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Source Code:

```
#include <stdio.h>
void merge_sort(int i, int j, int a[], int aux[]) {
    if (j <= i) {
        return;
    }
    int mid = (i + j) / 2;
    merge_sort(i, mid, a, aux);
    merge_sort(mid + 1, j, a, aux);
    int pointer_left = i;
    int pointer_right = mid + 1;
    int k;
    for (k = i; k <= j; k++) {
        if (pointer_left == mid + 1) {
            aux[k] = a[pointer_right];
            pointer_right++;
        } else if (pointer_right == j + 1) {
            aux[k] = a[pointer_left];
            pointer_left++;
        } else if (a[pointer_left] < a[pointer_right]) {
            aux[k] = a[pointer_left];
            pointer_left++;
        } else {
            aux[k] = a[pointer_right];
            pointer_right++;
        }
    }
    for (k = i; k <= j; k++) {
        a[k] = aux[k];
    }
}
int main() {
```

```
int a[100], aux[100], n, i, d, swap;
printf("Enter number of elements in the array:\n");
scanf("%d", &n);
printf("Enter %d integers\n",
n); for (i = 0; i < n; i++)
    scanf("%d", &a[i]);
merge_sort(0, n - 1, a, aux);
printf("Printing the sorted
array:\n"); for (i = 0; i < n; i++)
    printf("\t%d", a[i]);
return 0;
}
```

Output:-

Enter number of elements in the
array: 5

Enter 5 integers

34

56

20

1

0

Printing the sorted array:

0 1 20 34 56