Programming exercise:

**Health station (3 parts)**

In the exercise base there is the class Person, which we are already quite familiar with. There is also an outline for the class HealthStation. Health station objects process people in different ways, they e.g. weigh and feed people. In this exercise we will construct a health station. The code of the Person class should not be modified in this exercise!

**Part 1: Weighing people**

In the outline of the Health station there is an outline for the method **weigh**:

public class HealthStation {

public int weigh(Person person) {

// return the weight of the person passed as the parameter

return -1;

}

}

The method receives a person as a parameter, and it is meant to return to its caller the weight of that person. The weight information can be found by calling a suitable method of the person person. **So your task is to complete the code of the method!**

Here is a main program where a health station weight two people:

public static void main(String[] args) {

// example main program for the first section of the exercise

HealthStation childrensHospital = new HealthStation();

Person ethan = new Person("Ethan", 1, 110, 7);

Person peter = new Person("Peter", 33, 176, 85);

System.out.println(ethan.getName() + " weight: " + childrensHospital.weigh(ethan) + " kilos");

System.out.println(peter.getName() + " weight: " + childrensHospital.weigh(peter) + " kilos");

}

The output should be the following:

Sample output

Ethan's weight: 7 kilos Peter's weight: 85 kilos

**Part 2: Feeding**

It is possible to modify the state of the object that is received as a parameter. Write a method called public void feed(Person person) for the health station. It should increase the weight of the parameter person by one.

Following is an example where people are weighed first, and then ethan is fed three times in the children's hospital. After this the people are weighed again:

public static void main(String[] args) {

HealthStation childrensHospital = new HealthStation();

Person ethan = new Person("Ethan", 1, 110, 7);

Person peter = new Person("Peter", 33, 176, 85);

System.out.println(ethan.getName() + " weight: " + childrensHospital.weigh(ethan) + " kilos");

System.out.println(peter.getName() + " weight: " + childrensHospital.weigh(peter) + " kilos");

childrensHospital.feed(ethan);

childrensHospital.feed(ethan);

childrensHospital.feed(ethan);

System.out.println("");

System.out.println(ethan.getName() + " weight: " + childrensHospital.weigh(ethan) + " kilos");

System.out.println(peter.getName() + " weight: " + childrensHospital.weigh(peter) + " kilos");

}

The output should reveal that Ethan's weight has increased by three:

Sample output

Ethan weight: 7 kilos Peter weight: 85 kilos

Ethan weight: 10 kilos Peter weight: 85 kilos

**Part 3: Counting weighings**

Create a new method called public int weighings() for the health station. It should tell how many weighings the health station has performed. *NB! You will need a new object variable for counting the number of weighings!*. Test main program:

public static void main(String[] args) {

HealthStation childrensHospital = new HealthStation();

Person ethan = new Person("Ethan", 1, 110, 7);

Person peter = new Person("Peter", 33, 176, 85);

System.out.println("weighings performed: " + childrensHospital.weighings());

childrensHospital.weigh(ethan);

childrensHospital.weigh(peter);

System.out.println("weighings performed: " + childrensHospital.weighings());

childrensHospital.weigh(ethan);

childrensHospital.weigh(ethan);

childrensHospital.weigh(ethan);

childrensHospital.weigh(ethan);

System.out.println("weighings performed: " + childrensHospital.weighings());

}

The output is:

Sample output

weighings performed: 0 weighings performed: 2 weighings performed: 6