**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≤*T*≤100
* 2≤*N*≤10^3
* *N* is even.
* Sum of *N* over all test cases is at most 103103.
* *S* contains only characters 0 and 1.

**Sample 1:**

Input

4

2

00

4

0011

6

101010

4

1001

Output

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.