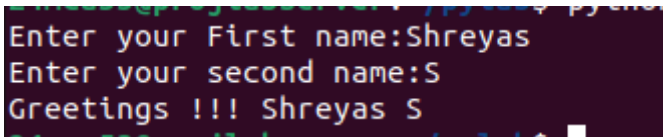# Lab Cycle 1(20MCA131)

PROGRAM 1

AIM:

 Write a program that prompts the user to enter his first name and last name and then displays a message.

SOURCE CODE:

```
a=input("Enter your First name:")
b=input("Enter your second name:")
print("Greetings !!!",a,b)
```

OUTPUT:


```
Enter your First name:Shreyas
Enter your second name:S
Greetings !!! Shreyas S
```

****

PROGRAM 2

AIM:

Write a program to demonstrate different number data types in python.

SOURCE CODE:

```
x,y,z=5,7.4,5+2j
print("Data Type of x=",type(x))
print("Data Type of y=",type(y))
print("Data Type of z=",type(z))
print("Integer:",x)
print("Float:",y)
print("Complex number:",z)
```

OUTPUT:

```
Data Type of x= <class 'int'>
Data Type of y= <class 'float'>
Data Type of z= <class 'complex'>
Integer: 5
Float: 7.4
Complex number: (5+2j)
```

****

PROGRAM 3

AIM:

Write a program to calculate the area of a circle by reading inputs from the user.

SOURCE CODE:

```
r=float(input("Enter the radius of the circle:"))
area=3.14*r*r
print("The Area of the circle =",area)
```

OUTPUT:

```
Enter the radius of the circle:7
The Area of the circle = 153.86
```

****

PROGRAM 4

AIM:

Write a program to calculate the salary of an employee given his basic pay (to be entered by the user) . HRA = 10 percent of the basic pay, TA = 5 percent of the basic pay.

SOURCE CODE:

```
P=float(input("Enter the Basic salary of the Employee:"))
HRA=0.10*BP
TA=0.05*BP
```

```
salary=BP+HRA+TA
print("The salary of the employee:",salary)
```

OUTPUT:

```
Command  python  From dcb python-t3-python3
24mca53@projlabserver:~/pylab$ python3 salary.py
Enter the Basic salary of the Employee:12000
The salary of the employee: 13800.0
```

****

PROGRAM 5

AIM:

Write a Python program to perform arithmetic operations on two integer numbers.

SOURCE CODE:

```
x=int(input("Enter the first number:"))
y=int(input("Enter the second number:"))
print(f"Sum:{x}+{y}={x+y}")
print(f"Difference:{x}-{y}={x-y}")
print(f"Product:{x}*{y}={x*y}")
print(f"Division:{x}/{y}={x/y}")
print(f"Remainder:{x}%{y}={x%y}")
```

OUTPUT:

```
Enter the first number:10
Enter the second number:2
Sum:10+2=12
Difference:10-2=8
Product:10*2=20
Division:10/2=5.0
Remainder:10%2=0
```

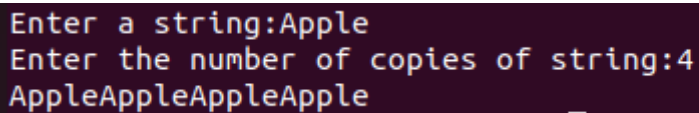***

PROGRAM 6

AIM:

 Write a Python program to get a string which is n (non-negative integer) copies of a given string.

SOURCE CODE:

```python
str=input("Enter a string:")
n=int(input("Enter the number of copies of string:"))
if n<0 :
 print("Invalid")
else:
 print(str*n)
```

OUTPUT:

```
Enter a string:Apple
Enter the number of copies of string:4
AppleAppleAppleApple
```
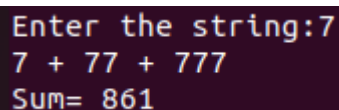
****

PROGRAM 7

AIM:

 Program to accept an integer n and compute n+nn+nnn.

SOURCE CODE:

```python
n=input("Enter the string:")
print(n,"+",n*2,"+",n*3)
sum=(int(n)+int(n*2)+int(n*3))
print("Sum=",sum)
```

OUTPUT:

```
Enter the string:7
7 + 77 + 777
Sum= 861
```
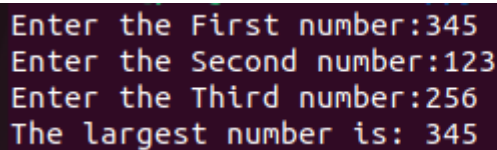
PROGRAM 8

AIM:

 Find biggest of 3 numbers entered.

SOURCE CODE:

```python
a=int(input("Enter the First number:"))
b=int(input("Enter the Second number:"))
c=int(input("Enter the Third number:"))
if a>b and a>c:
 largest=a
elif b>a and b>c:
 largest=b
else:
 largest=c
print("The largest number is:",largest)
```

OUTPUT:

```
Enter the First number:345
Enter the Second number:123
Enter the Third number:256
The largest number is: 345
```

****

PROGRAM 9

AIM:

 Program to determine whether a year is a leap year or not.

SOURCE CODE:

```python
year=int(input("Enter the year:"))
if  year%4==0 and (year%100!=0 or year%400==0):
 print(year,"is a leap year")
else:
  print(year,"is not a leap year")
```

OUTPUT:

```
(base) D:\python>python leap.py
Enter the year:2024
2024 is a leap year

(base) D:\python>python leap.py
Enter the year:2025
2025 is not a leap year
```

****

PROGRAM 10

AIM:

 Write a Python program to determine the rate of entry-ticket in a trade fair based on age.

SOURCE CODE:

```
age=int(input("Enter your age:"))
if age<10:
    rate=7
elif age>=10 and age<60:
    rate=10
else:
    rate=5
print("The rate of the ticker for age",age,"is",rate)
```

OUTPUT:

```
Enter your age:8
The rate of the ticker for age 8 is 7

(base) D:\python>python ticket.py
Enter your age:35
The rate of the ticker for age 35 is 10

(base) D:\python>python ticket.py
Enter your age:82
The rate of the ticker for age 82 is 5
```

****

PROGRAM 11

AIM:

Write a Python program to solve a quadratic equation.

SOURCE CODE:

```
import math
a=float(input("Enter the coefficient of a:"))
b=float(input("Enter the coefficient of b:"))
c=float(input("Enter the coefficient of c:"))
d=(b*b)-(4*a*c)
if a==0:
 print("Coefficient 'a' cannot be zero")
elif d>0:
 sol1=(-b + math.sqrt(d))/(2*a)
 sol2=(-b - math.sqrt(d))/(2*a)
 print("There are two solutions:",sol1,"and",sol2)
elif d==0:
 sol=-b/(2*a)
 print("There is only one real solution:",sol)
else:
 real=-b/(2*a)
 imag=math.sqrt(abs(d))/(2*a)
 print(f"The solutions are complex numbers:{real}+i{imag} and {real}-i{imag}")
```

OUTPUT:

```
Enter the coefficient of a:1
Enter the coefficient of b:-3
Enter the coefficient of c:2
There are two solutions: 2.0 and 1.0

(base) D:\python>python quad.py
Enter the coefficient of a:1
Enter the coefficient of b:-4
Enter the coefficient of c:4
There is only one real solution: 2.0

(base) D:\python>python quad.py
Enter the coefficient of a:1
Enter the coefficient of b:2
Enter the coefficient of c:5
The solutions are complex numbers:-1.0+i2.0 and -1.0-i2.0
```