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Course: IT FDN 110A Foundation of Programming (Python)

Assignment: Module05

Data processing using Lists and Files

Introduction: based on the previous assignment to practice the usage of dictionary in the Python programming and how to apply it combining with .json file. Also learn to use the try/except to well manipulate the program control flow.

Step1: define all the Constants and Variables. Here I give the main variable an empty string initially. Which I use it to distinguish user input info or not (in case user select save or display before input their info).

Step2: the program to start to open the file and using load function from importing json. I add two try/except scenarios, one is when file is not existed and another is empty content file.

Step3: the same structure as Assignment04, but the program will flow entering a While loop when it read information from the file (if there's no file existed or empty file then program show error message then stop). Another try/except practice of the scenarios when user's selection is not 1~4 or user input is not a numeric integer. It has the proper If/else conditions arranged when user select 1~4.

Step4: I use `.append()` function to add the new input (form as a dictionary) into the lists.

Step5: This time I used the `.dump` function imported from json library to write the data into the .json file.

Step6: Using the "break" command to leave the program if user select Opt.4 to end the While loop.

Task Result: attached 3 figures to show my code runs successfully both on windows CMD and Spyder (the IDE I used). Also the .json file open in Notepad.

```

C:\Users\radio\Documents\Python\PythonCourse\Module05>python Assignment05.py

---- 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: 1
Please Enter Student's First Name: Charlie
Please Enter Student's Last Name: M
Please Enter Course Name: Python301
Press "Enter" to continue...

---- 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
Bob Smith is registered for course Python101
Sue Jones is registered for course Python101
Vu Vic is registered for course Python201
Charlie M is registered for course Python301
Press "Enter" to continue...

---- 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: 1
Please Enter Student's First Name: 123
Please Enter Student's Last Name: B
User Entered Invalid Information!
Please Enter Student's First Name: Ryan
Please Enter Student's Last Name: 123
User Entered Invalid Information!
Please Enter Student's First Name: Ryan
Please Enter Student's Last Name: B
Please Enter Course Name: Python101
Press "Enter" to continue...

---- 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: 5
Please input 1-4 !

---- 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: a
Please enter valid choice (1-4)

---- 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
Bob Smith is registered for course Python101
Sue Jones is registered for course Python101
Vu Vic is registered for course Python201
Charlie M is registered for course Python301
Ryan B is registered for course Python101
Press "Enter" to continue...

---- 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
Your Info is registered in the system
Press "Enter" to continue...

---- 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: 4
Thanks for using Registration System, Goodbye!
C:\Users\radio\Documents\Python\PythonCourse\Module05>

```

Figure1: running my coder under windows CMD

```

---- 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
No data was input, Please select Opt.1 to input data!
Press "Enter" to continue...

---- 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: 1
Please Enter Student's First Name: Pat
Please Enter Student's Last Name: D
Please Enter Course Name: Python301
Press "Enter" to continue...

---- 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
Bob Smith is registered for course Python101

Sue Jones is registered for course Python101

Vu Vic is registered for course Python201

Peter James is registered for course Python201

Pat D is registered for course Python301

Press "Enter" to continue...

---- 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: 1
Please Enter Student's First Name: 123
Please Enter Student's Last Name: V
User Entered invalid information!
Please Enter Student's First Name: Ryan
Please Enter Student's Last Name: 123
User Entered invalid information!
Please Enter Student's First Name: Ryan
Please Enter Student's Last Name: B
Please Enter Course Name: Python201
Press "Enter" to continue...

---- 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
Your Info is registered in the system

Press "Enter" to continue...

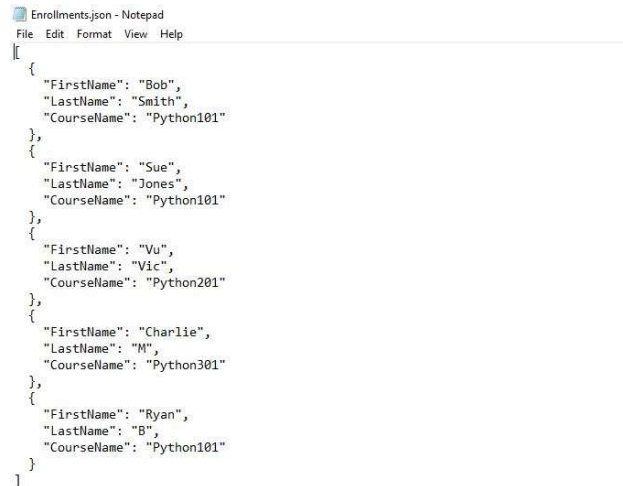
---- Course Registration Program ----
Select from the following menu:
1. Register a Student for a Course.
2. Show current data.
3. Save data to a file.
4. Exit the program.
-----

What would you like to do: 4
Thanks for using Registration System, Goodbye!

In [22]: |

```

Figure2: running my code under Spyder



```
[{"FirstName": "Bob", "LastName": "Smith", "CourseName": "Python101"}, {"FirstName": "Sue", "LastName": "Jones", "CourseName": "Python101"}, {"FirstName": "Vu", "LastName": "Vic", "CourseName": "Python201"}, {"FirstName": "Charlie", "LastName": "M", "CourseName": "Python301"}, {"FirstName": "Ryan", "LastName": "B", "CourseName": "Python101"}]
```

Figure3: export data in the Enrollments.csv file

Summary: learned the dictionary with Keys and Values structure and applied it to the .json file. Practice the Try/except function to manipulate to control the program flow which will be very useful/important to be used in the function/module in the future.

GitHub Link:

<https://github.com/ShandyML/Intro2Prog-Python-Mod05>