Page :
Date : / /

Tutorial 6

1) As we know the choice for iteration of next node is done from the children of the current node rather than exploring fellow node on the same level.

So, to do this, DFS uses FIFO data structure which can be 'stack'.

Backtracking in DFS is done when a node that's already been explored is encountered is ignored & other node is chosen.

2) Diameter of state space is the longest shortest (non-repetative) path in the set of shortest path between pairs of states.

Depth Limited Search, we limit our search till certain depth. This sets the diameter which can be though as limiting our search space as per the diameter.

3)

a) BFS: We travel layer by layer simply with no priority to any node from the same layer.

Time complexity : $O(b^d)$
Space complexity : $O(b^d)$

b: branch factor
d: depth

b) UCS: We traverse next node as per least cost & this will continue while backtracking also.

Also, if cost of each node is same, then there would be no difference in UCS & BFS.

Time complexity : $O(b^{1+C/E})$
Space complexity : $O(b^{1+C/E})$