

A. Infinity Gauntlet

time limit per test

1 second

memory limit per test

256 megabytes

input

standard input

output

standard output

You took a peek on Thanos wearing Infinity Gauntlet. In the Gauntlet there is a place for six Infinity Gems:

- the Power Gem of purple color,
- the Time Gem of green color,
- the Space Gem of blue color,
- the Soul Gem of orange color,
- the Reality Gem of red color,
- the Mind Gem of yellow color.

Using colors of Gems you saw in the Gauntlet determine the names of **absent** Gems.

Input

In the first line of input there is one integer n ($0 \leq n \leq 6$) — the number of Gems in Infinity Gauntlet.

In next n lines there are colors of Gems you saw. Words used for colors are: purple, green, blue, orange, red, yellow. It is guaranteed that all the colors are **distinct**. All colors are given in lowercase English letters.

Output

In the first line output one integer m ($0 \leq m \leq 6$) — the number of absent Gems.

Then in m lines print the names of absent Gems, each on its own line. Words used for names are: Power, Time, Space, Soul, Reality, Mind. Names can be printed in any order. Keep the first letter uppercase, others lowercase.

Examples

input

Copy

4

red

purple

yellow

orange

output

Copy

2

Space

Time

input

Copy

0

output

Copy

6

Time

Mind

Soul

Power

Reality

Space

Note

In the first sample Thanos already has Reality, Power, Mind and Soul Gems, so he needs two more: Time and Space.

In the second sample Thanos doesn't have any Gems, so he needs all six.