DNA Storage

For encoding an even-length binary string into a sequence of `A`, `T`, `C`, and `G`, we iterate from **left to right** and replace the characters as follows:

- `00` is replaced with `A`
- `01` is replaced with `T`
- `10` is replaced with `C`
- `11` is replaced with `G`

Given a binary string S of length N (N is even), find the encoded sequence.

Input Format

- First line will contain T, number of test cases. Then the test cases follow.
- Each test case contains two lines of input.
- First line contains a single integer N, the length of the sequence.
- Second line contains binary string S of length N.

Output Format

For each test case, output in a single line the encoded sequence.

Note: Output is **case-sensitive**.

Constraints

- $1 \leq T \leq 100$
- $2 \leq N \leq 10^3$
- N `is even.`
- `Sum of` N `over all test cases is at most` 10^3.
- S `contains only characters 0 and 1.`

Sample 1:

Input	Output
4 2 00 4 0011 6 101010 4 1001	A AG CCC CT

Explanation:

Test case 1**:** Based on the rules `00` is replaced with `A`.

Test case 2**:** Based on the rules `00` is replaced with `A`. Similarly, `11` is replaced with `G`. Thus, the encoded sequence is `AG`.

Test case 3**:** The first two characters are `10` which is encoded as `C`. Similarly, the next two characters `10` are encoded as `C` and the last two characters `10` are encoded as `C`. Thus, the encoded string is `CCC`.

Test case 4**:** The first two characters are `10` which is encoded as `C`. Similarly, the next two characters `01` are encoded as `T`. Thus, the encoded string is `CT`.