Yunah

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

It is well known Illit has N members. It is known each member of Illit has at most 2 friends.

K members don't fit well in the group and hence have no friends. You are given a list A of length K containing the indices of the members with no friends.

Yunah, the eldest member of the group needs to keep track of who is friends with who. Help her construct a valid friendship graph, such that the K people given have no friends and each remaining member of the group has **at least 1 but at most 2** friends.

Input

The first line of input contains two integers N ($1 \leq N \leq 2 \times 10^5$), K ($1 \leq K \leq N, K \neq N-1$).

The second line contains K space separated integers, the ith integer being A_i ($1 \leq A_i \leq N$).

Note that if $K = 0$, then the second line of input would be empty.

Output

The first line of output should be m which is the number of edges in the friendship graph. The next m lines should be an edge list that represents your graph of N vertices.

First, print an integer M, the number of edges in your graph.

Then print M lines with two integers each, A_i, B_i, representing that A_i and B_i are friends.

Note that $1 \leq A_i,\ B_i \leq N$ must hold.

If there are multiple solutions that fulfill the conditions, any of them would be accepted.

Scoring

Subtask	Score	Additional constraints
1	15	$N = 2$
2	35	$K = 0$
3	50	No additional constraints
4	0	Sample test cases

Examples

standard input	standard output
7 4 1 3 5 6	3 2 4 4 7 2 7
4 0	2 1 3 2 4
2 2 1 2	0