

Basketball

Slavko has started to follow the NBA league. The game duration is exactly 48 minutes. When a game ends, the statistics are shown. Slavko has written down whenever a team scored. He is curious about how long each team was in the lead.

Input

The first line of input contains one integer N ($1 \leq N \leq 100$). The following N lines describe events when a team scored.

Each description consists of a team that scored, which is either 1 or 2, and a timestamp in format MM:SS (minutes:seconds), the time when a team scored. Minutes and seconds are zero padded and from ranges $[00, 47]$ and $[00, 59]$ (inclusive). The given timestamps are unique.

Output

The first line of output must contain the duration that the first team was in the lead. The second line of output must contain the duration that the second team was in the lead.

All durations should be in MM:SS format, with leading zeros.

Sample input

Sample output

1 1 20:00	28:00 00:00
3 1 01:10 2 21:10 2 31:30	20:00 16:30
5 1 01:10 1 02:20 2 45:30 2 46:40 2 47:50	45:30 00:10