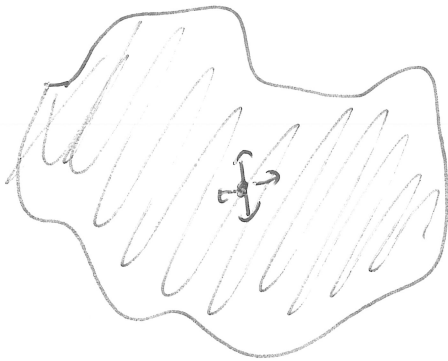


COP3502 1/26/22

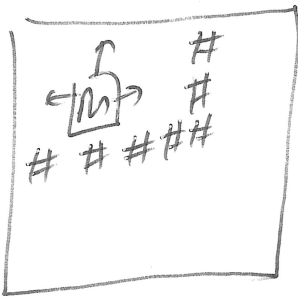
Flood fill



Paint prog
fill region



Leak - where does
it stop



General Set up

- 1) 2D grid (3D allowed but I won't give these!)
- 2) "you" start somewhere
- 3) Rules of movement to adjacent squares
- 4) Forbidden/Boundary Squares

Goal: Mark all reachable locations from
where you start.

How to CODE

Recursion

fill (int x, int y, int** grid, int** used) {

// mark
used[x][y] = 1;
// grid[x][y] = 'X';

for (int i = 0; i < NUMDIR; i++) {

int nextx = x + DX[i];

int nexty = y + DY[i];

if (~~use~~ !inbounds(nextx, nexty)) continue;

if (used[nextx][nexty]) continue;

fill(nextx, nexty);

}

}

SIZE
↓ Gnd

OPTIONAL

USE THIS IF
you don't want
to change grid.

other stuff!

MOVEMENT

#define NUMDIR 4

const int DX[4] = { -1, 0, 0, 1 };

const int DY[4] = { 0, -1, 1, 0 };

(-1, 0), (0, -1), (0, 1), (1, 0)

0 1 2 3
↓ ↓ ↓ ↓

(-1, 0)
(0, -1) × (0, 1)
(1, 0)