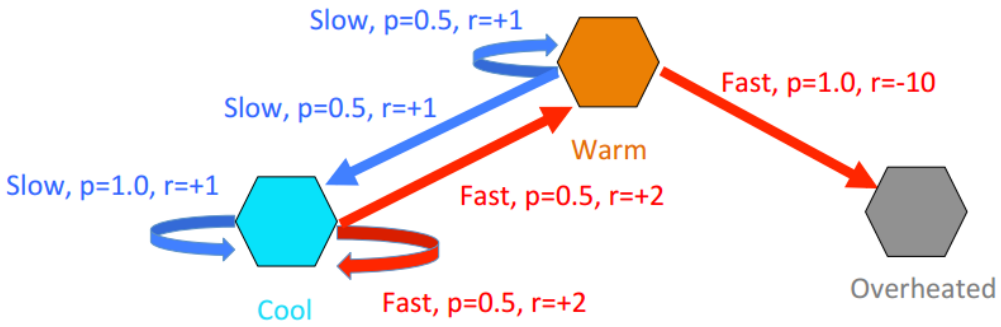
CAP 4630 – Problem Set on Value Iteration Algorithm

Hiker in the Grand Canyon wants to get to the bottom quickly, but pace himself/herself. There are three states: Cool, Warm, Overheated, and two actions: slow and fast. Going faster gets double reward.



Given the Value Iteration Formula and the iteration table, calculate V_2 (cool) and V_2 (warm). Assume no discount ($\gamma = 1$).

$$V_{k+1}(s) = \max_a \sum_{s'} P(s'|s,a)[R(s') + \gamma V_k(s')]$$

ITERATION	COOL	WARM	OVERHEATED
V_0	0	0	0
V_1	2 (fast)	1 (slow)	0
V_2			