Assignment 4 - StairSweeper

Consider the starting and ending situations shown in the diagrams below. Karel’s task is to climb the stairs and “sweep” all of the beepers off of them by putting them in his bag, ending and turning off on the last stair.

You need to write a new definition for a robot, that is, a new robot class that extends UrRobot called StairSweeper. First, think about what new instructions you’d like the robot to be able to perform. Plan your strategy for how the robot will accomplish its task and decide what new methods would be helpful. Think about robustness. That is, try to think of methods that will help you perform this task as well as similar tasks in the future.

Break the problem down into smaller sub-problems that can then be combined to accomplish the task. Writing one method that solves this particular problem will certainly accomplish this specific task, but what if the situation changed so that there were five stairs instead of three? Remember that you are designing a new type of Robot that should be helpful for the task of stair-sweeping in general – a main program will construct Robots of type StairSweeper and try to use it for stair- sweeping tasks. So, think about the actions that are fundamental to stair-sweeping and list them below:

List your methods here:

Bring this to class on Monday!
The next thing you'll do is write the code. A good place to start writing the code is to write the class header first. Using the SuperUrRobot example from class as a guide, you know that the StairSweeper header should be:

```java
import kareltherobot.*;
public class StairSweeper extends UrRobot
{
    public StairSweeper(int street, int ave,
                        Direction dir, int beepers)
    {
        super(street, ave, dir, beepers);
    }

    //method definitions go here
}
```

Finally, you'll write a main program to test your Stairsweeper. This main program should open the world stairs.kwld, create a StairSweeper robot at 1,1 facing North, and give the command to sweep the stairs. This main program must be in a different class in your BlueJ project!