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## Problem Statement :

Write a program for Water jug problem using appropriate knowledge representation and reasoning techniques.

In [1]:
```python
x = 0
y = 0
m = 4
n = 3
```

In [2]:
```python
print("Initial state = (0,0)")
print("Capacities = (4,3)")
print("Goal state = (2,y)")
```

```
Initial state = (0,0)
Capacities = (4,3)
Goal state = (2,y)
```

In [3]:
```python
while x != 2:
    r = input("RULES\n\n1. Fill X\n2. Fill Y\n3. Empty X\n4. Empty Y\n5. Fill Y from X\n6. Fill X from Y\n7. Tran
    r = int(r)
    if(r == 1):
        x = m
    elif(r == 2):
        y = n
    elif(r == 3):
        x = 0
    elif(r == 4):
        y = 0
    elif(r == 5):
        t = n - y
        y = n
        x -= t
    elif(r == 6):
        t = m - x
        x = m
        y -= t
    elif(r == 7):
        y += x
        x = 0
    elif(r == 8):
        x += y
        y = 0
    print (x, y)
```

```
RULES

1. Fill X
2. Fill Y
3. Empty X
4. Empty Y
5. Fill Y from X
6. Fill X from Y
7. Transfer from X to Y
8. Transfer from Y to X

Enter rule: 2
0 3
RULES

1. Fill X
2. Fill Y
3. Empty X
4. Empty Y
5. Fill Y from X
6. Fill X from Y
7. Transfer from X to Y
8. Transfer from Y to X

Enter rule: 8
3 0
RULES

1. Fill X
2. Fill Y
3. Empty X
4. Empty Y
5. Fill Y from X
6. Fill X from Y
7. Transfer from X to Y
8. Transfer from Y to X

Enter rule: 2
3 3
RULES

1. Fill X
2. Fill Y
3. Empty X
4. Empty Y
5. Fill Y from X
6. Fill X from Y
7. Transfer from X to Y
8. Transfer from Y to X

Enter rule: 6
4 2
RULES

1. Fill X
2. Fill Y
3. Empty X
4. Empty Y
5. Fill Y from X
6. Fill X from Y
7. Transfer from X to Y
8. Transfer from Y to X

Enter rule: 3
0 2
RULES

1. Fill X
2. Fill Y
3. Empty X
4. Empty Y
5. Fill Y from X
6. Fill X from Y
7. Transfer from X to Y
8. Transfer from Y to X

Enter rule: 8
2 0
```

In [ ]: