# 1439. Find the Kth Smallest Sum of a Matrix With Sorted Rows

## Description

You are given an `m x n` matrix `mat` that has its rows sorted in non-decreasing order and an integer `k`.

You are allowed to choose **exactly one element** from each row to form an array.

Return *the* `k th` *smallest array sum among all possible arrays*.

**Example 1:**

```
Input: mat = [[1,3,11],[2,4,6]], k = 5
Output: 7
Explanation: Choosing one element from each row, the first k smallest sum are:
[1,2], [1,4], [3,2], [3,4], [1,6]. Where the 5th sum is 7.
```

**Example 2:**

```
Input: mat = [[1,3,11],[2,4,6]], k = 9
Output: 17
```

**Example 3:**

```
Input: mat = [[1,10,10],[1,4,5],[2,3,6]], k = 7
Output: 9
Explanation: Choosing one element from each row, the first k smallest sum are:
[1,1,2], [1,1,3], [1,4,2], [1,4,3], [1,1,6], [1,5,2], [1,5,3]. Where the 7th sum is 9.
```

**Constraints:**

- `m == mat.length`
- `n == mat.length[i]`
- `1 <= m, n <= 40`
- `1 <= mat[i][j] <= 5000`
- `1 <= k <= min(200, n`$^m$`)`
- `mat[i]` is a non-decreasing array.