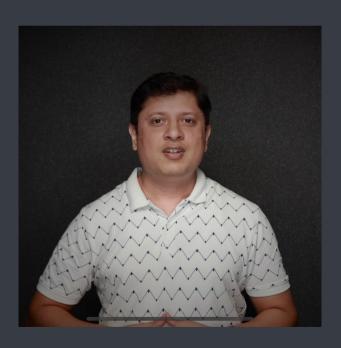
DSA through C++

Time Complexity



Saurabh Shukla (MySirG)

Agenda

- 1) Selection Sort
- 2) Bubble Sort
- 3 Linear Search
- 4) Binary Search
- (5) Auick Sort
- 6 Merge Sort

Selection Sort

Best Case

 $\Omega(n^2)$

Average Case Worst Care

$$\Theta(n^2)$$
 $O(n^2)$

$$O(n^2)$$

Bubble Sort

Best Case

 $\Omega(n^2)$

Average Case Worst Care

$$\Theta(n^2)$$
 $O(n^2)$

$$O(n^2)$$

Modified Bubble Sort

Best Case

Average Case

Worst Care

$$O(n^2)$$

Linear Search

Best Case Average Case Worst Case

(1) 9(n) O(n)

Binary Search

Best Case

(1)

Average Case

9 (logn)

Worst Care

O (palu)

Quick Sort

Best Case

(nlgn)

Average Case

9 (nloyn)

Worst Care

 $O(n^2)$

Merge Sort

Best Case
(2 (n log n)

Average Case Worst Care 9 (n logn) () (n logn)