



InsertionSort.c

Saved

```
1 #include <stdio.h>
2 #include<time.h>
3 void InsertionSort(int a[],int n)
4 {
5     int i,j,y;
6     for (i=1;i<n;i++)
7     {
8         y=a[i];
9         j=i-1;
10        while(j>=0 && a[j]>y)
11        {
12            a[j+1]=a[j];
13            j=j-1;
14        }
15        a[j+1]=y;
16        printf("\nArray after Pass %d : ",i);
17        printArray(a, n);
18    }
19}
20 void printArray(int a[], int n)
21 {
22     int i;
23     for (i=0; i < n; i++)
24         printf("%d ", a[i]);
25 }
26 void main()
27 {
28     int n, array[n];
29     srand(time(0));
30     printf("Enter number of elements in Array:");
31     scanf("%d",&n);
32     for(int c=0;c<n;c++)
33         array[c]=rand()%100;
34     printf("The Array List is,\n");
35     for(int c=0;c<n;c++)
36         printf("%d ",array[c]);
37     clock_t start,end;
38     start=clock();
39     InsertionSort(array, n);
40     end=clock();
41     printf("\nTime Taken:%lf", (double)(end-start)/CLOCKS_PER_SEC);
42 }
```

× Terminal



```
Enter number of elements in Array:5
The Array List is,
56 31 18 7 36
Array after Pass 1 : 31 56 18 7 36
Array after Pass 2 : 18 31 56 7 36
Array after Pass 3 : 7 18 31 56 36
Array after Pass 4 : 7 18 31 36 56
Time Taken:0.000059
Process finished.
```

× Terminal

```
Enter number of elements in Array:10
The Array List is,
93 92 82 10 27 22 28 64 1 35
Array after Pass 1 : 92 93 82 10 27 22 28 64 1 35
Array after Pass 2 : 82 92 93 10 27 22 28 64 1 35
Array after Pass 3 : 10 82 92 93 27 22 28 64 1 35
Array after Pass 4 : 10 27 82 92 93 22 28 64 1 35
Array after Pass 5 : 10 22 27 82 92 93 28 64 1 35
Array after Pass 6 : 10 22 27 28 82 92 93 64 1 35
Array after Pass 7 : 10 22 27 28 64 82 92 93 1 35
Array after Pass 8 : 1 10 22 27 28 64 82 92 93 35
Array after Pass 9 : 1 10 22 27 28 35 64 82 92 93
Time Taken:0.000226
```

× Terminal

```
Enter number of elements in Array:20
The Array List is,
82 20 20 10 20 39 89 95 12 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 1 : 20 82 20 10 20 39 89 95 12 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 2 : 20 20 82 10 20 39 89 95 12 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 3 : 10 20 20 82 20 39 89 95 12 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 4 : 10 20 20 20 82 39 89 95 12 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 5 : 10 20 20 20 39 82 89 95 12 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 6 : 10 20 20 20 39 82 89 95 12 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 7 : 10 20 20 20 39 82 89 95 12 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 8 : 10 12 20 20 20 39 82 89 95 69 83 36 95 57 0 52 23 91 97 80
Array after Pass 9 : 10 12 20 20 20 39 69 82 89 95 83 36 95 57 0 52 23 91 97 80
Array after Pass 10 : 10 12 20 20 20 39 69 82 83 89 95 36 95 57 0 52 23 91 97 80
Array after Pass 11 : 10 12 20 20 20 36 39 69 82 83 89 95 95 57 0 52 23 91 97 80
Array after Pass 12 : 10 12 20 20 20 36 39 69 82 83 89 95 95 57 0 52 23 91 97 80
Array after Pass 13 : 10 12 20 20 20 36 39 57 69 82 83 89 95 95 0 52 23 91 97 80
Array after Pass 14 : 0 10 12 20 20 20 36 39 57 69 82 83 89 95 95 52 23 91 97 80
Array after Pass 15 : 0 10 12 20 20 20 36 39 52 57 69 82 83 89 95 95 23 91 97 80
Array after Pass 16 : 0 10 12 20 20 20 23 36 39 52 57 69 82 83 89 95 95 91 97 80
Array after Pass 17 : 0 10 12 20 20 20 23 36 39 52 57 69 82 83 89 91 95 95 97 80
Array after Pass 18 : 0 10 12 20 20 20 23 36 39 52 57 69 82 83 89 91 95 95 97 80
Array after Pass 19 : 0 10 12 20 20 20 23 36 39 52 57 69 80 82 83 89 91 95 95 97
Time Taken:0.000908
Process finished.
```


	A	B
1	5	0.000046
2	10	0.000181
3	20	0.000952
4	50	0.005358
5	100	0.022033
6		

