#include <bits/stdc++.h>

using namespace std;

int printRandoms(int lower, int upper,

int count)

{

int i;

for (i = 0; i < count; i++) {

int num = (rand() %

(upper - lower + 1)) + lower;

return num ;

}

return 0;

}

void swap(int\* a, int\* b)

{

int temp = \*a;

\*a = \*b;

\*b = temp;

}

int partion(int arr[], int low, int high,int &count)

{

int pivot = arr[high];

int i = (low - 1);

for (int j = low; j <= high - 1; j++)

{

if (arr[j] < pivot)

{

count+=1;

i++;

swap(&arr[i], &arr[j]);

}

}

swap(&arr[i + 1], &arr[high]);

return (i + 1);

}

void quickSort(int arr[], int low, int high, int &count)

{

if (low < high)

{

int pi = partion(arr, low, high,count);

quickSort(arr, low, pi - 1, count);

quickSort(arr, pi + 1, high,count);

}

}

void printArr(int arr[], int size)

{

int i;

for (i = 0; i < size; i++)

cout << arr[i] << " ";

cout << endl;

}

int main()

{

int lower, upper, count;

cout<<"Enter lower limit : "<<endl;

cin>>lower;

cout<<"Enter lower limit : "<<endl;

cin>>upper;

cout<<"Enter number: "<<endl;

cin>>count;

int comparison = 0 ;

int arr[count] ;

srand(time(0));

printRandoms(lower, upper, count);

for(int i = 0 ; i< count;i++){

arr[i] = printRandoms(lower, upper, count);

}

printArr(arr,count);

int n = sizeof(arr) / sizeof(arr[0]);

quickSort(arr, 0, n - 1, comparison);

cout <<endl<< "Sorted array: \n";

printArr(arr, n);

return 0;

}