

Problem 3 – Rage Quit

Every gamer knows what rage-quitting means. It's basically when you're just not good enough and you blame everybody else for losing a game. You press the CAPS LOCK key on the keyboard and flood the chat with gibberish to show your frustration.

Chochko is a gamer, and a bad one at that. He asks for your help; he wants to be the most annoying kid in his team, so when he rage-quits he wants something truly spectacular. He'll give you **a series of strings followed by non-negative numbers**, e.g. "a3"; you need to print on the console **each string repeated N times; convert the letters to uppercase beforehand**. In the example, you need to write back "AAA".

On the output, print first a statistic of the **number of unique symbols** used (the casing of letters is irrelevant, meaning that 'a' and 'A' are the same); the format should be **"Unique symbols used {0}"**. Then, **print the rage message** itself.

The **strings and numbers will not be separated by anything**. The input will always start with a string and for each string there will be a corresponding number. The entire input will be given on a **single line**; Chochko is too lazy to make your job easier.

Input

- The input data should be read from the console.
- It consists of a single line holding a series of **string-number sequences**.
- The input data will always be valid and in the format described. There is no need to check it explicitly.

Output

- The output should be printed on the console. It should consist of **exactly two lines**.
- On the first line, print the **number of unique symbols used** in the message.
- On the second line, print the **resulting rage message** itself.

Constraints

- The count of **string-number pairs** will be in the range [1 ... 20 000].
- Each string will contain any character **except digits**. The **length** of each string will be in the range [1 ... 20].
- The **repeat count** for each string will be an integer in the range [0 ... 20].
- Allowed working time for your program: 0.3 seconds. Allowed memory: 64 MB.

Examples

Input	Output	Comments
a3	Unique symbols used: 1 AAA	We have just one string-number pair. The symbol is 'a', convert it to uppercase and repeat 3 times: AAA. Only one symbol is used ('A').
aSd2&5s@1	Unique symbols used: 5 ASDASD&&&&S@	"aSd" is converted to "ASD" and repeated twice; "&" is repeated 5 times; "s@" is converted to "S@" and repeated once. 5 symbols are used: 'A', 'S', 'D', '&' and '@'.