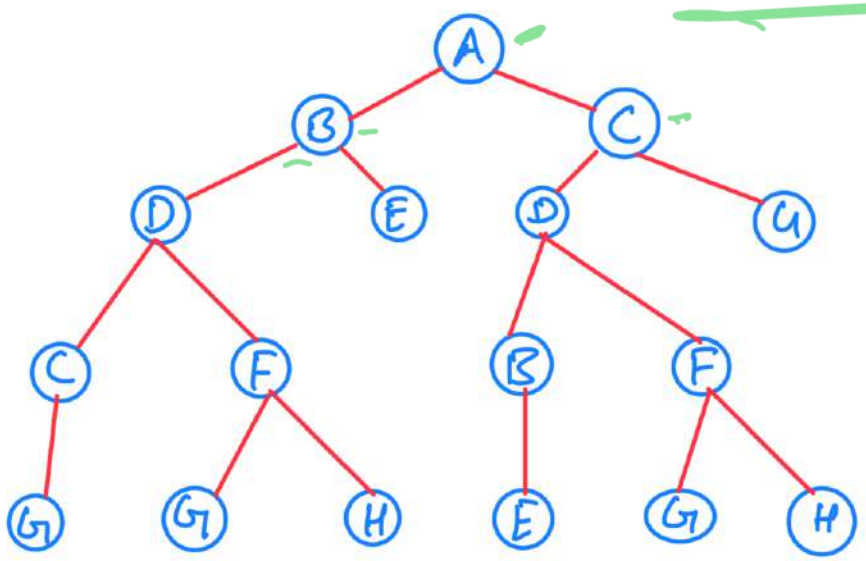
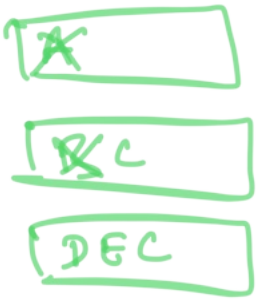
BFS: Illustration

Breadth first Search

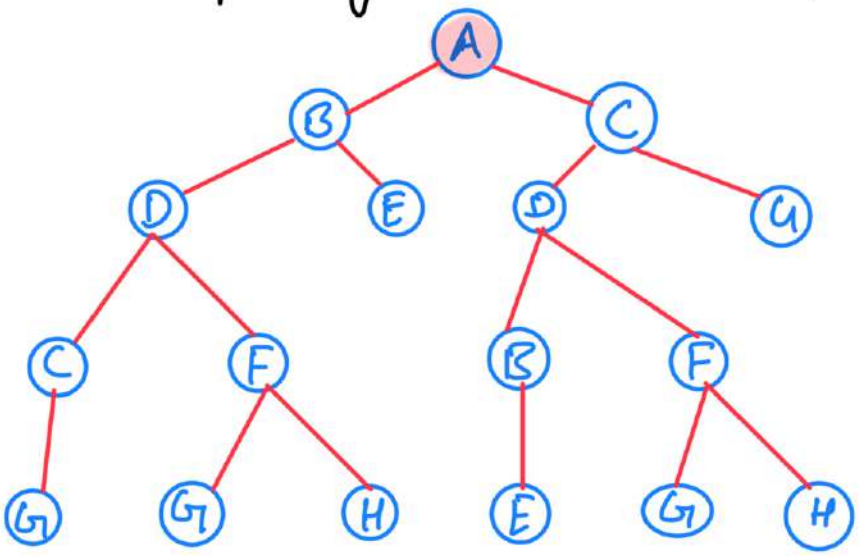


DFS:



Step 1:

Initially: Fringe contains only one node corresponding to the source/root state

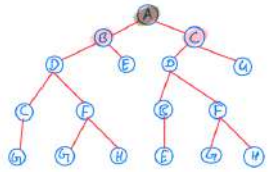


Fringe: | A |

// Fringe is based on FIFO Approach

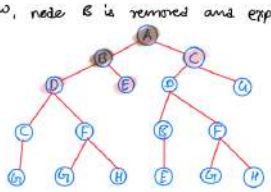
Step 2:

Remove A from fringe. Generate its child / Expand node A. Then, expended nodes are placed back to the fringe.



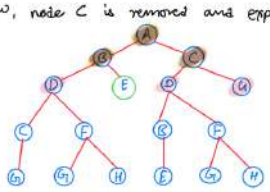
Fringe: B C

step 3:
Now, node B is removed and expanded.



Fringe: C D E

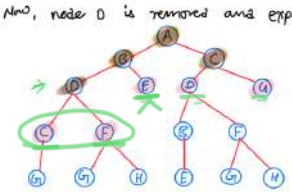
step 4:
Now, node C is removed and expanded.



Fringe: D E D G1

Step 5:

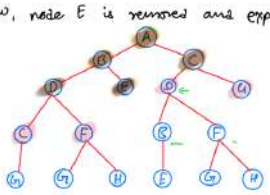
Now, node D is removed and expanded.



Fringe: ~~E~~ E D G1 C F

D G1 C F
G1 C F B F

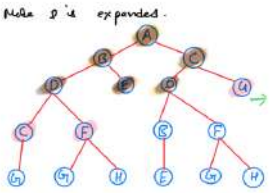
Step 6:
Now, node E is removed and expanded.



Fringe: D G1 C F

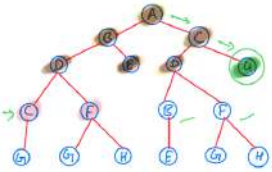
Here, node E has no children.

Step 7: Node D is expanded.



Fringe: G1 C F B F

Step 8:



Fringe: G1 C F B F

Here, node G1 is selected for expansion.
It is found to be a goal node.
So the algorithm returns the
path A C G1 by following the
parent pointer of the node corresponding
to goal node G1.
Finally, A* algorithm terminates.