

Walls and Gates

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

-1 A wall or an obstacle.

0 A gate.

INF Infinity means an empty room.

We use the value $2^{31} - 1 = 2147483647$ to represent 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 INF.

```
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]
]
```

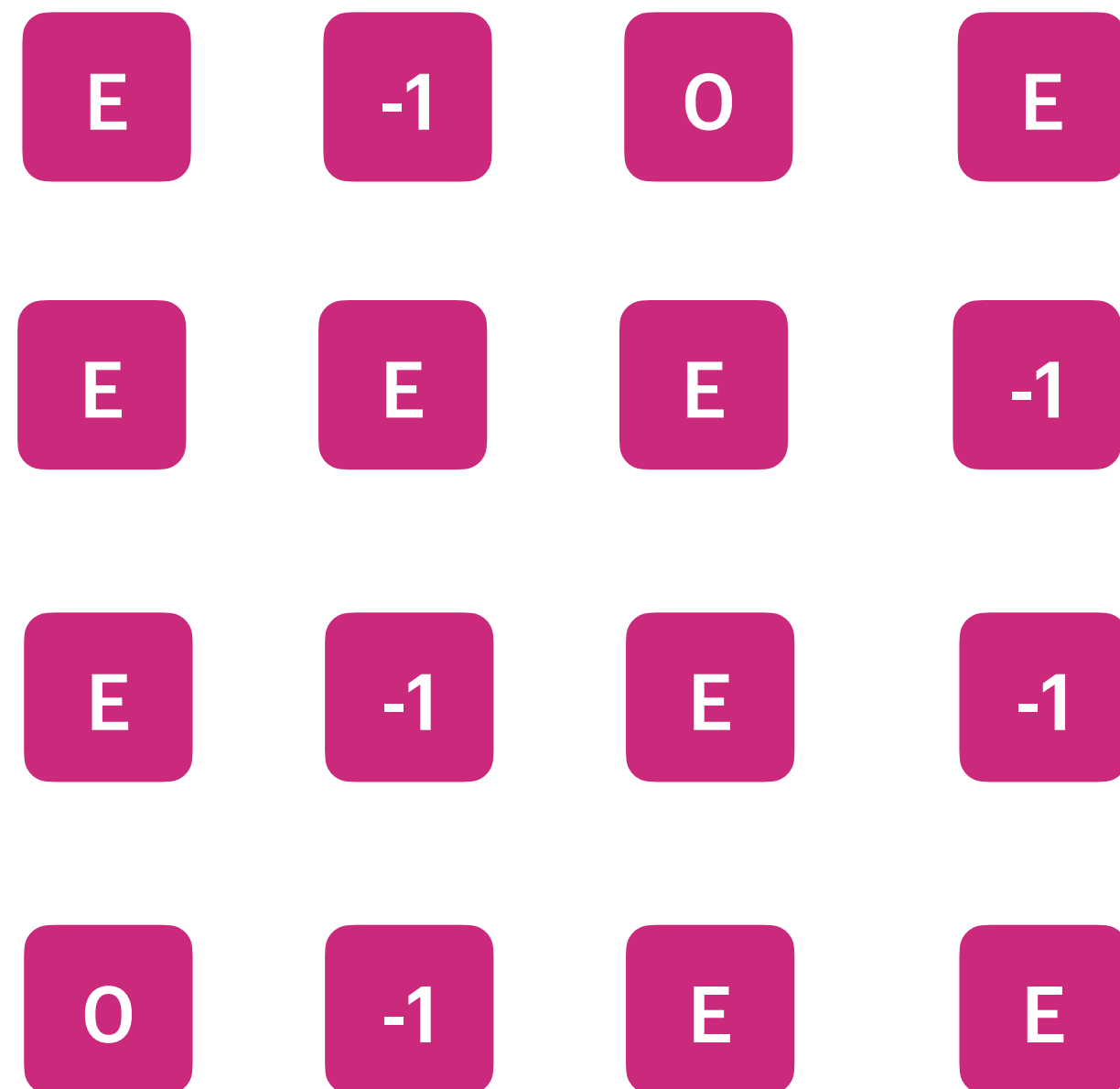
```
Input: rooms = [[-1]]
Output: [[-1]]
```

```
m == rooms.length
n == rooms[i].length
1 <= m, n <= 250
rooms[i][j] is -1, 0, or 231 - 1.
```

