C++ Vector Cheatsheet

# 1. Vector Declaration

vector<type>name;  
Ex: vector<int> TestVector1;

# 2. Vector Initialization

vector<type> name = {value1, value2, …}  
Ex vector<int> TestVector2 = {10, 20, 30};

# 3. Choose an Element at Position i out of bound safe

name.at(i);  
Ex: TestVector.at(2) // accesses element at position 2;

# 4. Insert element (push)

name.push\_back(value);  
Ex: TestVector2.push\_back(40); // we insert at the end of the vector the value 40

# 5. Iteration

vector<int>::iterator i => it’s the index

TestVector1.begin() => beginning of the vector;

TestVector1.end() => ending of the vector;

The iteration:

for (vector<int>::iterator i = TestVector2.begin(); i != TestVector2.end(); i++)

{

cout << \*i << " "; // Displays each element

}

cout << endl;

# 6. Inserting an element

vector<int>::iterator i = TestVector2.begin();

TestVector2.insert(i, 0); // Inserts 0 at the beginning

# 7. Removing Elements

1. Remove the Last Element: TestVector2.pop\_back();
2. Erase the Element Pointed to by Iterator:

vector<int>::iterator j = TestVector2.begin();

TestVector2.erase(j); // Removes the first element

1. Erase All Elements Except the Last:

TestVector2.erase(TestVector2.begin(), TestVector2.end() - 1);

# 8. Swapping Between Vectors

TestVector2.swap(TestVector1); // Swaps the contents of the two vectors

# 9. Size Function

cout << "Size: " << TestVector1.size() << endl;

# 10. Max Size Function

cout << "\nCapacity: " << TestVector2.capacity() << endl; // Displays the capacity of the vector