

Name: Minghsuan (Shandy) Liu

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

Assignment: Module07

Constructor, properties and inheritance

Introduction: based on the previous assignment to modify the classes to having constructor and properties which is commonly used in OOP languages. Also the inheritance code is derived from parent class which is powerful feature of Python to enhance the code readability and shorten the length of code.

Step1: define the class of Person using constructor and setter function to define first and last name.

Step2: define the class of Student to inherit from Person and add the properties for course name.

Step3: since the student data would need to be stored as a list of class objects, the class of FileProcessor needs to be modified to convert dictionary in json file to Student Class for reading from a file and vice versa for writing to a file.

Step4: modify the class of IO to store the input of student info to the class object.

Task Result: attached a figures to show my code runs successfully both on Spyder (the IDE I used).

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In [50]: runfile('C:/Users/radio/Documents/Python/PythonCourse/
Module07/Assignment07.py', wdir='C:/Users/radio/Documents/Python/
PythonCourse/Module07')

---- 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.
-----
Please Select:1
Please Enter Student's First Name: Johnny2
Please Enter Student's Last Name: D
User Entered invalid information!
Please Enter Student's First Name: Johnny
Please Enter Student's Last Name: D12
User Entered invalid information!
Please Enter Student's First Name: Johnny
Please Enter Student's Last Name: D
Please Enter Course Name:
User Entered invalid information!
Please Enter Student's First Name: Johnny
Please Enter Student's Last Name: D
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.
-----
Please Select: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
Ethan H is registered for course Python101
Johnny D is registered for course 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.
-----
Please Select:3
Your Info is registered in the system

---- 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.
-----
Please Select:4

In [51]: |

```

Figure1: running my code under Spyder (my Python IDE)

Summary: learned the more advanced features and functions of Python class and understand how to write the code in the form of Pythonic OOP style. All the attribute, constructor, properties and inheritance in Class will be widely applied if the scope of program is larger and larger to well maintain the readability and usability of code.

GitHub Link:

<https://github.com/ShandyML/IntrotoProg-Python-Mod07>