QUICK SORT

```
#include <stdio.h>
 void partition(int a[],int low,int high)
{
     int mid;

  if(low < high)
     {
mid = (low + high)/2;

partition( a, low, mid);

partition(a, mid+1, high);

merge_Sort(a, low, mid, high);
  }
}

void merge_Sort(int a[], int low, int mid, int high)
{
int i, j, k, lo, temp[50];

lo = low;
i = low;
j = mid + 1;
while ((lo <= mid) && (j <= high))
{
if (a[lo] <= a[j])
{
temp[i] = a[lo];
lo++;
```

```
}
else
{
temp[i] = a[j];
j++;
}
i++;
}

if (lo > mid)
{
for (k = j; k <= high; k++)
{
temp[i] = a[k];
i++;
}
}
else
{
for (k = lo; k <= mid; k++)
{
temp[i] = a[k];
i++;
}
}

for (k = low; k <= high; k++)
a[k] = temp[k];
}
```

```
int main()
{
    int a[50] ,  i, n;
    printf("Enter total number of elements:");
    scanf("%d", &n);
    printf("Enter the elements:\n");
    for(i = 0; i < n; i++)
        scanf("%d", &a[i]);

    partition( a, 0, n - 1);

    printf("After merge sort:\n");
    for(i = 0;i < n; i++)
                printf("%d\t", a[i]);
}
```

OUTPUT: