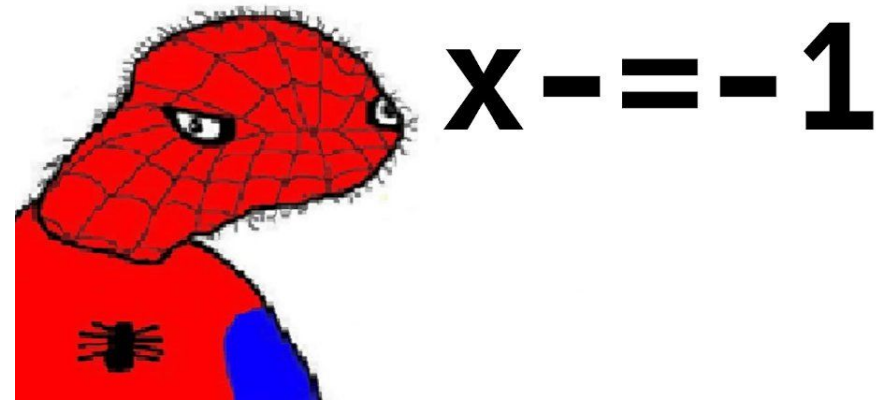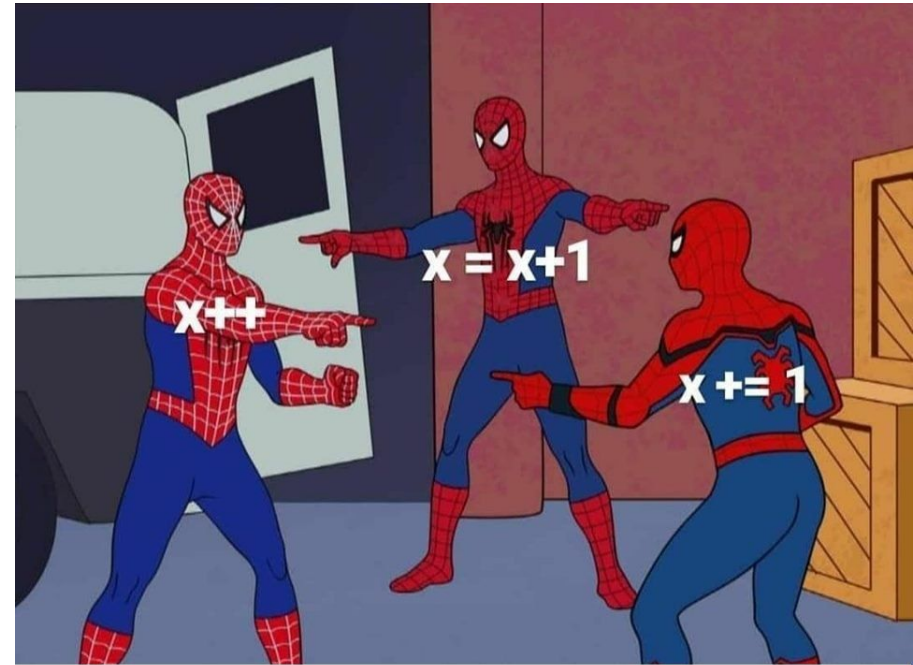# Competitive Programming

Lec 2
STL in C++

Time Complexity

1. Global variable vs local variable

2. [For loop example (10, 10^2, …etc.)](#)

3. [Binary Search Example for searching](#)

4. Hash Tables

5. [Recursive functions](#)

Two types of programmer

```
int foo(int x) {
    if (x==1)
        return 1;
    x=x+1;
    return foo(x-1)*foo(x+1);
}
```

```
int foo(int x) {
    if (x == 1)
        return 1;

    x = x + 1;
    return foo(x - 1) * foo(x + 1);
}
```

