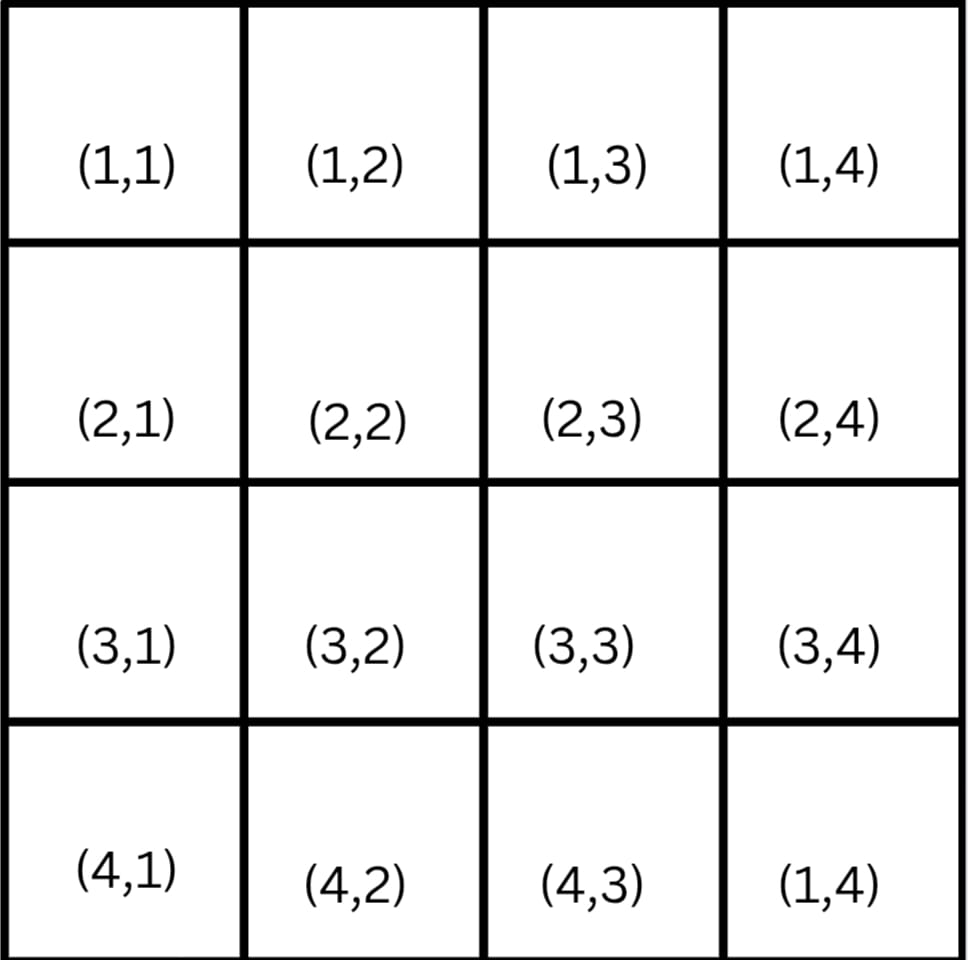
4-QUEENS PROBLEM:

The 4-Queens Problem involves **placing four queens on a 4x4 chessboard so that no two queens attack each other**. This means no two queens can be placed in the same row, column, or diagonal.



METHOD 1:

