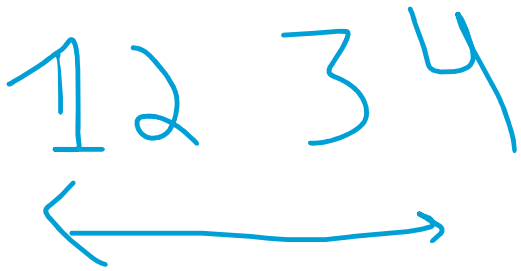
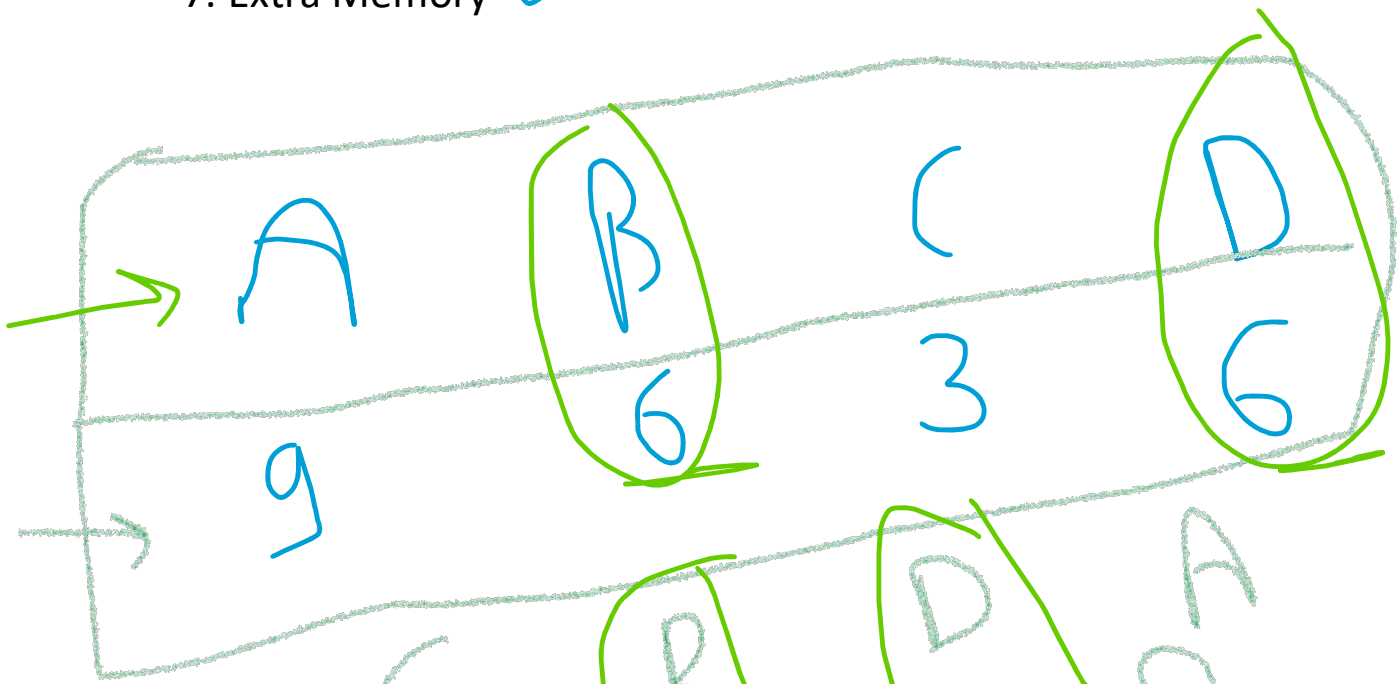
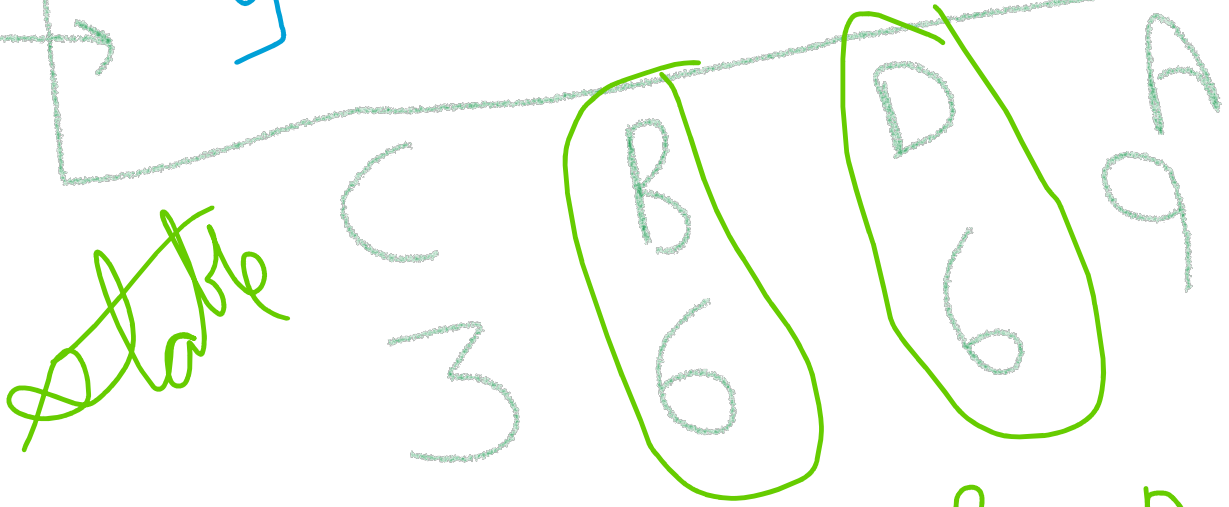
6 5 9 8 4 -> 4 5 6 8 9



