Luck Balance ☆

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Lena is preparing for an important coding competition that is preceded by a number of sequential preliminary contests. Initially, her luck balance is 0. She believes in "saving luck", and wants to check her theory. Each contest is described by two integers, $L[i]$ and $T[i]$:

- $L[i]$ is the amount of luck associated with a contest. If Lena wins the contest, her luck balance will decrease by $L[i]$; if she loses it, her luck balance will increase by $L[i]$.
- $T[i]$ denotes the contest's importance rating. It's equal to 1 if the contest is important, and it's equal to 0 if it's unimportant.

If Lena loses no more than k important contests, what is the maximum amount of luck she can have after competing in all the preliminary contests? This value may be negative.

For example, $k = 2$ and:

```
Contest         L[i]    T[i]
1               5       1
2               1       1
3               4       0
```

If Lena loses all of the contests, her will be $5 + 1 + 4 = 10$. Since she is allowed to lose 2 important contests, and there are only 2 important contests. She can lose all three contests to maximize her luck at 10. If $k = 1$, she has to win at least 1 of the 2 important contests. She would choose to win the lowest value important contest worth 1. Her final luck will be $5 + 4 - 1 = 8$.

Function Description

Complete the luckBalance function in the editor below. It should return an integer that represents the maximum luck balance achievable.

luckBalance has the following parameter(s):

- k: the number of important contests Lena can lose
- contests: a 2D array of integers where each $contests[i]$ contains two integers that represent the luck balance and importance of the i^{th} contest.

Input Format

The first line contains two space-separated integers n and k, the number of preliminary contests and the maximum number of important contests Lena can lose.

Each of the next n lines contains two space-separated integers, $L[i]$ and $T[i]$, the contest's luck balance and its importance rating.

Constraints

- $1 \leq n \leq 100$
- $0 \leq k \leq N$
- $1 \leq L[i] \leq 10^4$
- $T[i] \in \{0, 1\}$

Output Format

Print a single integer denoting the maximum amount of luck Lena can have after all the contests.

Sample Input

```
6 3
5 1
2 1
1 1
8 1
10 0
5 0
```

Sample Output

```
29
```

Explanation

There are $n = 6$ contests. Of these contests, 4 are important and she cannot lose more than $k = 3$ of them. Lena maximizes her luck if she wins the 3^{rd} important contest (where $L[i] = 1$) and loses all of the other five contests for a total luck balance of $5 + 2 + 8 + 10 + 5 - 1 = 29$.

Change Theme C++

```
vector<string> split_string(string);
//https://freshlybuilt.com/luck-balance-hackerrank-solution-greedy-problem/
//https://www.youtube.com/watch?v=qzPJvIF-ph0&ab_channel=Abhi
int luckBalance(int k, vector<vector<int>> contests) {
    int ans=0;
    sort(contests.begin(), contests.end());
    reverse(contests.begin(), contests.end());
    int n = contests.size();

    for(int i=0; i<n; i++){
        if(contests[i][1]==0) ans+= contests[i][0];
        else if (k>0) {
            ans+= contests[i][0];
            k--;
        }
        else
            ans-= contests[i][0];
    }
return ans;
}
```

Line: 7 Col: 3

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Test case 0

Compiler Message

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Success

Input (stdin) Download

```
6 3
5 1
2 1
1 1
8 1
10 0
5 0
```

Expected Output Download