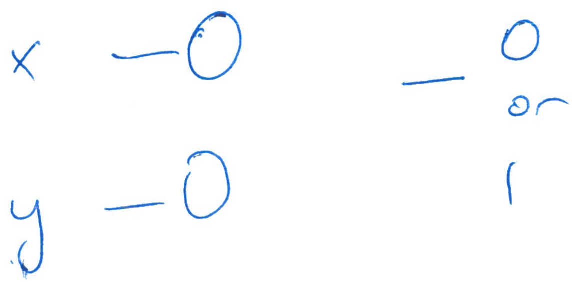
CS4811
Feb 1, 2017
Wednesday (1)

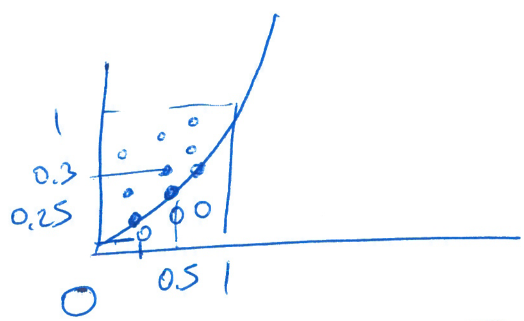
[x, y, 0]

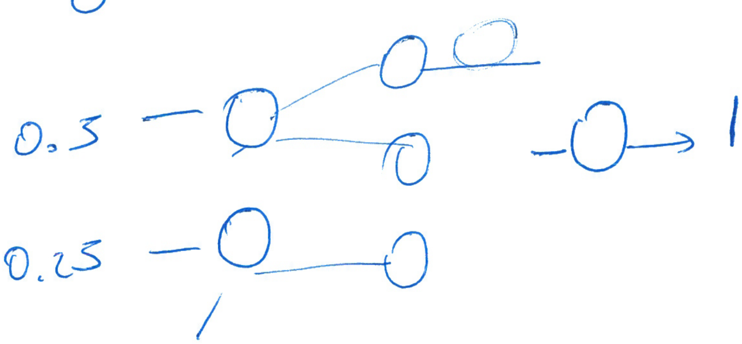
[x', y', 1]

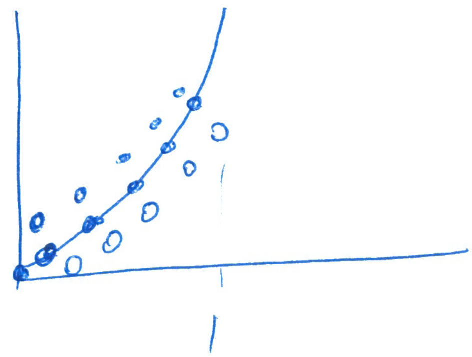



$x \longrightarrow x^2$

0.5 0.25





Previous class

best-first search — — — — — node n "how good is this node" → how close it is to the goal.

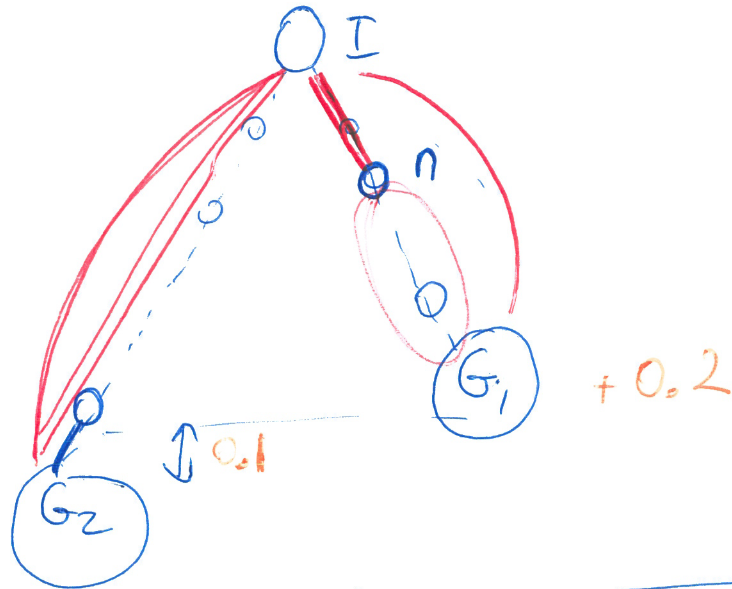
- greedy: uses only ~~h(n)~~ h(n)
- A*

$$f(n) = g(n) + h(n)$$

- $g(n)$: actual cost from init to n
- $h(n)$: estimated cost from n to goal.

