

Problem C

Binary Grid

You are given an array A containing N non-negative integers. You have to construct a binary grid of size $N \times M$ such that:

- for any cell with value 1, any of its adjacent cells, i.e. cells that share one of its four sides, must **not** have the value 1.
- the number of cells with value 1 in row i is exactly A_i .

Find any such binary grid or tell that it's impossible to construct.

Input

The first line contains two integers N and M ($1 \leq N, M \leq 1000$). The next line contains N integers containing A_i ($0 \leq A_i \leq M$).

Output

Output N lines, each containing M characters of either 0 or 1 representing the binary grid you constructed. If multiple construction exists, you may output any of them. If such a grid does not exist, output -1 .

Sample Input 1

```
6 7
4 3 2 2 3 4
```

Sample Output 1

```
1010101
0101010
1010000
0000101
0101010
1010101
```

Sample Input 2

```
2 2
2 2
```

Sample Output 2

```
-1
```



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