

# Exercise Sheet - Search

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1. Given the following tree, show the order of visitation of the nodes for each of the following search approaches:
  - Breadth first search
  - Depth first search
  - Iterative Deepening
2. Compare the three techniques in question 1 under the following headings:
  - Time complexity
  - Space complexity
  - Completeness
3. Consider the problem of finding the shortest path between two nodes on a weighted graph (where all weights are  $\geq 0$ ).
  - Suggest a greedy heuristic that could be adopted. Create a graph where the greedy approach will fail to find the best path.
  - For Dijkstra’s algorithm, described how the frontier nodes are ordered.
  - Explain why an iterative deepening approach is good (or not) for this problem. ‘