1. Python program to check leap year

def is\_leap\_year(year): #using def function

if year % 4 == 0: #using if function check the condition

if year % 100 == 0:

if year % 400 == 0:

return True #return condition is true

else:

return False #return condition is false

else:

return True

else:

return False

# Example usage

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

if is\_leap\_year(year):

print(“It is a leap year.")

else:

print(“It is not a leap year.")

output: Enter a year: 2024

It is a leap year

…………………………………………………………………………………………………………………………………………………

2.Python Program to Find the Largest Among Three Numbers

def find\_largest(num1, num2, num3): #using def function for declaring three

numbers

if num1 >= num2 and num1 >= num3: #if function to check the condition

largest = num1

elif num2 >= num1 and num2 >= num3:

largest = num2

else:

largest = num3

return largest

num1 = float(input("Enter the first number: ")) #user input for first number

num2 = float(input("Enter the second number: ")) #user input for second number

num3 = float(input("Enter the third number: ")) #user input for third number

largest = find\_largest(num1, num2, num3)

print(“The largest number is:”, largest)

output: Enter the first number: 4.0

Enter the first number: 2.0

Enter the first number: 5.0

The largest number is: 5.0

………………………………………………………………………………………………………………………………………………………….

3.Python Program to Check if a Number is Positive, Negative or 0

def check\_number(num): #def function for declaring num

if num > 0: #using if condition

return "Positive"

elif num < 0: #using elif function

return "Negative"

else:

return "Zero"

num = int(input(“Enter a number:”)) #user input

result = check\_number(num)

print(“The number is:”, result) #print the result

output: Enter a number: -2

The number is Negative

……………………………………………………………………………………………………………………………………………………..

4. A toy vendor supplies three types of toys: Battery Based Toys, Key-based Toys, and Electrical Charging Based Toys. The vendor gives a discount of 10% on orders for battery-based toys if the order is for more than Rs. 1000. On orders of more than Rs. 100 for key-based toys, a discount of 5% is given, and a discount of 10% is given on orders for electrical charging based toys of value more than Rs. 500. Assume that the numeric codes 1,2 and 3 are used for battery based toys, key-based toys, and electrical charging based toys respectively. Write a program that reads the product code and the order amount and prints out the net amount that the customer is required to pay after the discount.

def calculate\_discount(product\_code, order\_amount):

discount = 0

if product\_code == 1 and order\_amount > 1000:

discount = 0.1 \* order\_amount

elif product\_code == 2 and order\_amount > 100:

discount = 0.05 \* order\_amount

elif product\_code == 3 and order\_amount > 500:

discount = 0.1 \* order\_amount

return order\_amount - discount

product\_code = int(input("Enter the product code (1 for Battery Based Toys, 2 for Key-based Toys, 3 for Electrical Charging Based Toys): "))

order\_amount = float(input("Enter the order amount in Rs.: "))

net\_amount = calculate\_discount(product\_code, order\_amount)

print(f"The net amount customer is required to pay after discount is Rs. {net\_amount:.2f}")

output: Enter the product code (1 for Battery Based Toys, 2 for Key-based Toys, 3 for Electrical Charging Based Toys): 2

Enter the order amount in Rs.: 2

The net amount customer is required to pay after discount is Rs. 2.00

…………………………………………………………………………………………………………………………………………………..

5.A transport company charges the fare according to following table: Distance Charges 1-50 8 Rs./Km 51-100 10 Rs./Km > 100 12 Rs/Km

def calculate\_fare(distance):

if distance <= 50:

fare = distance \* 8

elif distance <= 100:

fare = 50 \* 8 + (distance - 50) \* 10

else:

fare = 50 \* 8 + 50 \* 10 + (distance - 100) \* 12

return fare

# Example usage

distance = float(input("Enter the distance traveled in kilometers: "))

fare = calculate\_fare(distance)

print(f"The fare for traveling {distance} kilometers is Rs. {fare:.2f}")

output: Enter the distance traveled in kilometers: 50

The fare for traveling 50.0 kilometers is Rs. 400.00

………………………………………………………………………………………………………………………………………………………..