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#include <iostream>
#include <vector>
#include <algorithm>
#include <functional>

using namespace std;

int main()
{
    vector<int> v{5, 6, 4, 3, 2, 6, 7, 9, 3};

    nth_element(v.begin(), v.begin() + v.size()/2, v.end());
    cout << "The median is " << v[v.size()/2] << '\n';

    for_each(begin(v), end(v), [](auto& i){cout << i << " ";});
    cout << endl;

    nth_element(v.begin(), v.begin()+1, v.end(), std::greater<int>());
    cout << "The second largest element is " << v[1] << '\n';

    for_each(begin(v), end(v), [](auto& i){cout << i << " ";});
    cout << endl;

    partial_sort(begin(v), begin(v) + 4, end(v));

    for_each(begin(v), end(v), [](auto& i){cout << i << " ";});
    cout << endl;

    return 0;
}
```