Assignment05

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Foundations Of Programming: Python

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Purpose

To create a Python program that demonstrates using constants, variables, and print statements to display a message about a student's registration for a Python course. This program is very similar to Assignment04, but **it adds the use of data processing using dictionaries and exception handling.**

Steps and Guidance

Note: I utilized starter file to accomplish this assignment: *Assignment05-Starter.py*

First, I define(d) the requirements:

MENU: Display the program menu (str = ''')
FILE_NAME: 'MyLabData.json'

- Constants string (str) specifying the JSON file name

Variables for storing student details and menu choices:

- student_first_name: str = ''
- student_last_name: str = ''
- course_name: str = ''
- student_data: list = []
- students: list = []
- csv_data: str = ''
- file = None
- menu_choice: str

For Data Storage:

- The student registration data is stored as a list of dictionaries
- The data is loaded from Enrollments.json at the start of the program
- The file contents are saved using the json module

For Functions:

- load_data(): Loads existing student data from Enrollments.json. Handles errors if the file is missing or empty.
    - At first, I forgot to input data in CSV file and I got an error, took me a while to figure out until I read again the criteria.
- save_data(): Saves the current student data into the JSON file. Provides error handling for file writing issues
- display_data(): Displays all student registrations in a structured format

For User Interaction:

- Users can choose from the menu:
    - To Register a student: **Enter 1**
    - To Display all registrations: **Enter 2**

    - To Save data to a file: **Enter 3**
    - To Exit the program: **Enter 4**

  - Input validation ensures that first name and last name are not empty

For Error Handling:

- Handles missing or corrupt JSON files
- Ensures valid user input for names
- Catches file writing errors when saving data

For Execution Flow

- The script starts by loading data from the JSON file
- It displays a menu for user interaction
- Based on user choice, it processes input and modifies the student list
- Data can be saved and retrieved as needed
- The program continues to run until the user selects the exit option

Post the Files to GitHub:
Per criteria, both knowledge document and Python script file must be posted.

Self-note:
Should I need to create an account first before posting? ☺ I used my (school) UW email to create an account but I did not receive the GitHub verification! Instead, I used my personal email.

Perform the following to create a repository for your code:
a. Login to https://github.com (created an account with **pseudo name: "benchman214"**

b. Create a repository called "IntroToProg-Python-Mod05"

Then Post a Link to GitHub; share (my) work using the Canvas discussion board.

Create a post with a link to your GitHub site.

Submit work:
Place the document with the Python script into a folder named A05.

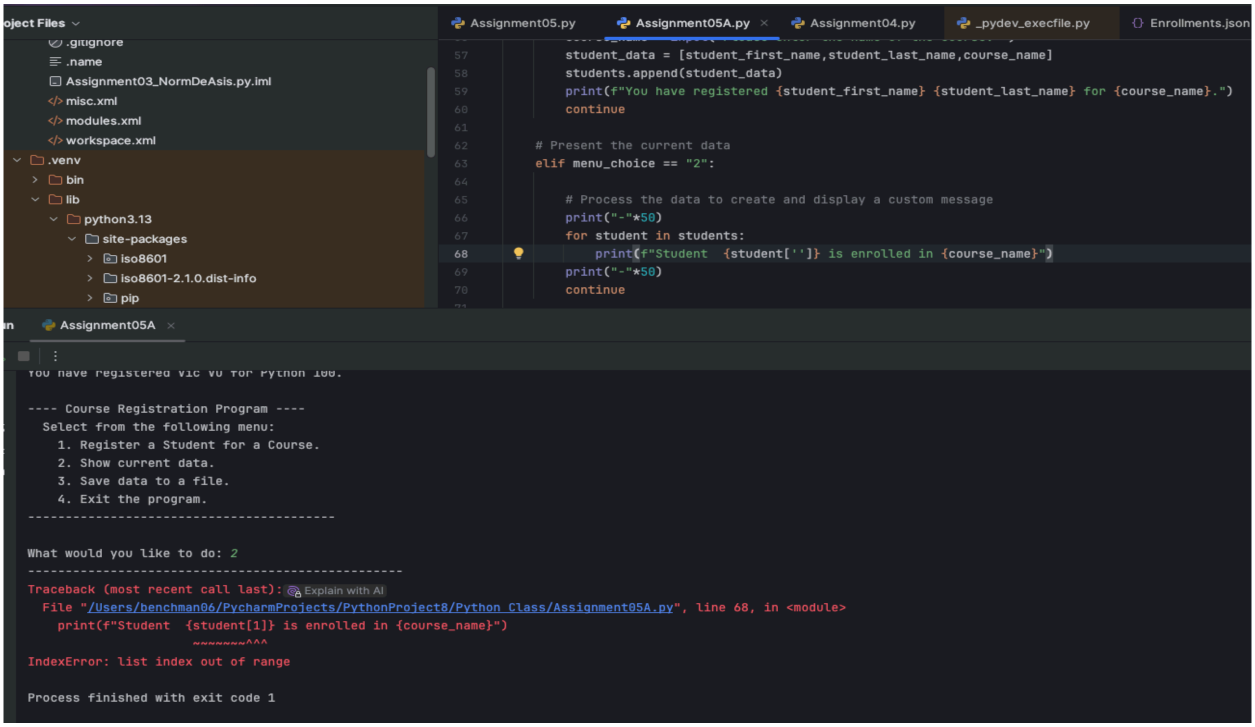
Perform a Peer Review.

