

Planning



- Search vs. planning
- STRIPS operators
- Partial-order planning

What we have so far



- Can TELL KB about new percepts about the world
- KB maintains model of the current world state
- Can ASK KB about any fact that can be inferred from KB

How can we use these components to build a **planning agent**,

i.e., an agent that constructs plans that can achieve its goals,
and that then executes these plans?

Remember: Problem-Solving Agent

```
function SIMPLE-PROBLEM-SOLVING-AGENT(p) returns an action
  inputs: p, a percept
  static: s, an action sequence, initially empty
           state, some description of the current world state
           g, a goal, initially null
           problem, a problem formulation

  state ← UPDATE-STATE(state, p)
  if s is empty then
    g ← FORMULATE-GOAL(state)
    problem ← FORMULATE-PROBLEM(state, g)
    s ← SEARCH(problem)
  action ← RECOMMENDATION(s, state)
  s ← REMAINDER(s, state)
  return action
```

Note: This is *offline* problem-solving. *Online* problem-solving involves acting w/o complete knowledge of the problem and environment