



Lesson 6 CPP sort

How to sort an array ?

We include <algorithm> library then we use .sort() :

sort(x, x+n);

x+n : number of elements that I want to sort.

How to sort a Vector?

We include the same library and we use the same function but in a different way :

To Specify from where you want to sort :

sort(y.begin()+n, y.end());

To Specify to where you want to sort :

sort(y.begin(), y.end()-n);

To sort all the elements of the vector

sort(y.begin(), y.end());

Example:

```
#include <iostream>
```

```
#include <vector>
```

```
#include <algorithm>
```

```
using namespace std;
```

```
int main() {
```



```
int x[5] = { 9,8,7,6,5 };
vector <int> y;
y.push_back(9);
y.push_back(8);
y.push_back(7);
y.push_back(6);
y.push_back(5);
sort(x, x + 5);
cout << "Array: \n";
for (int i = 0; i < 5; i++)
    cout << x[i] << " ";
sort(y.begin(), y.end());
cout << "\nVector: \n";
for (int i = 0; i < y.size(); i++)
    cout << y[i] << " ";
}
```

output:

Array:

5 6 7 8 9

Vector:

5 6 7 8 9



How to reverse an array ?

using the function `reverse(x,x+n)` that exists in the same library of `sort()`.

```
#include <iostream>
#include <vector>
#include <algorithm>
using namespace std;
```

```
int main() {
int x[5] = { 2,4,5,1,3 };
```

```
reverse(x, x + 5);
cout << "Array: \n";
for (int i = 0; i < 5; i++)
cout << x[i] << " ";
}
```

output:

Array:

3 1 5 4 2



How to sort & reverse a vector?

```
#include <iostream>
#include <vector>
#include <algorithm>
using namespace std;
int main() {
    vector<int> y;
    y.push_back(2);
    y.push_back(4);
    y.push_back(5);
    y.push_back(1);
    y.push_back(3);
    sort(y.begin(), y.end());
    reverse(y.begin(), y.end());
    cout << "Vector: \n";
    for (int i = 0; i < y.size(); i++)
        cout << y[i] << " ";
}
```

output:

Vector:

5 4 3 2 1