Alphabet

Time Limit – 1 second

Imagine that all the letters of the English alphabet from ‘a’ to ‘z’ are respectively written clockwise in a circle. Begin with the letter ‘a’ and write the letters clockwise. After each written letter, I can tell you to continue writing the alphabet in reverse order or I can ask you how many times so far you’ve written a certain letter.

Now write a program that solves this problem.

**Input:**The first line of input gives the number of cases, **T (**≤ 10**)**. **T** test cases follow. For each test case there will be:

The first line of input contains the integer Q (1 ≤ Q ≤ 100 000), the number of queries. Each of the following Q lines contains one of the queries in the form of **“S n”** or **“U n x”**. The query in the form **“S n”** means that, after the nth written letter, you must start writing the alphabet in reverse, whereas the query in the form **“U n x”** means that you must say how many times so far you’ve written the letter **x** in the first **n** written letters.

Queries will be given chronologically in the input, or, the numbers n **(1 ≤ n ≤ 10^9)** from the queries will be strictly ascending. The character x from the order in the form of **“U n x”** is a lowercase letter of the English alphabet.

**Output:**

For each test case, output one line containing "Case **t**: " followed by query results. For each query in the form of **“U n x”**, output how many times you’ve written the letter x in the first n spoken letters. The answer to each query needs to be written in a separate line, and the queries need to be answered in the order given in the input.

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| **Sample Input** | **Sample Output** |
| **2**  **5**  **U 1 b**  **U 3 b**  **S 4**  **U 7 a**  **U 10 z**  **5**  **S 1**  **S 2**  **S 3**  **U 5 a**  **U 7 w** | **Case 1:**  **0**  **1**  **2**  **1**  **Case 2:**  **2**  **1** |

Explanation of the first case:

You wrote the following letters: a, b, c, d, c, b, a, z, y, x.

Explanation of the second case:

You wrote the following letters: a, z, a, z, y, x, w.