# 373. Find K Pairs with Smallest Sums

## Description

You are given two integer arrays `nums1` and `nums2` sorted in **non-decreasing order** and an integer `k`.

Define a pair `(u, v)` which consists of one element from the first array and one element from the second array.

Return *the* `k` *pairs* $(u_1, v_1), (u_2, v_2), \ldots, (u_k, v_k)$ *with the smallest sums*.

### Example 1:

```
Input: nums1 = [1,7,11], nums2 = [2,4,6], k = 3
Output: [[1,2],[1,4],[1,6]]
Explanation: The first 3 pairs are returned from the sequence: [1,2],[1,4],[1,6],[7,2],[7,4],[11,2],[7,6],[11,4],[11,6]
```

### Example 2:

```
Input: nums1 = [1,1,2], nums2 = [1,2,3], k = 2
Output: [[1,1],[1,1]]
Explanation: The first 2 pairs are returned from the sequence: [1,1],[1,1],[1,2],[2,1],[1,2],[2,2],[1,3],[1,3],[2,3]
```

### Example 3:

```
Input: nums1 = [1,2], nums2 = [3], k = 3
Output: [[1,3],[2,3]]
Explanation: All possible pairs are returned from the sequence: [1,3],[2,3]
```

### Constraints:

- $1 \le nums1.length, nums2.length \le 10^5$
- $-10^9 \le nums1[i], nums2[i] \le 10^9$
- `nums1` and `nums2` both are sorted in **non-decreasing order**.
- $1 \le k \le 10^4$
- `k <= nums1.length * nums2.length`