

1801. Number of Orders in the Backlog

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You are given a 2D integer array `orders`, where each `orders[i] = [pricei, amounti, orderTypei]` denotes that `amounti` orders have been placed of type `orderTypei` at the price `pricei`. The `orderTypei` is:

- 0 if it is a batch of `buy` orders, or
- 1 if it is a batch of `sell` orders.

Note that `orders[i]` represents a batch of `amounti` independent orders with the same price and order type. All orders represented by `orders[i]` will be placed before all orders represented by `orders[i+1]` for all valid `i`.

There is a **backlog** that consists of orders that have not been executed. The backlog is initially empty. When an order is placed, the following happens:

- If the order is a `buy` order, you look at the `sell` order with the **smallest** price in the backlog. If that `sell` order's price is **smaller than or equal to** the current `buy` order's price, they will match and be executed, and that `sell` order will be removed from the backlog. Else, the `buy` order is added to the backlog.
- Vice versa, if the order is a `sell` order, you look at the `buy` order with the **largest** price in the backlog. If that `buy` order's price is **larger than or equal to** the current `sell` order's price, they will match and be executed, and that `buy` order will be removed from the backlog. Else, the `sell` order is added to the backlog.

Return the total **amount** of orders in the backlog after placing all the orders from the input. Since this number can be large, return it **modulo**  $10^9 + 7$ .

Example 1:

Buy Backlog:

10

10

10

10

10

5 buy orders for \$10

Sell Backlog:

Buy Backlog:

10

10

10

10

10

2 sell orders for \$15

Sell Backlog:

15

15

Buy Backlog:

10

10

10

10

10

1 sell order for \$25

Sell Backlog:

15

15

25

Buy Backlog:

10

10

10

10

10

30

4 buy orders for \$30

Sell Backlog:

~~15~~

~~15~~

~~25~~

**Input:** orders = [[10,5,0],[15,2,1],[25,1,1],[30,4,0]]

**Output:** 6

**Explanation:** Here is what happens with the orders:

- 5 orders of type buy with price 10 are placed. There are no sell orders, so the 5 orders are added to the backlog.
- 2 orders of type sell with price 15 are placed. There are no buy orders with prices larger than or equal to 15, so the 2 orders are added to the backlog.
- 1 order of type sell with price 25 is placed. There are no buy orders with prices larger than or equal to 25 in the backlog, so the order is added to the backlog.
- 4 orders of type buy with price 30 are placed. The first 2 orders are matched with the 2 sell orders of the least price, which were at price 15. The remaining 2 orders are added to the backlog. Finally, the backlog has 5 buy orders with price 10, and 1 buy order with price 30. So the total number of orders in the backlog is 6.

Example 2: