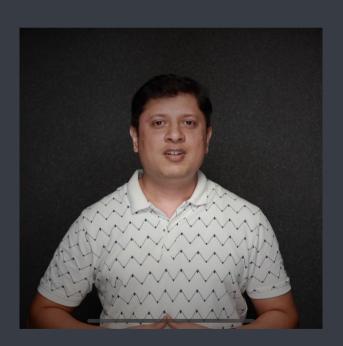
#### DSA using Java

### Sorting



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## Agenda

- (I) Sorting
- 2 Various Sorting techniques

## Sosting

Arranging data elements in some logical order is known as sorting.

Sosting we are going to cover in also known as internal sorting.

when elements are numbers, sorting means arranging numbers in ascending order (by default)

when elements are strings, sorting means arranging strings in dictionary order (alphabetical) order (by default)

## Various Sorting Algorithms

- 1 Bubble Sort
- 2 modified Bubble Sort
- 3 Selection Sort
- 4 Insertion sort
- (S) Quick Sort
- 6 Merge Sort
- (3) Heap Soxt.

Bubble Sort 2 3 4 5 24 58 11 67 92 43 6743925 11 58 R1 24 24 58 43 67 92 R2 1) 24 43 58 67 92 3 Rz II 58 67 92 24 43 24 43 58 67 92 1

## Modified Bubble Sort

n elements Round-K 05K<1

no swappny in Kth round means elements are sosted now, no more rounds to be executed.

# Selection Sort 2 3 4 5 6 7 8 47 69 52 88 71 18 20

18 20 38 47 52 69 71 88 90

#### Insertion Sort

0 1 2 3 4 5 6 7 8 9 52 78 16 39 84 91 26 31 15 43 15 16 26 31 39 43 52 78 84 91 Oluick Sort

Oluick Sort

58 62 91 43 29 37 88 72 16

$$(0,2)$$
  
 $(5,8)$ 

Merge Soxt

9 1 2 3 4 5 6 7 8 9 10 11 12

75 29 83 42 16 90 56 34 20 71 88 92 7