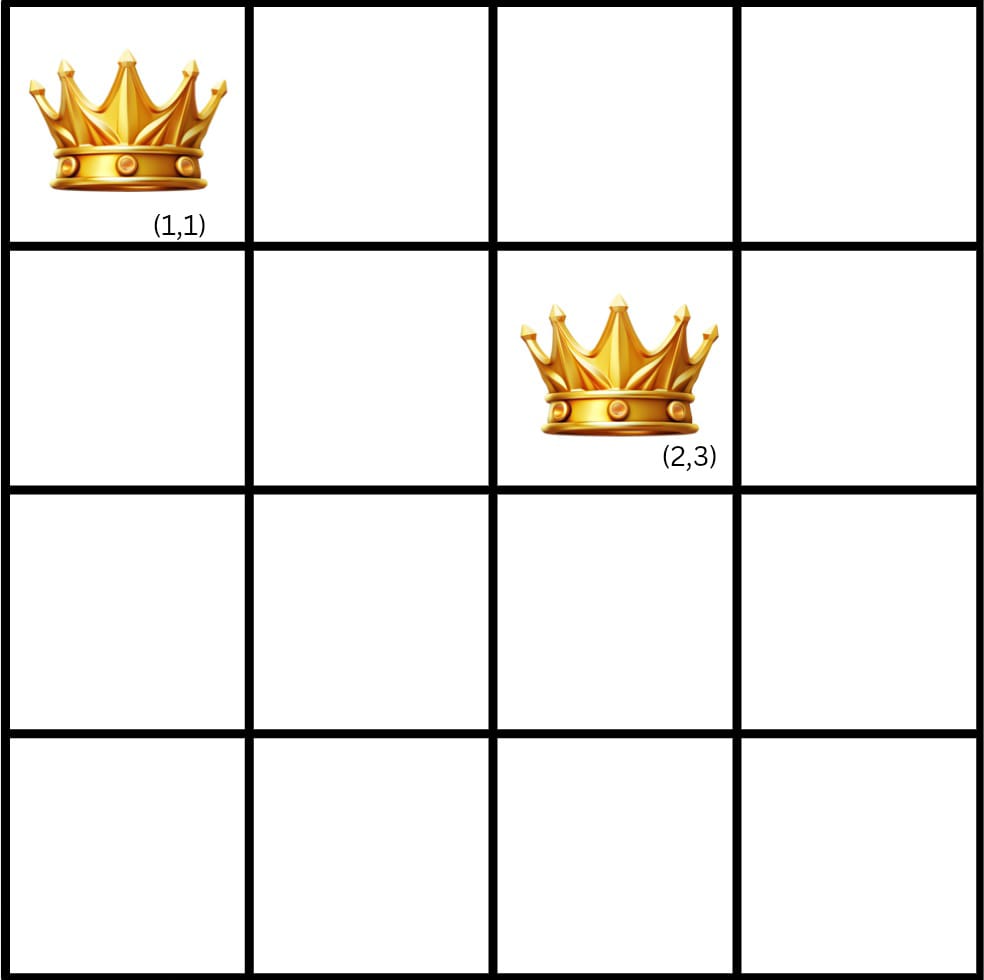
Steps to follow:

1. Place Q1 in (1,1)

2. Place Q2 in (2,3)

3. Now there is no appropriate place for Q3 in the matrix because in the third row there is no place left that satisfies the question’s requirements.

Therefore, the method 1 fails.



METHOD 2

Steps to follow:

1. Place Q1 in (1,2)

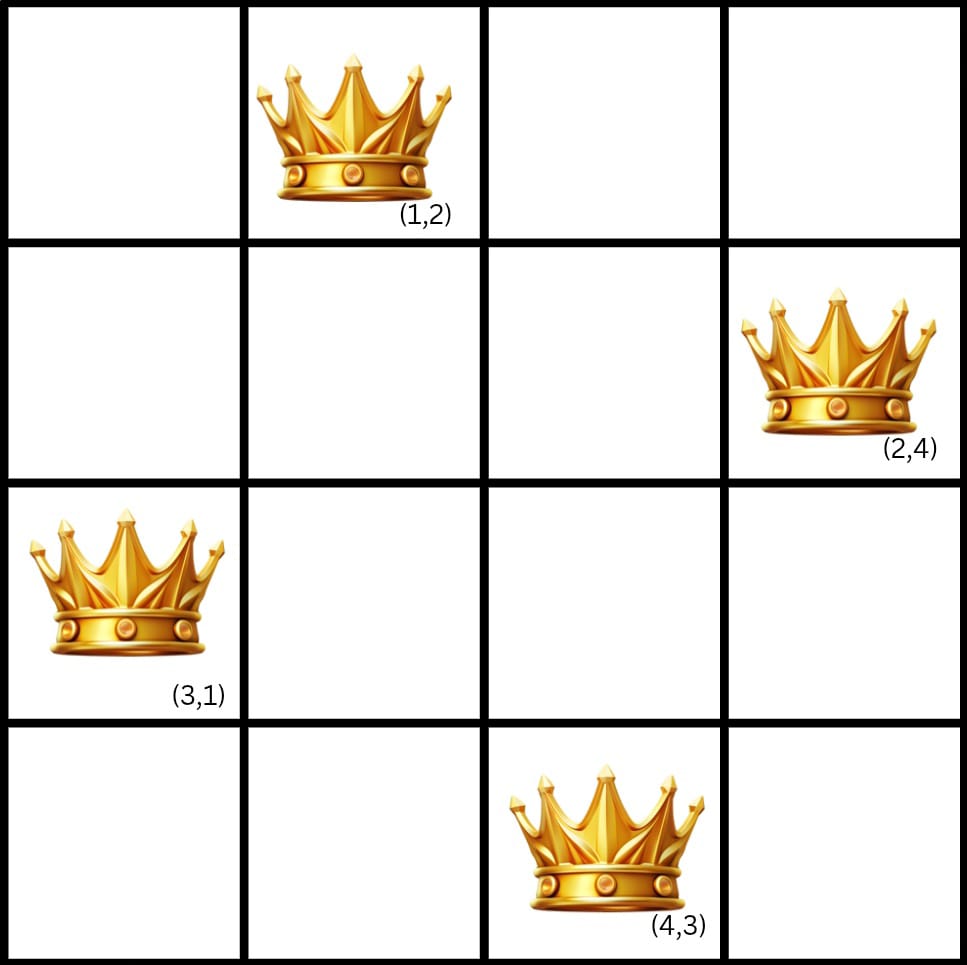
2. Place Q2 in (2,4)

