AI Expt 3 Postlab

1. What is the time complexity of the Water Jug Problem?
Ans:- The time complexity of the Water Jug Problem using a Depth-First Search (DFS) approach is $O(J \times k)$, where J and k are the capacities of the two jugs resp. This is because each state can have upto $O(J \times k)$ successor states and the DFS explores these states until a solution is found.

2. Why is DFS not used for solving a water jug problem?
Ans:- DFS is not typically used to solve the Water Jug problem because it may lead to an exponential number of states being explored, especially in the worst case where no solution exists. Additionally, DFS does not guarantee finding the shortest path to the solution, which is often desired in optimization problems like the Water Jug problem.

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