

# Merge 2 sorted array and sort in 3<sup>rd</sup> array

```
#include <stdio.h>

int main()
{
    int ar1[20], ar2[20], ar3[50];
    int m,n,i,j,k;
    printf("Enter number of elements in array 1 : ");
    scanf("%d",&m);
    printf("Enter array 1 in sorted order : ");
    for(i=0;i<m;i++)
    {
        scanf("%d",&ar1[i]);
    }
    printf("Enter number of elements in array 2 : ");
    scanf("%d",&n);
    printf("Enter array 2 in sorted order : ");
    for(i=0;i<n;i++)
    {
        scanf("%d",&ar2[i]);
    }
    i=j=k=0;
    while(i<m&& j<n)
    {
        if(ar1[i]>ar2[j])
```

```
{
ar3[k++]= ar2[j++];
}
else
{
ar3[k++]=ar1[i++];
}
}
while(i<m)
{
ar3[k++]=ar1[i++];
}
while(j<n)
{
ar3[k++]= ar2[j++];
}
printf("\nFirst array is :\n");
for(i=0;i<m;i++)
{
printf("\n%d \n",ar1[i]);
}
printf("\nSecond array is : \n");
for(i=0;i<n;i++)
{
printf("%d \n",ar2[i]);
}
```

```
printf("\nMerged array is :\n");
```

```
for(i=0;i<m+n;i++)
```

```
{
```

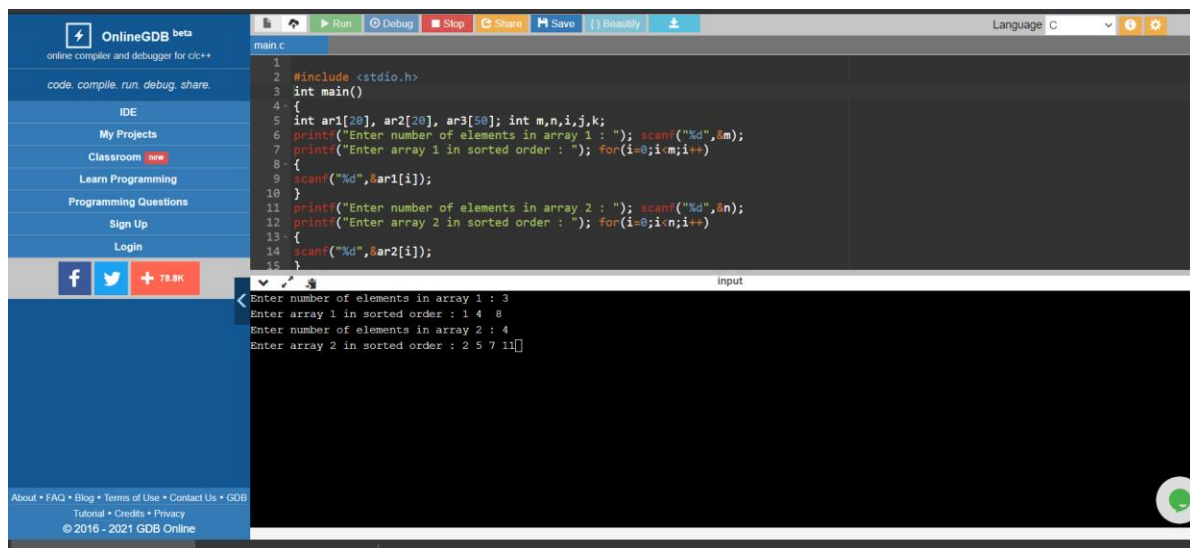
```
printf("%d \n",ar3[i]);
```

```
}
```

```
return 0;
```

```
}
```

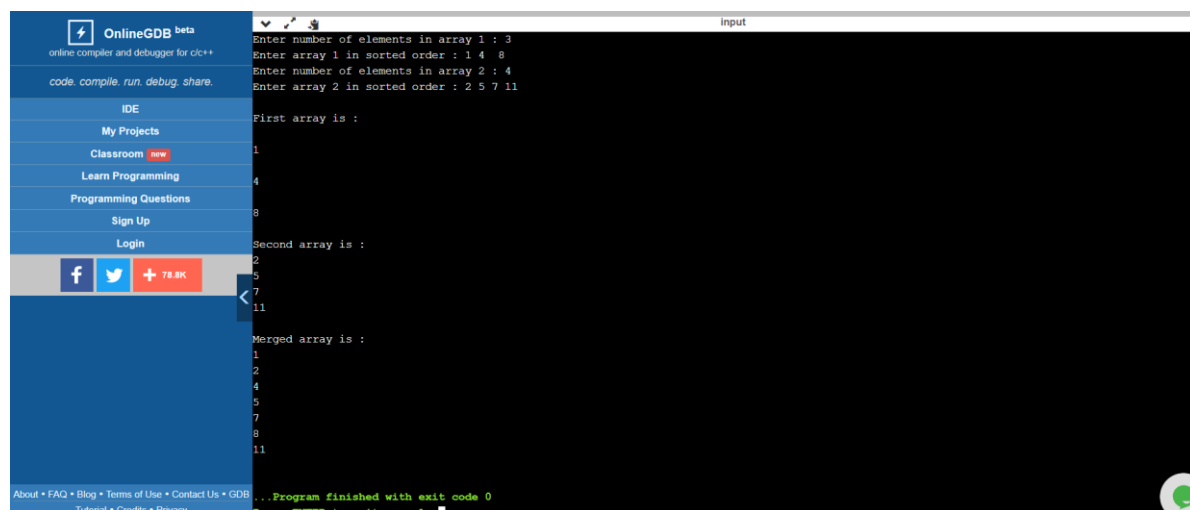
## Output



```
main.c
1 #include <stdio.h>
2 int main()
3 {
4     int ar1[20], ar2[20], ar3[50]; int m,n,i,j,k;
5     printf("Enter number of elements in array 1 : "); scanf("%d",&m);
6     printf("Enter array 1 in sorted order : "); for(i=0;i<m;i++)
7     {
8         scanf("%d",&ar1[i]);
9     }
10    printf("Enter number of elements in array 2 : "); scanf("%d",&n);
11    printf("Enter array 2 in sorted order : "); for(i=0;i<n;i++)
12    {
13        scanf("%d",&ar2[i]);
14    }
15 }
```

input

```
< Enter number of elements in array 1 : 3
Enter array 1 in sorted order : 1 4 8
Enter number of elements in array 2 : 4
Enter array 2 in sorted order : 2 5 7 11
```



```
input
Enter number of elements in array 1 : 3
Enter array 1 in sorted order : 1 4 8
Enter number of elements in array 2 : 4
Enter array 2 in sorted order : 2 5 7 11

First array is :
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Second array is :
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Merged array is :
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

...Program finished with exit code 0
Press ENTER to exit console.
```