1. Max, min of number

2. Ternary Operator

STL

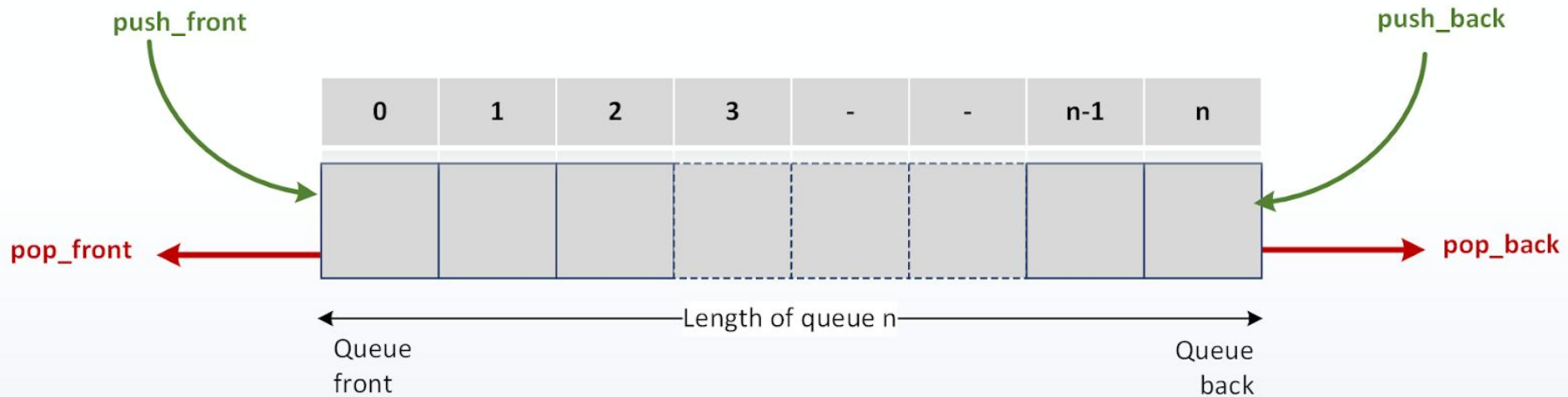|	
vector	sort
queue	deque
stack	map
unordered_map	multimap
unordered_multimap	set
binary_search	unordered_set
upper_bound	lower_bound
memset	bitset (homework)

Vector

- One dimensional
- Two dimensional

- memset/fill

- Int vector
- String vector
- Bool vector
- Pointer vector
- Vector of vector
- Pair vector

sort

- One dimensional
- Two dimensional

- Int vector
- String vector
- Vector of vector
- Pair vector (without comparator)
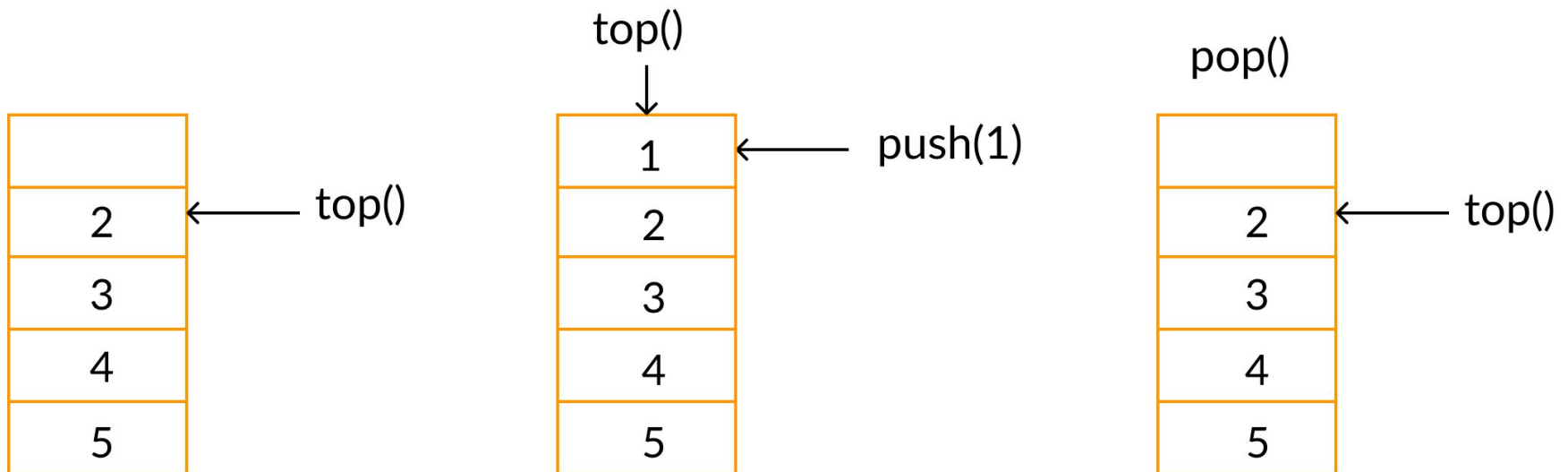- Pair vector (with comparator)

queue/deque

- Priority_queue [*Nutanix first coding question*]

Queue with n elements

stack

- Stack of int, string, char, ..etc.
- Stack of vector/pair

2	← top()
3	
4	
5	

top()
↓

1	← push(1)
2	
3	
4	
5	

pop()

2	← top()
3	
4	
5	

map/set

- [Unordered_map](#) vs map
- Unordered_multimap vs multimap

Binary search

- Binary search [*samsung coding question*]
- Upper_bound
- lower_bound