CS3023
Intermediate Programming
Homework 5

Each task in this assignment will ask you to write code. You will produce separate file for each task.

For best learning experience, you should work on homework tasks without relying on Google search. On occasions, you may want to look up for additional information or hint, but you should resist the urge to search solution code on the Internet.

Task 1

Define a basic Person class with attributes ssn (string), name (string), age (int), address (string). Define one of the mutator method setAge so that it will throw a ValueError or a TypeError exception when an invalid value is passed to a method. The value is invalid if it is not an integer (TypeError) or an integer less than 0 (ValueError) . Likewise, define the __init__ method so that it will also throw a ValueError if an invalid value for the age is passed. Save the Person class definition in the file person.py.

Create a test main program that creates a Person object and tests the __init__ and setAge methods. Call each of them at least twice, one with a valid and the other with an invalid value. Save the main program in the source file hw5_task1.py.

Task 2

Using the Person class from Task 1, write a program that will

1. Loop to get data for Person objects. Stop the loop when 000 is entered for ssn. If a Person object is not created (because the age value is not good), display an error message and ignore this set of data.
2. For each Person object created, add it to a dictionary member. The key is ssn and the value the Person object.
3. For each Person object created, add it to a second dictionary ageGroup. The keys are fixed to 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, and 100. The value for each key is a list of Person objects of that age group, e.g., those who are 10 to 19 belong to the age group 10, those who are 20 to 29 belong to the age group 20, and so forth. Everybody above 100 belong to the last age group. [Don't do this with a huge if-elif statement. Do it nicely with a simple arithmetic computation.]

Save the function in the source file hw5_task2.py.

Submission

Go to the Homework 5 Assignment page in the Sakai course website and submit your solution file(s).