Exercise *(Note: Not for session 1)* SDJ1

Exercise: Guess a number

The following piece of code sets target to a random number between 1 and 1024.

```
java.util.Random random = new java.util.Random();
int target = random.nextInt(1024) + 1;
```

Game:

Use this code to write a program (a class with a `main` method) that asks the user to guess the number. Each time the user guesses wrong tell him if his guess is too high or too low and ask for the next guess.

Number of guesses:

Expand your program to count how many guesses you use. Initialise a counter to 0 and in the loop increment it by one. When you have guessed the number print out the number of guesses too.

Interval:

Expand your program to start asking for the two integers `a` and `b` representing the interval, such that you could guess a number in the interval given by [`a`; `b`] and not only [1; 1024]

Exercise: Computer guesses a number

Make a program with the following

a) Think of a number in the interval [1; 1024] (or [`a`; `b`]), i.e. lower bound is 1 (or `a`) and upper bound is 1024 (or `b`) – and don't tell your computer which number you are thinking ;-)
b) Let the computer 'guess' the number `guess` in the interval given and print this to the screen
c) If the number is correct print "Done" and the number of guesses and end the program
d) Else If the number is too low change the interval moving the lower bound and go to b) again
e) Else If the number is too high change the interval moving the upper bound and go to b) again

Hint: telling the computer if a guess was too high or too low could be a keyboard input indicated by this message: "press 1 if the guess was too low and 2 if it was too high"