Kris Czaja
11/14/2021
IT FDN 110: Introduction to Programming (Python)
Assignment 05

Assignment 05 - Introduction

The following document is a summary of the main learnings from Module 05 of the IT FDN course. Module 5 continues with description of Lists (unpacking, loading from file), introduces dictionaries, which use key:value pairs.
Other than sequences, Module 5 contains information about script templates, SoC, functions and structured error handling, but above all it's loaded with exercises in which student changes existing code.

GitHub location
https://github.com/Krzsztfczj/Assignment_05

Lists - unpacking, saving/loading to/from file

Lists can be unpacked using for loop, or with * operator. I use * operator in SQL to select all available options, so when 'print(*list)' unpacks and displays all elements from the list, it makes sense to me.

Saving the data into file was covered in module 4 - module 5 shows how to load data, by opening a document in 'r' mode. Pulled data needs to be formatted to match the program e.g. 2D Table consisting of lists.

Dictionaries

{key:value}

Dictionaries are similar to sequences, but function based on the key:value pairs. Keys are like text indexes.

Dictionaries have some unexpected formatting features. For example, printing .values() yields additional 'var_values' before the values are printed.

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GitHub

GitHub is a large, corporate-owned repository of code. Code can be accessed and shared with other creators.
Git is a version control system.

My profile: https://github.com/Krzsztfczj

SoC

SoC - separation of concerns

It's a typical operational practice to dissect large and complex tasks into small, simple and repetitive steps. It increases productivity and allows for easier replacement of contributors. In programming it's called separation of concerns - tasks are divided into distinguishable sections: Data, Processing and Presentation.

Functions

Functions allow to group sets of commands under one definition. If variables are placeholders for data, functions are placeholders for actions.

Structured Error Handling

'Try - Except' construct anticipates error and shows moment when it occurred. Additionally, instead of crashing the program, error triggers new action.

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Templates

Spyder has templates - they can be used to set a predefined header.

CDInventory script

Task: “(...)Modify the 2D data structure to use dictionaries as the inner data type (list of dictionaries) (...)”

- Working on somebody else's code shows how one problem can be solved in different ways.
- Changing code from lists to dictionaries was similar to labs and posed problems with getting the end results in correct format. For example, keys do not need to be displayed to the end user when viewing current inventory, so code needs to be different than with lists that do not have keys.
- Deleting rows was surprisingly difficult. Initially I wanted the condition in the if statement to be a comparison of row[0] to the ID number, as ID is the first entry in my rows. This turned out to be completely incorrect and it took me a lot of trial and error to get the code right.
- Loading the data turned out to be much easier. I decided to take the position that data is considered fully loaded when it is stored in the 2D table, not just in the variables that can be used to update the table.
- I tested the code many times at different stages, in Spyder, Idle3 and Terminal.

