

Problem 8: Ben in the Middle

9 Points

Problem ID: kumi

Rank: 3

Introduction

After Miku decided to redirect all of Big Ben's links to [levan Polkka Hatsune Miku Cover](#), Big Ben has decided upon the path of revenge. In order to get the message through her thick skull, he decides to confront Miku in a language that she can understand: tampering with her packets!

Problem Statement

Given a number N , produce a string consisting of the characters u and w such that there are exactly N pairs of u 's that can be used to form the subsequence uwu . A string s is a subsequence of string t if s can be formed by deleting any number of characters from t while preserving the order of the remaining characters. If there are multiple solutions, output any one of them.

Input Format

The first line of the input contains a single integer T denoting the number of test cases that follow.

Each test case is described in a single line containing an integer N denoting the number of pairs of u 's your output string must allow to form the subsequence uwu .

Output Format

For each test case, output a string consisting of the characters u and w such that there are exactly N pairs of u 's that can be used to form the subsequence uwu . **Your output for each test case must be less than 10^5 characters.**

Constraints

$$1 \leq T \leq 30, 1 \leq N \leq 10^9$$

It is guaranteed that a correct solution always exists.

Sample Test Cases

Sample Input

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```
3
1
2
20
```

Sample Output

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```
uwu
uwuu
uwuwuwuwuwuwuw
```

Sample Explanations

For test case #1, the only pair of `u`'s that exists in the string can be used to create a subsequence `uwu` (trivially, as it is the entire string).

For test case #2, you could construct the subsequence `uwu` by using either the 1st and 2nd `u` (`uwu*`) or the 1st and 3rd `u` (`uwuu`), providing the $N = 2$ pairs of `u`'s needed to satisfy this test case. Note that there are multiple valid strings that satisfy this test case; `uwuwu` would be another such valid string.

For test case #3, every single pair of `u`'s in the string can be used to form a subsequence of `uwu`, except for the last two `u`'s. There are a total of $N = 20$ such pairs in this string, satisfying the test case. Note that there are multiple valid strings that satisfy this test case; `wuwuwuwuwuwuwuw` would be another such valid string.