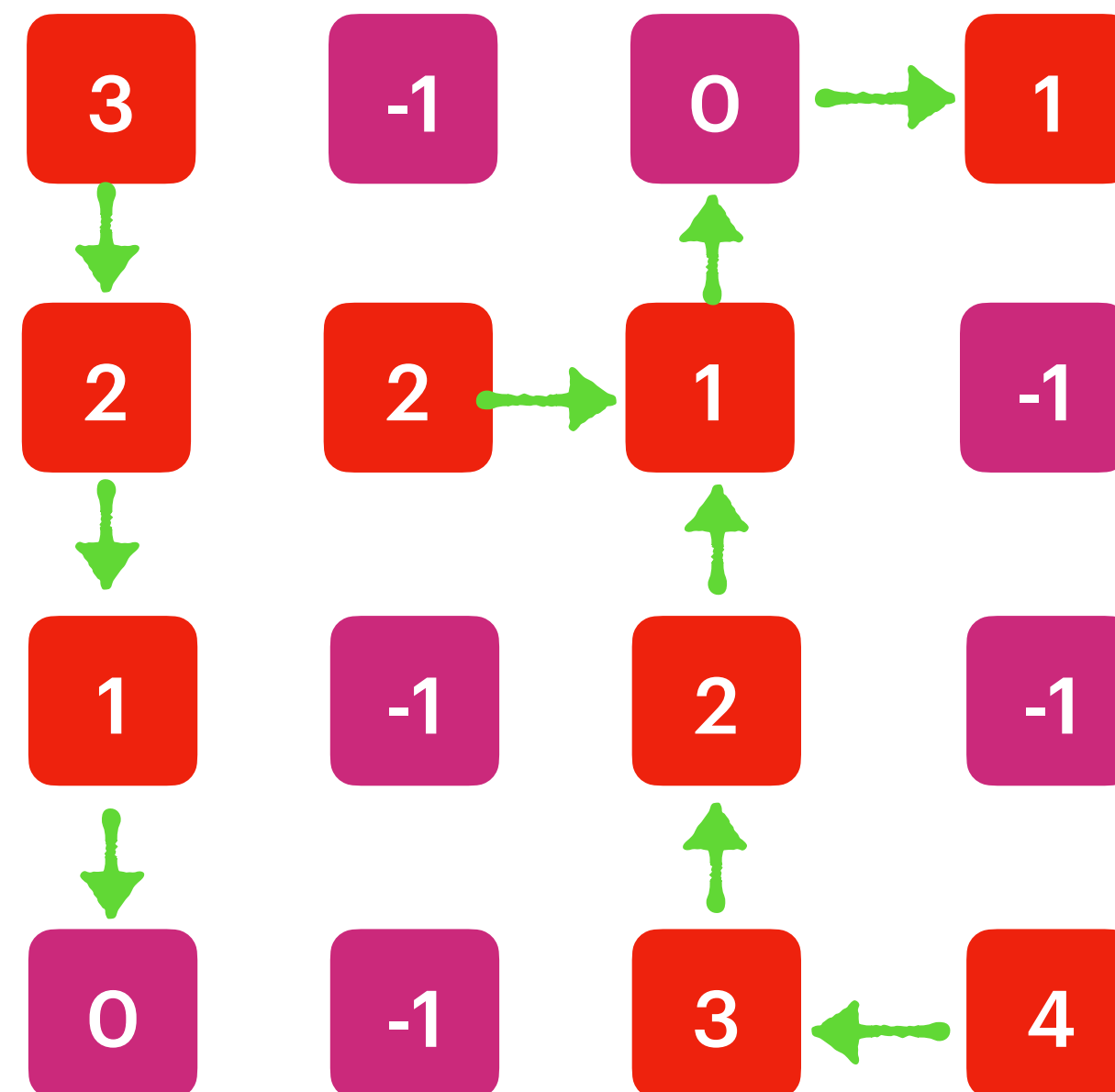
[
[E,-1,O,E],
[E,E,E,-1],
[E,-1,E,-1],
[O,-1,E,E]
]

