
Online C Compiler.

Code, Compile, Run and Debug C program online.

Write your code in this editor and press "Run" button to compile and

```
#include <stdio.h>
```

```
#include <time.h>
```

```
void delay(){  
    for (int i=0;i<10000000;i++){  
        //delay  
    }  
}
```

```
void merge(int a[],int low1,int high1,int low2,int high2)  
{
```

```
    int temp[1000];
```

```
    int i,j,k;
```

```
    i=low1;
```

```
    j=low2;
```

```
    k=0;
```

```
    while(i<=high1 && j<=high2)
```

```
{  
    if(a[i]<a[j])  
        temp[k++]=a[i++];  
    else  
        temp[k++]=a[j++];  
}
```

```
    while(i<=high1)  
        temp[k++]=a[i++];
```

```
    while(j<=high2)  
        temp[k++]=a[j++];
```

input

```
38
39
40     for(i=low1,j=0;i<=high2;i++,j++)
41         a[i]=temp[j];
42 }
43
44
45 void sort(int a[],int low,int high)
46 {
47     int mid;
48
49     if(low<high)
50     {
51         mid=(low+high)/2;
52         sort(a,low,mid);
53         sort(a,mid+1,high);
54         merge(a,low,mid,mid+1,high);
55     }
56     delay();
57 }
58
59 //display array
60 void display(int a[],int n)
61 {
62     int i;
63     for(i=0;i<n;i++)
64     {
65         printf("%d ",a[i]);
66     }
67 }
68
69 int main()
70 {
71     int a[1000],n,i;
72     int rand(void);
73     clock_t start,end;
74     double timetaken;
75
```

I


```

main.c
59 //display array
60 void display(int a[],int n)
61 {
62     int i;
63     for(i=0;i<n;i++)
64     {
65         printf("%d ",a[i]);
66     }
67 }
68
69 int main()
70 {
71     int a[1000],n,i;
72     int rand(void);
73     clock_t start,end;
74     double timetaken;
75
76     printf("Enter no of elements:");
77     scanf("%d",&n);
78
79     for(i=0;i<n;i++)
80         a[i]=rand() % 2000 + 1;
81     printf("\n\nUnsorted Array:\n");
82     display(a,n);
83
84     start = clock();
85     sort(a,0,n-1);
86     end = clock();
87     printf("\nSorted array is :");
88     timetaken=((double)(end-start))/CLOCKS_PER_SEC;
89
90     printf("\n\nArray after Merge Sort:\n");
91     display(a,n);
92
93     printf("\n\nTime taken for Merge Sort: %lf s",timetaken);
94
95     return 0;
96 }

```

Enter no of elements:5

Unsorted Array:

1384 887 778 916 1794

Sorted array is :

Array after Merge Sort:

778 887 916 1384 1794

Time taken for Merge Sort: 0.237806 s

...Program finished with exit code 0

Press ENTER to exit console.