Week 7 Programming Assignment

Due on 2019-03-29, 23:59 IST

- Select your language (C/C++/Java/Python2/Python3)
- Paste your code into the submission window.
- There are some public test cases and some (hidden) private test cases.
- "Compile and run" will evaluate your submission against the public test cases.
- "Submit" will evaluate your submission against the hidden private test cases and report a score on 100. There are 10 private testcases in all, each with equal weightage. You will only get a score on 100. You will not get feedback on which private testcases passed or failed.
- Ignore warnings about "Presentation errors".

IOI Training Camp 20xx

(INOI 2011)

We are well into the 21st century and school children are taught dynamic programming in class 4. The IOI training camp has degenerated into an endless sequence of tests, with negative marking. At the end of the camp, each student is evaluated based on the sum of the best *contiguous segment (i.e., no gaps)* of marks in the overall sequence of tests.

Students, however, have not changed much over the years and they have asked for some relaxation in the evaluation procedure. As a concession, the camp coordinators have agreed that students are allowed to drop upto a certain number of tests when calculating their best segment.

For instance, suppose that Lavanya is a student at the training camp and there have been ten tests, in which her marks are as follows.

Test	1	2	3	4	5	6	7	8	9	10
Marks	6	-5	3	-7	6	-1	10	-8	-8	8

In this case, without being allowed to drop any tests, the best segment is tests 5–7, which yields a total of 15 marks. If Lavanya is allowed to drop upto 2 tests in a segment, the best segment is tests 1–7, which yields a total of 24 marks after dropping tests 2 and 4. If she is allowed to drop upto 6 tests in a segment, the best total is obtained by taking the entire list and dropping the 5 negative entries to get a total of 33.

You will be given a sequence of N test marks and a number K. You have to compute the sum of the best segment in the sequence when upto K marks may be dropped from the segment.

Solution hint

Input format

The first line of input contains two integers N and K, where N is the number of tests for which marks will be provided and K is the limit of how many entries may be dropped from a segment.

This is followed by N lines of input each containing a single integer. The marks for test i, i ∈ {1,2,...,N} are provided in line i+1.

Output format

The output is a single number, the maximum marks that can be obtained from a segment in which upto K values are dropped.

Constraints

You may assume that $1 \leq N \leq 10^4$ and $0 \leq K \leq 10^2$. The marks for each test lie in the range $[-10^4 \ldots 10^4]$. In 40% of the cases you may assume N ≤ 250.

Example:

We now illustrate the input and output formats using the example described above.

Sample input:

```
10 2
6
-5
3
-7
6
-1
10
-8
-8
8
```

Sample output:

```
24
```

Select the Language for this assignment. [-- ▼]

You may submit any number of times before the due date. The final submission will be considered for grading.
Assignment will be evaluated only after submitting using Submit button below. If you only save as or compile and run the Program,

Save as Draft	Compile & Run	Submit	Reset

Sample Test Cases

	Input	Output
	10 2	
	6	
	-5	
	3	
	-7	
Test Case 1	6	24
	-1	
	10	
	-8	
	-8	
	8	
	10 3	
	6	
	-5	
	3	
	-7	
Test Case 2	6	27
	-1	
	10	
	-8	
	-8	
	8	
	10 4	
	6	
	-5	
	3	
	-7	
Test Case 3	6	32
	-1	
	10	
	-8	
	-8	
	8	
	10 6	
	6	
	-5	
	3	
	-7	
Test Case 4	6	33
	-1	
	10	
	-8	
	-8	
	8	

End