

~\Desktop\Outputs\HPC\2-A.cpp

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```
1 //OUTPUT :
2
3 #include <iostream>
4 #include <stdlib.h>
5 #include <omp.h>
6 using namespace std;
7
8 void bubble(int *, int);
9 void swap(int &, int &);
10
11 void bubble(int *a, int n) {
12     for (int i = 0; i < n; i++) {
13         int first = i % 2;
14
15         #pragma omp parallel for shared(a, first)
16         for (int j = first; j < n - 1; j += 2) {
17             if (a[j] > a[j + 1]) {
18                 swap(a[j], a[j + 1]);
19             }
20         }
21     }
22 }
23
24 void swap(int &a, int &b) {
25     int test = a;
26     a = b;
27     b = test;
28 }
29
30 int main() {
31     int *a, n;
32     cout << "\nEnter total number of elements: ";
33     cin >> n;
34     a = new int[n];
35     cout << "\nEnter elements: ";
36     for (int i = 0; i < n; i++) {
37         cin >> a[i];
38     }
39
40     bubble(a, n);
41
42     cout << "\nSorted array is: ";
43     for (int i = 0; i < n; i++) {
44         cout << a[i] << endl;
45     }
46
47     return 0;
48 }
```

```
49
50  /*
51
52  OUTPUT :
53
54  Sample Input :
55
56  Enter total number of elements: 9
57  Enter elements: 5 3 1 9 8 2 4 7 6
58
59  Sample Output :
60
61  Sorted array is:
62  1
63  2
64  3
65  4
66  5
67  6
68  7
69  8
70  9
71
72
73  */
```