UIT-ALGOBOOTCAMP

RECOVERY TELESCOPE data

RECOVERY

The Giant Magellan Telescope (GMT) is a ground-based extremely large telescope under construction. It will consist of seven 8.4 m (27.6 ft) diameter primary segments, that will observe optical and near infrared (320–25000 nm) light, with the resolving power of a 24.5 m (80.4 ft) primary mirror and collecting area equivalent to a 22.0 m (72.2 ft) one, which is about 368 square meters. The telescope is expected to have a resolving power 10 times greater than the Hubble Space Telescope.

You are intrested in `n` galaxies (n < 1000), which have been sorted in increasing order of distance from Earth. The further a galaxy is, the more prominent its redshift effect shows in captured images. Computer model the redshift effect for galaxy `i` as a non-negative integer a_i. Trivially, one may expect the array `a` to be in non-decreasing order. However, since the telescope's resolving system are still under constructions, you have to `de-noise` the data yourself.

The de-noising process involves removing some digits in some number in `a`, so that the whole array is in non-decreasing order. This process could damage the data so you would want to remove as few digits as possible and you must not remove any number in a completely. How many digits should you remove?

INPUT

- The first line is the integer `n`
- Line `i` in n lines that follow will be the integer a_i.

Note: The sum of all integers in the array will not exceed ten thousand.

OUTPUT

The number of digits we have to remove. If the task can't be done, print -1.

EXAMPLE

UIT-ALGOBOOTCAMP

```
4 2
93
31
23
31
```

Submit

upload source code

Choose File

Select language

C++ (1s, 500MB)

Submit

Code editor