Ex. 1 **PYTHON IN INTERACTIVE AND SCRIPT MODE**
Date: 22.01.24

Aim:

To explore the use of Python in the interactive and script modes in Linux.

Interactive Mode Exercises:

1. Execute the following in interactive mode:

$$width = 17$$
$$height = 12.0$$
$$delimiter = 'a'$$

Execute each of the following expressions and write the value of the expression and the type of the values obtained:

- $width/2$
- $width/2.0$
- $height/3$
- $1+2*5$
- $delimiter*5$

Screenshot:

2. Use the Python interpreter as a calculator to answer the following:
    a. The volume of a sphere with radius r is $\frac{4}{3}\pi r^3$. What is the volume of a sphere with radius 5?
    b. Suppose the cover price of a book is $24.95, but bookstores get a 40% discount. Shipping costs $3 for the first copy and 75 cents for each additional copy. What is the total wholesale cost for 60 copies?

Screenshot:

```
>>> r = 5
>>> print("Volume = ",(4/3)*(3.14*(r**3)))
Volume =  523.3333333333333
>>>
```

```
>>> Cover_price = 24.95
>>> Discount = 40/100
>>> First_Ship_Cost = 3
>>> Ship_Cost = 0.75
>>> No_Copies = 60
>>> WholesaleCost = First_Ship_Cost + (No_Copies - 1)*Ship_Cost + No_Copies * Discount * Cover_price
>>> print(WholesaleCost)
646.05
>>> WholesaleCost = First_Ship_Cost + (No_Copies - 1)*Ship_Cost + No_Copies * (Discount-1) * Cover_price
>>> print(WholesaleCost)
-850.9499999999999
>>> WholesaleCost = First_Ship_Cost + (No_Copies - 1)*Ship_Cost + No_Copies * (1-Discount) * Cover_price
>>> print(WholesaleCost)
945.4499999999999
>>>
```

Script Mode Exercises:

1. Given the unit price of a product and the quantity of the product sold, find the total sale, using Python in script mode.

Algorithm:

Step 1: Get the unit price and quantity of a product from the user.

Step 2: Calculate the total sale by multiplying the unit price with the quantity of the product.

Step 3: Display the result:

Program:

```
Lab1(22_1_24) > Shop.py > ...
1   price = int(input("Enter the Cost of a product : "))
2   Qty = int(input("Wnter the Quantity of product sold : "))
3   print("Total Sale = ",price * Qty)
```

Screenshot of Output:

```
Enter the cost of a product : 5
Wnter the Quantity of product sold : 10
Total Sale = 50
>>>
```

2. Write a program (script mode) to get two integers from a user, store them in variables a and b, and evaluate the following expression:

$$c = \frac{(a+b)^2 + 10}{a \times b}$$

Algorithm:

Step – 1: Get the inputs required (a,b)
Step – 2: Equate the Variables given by the user in the expression
Step – 3: Display the output of the equation to the user

Program:

```
Lab1(22_1_24) > calculate.py > ...
1   a = int(input("enter a : "))
2   b = int(input("enter b : "))
3   c = ((a+b)**2 + 10)/(a*b)
4   print("C = ",c)
```

Screenshot of Output:

```
enter a : 5
enter b : 2
C =  5.9
```

Result:

Thus, the use of python in the interactive mode and the script mode has been explored.