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Description

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1383. Maximum Performance of a Team

Hard 2565 67 Add to List Share

You are given two integers n and k and two integer arrays `speed` and `efficiency` both of length n . There are n engineers numbered from 1 to n . `speed[i]` and `efficiency[i]` represent the speed and efficiency of the i^{th} engineer respectively.

Choose **at most** k different engineers out of the n engineers to form a team with the maximum **performance**.

The performance of a team is the sum of their engineers' speeds multiplied by the minimum efficiency among their engineers.

Return *the maximum performance of this team*. Since the answer can be a huge number, return it **modulo** $10^9 + 7$.

Example 1:

Input: $n = 6$, `speed` = $[2,10,3,1,5,8]$, `efficiency` = $[5,4,3,9,7,2]$, $k = 2$
Output: 60
Explanation:
We have the maximum performance of the team by selecting engineer 2 (with speed=10 and efficiency=4) and engineer 5 (with speed=5 and efficiency=7). That is, performance = $(10 + 5) * \min(4, 7) = 60$.

Example 2:

Input: $n = 6$, `speed` = $[2,10,3,1,5,8]$, `efficiency` = $[5,4,3,9,7,2]$, $k = 3$
Output: 68
Explanation:
This is the same example as the first but $k = 3$. We can select engineer 1, engineer 2 and engineer 5 to get the maximum performance of the team. That is, performance = $(2 + 10 + 5) * \min(5, 4, 7) = 68$.

Example 3:

Input: $n = 6$, `speed` = $[2,10,3,1,5,8]$, `efficiency` = $[5,4,3,9,7,2]$, $k = 4$
Output: 72

Constraints:

- $1 \leq k \leq n \leq 10^5$
- `speed.length == n`
- `efficiency.length == n`
- $1 \leq \text{speed}[i] \leq 10^5$
- $1 \leq \text{efficiency}[i] \leq 10^8$

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```
class Solution {
    public int maxPerformance(int n, int[] speed, int[] efficiency, int k) {
    }
}
```

⌵ Problems

✂ Pick One

⏪ Prev

1383/2408

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