

PROBLEM 1: RECTANGULARROOM CLASS (10 points possible)

You will need to design two classes to keep track of which parts of the room have been cleaned as well as the position and direction of each robot.

In `ps2.py`, we've provided skeletons for the following two classes, which you will fill in in Problem 1:

RectangularRoom

Represents the space to be cleaned and keeps track of which tiles have been cleaned.

Robot

Stores the position and direction of a robot.

We've also provided a complete implementation of the following class:

Position

Stores the x- and y-coordinates of a robot in a room.

Read `ps2.py` carefully before starting, so that you understand the provided code and its capabilities.

PROBLEM 1

In this problem you will implement two classes, `RectangularRoom` on this page and `Robot` on the next.

For the `RectangularRoom` class, decide what fields you will use and decide how the following operations are to be performed:

- Initializing the object
- Marking an appropriate tile as cleaned when a robot moves to a given position (casting floats to ints - and/or the function `math.floor` - may be useful to you here)
- Determining if a given tile has been cleaned
- Determining how many tiles there are in the room
- Determining how many cleaned tiles there are in the room
- Getting a random position in the room
- Determining if a given position is in the room

Complete the `RectangularRoom` class by implementing its methods in `ps2.py`.

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.*)

Hint:

During debugging, you might want to use `random.seed(0)` so that your results are reproducible.

Enter your code for `RectangularRoom` below.

```
1 # Enter your code for RectangularRoom in this box
2
```

Unanswered

Check

Save

You have used 0 of 30 submissions

Help

Show Discussion

 New Post



EdX offers interactive online classes and MOOCs from the world's best universities. Online courses from MITx, HarvardX, BerkeleyX, UTX and many other universities. Topics include biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. EdX is a non-profit online initiative created by founding partners Harvard and MIT.

© 2014 edX, some rights reserved.

[Terms of Service and Honor Code](#)

[Privacy Policy \(Revised 4/16/2014\)](#)

About & Company Info

[About](#)

[News](#)

[Contact](#)

[FAQ](#)

[edX Blog](#)

[Donate to edX](#)

[Jobs at edX](#)


Follow Us

 [Twitter](#)

 [Facebook](#)

 [Meetup](#)

 [LinkedIn](#)

 [Google+](#)

