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**TASK NO:** TASK # 1

I implemented the **Water Jug Problem** using **Depth-First Search (DFS)**. This problem is about measuring a specific amount of water using two jugs with fixed capacities. The code explores all possible ways to fill, empty, or transfer water between the jugs until the required amount is reached.

**How It works:**

* The function uses a stack to keep track of states **(x, y)** where **x** and **y** represent the current amount of water in jug X and jug Y respectively.
* It starts from the initial state **(0, 0)** (both jugs empty).
* It explores all possible states by:
  + Filling either jug to its full capacity.
  + Emptying either jug.
  + Pouring water from one jug to the other until the first jug is empty or the second jug is full.
* It keeps track of visited states to avoid repeated processing.
* If at any point either jug contains exactly **T** liters, it prints **"Possible"** and terminates.

**We use DFS here because:**

* It efficiently explores the state space.
* It’s simple to implement.
* It’s sufficient for checking **feasibility** (whether the target volume is possible), not necessarily the shortest path.