def pour(jug1, jug2):

    max1, max2, goal = 3, 4, 2  # Capacities of Jug1, Jug2 and Target

    print(jug1, "\t", jug2)

    if jug1 == goal or jug2 == goal:

        print("Goal reached!")

        return

    # Case 1: Fill Jug2

    if jug2 == max2:

        pour(0, jug1)

    # Case 2: Transfer from Jug1 to Jug2

    elif jug1 > 0 and jug2 < max2:

        total = jug1 + jug2

        if total <= max2:

            pour(0, total)

        else:

            pour(jug1 - (max2 - jug2), max2)

    # Case 3: Jug2 is empty, transfer from Jug1

    elif jug1 != 0 and jug2 == 0:

        pour(0, jug1)

    # Case 4: Fill Jug1

    elif jug1 < max1:

        pour(max1, jug2)

    else:

        return

# --- Main Execution ---

print("JUG1\tJUG2")

pour(0, 0)

JUG1 JUG2

0 0

3 0

0 3

3 3

2 4

Goal reached!