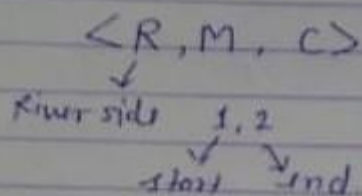


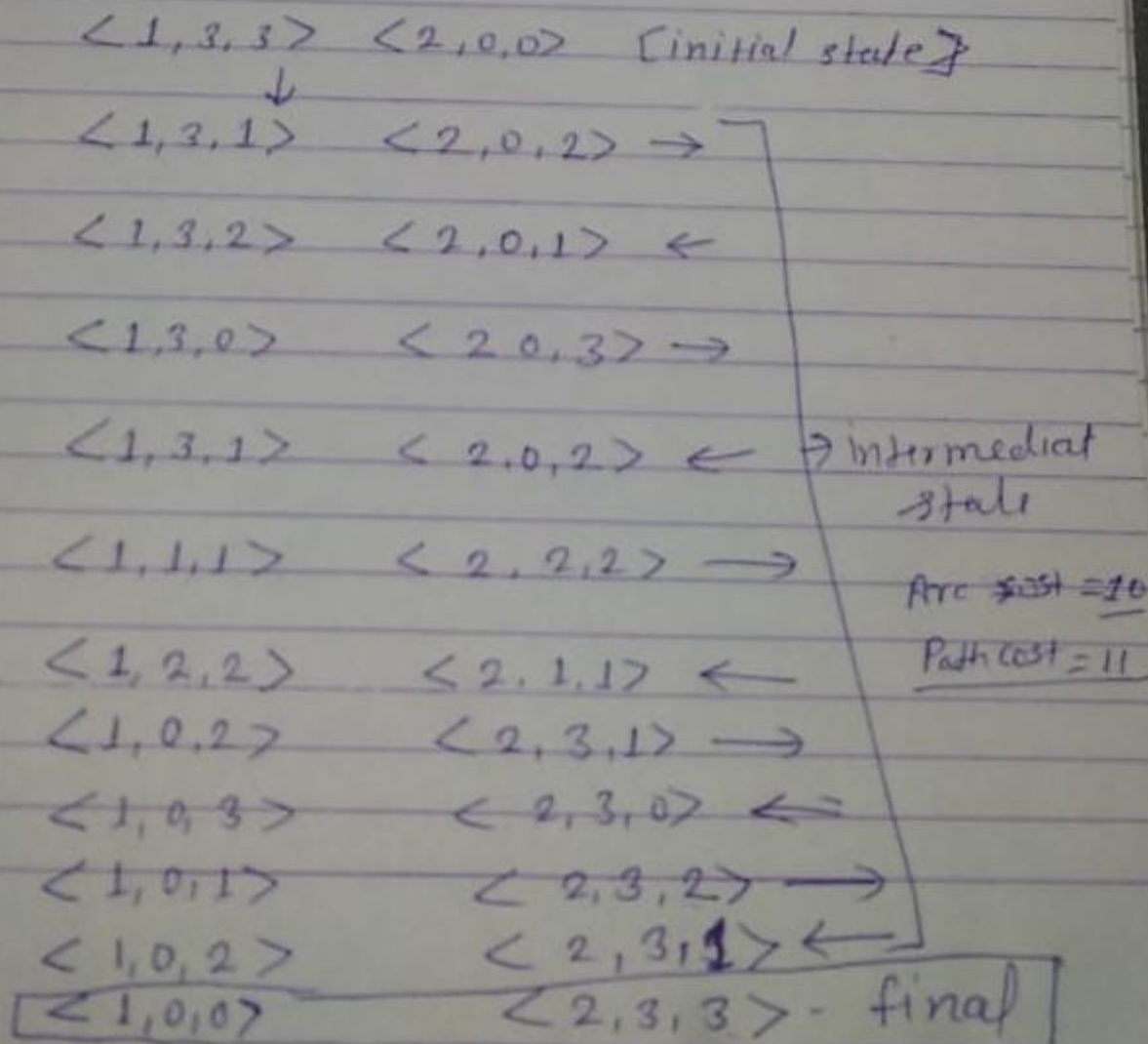
Assignment AI-1

~~missionaries~~ missionaries and cannibals problems
3 3

• State space representation -



• Successor function -



$\langle 1, 3, 3 \rangle$ $\langle 2, 0, 0 \rangle \Rightarrow$ Initial state.

$\langle 1, 3, 1 \rangle$ $\langle 2, 0, 2 \rangle \rightarrow$

$\langle 1, 3, 2 \rangle$ $\langle 2, 0, 1 \rangle \leftarrow$

$\langle 1, 3, 0 \rangle$ $\langle 2, 0, 3 \rangle \rightarrow$

$\langle 1, 3, 1 \rangle$ $\langle 2, 0, 2 \rangle \leftarrow$

$\langle 1, 1, 1 \rangle$ $\langle 2, 2, 2 \rangle \rightarrow$

$\langle 1, 2, 2 \rangle$ $\langle 2, 1, 1 \rangle \leftarrow$

$\langle 1, 0, 2 \rangle$ $\langle 2, 3, 1 \rangle \rightarrow$

$\langle 1, 0, 3 \rangle$ $\langle 2, 3, 0 \rangle \leftarrow$

$\langle 1, 0, 1 \rangle$ $\langle 2, 3, 2 \rangle \rightarrow$

$\langle 1, 0, 2 \rangle$ $\langle 2, 3, 1 \rangle \leftarrow$

$\langle 1, 0, 0 \rangle$ $\langle 2, 3, 3 \rangle \rightarrow$ final

- Goal Test :- check if all the missionaries and cannibals are at the right ~~side~~ bank of the river.

- Arc cost = 11

- goal state = $\langle 2, 3, 3 \rangle$

Ans.

2nd question.

state space : Given map and 4 different colours.

Initial state : map with uncoloured region.

Successor function : It will colour the uncoloured region.

Goal — Test : check, if all region coloured with no adjacent region coloured with same colour.