

```

1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <string.h>
4
5  #define SWAP(A, B) { typeof(A) C; C = A; A = B; B = C; }
6
7
8  //Complexity is O(n^2)
9  //[0] [1] [2]
10 // 3   2   1
11 // 3   1   2
12 // 1   3   2
13 // 1   2   3
14
15 //0:
16 //[0] [1] [2]
17 // 3   2   1
18
19 //1: i = 2, j = 2
20 //[0] [1] [2]
21 // 3   1   2
22
23 // i = 2, j = 1:
24 //[0] [1] [2]
25 // 1   3   2
26
27 // i = 1, j = 2
28 //[0] [1] [2]
29 // 1   2   3
30
31 // i = 1, j = 1
32 //[0] [1] [2]
33 // 1   2   3
34
35 void babSort(const char * in, char * out) {
36
37     strcpy(out, in);
38
39     for(int i = strlen(out) - 1; i > 0; i--) {
40         for(int j = strlen(out) - 1; j >= strlen(out) - i; j--)
41             if(out[j] < out[j-1])
42                 SWAP(out[j-1], out[j])
43     }
44 }
45
46 int ownComp(const void * a, const void * b) {
47
48     return ((* (char*)a) - (* (char*)b));
49 }
50
51 int main(int argc, const char * argv[]) {
52
53     if(argc <= 1) {
54         return 0;
55     }
56
57     const char * toSort = argv[1];
58     char sorted[strlen(toSort)];
59     sprintf(sorted, "%s", '\0');
60
61     printf("1) Input string is: %s\n", toSort);
62     babSort(toSort, sorted);
63     printf("1) Output string is: %s\n", sorted);
64
65     char sorted2[strlen(toSort)];
66     strcpy(sorted2, toSort);
67     printf("2) Input string is: %s\n", sorted2);
68     qsort(sorted2, strlen(toSort), sizeof(toSort[0]), ownComp);
69     printf("2) Output string is: %s\n", sorted2);
70
71     return 0;
72 }

```