```cpp
#include <iostream>
#include <vector>
#include <cassert>
#include <algorithm>
#include "Random.h"

using namespace std;

int nosort_median(vector<int> nums)
{
    assert(nums.size() % 2 != 0);
    int half = nums.size() / 2;

    for (int i = 0; i < nums.size(); i++)
    {
        int k = 0;
        for (int j = 0; j < nums.size(); j++)
        {
            if (nums[j] < nums[i])
                k++;
        }
        if (k == half)
            return nums[i];
    }
    return -1; //will not go here;
}

int median(vector<int> nums)
{
    assert(nums.size() % 2 != 0);
    int half = nums.size() / 2;

    sort(nums.begin(), nums.end());
    return nums[half];
}
```

```
void print_vector(vector<int> vec)
{
    cout << endl;
    for (int i = 0; i < vec.size(); i++)
        cout << vec[i] << " ";
    cout << endl;
    return;
}

int main()
{
    rand_seed();

    int how_many;
    cout << "How many? (odd) ";
    cin >> how_many;
    cout << endl;

    if (how_many % 2 == 0)
        how_many++;

    vector<int> mynums;

    random_vector_norep(how_many, 1,
                        100, mynums,5);

    vector<int> cpmynums(mynums);

    print_vector(mynums);
    cout << "The median element (no sort) is "
         << nosort_median(mynums)
         << endl << endl;

    print_vector(cpmynums);
```

```
    cout << "The median element (with sort) is "
         << median(cpmynums) << endl << endl;

    return 0;
}
```