Lab 13

Question 1

Identify and design the classes required for the following application by drawing the UML class diagram and the associations with required data members:

AwesomeBike. Inc. sells motorbike from their catalog. Business is growing 40% per year, and they need a new order entry system. You have been contacted by AwesomeBike to design the new system.

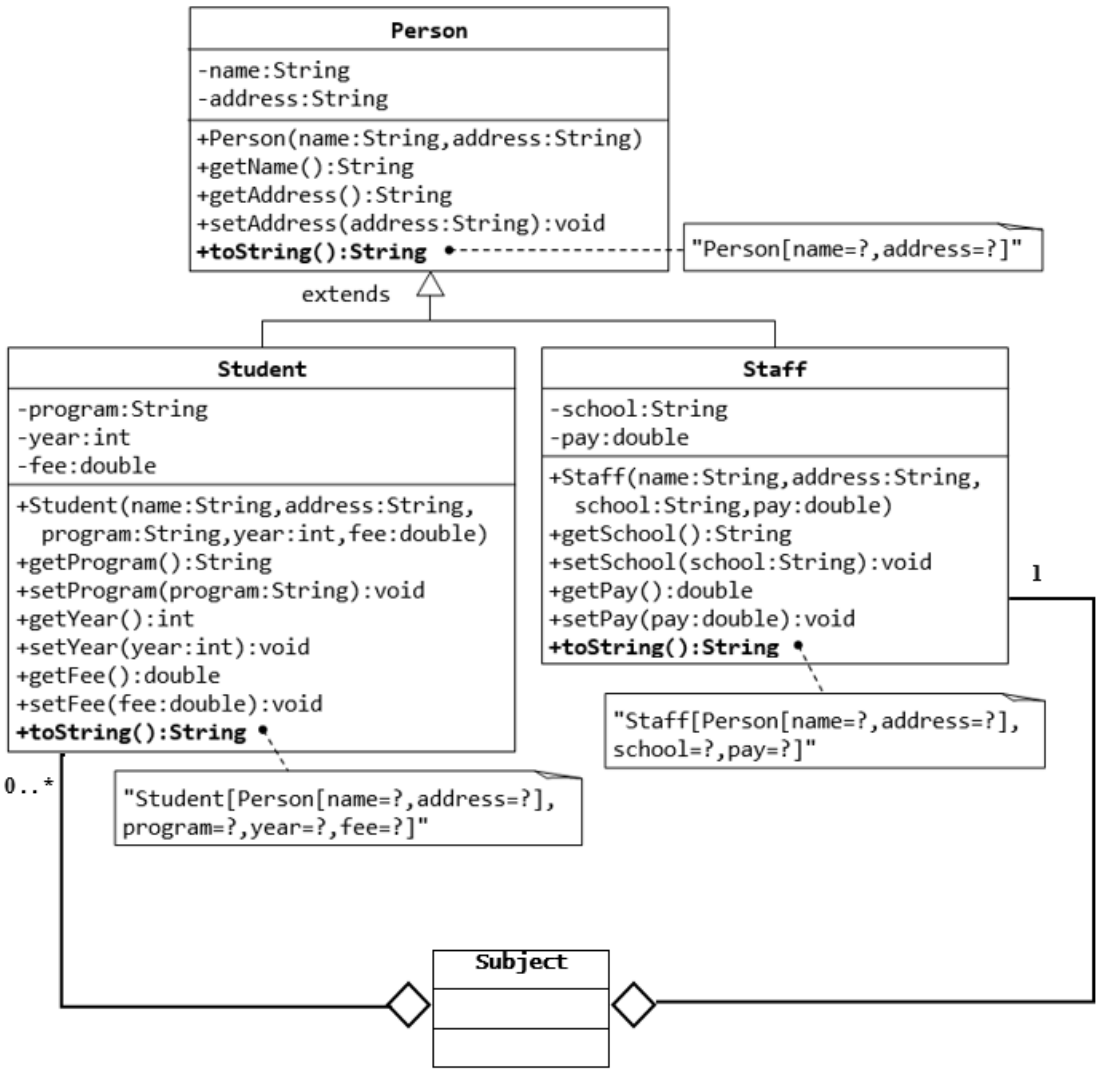
AwesomeBike produces a catalog of bike every six months and mails it to subscribers. Each bike in the catalog has an item identifier(ID), specification description and price. AwesomeBike sells two types of bike, which is the normal bike and sports bike. The sports bike has type specification of lightweight, middleweight or superbike.

The order entry system requires to be able to take order and also keep track of the customers' information such as name and address. The order consists of order number, customer and the bikes they ordered.

(Note: You should design your classes for optimum maintainability and reusability)

Question 2

The following UML diagram shows an inheritance and aggregation relationship of the classes:



Given the UML class diagram above:

1. Write the Java code for the Staff class. In the setPay method, if the staff stays in Selangor (staff's address contains "Selangor"), give additional 200 allowances. (note: you can use the contains() method in String library)
2. Write the Java code of Subject class, which shall have subject code as attribute. And, each subject has multiple students and a lecturer.

In the main(driver) application **TestProg**:

3. Write the Java code to create a staff object. Then update the school to "Sunway College". Then print the output.
4. Write the Java code to create a subject object with code 'PRG1203' which shall contain 3 students and a lecturer (staff).
5. Then create an ArrayList to hold all the students and lecturer, print out all the objects by looping through the ArrayList.