

# Introduction to Java: Exercise I

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Please hand in all your Java files until the next lecture. The exercises (a) and (b) give one point, (d) to (f) are worth two points each. It is also possible to earn partial points if the problem is almost solved.

You have to print the following patterns using *for* and/or *while* loops, and conditional statements. You should print only one character per print statement and it is not allowed to hard code the solutions, by just programming many print statements consecutively.

For example the following is not allowed to print the first line in (a):

```
System.out.println( '#####' );
```

To print a single character without a newline in the end, you can use the *System.out.print* function. To print a line break use then an empty *System.out.println()*.

Before every exercise, also print the exercise number. This can be done by adding, for example, *System.out.println("a");* in front of your code of exercise (a).

## Exercises

a) #####  
#####  
#####

c) #  
##  
###  
####  
#####

e) #0#0#0#  
0#0#0#0  
#0#0#0#

b) ###  
000  
###  
000

d) #0#0#0#  
#0#0#0#  
#0#0#0#

f) #  
0#  
0#0  
#0#0  
#0#0#

## Bonus

This exercise accounts for maximum **three** additional points, which may give you up to ten total points for all the exercises.

Program – following the same rules as above – an application that takes a number as input and then prints this number of lines in the triangle shape of exercise (c). For example it first prints:

*Give me a number:*

Then the user enters 3 and hits enter. You should then print:

```
#  
##  
###
```

Check the internet on how to work with interactive input on the console/terminal.