```
//Created By Ritwik Chandra Pandey on 6/11/21
//Merge Sort


#include <stdio.h>

void display(int arr[15], int n) {
	int i;
	for(i=0;i<n;i++){
		printf("%d ",arr[i]);

	}
	printf("\n");
}
void merge(int arr[15], int low, int mid, int high) {
	int i = low,h =low,j=mid+1,k,temp[15];
	while(h<=mid && j<=high){
		if(arr[h]<=arr[j]){
			temp[i] = arr[h];
			h++;
		}else{
			temp[i] = arr[j];
			j++;
		}
		i++;
	}
	if(h>mid){
		for(k=j;k<=high;k++){
			temp[i] = arr[k];
			i++;
		}
	}else{
		for(k=h;k<=mid;k++){
			temp[i] = arr[k];
			i++;
		}
	}
	for(k=low;k<i;k++){
		arr[k] = temp[k];
```

```
        }
}
void splitAndMerge(int arr[15], int low, int high) {
        if(low<high){
                int mid = (low+high)/2;
                splitAndMerge(arr,low,mid);
                splitAndMerge(arr,mid+1,high);
                merge(arr,low,mid,high);
        }

}


void main() {
        int arr[15], i, n;
        printf("Enter array size : ");
        scanf("%d", &n);
        printf("Enter %d elements : ", n);
        for (i = 0; i < n; i++) {
                scanf("%d", &arr[i]);
        }
        printf("Before sorting the elements are : ");
        display(arr, n);
        splitAndMerge(arr, 0, n - 1);
        printf("After sorting the elements are : ");
        display(arr, n);
}
```