Trace table : การจัดเรียงข้อมูล แบบ Bubble sort

Algorithm :

```
int arr[] = { 5, 2, 4, 6, 1, 3}
int n = 6
for (int i = 0; i < n - 1; i++){
  for (int j = 0; j < n - 1; j++){          // loop 5x5
    if (arr[j] > arr[j + 1]){               //compare index n and n+1
      swap(arr[j], arr[j + 1])              //swap array
    }
  }
}
```

Analysis :

Variables : arr, b, i, j
Conditions : i<n-1 , j<n-1 , arr[j] > arr[j+1]
Output :

Trace Table :

Step/Line no	i	i < n - 1	j	j < n - 1	arr[j] > arr[j + 1]	arr
1	-	-	-	-	-	{5, 2, 4, 6, 1, 3}
2	0	true	-	-	-	{5, 2, 4, 6, 1, 3}
3	0	true	0	true	true	{2, 5, 4, 6, 1, 3}
4	0	true	1	true	true	{2, 4, 5, 6, 1, 3}
5	0	true	2	true	false	{2, 4, 5, 6, 1, 3}

6	0	true	3	true	true	{2, 4, 5, 1, 6, 3}
7	0	true	4	true	true	{2, 4, 5, 1, 3, 6}
8	0	true	5	false	-	{2, 4, 5, 1, 3, 6}
9	1	true	0	true	false	{2, 4, 5, 1, 3, 6}
10	1	true	1	true	false	{2, 4, 5, 1, 3, 6}
11	1	true	2	true	true	{2, 4, 1, 5, 3, 6}
12	1	true	3	true	true	{2, 4, 1, 3, 5, 6}
13	1	true	4	true	false	{2, 4, 1, 3, 5, 6}
14	1	true	5	false	-	{2, 4, 1, 3, 5, 6}
15	2	true	0	true	false	{2, 4, 1, 3, 5, 6}
16	2	true	1	true	true	{2, 1, 4, 3, 5, 6}
17	2	true	2	true	true	{2, 1, 3, 4, 5, 6}
18	2	true	3	true	false	{2, 1, 3, 4, 5, 6}
19	2	true	4	true	false	{2, 1, 3, 4, 5, 6}
20	2	true	5	false	-	{2, 1, 3, 4, 5, 6}

21	3	true	0	true	true	{1, 2, 3, 4, 5, 6}
22	3	true	1	true	false	{1, 2, 3, 4, 5, 6}
23	3	true	2	true	false	{1, 2, 3, 4, 5, 6}
24	3	true	3	true	false	{1, 2, 3, 4, 5, 6}
25	3	true	4	true	false	{1, 2, 3, 4, 5, 6}
26	3	true	5	false	-	{1, 2, 3, 4, 5, 6}
27	4	true	0	true	false	{1, 2, 3, 4, 5, 6}
28	4	true	1	true	false	{1, 2, 3, 4, 5, 6}
29	4	true	2	true	false	{1, 2, 3, 4, 5, 6}
30	4	true	3	true	false	{1, 2, 3, 4, 5, 6}
31	4	true	4	true	false	{1, 2, 3, 4, 5, 6}
32	4	true	5	false	-	{1, 2, 3, 4, 5, 6}
33	5	true	0	true	false	{1, 2, 3, 4, 5, 6}
34	5	true	1	true	false	{1, 2, 3, 4, 5, 6}
35	5	true	2	true	false	{1, 2, 3, 4, 5, 6}

36	5	true	3	true	false	{1, 2, 3, 4, 5, 6}
37	5	true	4	true	false	{1, 2, 3, 4, 5, 6}
38	5	true	5	false	-	{1, 2, 3, 4, 5, 6}