

Valid Arrangement of Pairs

You are given a **0-indexed** 2D integer array `pairs` where `pairs[i] = [starti, endi]`. An arrangement of pairs is **valid** if for every index i where $1 \leq i < \text{pairs.length}$, we have $\text{end}_{i-1} == \text{start}_i$.

Return **any** valid arrangement of pairs.

Note: The inputs will be generated such that there exists a valid arrangement of pairs.

Example 1:

Input: `pairs = [[5,1],[4,5],[11,9],[9,4]]`

Output: `[[11,9],[9,4],[4,5],[5,1]]`

Explanation:

This is a valid arrangement since end_{i-1} always equals start_i .

$$\text{end}_0 = 9 == 9 = \text{start}_1$$

$$\text{end}_1 = 4 == 4 = \text{start}_2$$

$$\text{end}_2 = 5 == 5 = \text{start}_3$$

Example 2:

Input: `pairs = [[1,3],[3,2],[2,1]]`

Output: `[[1,3],[3,2],[2,1]]`

Explanation:

This is a valid arrangement since end_{i-1} always equals start_i .

$$\text{end}_0 = 3 == 3 = \text{start}_1$$

$$\text{end}_1 = 2 == 2 = \text{start}_2$$

The arrangements `[[2,1],[1,3],[3,2]]` and `[[3,2],[2,1],[1,3]]` are also valid.

Example 3:

Input: pairs = [[1,2],[1,3],[2,1]]

Output: [[1,2],[2,1],[1,3]]

Explanation:

This is a valid arrangement since end_{i-1} always equals start_i .

$\text{end}_0 = 2 == 2 = \text{start}_1$

$\text{end}_1 = 1 == 1 = \text{start}_2$

Constraints:

- $1 \leq \text{pairs.length} \leq 10^5$
- $\text{pairs}[i].\text{length} == 2$
- $0 \leq \text{start}_i, \text{end}_i \leq 10^9$
- $\text{start}_i \neq \text{end}_i$
- No two pairs are exactly the same.
- There **exists** a valid arrangement of pairs.