C++ STL Library.

Date.....

Vector:- vector <int> V;

vector <int> v(n, 0) // Size n, filled with 0

Methods: v.push_back(x); / V[i]
v.pop_back;
v.size(), v.empty(), v.clear()
v.front(), v.back()

v.insert(v.begin()+i, x);
v.erase(v.begin()+i);
v.erase(v.begin()+l, v.begin()+r); [l,r)

sort(v.begin(), v.end())
reverse(v.begin(), v.end())
accumulate(v.begin(), v.end(), 0); //sum
count(v.begin(), v.end(), x); // freq. of x

String: String s = "Hello";

Methods: s.size(); , s.length();
s.empty(); , s.clear();
s.push_back('a'); s[i];
s.pop_back();
s.substr(pos, len); //substring
s.find("lo"); // returns index
s.erase(pos, len)
s.insert(pos, "abc")
s.append("xyz")
stoi("123") //str → int
stoll("123") //str → long long
to_string(123)

Set :- set <int> s;

Methods:- s.insert(x);
s.erase(x); //erase element
s.erase(it); //erase by iterator
s.find(x) // returns its or s.end()
s.count(x) // 0 or 1
s.size(); s.empty()
s.lower_bound(x) >=x
s.upper_bound(x) >x

Map:- map <int, int> m;

m[key] = value;

m.insert({k,v});
m.erase(k);
m.erase(itr);
m.find(k)
m.count(k)
m.size(), m.empty()

Teacher's Sign.....

Queue: queue <int> q;

```
q.push(x);
q.pop();
q.front();
q.back();
q.size(); q.empty()
```

Stack: Stack <int> st;

```
st.push(x);
St.pop();
St.top();
St.size();
St.empty();
```

Deque: deque <int> deq;

```
deq.push_back(x);
deq.push_front(x);
deq.pop_back();
deq.pop_front();
deq.front(); deq.back();
deq.size(); deq.empty()
dq[i];
```

List: list <int> l;

```
l.push_back(x);
l.push_front(x);
l.pop_back();
l.pop_front();
l.front(), l.back();
l.insert(itr, x);
l.erase(itr);
l.remove(x);          //removes all x
l.reverse();
l.sort();
```

Algorithms:

```
sort(v.begin(), v.end());
reverse(  ,  )
max_element(  ,  )
min_element(  ,  )
accumulate(  ,  , 0);
count(  ,  , x);
find(  ,  , x);
binary_search(  ,  , x);
lower_bound(  ,  , x)
upper_bound(  ,  , x)
```

Priority Queue (Heap): priority_queue <int> mh;

```
mh.push(x);
mh.pop();
mh.top();
mh.size(); mh.empty();
```

```
abs(x);
swap(a, b);
```

Spiral priority_queue <int, vector <int>, greater <int>> minh;

Teacher's Sign .....