

```
1 //
2 // Created by hfwei on 2023/10/12.
3 //
4
5 #include <stdio.h>
6
7 #define LEN 20
8 int numbers[LEN] = { 0 };
9
10 void SelectionSort(int arr[], int len);
11 void Swap(int left, int right);
12 int GetMinIndex(const int arr[], int begin, int end);
13 void Print(const int arr[], int len);
14
15 int main(void) {
16     int len = -1;
17     while (scanf("%d", &numbers[++len]) != EOF);
18
19     // sizeof numbers / sizeof(numbers[0])
20     Print(numbers, len);
21     SelectionSort(numbers, len);
22     Print(numbers, len);
23
24     return 0;
25 }
26
27 // arr: the (copy of the) address of the first element of the `numbers
    ` array
28 void SelectionSort(int arr[], int len) {
29     for (int i = 0; i < len; i++) {
30         int min_index = GetMinIndex(arr, i, len);
31
32         // ERROR: Swap(arr[i], arr[min_index]);
33         int temp = arr[i];
34         arr[i] = arr[min_index];
35         arr[min_index] = temp;
36     }
37 }
38
39 int GetMinIndex(const int arr[], int begin, int end) {
40     int min = arr[begin];
41     int min_index = begin;
42
43     for (int i = begin + 1; i < end; ++i) {
44         if (arr[i] < min) {
45             min = arr[i];
46             min_index = i;
47         }
48     }
49
50     return min_index;
51 }
52
```

```
53 void Swap(int left, int right) {
54     int temp = left;
55     left = right;
56     right = temp;
57 }
58
59 void Print(const int arr[], int len) {
60     printf("\n");
61     for (int i = 0; i < len; i++) {
62         printf("%d ", arr[i]);
63     }
64     printf("\n");
65 }
```