Quiz-02 ID-17101007

Answer to the question no: 1

Yes, we can formulate a given problem in artificial Intelligence. The componerts are:

i) Initial state.
ii) Action.
iii) Transition model.
iv) Goal Test.
v) Path cost.

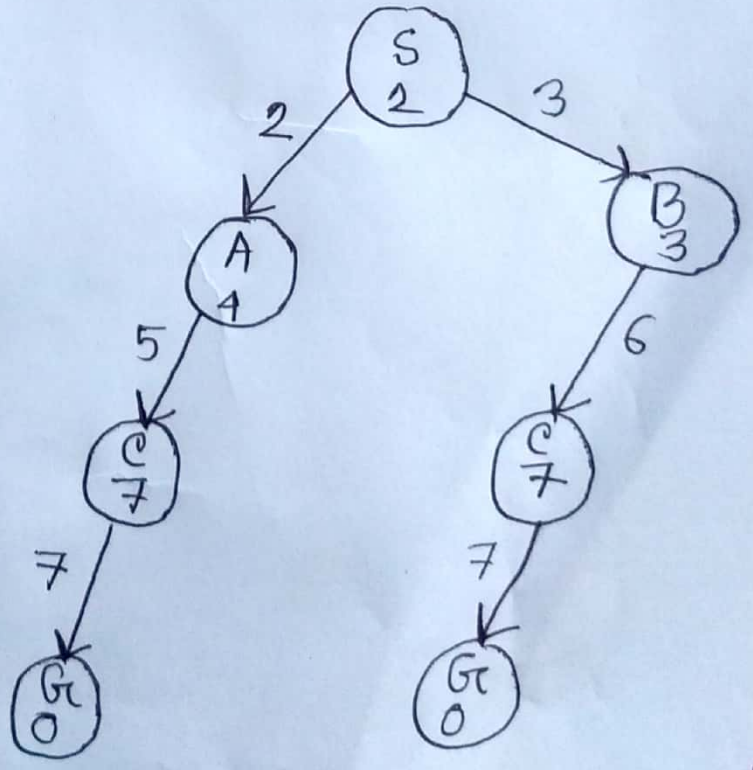
Answer to the question no: 2

$h(S) = 07 \% 3 + 1 = 2$

$h(A) = 07 \% 5 + 2 = 4$

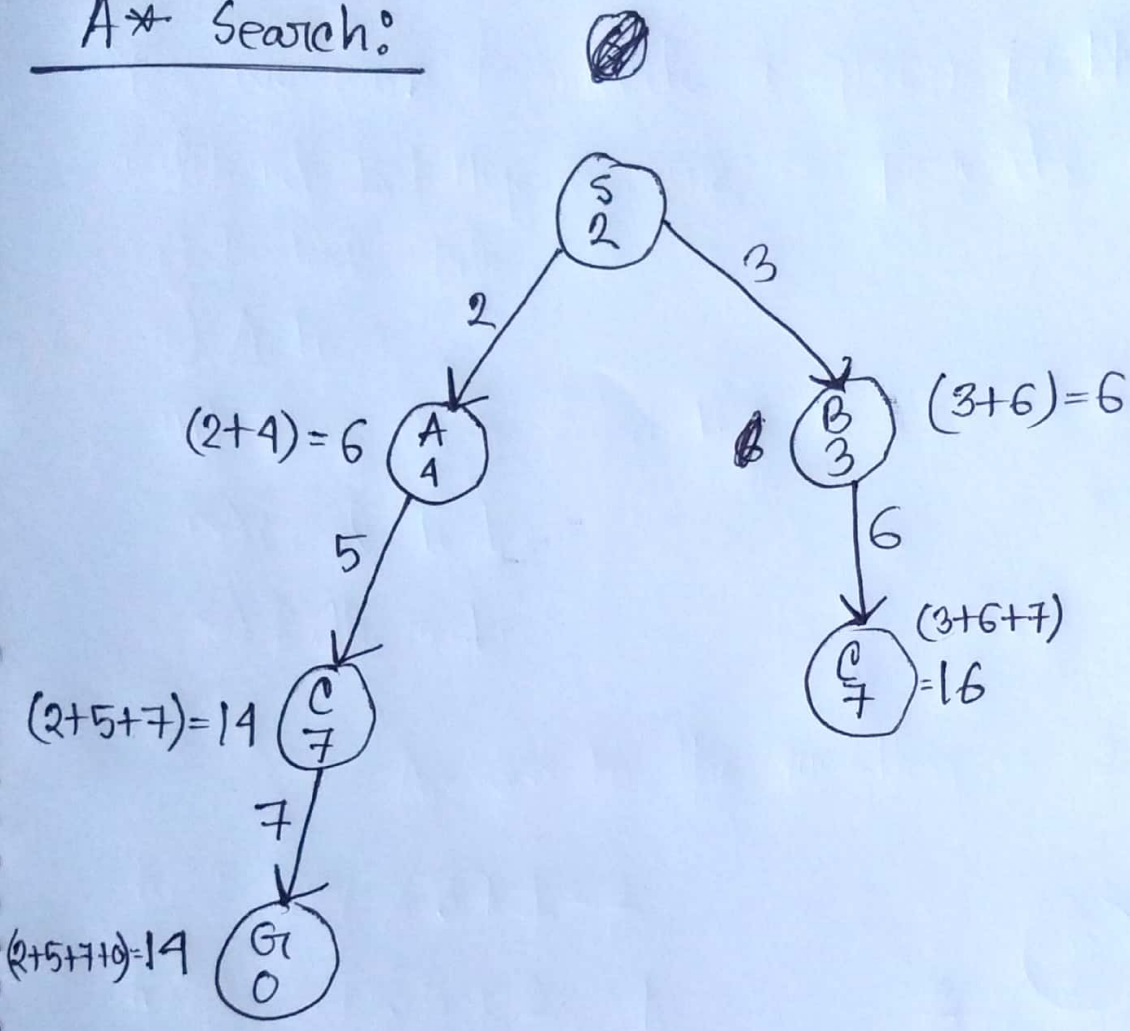
$h(B) = 07 \% 7 + 3 = 3$

$h(C) = 07 \% 4 + 4 = 7$



This is the search tree.

A* Search:



States Expanded: S, A, B, C, Gr

Path: S - A - C - Gr

Initialization: {(S, 2)}, Open [S], Closed [ ]

Iteration 1: {(S→A, 2+4), (S→B, 3+3)}, Open [A,B], Closed [S]

{(S→A, 6), (S→B, 6)}, Open [A,B], Closed [S]

Iteration 2: {(S→A→C, 2+5+7), (S→B, 6)}, Open [C, B], Closed [S,A]

{(S→A→C, 14), (S→B, 6)}, Open [C, B], Closed [S, A]

Iteration 3: {(S→A→C, 14), (S→B→C, 3+6+7)}, Open [C, C], Closed [S,A,B]

{(S→A→C, 14), (S→B→C, 16)}, Open [C, C], Closed [S, A, B]

Iteration 4: {(S→A→C→G, 2+5+7+0), (S→B→C, 16)}, Open [G, C],

Closed [S, A, B, C]

{(S→A→C→G, 14), (S→B→C, 16)}, Open [C],

Closed [S, A, B, C, G]

Final Result will be S→A→C→G with the optimal cost of 14.