3. Place Q3 in (3,1)

4. Now place Q4 in (4,3)

5. Therefore, none of the queens violate any of the rules.

6. So, the method 2 is successful.



METHOD 3

Steps to follow:

1. Place Q1 in (1,3)

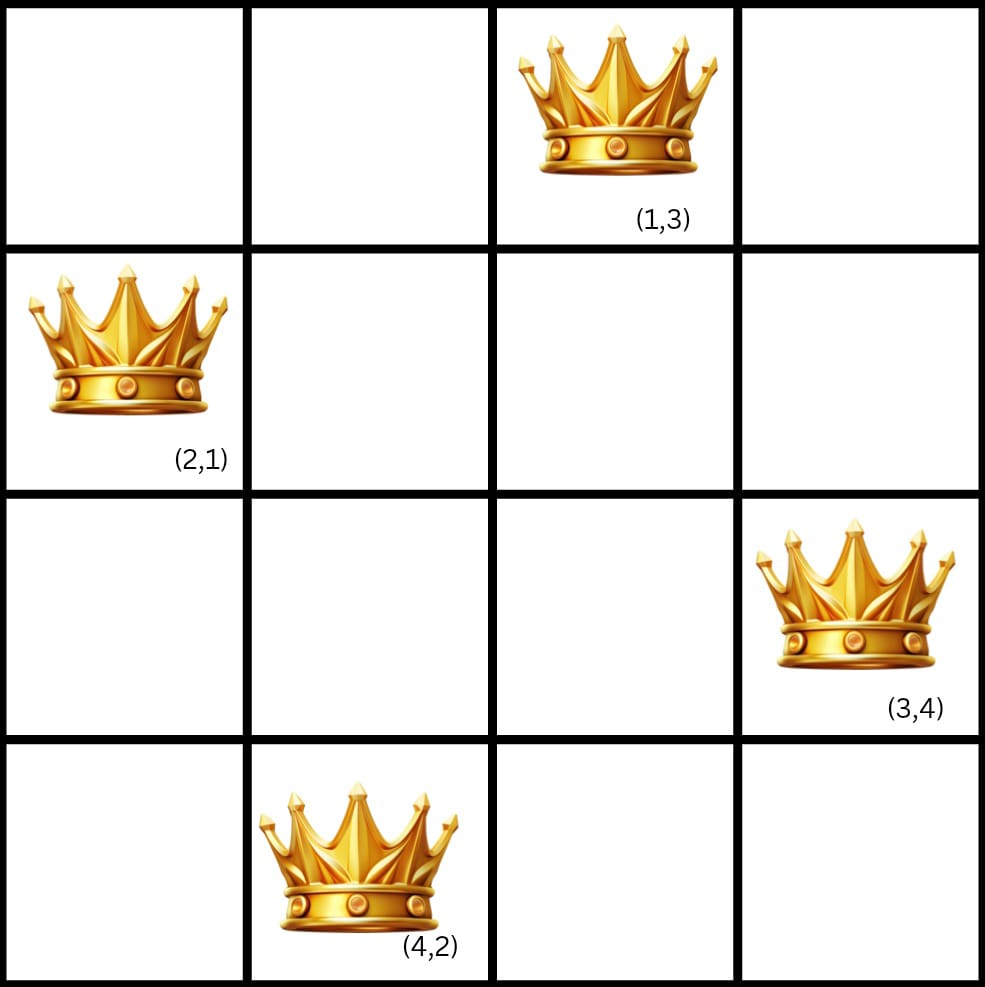
2. Place Q2 in (2,1)

