

## Program to perform merge sort

```
import java.io.*;
class merg_sort
{
public static void main(String arg[])
{
int a[]=new int[10];
int b[]=new int[10];
int c[]=new int[20];

DataInputStream ins=new DataInputStream(System.in);
int i,j,num=0,temp=0;

try
{
System.out.println("Enter no. of elements in both of the arrays ");
num=Integer.parseInt(ins.readLine());

System.out.println("Enter elements of 1st array ");
for(i=0;i<num;i++)
{
a[i]=Integer.parseInt(ins.readLine());
}

System.out.println("Enter elements of 2nd array ");
for(i=0;i<num;i++)
{
```

```
        b[i]=Integer.parseInt(ins.readLine());
    }
}
catch(IOException e)
{}
```

```
for(i=0;i<num;i++)
{ for(j=i+1;j<num;j++)
  { if(a[i]>a[j])
    { temp=a[i];
      a[i]=a[j];
      a[j]=temp;
    }
  }
}
```

```
for(i=0;i<num;i++)
{ for(j=i+1;j<num;j++)
  { if(b[i]>b[j])
    { temp=b[i];
      b[i]=b[j];
      b[j]=temp;
    }
  }
}
```

```
int k=0;
```

```

for(i=0,j=0;i<num && j<num;)
{
    if(a[i]<b[j])
        {
            c[k]=a[i];
            i++;k++;
        }
    else
        {
            c[k]=b[j];
            j++;k++;
        }
}
int ptr;
if(i>=num)
{
    for(ptr=0;ptr<=(num-j);ptr++)
        c[k+ptr]=b[j+ptr];
}
else
{
    for(ptr=0;ptr<=(num-i);ptr++)
        c[k+ptr]=a[i+ptr];
}

System.out.print("The sorted list is: ");
for(i=0;i<2*num;i++)
    System.out.print(c[i]+"\\t");
}

```

```
}
```

**Output:**

```
C:\Documents and Settings\Administrator\Desktop\java\New Folder>java merg_sort
Enter no. of elements in both of the arrays
3
Enter elements of 1st array
2
4
7
Enter elements of 2nd array
1
2
6
The sorted list is: 1 2 2 4 6 7
```

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