Solution to Lab week 1

4) Exercise P3.4, this example shows how to test a program by create objects instances and to call the methods of the class. Most OO programs work in this way. Fill in the blanks in the Employee class.

```java
// This program tests the Employee class.
public class EmployeeTester
{
    public static void main(String[] args)
    {
        Employee harry = new Employee("Harry Hacker", 50000);
        harry.raiseSalary(10);

        System.out.println(harry.getName());
        System.out.println("Expected: Harry Hacker");

        System.out.println(harry.getSalary());
        System.out.println("Expected: 55000");
    }
}

// An employee with a name and salary.
public class Employee
{
    // constructor
    public Employee(String employeeName, double currentSalary)
    {
        name = employeeName;
        salary = currentSalary;
    }
    // method getName
    public String getName()
    {
        return name;
    }
    // method getSalary
    public double getSalary()
    {
        return salary;
    }
    // method raiseSalary by percent
    public void raiseSalary(double percent)
    {
        salary = salary + salary * percent/100;
    }
    private String name;  // instance field
    private double salary; // instance field
}
```
5) Exercise P4.5, same as above, this one also focus on how to create object instance and to make methods call. Fill in the blanks in the `DataSet` class.

```java
import java.util.Scanner;

// Tests the DataSet class.

public class DataSetTester
{
    public static void main(String[] args)
    {
        DataSet myDataSet = new DataSet();
        myDataSet.addValue(13);
        myDataSet.addValue(-2);
        myDataSet.addValue(3);
        myDataSet.addValue(0);

        System.out.println("Sum: " + myDataSet.getSum());
        System.out.println("Expected: 14");
        System.out.println("Average: " + myDataSet.getAverage());
        System.out.println("Expected: 3.5");
    }
}
```
// A DataSet computes the total and average value of a
// collection of numbers.

public class DataSet
{
    // Constructs an empty data set.
    public DataSet()
    {
        count = 0;
        total = 0;
    }

    // Adds a value to this data set.
    public void addValue(int x)
    {
        total = total + x;
        count++;
    }

    // Computes the sum of the values.
    public int getSum()
    {
        return total;
    }

    // Computes the average of the values.
    public double getAverage()
    {
        if (count == 0)
        {
            return 0;
        }
        else
        {
            return (double)total/count;
        }
    }

    private int total;
    private int count;
}