



CS 416

Artificial Intelligence

Lecture 3

Uninformed Searches

(mostly copied from Berkeley)



Outline

Problem Solving Agents:

- Restricted form of general agent:

Problem Types:

- Fully vs. partially observable, deterministic vs. stochastic:

Problem Formulation:

- State space, initial state, successor function, goal test, path cost:

Example Problems:

Basic Search Algorithms:



Problem Solving Agents

Restricted form of general agent:

```
function SIMPLE-PROBLEM-SOLVING-AGENT(percept) returns an action
  static: seq, an action sequence, initially empty
         state, some description of the current world state
         goal, a goal, initially null
         problem, a problem definition
  state ← UPDATE-STATE(state, percept)
  if seq is empty then
    goal ← FORMULATE-GOAL(state)
    problem ← FORMULATE-PROBLEM(state, goal)
    seq ← SEARCH(problem)
  action ← RECOMMENDATION(seq, state)
  seq ← REMAINDER(seq, state)
  return action
```

Note: This is offline problem solving; solution with “eyes closed.”

Online problem solving involves acting without complete knowledge