

Assignment no 2

Artificial Intelligence (case 1)

$$R = 0$$

No penalty,

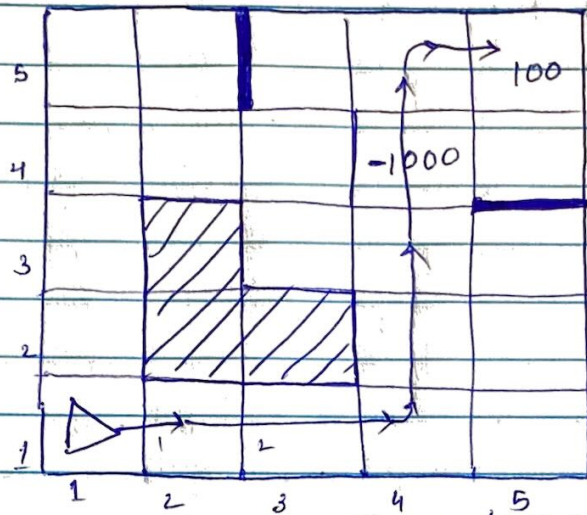
no discount factor ($\gamma = 1$)

A_1 move 1 cell forward
cost = 1.5

A_2 move 2 cells forward
cost = 2

A_3 turn to left and stay
cost = 0.5

A_4 turn to right and stay
cost = 0.5



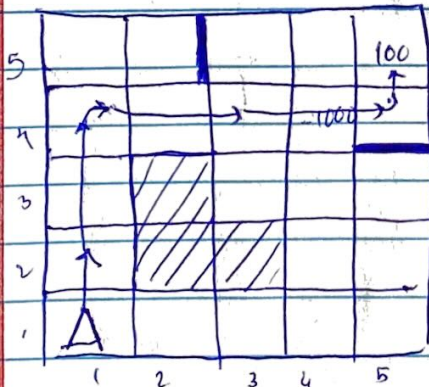
case (1) when robot is in state (1,1,4)
ie (1,1) and facing right

Path A in diagram

$$s(1,1,4) \xrightarrow{A_1} s(2,1,4) \xrightarrow{A_2} s(4,1,4) \xrightarrow{A_3} s(4,1,1) \xrightarrow{A_2} s(4,3,1)$$

goal state reach!!

$$s(5,5,4) \leftarrow s(4,5,4) \xleftarrow{A_4} s(4,5,1) \xleftarrow{A_2}$$



case (2) when robot is in state (1,1,1)
ie (1,1) and facing up

$$s(1,1,1) \xrightarrow{A_1} s(1,2,1) \xrightarrow{A_2} s(1,4,1) \xrightarrow{A_4} s(3,4,4)$$

$$s(5,5,1) \leftarrow s(5,4,1) \xleftarrow{A_3} s(5,4,4) \xleftarrow{A_2} s(3,4,4)$$

goal state reach