CSE 4304
SWE B
Lab 12

These lab content focuses on use of BST to solve some problems.

Task1:

Problem
Given an array *A* of *N* integers, classify it as being Good Bad or Average. It is called Good, if it contains exactly *X* distinct integers, Bad if it contains less than *X* distinct integers and Average if it contains more than *X* distinct integers.

Input format:
First line consists of a single integer *T* denoting the number of test cases.
First line of each test case consists of two space separated integers denoting *N* and *X*.
Second line of each test case consists of *N* space separated integers denoting the array elements.

Output format:
Print the required answer for each test case on a new line.

Constraints:
$1 \le T \le 50$
$1 \le X, N \le 13000$
$1 \le A[i] \le 10^9$

Sample Input
4
4 1
1 4 2 5
4 2
4 2 1 5
4 3
5 2 4 1
4 4
1 2 4 5

Sample Output
Average
Average
Average
Good

Task 2:

Problem
Monk is standing at the door of his classroom. There are currently **N** students in the class, **i**'th student got $\mathbf{A_i}$ candies.
There are still **M** more students to come. At every instant, a student enters the class and wishes to be seated with a student who has **exactly** the same number of candies. For each student, Monk shouts YES if such a student is found, NO otherwise.

Input:
First line contains an integer **T**. **T** test cases follow.
First line of each case contains two space-separated integers **N** and **M**.
Second line contains **N** + **M** space-separated integers, the candies of the students.

Output:
For each test case, output **M** new line, Monk's answer to the **M** students.
Print "YES" (without the quotes) or "NO" (without the quotes) pertaining to the Monk's answer.

Constraints:
$1 \leq \mathbf{T} \leq 10$
$1 \leq \mathbf{N}, \mathbf{M} \leq 10^5$
$0 \leq \mathbf{A_i} \leq 10^{12}$

Sample Input
1
2 3
3 2 9 11 2

Sample Output
NO
NO
YES