C++ STLs

"Like a Boss"

video - 5 ⇐

Comparators

- It is a function or an object that is used to compare elements.
- Used to decide the order of elements inside a Data Structure. (vector, set, map, heap)

They can be implemented in different ways :-

1. **Function Pointers** - A function that implements the logic of comparison.

Example → sort()

```
vector<int> vec = {3, 2, 1, 6}
```

- `sort(vec.begin(), vec.end());` //Default Asc

```
Sort (vec.begin(), vec.end(), myComparator);
```

```
bool myComparator(int a, int b) {
    if (a > b) return True;
    return False;
}
```

2 Function Objects (Functors) :-

An object that can be treated as a function.

Example → sort() ⇐

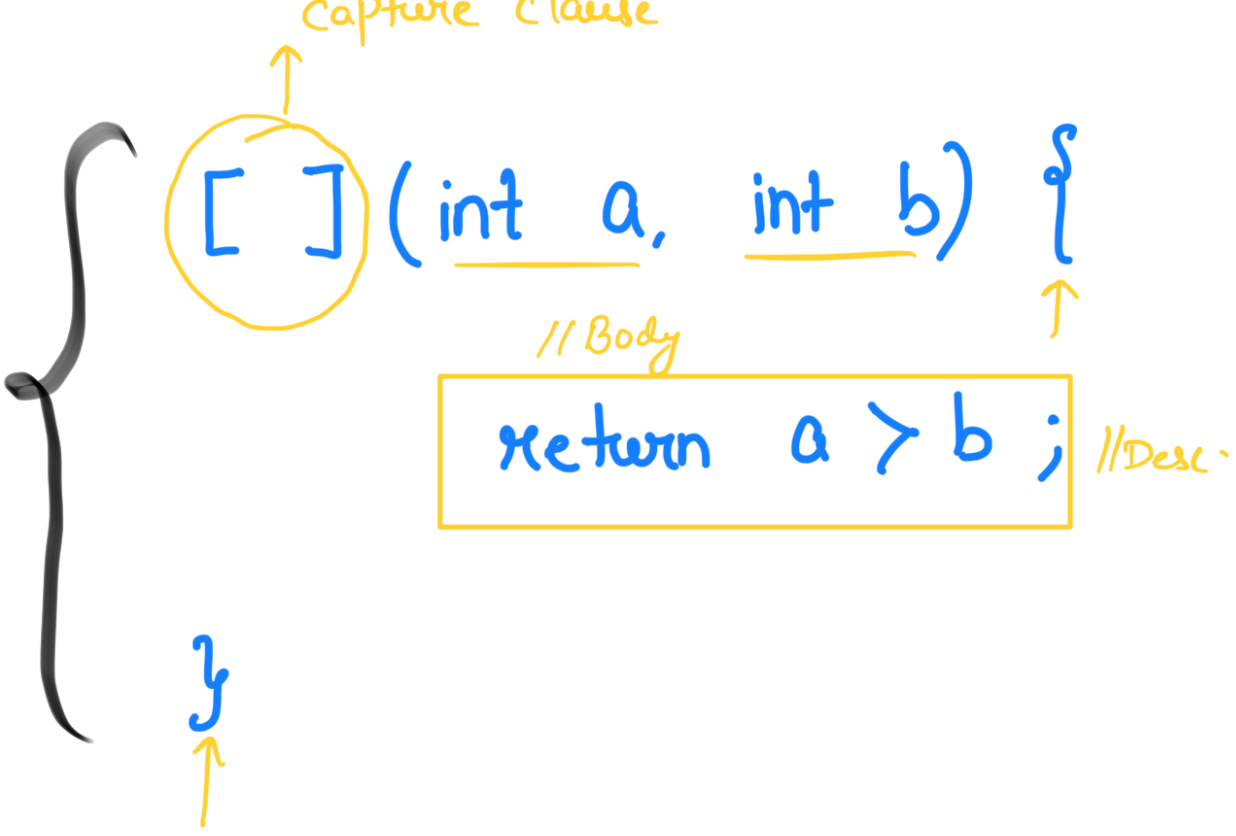
```
vector<int> vec = {3, 2, 1, 6} ⇐

sort(begin(vec), end(vec), myComparator());

class myComparator {
    bool operator()(int a, int b) {
        return a < b;   //Asc.
    }
};
```

