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<IT FDN 110>

<Assignment\_06>

CD Inventory

# Introduction

The Assignment 06 is about class in Python. Based on the starter code, we organized the data workflow and gathered some code that we can use repeatedly around to make them a class. In the starter file, there are three classes we need to implement: FileProcessor , DataProcessor and IO.

# Topic\_1 FileProcessor

There are two methods in FileProcessor: read\_file and write\_file.

Professor has already filled the read\_file method for us. The basic logic of this is to read a file line by line. Each line represents an object of CD (as python dictionary type). For one line, there are three values (ID, Title, Artist) separated by ‘,’. And we read it, parsed it into a dictionary object then append it to the table.

Our task in this topic is clear: reverse the process of read\_file. From the lstTbl list, we get all the dictionary one by one using a for loop. In the for loop, we should construct the string by concatenating dictionary values and ‘,’. we have opened the file by the parameter file\_name before entering the for loop. Once I get the string, I write it into the file immediately with a newline character ‘\n’, so that every dictionary row will be exactly one line. This part of code has already been implemented in the starter code line 185 – 190.

Text

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Figure explanation of write\_file code

# Topic\_2 IO

Class IO’s method requirements are showed within the while loop. In line 138 – 140 from starter code, there are three input statement to read three records of information of a CD item. Since we need to move IO code into class function, I created another static method under IO called add\_cd(). The function just simply includes three inputs, and invoke the method of the next processing part of the code, which is also integrated into a class DataProcessor’s method.

# Topic\_3 Function return multiple values

After revising OOP concept and the definition of class, I realized it is inappropriate to directly invoke class DataProcessor’s method in class IO. The best usage of these should be let the main workflow get the data from the IO, and use DataProcessor to add the data. So the problem I’m facing is to return three value from the IO. After searching online, I totally understand how to return multiple values in a python function. Then I applied it in the relative IO class and rename it get\_cd\_info.

Text

Description automatically generated

Figure 2 get\_cd\_info, return three values

Text

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Figure 3 add\_item method in DataProcessor

# Summery

In this assignment. I learned how to avoid using redundant code by move them into a class and make them a function. While I was moving the code, I found a question about directly invoking methods between Classes which are not strongly related and I solved it with searching online for technical solutions and implemented the code better.

# Appendix

DataProcessor

class DataProcessor:

@staticmethod

def add\_item(strID, strTitle, stArtist):

intID = int(strID)

dicRow = {'ID': intID, 'Title': strTitle, 'Artist': stArtist}

lstTbl.append(dicRow)

@staticmethod

def delete\_item(intIDDel):

intRowNr = -1

blnCDRemoved = False

for row in lstTbl:

intRowNr += 1

if row['ID'] == intIDDel:

del lstTbl[intRowNr]

blnCDRemoved = True

break

if blnCDRemoved:

print('The CD was removed')

else:

print('Could not find this CD!')

FileProcessor

class FileProcessor:

"""Processing the data to and from text file"""

@staticmethod

def write\_file(file\_name, table):

# TODO Add code here

objFile = open(file\_name, 'w')

for row in lstTbl:

lstValues = list(row.values())

lstValues[0] = str(lstValues[0])

objFile.write(','.join(lstValues) + '\n')

objFile.close()

IO

class IO:

@staticmethod

def get\_cd\_info():

strID = input('Enter ID: ').strip()

strTitle = input('What is the CD\'s title? ').strip()

stArtist = input('What is the Artist\'s name? ').strip()

return strID, strTitle, stArtist

Implementation of dealing with multiple return values

elif strChoice == 'a':

# 3.3.1 Ask user for new ID, CD Title and Artist

strID, strTitle, stArtist = IO.get\_cd\_info()

DataProcessor.add\_item(strID, strTitle, stArtist)

IO.show\_inventory(lstTbl)