Rising

Computer Science Society
Programming Contest
Winter 2012

Temperature is measured on several linearly-related scales, including degrees Celsius, Fahrenheit, and Kelvin. The following conversion formulas define the relationships between temperature scales:

$$^\circ\mathrm{F} = {}^\circ\mathrm{C} \cdot \tfrac{9}{5} + 32$$
$$^\circ\mathrm{K} = {}^\circ\mathrm{C} + 273.15$$

Input Format

Each input line contains a temperature in degrees Celsius (`C`), Fahrenheit (`F`), or Kelvin (`K`), represented by an integer value $-2^{15} \leqslant v < 2^{15}$ and a character $\mathtt{c} \in \{\mathtt{C}, \mathtt{F}, \mathtt{K}\}$ separated by white space.

Output Format

Read the temperatures in the input, sort them by non-decreasing temperature (with same temperatures sorted $\mathtt{C} < \mathtt{F} < \mathtt{K}$), and output them in the same format they were input.

Input Sample

```
274 K
273 K
33 F
32 F
31 F
1 C
0 K
0 F
0 C
-10 F
-10 C
```

Output Sample

```
0 K
-10 F
0 F
-10 C
31 F
273 K
0 C
32 F
33 F
274 K
1 C
```