Lecture 1

Fast Track
OOP – Spring 2022 (Python)

Input

```
t = int(input())
```

To read multiple integer values from single line in variables:

```
x, y = map(int, input().split())
```

To read multiple integer values from single line in list:

```
x = list(map(int, input.split())
```

Output

In case of string take care of case

In case of multiple strings take care of space or next line

In case of string + integer, take care of space, colon, comma

In case of integers, take care of space or multiple lines

Question Answer

You work in the technical support department of a company. Your job is to ensure that all client issues have been resolved. You need to check a copy of a dialog between a client and a staff.

According to the rules of work, each message of the client must be followed by one or several messages by staff. However, sometimes clients ask questions so quickly some answers comes after one or more new questions.

The full text of messages is not available, only the order of messages is visible, as well as the type of each message: a customer question or a response from the staff. It is guaranteed that the dialog begins with the question of the client.

You have to determine, if this dialog may correspond to the rules of work described above, or the rules are certainly breached.

Question Answer (Input/ Output)

Input: Each test contains multiple test cases. The first line contains the number of test cases t $(1 \leq t \leq 500)$. Description of the test cases follows.

The first line of each test case contains one integer n $(1 \leq t \leq 100)$— the total number of messages in the dialog.

The second line of each test case consists of n characters "Q" and "A", describing types of messages in the dialog in chronological order. Character "Q" denotes the message with client question, and character "A" — the message with technical support manager answer. It is guaranteed that the first character in the line equals to "Q".

Output: For each test case print "Yes" (without quotes) if dialog may correspond to the rules of work, or "No" (without quotes) otherwise.

Question Answer (Example)

Input	Output
5	Yes
4	No
QQAA	Yes
4	No
QQAQ	Yes
3	
QAA	**Explanation:**
1	In the first test case the two questions from the client are followed with two specialist's answers. So this dialog may correspond to the rules of work.
Q	
14	In the second test case one of the first two questions was not answered.
QAQQAQAAQQQAAA	In the third test case the technical support manager sent two messaged as the answer to the only message of the client.

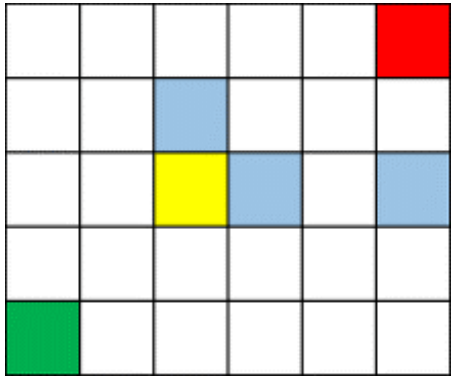
Grid Game

Player_A and Player_B are playing an old Grid game with a chip on a board of n×m cells.

At the beginning of the game, the chip is located in the lower left corner of the board. In one move, the player can move the chip to the right or up by any odd number of cells (but you cannot move the chip both to the right and up in one move). The one who cannot make a move loses.

Player_A makes the first move, the players take turns. Name the winner of the game (it is believed that Player_A and Player_B are masters of playing with chips, so they always move in the optimal way).

Chip's starting cell is green, the only cell from which chip can't move is red. if the chip is in the yellow cell, then blue cells are all options to move the chip in one move.



Grid Game(Input/ Output)

Input: The first line contains one integer t $(1 \leq t \leq 104)$— the number of test cases. The following is a description of the input data sets.

The only line of each test case contains two integers n and m $(1 \leq n, m \leq$

Grid Game(Example)

Input	**Output**
6	Player_B
1 1	Player_A
1 4	Player_A
5 6	Player_B
2 2	Player_A
6 3	Player_A
999999999 1000000000	

Explanation:
In the first case, Player_A has no move, so Player_B wins.

In the second case, Player_A can move 3 cells to the right, after which Player_B will not be able to make a move, which means that Player_A wins.

In the third case, Player_A can move 5 squares to the right. Then we can say that we have a game on a board of 1×5 cells, and Player_B is the first player. In such game the second player wins, so in the original one Player_A will win.

Compare Shirts

The T-shirt size is either a string M or a string consisting of several (possibly zero) characters X and one of the characters S or L. For example, strings M, XXL, S, XXXXXXXS could be the size of some T-shirts. And the strings XM, LL, SX are not sizes.

The letter M stands for medium, S for small, L for large. The letter X refers to the degree of size (from eXtra). For example, XXL is extra-extra-large (bigger than XL, and smaller than XXXL).

You need to compare two given sizes of T-shirts a and b.

The T-shirts are compared as follows:

any small size (no matter how many letters X) is smaller than the medium size and any large size;

any large size (regardless of the number of letters X) is larger than the medium size and any small size;

the more letters X before S, the smaller the size;

the more letters X in front of L, the larger the size.

Compare Shirts (Details)

For example:

- XXXS < XS
- XXXL > XL
- XL > M
- XXL = XXL
- XXXXXS < M
- XL > XXXS

Compare Shirts(Input/ Output)

Input: The first line of the input contains a single integer t $(1 \leq t \leq 104)$ — the number of test cases.

Each test case consists of one line, in which a and b T-shirt sizes are written. The lengths of the strings corresponding to the T-shirt sizes do not exceed 50. It is guaranteed that all sizes are correct.

Output: For each test case, print on a separate line the result of comparing a and b T-shirt sizes (lines "<", ">" or "=" without quotes).

Compare Shirts(Example)

Input	Output
6	**<**
XXXS XS	**>**
XXXL XL	**>**
XL M	**=**
XXL XXL	**<**
XXXXXS M	**>**
L M	