ICFP Programming Contest 2012
Flooding!

ICFP Programming Contest Organising Team

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We've been having some terrible weather this last couple of weeks (see, for example, `http://www.bbc.co.uk/news/uk-scotland-18752725`) and this has naturally had an unfortunate effect on our Lambda mining operations. Some of the mines are flooded, and have rising water levels. Fortunately, our Robots are waterproof to some extent, and can remain underwater for a number of *consecutive* steps. A Robot is defined as being *underwater* if its position is (x, y) and the water level is y or greater.

Mine descriptions may now contain *metadata* after a blank line, describing the flooding rate, the initial water level, and how many steps the Robot can last underwater. For example:

```
###########
#....R....#
#.*******.#
#.\\\\\\\.#
#.       .#
#..*\\\*..#
#.#*\\\*#.#
#########L#

Water 0
Flooding 10
Waterproof 5
```

In this map, the initial water level, given by `Water`, is 0 (i.e., there is no water — remember that the bottom left is location $(1, 1)$). After every 10 steps in the map update phase, given by `Flooding`, the water level will rise by 1. If the Robot spends more than 5 consecutive steps underwater, given by `Waterproof`, it becomes inoperative, mining ends and the robot is destroyed.

Given a setting of `Waterproof n`, the robot may be underwater after n consecutive map updates. If after the next update it is still underwater, it becomes inoperative.

If `Flooding` is set to 0, then the water level does not rise at all. The default values for `Water`, `Flooding` and `Waterproof` are $0, 0$ and 10 respectively.

In all other respects, Robot movement and map update remain the same.