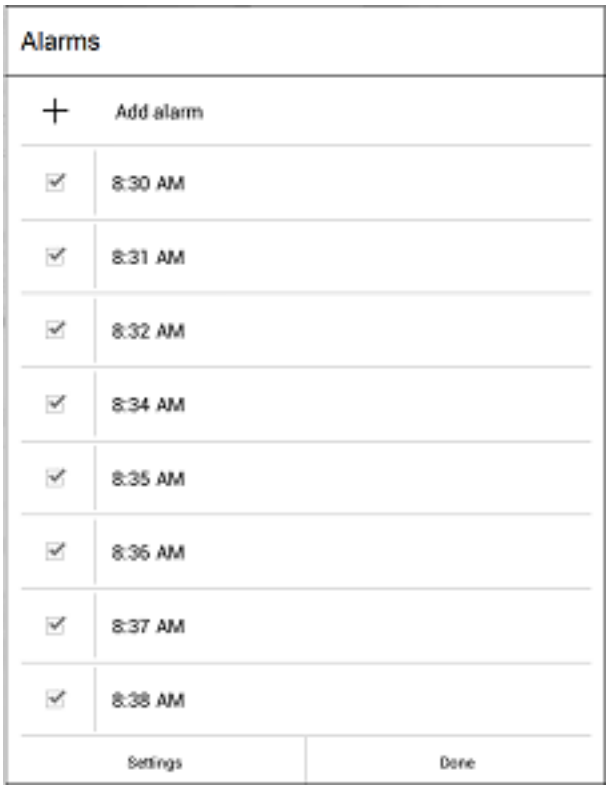
Problem A. Epilogue

Input file:	`input.txt`
Output file:	`output.txt`
Time limit:	2 seconds
Memory limit:	256 megabytes



Chris opened his eyes and squinted immediately. His bedroom window faced East, and the sun rays shone through the curtains made of light fabric. He glanced at the phone screen — no, he did not dream these calls up; five missed calls from same unknown phone number. A second later, the phone rang again.

— Hey, Chris! This is Simon. My secretary Alice could not get through to you. I need to train my company employees. The language $K\pm$, you know it. I have already told them about you, they are thirsty for knowledge! — Simon was clearly in a good mood. — So, what are you going to tell me this time?

"It was not such a strange dream after all..." — Chris thought.

— You know, Simon, I have a lot of work on some project and I am planning a few business trips in the near future. I won't be able to do it.

— Give up the trips, drop your project, mine is definitely more profitable! No? You always say that. I'll call the specialists from the "Quadrotech", and you will regret that!

Chris thought that today Simon did a good job — he woke him up. Recently, Chris was very tired and, in order not to oversleep, set N alarms at times $T_1, T_2, \ldots, T_N$ on his phone.

Chris calls *the degree of tiredness* the amount of alarms he oversleeps.

Your task is to determine the time when Chris wakes up, if the degree of tiredness is U.

Input

The first line contains integers N ($1 \le N \le 100$) and U ($1 \le U \le 100$) separated by space.

The second line contains integers $T_1, T_2, \ldots T_N$ ($0 \leq T_1, T_2, \ldots, T_N \leq 10,000$) — the points of time at which alarms were set. All times are distinct.

Output

Output in the first line the time when Chris wakes up. If he set insufficient alarms, output -1.

Examples

input.txt	output.txt
5 3 832 831 835 833 834	834
4 7 1032 944 1112 807	-1