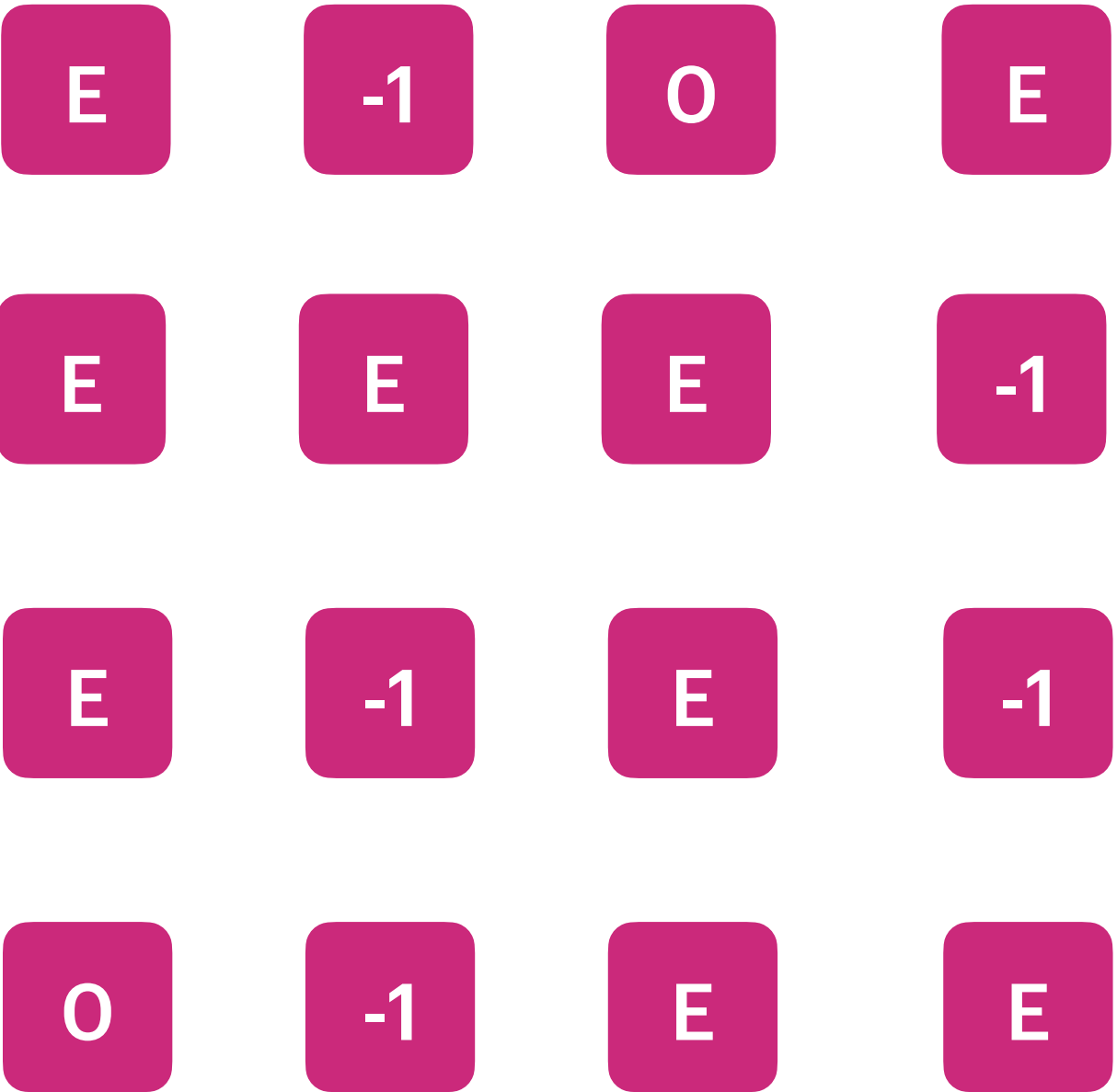
E = Integer.MAX_VALUE = Empty Room
-1 = Wall
0 = Gate

