Exercise 1

(a) Create a class **Employee** that has

Variables:

Variable name	Data type
name	String
salary	int

Methods:

```
getName(), setName(), getSalary() and setSalary()
```

- (b) Complete the following test program that creates two **Employee** object instances named emp1 and emp2. Then perform the followings:
- 1. Set the name and salary of emp1 to "Chan Tai Man" and 12000, respectively.
- 2. Set the name and salary of emp2to "Tam Ping Shing" and 13500, respectively.
- 3. Print the current details of emp1 and emp2.
- 4. Increase the salary of "Chan Tai Man" by 10% and the salary of "Tam Ping Shing" by 5%.
- 5. Print the new details of emp1 and emp2.

The output of the program is shown below.

Before-

Employee 1: name=Chan Tai Man salary=12000 Employee 2: name=Tam Ping Shing salary=13500

After-

Employee 1: name=Chan Tai Man salary=13200 Employee 2: name=Tam Ping Shing salary=14175

Exercise 2

(a) Create a class **Student** that has

Variables:

Attribute name	Data type
name	String
id	int
score	double

Methods:

the getter and setter methods for each of the

above attributes.

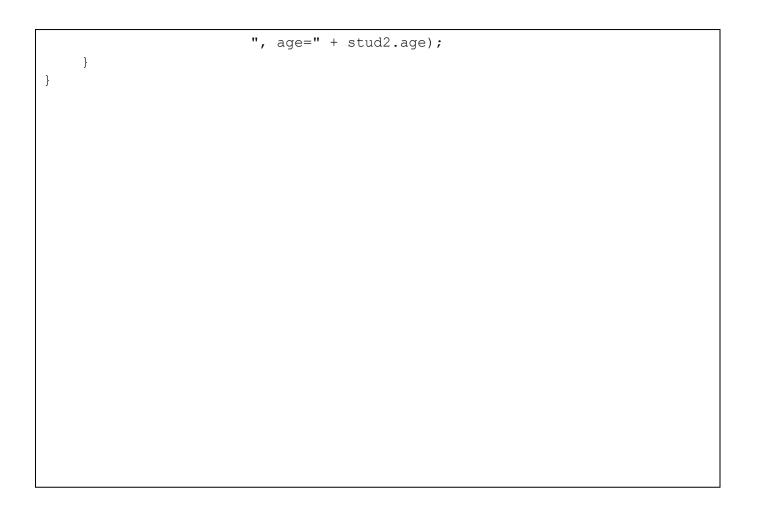
- (b) Write a test program that creates three **Student** object instances named stud1, stud2 and stud3. Then perform the followings:
- 1. Set the name, id and score of stud1 to "Cheung Siu Ming", 310567 and 87.1.
- 2. Set the name, id and score of stud2 to "Ng Wai Man", 451267 and 77.5.
- 3. Set the name, id and score of stud3 to "Wong Sui Kai", 789014 and 83.4.
- 4. Print the details of stud1, stud2 and stud3.
- 5. Find and print the average score among the three students.

The output of the program is shown below.

Exercise 3

Consider the following classes.

```
class AStudent {
   private String name;
   public int age;
   public void setName(String inName) {
   name = inName;
   public String getName() {
   return name;
    }
public class TestStudent2 {   public
static void main(String s[]) {
   AStudent stud1 = new AStudent();
   AStudent stud2 = new AStudent();
   stud1.setName("Chan Tai Man");
   stud1.age = 19;
   stud2.setName("Ng Hing");
   stud2.age = -23;
        System.out.println("Student: name="+stud1.getName() +
                        ", age=" + stud1.age);
        System.out.println("Student: name="+stud2.getName() +
```



(a) What is the output of the above program?

Student: name=Chan Tai Man, age=19

Student: name=Ng Hing, age=-23

(b) Identify the problem regarding the data stored in the object stud2.

stud2.age = -23;

(c) Enhance the class AStudent by enforcing data encapsulation on the attribute age. If the inputted age is invalid, print an error message and set the age to 18.

END.