3. Place Q3 in (3,4)

4. Place Q4 in (4,2)

5. Hence all queens are placed according to the condition mentioned in the question.

6. Therefore, the Method 3 is successful.



METHOD 4

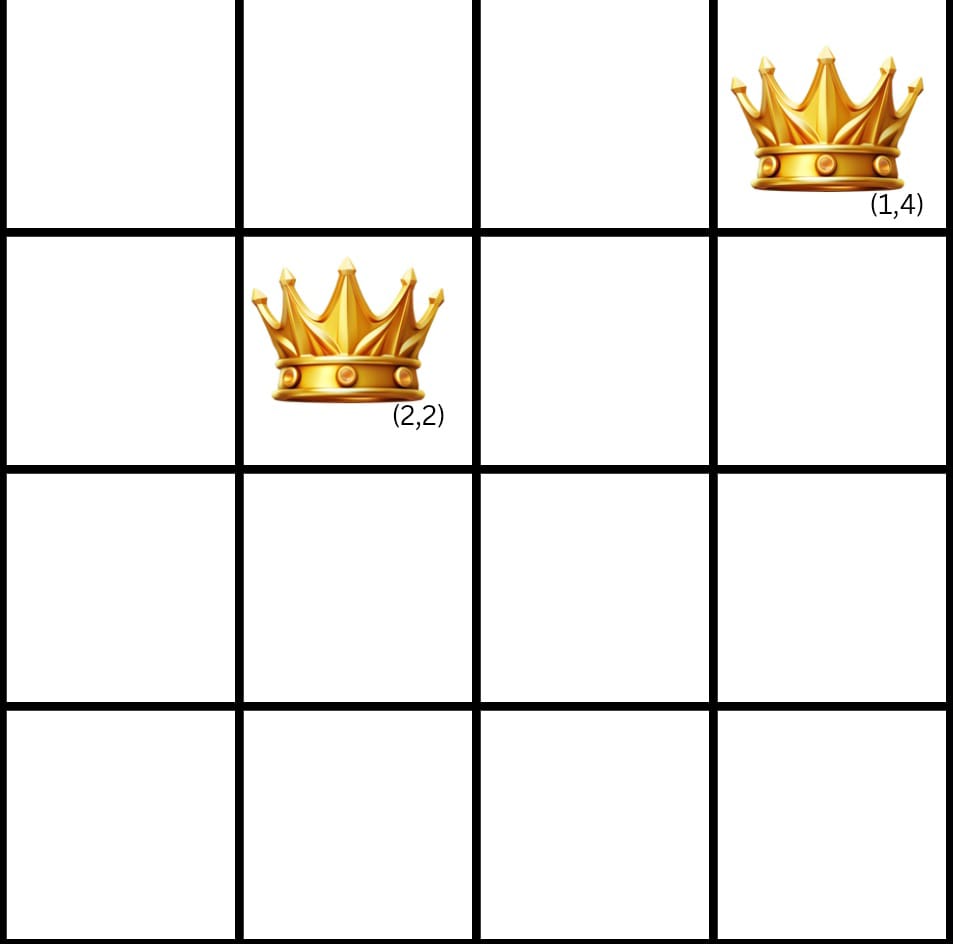
Steps to follow:

1. Place Q1 in (1,4)

2. Place Q2 in (2,2)

3. Now, we have no appropriate position left for Q3.

Therefore, this method fails.



METHOD 5

Steps to follow:

1. Place Q1 in (1,4)

2. Place Q2 in (2,1)

3. Place Q3 in (3,3)

4. Now there is no appropriate position left for Q4.

Therefore, this method also fails.

