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IT FDN 110 B Au 24: Foundations of Programming: Python
Assignment 03

Assignment 03: Enrollment System with Menu

Introduction:

This document presents a python assignment meant to practice conditions and loops. Using while loops and if and else if statements a menu is presented to the user to enroll students in courses and output those enrollments to .csv

The Code:

The code is too long to comfortably insert into the document now. Please refer to Assignment03.py

Expected Outcomes:

The code should present a user with a menu to enter student information, view entered information, write entries to .csv and close the program. We expect each of these options to be accessible and prompt the user for input.

The Constants:

The script uses preestablished constants for the MENU string and the FILE_NAME string.

```
# Define the Data Constants
MENU: str = \
    "---- Course Registration Program ----\n\
  Select from the following  menu:\n\
    1. Register a Student for a Course\n\
    2. Show current data\n\
    3. Save data to a file\n\
    4. Exit the program\n\
----------------------------------------"

FILE_NAME: str = "Enrollments.csv"
```

Fig. 01 The constants used

Data Variables:

Data variables hold use input and the current state of the user's menu choice

```
# Define the Data Variables
student_first_name: str = ""
student_last_name: str = ""
course_name: str = ""
csv_data: str = ""
file_obj = None
menu_choice: str = "0"
```

Fig. 02 Variables declared and initialized

The Menu:

The user uses menu keys to navigate between the menu which is enclosed in a while loop and uses condition if and else if statements to navigate the user to the proper menu

```
# Present the menu of choices

menu_choice = input("What would you like to do?: ")

while menu_choice != 4:
```

Fig. 03 The menu presentation and beginning of while loop

1. Entering Student information

If the user entered 1 they are prompted to enter the student's information in a series of input prompts then are fed a string to confirm the data they just entered.

```
# Input user data

if menu_choice == "1":
    student_first_name = input("Student's First Name: ")
    student_last_name = input("Student's Last Name: ")
    course_name = input("What is the course name?: ")
    print(f"{student_first_name} {student_last_name} has been added to {course_name}")
    csv_data += f"{student_first_name},{student_last_name},{course_name}\n"
```

Fig. 04 collecting user data

2. Displaying Data

The user may also display the current contents of the csv_data variable with menu option 2

```
    # Present the current data

    elif menu_choice == "2":
        print(f"the current data is:\n" + csv_data)
```

Fig. 05 Returning the data to user

3. Writing the data to .csv

The user may write the csc_data string to enrollments.csv using the open function and .write method associated with file_obj. The code prints feedback then closes the file

```
    elif menu_choice == "3":
        file_obj = open(FILE_NAME, "w")
        file_obj.write(csv_data)
        print(f"{csv_data} written to {FILE_NAME}")
        file_obj.close()
```

Fig. 06 Writing the data to .csv

4. Exiting the program

The user has the option to quit using option 4 which runs the exit() function

```
elif menu_choice == "4":
    print("Program Ended")
    exit()
```

Fig. 07 Closing the program

5. Rest the Loop

At the end of the loop the menu is presented again to gather user input for the next iteration of the while loop.

```
print(MENU)
menu_choice = input("What would you like to do?: ")
```

Fig. 08 Resetting the loop

Testing:

The code runs correctly in pycharm and terminal.

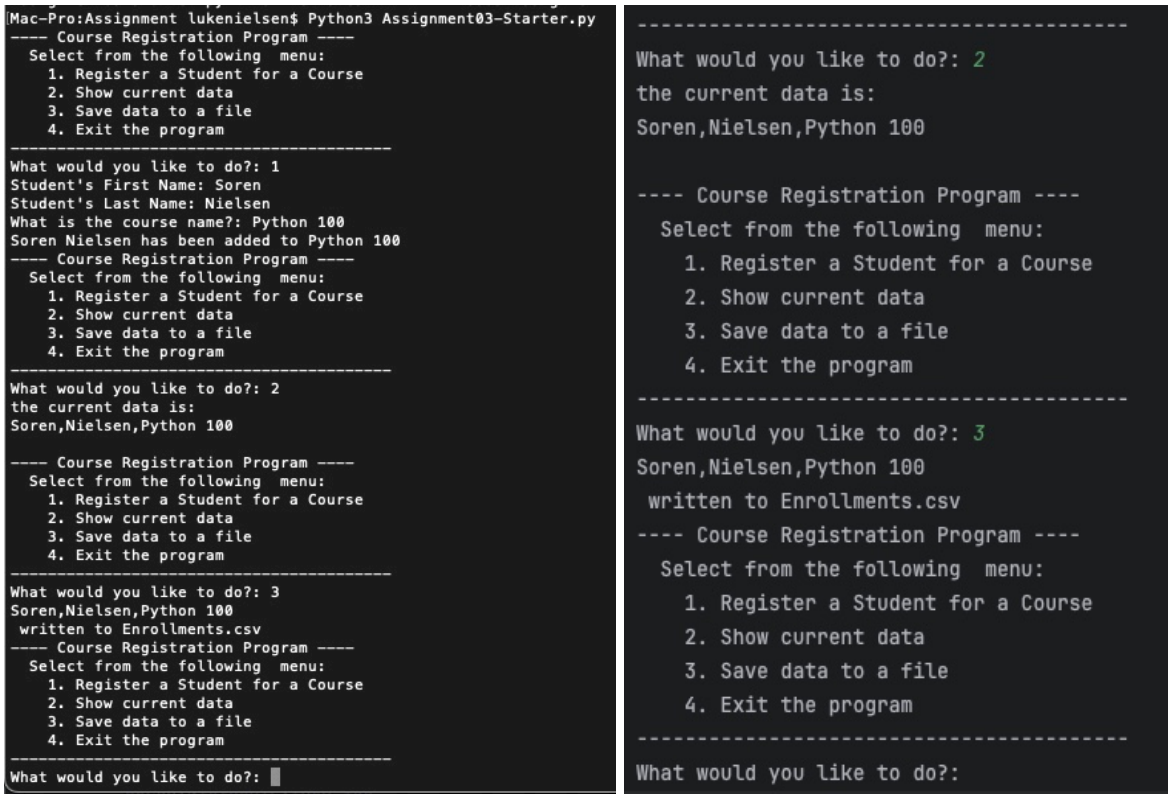

Fig. 09 Testing the code in Terminal and Pycharm IDE

Feedback from Assignment 02

In response to feedback from assignment 2 special care was taken to initialize all string variables with an empty string when declaring them.

Summary

Hopefully this code meets all of the requirements of the assignment. Initially I tried to nest if statements to make the code a little bit more interactive but struggled with nesting. Also I'm not confident that my while loop is formatted correctly. But the code works correctly so the proof is more or less in the pudding here.