Bombings _ Bombings Everywhere

Sherlock Holmes is called for a new case, bombings happen every day in the Faculty of Computer and Information Science. Although many people were happy seeing bombings in their faculty, Sherlock Holmes was determined to catch the terrorist, someone was challenging him by putting encrypted ciphers in the bombing scene for him.
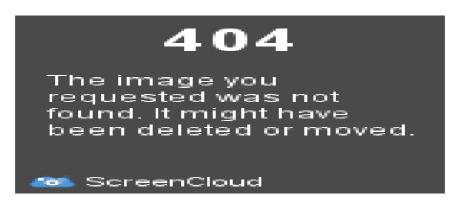
However Sherlock Holmes assistant can't withstand the weather in Egypt, so he got himself a new assistant called Dr Ahmed Hussein Watson.

One Day Dr Ahmed Hussein was wandering in the halls of the faculty when he got thirsty, so he went to get himself a juice box from Mr Fathy the Cafeteria Keeper of the college, when he realized someone sticking a note to the Fridge of the Cafeteria, the one who was sticking the notes was Tarek Mamdouh!

Tarek realized that someone noticed him and he ran away, they kept chasing each other until Dr Ahmed Hussein finally beat him to the ground.

He kept torturing him and Tarek finally told him that he was the one responsible for the Bombings, he had his bombs made from a special mixture made out of Fish, Milk and Tamarind, and he is working as an Agent for Abla Fahita, but he will never tell him what the notes actually mean.

Dr Ahmed Hussein already gathered a huge amount of notes from different parts of the faculty and he wants to decipher the note to reduce future casualties as much as possible and know the secret behind the bombings.

Input

Your program will be tested on one or more test cases. The first line of input will be a single integer T, the number of test cases (1<=T<=100), followed by T lines.
Each line is a single string s where (0<|s|<100), which consist of only digits and plus signs.

Output

For each test case, print "Case_#i:_X" where "X" is a single line contains the deciphered text, "i" is the number of the test case (starting with 1) and "_" is a white space. Each output should be printed in a separate line.

Example

Input:
3
73+47328
5+6675+6
422+444+422444

Output:
Case #1: st fehte
Case #2: f sisi x
Case #3: ftw our fotour