

Problem C: Club

Orientation week has arrived at KKU, and this year's freshmen are lined up along the walkway outside the faculty, waiting to sign up for a student club. There are five clubs to choose from: **A**rt, **B**asketball, **C**oding, **D**J, and **E**-Sports.

These days KKU has left the old SOTUS traditions behind. There are no shouting seniors and no midnight roll calls, only five clubs that are all warm and welcoming. Still, a few seniors quietly wonder: when everyone is friendly with everyone in the same easygoing way, do real friendships end up a little thinner than they used to be? So you have a theory. If freshmen from different clubs stand next to each other instead of clumping together in one big group of **A**'s or **B**'s, they are forced to actually talk, and stronger friendships grow across the clubs.

That is why you do not want two people from the same club standing side by side. A line like **ABCAB** is exactly what you are after, while a line like **AAB** wastes a chance to mix. Freshmen make friends most easily with the person right next to them, but only if that neighbour is in a different club. So you want to fill in every undecided student so that the number of neighbouring pairs standing in the same club is **as small as possible**.

You are given the line of students as a string where each character is one of **A**, **B**, **C**, **D**, **E** (a student who already chose that club) or **?** (an undecided student). Your task is to replace every **?** with a club letter so that the number of adjacent positions holding the same letter is minimized. If more than one assignment achieves that minimum, output the one that comes **first alphabetically**.

Input:

The first line contains an integer **T**, the number of test cases.

Each test case is given on two lines:

- a line with an integer **N**, the number of students in the line;
- a line with a string of length **N** over the characters **A B C D E ?**

Output:

For each test case, print one line: the completed string with every **?** replaced by a club letter, achieving the smallest possible number of equal adjacent pairs. Among all assignments reaching that minimum, print the alphabetically first one.

Sample Input	Sample Output
3 3 D?B 5 A??B? 4 ????	DAB ABABA ABAB

Explanation:

- Test Case #1: there are five ways to replace the string
 - **DDB** has one pair of consecutive letters
 - **DEB** has no pair of consecutive letters
 - **DBB** has one pair of consecutive letters
 - **DAB** has no pair of consecutive letters
 - **DCB** has no pair of consecutive letters

There are three ways to minimize the number of pairs, but you choose **DAB** because it comes first alphabetically.

Constraints:

- $1 \leq T \leq 100$
- $1 \leq N \leq 1,000$