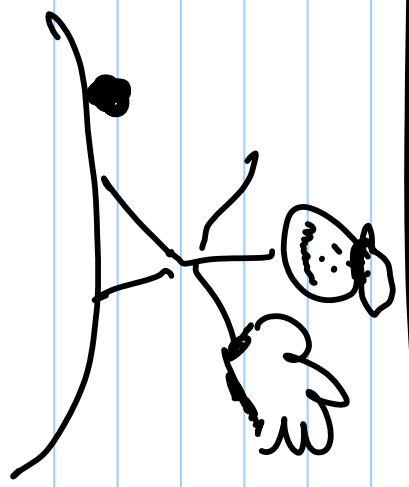
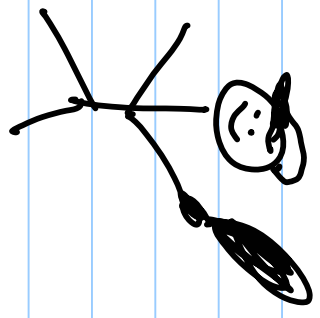


Continue I A Search

Simple Reflex Agent

Model based agent
current state is evaluated
in terms of how it changed
from the previous
state

Goal based
takes into
account the
future



Goal based agent

Goal - desirable situation

Utility agent - utility function maps a state to a number. The number measures how happy the agent is with choosing that state.

Goal - utility agent's highest happiness state from the utility function

Learning agent

4 components

Learning element - responsible for
learning improvements

Performance element - what we
previously considered that agent
Takes Percepts \rightarrow actions

critic - gives feedback on how well
the performance element is doing
if it needs to be modified

Problem generator - suggests actions that
lead to new and informative experiences

If an agent always tried to maximize a performance measure it may not find good long term solutions to a problem

The Goal-based Searcher allows the agent to explore all experiences some sub-optimal performance in hundreds of better long term performance

Chp 3

Uninformed Search (Blind Search)
Problem solvings →

Problems - have goals

Goal - Within the set of all states
the goal is the desired state.

Goal formulation - deciding what the
goal states are.

Problem formulation - state the problem
in such a way that we can make efficient
progress toward goal state. We decide
which actions and states to consider
when moving toward a goal(s).

Path sequence - an ordered listing of states
and actions used in achieving a goal

Search - The process of finding the state-action sequence that leads to a goal.

Search - results in a solution to a problem
Solution can then be executed to achieve a goal

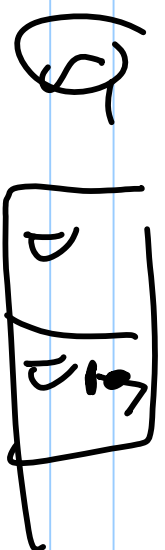
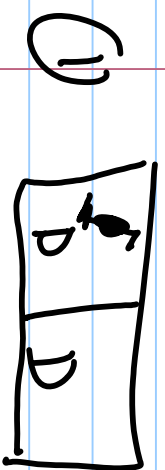
The set of all states that exist for a problem is called the problem's state space

Vacuum cleaner problem

- ① Two locations which may or may not contain dirt
- ② Vacuum is in one of the locations

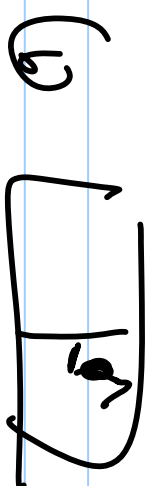
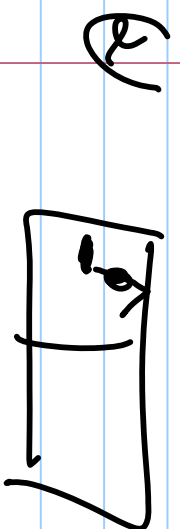
Start & Space

2 rooms



vacuum actions

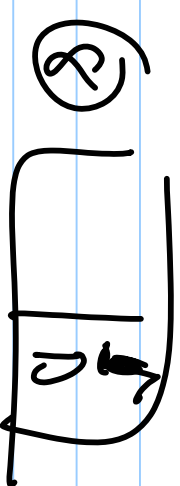
(1) Suck



(2) move right



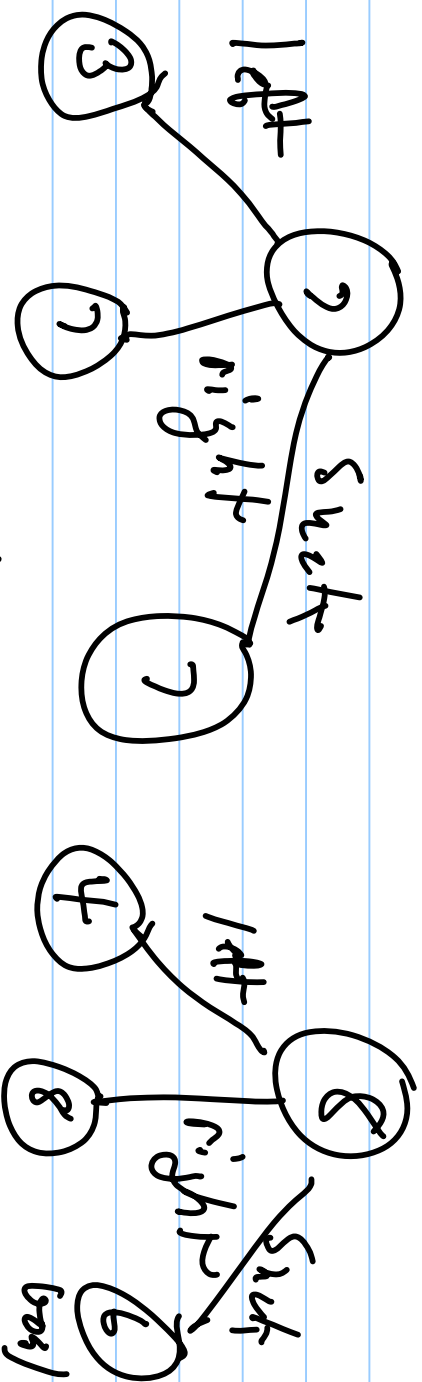
Goal - no dirt



The problem depends on the amount of info from the agent's sensors

1) world accessible
 knows current state
 knows what each action does
 knows the result of action

} single state problem



Agent can easily calculate which action to take

Sensorless problem

multiple state problem

{1, 2, 3, 4, 5, 6, 7, 8}

right left suck

r
{5, 6, 7, 8}

✓
✓
✓
suck

{5, 6, 7}

✓

