Problem 2: Robot Class

In *ps2.py* we provided you with the Robot class, which stores the position and direction of a robot. For this class, decide what fields you will use and decide how the following operations are to be performed:

* Initializing the object
* Accessing the robot's position
* Accessing the robot's direction
* Setting the robot's position
* Setting the robot's direction

Complete the Robot class by implementing its methods in *ps2.py*.

**Note:** When a Robot is initialized, it should clean the first tile it is initialized on. Generally the model these Robots will follow is that after a robot lands on a given tile, we will mark the entire tile as clean. This might not make sense if you're thinking about really large tiles, but as we make the size of the tiles smaller and smaller, this does actually become a pretty good approximation.

Although this problem has many parts, it should not take long once you have chosen how you wish to represent your data. For reasonable representations, *a majority of the methods will require only a couple of lines of code*.

**Note:** The Robot class is an *abstract* class, which means that we will never make an instance of it. Read up on the Python docs on abstract classes at [this link](http://docs.python.org/3/library/abc.html) and if you want more examples on abstract classes, follow [this link](http://julien.danjou.info/blog/2013/guide-python-static-class-abstract-methods).

In the final implementation of Robot, not all methods will be implemented. Not to worry -- its subclass(es) will implement the method updatePositionAndClean()

Enter your code for classes RectangularRoom (from the previous problem) and Robot below.