

```
1  #include <iostream>
2  #include <iomanip>
3
4  using namespace std;
5
6  void bubbleSort(int* a, int size)
7  {
8      if (a == nullptr)
9      {
10         cout << "No real values in array, program exits" << endl;
11     }
12     else
13     {
14         bool swapped;
15         for (int i = 0; i < size - 1; i++)
16         {
17             swapped = false;
18             for (int j = 0; j < size - i - 1; j++)
19             {
20                 if (*(a+j) > *(a+j + 1))
21                 {
22                     int temp = *(a+j);
23                     *(a + j) = *(a + j + 1);
24                     *(a + j + 1) = temp;
25                     swapped = true;
26                 }
27             }
28             if (swapped == false)
29             {
30                 break;
31             }
32         }
33     }
34 }
35
36
37 int main()
38 {
39     const int SIZE = 5;
40     int a1[] = { 3, 4, 8, 2, 1 };
41     int* p = nullptr;
42
43     bubbleSort(a1, SIZE);
44
45     for (int i = 0; i < SIZE; i++) {
46         cout << a1[i] << endl;
47     }
48
49     bubbleSort(nullptr, SIZE);
```

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50
51     return 0;
52 }
53
54
```