The computer company you work for is introducing a brand new computer line and is developing a new Unix-like operating system to be introduced along with the new computer. Your assignment is to write the formatter for the `ls` function.

Your program will eventually read input from a pipe (although for now your program will read from the input file). Input to your program will consist of a list of (F) filenames that you will sort (ascending based on the ASCII character values) and format into (C) columns based on the length (L) of the longest filename. Filenames will be between 1 and 60 (inclusive) characters in length and will be formatted into left-justified columns. The rightmost column will be the width of the longest filename and all other columns will be the width of the longest filename plus 2. There will be as many columns as will fit in 60 characters. Your program should use as few rows (R) as possible with rows being filled to capacity from left to right.

Input

The input file will contain an indefinite number of lists of filenames. Each list will begin with a line containing a single integer ($1 \leq N \leq 100$). There will then be N lines each containing one left-justified filename and the entire line's contents (between 1 and 60 characters) are considered to be part of the filename. Allowable characters are alphanumeric (`a` to `z`, `A` to `Z`, and `0` to `9`) and from the following set {`._-`} (not including the curly braces). There will be no illegal characters in any of the filenames and no line will be completely empty.

Immediately following the last filename will be the N for the next set or the end of file. You should read and format all sets in the input file.

Output

For each set of filenames you should print a line of exactly 60 dashes (`-`) followed by the formatted columns of filenames. The sorted filenames 1 to R will be listed down column 1; filenames $R+1$ to $2R$ listed down column 2; etc.

Sample Input

```
10
tiny
2short4me
very_long_file_name
shorter
size-1
size2
size3
much_longer_name
12345678.123
mid_size_name
12
Weaser
Alfalfa
Stimey
Buckwheat
Porky
Joe
Darla
Cotton
Butch
Froggy
Mrs_Crabapple
P.D.
19
Mr._French
Jody
Buffy
Sissy
Keith
Danny
Lori
Chris
Shirley
Marsha
Jan
Cindy
Carol
Mike
Greg
Peter
Bobby
Alice
Ruben
```

Sample Output

```
------------------------------------------------------------
12345678.123        size-1
2short4me           size2
mid_size_name       size3
much_longer_name    tiny
shorter             very_long_file_name
------------------------------------------------------------
Alfalfa        Cotton       Joe            Porky
Buckwheat      Darla        Mrs_Crabapple  Stimey
Butch          Froggy       P.D.           Weaser
------------------------------------------------------------
Alice        Chris        Jan          Marsha      Ruben
Bobby        Cindy        Jody         Mike        Shirley
Buffy        Danny        Keith        Mr._French  Sissy
Carol        Greg         Lori         Peter
```