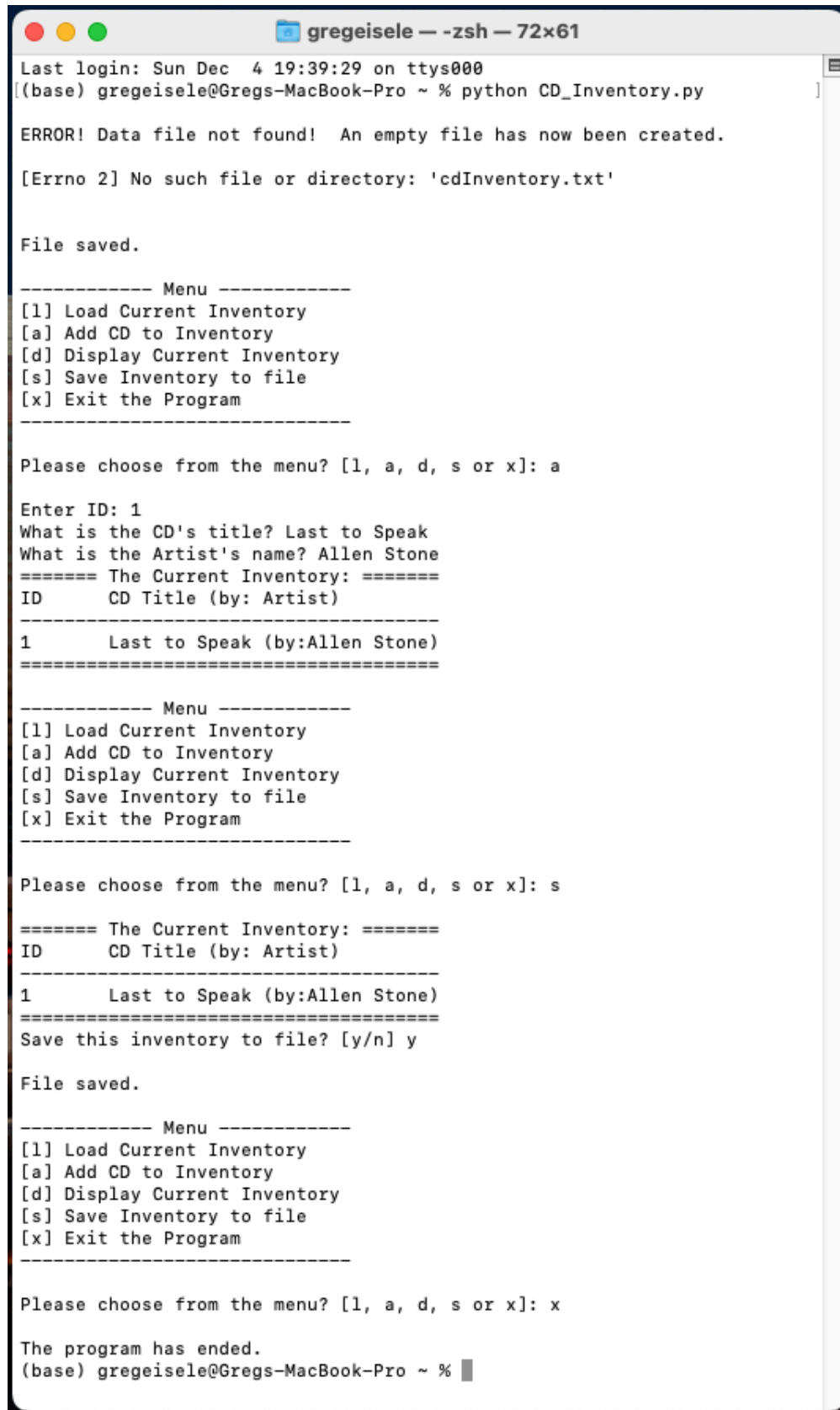
----- Menu -----
[l] Load Current Inventory
[a] Add CD to Inventory
[d] Display Current Inventory
[s] Save Inventory to file
[x] Exit the Program
-----

Please choose from the menu? [l, a, d, s or x]: x

The program has ended.
```

Figure 2 - Program Running in Spyder

Figure 3 shows the program running in Terminal. I did not have a file saved in the correct directory in order to show the file error handling works properly.



```
gregeisele — -zsh — 72x61
Last login: Sun Dec  4 19:39:29 on ttys000
(base) gregeisele@Gregs-MacBook-Pro ~ % python CD_Inventory.py

ERROR! Data file not found! An empty file has now been created.

[Errno 2] No such file or directory: 'cdInventory.txt'

File saved.

----- Menu -----
[l] Load Current Inventory
[a] Add CD to Inventory
[d] Display Current Inventory
[s] Save Inventory to file
[x] Exit the Program
-----

Please choose from the menu? [l, a, d, s or x]: a

Enter ID: 1
What is the CD's title? Last to Speak
What is the Artist's name? Allen Stone
===== The Current Inventory: =====
ID      CD Title (by: Artist)
-----
1       Last to Speak (by:Allen Stone)
=====

----- Menu -----
[l] Load Current Inventory
[a] Add CD to Inventory
[d] Display Current Inventory
[s] Save Inventory to file
[x] Exit the Program
-----

Please choose from the menu? [l, a, d, s or x]: s

===== The Current Inventory: =====
ID      CD Title (by: Artist)
-----
1       Last to Speak (by:Allen Stone)
=====
Save this inventory to file? [y/n] y

File saved.

----- Menu -----
[l] Load Current Inventory
[a] Add CD to Inventory
[d] Display Current Inventory
[s] Save Inventory to file
[x] Exit the Program
-----

Please choose from the menu? [l, a, d, s or x]: x

The program has ended.
(base) gregeisele@Gregs-MacBook-Pro ~ %
```

Figure 3 - Program Running in Terminal

Summary

Object oriented programming is.....interesting. At its most basic, I feel like i get it. However, applying it to the CD inventory program was a bit of a challenge. Part of me wonders if objects aren't the most appropriate use for the CD inventory program, and thats what made it challenging?

GitHub

https://github.com/Greg6874/Assignment_08