

ASSIGNMENT (AFLEVERINGSOPGAVE) 3

GENERAL INFORMATION

This assignment is made public on Friday, February 20th, 2004. The assignment is due on
Friday, February 27th, 1 PM.

Hand in your assignment to the teaching assistant running your lab session.

The first page of your (written) assignment has to contain at least the following information:

- the course name (Grundlæggende Programmering)
- name and student number of the fellow student(s) in your group (max two)
- assignment number

Please staple your assignment!

You will get back the graded assignment one week after submission deadline.

WARM-UP AND SUGGESTIONS FOR FURTHER EXERCISES

As warm-up I suggest that you have a look at the review questions of Chapter 3 of the course book. As to further exercises I suggest the following from Chapter 3 of the textbook (pp. 89—91 of my copy), where for good variation you should pick exercises from different items below. Note that exercise 18 is one of the assignment questions below.

- Exercises 1 – 4 are elementary questions asking for very simple programs of the form input – simple comparison of input - output. Exercises 5 and 6 are of the same form, dealing with properties of triangles. Note the typo in exercise 6: The correct formula involves a plus instead of multiplication, thus, three numbers a , b and c form a Pythagorean triple if $a^2 + b^2 = c^2$.
- Exercise 7 handles yet another version of the if-then-else statement in connection with assignments which we didn't cover in class. Not too exciting, maybe confusing.
- Exercises 8 – 12 concern different simple loops, where in each iteration the user is asked for input and some output is produced. The program terminates on an *a priori* specified user input.
- Exercise 14 is again an elementary program consisting mainly of one loop (what kind of loop do you choose?).
- Exercise 16 is more complicated as it contains many variations.
- Exercises 22 and 23 are for the mathematical inclined person dealing with an approximation to the so-called Euler constant e and with the generation of pseudo-random numbers.

It is up to you whether or not you want to work on these exercises. Those exercises will not be marked.

ØVELSER

Arbejd i små grupper.

- Betingelser: opgaverne 4 (uden løkker), 6 fra kapitel 3.
- Løkker: Opgaverne 4, 6, 9 fra kapitel 3.
- Mere avanceret: Opgaverne 16 17, 18 fra kapitel 3.

ASSIGNMENT: LOOPS

AFLEVERINGSOPGAVE: LØKKER

Filen `Triangle.java` findes på hjemmesiden:

```
import tio.*;

public class Triangle {

    public static void main (String[] args){

        int input;
        int i,j;

        System.out.print("Please enter a number: ");
        input = Console.in.readInt();
        System.out.println();

        // Here start the loops that you are supposed to
        // rewrite:

        for(i=input; i>=1; i--)
        {
            for(j=1; j<=i; j++)
                System.out.print("*");

            System.out.print("\n");
        }

        // end of loops

        // next comes a separator
        System.out.println("\n-----\n");

        // insert your code here using while loops

        // next comes a separator
        System.out.println("\n-----\n");

        // insert your code here using do loops

        // next comes a separator
        System.out.println("\n-----\n");

    }
}
```

1. Beskriv hvad programmet udskriver på skermen.
2. Forklar hvordan opgaven løses, dvs. beskriv algoritmen som bruges.
3. Der står to gang `// insert your code here` hvor du skal indsætte nogen kode. Din kode skal give den samme udskrift på skermen som koden der står der allerede, men du skal bruge `while` løkker og `do` løkker istedet for `for` løkker.

Opgaven: Beskriv hvad programmet laver og beskriv algoritmen som bruges. Skriv kildekoden, tjek at koden kan oversættes og at programmet kører korrekt. Aflever det hele.