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

A) def check\_number(num):

if num > 0:

print("Positive")

elif num < 0:

print("Negative")

else:

print("Zero")

# Test the function

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

check\_number(num)

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

A) def check(n):

if n % 2 == 0:

return "Even"

else:

return "Odd"

n = int(input("Enter a value: "))

r = check(n)

print(r)

1. Write a Python Program to Check Leap Year?

A) def is\_leap\_year(year):

if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):

return True

else:

return False

# Test the function

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

if is\_leap\_year(year):

print(f"{year} is a leap year.")

else:

print(f"{year} is not a leap year.")

1. Write a Python Program to Check Prime Number?

A) def is\_prime(num):

if num <= 1:

return False

elif num == 2:

return True

elif num % 2 == 0:

return False

else:

# Check divisibility starting from 3 up to the square root of the number

for i in range(3, int(num\*\*0.5) + 1, 2):

if num % i == 0:

return False

return True

# Test the function

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

if is\_prime(num):

print(f"{num} is a prime number.")

else:

print(f"{num} is not a prime number.")

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

A) def is\_prime(num):

if num <= 1:

return False

elif num == 2:

return True

elif num % 2 == 0:

return False

else:

# Check divisibility starting from 3 up to the square root of the number

for i in range(3, int(num\*\*0.5) + 1, 2):

if num % i == 0:

return False

return True

# Print prime numbers in the interval [1, 10000]

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

for number in range(1, 10001):

if is\_prime(number):

print(number, end=" ")