1)=> The time complexity of the water Jug Problem depends on the specific approach used to solve it. If we consider a brute-force approach, when we systematically explore all system possible states until finding a solution, the time complexity can be exponential in the worst case. However, if we employ more efficient algorithms like breadth-first search (BFS) or depth-first search (DFS) with pruning techniques, the time complexity can be reduced significantly. the time complexity of solving the water Jug problem is often represented as $O(m*n)$ where m and n are the capacities of the two Jugs.

2)=> Depth-first search (DFS) is not typically used for solving the water Jug problem because DFS may lead to inefficiencies and infinite loops when exploring the state space. The water Jug problem involves a large state space with many possible states, and DFS may get trapped in certain paths that do not lead to a solution or may revisit states multiple times, leading to inefficiency.