Reading

Module 05 - Advanced Collections and Error Handling

Lessons Learned (not in order)

INDEX ERROR: List index out of range

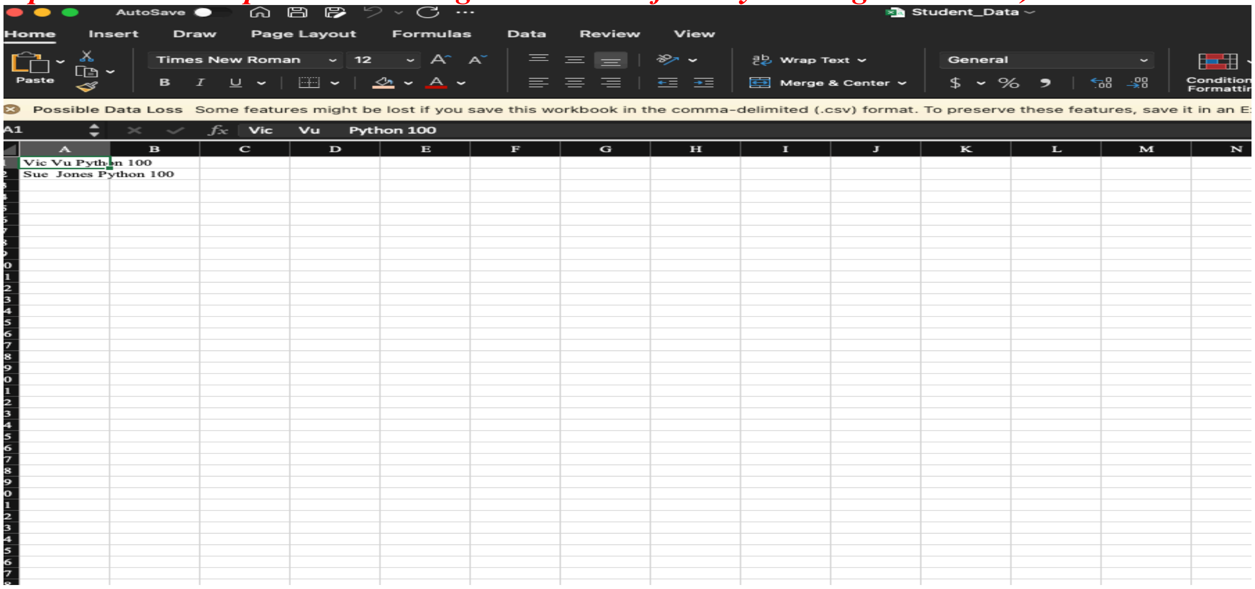


```
        student_data = [student_first_name,student_last_name,course_name]
        students.append(student_data)
        print(f"You have registered {student_first_name} {student_last_name} for {course_name}.")
        continue

    # Present the current data
    elif menu_choice == "2":

        # Process the data to create and display a custom message
        print("-"*50)
        for student in students:
            print(f"Student  {student['']} is enrolled in {course_name}")
        print("-"*50)
        continue
```

```
You have registered Vic Vu for Python 100.

---- 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.
-----------------------------------------

What would you like to do: 2
--------------------------------------------------
Traceback (most recent call last):
  File "/Users/benchman06/PycharmProjects/PythonProject8/Python Class/Assignment05A.py", line 68, in <module>
    print(f"Student  {student[1]} is enrolled in {course_name}")
                      ~~~~~~~^^^
IndexError: list index out of range

Process finished with exit code 1
```

I forgot Module TIP:

Tip: Make sure to put some starting data into the file or you will get an error!)

