Bubble Sort is a comparisn sort method.

Steps :-

1. In every steps you are comparing adjasent elements

Run, 1

3, 1, 5, 4, 2

compar. and swap

=> 1, 3, 5, 4, 2

1 3 5 4 2

=> 1 3 4 5 2

=> 1 3 4 2 | 5

do again

Sorted no need to scan agai

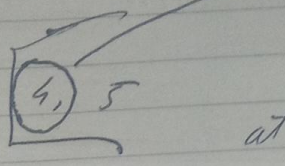
Why?

=> With the first pass through the array, the largest element come to the end

MAR '21

Run 2

1, 3, 4, 2, 5



=> 1, 3, 2, 4, 5

with pass no 2 2nd Largest element is at the 2nd last index

(x) At every step the largest element remaining in array is comming at last.

also known as,

Sinking sort / Exchange sort

intuation - with every pass largest element will come to end.

Space Complexity - O(1) // constant

No extra space required - i.e copying the array etc not required } -> aka inplace sorting algorithms

Time Complexity : Best : $O(N)$ => Sorted
worst : $O(N^2)$ => Sorted in opposite

8 am
9 am
10 am
11 am

Stable and Unstable algo :

noon

When orignal value retain when values are equal.

1 pm

↑
2 pm Stable

3 pm

=> 1; 2 3 1ii 4 6

4 pm

-> 1; 1ii 2 3 4 6 (stable)

5 pm
evening
7 pm

Bubble Sort is a comparisn sort method.

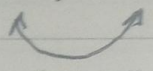
8 am Steps :-

9 am 1. In every steps you are comparing adjacent elements

10 am

Run, 1

11 am 3, 1, 5, 4, 2



noon compar. and swap

1 pm

=> 1, 3, 5, 4, 2

2 pm

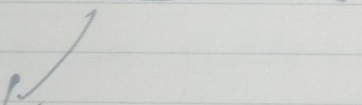
3 pm 1 3 5 4 2

4 pm

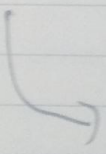
=) 1 3 4 5 2

5 pm

evening => 1 3 4 2 | 5



7 pm



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do again

Our attitudes govern our destiny