This assignment will earn you at most 7.5 points. If you want to have more points than that, submit the advanced assignment as well, which will earn you up to 2.5 points. The sum of the scores for these two assignments is your grade for the second homework assignment.

2 A Homework assignment – Guessing Game Basic

Write a program called `GuessingGame` that plays a game with the user. The user is asked to guess an integer number, called the *code*, between 0 and 99 that is secretly input by someone else or randomly chosen by the computer.

You are **required** to use the random number generator of the class `Random` as explained in the **Required** section below.

Input

The input consists of an answer to the first question (see Output below), which is the word "yes" or "no", possibly followed by the code (if the user answered "yes") and then a sequence of integer numbers, the guesses. In your program you may assume that the input is in compliance with this description. I.e., if the user should input an integer number, you don't have to check whether it really is an integer.

Output

- The first line of output is: "Do you want to enter the secret code yourself?"
- If the user answers this with "yes", the program prints "Secretly type the code". If the user answers "no", the program prints: "Type an arbitrary number". The code resp. the arbitrary number (i.e., the seed for the random number generator) is read and the game starts with the line "Start guessing!".
- The program gives replies to each guess: either "lower" when the guess is higher than the code, or "higher" when the guess is lower than the code, or "Good guess! You won." when the player guesses right.
- Furthermore, when the maximum number of guesses has been reached without a good guess, it prints "No more guesses, you lost.". So this will be printed after a lower/higher reaction to the last guess has been output. **The maximum number of guesses is** 7**.**
- Afterwards the guessing history is printed. (see the next section)

Examples of sessions can be seen below.

Guessing history

The guessing history consists of

1. The number of guesses followed by the string " guesses:".
2. For each guess a line that shows how close your guess was. The line consists of 100 characters: 98 or 99 dots, an `X` at the position of the guess and a `|` at the position of the code. E.g., when the code is 50 and the guess is 48, the line will be

   `.....X.|.....`

   If the two positions coincide, an `X` should be printed at this position and no `|` should be printed in that line at all. This is the only case in which 99 dots are printed.

Requirements

Use the provided template. Do not change the name of the class or other names used there.

You are **required** to use Java's random number generator `java.util.Random`. Follow the template and use `Random randomGenerator = new Random(seed);` where `seed` is a number (of type `long`, an integer type that can contain larger values than `int`) read from input. A random number generator produces a sequence of numbers that are seemingly randomly chosen. `randomGenerator.nextInt(n)` gives a random number between 0 (included) en `n` (excluded). Although seemingly random, the sequence is completely determined by the starting value, the *seed*. This way, we can predict the outcome and properly test your program.

Example 1

Input is preceded by a >.

```
Do you want to enter the secret code yourself?
>yes
Secretly type the code
>50
Start guessing!
>10
higher
>90
lower
>48
higher
>50
Good guess! You won.
4 guesses:
..........X.....................................|.........................................
.............................................|.....................................X.....
.........................................X.|.........................................
.............................................X.........................................
```

Example 2

The randomly picked number is 0. Input is preceded by a >.

```
Do you want to enter the secret code yourself?
>no
Type an arbitrary number
>12345
Start guessing!
>90
lower
>80
lower
>70
lower
>60
lower
>50
lower
>40
```

lower
>30
lower
No more guesses, you lost.
7 guesses:

```
|.........................................................................................X.........
|...............................................................................X...................
|.....................................................................X.............................
|...........................................................X.......................................
|.................................................X.................................................
|.......................................X...........................................................
|.............................X.....................................................................
```

Example 3

Input is preceded by a >.

Do you want to enter the secret code yourself?
>yes
Secretly type the code
>37
Start guessing!
>90
lower
>0
higher
>45
lower
>25
higher
>40
lower
>35
higher
>37
Good guess! You won.
7 guesses:

```
.....................................|....................................................X.........
X....................................|..............................................................
.....................................|.......X......................................................
.........................X...........|..............................................................
.....................................|..X...........................................................
...................................X.|..............................................................
.....................................X..............................................................
```