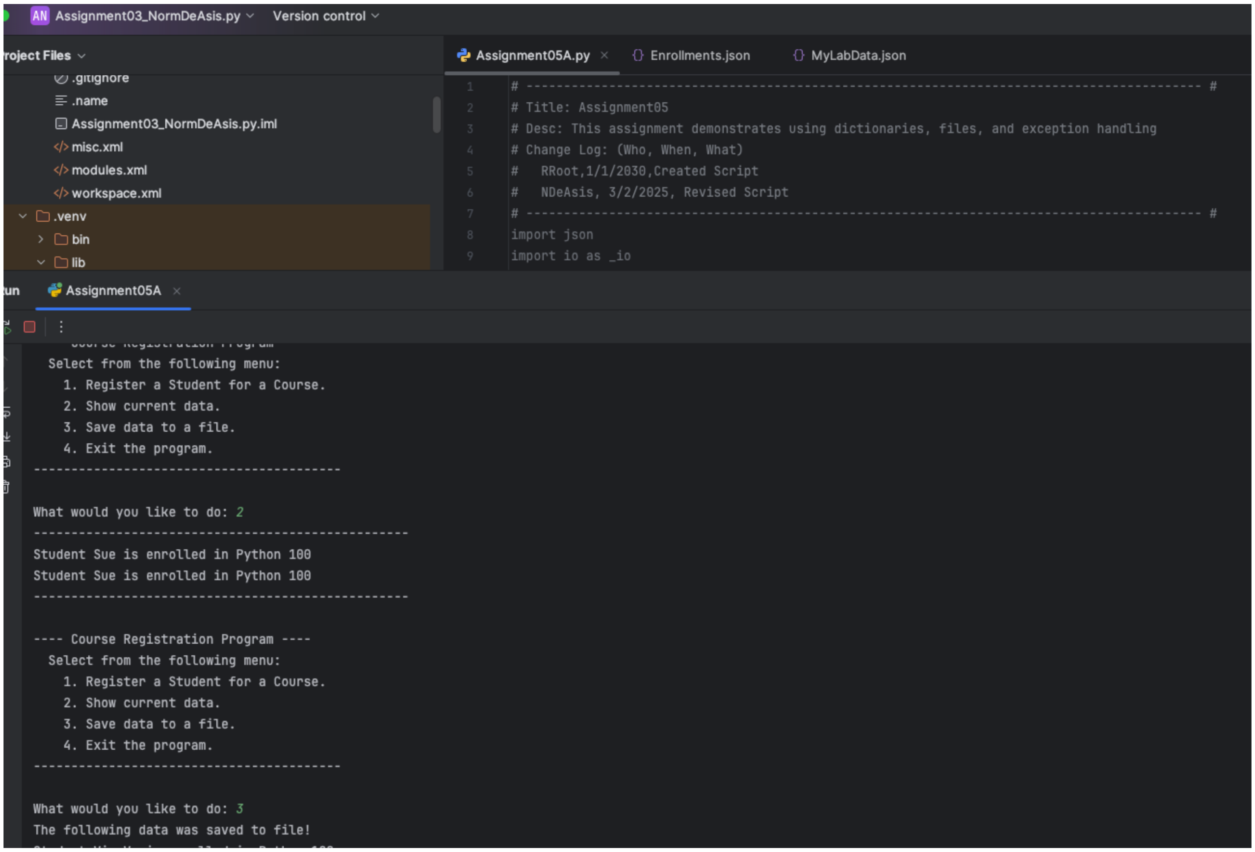


Possible Data Loss Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To preserve these features, save it in an E

Vic   Vu   Python 100

1	Vic Vu Python 100
2	Sue Jones Python 100

Not sure if it’s an error but I keep getting “Duplicate data” after I enter 2 to display the data.



```
# ------------------------------------------------------------------------------------------ #
# Title: Assignment05
# Desc: This assignment demonstrates using dictionaries, files, and exception handling
# Change Log: (Who, When, What)
#   RRoot,1/1/2030,Created Script
#   NDeAsis, 3/2/2025, Revised Script
# ------------------------------------------------------------------------------------------ #
import json
import io as _io
```

```
     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.
-----------------------------------------

What would you like to do: 2
--------------------------------------------------
Student Sue is enrolled in Python 100
Student Sue is enrolled in Python 100
--------------------------------------------------

---- 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.
-----------------------------------------

What would you like to do: 3
The following data was saved to file!
Student Vic Vu is enrolled in Python 100
```

References:

Class Module 05 materials and videos.