University of West London

School of Computing and Engineering

CP60034E - Artificial Intelligence

Seminar Week-5: Searching

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1) Explain the Graph-Search algorithm.

2) In an iterative deepening search, the nodes on the bottom level (depth d) are generated once, those on the next-to-bottom level are generated twice, and so on, up to the children of the root, which are generated d times. Therefore, the total number of nodes generated in the worst case is

$$N(\text{IDS}) = (d)b + (d-1)b^2 + \cdots + (1)b^d$$

which gives a time complexity of $O(b^d)$. Assuming $b = 10$ and $d = 5$, compute the following:

N(IDS) =

N(BFS) =

For estimating N(Breadth-first search), you can consult the lecture notes.