

## 286. Walls and Gates

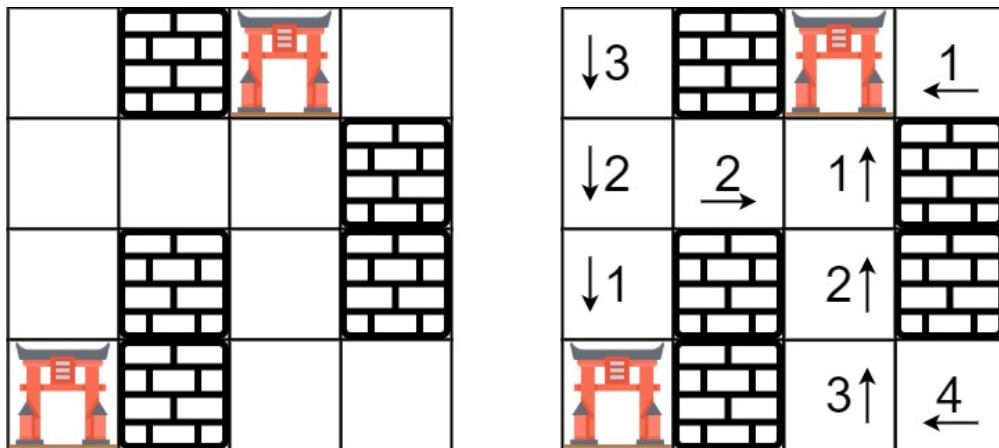
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You are given an  $m \times n$  grid `rooms` initialized with these three possible values.

- $-1$  A wall or an obstacle.
- $0$  A gate.
- $\text{INF}$  Infinity means an empty room. We use the value  $2^{31} - 1 = 2147483647$  to represent  $\text{INF}$  as you may assume that the distance to a gate is less than  $2147483647$ .

Fill each empty room with the distance to *its nearest gate*. If it is impossible to reach a gate, it should be filled with  $\text{INF}$ .

### Example 1:



**Input:** `rooms = [[2147483647,-1,0,2147483647],[2147483647,2147483647,2147483647,-1],[2147483647,-1,2147483647,-1],[0,-1,2147483647,2147483647]]`

**Output:** `[[3,-1,0,1],[2,2,1,-1],[1,-1,2,-1],[0,-1,3,4]]`

### Example 2:

**Input:** `rooms = [[-1]]`

**Output:** `[[ -1]]`

### Constraints:

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