PROBLEM 4: THE RANDOMWALKROBOT CLASS : 15.0 POINTS

iRobot is testing out a new robot design. The proposed new robots differ in that they change direction randomly **after every time step**, rather than just when they run into walls. You have been asked to design a simulation to determine what effect, if any, this change has on room cleaning times.

Write a new class `RandomWalkRobot` **that inherits from** `Robot` **(like** `StandardRobot` **) but implements the new movement strategy.** `RandomWalkRobot` should have the same interface as `StandardRobot` .

Test out your new class. Perform a single trial with the new `RandomWalkRobot` implementation and watch the visualization to make sure it is doing the right thing. Once you are satisfied, you can call `runSimulation` again, passing `RandomWalkRobot` instead of `StandardRobot` .

GRADER IS CURRENTLY DOWN; IT WILL BE AVAILABLE SOON!

In the meantime, you can work on implementing this problem on your own machine.

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