A* has an admissible heuristic function.

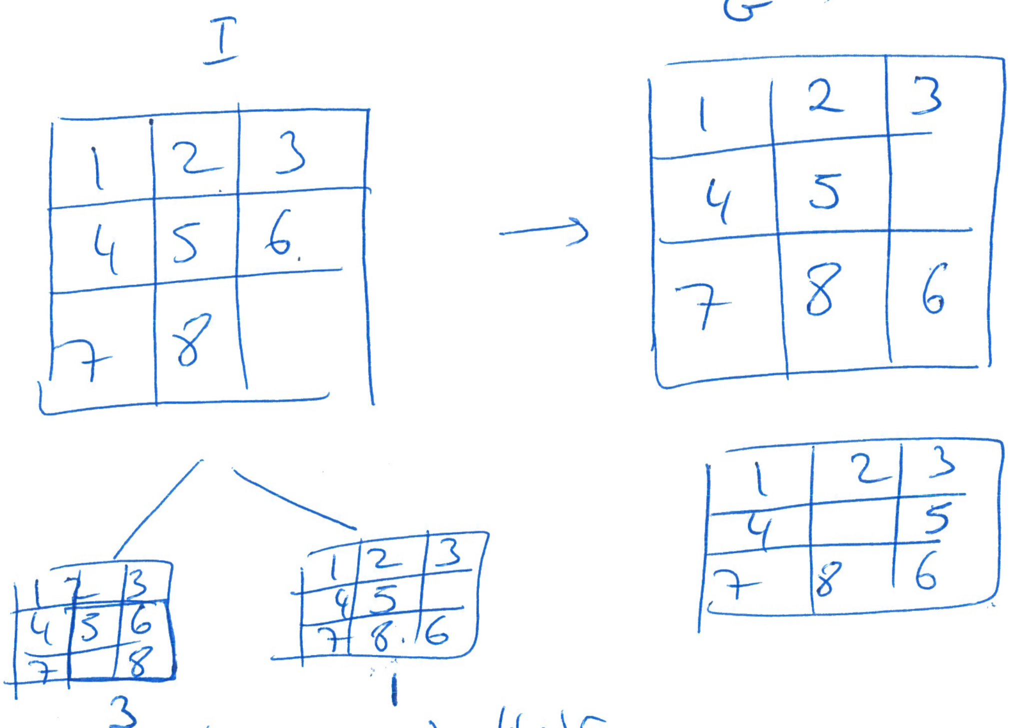
non admissible: not guaranteed to find an optimal solution




$f(G_2) < f(n)$

| I | $G_2$ | $G_1$ |

G ~~$f(G_2) > f(G_1)$~~



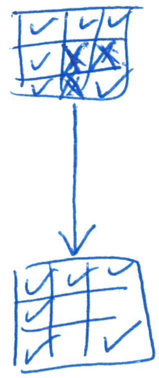

how tiles are in their correct places

higher the better

how many tiles are misplaced

If we use # of misplaced tiles to estimate the cost to the goal, could this ever be an overestimation?

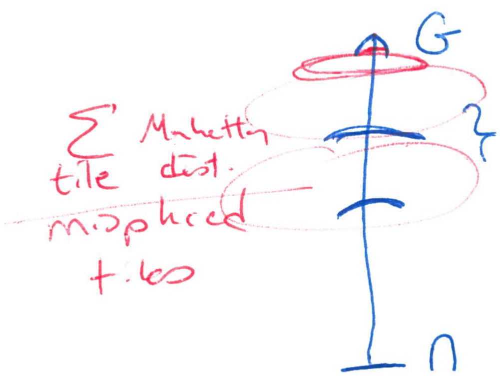
O



# of misplaced tiles

# of tile movements

It can't over estimate





admissible "very" informed heuristic } close to actual cost

might still have exponential number of nodes to explore

# Local search



1. start with a solution, any solution
2. make that solution "better"
   closer to a real solution
3. lather, rinse, repeat: #2 until you arrive at a real solution