

```

1  #include <stdlib.h>
2  #include <stdio.h>
3  #define max 100
4  int insert_array(int V[]) {
5      int n, i;
6      printf("Quanti elementi?: ");
7      scanf("%d", &n);
8
9      for (i = 0; i < n; i++) {
10         printf("elemento %d: ", i);
11         scanf("%d", &V[i]);
12     }
13     return (n);
14 }
15
16 void stampa_array(int V[], int n) {
17     int i;
18     for (i = 0; i < n; i++) {
19         printf("%d ", V[i]);
20     }
21     printf("\n");
22     return;
23 }
24
25 void merge(int a[], int p, int q, int r) {
26     int i, j, k = 0, b[max];
27     i = p;
28     j = q + 1;
29     while (i <= q && j <= r) {
30         if (a[i] < a[j]) {
31             b[k] = a[i];
32             i++;
33         } else {
34             b[k] = a[j];
35             j++;
36         }
37         k++;
38     }
39     while (i <= q) {
40         b[k] = a[i];
41         i++;
42         k++;
43     }
44     while (j <= r) {
45         b[k] = a[j];
46         j++;
47         k++;
48     }
49     for (k = p; k <= r; k++)
50         a[k] = b[k - p];
51     return;
52 }
53
54 void mergeSort(int a[], int p, int r) {
55     int q;
56     if (p < r) {
57         q = (p + r) / 2;
58         mergeSort(a, p, q);
59         mergeSort(a, q + 1, r);
60         merge(a, p, q, r);
61     } return;
62 }
63
64 int main(void) {
65     int n, V[max];
66     n = insert_array(V);
67     mergeSort(V, 0, n - 1);
68     stampa_array(V, n);
69     return (0);
70 }

```