

ASSIGNMENT-2

A) Create a ReportCard class that abstracts the concept of school report. It must have the following information:

- name, surname and class of the student;
- a table of votes that you associate for each subject, the vote and the judgment
- It must also declare a method that reads the report data legibly.
- Also create an class that prints one or more report cards.

B) Consider the following code:

```
import java.util.Scanner;
public class InteractiveApp {
    public static void main(String args[]) {
        Scanner scanner = new Scanner(System.in);
        String string = "";
        System.out.println("Type something then press enter, " +
            "or type \"end\" to end the program");
        while (!(string = scanner.next()).equals("end")) {
            System.out.println("You typed " + string.toUpperCase() + "!");
        }
        System.out.println("Program ended!");
    }
}
```

This class reads keyboard input using the Scanner class of the java.util package, The next() method used in the while construct (with a complex syntax that also includes the assignment to the string variable) is a blocking method (that is, that blocks the execution of the code waiting for user input) that reads the input from the keyboard, until the enter key is pressed. The program ends when you type the word “end”.

Edit the previous program so that it becomes a word moderator, meaning that it must censor some words you type.

C) Given the following class:

```
public class Exercise4R {
    private static int matrix[][] = {
        {1, 7, 3, 9, 5, 3},
        {6, 2, 3},
        {7, 5, 1, 4, 0},
        {1, 0, 2, 9, 6, 3, 7, 8, 4}
    };
    public static void main(String args[]) {
    }
}
```

implement the main() method so that it reads a number (between 0 and 9) as parameter args[0], and find the position (row and column) of the first occurrence of the number specified within the two-dimensional array called matrix.

D) The solution of the previous exercise(C) fails when:

- no command line argument is specified;
- an integer argument from the command line is specified, that is not within the range 0-9;
- an argument from the command line is specified that is not an integer.
- Add the code that manages the three cases (specifying a message with the instructions to follow for correct use).

E) Declare a SimpleCalc class that given two numbers, defines the methods for:

- Summing them.
- Subtract the second from the first.
- Multiply.
- Divide them.
- Return the rest of the division.
- Return the largest number (the maximum).
- Return the smallest number (the minimum).
- Return the average of the two numbers Create a class that tests all methods.

F) Declare a class using the **Scanner** class, which allows the user to interact with the SimpleCalc class: the user must be able to write the first operand, select the operation to be performed from a list and specify the second operand. The program must return the right result.

G) Declare a StrangeCalc class that given an unspecified number of numbers, defines the methods for:

- Summing them.
- Subtract the second from the first.
- Multiply.
- Divide them.
- Return the rest of the division.
- Return the largest number (the maximum).
- Return the smallest number (the minimum).
- Return the average of the two numbers

H) Declare a class that uses the Scanner class, which allows the user to interact with the StrangeCalc class. The reader is free to decide how the user will interact with the program.

I) Create a class called HeadsOrTails that defines a method called getHeadsOrTails() that using a switch expression, returns the string “Heads” or “Tails”. Also create a test class that invokes this method and prints the result. , create a class called HeadsOrTailsGame, which simulates the tossing of a coin, and which allows the user to guess whether “heads” or “tails” will come out. The program will have to print a final message stating if the user has won or not.

J) Considering the PhoneBook class, create a method called searchContactsbyName(String name) which takes as input a string that can represent a name or part of it, and must return an array of Contact objects that contain this string in its name. Also create a test class called SearchContacts which allows the user to specify the string to be passed as a search criterion to the searchContactsbyName() method and which prints the search results.