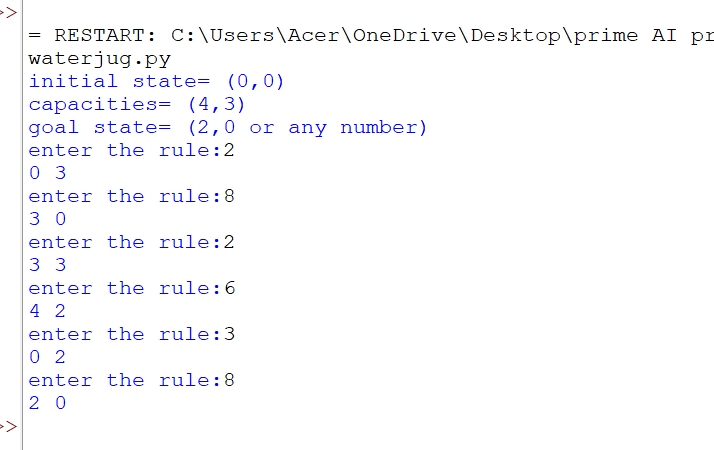
**Water jug problem**

1. J1 and j2 are two jugs
2. (x, y) : order pair
3. x: maximum water storage capacity of jug1 is 4 gallons i.e. x=4
4. y: maximum water storage capacity of jug2 is 3 gallons i.e. y=3
5. No mark on jug
6. Pump to fill the water into the jug
7. How can you get exactly 2 gallon of water into the 4-gallons jug?

**Solution:**

|  |  |  |  |
| --- | --- | --- | --- |
| state | Jug1 | Jug2 | rules |
| Initial state | 0 | 0 | - |
|  | 0 | 3 | 2 |
|  | 3 | 0 | 8 |
|  | 3 | 3 | 2 |
|  | 4 | 2 | 6 |
|  | 0 | 2 | 3 |
| Final state | **2** | 0 | 8 |

Output:****