

Experimet – 2

```
#include <iostream>
using namespace std;

void merge(int arr[],int b[],int l,int mid,int r)
{
int i=l;
int j=mid+1;
int k=l;
while(i<=mid&& j<=r)
{
if(arr[i]<arr[j])
{
b[k]=arr[i];
i++;
}
else
{
b[k]=arr[j];
j++;
}
k++;
}
if(i>mid)
{
while(j<=r)
{
b[k]=arr[j];
j++;
k++;
}
}
else
{
while(i<=mid)
{
b[k]=arr[i];
i++;
```

```

k++;
}
}

for(int k=1;k<=r;k++)
{
arr[k]=b[k];
}

}
void demerge(int arr[],int b[],int l,int r)
{
if(l<r)
{
int mid=(l+r)/2;
demerge(arr,b,0,mid);//function call
demerge(arr,b,mid+1,r);//function call
merge(arr,b,l,mid,r);
}
}

int main() {
int n;
cout<<"Enter the array size:";
cin>>n;
int arr[n];
int b[n];
cout<<"Enter the array element:"<<endl;

for(int i=0;i<n;i++)
{
cin>>arr[i];
}
demerge(arr,b,0,n);//function call
cout<<"Sorted array element are:"<<endl;

for(int i=0;i<n;i++)
{
cout<<arr[i]<<endl;
}
}

```

```
return 0;
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}
```

Output:

Enter the array size:5

Enter the array element:

1

4

2

5

3

Sorted array element are:

1

2

3

4

5