```
#include <stdio.h>
#include <stdlib.h>
int findMax(int a[],int n)
{
  int max=a[0];
  int i;
  for (i = 1; i < n; i++)
  {
      if(a[i]>max)
      {
          max=a[i];
      }
  }
  return max;
}
void countSort(int a[],int n) //here n is size of array
{
    int i,j,max,*c;
    max=findMax(a,n);//find max elemement value into the original array
    c=(int*)malloc(sizeof(int)*(max+1));//dynamic memory from 1 to (max+1) = max
element's size allocated

    for ( i = 0; i < max+1; i++) {
        c[i]=0; // intialized all element's value =0
    }

    for ( i = 0; i < n; i++) {
        c[a[i]]++;//the element in terms of their values stored into count array

    }

    i=0,j=0;
    //value restored from count array to original array
    while(j<max+1)//check element up to max
   {
       if(c[j]>0)
       {
           a[i++]=j;
           c[j]--;
       }
       else
       {
           j++;
       }
   }

}

int main()
{
    int a[100],i,n;
    printf("enter the size");
    scanf("%d",&n);
```

```
    printf("enter the elements into the array");
    for (i = 0; i < n; i++)
    {
        scanf("%d",&a[i]);
    }
    printf("entered elements are :");
    for (i = 0; i < n; i++)
    {
        printf("%d ",a[i]);
    }

    countSort(a,n);
    printf("\nsorted elements are :");
    for (i = 0; i < n; i++)
    {
        printf("%d ",a[i]);
    }
    return 0;
}
```