#include<iostream>

#include<Windows.h>

using namespace std;

void main() {

/\*int arr[20] = {};

int arr\_p[20] = {};

int min = -10;

int max = 20;

int random = 0;

for (size\_t i = 0; i < 20; i++)

{

random = min + rand() % (max - min);

arr[i] = random;

}

for (size\_t i = 0; i < 20; i++)

{

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

}cout << endl;

int begin = -1;

int maximum = 0;

int counter = 0;

for (size\_t i = 0; i < 20; i++)

{

counter = 0;

if (arr[i] > 0) {

for (size\_t k = i; k < 20; k++)

{

if (arr[k] < 0) {

break;

}

++counter;

}

if (counter > maximum) {

begin = i;

maximum = counter;

}

}

}

for (size\_t i = begin,i2=0; i <begin+maximum; i++,i2++)

{

arr\_p[i2] = arr[i];

}

for (size\_t i = 0; i <maximum; i++)

{

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

}

cout << "Maximum : " << maximum << endl;\*/

/\*

8. Massivin dövrü olaraq N element qədər sürüşməsini reallaşdırın. N ədədini istifadəçi

daxil edir. (məs: 0,1,2,3,4,5,6,7,8,9 və N=3 ;; Cavab => 7,8,9,0,1,2,3,4,5,6 )

\*/

//const int size = 10;

//int arr[size] = {};

//int min = -10;

//int max = 20;

//int random = 0;

//for (size\_t i = 0; i < size; i++)

//{

// random = min + rand() % (max - min);

// arr[i] = random;

//}

//for (size\_t i = 0; i < size; i++)

//{

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

//}cout << endl;

//int count = 0;

//cout << "Enter count : ";

//cin >> count;

//int begin = size - count;

//int arr2[size] = {};

//for (size\_t i = begin,i2=0; i < size; i++,i2++)

//{

// arr2[i2] = arr[i];

//}

//for (size\_t i = count,i2=0; i < size; i++,i2++)

//{

// arr2[i] = arr[i2];

//}

//for (size\_t i = 0; i < size; i++)

//{

// cout << arr2[i] << " ";

//}cout << endl;

/\*int hour = 0;

cout << "Enter hour : ";

cin >> hour;

int minute = 0;

cout << "Enter minute : ";

cin >> minute;

int second = 0;

cout << "Enter second : ";

cin >> second;

for (size\_t i = hour; i < 24; i++)

{

for (size\_t k = minute; k < 60; k++)

{

for (size\_t j = second; j < 60; j++)

{

if(j>=0 && j<=9)

cout << i << "/" << k << "/0" << j << endl;

else

cout << i << "/" << k << "/" << j << endl;

Sleep(1000);

system("cls");

}

second = 0;

}

minute = 0;

}\*/

srand(time(0));

int min = 0;

int max = 10000;

const int size = 10001;

int arr[size] = {};

int random = 0;

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

{

random = min + rand() % (max - min);

arr[i] = random;

}

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

{

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

}cout << endl;

//Bubble Sort

/\*bool swapped = false;

int counter = 0;

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

{

swapped = false;

for (size\_t k = 0; k < size - 1-i; k++)

{

counter++;

if (arr[k] > arr[k + 1]) {

swapped = true;

int temp = arr[k];

arr[k] = arr[k + 1];

arr[k + 1] = temp;

}

}

if (!swapped) {

break;

}

}

cout << counter << endl;\*/

/\*cout << "Sorted" << endl;

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

{

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

}cout << endl;\*/

//Selection Sort

int min\_index = 0;

for (size\_t i = 1; i < size; i++)

{

for (size\_t k = i; k < size; k++)

{

if (arr[k] < arr[min\_index]) {

min\_index = k;

}

}

int temp = arr[i - 1];

arr[i - 1] = arr[min\_index];

arr[min\_index] = temp;

}

cout << "Sorted" << endl;

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

{

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

}cout << endl;

int number = 0;

cout << "Enter number : ";

cin >> number;

int m = size / 2;

int f = 0;

int l = size - 1;

int counter = 0;

while (true)

{

counter++;

if (arr[m] == number) {

cout << "I found" << endl;

break;

}

else if (arr[m] < number) {

f = m;

m = (m + l+1) / 2;

}

else {

l = m;

m = (m + f-1) / 2;

}

}

cout << "Counter : " << counter << endl;

//Linear Search N=10

/\*int number = 0;

cout << "Enter number : ";

cin >> number;

int counter = 0;

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

{

counter++;

if (number == arr[i]) {

cout << "I found" << endl;

break;

}

}

cout << "Data was founded at " << counter << " times" << endl;

\*/

}