Team Building Excercise (`teams`)

Antonio is working as a manager in a startup, and he has a challenging task at hand. He needs to form the maximum number of development teams from his employees. Each employee has skills in one or more areas: frontend, backend, and product design.

Figure 1: Some of Antonio's employees.

To simplify the process, Antonio classifies each employee with a binary string of length 3:

- The first bit indicates if the employee knows frontend (1 for yes, 0 for no).

- The second bit indicates if the employee knows backend (1 for yes, 0 for no).

- The third bit indicates if the employee knows product design (1 for yes, 0 for no).

Antonio needs to form teams where each team must include at least one person with frontend skills, one person with backend skills, and a person with product design skills. Employees can possess more than one skill, meaning someone can take on multiple roles in the same team.

Now, Antonio has come to you for help. Given the skill sets of his employees, he wants to know the maximum number of teams he can form.

Input

The first line contains one integer N, the number of employees of the company.

The next N lines contain each a binary string of length 3, where each bit represents an employee's skills.

Output

You need to write a single line containing the maximum number of teams that can be formed.

Constraints

- $1 \leq N \leq 10^6$.

Examples

input	output
8 111 101 010 100 010 001 100 111	4
4 111 111 111 000	3