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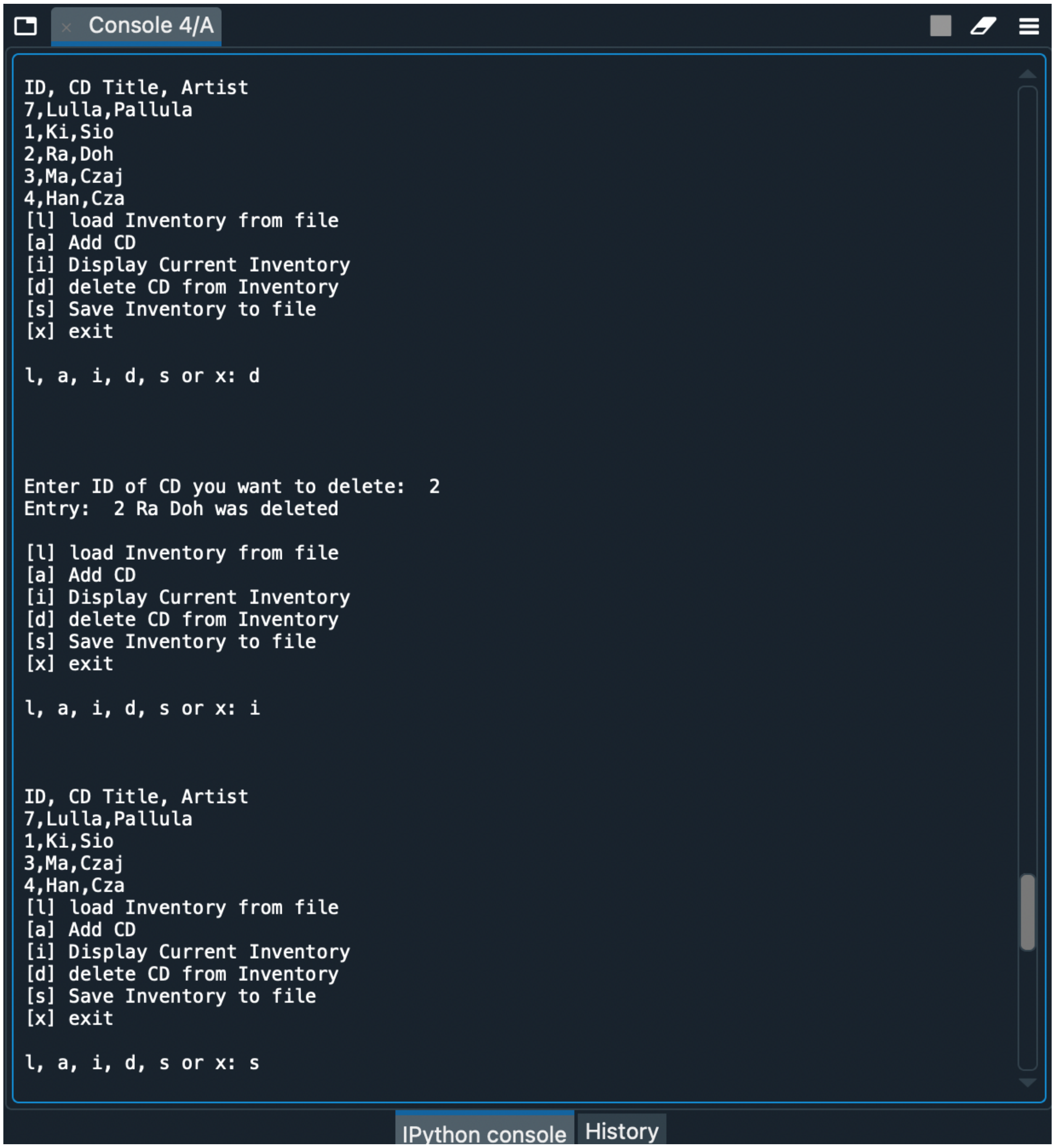
Assignment 05



```
ID, CD Title, Artist
7,Lulla,Pallula
1,Ki,Sio
2,Ra,Doh
3,Ma,Czaj
4,Han,Cza
[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] delete CD from Inventory
[s] Save Inventory to file
[x] exit

l, a, i, d, s or x: d




Enter ID of CD you want to delete:  2
Entry:  2 Ra Doh was deleted

[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] delete CD from Inventory
[s] Save Inventory to file
[x] exit

l, a, i, d, s or x: i



ID, CD Title, Artist
7,Lulla,Pallula
1,Ki,Sio
3,Ma,Czaj
4,Han,Cza
[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] delete CD from Inventory
[s] Save Inventory to file
[x] exit

l, a, i, d, s or x: s
```

