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IT FDN 110 B
Assignment 07

Modifying the CD Inventory Program

Introduction

In this document I will describe the concepts used to modify and test the CDInventory.py script as required for assignment 07.

Approach

In this assignment we were asked to modify last weeks assignment to work with our file data as binary, and also to add some structured error handling for some of the common errors the program might find with user input and file handling. I identified all the sections of code that worked with file data in order to determine where I needed to modify to use pickle. My next step was to find the sections of code that could potentially error out based on a users input in order to determine where to add structured error handling.

Import

The import keyword is an important part python functionality that we have not used through assignment 07. Using import was key to completing assignment 07 due to the fact that we needed to use the pickle module. By calling the import statement we are able to bring the pickle module into our program and make it available for use. In this assignment I chose not to alias the pickle module, and instead chose to reference it via the full name "pickle."

Try Except

Try except is an important way to handle errors in python scripts that has a few benefits that are helpful in the CDInventory program. By using try except for error handling we can handle errors in a way that does not crash our program. This creates a better user experience by preventing the technical errors being shown to users and also prevents the program from losing the data due to an unexpected termination of the program. In assignment 07 I used try except blocks to look for a few things. The first was using a Try except for a FileNotFound error. I felt this was a good place to handle an error gracefully because the program cannot work without a file available. In my except block I chose to create a new blank file when one is not found so the program was able to continue without error.

Python Try Except - GeeksforGeeks

Python Try Except (w3schools.com)

Pickling

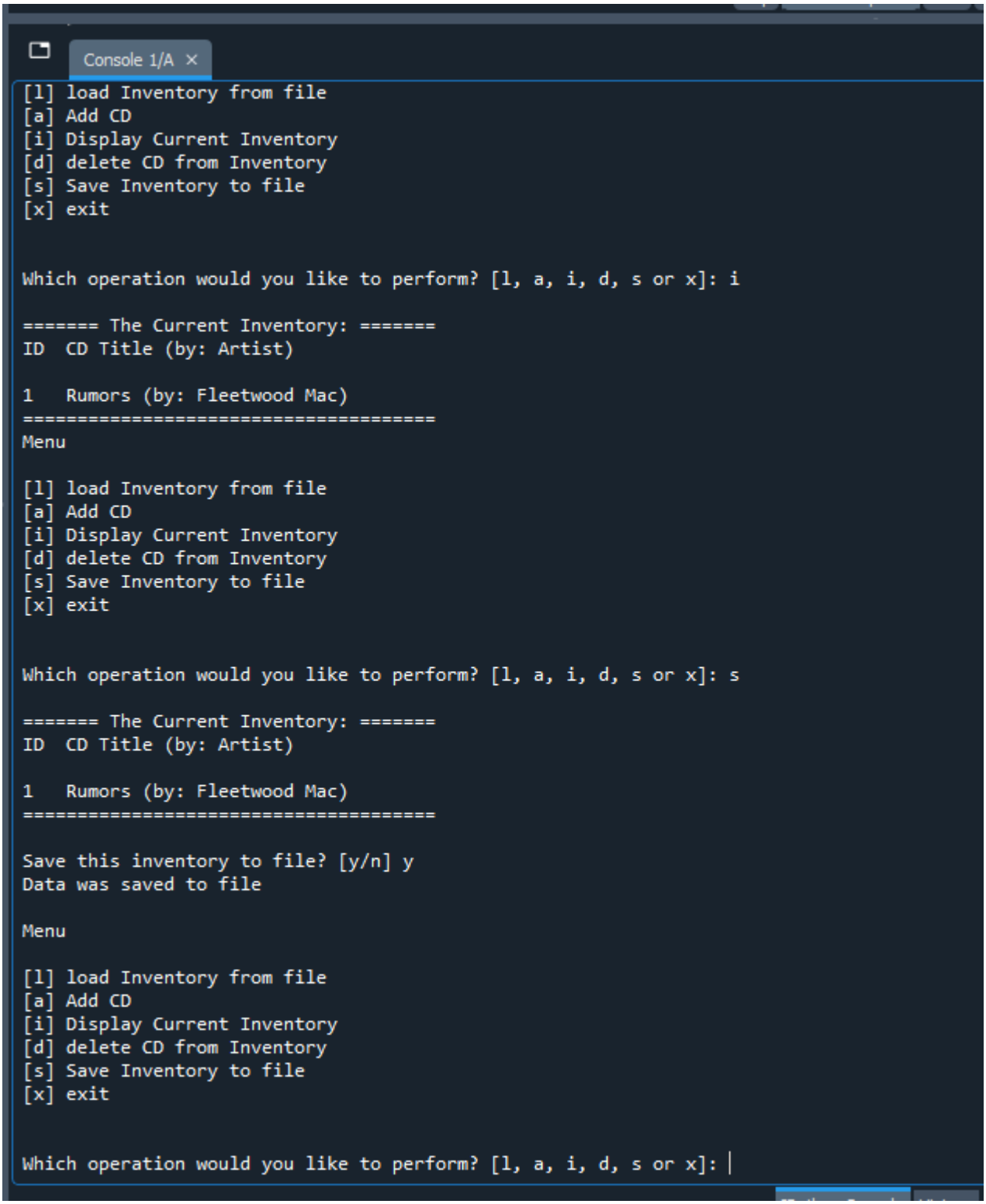
Another concept introduced in module 7 was pickling. Pickling is a python module that allows us to read and store data as binary. There are few drawbacks of using pickle, the first is that the data format is unreadable to humans, and can only be read by using pickle again. It is also limited to python only, however this did not affect us in Assignment 07 as we are only using python. Through my research, it also requires caution to make sure you never unpickle data that you are not sure about, this can be an open door for people to exploit programs. While pickle has its drawbacks, it also has benefits. Pickling data allows us to dump all the information into a file in a very simple way. It also allows for a majority of python objects to be pickled. In assignment 07, I had to adjust the read and write functions to work with pickle functions to write binary data to file.

