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**Section : 4A**

**“Documentation of Task 3”**

**Water Jug Problem (DFS Approach)**

**Purpose:**  
This program solves the **Water Jug Problem** using **Depth-First Search (DFS)**.  
We have two jugs:

* Jug 1 → 4 liters capacity
* Jug 2 → 3 liters capacity  
  The goal is to measure **exactly 2 liters** in either jug.

### How it works:

1. Start with both jugs empty → (0, 0).
2. Use a **stack** to explore possible moves.
3. Keep track of **visited states** to avoid repeating.
4. Possible moves are:
   * Fill a jug
   * Empty a jug
   * Pour water from one jug to the other
5. Continue until one jug has the target (2 liters).
6. Print each state and the **rule applied**.