```c
1. #include<stdio.h>
#include<stdlib.h>
int main()
{

    int a,b,c;
    printf("enter three sides of triangle");
    scanf("%d,%d,%d",&a,&b,&c);
    if((a>10)||(b>10)||(c>10))
    {
        printf("out of range");
        exit(0);
    }
    if((a<=b+c)&&(b<=a+c)&&(c<=a+b))
    {
        if((a==b)&&(b==c))
        {

            printf("equilateral triangle");
        }
        else if((a!=b)&&(a!=c)&&(b!=c))
        {
            printf("scalen teinagle");

        }
        else
            printf("isosclence tirangle");
    }
    else
        printf("triangle is not formed");
}
```

```c
2. #include<stdio.h>
#include<stdio.h>
int main()
{
    int locks,stocks,barrels,t_sales,flag=0;
    float commission;
    printf("enter the total number of locks");
    scanf("%d",&locks);
    if((locks<=0)||(locks>70))
    {
        flag=1;
    }
    printf("enter the total number of stocks");
    scanf("%d",&stocks);
    if((stocks<=0)||(stocks>80))
        {
            flag=1;
        }
    printf("enter the total number of barrels");
    scanf("%d",&barrels);
```

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    if((barrels<=0)||(barrels>90))
    {
        flag=1;
    }
    if(flag==1)
    {
        printf("invalid input");

    }
    t_sales=(locks*45)+(stocks*30)+(barrels*25);
    if(t_sales<=1000)
    {
        commission=0.10*t_sales;
    }
    else if(t_sales<1800)
    {
        commission=0.10*1000;
        commission=commission+(0.15*(t_sales-1000));
    }
    else
    {
        commission=0.10*1000;
        commission=commission+(0.15*800);
        commission=commission+(0.20*(t_sales-1800));

    }
    printf("%d\n%f",t_sales,commission);
}
```

```c
3. #include<stdio.h>
#include<stdlib.h>
main()
{

    int
    month[12]={31,28,31,30,31,30,31,31,30,31,30,31};
    int d,m,y,nd,nm,ny,ndays;
    printf("enter the date ,month year");
    scanf("%d%d%d",&d,&m,&y);
    ndays=month[m-1];
    if(y<=1813&&y>2012)
    {
        printf("invalid input year");
        exit(0);

    }
    if(d<=0||d>ndays)
    {
        printf("invalid input days");
        exit(0);
    }
    if(m<1&&m>12)
```

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    {
        printf("invalid input month");
        exit(0);
    }
    if(m==2)
    {
        if(y%100==0)
        {
            if(y%400==0)
                ndays=29;
        }
        else if(y%4==0)
            ndays=29;
    }
    nd=d+1;
    nm=m;
    ny=y;
    if(nd>ndays)
    {
        nd=1;
        nm++;

    }
    if(nm>12)
    {
        nm=1;
        ny++;
    }
    printf("\n%d%d%d",d,m,y);
    printf("\n%d%d%d",nd,nm,ny);
}
```

```c
10. #include<stdio.h>
#include<conio.h>
int main()
{
    int a[20],n,low,high,mid,key,i,flag=0;
    printf("enter the value of n:\n");
    scanf("%d",&n);
    if(n>0)
    {
        printf("enter %d element inn ascending order\n",n);
        for(i=0;i<n;i++)
        {
            scanf("%d",&a[i]);
        }
        printf("enter the key element to be searched\n");
        scanf("%d",&key);
        low=0;
        high=n-1;
        while(low<=high)
        {
            mid=(low+high)/2;
            if(a[mid]==key)
```

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                {
                        flag=1;
                        break;

                }
                else if(a[mid]<key)
                {
                        low=mid+1;
                }
                else
                {
                        high=mid-1;
                }
        }
        if(flag==1)
                printf("successful search\n element found at the
location %d\n",mid+1);
        else
                printf("key element not found\n");
    }
    else
        printf("wrong input");
    return 0;
}
```


```c
12. #include<stdio.h>
main()
{

    float kan,eng,hindi,avmar;
    printf("letter grading\n");
    printf("SSLC Marks Grading\n");
    printf("enter the marks of kan");
    scanf("%f",&kan);
    printf("enter the marks of eng");
    scanf("%f",&eng);
    printf("enter the marks of hindi");
    scanf("%f",&hindi);
    avmar=(kan+eng+hindi)/3;
    printf("answer is %f",avmar);
    if((avmar<=35)&&(avmar>0))
        printf("fail");
        else if((avmar<=40)&&(avmar>35))
        printf("grade C");
        else if ((avmar<=50)&&(avmar>40))
        printf("grade C+");
        else if((avmar<=60)&&(avmar>50))
        printf("grade B");
        else if((avmar<=70)&&(avmar>60))
        printf("grade B+");
        else if((avmar<=80)&&(avmar>70))
        printf("grade A");
        else if((avmar<=90)&&(avmar>100))
        printf("grade A+");
```

```
}
```

11.

```c
#include<stdio.h>
void swap(int*a,int*b)
{
    int t=*a;
    *a=*b;
    *b=t;
}
int partition (int arr[],int I,int h)
{
    int x=arr[h];
    int i=(I-1),j;
    for(j=I;j<=h-1;j++)
    {
        if(arr[j]<=x)
        {
            i++;
            swap(&arr[i],&arr[j]);
        }
    }
    swap(&arr[i+1],&arr[h]);
    return(i+1);
}
void quickSortIterative(int arr[],int I,int h)
{
    int stack[10],p;
    int top=-1;
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        stack[++top]=l;

        stack[++top]=h;

        while(top>=0)

        {

            h=stack[top--];

            l=stack[top--];

            p=partition(arr,l,h);

            if(p-1>l)

            {

                stack[++top]=l;

                stack[++top]=p-1;

            }

        }

}

int main()

{


    int arr[20],n,i;

    printf("enter the size of the array");

    scanf("%d",&n);

    printf("enter %d element",n);

    for(i=0;i<n;i++)

        scanf("%d",&arr[i]);

    quickSortIterative(arr,0,n-1);

    printf("enter of the array are ");

    for(i=0;i<n;i++)

        printf("%d",arr[i]);

    return 0;

}
```