

* Selection Sort *

* What is selection sort ?

⇒ Selection sort is the sorting algorithm in which in Array, "select one element & put it at its Correct index."

* Example :-

Array →

4, 5, 1, 2, 3

4, 3, 1, 2, 5

2, 3, 1, 4, 5

2, 1, 3, 4, 5

This is called
Selection Sort:

Ans // 1, 2, 3, 4, 5

* Complexity :-

Total Comparisons ⇒ 4, 5, 1, 2, 3 (n-1)

Already at its
Correct index so,
ignore in future
steps

4, 3, 1, 2, 5 (n-2)

2, 3, 1, 4, 5 (n-3)

2, 1, 3, 4, 5 (n-4)

1, 2, 3, 4, 5 (n-5)

$$= 0 + 1 + 2 + 3 + 4 + \dots + (n-1) = n$$

$$= \frac{n(n-1)}{2}$$

$$= \frac{n^2 - n}{2}$$

Worst case → $O(n^2)$

Best case → $O(n^2)$

→ neglect less dominating
constant term.

* It is not stable Algorithm. (sorting)

* It performs well on small