```
IDLE Shell 3.13.5                                              —    □    ×

File  Edit  Shell  Debug  Options  Window  Help

    Python 3.13.5 (tags/v3.13.5:6cb20a2, Jun 11 2025, 16:15:46) [MSC v.1943 64 bit (
    AMD64)] on win32
    Enter "help" below or click "Help" above for more information.
>>>
    ====================== RESTART: C:/ayushsr/AI/lab 7.py ======================
    Enter the capacity of jug 1: 4
    Enter the capacity of jug 2: 3
    Enter the goal state for jug 1: 2
    Enter the goal state for jug 2: 0
    Initial state = (0,0)
    Capacities = (4, 3)
    Goal state = (2, 0)
    Enter the rule: 2
    Current state: (0, 3)
    Enter the rule: 8
    Current state: (3, 2)
    Enter the rule: 2
    Current state: (3, 3)
    Enter the rule: 6
    Current state: (4, 2)
    Enter the rule: 3
    Current state: (0, 2)
    Enter the rule: 8
    Current state: (2, 0)
    Goal state reached: (2, 0)
>>>
```

Water jug problem

```
IDLE Shell 3.13.5                                              —    □    ×

File  Edit  Shell  Debug  Options  Window  Help

    Python 3.13.5 (tags/v3.13.5:6cb20a2, Jun 11 2025, 16:15:46) [MSC v.1943 64 bit (
    AMD64)] on win32
    Enter "help" below or click "Help" above for more information.
>>>
    ====================== RESTART: C:/ayushsr/AI/lab 8.py ======================
    ANSWER:
    For given Data, the local maxima is at node 'g' with heuristic value 3
>>>
```

Hill climbing