

Assignment 5 – Python Registration Script

Introduction

This week, I learned how to create a program that utilizes lists and files to register students, display the information in a two-dimensional table, and save the data to a CSV file. The information below breaks down the steps of how I was able to create this program.

Creating the Program

Setting Constant Variables

There are many ways to use Python to create this project. These are the steps that I followed to achieve my result.

My first goal was to set constant variables in Python. The list of constant variables was already provided in the assignment, which made the process easier. Like last time, I declared constants that contained characters to a string and the “students” variable to a list. However, I declared student_data to a dictionary and added “{}” brackets as the directions instructed (**Figure 1.1**).

```
# Set My Variables
student_first_name: str = ""
student_last_name: str = ""
course_name: str = ""
menu_choice: str = ""
student_data: dict = {}
students: list = []
```

Figure 1.1: Setting constant functions and allocating them to either a string, list, or dict type.

Displaying the Menu

Similarly to the last assignment, I created the MENU, set it as a string, printed it, and then used an input function to ask the user which choice they’d like to select from the menu (**Figure 1.2**).

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

Figure 1.2: Added a menu to display choices and used an input function to help the user make a selection.

Creating the Two-Dimensional Table

The easiest way to create this table was to utilize the print function. I decided to define the `print_students` function. Similar to what I did last time, I created code that would print “No students registered yet” if the user had not entered any students. Otherwise, it would display a table with the students’ names that were inputted. I was able to do so with the print function and using `\t` to add tab spacing between the columns. Lastly, I used the f function to print each data point with tuples signifying which data point to use (first, last, or course name) (**Figure 1.3**).

```
# Creating the Table Guidelines
1 usage
def print_students():
    if not students:
        print("No students registered yet.")
    else:
        print("Current Data:")
        print("First Name\tLast Name\tCourse Name")
        for student_data in students:
            print(f"{student_data[0]}\t\t{student_data[1]}\t\t{student_data[2]}")
```

Figure 1.3: Using the print, f, and `\t` functions to create a two-dimensional table.

Changing the Menu

There were no changes made to the menu options aside from Menu 2. This menu was intended to display a two-dimensional table with all the students’ first, last, and course names. I decided to add the print function we had defined before and it was as easy as that (**Figure 1.4**).

```
# If User Choice is 2
elif menu_choice == "2":
    print_students()
```

Figure 1.4: Using the `print_students` function from earlier to display the two-dimensional table.

Summary

In this project, I successfully created a Python registration script that allowed a user to enter an unlimited amount of students’ first, last, and course names; display them in the program in a two-dimensional table; and save them in a CSV file. I employed key programming elements such as the print, f, and `\t` functions to achieve this outcome. I, then, tested my program in both the terminal and PyCharm to ensure that it works (**Figure 1.5, Figure 1.6**).

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February 9th, 2024
Assignment 05
<https://github.com/banibedi/IntroToProg-Python>

```
---Course Registration Program---
Select from the following menu:
    1. Register a Student for a Course
    2. Show current data
    3. Save data to a file
    4. Exit the program
-----

Which of the following would you like to select: 1
Enter your first name: Bani
Enter your last name: Bedi
Please enter the name of your course: Python 100
Would you like to register another student? (y/n): y
Enter your first name: Alex
Enter your last name: Haro
Please enter the name of your course: CS 682
Would you like to register another student? (y/n): y
Enter your first name: Romas
Enter your last name: Thind
Please enter the name of your course: Bio 380
Would you like to register another student? (y/n): n

---Course Registration Program---
Select from the following menu:
    1. Register a Student for a Course
    2. Show current data
    3. Save data to a file
    4. Exit the program
-----
```

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```
Which of the following would you like to select: 2
Current Data:
First Name  Last Name  Course Name
Bani        Bedi       Python 100
Alex        Haro       CS 682
Romas       Thind      Bio 380

---Course Registration Program---
Select from the following menu:
    1. Register a Student for a Course
    2. Show current data
    3. Save data to a file
    4. Exit the program

-----

Which of the following would you like to select: 3
Data saved to Enrollments.csv

---Course Registration Program---
Select from the following menu:
    1. Register a Student for a Course
    2. Show current data
    3. Save data to a file
    4. Exit the program

-----

Which of the following would you like to select: 4
Program Ended

Process finished with exit code 0
```

Figure 1.6: An image of the Python Registration Script in PyCharm.

Bani Bedi
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```
PS C:\Users\bedib> python "C:\Users\bedib\OneDrive\Doc

---Course Registration Program---
Select from the following menu:
    1. Register a Student for a Course
    2. Show current data
    3. Save data to a file
    4. Exit the program

-----

Which of the following would you like to select: 1
Enter your first name: Bani
Enter your last name: Bedi
Please enter the name of your course: Python 100
Would you like to register another student? (y/n): y
Enter your first name: Alex
Enter your last name: Haro
Please enter the name of your course: CS 682
Would you like to register another student? (y/n): y
Enter your first name: Romas
Enter your last name: Thind
Please enter the name of your course: Bio 200
Would you like to register another student? (y/n): n

---Course Registration Program---
Select from the following menu:
    1. Register a Student for a Course
    2. Show current data
    3. Save data to a file
    4. Exit the program

-----

Which of the following would you like to select: 2
Current Data:
First Name      Last Name      Course Name
Bani            Bedi           Python 100
Alex            Haro           CS 682
Romas           Thind          Bio 200
```

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```
---Course Registration Program---
Select from the following menu:
    1. Register a Student for a Course
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-----

Which of the following would you like to select: 3
Data saved to Enrollments.csv

---Course Registration Program---
Select from the following menu:
    1. Register a Student for a Course
    2. Show current data
    3. Save data to a file
    4. Exit the program
-----

Which of the following would you like to select: 4
Program Ended
PS C:\Users\bedib> ^S|
```

Figure 1.7: The code successfully working in Terminal.