

## Find K Pairs with Smallest Sums

You are given two integer arrays `nums1` and `nums2` sorted in **ascending 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  $(u_1, v_1), (u_2, v_2), \dots, (u_k, v_k)$  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:**

- $1 \leq \text{nums1.length}, \text{nums2.length} \leq 10^5$
- $-10^9 \leq \text{nums1}[i], \text{nums2}[i] \leq 10^9$
- `nums1` and `nums2` both are sorted in **ascending order**.
- $1 \leq k \leq 10^4$