

MERGE_SORT.C - Code::Blocks 20.03

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<global>

binary_search.c X nonRecursiveBinarySearch.c X quick_sort.c X MERGE_SORT.C X

```
1 // BE2005F062 AKASH SRIDHARAN
2 #include<stdio.h>
3
4 void mergesort(int a[],int i,int j);
5 void merge(int a[],int i1,int j1,int i2,int j2);
6
7 int main()
8 {
9     int a[30],n,i;
10    printf("Enter no of elements:");
11    scanf("%d",&n);
12    printf("Enter array elements:");
13
14    for(i=0;i<n;i++)
15        scanf("%d",&a[i]);
16
17    mergesort(a,0,n-1);
18
19    printf("\nSorted array is :");
20    for(i=0;i<n;i++)
21        printf("%d ",a[i]);
22
23    return 0;
24 }
25
26 void mergesort(int a[],int i,int j)
27 {
28     int mid;
29
30     if(i<j)
31     {
32         mid=(i+j)/2;
33         mergesort(a,i,mid);
34         mergesort(a,mid+1,j);
35         merge(a,i,mid,mid+1,j);
36     }
```

C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 36, Pos 35 Insert Read/Write defa...

C:\Users\akash\Desktop\5th_sem_books&PPTs\DAA\DAA-lab-works\MERGE_SORT.exe

```
Enter no of elements:5
Enter array elements:43
62
53
69
23

Sorted array is :23 43 53 62 69
Process returned 0 (0x0)   execution time : 18.135 s
Press any key to continue.
```

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```
31 {
32     mid=(i+j)/2;
33     mergesort(a,i,mid);
34     mergesort(a,mid+1,j);
35     merge(a,i,mid,mid+1,j);
36 }
37 }
38
39 void merge(int a[],int i1,int j1,int i2,int j2)
40 {
41     int temp[50];
42     int i,j,k;
43     i=i1;
44     j=i2;
45     k=0;
46
47     while(i<=j1 && j<=j2)
48     {
49         if(a[i]<a[j])
50             temp[k++]=a[i++];
51         else
52             temp[k++]=a[j++];
53     }
54
55     while(i<=j1)
56         temp[k++]=a[i++];
57
58     while(j<=j2)
59         temp[k++]=a[j++];
60
61     for(i=i1,j=0;i<=j2;i++,j++)
62         a[i]=temp[j];
63 }
64
65
```

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