Find out the merge sort of the given array.

```
#include <stdio.h>
int c[50];

void merge (int arr[], int low, int mid,
            int high)
{ int i = low;
  int j = mid + 1;
  int k = 0;
while (i <= mid && j <= high)
  { if (arr[i] <= arr[j])
      { c[k] = arr[i];
        i++;
        k++;
      } else
      { c[k] = arr[j];
        j++;
        k++;
      }
}
while (i <= mid)
{ c[k] = arr[i];
  i++;
  k++;
}
while (j <= high)
{ c[k] = arr[j];
  j++;
  k++;
}
```

```
for (k=0; k < (high - low+1); k++)
    arr[low+k] = c[k];

void mergesort (int arr[], int low, int high)
{ int low < high)
  { int mid = (low + high) / 2;

mergesort (arr, low, mid);
mergesort (arr, mid+1, high);
merge (arr, low, mid, high);
}
}

int main ()
{ int size;
printf ("Enter the number of elements :");
scanf ("%d", &size);
int arr[size];
printf ("Enter the elements");
for (int i=0; i<size; i++)
scanf ("%d", &arr[i]);
printf ("Original array :");
for (int i=0; i<size; i++)
printf ("%d", arr[i]);
printf ("\n");

mergeSort (arr, 0, size-1);
printf ("Sorted array :");
for (int i=0; i<size; i++)
printf ("%d", arr[i]);
printf ("\n");
```

Date _____ Page _____

```
    return 0;
}
```

Output

```
Enter the number of elements: 4
Enter the elements: 8 4 6 9
Original array: 8 4 6 9
Sorted array: 4 6 8 9.
```

13/12/23

```
Enter the number of elements: 4
Enter the elements:
8
4
6
9
Original array: 8 4 6 9
Sorted array: 4 6 8 9

Process returned 0 (0x0)   execution time : 29.762 s
Press any key to continue.
```