COSC 370 – Artificial Intelligence
Project 1

Purpose: Do a little bit of agent design and create an efficient robotic vacuum.

Task: Create a program that will allow for an n x n vacuum world, where n is input by the user. The world should be randomly seeded with dirt at a probability of 0.2. Your program should include an intelligent agent that you have designed for the robotic vacuum and that vacuum should start in a random square of the vacuum world.

After T timesteps (T is input by the user) the program should show the score for the robot, computed as follows:

Initial score = 0
Move cost = -1
Clean Squares = +2
Dirty Squares = -3

Each action is performed in 1 timestep.

Your robot is allowed to use a secondary agent – a search agent. It can report back a mapping of the space. Each move it makes costs -.5 for the total score.

Your program should have some sort of GUI interface (it can be in just ASCII text if you wish) that displays the world state at each timestep. The user goes from timestep to timestep by pressing enter.

Note: you are attempting to maximize your score for a general board.

You are required to work in teams of 2 for this project. Team requests are due by 5pm, Friday, January 28th. If you do not have a team request in at this point, you will be assigned a random partner.

DUE: February 11th at 11:59pm in the Digital Dropbox