Lab # 03 Task

1. Implement vacuum cleaner world problem using;
    a. Table driven agent environment for simple 2 portion room?
    b. For reflex agent environment? Successfully implemented in today's lab! Uploaded on Slate (Resources) folder.
2. Define multiple Goals of the poker agent?
3. Implement a table-lookup agent for the special case of the vacuum-cleaner world consisting of a 2 x 2 grid of open squares, in which at most two squares will contain dirt. The agent starts in the upper left corner, facing to the right. Recall that a table-lookup agent consists of a table of actions indexed by a percept sequence. In this environment, the agent can always complete its task in nine or fewer actions (four moves, three turns, and two suck-ups), so the table only needs entries for percept sequences up to length nine. At each turn, there are eight possible percept vectors, so the table will be of size 89 = 134,217,728. Fortunately, we can cut this down by realizing that the touch sensor and home sensor inputs are not needed; we can arrange so that the agent never bumps into a wall and knows when it has returned home. Then there are only two relevant percept vectors, ?0? and ?!?, and the size of the table is at most 29 = 512. Run the environment simulator on the table-lookup agent in all possible worlds (how many are there?). Record its performance score for each world and its overall average score.

4. You can complexity to the environment like following;
    1. In the simplest case, the room is an *n* x *n* square, for some fixed *n*
    2. Change it to a rectangular, L-shaped, or irregularly shaped room, or a series of rooms connected by corridors.
    3. Placing furniture in the room makes it more complex than an empty room. Represent furniture and wall both by 1 for the agent
    4. Simplest case, dirt is distributed uniformly around the room. But it is more realistic for the dirt to predominate in certain locations
    5. Increase the number of rooms and number of possible actions. State space will grow exponentially. You need good searching strategies to maximize your goal.