

★ Rating changes for the last round are temporarily rolled back. They will be returned soon.

PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

B. Nastya and Scoreboard

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Denis, after buying flowers and sweets (you will learn about this story in the next task), went to a date with Nastya to ask her to become a couple. Now, they are sitting in the cafe and finally... Denis asks her to be together, but ... Nastya doesn't give any answer.

The poor boy was very upset because of that. He was so sad that he punched some kind of scoreboard with numbers. The numbers are displayed in the same way as on an electronic clock: each digit position consists of 7 segments, which can be turned on or off to display different numbers. The picture shows how all 10 decimal digits are displayed:



After the punch, some segments stopped working, that is, some segments might stop glowing if they glowed earlier. But Denis remembered how many sticks were glowing and how many are glowing now. Denis broke **exactly** k segments and he knows which sticks are working now. Denis came up with the question: what is the maximum possible number that can appear on the board if you turn on exactly k sticks (which are off now)?

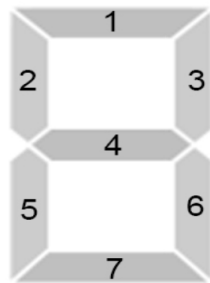
It is **allowed** that the number includes leading zeros.

Input

The first line contains integer n ($1 \leq n \leq 2000$) — the number of digits on scoreboard and k ($0 \leq k \leq 2000$) — the number of segments that stopped working.

The next n lines contain one binary string of length 7, the i -th of which encodes the i -th digit of the scoreboard.

Each digit on the scoreboard consists of 7 segments. We number them, as in the picture below, and let the i -th place of the binary string be 0 if the i -th stick is not glowing and 1 if it is glowing. Then a binary string of length 7 will specify which segments are glowing now.



Thus, the sequences "1110111", "0010010", "1011101", "1011011", "0111010", "1101011", "1101111", "1010010", "1111111", "1111011" encode in sequence all digits from 0 to 9 inclusive.

Output

Output a single number consisting of n digits — the maximum number that can be obtained if you turn on exactly k sticks or -1 , if it is impossible to turn on exactly k sticks so that a correct number appears on the scoreboard digits.

Examples

input	Copy
1 7 0000000	
output	Copy
8	
input	Copy
2 5 0010010 0010010	
output	Copy
97	
input	Copy
3 5	

Codeforces Round #637 (Div. 1) - Thanks, Ivan Belonogov!

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++14 6.4.0

Choose file: Choose File No file chosen

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Problem tags

bitmasks dp graphs greedy *1700

No tag edit access

→ Contest materials

- Announcement
- Tutorial (en)

```
0100001
1001001
1010011
```

output

Copy

-1

Note

In the first test, we are obliged to include all 7 sticks and get one 8 digit on the scoreboard.

In the second test, we have sticks turned on so that units are formed. For 5 of additionally included sticks, you can get the numbers 07, 18, 34, 43, 70, 79, 81 and 97, of which we choose the maximum — 97.

In the third test, it is impossible to turn on exactly 5 sticks so that a sequence of numbers appears on the scoreboard.

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