ECE25100 Object Oriented Programming

Lab 9: Inheritance

Description:
The purpose of this lab is to practice inheritance.

To get credit for the lab, you need to demonstrate to the student helper that you have completed all the requirements.

Question 1: Consider the following detailed inheritance hierarchy diagram in Fig. 1.

1) The **Person.java** **constructor** has two String parameters, *a first name* and *a last name*. The constructor initializes the *email address* to the first letter of the first name followed by the first five letters of the last name followed by @yahoo.com. If the last name has fewer than five letters, the email address will be the first letter of the first name followed by the entire last name followed by @yahoo.com. Examples:

Name	Email address
Jane Smith	JSmith@yahoo.com
John Morris	JMorri@yahoo.com
Mary Key	MKey@yahoo.com

2) **public** methods in **Person** used to access modify the instance fields or variables, i.e, **get** and **set** methods, respectively.
3) a **toString** method that should return the **Person**'s information.
4) Write the **Student.java** class so that the Student is a subclass of **Person** and implements the **Comparable** interface.
5) Write the **Student** **constructor**. The **Student** constructor will be called with two String parameters, the first name and the last name of the student. When the student is constructed, the inherited fields **myFirstName, myLastName**, and **myEmailAddress** will be properly initialized, the student's GPA (**myGpa**) will be set to 0. The variable **lastIdAssigned** will be properly incremented each time a Student is constructed and the student ID (**myStudentId**) will be set to the next available ID number as tracked by the class variable, **lastIdAssigned.**
6) **public** methods in **Student** used to access modify the instance fields or variables, i.e, **get** and **set** methods, respectively.
7) a **toString** method in **Student** that should return the present state of the Student.
8) Students are compared to each other by comparing GPAs. Implement the **compareTo** method for the **Student** class.
9) Write a **Test.java** and test your code thoroughly.

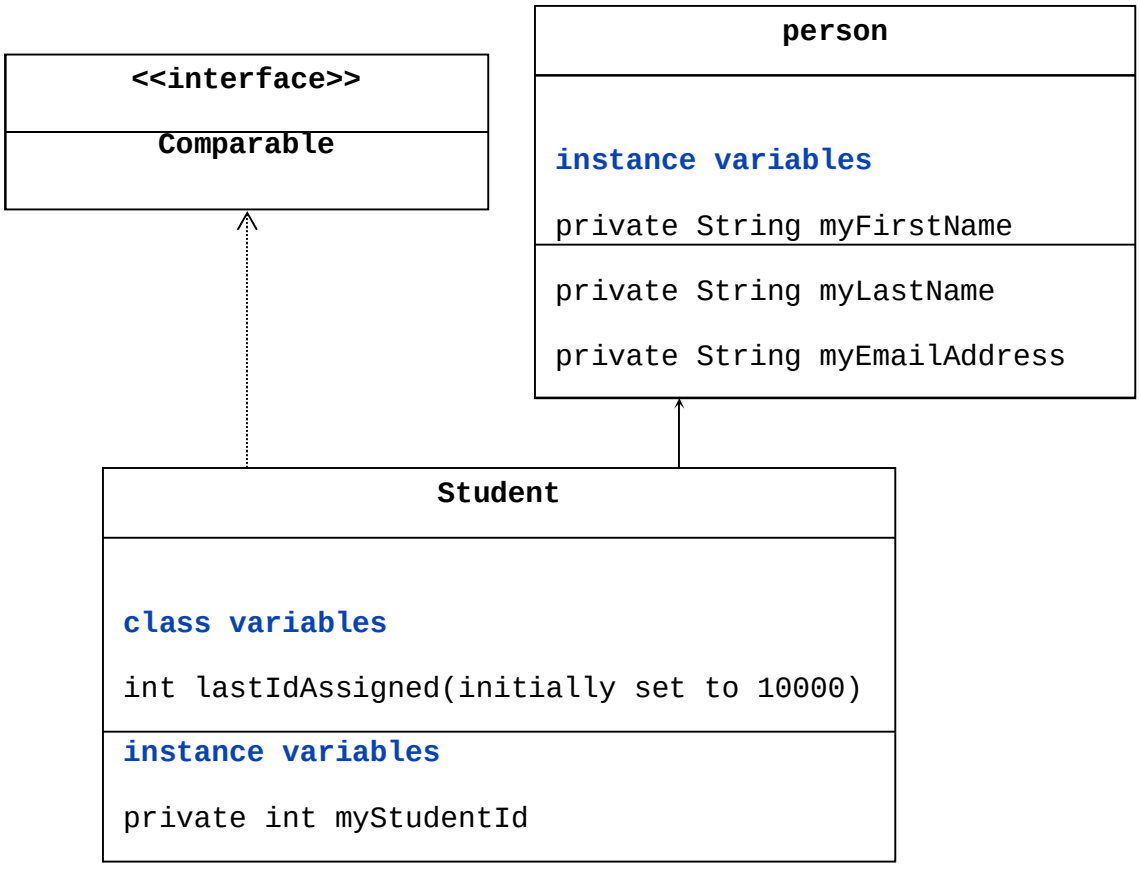

Fig.1: Inheritance Hierarchy Diagram