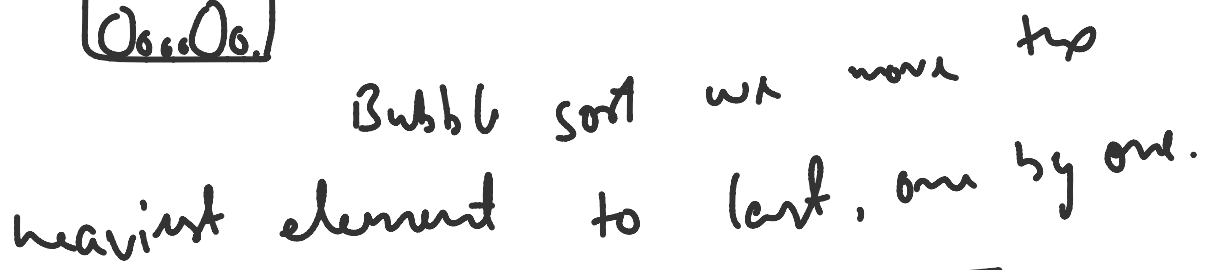


12 June 2023 20:53



Handwritten diagram illustrating the iterative merging of sorted sub-arrays. The process starts with individual elements 1, 2, 3, 4, 5, 6, 7. These are grouped into pairs: (1,2), (2,3), (3,4), (4,5), (5,6), (6,7). These pairs are then merged into larger sorted sequences: 1,2,3,4; 2,3,4,5; 3,4,5,6; 4,5,6,7. Finally, these are merged into a single sorted array: 1,2,3,4,5,6,7. The final result is circled.

→ 

1	2	3	5	6	9	3	9
---	---	---	---	---	---	---	---

  
n times

n times

2nd.

1 2 5 7 6 4 3 9

1 2 5 6 7 4 3 9

4 7  
4 3 7 9

125643

$n$  times  $\rightarrow$  sorted

for (int i = 0; i < n-1; i++)

0 1 2 3 4 5 6 7  
1 2 5 6 4 3 7 9

1 2 5 4 6 2 1  
1 2 5 4 3 | 6 7 9

$n-1$  times

3 largest

0 1  
1 2  
2 3  
3 4  
4 5  
x 5 6  
x 6 7

Q.  $n^{\text{th}}$   $10^{\text{th}}$   $n^{\text{th}}$  element 3 array  $x$  (6 7)

1 2 4 3 5 6 7 9

5<sup>th</sup>  $\rightarrow$  [1 2 3 4 5 6 7 9]  
 6  $\rightarrow$  [1 2 3 4 5 6 7 9]  $\rightarrow$  array sorted

---

```

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

```

---

when y.