

## GD5: Scheduling on many machines

[Optional]

### 問題描述：

There are  $N$  jobs to be processed by  $M$  machines, where  $N < 100,000$  and  $M < 10,000$ . A job cannot be partitioned and must be processed in one machine. The  $i$ -th job takes  $t(i)$  time no matter which machine you choose to process it. However, for the sake of fair, the jobs come earlier must be started to process earlier. Suppose that the jobs have been sorted by their incoming time. For  $i < j$ , job  $j$  cannot start before the time that job  $i$  starts. Write a program to compute the minimum completion time.

### 輸入說明：

The input consists of a number of test cases. The first line is an integer  $T$  which is the number of test cases, and the test cases follow one by one. The input of a test case consists of two lines. The first line contains two integers  $N$  and  $M$ , which are the numbers of jobs and machines, respectively. The second line consists of  $N$  integers, which are  $t(0), t(1), \dots, t(N-1)$ . Any two consecutive numbers in the same line are separated by a space. All the input and output numbers in this problem are 32-bit integers.

### 輸出說明：

Output the minimal completion time in one line.

### 範例：

Sample Input:	Sample Output:
1 5 2 2 3 1 5 4	8