[The ultimate guide to Python pickle | Snyk]

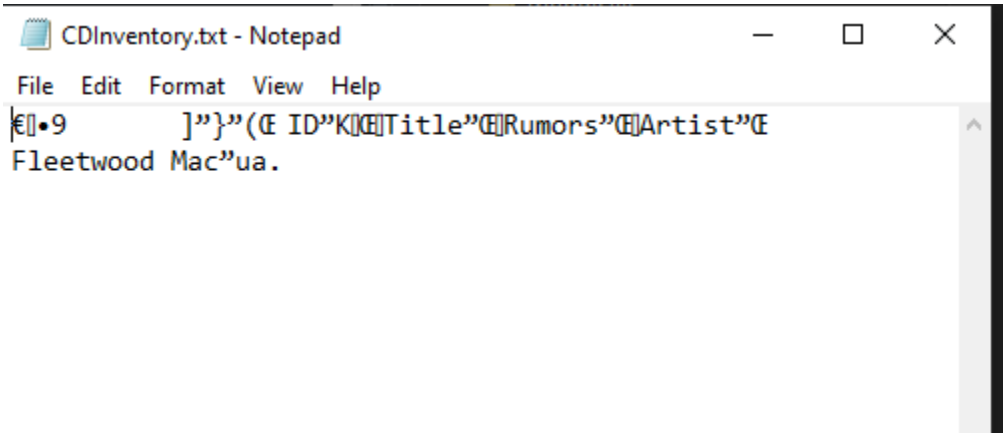
[The Python pickle Module: How to Persist Objects in Python – Real Python]

