

* Sorting techniques

1. Bubble Sort

- It is the simple sorting algorithm techniques
- In this techniques, we continually compare two adjacent items from the list. If the first element is larger than the second one ~~the~~ the position of the elements are interchanged (swap) otherwise it is not changed and then after sorting is completed. This process is used frequently until no swaps are needed.
- Then next item is compared with its adjacent element and the same process is repeated for all the elements in the array until we get sorted array.
- From its name "bubble", smallest elements at the top of the list and largest elements at the bottom of the list.
- It is also known as comparison sort because it continually compares two adjacent elements from the list.

* ALGORITHM

Step 1: Input n numbers of an array A

Step 2: Initialize $i=0$ and repeat through Step 4 if $(i < n)$

Step 3: Initialize $j=0$ and repeat through step 4 if $(j < n-i-1)$

Step 4: IF $(A[j] > A[j+1])$

a swap = $A[j]$

b $A[j] = A[j+1]$

c $A[j+1] = \text{swap}$

Step 5: Display the sorted number of array A

Step 6: Exit

4 bubble sort

* Code

```
for(int i=0; i<n; i++){
    for(int j=0; j<n-i-1; j++){
        if(arr[j] > arr[j+1]){
            int temp = arr[j];
            arr[j] = arr[j+1];
            arr[j+1] = temp;
        }
    }
}
```

* explain

- n is size of array
- arr is variable name
- If first element bigger than second element then their position will be change
- This process work until array is sorted.