

Program-6:

You are given two jugs, a 4-litre one and a 3-litre one. Neither has any measuring marker on it. There is a pump that can be used to fill the jugs with water. How can you get exactly 2 litres of water into 4-litre jug? Implement this using Depth First Search.

```
def pour(jug1, jug2):  
    max1, max2, fill = 3, 4, 2 #Change maximum capacity and final capacity  
  
    print("JUG1\tJUG2")  
  
    print("%d\t%d" % (jug1, jug2))  
  
    if jug2 == fill:  
        return  
  
    elif jug2 == max2:  
        pour(0, jug1)  
  
    elif jug1 != 0 and jug2 == 0:  
        pour(0, jug1)  
  
    elif jug1 == fill:  
        pour(jug1, 0)  
  
    elif jug1 < max1:  
        pour(max1, jug2)  
  
    elif jug1 < (max2-jug2):  
        pour(0, (jug1+jug2))  
  
    else:  
        pour(jug1-(max2-jug2), (max2-jug2)+jug2)  
  
pour(0, 0)
```

Output:

JUG1	JUG2
0	0
JUG1	JUG2
3	0
JUG1	JUG2
0	3
JUG1	JUG2
3	3
JUG1	JUG2
2	4
JUG1	JUG2
0	2