Passengers on a train

At a train line, there are N stations. We have data about the count of passengers who got off and got on at a train. The train stops at each station between its departure and arrival stations. If a train did not go to a station, the getting on and off counts are both zero for sure (but they could be also zero, if there were no passengers getting off and on). We know that there are people getting on at the departure station, but there are no passengers getting off. We also know that all people get off at the arrival station, and no people get on there.

Create a program that solves the following subtasks:

a) How many people traveled with the train in total?
b) How many stations were there when the train needlessly stopped (there were no people getting on or off)?
c) What was the maximum count of passengers on the train?
d) List the stations from which the train went on with `0` passengers.
e) What was the longest section of stations where the count of people getting on was always more than the count of people getting off?

Input

The first line of the *`standard input`* contains the count of stations ($1 \leq N \leq 1000$). The next N lines each contain the count of people getting off and getting on ($0 \leq Off_i,\ 0 \leq On_i \leq 100$)

Output

The **standard output** should contain a line containing the **# character before each subtask** solution. This # character line is followed by as many lines as is needed for the output of a subtask. If you can't solve a subtask, you should only output the line containing the # character. If the output format is not correct (less/more # characters are in the output), Biro will write "*Output format error*", even if you have some good solutions.

1. subtask: The first line should contain the total count of passengers.

2. subtask: The first line should contain the count of stations where the train stopped needlessly.

3. subtask: The first line should contain the maximum count of passengers who were on the train at the same time.

4. subtask: The first line should contain the count of stations from which the train departed with zero passengers. The second line should contain the identifiers of such stations in increasing order.

5. subtask: The first line should contain the identifier of the start and end of the longest section of stations where the count of people getting on was always more than the count of people getting off. If there is more than one solution, the output should be the first such section.

Example

Input	Output
10 0 0 0 0 0 5 3 3 0 0 5 0 0 5 4 5 1 3 8 0 0 0	# 21 # 1 # 8 # 1 6 # 7 9

Limits

Time limit: 0.1 mp. Memory limit: 32 MiB

Evaluation

Based on 10 test files: **10*(1+2+2+2+3)=10*10=100 points**

Minimum points required to pass this exam: **40 points**

We only assess programs that aim at solving the actual problems. All the tries that just want to test the Biro system will be evaluated as 0 point (even if you have worked hard with it ☺).

Plagiarism Declaration

Please, **copy** the following Plagiarism Declaration to the beginning of your main.cpp file:

```
/* This solution was submitted and prepared by %% <Name, Neptun ID>
%% for the Final Coding Test 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 Eotvos Lorand 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 their 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. */
```