Coding Arena

Problem : Common Schedule

The Leaders of all countries around the world need to gather in order to sign the World Peace Summit.

Today is the D-Day. Given **N** countries and the schedule of their leaders for next 24 hours, your task is to find a maximum time slot such that all leaders are available during that period.

Input Format:

The first line contains **N**, the number of countries.

The following line contains:

1. **I** - unique id of the leader
2. **[A , B)** - the time slot when the leader is busy i.e. including time A, but excluding time B

End of input is given by "**-1**"

Note:

- Each country will have only one representative
- Time slot **[A, B)** will be in the format **HH:MM**

Output Format:

Print 3 lines each with a time slot **[A, B)**.

1. Line 1 should contain - Among the best free schedules of every leader print the maximum free time slot in the first line
2. Line 2 should contain - Among the best free schedules of every leader print the minimum free time slot in the first line
3. Line 3 should contain - The maximum common duration at which all the leaders will be available.

Start time and end time of the slot should be in the HH:MM format.

Note:

In the case if there is a tie between two time slots, due to length of the slot, prefer the one which appears earlier on the clock.

Constraints:

1 <= N <= 5000

1 <= I <= N

00:00 <= A <= B <= 24:00

Sample Input and Output

SNo.	Input	Output
1	3 2 00:35 12:35 1 00:35 09:45 1 23:02 23:59 2 18:45 23:59 3 15:15 20:36 3 00:15 02:45 -1	09:45 23:02 12:35 18:45 12:35 15:15

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.

Note: