```
#include<stdio.h>    /* RADIX SORT */
#include<math.h>

int arr[100],n;
struct queue
{
int data[10];
int front,rear;
}q[10];

void radix( )
{
int i,i1,j,s,pos,c,max;
for(i=0;i<c;i++)
{
        //reset queues
        for(i1=0;i1<10;i1++)
        {
                q[i1].front=-1;
                q[i1].rear=-1;
        }
        for(j=0;j<n;j++)
        {
                s=(arr[j]%(int)pow(10.0, i+1))/(int)pow(10.0, i);

                q[s].rear++;
                q[s].data[q[s].rear]=arr[j];
                if (q[s].front==-1)  q[s].front=0;
        }
        pos=0;
        for(j=0;j<10;j++)
        {
                while(q[j].front!=-1 && q[j].front <= q[j].rear)
                {       arr[pos++]=q[j].data[q[j].front];
                        q[j].front++;
                }
        }
}
 printf("\n");
}

void main()
{
int i,j;

printf("Please enter the number of elements \n");
scanf("%d",&n);

printf("please enter the elements \n");
for(i=0;i<n;i++)        scanf("%d",&arr[i]);

radix( );
printf("the sorted elements are \n");
for(i=0;i<n;i++)        printf("%d\t",arr[i]);
}
```

```
for(i=0;i<n;i++)
        if(i==0) max=arr[i];
        else if(arr[i]>max) max=arr[i];

c=0;
while(max>0)
{
        max=max/10;
        c=c+1;
}
```