

Problem Zip Codes

Input File: ZipCodesIn.txt
Output File: ZipcodesOut.txt
Program File: ZipCodes

Your local post office is doing a terrible job sorting the mail. Mail is to be sorted into 3 groups based on the last two digits in the 5-digit zip code. Group 1 contains all zip codes whose last two digits are evenly divisible by 4. Group 2 contains all zip codes whose last two (right most) digits are evenly divisible by 10 and not by 4. Group 3 contains all others.

No one in the post office is proficient in math and they have employed you to write a program to automate the sorting process. Given a zip code, the program will determine group number of each zip code. In addition it will sort the zip codes in each group in ascending order, according to their full zip code.

Inputs

The input will be the zip codes to be sorted (maximum of 300) on one line.

Outputs

There will be one line of output per zip code group. Group 1 will be output first followed by group 2 and finally group 3. The group number will appear first on the line followed by the zip codes in that group, in sorted order.

Sample input

11524 11740 11617 11820 11708 11531 11304 11580 11744 11590

Sample output

1 11304 11524 11580 11708 11740 11744 11820
2 11590
3 11531 11617