

54. Spiral Matrix

Description

Hints

Submissions

Discuss

Solution

Pick One

Given a matrix of $m \times n$ elements (m rows, n columns), return all elements of the matrix in spiral order.

Example 1:

Input:

```
[
  [ 1, 2, 3 ],
  [ 4, 5, 6 ],
  [ 7, 8, 9 ]
]
```

Output: [1,2,3,6,9,8,7,4,5]

Example 2:

Input:

```
[
  [ 1, 2, 3, 4 ],
  [ 5, 6, 7, 8 ],
  [ 9,10,11,12 ]
]
```

Output: [1,2,3,4,8,12,11,10,9,5,6,7]

Seen this question in a real interview before? ☐ Yes ☐ No



```

public class L54 {

    public List<Integer> spiralOrder(int [][] matrix) {
        List<Integer> res = new ArrayList<Integer>();

        if(matrix.length == 0)
            return res;

        int rows = matrix.length;
        int cols = matrix[0].length;

        //math.ceil是浮点数向上取整，最小值除以2，向上取整，layes的关键点是求圈数
        int layes = (int) Math.ceil((Math.min(rows, cols)) / 2.0);

        //要打印的圈数
        for(int i = 0; i < layes; i++) {
            //打印每圈
            //左至右
            for(int k = i; k < cols - i; k++)
                res.add(matrix[i][k]);
            //右上至右下
            for(int j = i + 1; j < rows - i; j++)
                res.add(matrix[j][cols - i - 1]);
            //注意k和j开始的下标，右至左 (row - i - 1 != i) 避免重复打印第i行
            for(int k = cols - i - 2; (k >= i) && (rows - i - 1 != i); k--)
                res.add(matrix[rows - i - 1][k]);
            //左下至左上，(cols - i - 1 != i) 避免重复打印第i列，这儿是j > i
            for(int j = rows - i - 2; (j > i) && (cols - i - 1 != i); j--)
                res.add(matrix[j][i]);
        }

        return res;
    }
}

```