ARTIFICIAL INTELLIGENCE ABSTRACT

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Algorithm Assigned: Depth Limited Search

ABSTRACT:

Depth limit search(DLS) is a variant of depth first search algorithm.
Depth first search expands the deepest node in the current frontier of the search tree. The search proceeds immediately to the deepest level of the search tree, where the nodes have no successors.

Depth first search will fail in other words end up in an infinite loop when the number of nodes tends to infinite. Depth limit search is used as a solution to this.

In Depth limit search, a limit L is chosen right in the start. This limit L is lesser than or equal to the depth of the tree D. Normal DFS is then carried on till the limit is L.

Therefore, regular DFS is a special case of DLS, where L is infinity.

The time complexity of DLS is $O(b^L)$ and space complexity is O(bL) , where b is the branching factor and L is the limit chosen

CASE STUDY:

For the case study, DLS is compared with DFS, IDDFS(Iterative deepening depth first search).
Adjacency list / adjacency matrix is going to be as an input to the algorithm.

The entire project is to be coded in c++.