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November 12, 2025

Foundations of Python Programming

Assignment 05

Advanced Collections and Error Handling

Introduction

In this paper, I will outline how I learned how to use dictionaries and json file types to store data and organize data in a dictionary and then save to a .json file. With the help of an instructional document provided in Module 05 by Randal Root, module videos created by Anubhaw Ayra.

Completing assignment 05

Like the previous assignment we continued to iterate on our program for course and student registration but this time using dictionaries to store user inputs and write the data to json files rather than lists or csv files. Watching the module videos and working through and reviewing the lab solutions really helped my understanding of Assignment05. This time I started with student data already loaded onto the json file and made try and except statements before the while loop which I missed in assignment04 but included in this assignment as seen in figure 1 below.

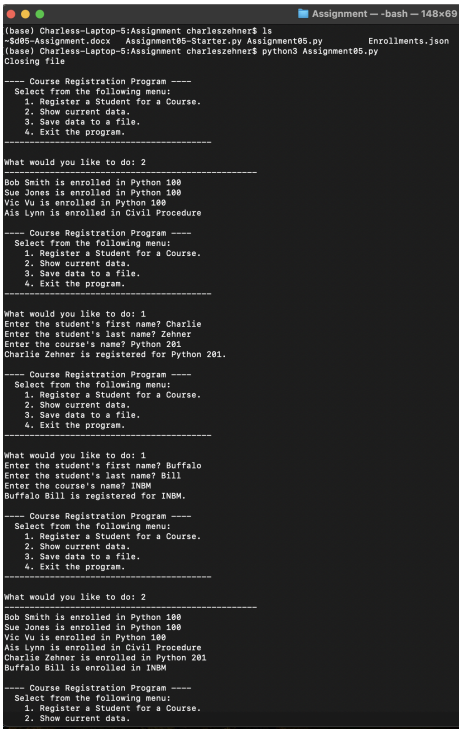
```python
try:
    file = open(FILE_NAME, 'r')
    students = json.load(file)
    file.close()

except FileNotFoundError as e:
    print("File must exist before running this script.") #check for the file and data preexisting
    print("Technical error message:")
    print(e, e.__doc__, type(e), sep='\n')
    file = open(FILE_NAME, 'w') # Creates the file if it didn't exist
    file.write(json.dumps(students, indent=4)) # Creates the format for a list in the json file
    file.close()
except Exception as e:
    print("There was a non specific error")
    print("Techincal error message:")
    print(e, e.__doc__, type(e), sep='\n')
finally:
    print("Closing file")
    file.close()

while True:
    # Present the menu of choices
    print(MENU)
```

Figure 1. Loaded and Try/Except statements before While loop menu choices

I first ran into a silly IDE display issue after importing the simplejson package because when typed out “import json” at the top of script it grayed out. I later learned after deciding to just move on and code that if an imported package is not used it will remain gray in the PyCharm IDE. I am intrigued by how json files work and how they compare to csv files.



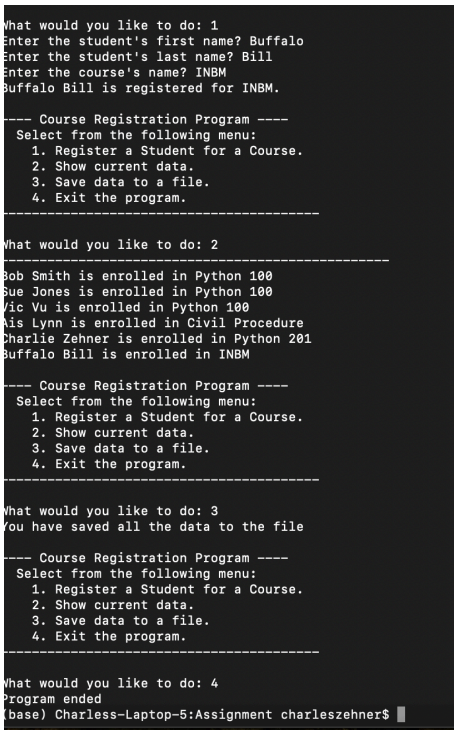


Figure 2. Terminal running assignment 5

Figure 3. Terminal output cont.

Summary

In this assignment I learned how to use dictionaries to store and organize data and read and write to json files. Along with error/exception handling which helps me better understand how python ‘thinks’. It is also a bonus that try and except statements make debugging easier and it's more pleasant to see your code not immediately crash if you accidentally input the wrong type.