```c
//program for sorting element in array by using merge sort
#include<stdio.h>

void merge(int a[], int low, int mid, int high)
{
        int i = low, j = mid + 1,k=0,b[10];

        while (i <= mid && j <= high)
        {
                if (a[i] < a[j])
                {
                        b[k] = a[i];
                        i++;
                        k++;
                }
                else
                {
                        b[k] = a[j];
                        k++;
                        j++;
                }
        }

        while (i <= mid)
        {
                b[k] = a[i];
                k++;
                i++;
        }

        while (j <= high)
        {
                b[k] = a[j];
                k++;
                j++;
        }

        k = 0;
        for (i = low; i <= high; i++, k++)
        {
                a[i] = b[k];
        }
}
void merge_sort(int a[], int low, int high)
{
        int mid;

        if (low < high)
        {
                mid = (low + high) / 2;
                merge_sort(a, low, mid);
                merge_sort(a, mid + 1, high);
                merge(a, low, mid, high);
        }
}
void main()
{
        int i, n, a[10];

        printf("Total number of elements\n");
        scanf_s("%d", &n);
```

```c
    printf("Enter the elements\n");

    for (i = 0; i < n; i++)
    {
            scanf_s("%d", &a[i]);
    }

    merge_sort(a, 0, n - 1);

    printf("Sorted array is [");
    for (i = 0; i < n; i++)
    {
            printf("%d ,", a[i]);
    }
    printf("]");
}
```