Your submitted solution is only **valid if it contains the following paragraphs** at the top of the program. Please ***fill*** in ***your name*** and ***Neptun code***.

```
/*
<NAME>, <NEPTUN>
This solution was prepared and submitted by the student stated above for the
assignment of the Programming course. I declare that this solution is my own
work. I have not copied or used third party solutions. I have not passed my
solution to my classmates, neither made it public.
Students' regulation of Eötvös Loránd University (ELTE Regulations Vol. II.
74/C.§) states that as long as a student presents another student's work -
or at least the significant part of it - as his/her own performance, it will
count as a disciplinary fault. The most serious consequence of a disciplinary
fault can be dismissal of the student from the University.
*/
```

Ships in the harbor

Ships arrive at a sea port, we know their arrival times (the number of the day) in chronological order. Arrivals were monitored for M days.

Create a program that gives the:

1. the number of days when no ship arrived;
2. a day (between day 2 and day M-1) on which a ship arrived, and no ship arrived on the previous day and on the following day;
3. the length of the longest period during M days when no ship arrived;
4. the number of the day when the most ships arrived (in the case of several solutions, give the first);

Input

The first line of the *standard input* contains the number of ships ($1 \leq N \leq 1000$) and the number of days ($1 \leq M \leq 1000$). The next N line contains the day of each ship's arrival ($1 \leq E_i \leq M$).

Output

On the *standard output* before the result of every subtask has to be a line containing a #. If you cannot solve a partial task, you only need to write the # character! If the output formally does not meet this requirement (e.g. it writes fewer/more # characters), the evaluator will give the message "Output format error" (even if there is a correct subtask solution).

1. subtask: The number of days when no ship arrived must be entered in the first line!

2. subtask: In the first line, you must write the number of a day on which a ship arrived, but not on the previous and the following day! In the case of several solutions, the number of the very first such day must be written; if there is no such day, then -1!

3. subtask: In the first line, the number of days of the longest period when no ships arrived must be written (0 if there were none)!

4. subtask: In the first line, write the number of a day when the most ships arrived (in the case of several solutions, the first)!

Example

Input	Output
7 45 3 6 6 42 42 42 43	# 41 # 3 # 35 # 42

Limits

Time limit: 0.1 mp.
Memory limit: 32 MiB

Evaluation

Evaluation based on 10 input tester files:
Points: **10*(2+2+3+3)=10*10=100 points**