3 Lambda Expressions :-

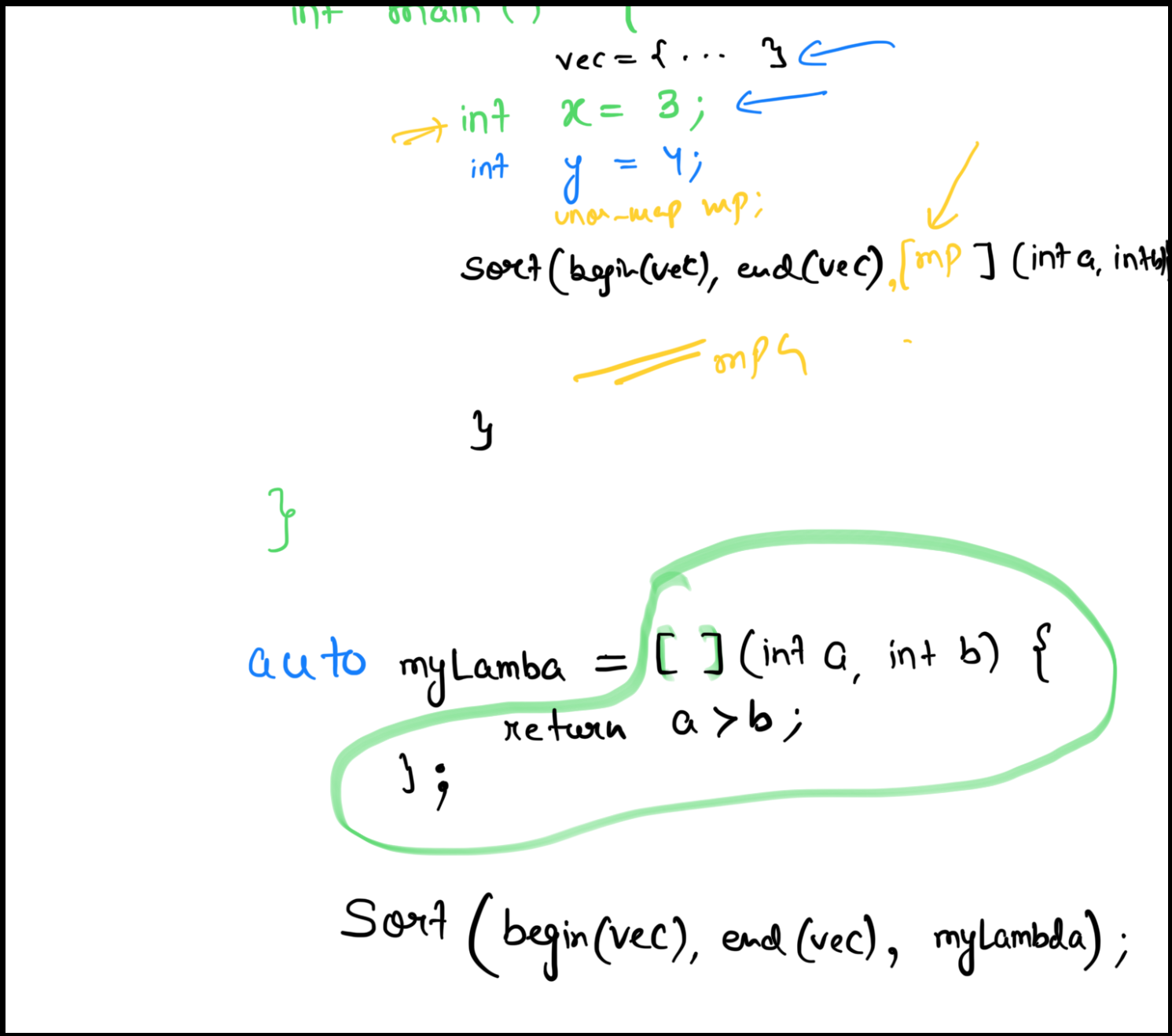
Example → sort()

```
vector<int> vec = {3, 2, 1, 6}
```

```
sort(begin(sort), end(sort), [](int a, int b){
    return a > b;
});
```



int main() {




```
auto myLamba = [ ](int a, int b) {
        return a > b;
};
```

```
Sort (begin(vec), end(vec), mylambda);
```