

## Problem Wk.13.3.4: Robot on a grid

We want to write a program that uses search to plan paths for a robot on an infinite two-dimensional grid.

- The states will each be a pair of integers  $(i,j)$ , designating a square on the grid. Use tuples to represent the pairs.
- On each step, the robot can do the following actions: 'up' (increment j), 'down' (decrement j), 'right' (increment i), or 'left' (decrement i).

In the space below enter a state machine definition of this domain. The state machine should have `legalInputs` attribute, a `getNextValues` method and a `done` method that will terminate the search at the state  $(3, 4)$ . The initialization of the machine takes the start state as an argument.

```
class RobotMoves(sm.SM):
    legalInputs = ['left', 'right', 'down', 'up']
    def __init__(self, s):
        pass
    def getNextValues(self, state, inp):
        pass
    def done(self, state):
        pass
```

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