

```

1: // Inversions
2:
3: #include<stdio.h>
4: int merge(int arr[],int temp[],int left,int mid,int right){
5:     int i, j, k,count=0;
6:
7:     i = left;
8:     j = mid;
9:     k = left;
10:    while ((i<=mid-1)&&(j<=right)) {
11:        if (arr[i] <= arr[j]) {
12:            temp[k++] = arr[i++];
13:        }
14:        else {
15:            temp[k++] = arr[j++];
16:            count =count + (mid - i);
17:        }
18:    }
19:    while (i <= mid - 1)
20:        temp[k++] = arr[i++];
21:    while (j <= right)
22:        temp[k++] = arr[j++];
23:
24:    for(int i=left;i<=right;++i)
25:        arr[i]=temp[i];
26:    return count;
27: }
28: int merge_count(int arr[],int temp[],int left,int right){
29:     int mid;
30:     int count=0;
31:     if(right>left){
32:         mid=(left+right)/2;
33:         count=merge_count(arr,temp,left,mid);
34:         count+=merge_count(arr,temp,mid+1,right);
35:         count+=merge(arr,temp,left,mid+1,right);
36:     }
37:     return(count);
38: }
39:
40:
41:
42: int main(){
43:     int arr[5]={2,4,3,1,5};
44:     int temp[5];
45:     int p=merge_count(arr,temp,0,4);
46:     printf("Ans: %d",p);
47: }

```