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IT FDN 110 B – Introduction to Programming (Python)

Assignment 06

User CD Inventory: Classes and Functions

## Introduction

This week we build up our skills from using loops, dictionaries, lists, if statements, inputs, and everything else we have learned thus far to create an interactive program that will store a CDInventory based on the inputs from the user. Instead of just using loops, we are going to move previous code into functions, and move those functions into classes for a more powerful and organized program. Doing this editorial process from existing code helped me understand the concepts behind functions and classes at a beginner level. For the sake of this knowledge document, I will be focusing on the changes to the code that I personally did rather than the existing code. **If you want to see everything in its entirety, use the GitHub link in the Appendix.**

## Class setup

The three classes used in this assignment are DataProcessing, IO, and FileProcessor, each with their own purposes and callbacks in the main code. DataProcessing with the code contains functions that either add or delete data depending on the user’s request. FileProcessor Processes data to and from the text file CDInventory.txt, and in my case it is where I decide to save my file given the user request. And IO is where I store all the input/output functions used for this assignment, specifically where the user decides what they’re going to do, and it’s also how the computer lets the user add lines for the CDInventory.

## 2.0 Functions

Functions in this code store the code that was in the original main loop that muddied everything up and made it unnecessarily long and complex. Fore example, figure 2.0-1 shows the function that will allow the user to store a new CD to the list, and figure 2.0-2 is how the function is used in the main code. One interesting thing I learned was that I needed to make those variables in my IO code global so they could be used throughout the entire code rather than just the local function. Otherwise I would run in an error where my variables wouldn’t be defined, then my code would break. This can be seen in Figure 2.0-3.

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Figure 2.0-1 – data\_add function

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Figure 2.0-2 – data\_add Function Implementation

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Figure 2.0-3 – CD\_Input IO function

The Green text shown in the function is known as a docstring, which will allow the user to gain more clarity on what the code accomplishes and what you need in order to run it.

## 3.0 Main code

The main code seen in figure 3.0 was more filled in and bloated before moving those lines of code into their respective functions and classes. A couple key changes seen below are the callouts, which was a new concept I learned when doing this assignment. When I call out IO.CD\_Input() for example, the computer tracks the code to the class, and within the class runs the function CD\_Input(). I had no argument inputs for that function specifically, which is why I used the () symbol with nothing in it. DataProcessor.data\_add(stride, strTitle, stArtist) however required three argument inputs, which allow the code to add the data into the CD list As a user runs the code, the docstring provided in each function will provide ample amounts of explanation on what the function accomplishes, and what you need to use to run it.

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Figure 3.0 – CDInventory Main loop

## 4.0 Summary

Assignment 6 was the most difficult assignment by far, and I have learned the most from it. I learned how to create functions and classes that have actual purpose, global variables can be used to gain some more use out of certain variables called within local functions, and the main code can be followed more clearly if classes/functions are called upon, especially in complex codes.

## Appendix

The following appendix shows my code in its entirety, plus an example of it working in the terminal window. Everything in detail will be better processed in my assignment06 repository on github. The link will be provided below.

[MatthewBradley11/assignment06 (github.com)](https://github.com/MatthewBradley11/assignment06)

CDInventory.py code

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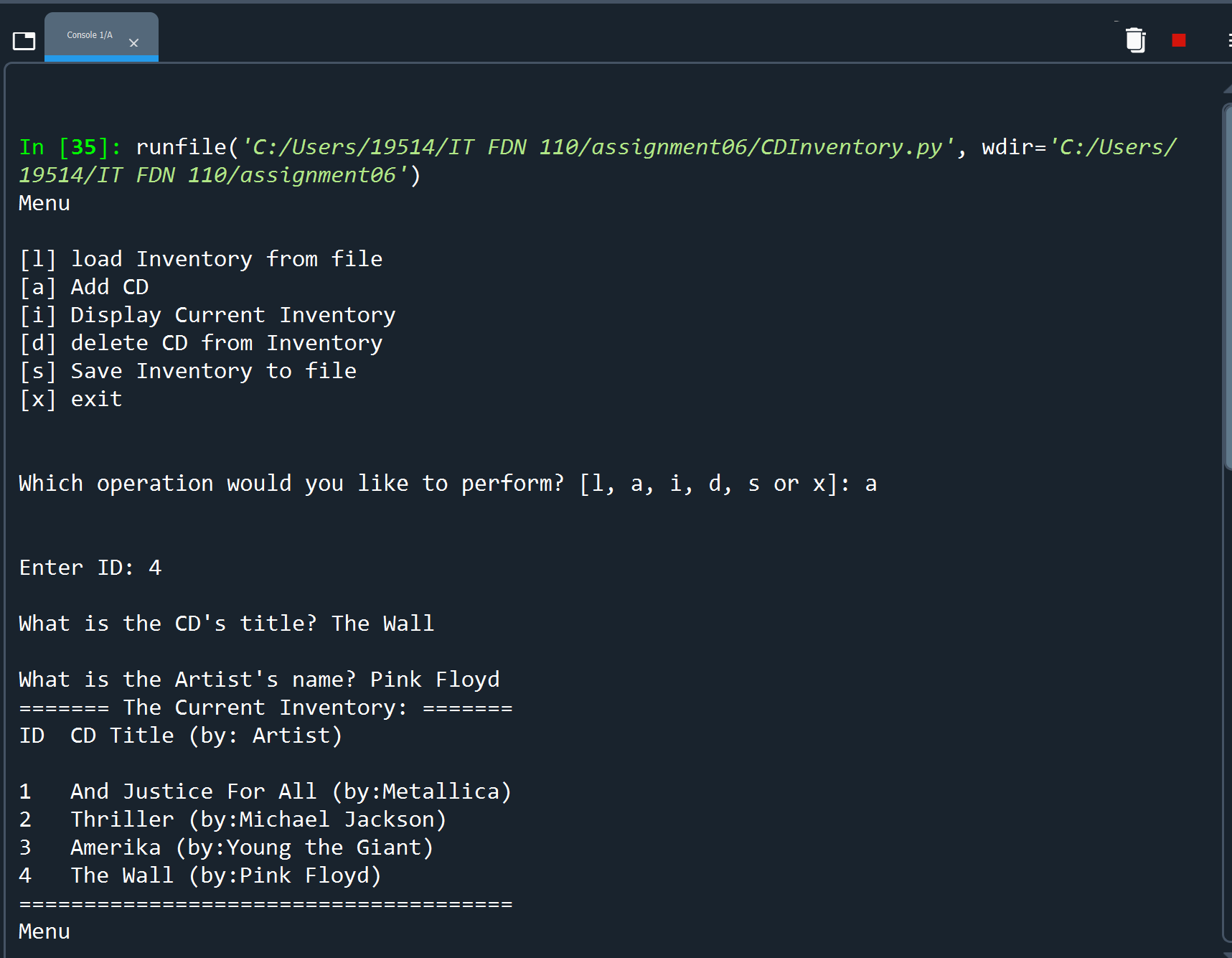
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CDINventory.py Code Working



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