Problem Title

Optimized Aggregation & Fair Distribution of Warehouse Orders (Multiple Products per Order)

Problem Statement

- You have **w** warehouses (1 ≤ w ≤ 10,000).
- For each warehouse:
  - You have **n** procurement partners.
  - You receive **o** orders (1 ≤ o ≤ 100).
  - Each order contains **c** (product, quantity) entries (where c can vary per order).
- **Step 1 (Aggregation):**
  - Combine all (product, quantity) data in the warehouse to figure out the total quantity for each unique product.
- **Step 2 (Distribution):**
  - Distribute the total quantity of each product **as evenly as possible** among the n partners.
  - If a product's total quantity is 1, assign it to **any one** partner.
- **Goal:**
  - Provide an output that shows, for each partner, the quantities of each product they are responsible for.

Input Format

1. An integer **w** for the number of warehouses.
2. For each warehouse:
   - An integer **n** for the number of procurement partners.
   - An integer **o** for the number of orders.
   - For each of the **o** orders:
     - An integer **c**, the number of (product, quantity) entries in that order.
     - Then **c** lines follow, each with:
       - A **product ID** (integer).
       - A **quantity** (integer).

Output Format

- For each warehouse:
  - Print **n** lines (one per procurement partner).
  - Each line shows a mapping of product IDs to quantities, for example:
    `Partner X: {product_id1: quantity1, product_id2: quantity2, ...}`

Example

Input

```
1               // w = 1 warehouse
5               // n = 5 partners
2               // o = 2 orders
2               // First order has 2 (product, quantity) entries
101 2
101 3
3               // Second order has 3 (product, quantity) entries
202 1
303 4
303 6
```

Aggregation

- Product 101 → 2 + 3 = 5
- Product 202 → 1
- Product 303 → 4 + 6 = 10

Distribution (One Possible Valid Output)

```
Partner 1: {101: 1, 202: 1, 303: 2}
Partner 2: {101: 1, 303: 2}
Partner 3: {101: 1, 303: 2}
Partner 4: {101: 1, 303: 2}
Partner 5: {101: 1, 303: 2}
```

Constraints and Considerations

- Up to 20 unique products per warehouse (after aggregation).
- Quantities can be very large (up to 1e9).
- Keep **aggregation** efficient (roughly O(total number of product entries per warehouse)).
- Keep **distribution** efficient (roughly proportional to the number of unique products).
- Minimize extra storage, ideally using a structure sized around the number of partners and number of unique products.