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#include <stdio.h>

void merge(int a[], int l, int m, int r)
{
    int i = l, j = m + 1, k = l;
    int temp[100];

    while (i <= m && j <= r)
    {
        if (a[i] <= a[j])
            temp[k++] = a[i++];
        else
            temp[k++] = a[j++];
    }

    while (i <= m)
        temp[k++] = a[i++];

    while (j <= r)
        temp[k++] = a[j++];

    for (i = l; i <= r; i++)
        a[i] = temp[i];
}

void mergeSort(int a[], int l, int r)
{
    if (l < r)
    {
        int m = (l + r) / 2;
        mergeSort(a, l, m);
        mergeSort(a, m + 1, r);
        merge(a, l, m, r);
    }
}

int main()
{
    int a[100], n, i;

    printf("Enter number of elements: ");
    scanf("%d", &n);

    printf("Enter elements:\n");
    for (i = 0; i < n; i++)
        scanf("%d", &a[i]);

    mergeSort(a, 0, n - 1);
}

```

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

return 0;
}
```