

mergesort

```
#include<stdio.h>
void mergesort(int a[],int low,int high)
{
    int mid;
    if(low<high)
    {
        mid=(low+high)/2;
        mergesort(a,low,mid);
        mergesort(a,mid+1,high);
        merge(a,low,mid,high);
    }
}

void merge(int a[],int low,int mid,int high)
{
    int i,j,k,b[10];
    i=low;
    j=mid+1;
    k=0;
    while((i<=mid)&&(j<=high))
    {
        if(a[i]<=a[j])
        {
            b[k]=a[i];
            k++;
            i++;
        }
        else
        {
            b[k]=a[j];
            k++;
            j++;
        }
    }
    while(i<=mid)
    {
        b[k]=a[i];
        k++;
        i++;
    }
    while(j<=high)
    {
        b[k]=a[j];
        k++;
        j++;
    }
    for(i=low,k=0;i<=high;i++,k++)
    a[i]=b[k];
}
```

```

void main()
{
int a[10],l,n,i;
printf("\nHow Many Values:");
scanf("%d",&n);
printf("\nEnter Actual Values:\n");
for(i=0;i<n;i++)
{
scanf("%d",&a[i]);
}
mergesort(a,0,n-1);
printf("\nThe Sorted Elements Are:\n");
for(i=0;i<n;i++)
{
printf("%d\t",a[i]);
}
}
/* output->

```

```

How Many Values : 5
Enter Actual Values: 12
11
66
89
44

```

The Sorted Element Are :

```

11 12 44 66 89
*/

```