Flood Fill

A recursive algorithm similar to depth-first search

The problem: How many chambers?

Solution: 6 chambers

(corrected from miscounted version used in lecture)
main:
for each cell in the cave
if the cell currently holds air
    choose a new color of water
    spread that water as far as it can reach

spread the water (row, col):
    if cave[row][col] holds air
        put water here
        spread water to the left
        spread water to the right
        spread water up
        spread water down

What are the base cases?
How do we know it doesn’t run forever?