

Jan 18, 2017

①

representation of where  
I'm the conducting the search  
"search space"

↓  
cities

↓  
represent the map

set of cities and "connections"  
between the cities ↓ roads

search problem  
state (snapshot of the world)  
simple example city

\* initial state : Arad

↓  
what does a state look like?  
the city we are at now.  
in (Arad) Arad

\* goal. (state) goal test  
↳ method

in Bucharest

in a city that starts with B  
a vowel

goal-test (state)

true or false

\* actions that one can take

(2)

Arad go (Sibiu)

method ACTIONS(state)  
returns all possible actions applicable at state

\* transition model

tells what happens when you apply (execute) an action  $a$ , in a state  $s$

RESULT ( in(Arad), go(Sibiu) )  $\Rightarrow$  in(Sibiu)

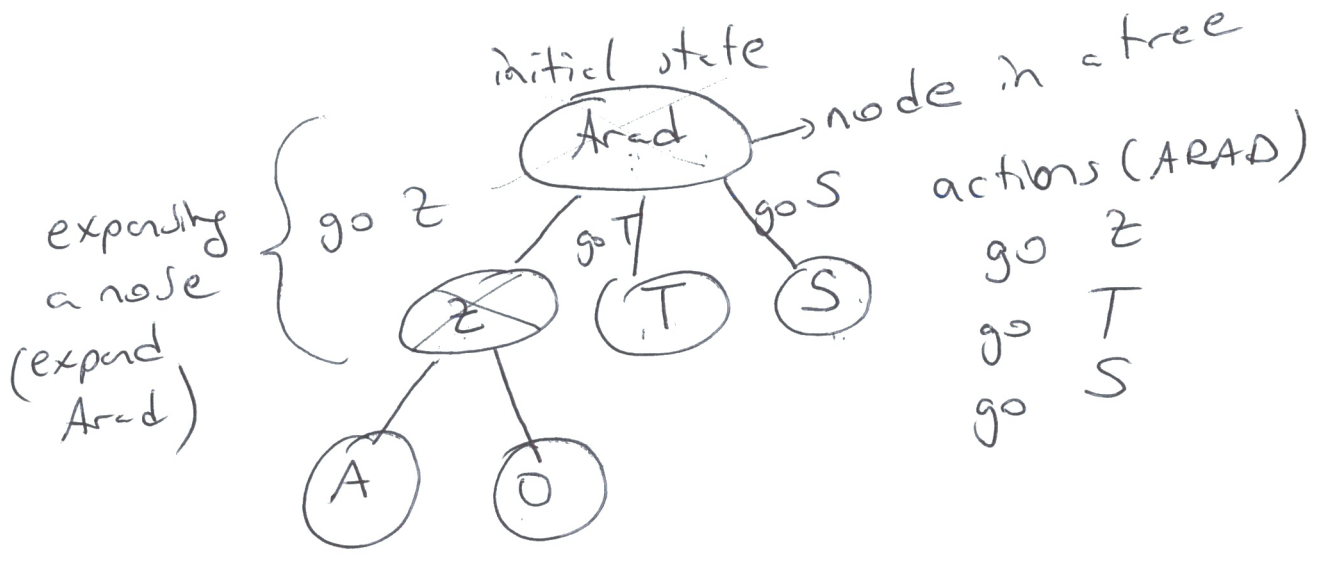
\* path cost

the cost of taking an action from one state to another.

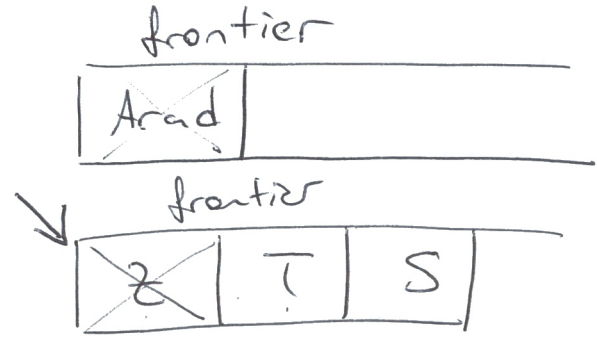
initial state: Arad  
 goal test: Bucharest  
 actions: go  
 transition model:

ACTIONS(state)  
 RESULT(state, action)  
 → state

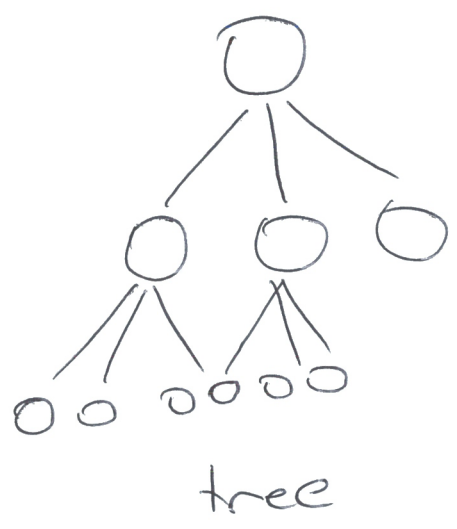
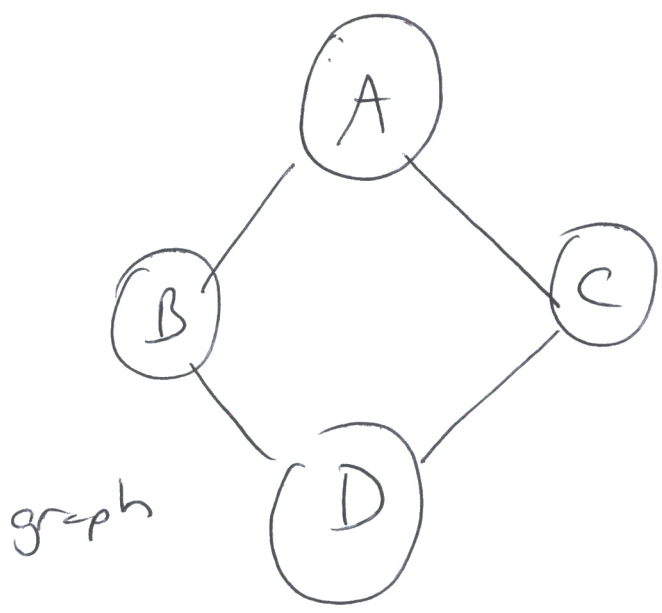
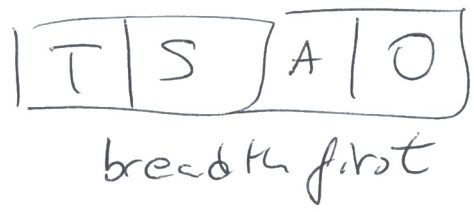
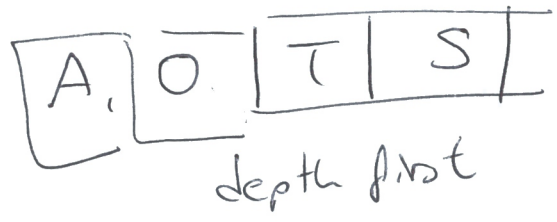
path cost: the cost of taking an action from  $s_1$  to  $s_2$



4



A, O



# 8-puzzle

5

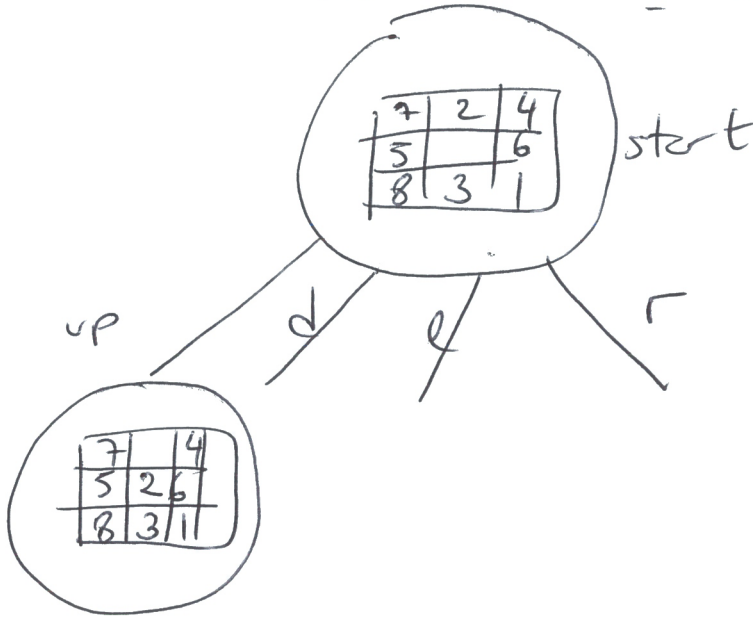
start state

2D matrix



string of 10 digits.

number



slide 2

slide 3

slide 6

slide 5

no need to specify direction

8

action possible

more

up  
down  
left  
right