

Ternary operator \rightarrow single line conditional

Q) $\text{age} > 18 \rightarrow \text{eligible}$
 $\text{age} < 18 \rightarrow \text{Not eligible}$

Condition? $\text{value 1} : \text{value 2}$
 \downarrow
 $[\text{true}]$ $[\text{false}]$

Selection Sort

\rightarrow [sort]

7 5 3 1 4

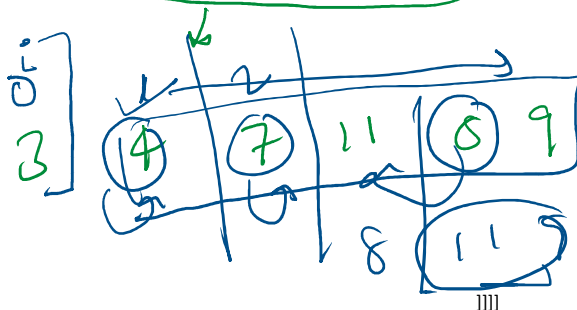
\downarrow

1 5 3 7 4

1 3 5 7 4

1 3 4 7 5

Q) 8 4 2 11 3 9



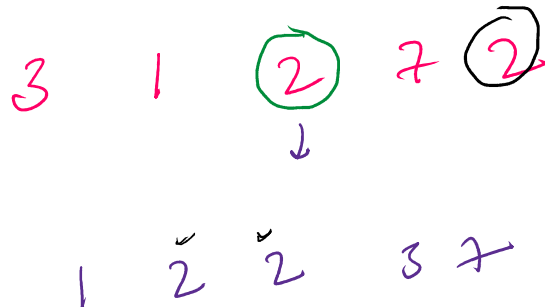
\Rightarrow Complexity Analysis

Worst $\rightarrow O(\underline{\underline{N^2}})$

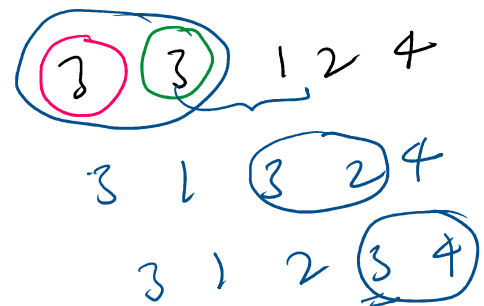
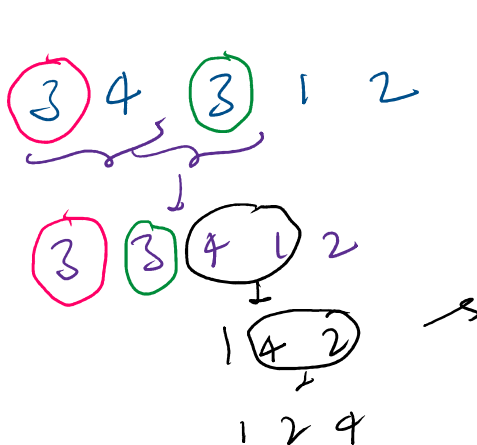
Best $\rightarrow O(N^2)$

Avg $\rightarrow \underline{O(N^2)}$

Stability



Bubble:



⊕ Bubble sort is stable

→ Selection sort is not stable



Inbuilt

→ Arrays.sort(arr) → sort
inc

→ Collections.sort(array list);

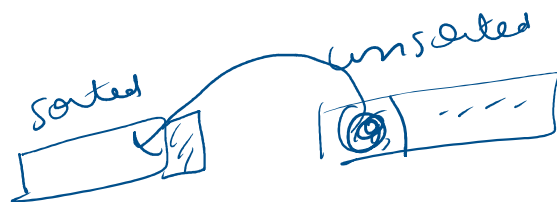
{ 'b', 'e', 'a' }

{ 'a', 'b', 'e' }

⊕ Strings are sorted on the basis of
dictionary order → lexicographical
order.

