

## ✓ Program to check if a given year is leap year or not

A leap year is a year that contains an additional day, February 29th, making it 366 days long instead of the usual 365 days.

A year is a leap year if the following conditions are satisfied:

- The year is multiple of 400.

OR

- The year is a multiple of 4 and not a multiple of 100.

For example, the years 1700, 1800, and 1900 are not leap years,

but the years 1600 and 2000, 2024 are LEAP YEARS.

```
year=int(input(" Enter year"))
```

```
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):  
    print("Leap Year")
```

```
else:
```

```
    print("Not a Leap Year")
```

```
↩ Enter year2024  
Leap Year
```

## ✓ Program to Check Whether a Number is Even or Odd

An even number is an integer that is exactly divisible by 2. For example: 0, 8, -24

An odd number is an integer that is not exactly divisible by 2. For example: 1, 7, -11, 15

```
num =int(input("Enter any number to test whether it is odd or ever
```

```
if num % 2 == 0:
```

```
    print ('The number is even')
```

```
else:
```

```
    print (' number is odd')
```

Enter any number to test whether it is odd or even: 35  
number is odd

- If ages of Ram, Shyam and Ajay are input through the  
✓ keyboard, write a program to determine the youngest of the three.

```
num1 = int(input("Enter age of first person: "))  
num2 = int(input("Enter age of second person:"))  
num3 = int(input("Enter age of third person:"))  
print("person2") if ((num2 < num1) and (num2 < num3)) else print('
```

Enter age of first person: 78  
Enter age of second person:9  
Enter age of third person:34  
person2


- ✓ Write a program to find the absolute value of a number entered through the keyboard.

The absolute value of any number is always positive. For any positive number, the absolute value is the number itself and for any negative number, the absolute value is (-1) multiplied by the negative number

```
N = int(input("enter the number"))

if N < 0:
    N = -1 * N

else:
    pass
print(N)
```

 enter the number10  
10

Python program to solve quadratic equation

$ax^2 + bx + c = 0$  where, a, b, and c are coefficient and real numbers and also  $a \neq 0$ . If a is equal to 0 that equation is not valid quadratic equation.

```
import math

a=int(input("enter coefficient a"))

b=int(input("enter coefficient b"))

c=int(input("enter coefficient c"))
    # calculating discriminant using formula
dis = b**2 - 4 * a * c
sqrt_val = math.sqrt(abs(dis))

if dis > 0:
    print("real and different roots")
    print((-b + sqrt_val)/(2 * a))
    print((-b - sqrt_val)/(2 * a))

elif dis == 0:
```

```
print("real and same roots")  
print(-b / (2 * a))
```

```
    # when discriminant is less than 0  
else:  
    print("Complex Roots or imaginary roots")
```

```
⇒ enter coefficient a1  
   enter coefficient b1  
   enter coefficient c1  
   Complex Roots or imaginary roots
```