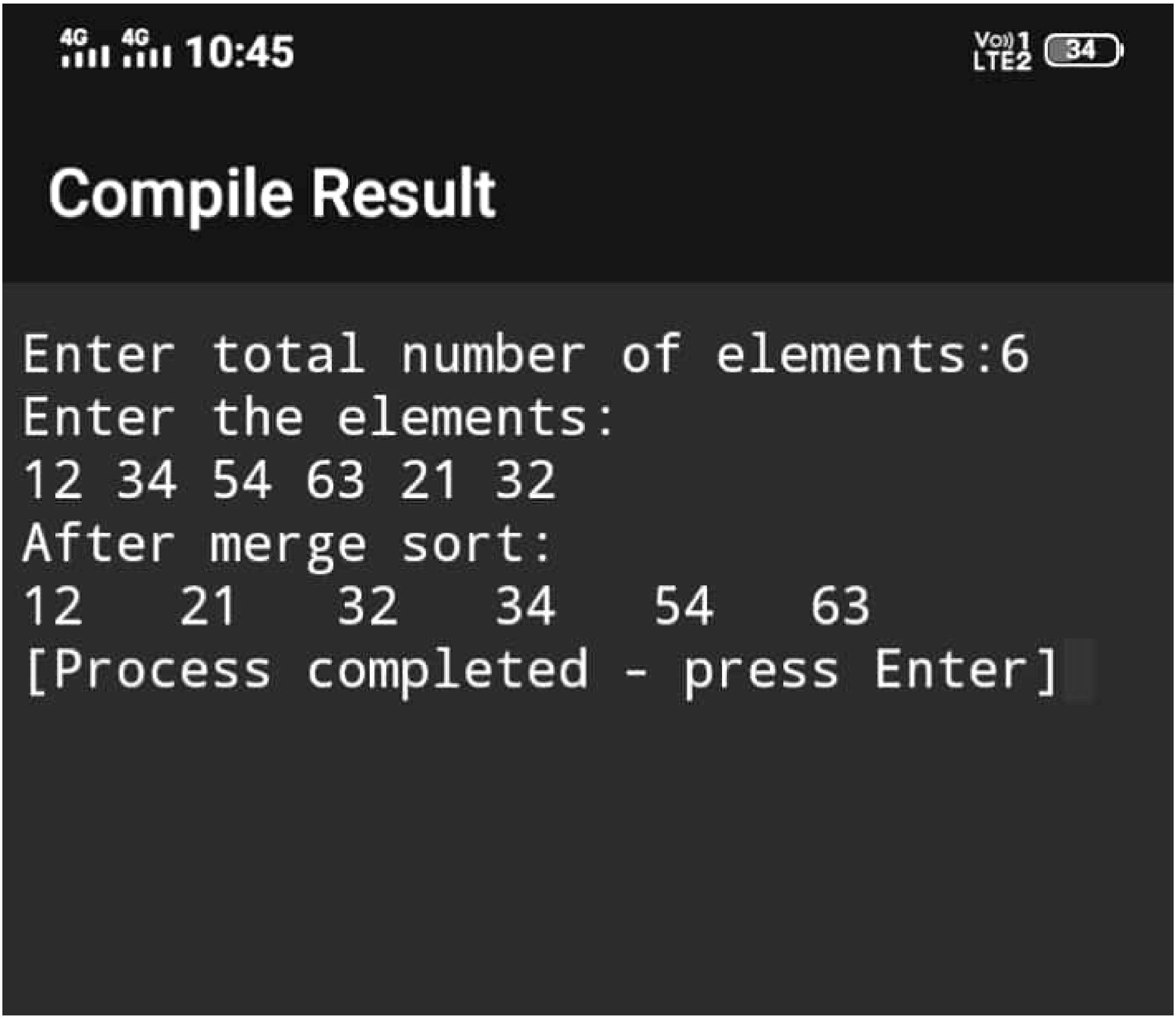


Compile Result

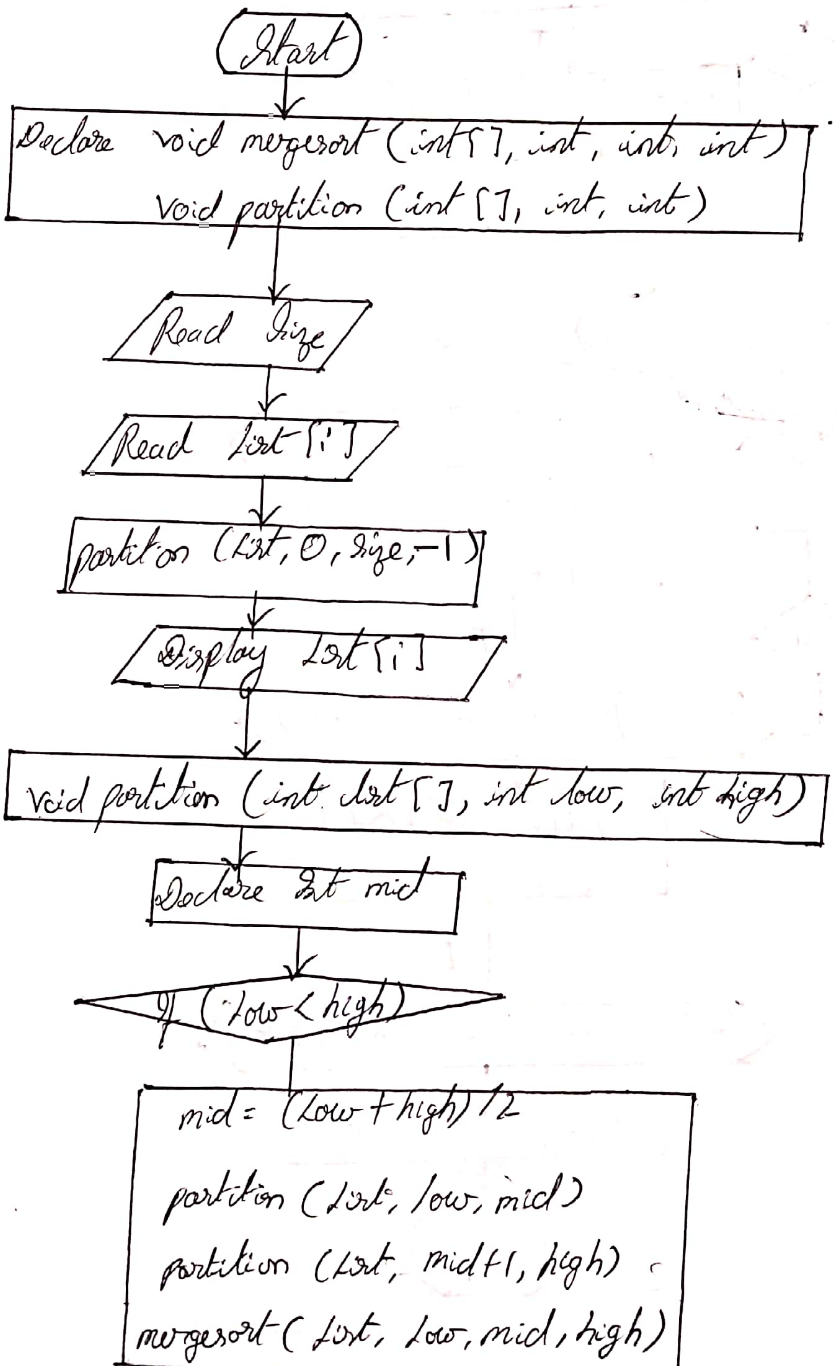
```
Enter total number of elements:6
Enter the elements:
12 34 54 63 21 32
After merge sort:
12   21   32   34   54   63
[Process completed - press Enter]
```

