In [3]:

```
#check if a number is even or odd
a=11
r=a%2
if r==0:
    print("even")
else:
    print("odd")
```

```
odd
```

In [9]:

```
#check if a number is even or odd
a=int(input("Enter first number:"))
if (a%2)==0:
    print("{0} is even number".format(a))
else:
    print("{0} is odd number".format(a))
```

```
Enter first number:23
23 is odd number
```

In [11]:

```
#find maximum of two numbers
def maximum(a,b):
    if a>=b:
        return a
    else:
        return b

x=int(input("enter 1st number:"))
y=int(input("enter 2nd number:"))
print("maximum number is")
print(maximum(x,y))
```

```
enter 1st number:54
enter 2nd number:32
maximum number is
54
```

In [16]:

```
#check number is positive, negative or 0
a= float(input("Input a number: "))
if a>0:
    print("It is positive number")
elif a==0:
    print("It is Zero")
else:
    print("It is a negative number")
```

```
Input a number: 43
It is positive number
```

In [17]:

```
a= float(input("Input a number: "))
if a>0:
    print("It is positive number")
elif a==0:
    print("It is Zero")
else:
    print("It is a negative number")
```

```
Input a number: -6
It is a negative number
```

In [19]:

```
#find maximum of three numbers
def maximum(a,b,c):
    if (a>=b) and (a>=c):
        largest=a
    elif (b>=a) and (b>=c):
        largest=b
    else:
        largest=c
    return largest
x=int(input("enter 1st number:"))
y=int(input("enter 2nd number:"))
z=int(input("enter 3rd number:"))
print("maximum number is")
print(maximum(x,y,z))
```

```
enter 1st number:86
enter 2nd number:32
enter 3rd number:67
maximum number is
86
```

In [21]:

```
#check if a year is leap
def leap(a):
    if (a%400==0) or (a%100!=0) and (a%4==0):
        print("given year is leap year")
    else:
        print("given year is not leap year")
year=int(input("enter year:"))
leap(year)
```

```
enter year:2024
given year is leap year
```

In [22]:

```
import cmath
print(dir(cmath))
```

```
['__doc__', '__loader__', '__name__', '__package__', '__spec__', 'acos', 'acosh', 'asin', 'asinh', 'atan', 'atanh',
'cos', 'cosh', 'e', 'exp', 'inf', 'infj', 'isclose', 'isfinite', 'isinf', 'isnan', 'log', 'log10', 'nan', 'nanj',
'phase', 'pi', 'polar', 'rect', 'sin', 'sinh', 'sqrt', 'tan', 'tanh', 'tau']
```

In [23]:

```
import cmath
a=float(input("enter a:"))
b=float(input("enter b:"))
c=float(input("enter c:"))
d=(b**2)-(4*a*c)
sol1=(-b-cmath.sqrt(d))/(2*a)
sol2=(-b+cmath.sqrt(d))/(2*a)
print('the solutions are {0} and {1}'.format(sol1,sol2))
```

```
enter a:1
enter b:5
enter c:6
the solutions are (-3+0j) and (-2+0j)
```

In [34]:

```
date=input("enter date in dd/mm/yy format:")
dd,mm,yy=date.split('/')
dd=int(dd)
mm=int(mm)
yy=int(yy)
if (mm==1) or (mm==3) or (mm==5) or (mm==7) or (mm==8) or (mm==10) or (mm==12):
    max1=31
elif (mm==4) or (mm==6) or (mm==9) or (mm==11):
    max1=30
elif(yy%4==0 and yy%100!=0 or yy%400==0) and (mm==2):
    max1=29
else:
    max1=28
if(mm<1 or mm>12):
    print("Date is invalid.")
elif(dd<1 or dd>max1):
    print("Date is invalid.")
else:
    print("Date is valid")
```

```
enter date in dd/mm/yy format:32/5/2024
Date is invalid.
```

In [33]:

```
#check if date is valid
date=input("enter date in dd/mm/yy format:")
dd,mm,yy=date.split('/')
dd=int(dd)
mm=int(mm)
yy=int(yy)
if (mm==1) or (mm==3) or (mm==5) or (mm==7) or (mm==8) or (mm==10) or (mm==12):
    max1=31
elif (mm==4) or (mm==6) or (mm==9) or (mm==11):
    max1=30
elif(yy%4==0 and yy%100!=0 or yy%400==0) and (mm==2):
    max1=29
else:
    max1=28
if(mm<1 or mm>12):
    print("Date is invalid.")
elif(dd<1 or dd>max1):
    print("Date is invalid.")
else:
    print("Date is valid")
```

```
enter date in dd/mm/yy format:29/2/2024
Date is valid
```

In [ ]: