

Bubble Sort

also known as *Sinking sort* or *Exchange sort*. It sorts the dataset by comparing adjacent elements and swapping them if they are out of order.

It is a *stable* algorithm. i.e. the order of identical elements in the output dataset is the same as in the input dataset.

Time Complexity

Best-case : $O(N)$

The dataset is already sorted.

Worst-case : $O(N^2)$

The dataset is sorted but in the reverse order.

```
void bubbleSort(int[] array)
{
    boolean swapped;
    for(int i=0;i<array.length-1;i++)
    {
        swapped = false;
        for(int j=1;j<=array.length-1-i;j++)
        {
            if(array[j-1]>array[j])
            {
                int temp = array[j-1];
                array[j-1] = array[j];
                array[j] = temp;
                swapped = true;
            }
        }
        if(!swapped)
            break;
    }
}
```