Fig1 CDInventory in Spyder

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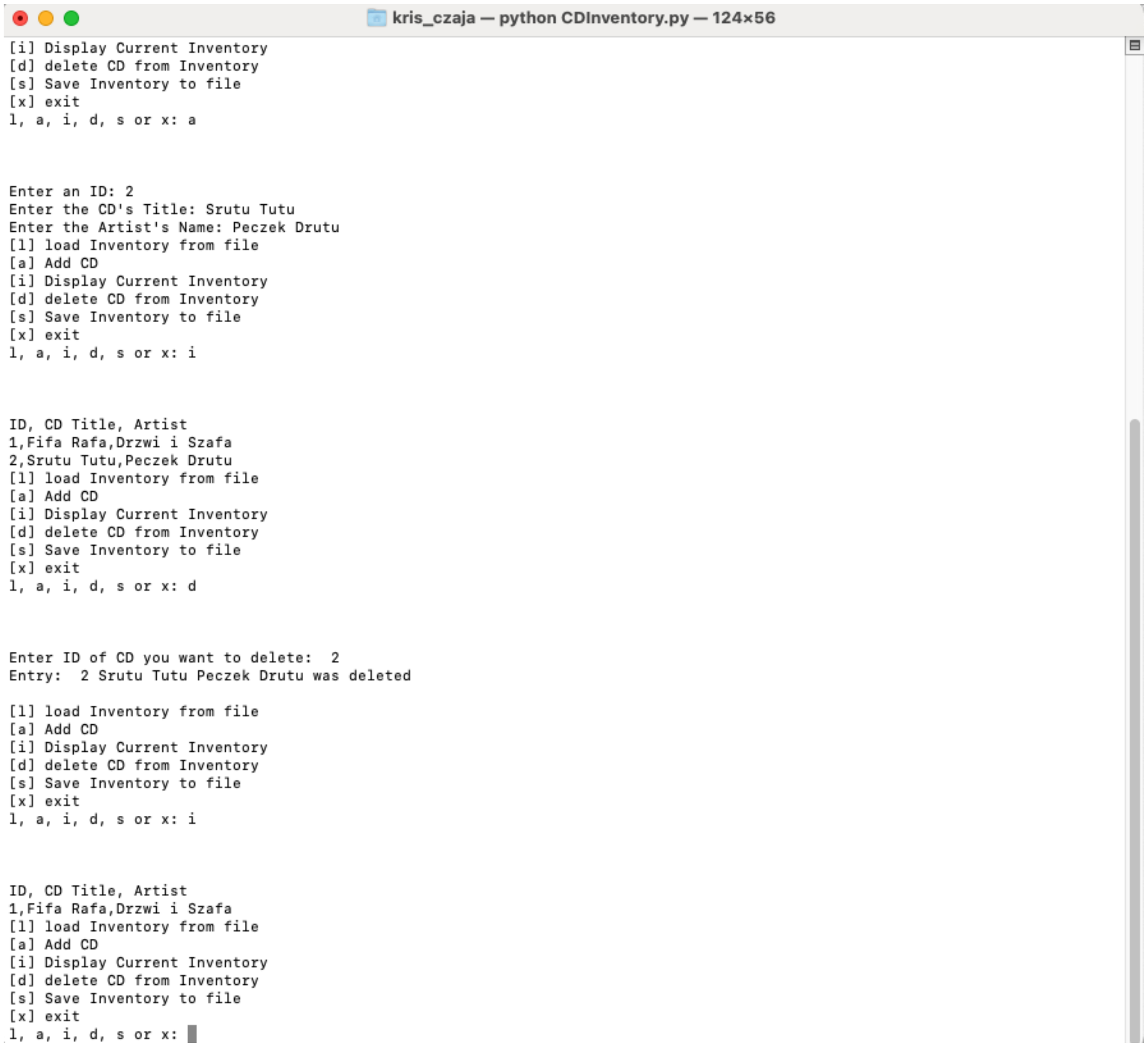
Assignment 05



```
[i] Display Current Inventory
[d] delete CD from Inventory
[s] Save Inventory to file
[x] exit
l, a, i, d, s or x: a



Enter an ID: 2
Enter the CD's Title: Srutu Tutu
Enter the Artist's Name: Peczek Drutu
[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] delete CD from Inventory
[s] Save Inventory to file
[x] exit
l, a, i, d, s or x: i



ID, CD Title, Artist
1,Fifa Rafa,Drzwi i Szafa
2,Srutu Tutu,Peczek Drutu
[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] delete CD from Inventory
[s] Save Inventory to file
[x] exit
l, a, i, d, s or x: d



Enter ID of CD you want to delete:  2
Entry:  2 Srutu Tutu Peczek Drutu was deleted

[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] delete CD from Inventory
[s] Save Inventory to file
[x] exit
l, a, i, d, s or x: i



ID, CD Title, Artist
1,Fifa Rafa,Drzwi i Szafa
[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[d] delete CD from Inventory
[s] Save Inventory to file
[x] exit
l, a, i, d, s or x: 
```

Fig2 CDInventory in Terminal

Summary

In the fifth module, I continued to discover sequences and learned about dictionaries. I learned how work on coding is streamlined by using code repositories, templates and efficiency optimization. The practical exercises in module 05 are focused on transforming existing code and working with other contributors.