# Backtracking -5

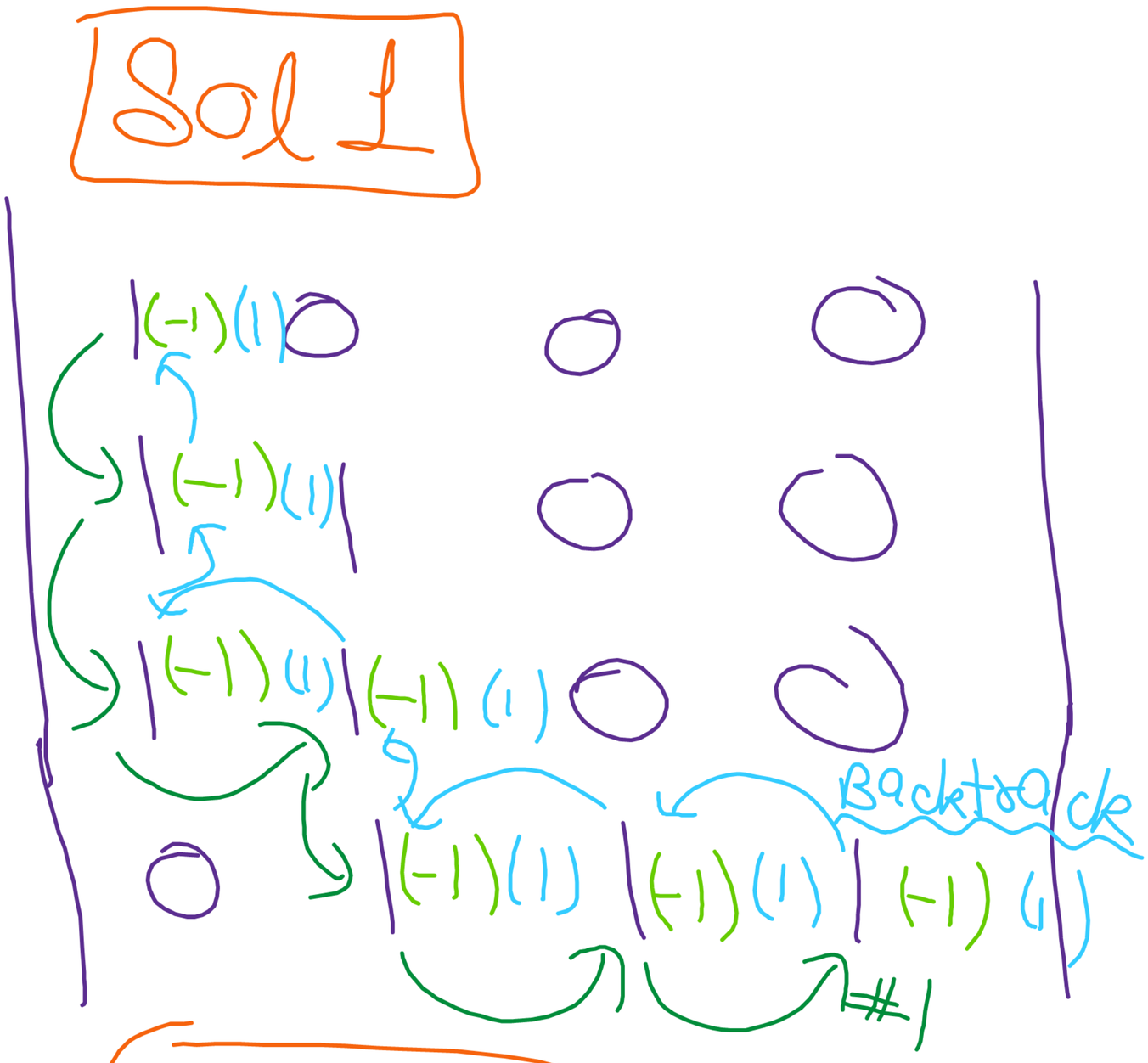
10 December 2025 14:40

## Rat in a Maze

maze : $\begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}$

Start
(0,0) → 1 (mark visited)
- helper(1,0,"D")
- D → ✓(1,0)
  - helper(2,0,'DD')
  - D → ✓(2,0)
    - helper(3,0,'DDD')
    - Return;
    - helper(2,1,'DDR')
    - R → ✓(2,1)
      - helper(3,1,DDRD)
      - D → ✓(3,1)
        - helper(4,1,DDRDD)
        - Return
        - helper(3,2,DDRDR)
        - R → (3,2) ✓
          - helper(3,3,DDRDRR) #1
          - R → (3,3) ✓
          - Base case reached → return
        - R → (3,2) → Return
      - D → (3,1) → Return
    - R → (2,1) → Return
- helper(1,1,DR)
- R → (1,1) ✓
  - helper(2,1,DRD)
  - D → (2,1) ✓
    - helper(3,1,DRDD)
    - D → ✓(3,1)
      - helper(3,2,DRDDR
      - R → ✓(3,2)
        - helper(3,3,DRDDRR)) #2
        - R → (3,3) ✓
        - Base case arrived → return

## Sol 1




## Sol 2