Criteria for analysis

1. No of Comparison ✓
2. No of swaps ✓
3. Adaptive ✓
4. Stable ✓
5.
6.
7. Extra Memory ✓





Bubble Sort

$n = 5$

A	8	5	7	3	2

Pass-1

if $(j > j+1)$ → swap → mark

8 j	5	5	5	5
5 j+1	8	7	7	7
7	7	8	3	3
3	3	3	8	2
2	2	2	2	8

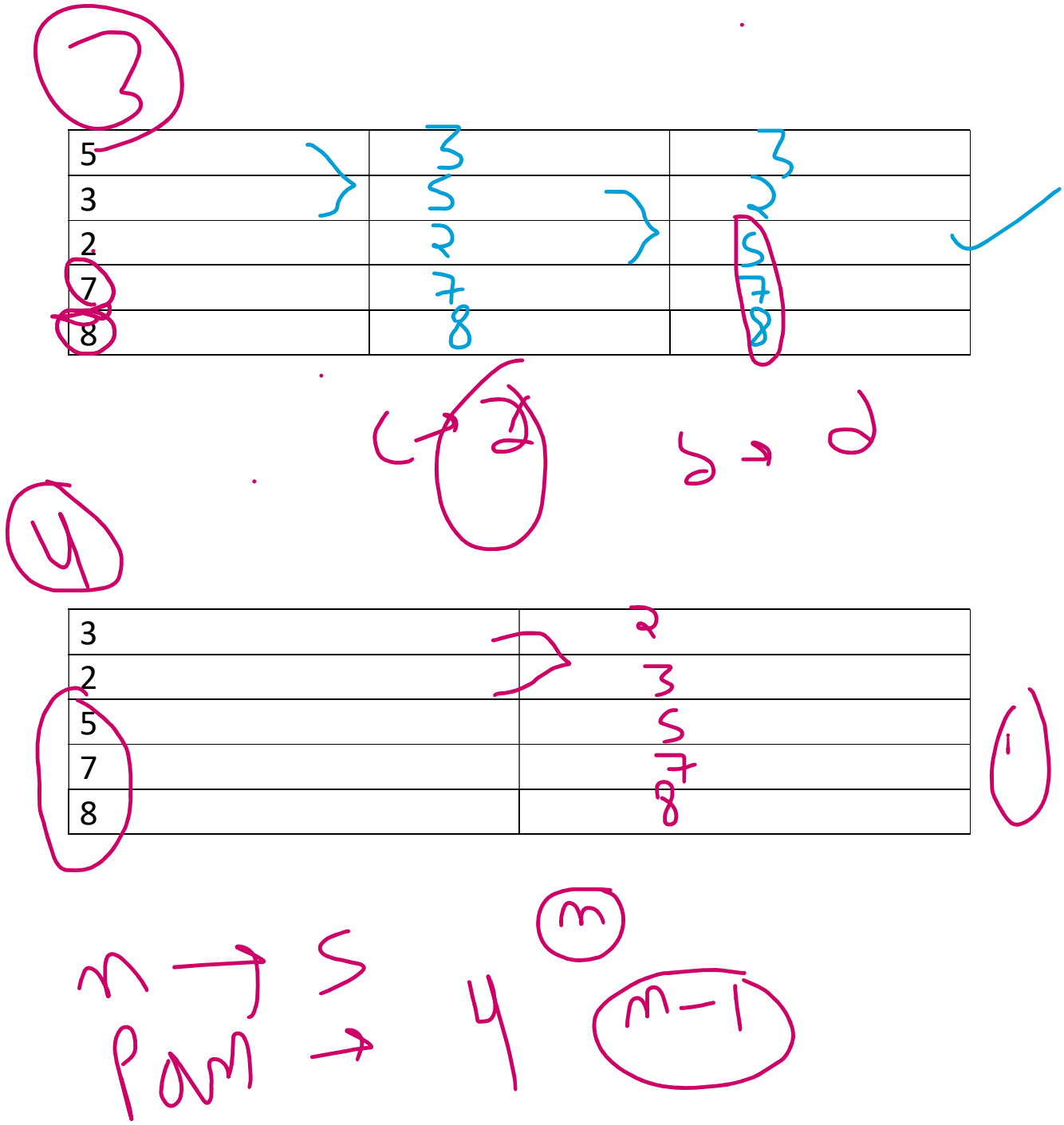
5 → Comp → 4 → Swap → 4

$n \rightarrow n-1$

Pass-2

5	5	5	5	
7	7	3	3	
3	3	7	2	
2	2	2	7	
8	8	8	8	

Comp → 3 → Swap → 3




```
For(int i=0; i<n-1; i++)
{
        For(int j=0;   j<n-1-i;    j++)