→ Inbuilt sort complexity
↳ $O(N \log N)$

Insertion Sort



3 | 4 | 1 | 7 | 2 | 5

3 4 | 1 7 2 5

1 3 4 | 7 2 5

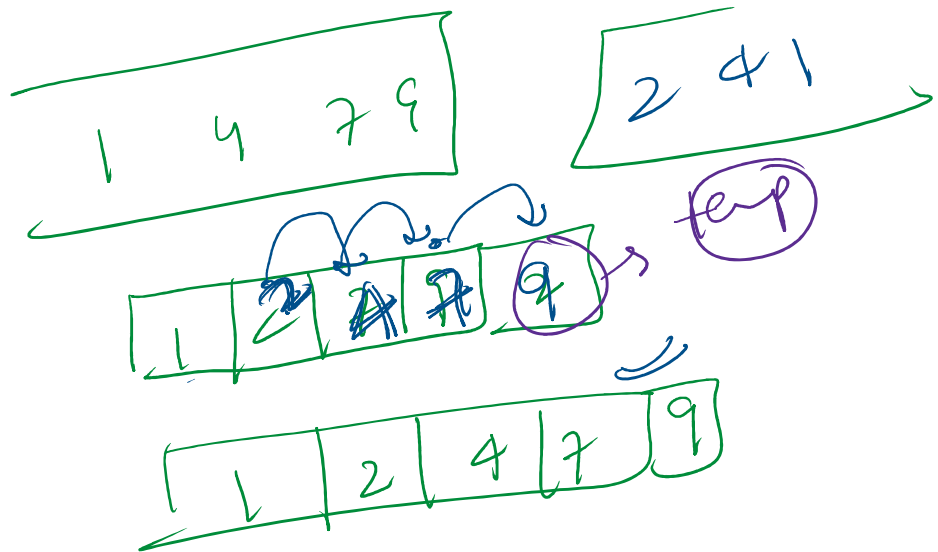
1 3 4 7 | 2 5

1 2 3 4 5 7

$\boxed{1 \ 3 \ 4 \ 7}$ $\boxed{2 \ 5}$
 1 2 3 4 7 $\boxed{5}$

Q)

4 -2 7 1 6 3



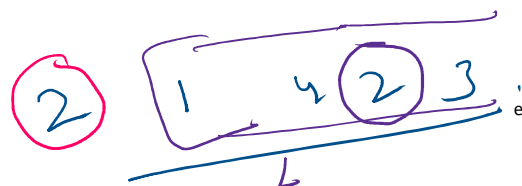
Complexity

Worst $\rightarrow O(\underline{\underline{N^2}})$

Best $\rightarrow O(N)$

Avg $\rightarrow \underline{O(N^2)}$

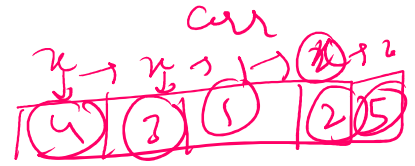
⊕ In section sort is



stable

1 (2) 4 (2) 3
1 (2) 4 (2) 3

for each loop -
[int arr[]]
for (int n; arr)
sort(n) ✓ 4, 3, 1, 1

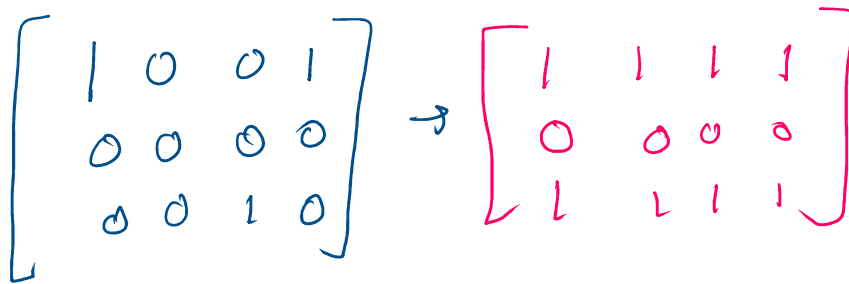


for (double n; arr)
}

double[]

Boolean matrix problem

[0 1 0 1 0]



Sort an array of 0s, 1s and 2s
↓
Dutch National Flag Algo
[DNF Algo]