Testing

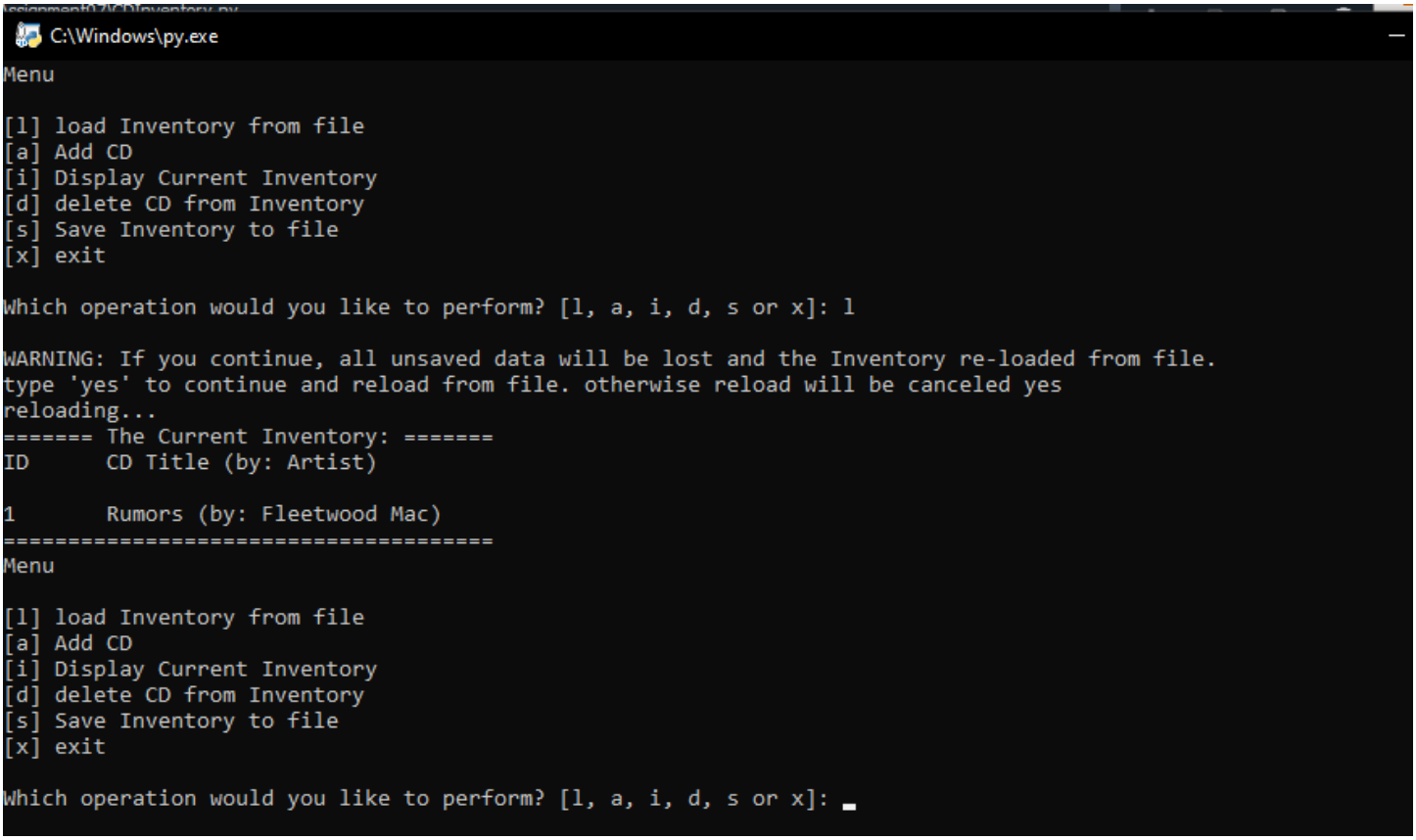
To test my program, I executed in both Spyder and the terminal to validate the modifications performed as expected.



To validate that the pickling was working, I opened the file to make sure I was seeing an unreadable format:



After validating the data was saved in binary, I needed to double check that it could be read back into the program correctly.



Publishing

Code was published to the following git repository: https://github.com/a-ayers/Assignment_07