Fill the Empty Room with nearest possible distance

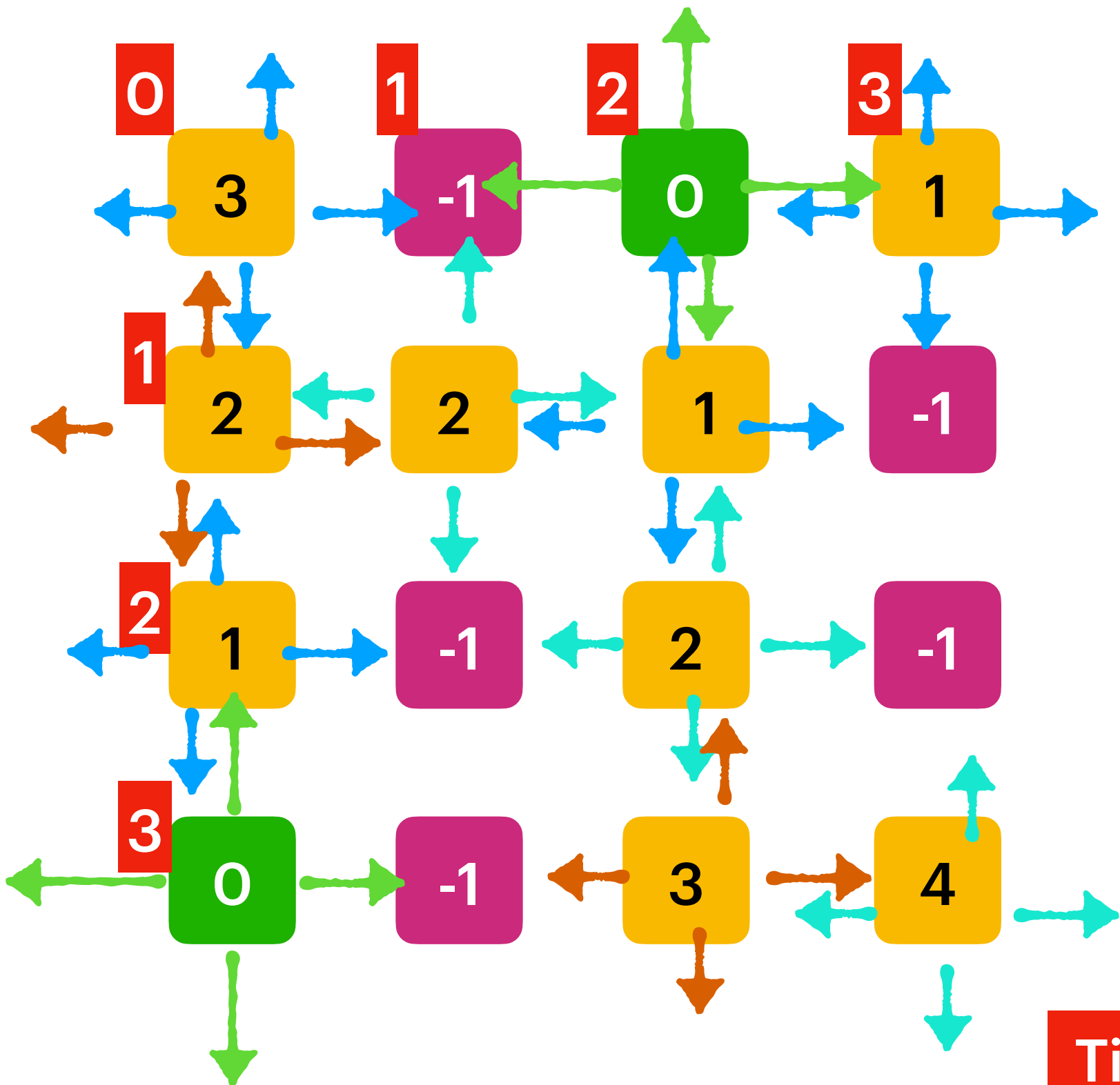


=





=



[
[3,-1,0,1],
[2,2,1,-1],
[1,-1,2,-1],
[0,-1,3,4]
]

Time Complexity : $O(MN)$
Space Complexity : $O(MN)$

Queue : []

