My C

Selection sort

- Brute force

- Sudo Code

array[] = {original array}

index=0;

for(int i=0;i<array.lenght;i++){

min = i;

for(int j=i+1;j<array.lenght;j++){

if(array[j] < array[min]){

min = j;

}

}

if(i<min){

temp = arrany[i];

array[i] = array[min];

array[min] =temp;

}

}

4 2 5 9 8

2 4 5 9 8

2 4 5 9 8

2 4 5 8 9

O(n2)

Boubble sort:

array[] = {original array}

for(int i=0;i<array.lenght;i++){

for(int j=array.lenght-1;j>=i;j--){

if(array[j]<array[j-1]){

temp=array[j-1];

array[j-1] = array[j];

array[j] = temp;

}

}

}

4 2 5 9 8

4 2 5 8 9

2 4 5 8 9

O(n2)

Boubble sort is correct but bad preformaning alogrithum . Selection sort will preforme much better than bubble sort even though both has O(n2)

Decrease and Concur : ( Lazy manager approach )

Remove one item and do the remaining

Diagram

Description automatically generated

Recursive (if top-down) and iterative (if bottom-up)

Recursive (if top-down):

Bubble sort

Selection sort

Bottom Up :

for(i=0;i<arr.length;i++)

temp=a[i];

j=i-1

while(j>=0 && arr[j] > temp){

arr[j]=arr[j-1];

j--

}

a[j]=temp;

4 2 5 9 8

temp=4 [4 2 5 9 8]

temp=2 [4 4 5 9 8]

[2 4 5 9 8]

temp=5 [2 4 5 9 8]

[2 4 5 9 8]

[2 4 5 9 8]

temp=9 [2 4 5 9 8]

[2 4 5 9 8]

temp=8 [2 4 5 9 8]

[2 4 5 9 9]

[2 4 5 8 9]

Log n is smaller than n . 2^n is inverse of log n .

Selection Sort -

Bubble sort –

Insertion sort

Merge Sort -