Course #4 Advanced Data Structure & Algorithms
Assignment #1 Searching Techniques

It's required to implement the following searching techniques:

1- Sequential Search.
2- Move to Top Search.
3- Transpose Search.
4- Binary Search.

Input format

The input will start with two numbers in one line separated by a white space, that is ***N M***. N represents the size of the your data array. M represents the number of the keys.

There follows N lines each will contain a single number ***d*** that's a number in the data. Follows M lines each contains a number ***k*** that you are required to search for in the data sequence.

The data will be provided through the standard input.

Output format

For **Sequential Search and Binary Search**, you are required to print ***M*** lines, that is, the *ith* line should be 1 if the *ki* was found in the array and 0 otherwise.

For **Move to Top Search and Transpose Search**, you are required to print M lines, that is, the *ith* line should be -1 if the *ki* was not found in the array or the zero-based position in the array of *ki* if it was found.

Examples:

Data set 1:

Input:

3 2

8

5

4

1

5

Output – Sequential Search and Binary Search:

0

1

Output – Move to Top:

-1

1

Output - Transpose:

-1

1

Data set 2:

Input:

5 4

7

13

11

8

4

7

13

8

8

Output – Sequential Search and Binary Search:

1

1

1

1

Output – Move to Top:

0

1

3

0

Output - Transpose:

0

1

3

2

Note: You should submit four programs; a separate file for every searching technique.