



Question 1

Max. score: 100.00

1

Cricket training program

Bob is the coach of a cricket team and he has N players each having a training capacity of A_i . He also has M trainers with training capacity B_j which can train players for their better performance. Any trainer can train only one player and one player can take training from only one trainer.

Bob wants the maximum number of players from his team to get training from trainers. But the players can only take training from the trainer if the trainer's training capacity B_j ($1 \leq j \leq M$) is less than or equal to the training capacity of that player A_i .

Task

Determine the *maximum* number of players who can take training if trainers are assigned optimally.

Notes

- There can multiple players or trainers with the same training capacities.
- You have to output only the count of players who can get training from trainers.

Example

Assumptions

- $N = 3$
- $M = 3$
- $A = [20, 10, 30]$
- $B = [40, 5, 10]$

Approach

- For Player 1: $A_1 = 20$ can get training from trainer 2 having a training capacity of 5.
- For Player 2: $A_2 = 10$ can get training from trainer 3 having a training capacity of 10.
- For Player 3: $A_3 = 30$ cannot get any trainer as only one trainer is left with the capacity of 40.

Hence, the output is 2.

Function description

Complete the function *solve* provided in the editor. This function takes the following 4 parameters and returns the required answer:

- N : Represents the number of players
- M : Represents the number of trainers
- A : Represents the array consisting of the training capacity of all N players
- B : Represents the array consisting of the training capacity of all M trainers

Input format

Note: This is the input format that you must use to provide custom input (available above the **Compile and Test** button).

- The First line contains an integer T denoting the number of test cases. T also specifies the number of times you have to run the *solve* function on a different set of inputs.
- For each test case:
 - The first line contains two integers N and M .
 - The second line contains A denoting the array of size N .
 - The third line contains B denoting the array of size M .

Output format

For each test case in a new line, print the maximum number of players who can get trainers.

Constraints

$$1 \leq T \leq 10$$
$$1 \leq N, M \leq 10^5$$
$$1 \leq A_i, B_j \leq 10^9$$

Code snippets (also called starter code/boilerplate code)



Code snippets (also called starter code, boilerplate code)

This question has code snippets for C, CPP, Java, and Python.

Sample input

```
1
4 3
20 10 20 40
40 5 30
```

Sample output

```
2
```

Explanation

The first line contains the number of test cases, $T = 1$.

The first test case

Given

- $N = 4$
- $M = 3$
- $A = [20, 10, 20, 40]$
- $B = [40, 5, 30]$

Approach

- Player 2 having a training capacity of 10 can take training from trainer 2 who has a training capacity of 5.
- Player 4 having a training capacity of 40 can take training from either trainer 1 having a training capacity of 40 or trainer 3 having a training capacity of 30.

Hence, the maximum output is 2.

The following test cases are the actual test cases of this question that may be used to evaluate your submission.

Sample input 1

```
2
10 14
9 1 3 5 9 4 10 1 6 3
3 8 4 8 10 1 3 4 10 10 8 1 4 10
19 17
6 8 7 3 8 1 4 10 10 10 2 8 3 4 7 6 6 9 2
5 8 2 4 9 5 9 1 5 7 1 4 3 7 10 5 2
```

Sample output 1

```
10
17
```

Sample input 2

```
3
50 74
59 31 73 45 79 24 10 41 66 93 43 88 4 28 30 41 13 4 70 10 58 61 34 100 79 17 36
45 69 91 25 97 31 4 23 67 50 25 2 54 78 9 29 34 99 82 36 14 66 15 64 37 26 70 1
31 7
63 43 66 83 53 68 22 96 13 72 2 91 32 39 58 17 91 41 80 36 7 73 99 96 20 55 24
24 7 14 71 39 95 21
45 67
35 27 95 64 39 45 91 51 60 24 48 86 18 73 40 48 86 97 86 24 21 45 69 36 16 26 3
63 12 9 78 62 26 36 69 96 77 68 40 75 32 57 2 73 61 95 85 56 90 8 16 94 70 81 5
```

Sample output 2

```
50
7
45
```

Note:

Your code must be able to print the sample output from the provided sample input. However, your code is run against multiple hidden test cases. Therefore, your code must pass these hidden test cases to solve the problem statement.

Limits

Time Limit: 2.0 sec(s) for each input file
Memory Limit: 256 MB
Source Limit: 1024 KB

Scoring

Score is assigned if any testcase passes

Allowed Languages

New Submission

All Submissions

Auto-complete ready! Save C++17 (g++ 10.3.0)

```
1 #include<bits/stdc++.h>
2 using namespace std;
3 int solve(int arr[], int arm[], int n, int m )
4 {
5     int val = 0;
6     int count = 0 ;
7
8     sort(arr, arr + n);
9     sort(arr, arr + m);
10    int i , j ;
11    for( i = 0 ; i < n ;i++)
12    {
13        for(j = val ; j < m ;j++){
14
15            if ( arr[j] <= arr[i] && arr[j] > 0 ){
16                arr[j] = 0 ;
17                val = j ;
18                if(arr[j] == 0) count++ ;
19                break;
20            }
21        }
22    }
23 }
```

50:2 vscode



Test against custom input

Custom input populated

Compile & Test code

Submit code

Submission ID: 71158018 / 5 seconds ago

RESULT: Accepted

Refer judge environment

Time (sec)	Memory (KiB)	Language
3.52894	728	C++17

Visibility	Input	Result	Time (sec)	Memory (KiB)	Your Output	Correct Output
	Input #1	Accepted	0.009284	2		
	Input #2	Accepted	0.012444	2		
	Input #3	Accepted	0.012477	2	-	-
	Input #4	Accepted	0.009183	2	-	-
	Input #5	Accepted	0.020519	2	-	-
	Input #6	Accepted	0.685919	720	-	-
	Input #7	Accepted	0.712023	720	-	-
	Input #8	Accepted	0.671052	724	-	-
	Input #9	Accepted	0.711938	724	-	-
	Input #10	Accepted	0.684102	728	-	-

< Previous Question

Next Question >