Problem B
Construct BFS Graph

You are currently researching a graph traversal algorithm called the Breadth First Search (BFS). Suppose there is a graph of N nodes, numbered from 1 to N, and an adjacency matrix A, for which node u can traverse to node v if $A_{u,v}$ is 1, otherwise it is 0. The following pseudocode will output the order the nodes that are visited in a BFS algorithm.

```
BFS(A[1..N][1..N]):
    let U be an empty array
    let Q be an empty queue

    append 1 to U
    push 1 to Q

    while Q is not empty:
        pop the front element of Q into u
        for v = 1 to N:
            if A[u][v] == 1 and v is not in U:
                append v to U
                push v to Q

    return U
```

Suppose now you have an integer N, M, and an array U of N integers. You wonder whether there exists a simple undirected graph with N nodes and M edges such that the output of the pseudocode above is the array U. Construct such graph if it exists.

A simple undirected graph with M edges has an adjacency matrix A that satisfies the following.

- $A_{u,u} = 0$ for all $1 \leq u \leq N$.
- Exactly M pairs (u, v) satisfies $1 \leq u < v \leq N$ and $A_{u,v} = 1$, meaning that there is an edge connecting node u and v.
- $A_{u,v} = A_{v,u}$ for all $1 \leq u < v \leq N$.

Input

The first line contains two integers N and M ($1 \leq N, M \leq 200\ 000$). The second line contains N integers representing U, which is a permutation of $(1, 2, \ldots, N)$. You are guaranteed that the first element of U is always 1.

Output

If such a graph exists, output M lines, each containing two integers u and v representing an edge that connects node u and v.

If there is no such graphs, output `-1 -1` in a single line.

Sample Input 1	Sample Output 1
5 6 1 5 2 3 4	1 5 2 3 5 2 4 3 3 5 4 5

Explanation of Sample 1: You can also output the following edges and get a correct answer: $(1, 5), (5, 2), (2, 3), (3, 5), (2, 4), (5, 4)$.

Sample Input 2	Sample Output 2
5 10 1 5 2 3 4	-1 -1