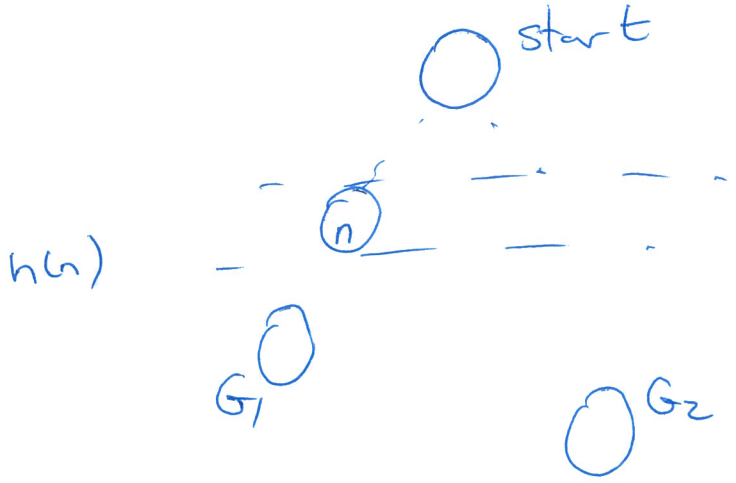
CS5811
September 7, 2016
Wednesday (1)



frontier

ordered list of $f(n) = g(n) + h(n)$

$f(G_1) < f(G_2)$

check for goal when
a generated ////
b expanded
c whenever
d idk ///

G_1	G_2

$f(G_2) = g(G_2) + \underbrace{h(G_2)}_{0}$

$f(G_1) = g(G_1)$

$g(G_1) < g(G_2)$

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

(1) $f(G_2) < f(n)$ would cause G_2 to be picked first and G_2 would be returned as the goal.

is this possible?

$h(n) \leq h^*(n)$ — $h^*(n)$: the actual cost to the goal.

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

$\therefore$ n is on the path of G_1.

$\therefore$ $g(n)$ is optimal.

$f(n) = g(n) + h(n) \leq g(n) + h^*(n) = f(G_1)$. ($h^*(n)$: actual cost)

$f(n) \leq f(G_1) < f(G_2)$

contradiction to (1) through admissability