Soren Nielsen
10/21/2024
IT FDN 110 B Au 24: Foundations of Programming: Python
Assignment 04

Assignment 04: Enrollment System with 2d Lists

Introduction:

This document presents a python assignment meant to practice using multi dimensional lists and interfacing with files. I am extremely interested in feedback on this assignment as I found it particularly difficult and I am still concerned that I may not have hit the exact mark here.

The Code:

Expected Outcomes:

We expect the code to preserve and then be able to add to the data already present in the csv. The code should be able to extract and write information without creating artifacts.

Capturing Data from the .CSV:

```
isfirstrun = True
file_obj = open(FILE_NAME, "r")
for row in file_obj.readlines():
    student_data = row.split(",")
    student_data = [student_data[0],student_data[1],student_data[2].strip()]

    if isfirstrun:
        csv_table_data = [student_data]
        isfirstrun = False
    else:
        csv_table_data.append(student_data)

## confirma and feedback data import
print ("inherited data from .csv is:")
index = 0
for each in csv_table_data:
    print(f"Index {index} is: {csv_table_data[index]}")
    index +=1
```

Fig 01 Extracting the information from the .csv and displaying it

The code reads each line of the .csv file and appends it to the csv_table_data list. Then the code prints that information to confirm its import to the user at the start of the program.

Adding user input data:

```
# Input user data
if menu_choice == "1":  # This will not work if it is an integer!
    student_first_name = input("Enter the student's first name: ")
    student_last_name = input("Enter the student's last name: ")
    course_name = input("Please enter the name of the course: ")
    csv_data = [student_first_name,student_last_name,course_name]
    csv_table_data.append(csv_data)
    print (f"Added Student: {csv_data}")
    continue
```

Fig 02 collection the information from user and formatting as a list

The main change in this section was to modify the csv_data variable to be a list which can then be appended to the table.

Displaying data:

```
    # Present the current data
    elif menu_choice == "2":
        print("\nThe current data is:")
        index = 0
        for each in csv_table_data:
            print(csv_table_data[index])
            index += 1
        continue
```

Fig 03 displaying the data with a loop.

To print the data a loop was added to help show the user the table in a readable format using separate print statements.

Writing data:

```
# Save the data to a file
elif menu_choice == "3":
    file_obj = open(FILE_NAME, "w")

    index = 0
    for each in csv_table_data:
        string_data = (f"{csv_table_data[index][0]},{csv_table_data[index][1]},{csv_table_data[index][2]}")
        file_obj.write(string_data)
        file_obj.write("\n")
        index += 1



    file_obj.close()
    print("data updated")
    continue
```

Fig 04 wiring the data back to the .csv

To write the new 2d list to a table a loop that iterates on an f string was used to make sure the data formatting was consistent in its output. Otherwise the program adds formatting artifacts on subsequent runs to the .csv file.

Testing:

The code was tested in pycharm and terminal.

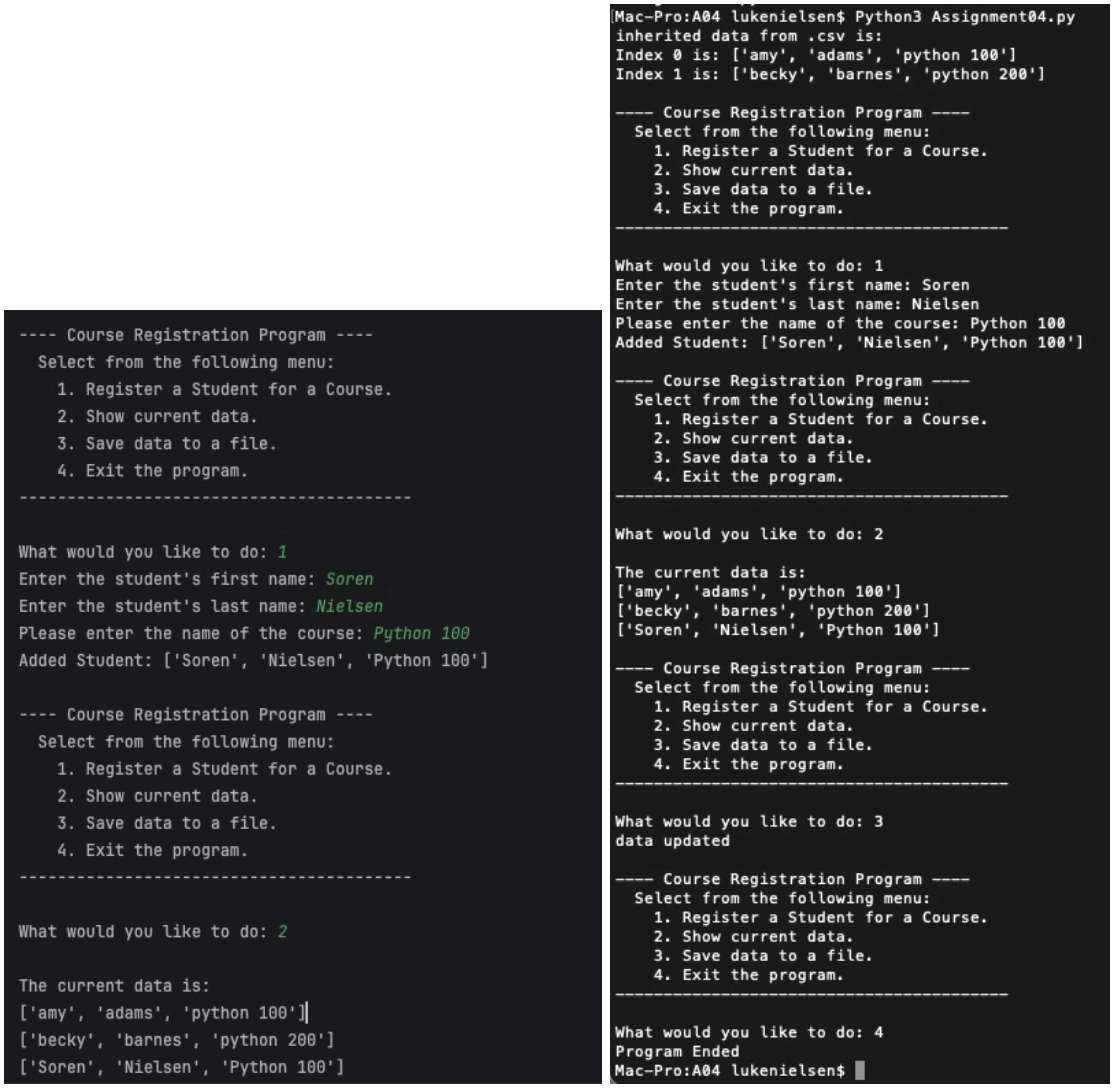

Fig. 09 Testing the code in Terminal and Pycharm IDE

Summary

This assignment was a bit of a struggle for me and it still doesnt work if there is no data in the CSV but, the assignment seemed to think that was normal. Hope for some good feedback on this one before i proceed to the next!