Algorithm

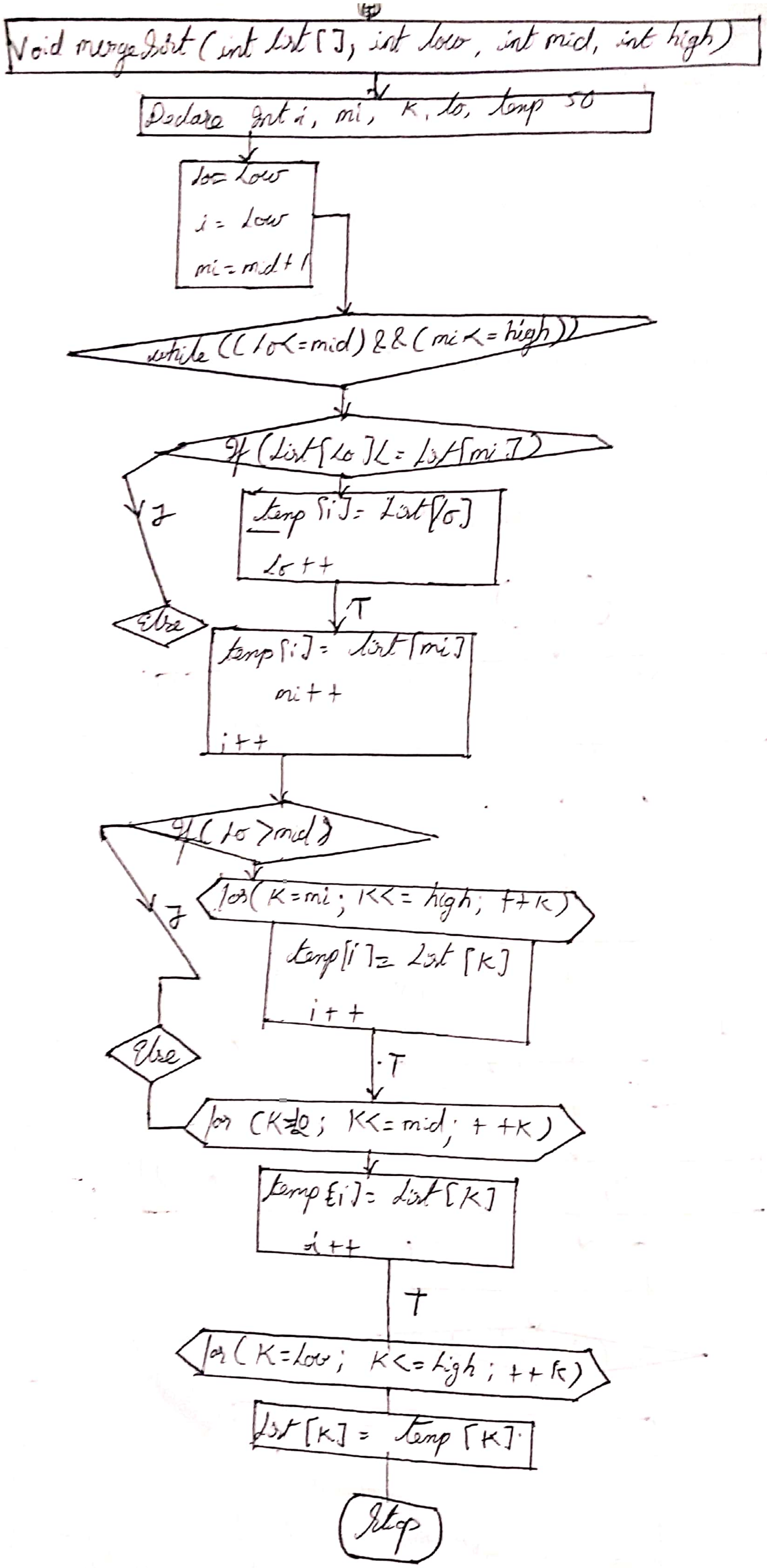
```
Step1: Start

Step2: Declare Int list[50]; Int i, size;

Step3: Enter the size

Step4: Read the Elements using for loop
    4.1  partition (List, 0, size-1)
            Display After merge sort
            for(i=0; i<size; ++i)
                printf("%d", list[i])

Step5: Declare int mid;
    5.1  If(low< high)
    5.2    mid = (low +high)/2
           partition (List, low, mid)
           partition (List, mid+1, high)
         merge_sort (List, low, mid, high)

Step6: Declare Int i, mi, k, lo, temp[50]
    6.1  lo = Low
         i = Low
         mi = mid+1
    6.2  while ((lo<=mid) && (mi<=high)
            If (List [Lo] <= List [mi])
                temp [i] = list [lo]
                  lo ++
            Else
                temp [i] = List [mi]
                  mi ++
              i++
for( K= mi; K<= high ; K++)
        temp[i]: list [K]
           i ++
6.4
Else
     for ( K= lo ; K< = mid; ++K)
           temp [i] = list [K]
              i++

     for  (K= low ; K<=high; K++)
           list [K]= temp [K]
```

Step7:   Stop:

Flowchart



Start
Declare void mergesort (int[], int, int, int)
Void partition (int [], int, int)
Read size
Read list [i]
partition (List, 0, size,-1)
Display List [i]
Void partition (int list [], int low, int high)
Declare Int mid
If (low < high)
mid = (Low + high) /2
partition (List, low, mid)
partition (List, mid+1, high)
mergesort (List, Low, mid, high)


Void mergeSort (int list[], int low, int mid, int high)
Declare int i, mi, k, lo, temp 50
lo= Low
i = Low
mi = mid + 1
while ((lo<=mid) && (mi<=high))
If (List[lo]<= List[mi])
temp [i]= List[lo]
lo++
F
T
Else
temp [i]= list [mi]
mi++
i++
If (lo >mid)
F
for (K=mi; K<= high; ++K)
temp[i]= List [K]
i++
T
Else
for (K=lo; K<=mid; ++K)
temp [i]= list [K]
i++
T
for (K=Low; K<=high; ++K)
list [K] = temp [K].
Stop