MEARGE SORT :

#include<stdio.h>

void merge(int arr[], int low, int mid, int high) {

int l = low, r = mid + 1;

int a = high - low + 1;

int temp[a];

int i = 0;

while (l <= mid && r <= high) {

if (arr[l] <= arr[r])

temp[i++] = arr[l++];

else

temp[i++] = arr[r++];

}

while (l <= mid)

temp[i++] = arr[l++];

while (r <= high)

temp[i++] = arr[r++];

for (int j = 0; j < a; j++)

arr[low + j] = temp[j];

}

void meso(int arr[], int low, int high) {

if (low >= high) return;

int mid = (low + high) / 2;

meso(arr, low, mid);

meso(arr, mid + 1, high);

merge(arr, low, mid, high);

}

void mergesort(int arr[], int n) {

meso(arr, 0, n - 1);

}

int main() {

int n;

printf("Enter number of elements: ");

scanf("%d", &n);

int arr[n];

printf("Enter elements: ");

for (int i = 0; i < n; i++)

scanf("%d", &arr[i]);

mergesort(arr, n);

printf("Sorted elements: ");

for (int i = 0; i < n; i++)

printf("%d ", arr[i]);

return 0;

}

OUTPUT:

