Write a program that input a list of student ID and grade, follow by a list of student ID that receive grade upgrade by one level (From **B+** to **A**, from **B** to **B+** from **C+** to **B**,....)

Input

Consist of 2 parts

- First part has multiple line as a list of student ID and grade, one line per student, this part end on the line with **q** letter

- Second part has one line as a list of student ID (separate by space) that receive upgrade by one level

Output

A list of student ID and grade (After upgrade) of every students, one line per student, in student ID ascending numerical order (from the smallest to the largest number)

Example

Input (from keyboard)	Output (on screen)
44444 A 22222 F 11111 B+ 66666 C 55555 B 33333 D+ q 33333 22222 55555	11111 B+ 22222 D Arrange by student ID 33333 C from the smallest to the 44444 A largest number 55555 B+ 66666 C