

Due Date: October 27, 2011, 23:55 (submit online at COW)

**CENG 707
Fall 2011-2012**

Assignment #2

Bug Finding in a Recursive Merge Sort Program

In this assignment, your goal is to write find the bug in the following Merge Sort program and correct that bug. The digital version of the program can be found in the newsgroup post.

```
#include <stdio.h>

void mergeSort(int a[], int start, int end)
{
    int mid;
    int a1,a2,cnt,c[end-start+1];
    int i;
    if (start>=end) return;

    mid = (start+end)/2;
    mergeSort(a,start,mid);
    mergeSort(a,mid+1,end);
    a1 = start;
    a2 = mid+1;
    cnt=0;
    while (a1<=mid && a2<=end)
    {
        if (a[a1]<a[a2])
            c[cnt++]=a[a1++];
        else
            c[cnt++]=a[a2++];
    }
    if (a2<=end)
    {
        while (a2<=end)
            c[cnt++]=a[a2++];
    }
    else
    {
        while (a1<=mid)
            c[cnt++]=a[a1++];
    }
    for (cnt=start;cnt<=end;cnt++)
        a[cnt]=c[cnt];
    return;
}
```

```
int main()
{
    int i;
    int a[] = {4,8,1,6};
    mergeSort(a,0,3);
    for (i=0;i<3;i++)
    {
        printf("%d ",a[i]);
    }
    printf("\n");
    return 0;
}
```