**1. Write a Python Program to Check if a Number is Positive, Negative or Zero?**

# Function to check the sign of a number

def check\_sign(num):

if num > 0:

return "Positive"

elif num < 0:

return "Negative"

else:

return "Zero"

# Main code

num = int(input("Enter a number: "))

print("The number is", check\_sign(num))

**2. Write a Python Program to Check if a Number is Odd or Even?**

# Function to check if a number is odd or even

def check\_odd\_even(num):

if num % 2 == 0:

return "Even"

else:

return "Odd"

# Main code

num = int(input("Enter a number: "))

print("The number is", check\_odd\_even(num))

**3. Write a Python Program to Check Leap Year?**

# Function to check if a year is a leap year

def is\_leap\_year(year):

if year % 400 == 0:

return True

elif year % 100 == 0:

return False

elif year % 4 == 0:

return True

else:

return False

# Main code

year = int(input("Enter a year: "))

if is\_leap\_year(year):

print(year, "is a leap year.")

else:

print(year, "is not a leap year.")

**4. Write a Python Program to Check Prime Number?**

# Function to check if a number is prime

def is\_prime(num):

if num <= 1:

return False

for i in range(2, num):

if num % i == 0:

return False

return True

# Main code

num = int(input("Enter a number: "))

if is\_prime(num):

print(num, "is a prime number.")

else:

print(num, "is not a prime number.")

**5. Write a Python Program to Print all Prime Numbers in an Interval of 1-10000?**

# Function to check if a number is prime

def is\_prime(num):

if num <= 1:

return False

for i in range(2, num):

if num % i == 0:

return False

return True

# Main code

print("Prime numbers between 1 and 10000:")

for num in range(1, 10001):

if is\_prime(num):

print(num)