# Iterative Deepening Search

- Uninformed Search strategy
- Performing DFS in BFS manner (Combination of DFS and BFS)
- Depth limited search is used as a component of IDS.

Start = $0^{th}$ level, Go till = MAX Depth
At each level DLS is performed upto certain level, if target is found, then successful, otherwise level is increased by 1 at every iteration till

max depth.

So in a limited depth, every node is visited and level is increased gradually.

Complete: Yes
Time : $O(b^d)$
Space : $O(bd)$
Optimal: Yes, if step cost = 1

b = Branching factor
d = Depth at ~~d~~ step

Algorithm IDS (Problem) returns a solution or Failure
inputs: problem
for depth ← 0 to ∞ do
result ← DLS (problem, depth)
if result ≠ cutoff then return result