# Flowchart Session-5

1. Input prices of 10 items and find the cheapest item price among them and the average of the prices of these listed items.

2. Given an array arr of integers of size n. We need to compute sum of elements from index i to index j. The queries consisting of i and j index values will be executed multiple times.

```
EXAMPLE
Input : arr[] = {1, 2, 3, 4, 5}
        i = 1, j = 3
        i = 2, j = 4
Output :  9
          12

Input : arr[] = {1, 2, 3, 4, 5}
        i = 0, j = 4
        i = 1, j = 2
Output : 15
           5
```

3. Given an array of n positive integers that represent lengths. Find out the maximum possible area whose four sides are picked from given array. Note that a rectangle can only be formed if there are two pairs of equal values in given array.

```
Example

Input : arr[] = {2, 1, 2, 5, 4, 4}

Output : 8

Explanation : Dimension will be 4 * 2


Input : arr[] = {2, 1, 3, 5, 4, 4}

Output : 0

Explanation : No rectangle possible
```

4. Given an array containing n numbers. The problem is to find the length of the longest contiguous subarray such that every element in the subarray is strictly greater than its previous element in the same subarray.

```
Example

Input : arr[] = {5, 6, 3, 5, 7, 8, 9, 1, 2}

Output : 5
```

```
The subarray is {3, 5, 7, 8, 9}

Input : arr[] = {12, 13, 1, 5, 4, 7, 8, 10, 10, 11}
Output : 4
The subarray is {4, 7, 8, 10}
```

5. Given an array of ratings for n books. Find the minimum cost to buy all books with below conditions :
   - Cost of every book would be at-least 1 dollar.
   - A book has higher cost than an adjacent (left or right) if rating is more than the adjacent.

```
Example

Input : Ratings[] = {1, 3, 4, 3, 7, 1}

Output : 10

Exp :- 1 + 2 + 3 + 1 + 2 + 1 = 10


Input : ratings[] = {1, 6, 8, 3, 4, 1, 5, 7}

Output : 15

Exp :- 1 + 2 + 3 + 1 + 2 + 1 + 2 + 3 = 15
```

6. Sidhu has an array A consisting of N positive integers. He would like to perform following operation on array.

   Pick some two elements a, b in the array (a could be same as b, but their corresponding indices in the array should not be same). Remove both the elements a and b and instead add a number x such that x lies between min(a, b) and max(a, b), both inclusive, (i.e. $\min(a, b) \leq x \leq \max(a, b)$).

   Now, as you know after applying the above operation N - 1 times, Sidhu will end up with a single number in the array. He is wondering whether it is possible to do the operations in such a way that he ends up a number t.

   He asks your help in answering Q such queries, each of them will contain an integer t and you have to tell whether it is possible to end up t.

**Input**

First line of the input contains two space separated integers N, Q denoting number of elements in A and number of queries for which Devu asks your help, respectively

Second line contains N space separated integers denoting the content of array A.

Each of the next Q lines, will contain a single integer t corresponding to the query.

**Output**

Output Q lines, each containing "Yes" or "No" (both without quotes) corresponding to the answer of corresponding query.

**Example**

Input 1:

1 2

1

1

2

**Output:**

Yes

No

**Input 2:**

2 4

1 3

1

2

3

4

**Output:**

Yes

Yes

Yes

No

**Explanation**

In the first example, Sidhu can't apply any operation. So the final element in the array will be 1 itself.

In the second example, Sidhu can replace 1 and 3 with any of the numbers among 1, 2, 3. Hence final element of the array could be 1, 2 or 3.

7. The Teacher had a box with N numbers arranged inside it: A1, A2, ..., AN. He also had the number N at the front, so that he knows how many numbers are in it. That is, the box actually contains N+1 numbers. But in his excitement due the ongoing IOI, he started dancing with the box in his pocket, and the N+1 numbers got jumbled up. So now, he no longer knows which of the N+1 numbers is N, and which the actual numbers are. He wants to find the largest of the N numbers. Help him find this.

**Input**

The first line of the input contains an integer T, denoting the number of test cases.
Each of the next T lines will contain N and N numbers, but it is not guaranteed that N is the first number.

**Output**
For each test case, output a single line containing the maximum value of the N numbers in that test case.

**Example**
Input:
3
1 2 1
3 1 2 8
1 5 1 4 3 2

**Output:**
1
8
4