

PROGRAMMING ASSIGNMENT

Java

The technical interview you're about to participate in will revolve around your solution to a programming assignment. Both the code itself and your reasoning and explanations will be part of our assessment of you as a potential Jayway employee. We want you to show your Java skills as well as your view on good code design, and structure the code according to good object oriented design principles. In short, we want to be impressed!

- Use Java for your solution.
- Your solution shall include automated test cases, e.g. using JUnit or TestNG.
- Do not use anybody else's code in your solution, except what comes with the JDK and test framework of your choice.
- Submit the whole solution including project files, so that we can open it in Eclipse or IntelliJ.

Please choose **ONE** of the following assignments, and submit the results to your contact at Jayway as soon as you are done.

Good luck!

Option A: Robot Programming

Your assignment is to write the control program for a robot. The robot moves in a two dimensional room, implementing the `Room` interface:

```
public interface Room {  
    java.awt.Point getStartPosition();  
    boolean contains(java.awt.Point position);  
}
```

The robot moves around the room by interpreting a string of commands in Swedish:

- V: Turn left (vänster)
- H: Turn right (höger)
- G: Move forward (gå)

Example string: VGGHGHGHGG

The robot can also be configured to accept commands in English:

- L: Turn left
- R: Turn right
- F: Move forward

Example string: LFFRFRFRFF

When the robot runs out of commands, it reports its current square (x, y) and direction using the following letters:

- N: North
- Ö: East
- S: South
- V: West

When the program starts, the robot is always facing **north**.

Example 1

We're using a square 5x5 room, and the starting position (1,2).

The input string "HGHGGHGHG" will give the result "1 3 N".

Example 2

We're using a circular room with a radius of 10 squares, origo at the center of the circle, and start position (0,0). The robot is configured to accept commands in English.

The input string "RRFLFFLRF" will give the result "3 1 Ö".

Option B: Search Fight

To rate the popularity of different terms online, we want you to write a program that queries different search engines and presents the resulting number of hits. We want to execute it by running a Jar-file. Example:

```
% java -jar searchfight.jar .net java
.net: Google: 4450000000 Bing: 12354420
java: Google: 9660000000 Bing: 94381485
Google winner: .net
Bing winner: java
Total winner: .net
```

Requirements:

- The program shall accept an arbitrary number of keywords.
- The program shall support search strings containing spaces by wrapping them in quotation marks: (java -jar searchfight.jar "bill gates" "larry ellison")
- The program shall use at least two different search engines