The Three Eyed Raven

Bryan Stark was on his way to find the three eyed raven. Since he was a warg, he could sometimes foresee the future via some patterns in the surroundings. One night he had this strange dream when he saw a lot of numbers.

When he woke up, he called Jojen Reed who was sleeping nearby and told him about the dream, since Jojen was a warg as well and had knowledge about such dreams, he interpreted Bryan's dream as follows :

Since Bryan had seen a lot of numbers, there might be some connection between them and their journey to find the three eyed raven. Jojen interpreted it as if there is at least one number among all those numbers which Bryan had seen which is a prefix to some other number then they won't be able to find the three eyed raven, otherwise they will be successful in finding it.

Your job is to help Jojen and Bryan to check whether they will be able to find the three eyed raven or not.

Input

The first line of input contains "T", the total number of test cases, the first line of each testcase contains a number N representing the count of numbers which Bryan had seen, followed by N numbers(each number can be atmost 10 digits long).

Output

Print "YES" if they would be able to find the three eyed raven and "NO" otherwise.

Example

Input

2
2
3
32
3

7
12
45

Output

NO
YES