TP1: Java language, program structure, base types

Exercise 1 Hello World!

Write the program below in Eclipse and run it.

```
class Hello {
    public static void main(String[] args) {
        System.out.println("Hello World!");
    }
}
```

a) Define a string using `String ss = "Hello World"`. Output it by replacing `"Hello World!"` with `ss`.

b) Observe that `+` performs concatenation of two strings. Test it!

Exercise 2 Basic types

In the Java file already produced above define variables with basic types: `int`, `double`, `char`. Initialize these variables when declaring them then print them at the output.

```
/*****************************************
* Hello2.java : version 2.0               *
*                                         *
* Declarare si afectare de variabile *
*****************************************/

class Hello2 {

    public static void main(String[] args) {
        int intreg  = 2014;
        double real = 3.1416;
        char litera = 'S';

        System.out.println(intreg);

        System.out.println("intreg : " + intreg);
        System.out.println("real ..: " + real);
        System.out.println("litera : " + litera);

    }

}
```

Exercise 3 Keyboard Input

Reading keyboard input can be done using a special object called `Scanner`. Compile and study the following example

```
/*****************************************
* Hello3.java : version 3.0               *
*                                         *
* Declarare si afectare de variabile *
*****************************************/

import java.util.*;

    class Hello3 {

    static final Scanner input = new Scanner(System.in);

    public static void main(String[] args) {
        int intreg;
        double real;
        String c;



        System.out.println("Introduceti un numar intreg : ");
        intreg = input.nextInt();
        System.out.println("Introduceti un cuvant : ");
        c= input.next();
        System.out.println("Valorile introduse sunt : " + intreg + "
            " + c);

        System.out.println("O alta valoare intreaga urmata de un
           numar real ");
        intreg = input.nextInt();
        real = input.nextDouble();
        System.out.println("Valorile introduse sunt : " + intreg + "
            " + real);
        System.out.println("That's all folks");
    }

}
```

Exercise 4 Influence of the type of operands

We ask to write a program which converts a temperature given in Fahrenheit degrees into Celsius degrees. The formula is as follows

$$celsius = 5 \times (fahr - 32)/9.$$

Test your program for the temperature 106.

After performing the test modify the formula as follows

$$celsius = 5/9 \times (fahr - 32).$$

Test the program with the same temperature. What do you observe?

The type of the result depends on the type of the operands which in turn influences the result.

```
// Program de conversie din Fahrenheit in Celsius

import java.util.*;

class Degres {

    static final Scanner input = new Scanner(System.in);

    public static void main(String[] args) {
        double fahr;
        double celsius;

        System.out.println("Program de conversie deg. F in deg. C");
        System.out.println("Introduceti o temperatura : ");
        fahr = input.nextDouble();

        celsius = 5 * (fahr - 32) / 9;
        // celsius = 5 / 9 * (fahr - 32);

        System.out.println("Temperatura in Celsius est : " + celsius
           );
    }

}
```