

# Homework 1

Charlie Coleman

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1. Yes, the only input the agent has is its current square and if the square is dirty, so it would be rational to clean the current square and move in a random direction. This is not optimal, or even decent, but it is the most rational you can be with that little information.
2. I don't believe so. With absolutely no knowledge of where the agent has been, it cannot clean the whole room without randomization. If the robot knew the previous move it took, it may be able to do it (move down until you can't, move over, move up until you can't, etc.), but as a simple reflex agent, this does not seem possible.
3. Bit 1 is true if you have made it to the corner, bit 2 is the direction you moved last. While bit 1 is false, move down until you can't, then move left until you can't. Bit 1 flips. Then move up until you can't, move right once, move down until you can't, etc. until you can't move to the right.