Bubble Sort Algorithm

Bubble Sort is the simplest sorting algorithm that works by repeatedly swapping the adjacent elements if they are in the wrong order. This algorithm is not suitable for large data sets as its average and worst-case time complexity is quite high.

Bubble Sort Algorithm

In Bubble Sort algorithm,
- *traverse from left and compare adjacent elements and the higher one is placed at right side.*
- *In this way, the largest element is moved to the rightmost end at first.*
- *This process is then continued to find the second largest and place it and so on until the data is sorted.*
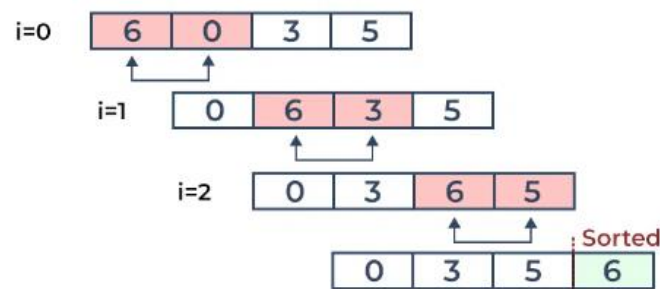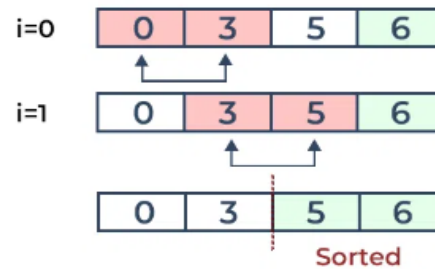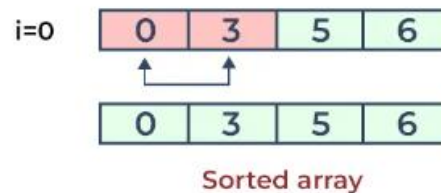
How does Bubble Sort Work?

Let us understand the working of bubble sort with the help of the following illustration:

First Pass:

The largest element is placed in its correct position, i.e., the end of the array.

Second Pass:

Place the second largest element at correct position

STEP 02	Placing 2nd largest element at Correct position

i=0 | 0 | 3 | 5 | 6 |

i=1 | 0 | 3 | 5 | 6 |

| 0 | 3 | 5 | 6 |

Sorted

Third Pass:

Place the remaining two elements at their correct positions.

STEP 03	Placing 3rd largest element at Correct position

i=0 | 0 | 3 | 5 | 6 |

| 0 | 3 | 5 | 6 |

Sorted array

Total no. of passes: n-1

Total no. of comparisons: n*(n-1)/2