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Exp. Name: **Write a C program to Merging of sorted arrays**

Date: 2022-06-07

**Aim:**

Write a C program to Merging of sorted arrays

**Source Code:**

mergesort.c

```
#include<stdio.h>
void read(int [],int);
void display(int [],int);
void merge(int [],int[],int[],int,int);
void main()
{
    int n,m,i,j,a[20],b[20],c[40];
    printf("Enter number of elements for array A: ");
    scanf("%d",&m);
    printf("Enter number of elements for array B: ");
    scanf("%d",&n);
    printf("Enter elements for A in ascending order: ");
    read(a,m);
    printf("Enter elements for B in ascending order: ");
    read(b,n);
    printf("The elements in array A are:");
    display(a,m);
    printf("The elements in array B are:");
    display(b,n);
    merge(a,b,c,m,n);
    printf("The merged elements in array C are: ");
    display(c,m+n);
}
void read(int a[],int m)
{
    int i;
    for(i=0;i<m;i++)
        scanf("%d",&a[i]);
}
void display(int a[],int n)
{
    int i;
    for(i=0;i<n;i++)
        printf("%d ",a[i]);
    printf("\n");
}
void merge(int a[],int b[],int c[],int m,int n)
{
    int i,j,k;
    i=j=k=0;
    while(i<m&&j<n)
    {
        if(a[i]<b[j])
            c[k++]=a[i++];
        else
            c[k++]=b[j++];
    }
}
```

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```
}  
while(i<m)  
{  
    c[k++]=a[i++];  
}  
while(j<n)  
{  
    c[k++]=b[j++];  
}  
}
```

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### Execution Results - All test cases have succeeded!

Test Case - 1
<b>User Output</b>
Enter number of elements for array A: 5
Enter number of elements for array B: 5
Enter elements for A in ascending order: 12 23 34 45 56
Enter elements for B in ascending order: 21 32 43 54 65
The elements in array A are:12 23 34 45 56
The elements in array B are:21 32 43 54 65
The merged elements in array C are: 12 21 23 32 34 43 45 54 56 65

Test Case - 2
<b>User Output</b>
Enter number of elements for array A: 4
Enter number of elements for array B: 4
Enter elements for A in ascending order: 32 85 96 98
Enter elements for B in ascending order: 52 64 73 82
The elements in array A are:32 85 96 98
The elements in array B are:52 64 73 82
The merged elements in array C are: 32 52 64 73 82 85 96 98

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