# Hackerland Radio Transmitters locked

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Hackerland is a one-dimensional city with houses aligned at integral locations along a road. The Mayor wants to install radio transmitter roofs of the city's houses. Each transmitter has a fixed range meaning it can transmit a signal to all houses within that number of units away.

Given a map of Hackerland and the transmission range, determine the minimum number of transmitters so that every house is within at least one transmitter. Each transmitter *must* be installed on top of an existing house.

For example, assume houses are located at $x = [1, 2, 3, 5, 9]$ and the transmission range $k = 1$. $3$ antennae at houses $2$ and $5$ and $9$ provide complete coverage. There is no house at location $7$ to cover both $5$ and $9$. Ranges of coverage, are $[1, 2, 3]$, $[5]$, and $[9]$.

### Function Description

Complete the *hackerlandRadioTransmitters* function in the editor below. It must return an integer that denotes the minimum number of transmitters to install.

hackerlandRadioTransmitters has the following parameter(s):

- *x*: integer array that denotes the locations of houses
- *k*: an integer that denotes the effective range of a transmitter

### Input Format

The first line contains two space-separated integers $n$ and $k$, the number of houses in Hackerland and the range of each transmitter. The second line contains $n$ space-separated integers describing the respective locations of each house $x[i]$.

### Constraints

- $1 \leq n, k \leq 10^5$
- $1 \leq x[i] \leq 10^5$
- There may be more than one house at the same location.

### Subtasks

- $1 \leq n \leq 1000$ for $50\%$ of the maximum score.

### Output Format

Print a single integer denoting the minimum number of transmitters needed to cover all of the houses.

### Sample Input 0

```
5 1
1 2 3 4 5
```

### Sample Output 0

```
2
```

### Explanation 0

The diagram below depicts our map of Hackerland:

### Sample Input 1

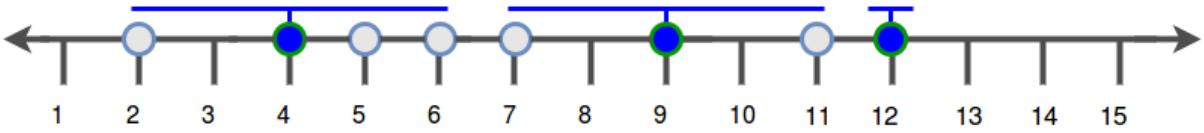
```
8 2
7 2 4 6 5 9 12 11
```

### Sample Output 1

```
3
```

### Explanation 1

The diagram below depicts our map of Hackerland:




We can cover the entire city by installing $3$ transmitters on houses at locations $4$, $9$, and $12$.

Submissions: 128
Max Score: 10

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C

```c
#include <assert.h>
#include <limits.h>
#include <math.h>
#include <stdbool.h>
#include <stddef.h>
#include <stdint.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

char* readline();
char** split_string(char*);

// Complete the hackerlandRadioTransmitters function below.
int hackerlandRadioTransmitters(int x_count, int* x, int k) {


}

int main()
{
    FILE* fptr = fopen(getenv("OUTPUT_PATH"), "w");

    char** nk = split_string(readline());

    char* n_endptr;
    char* n_str = nk[0];
    int n = strtol(n_str, &n_endptr, 10);

    if (n_endptr == n_str || *n_endptr != '\0') { exit(EXIT_FAILURE); }

    char* k_endptr;
    char* k_str = nk[1];
    int k = strtol(k_str, &k_endptr, 10);

    if (k_endptr == k_str || *k_endptr != '\0') { exit(EXIT_FAILURE); }

    char** x_temp = split_string(readline());

    int* x = malloc(n * sizeof(int));

    for (int i = 0; i < n; i++) {
        char* x_item_endptr;
```