⇒1 Time Complexity of A Algorithm*

- A* algorithm time complexity depends on the heuristic's quality and problem space size
- Generally expressed as $O(b^d)$, where b is the branching factor and d is the depth of the solution.
- Efficiency improves with a good heuristic function

⇒2 Limitations of A Algorithm*

- Can be inefficient or incorrect with a poor heuristic
- Faces challenges with large or dynamic search spaces
- Memory-intensive for large space due to storing explored states.

⇒3 Comparison

A* = Combines best features of greedy search and Dijkstra's algorithm Depends on heuristic quality.

BFS: Guarantees shortest path in unweighted graphs. Memory intensive but suitable for small spaces.

DFS: Does not guarantee shortest path. Memory-efficient but may get stuck in infinite loops.

Dijkstra's: Finds shortest path in weighted graphs suitable for non-negative edge weights.