Problem Pattern

1. What will be the value of distance for an empty room? The answer will be the minimum of all the distances from the empty to the gate.
2. Can you think of O(n) solution?
3. Be careful to check if your solution works for the case when no gate is present.

Problem Approach

1. Since we are interested in the minimum distance we have to perform a BFS for every gates.
2. Hence, insert all the positions where you find a gate in the queue.
3. Now perform a BFS and make sure to not enter a cell which is marked as an obstacle.
4. Insert a cell in the queue only if the current distance is less than the distance marked previously.
5. In this way, we will eventually get the minimum distance for all the cells.