**BASIS OF PYTHON—**

Python is a high-level, versatile programming language known for its simplicity and readability. It’s widely used in web development, data analysis, artificial intelligence, machine learning, automation, software development, and more.

A few things that make Python popular:

Easy to learn and use: Its syntax is clean and close to natural language.

Versatile: It supports different programming styles — object-oriented, procedural, and functional.

Huge ecosystem: Thousands of libraries and frameworks for various tasks (like Django for web development, Pandas for data analysis, and TensorFlow for AI).

Cross-platform: Works on Windows, macOS, and Linux.

**EXPERIMENT 1 :-**

Write a program to display various datatype using variables and literal constants.

num = 7

amt = 1235.50

pi = 3.1415

population  = 14000000000

msg = "hi"

print("num ="+str(num))

print("\namt ="+str(amt))

print("\npi ="+str(pi))

print("\npopulation ="+str(population))

print("\nmsg ="+str(msg))

**EXPERIMENT 2 :-**

Write a program to reassign a value to a variable.

num = 7

print("num")

num = 10.5

num = "hii"

num = 3+5j

print(num)

**EXPERIMENT 3 :-**

Write a program to read variable from the user.

name = input("what's your name:")

age = input("enter your age:")

print(name+"you are"+age+"years old")

**EXPERIMENT 4 :-**

Write a program to enter a number and display it’s hexa, octa, equivalent and it’s square root.

num = int(input("enter a number ="))

print("Hexadecimal of"+str(num)+":"+str(hex(num)))

print("octal of"+str(num)+":"+str(oct(num)))

print("squareroot of"+str(num)+":"+str(num\*\*0.5))

**EXPERIMENT 5 :-**

Write a program to calculate area of triangle using Heron’s formula.

a = int(input("enter a number ="))

b = int(input("enter a number ="))

c = int(input("enter a number ="))

s = (a+b+c)/2

print(s)

area = (s\*(s-a)\*(s-b)\*(s-c))\*\*0.5

print("area of the triangle =",area)

**EXPERIMENT 6 :-**

Write a program to perform arithmetic operation on two integar and float number.

a = int(input("enter a number ="))

b = int(input("enter a number ="))

sum = a+b

print("addition =",sum)

difference = a-b

print("subtraction =",difference)

multiplication = a\*b

print("multiplication =",multiplication)

division = a/b

print("division =",division)

modulodiv = a%b

print("modulo division =",modulodiv)

integraldivision = a//b

print("integral division="),integraldiv

**---------------(float number)---------------------**

a = float(input("enter a number ="))

b = float(input("enter a number ="))

sum = a+b

print("addition =",sum)

difference = a-b

print("subtraction =",difference)

multiplication = a\*b

print("multiplication =",multiplication)

division = a/b

print("division =",division)

modulodiv = a%b

print("modulo division =",modulodiv)

integraldivision = a//b

print("integral division="),integraldiv

**EXPERIMENT 7 :-**

Write a program to demonstrate the use of relational operator.

a = int(input("enter a number ="))

b = int(input("enter a number ="))

print (a==b)

print (a!=b)

print (a>b)

print (a<b)

print (a>=b)

print (a<=b)