{
        If(A[j]>A[j+1]) swap(A[j], A[j+1]);
```

```
}

}
```

Total Comp → 4 + 3 + 2 + 1

5 ⇝ 1 + 2 + 3 + 4

n ⇝ 1 + 2 + 3 ... (n-1)

$\frac{n(n+1)}{2} \rightarrow O(n^2)$

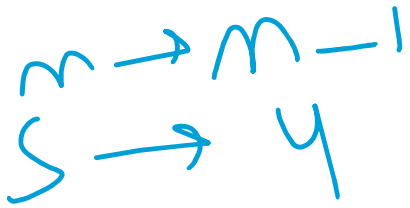
Swapping ⇗

Observation

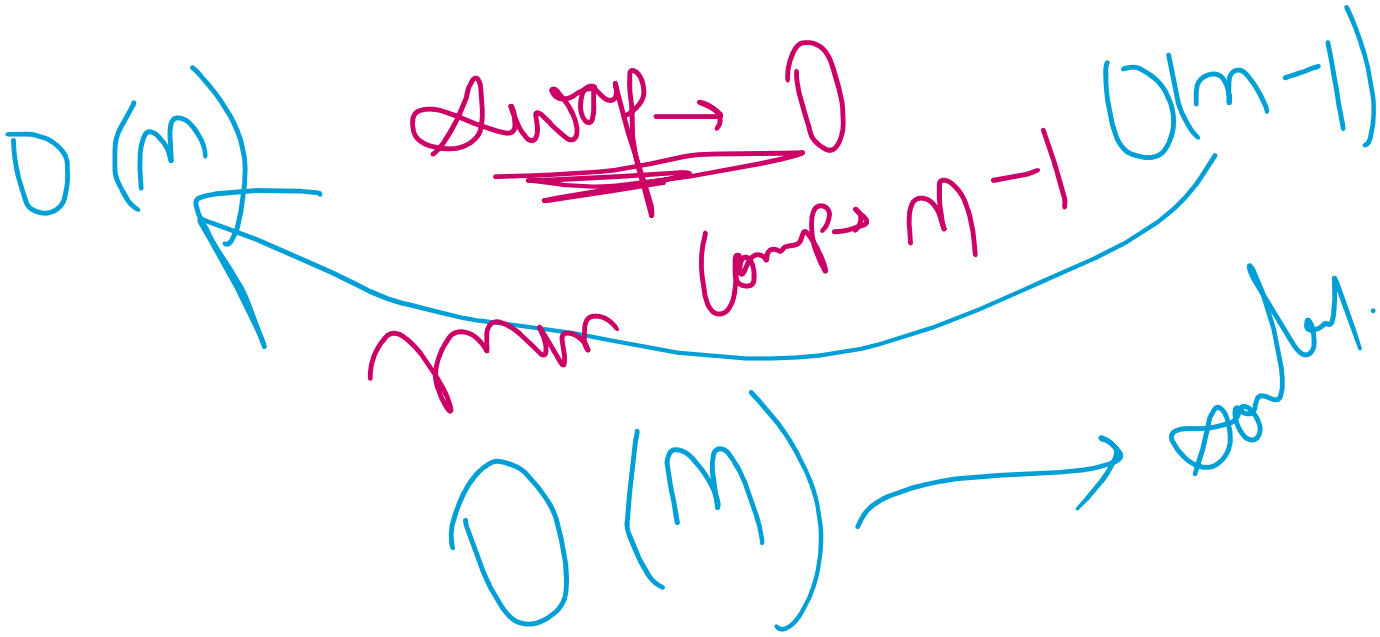
In 1 pass we got largest element

In 2 pass we got 2 largest element

In K pass we got k largest element



2	2	2	2	2
3	3	3	3	3
5	5	5	5	5
7	7	7	7	7
8	8	8	8	8



$SU(n) \to O(3)$

$\dim SU(n) \to n^2$