NAME: VINIT RANJAN

SAP Id: 590026420

2.Click on Downloads and download latest Python version.

3.Run the downloaded installer.

4.Select "Add Python to PATH" checkbox.

5.Click on Install Now.

6.Wait for installation and click Finish.

Interactive Mode:

Used to execute commands line by line.

Gives immediate output.

Used for testing small programs.

Shows prompt >>>

Script Mode:

Used to write and save complete programs.

File is saved with .py extension.

Run using Run → Run Module (F5) in IDLE.

```
#2. Create a variable to store your age and print its type using type().
age = 18
print(age)
type(age)
```

```
18
int
```

```
#3. Declare a string variable called x and assign it the value “Hello”
#a. Print out the value of x

x = "Hello"
print(x)
```

```
Hello
```

```
#4. Take different data types and print values using print function.
# 1. Integer
age = 18

# 2. Float
height = 5.9

# 3. String
name = "Roushan"

# 4. Boolean
is_student = True

# 5. List
marks = [85, 90, 78]

# Printing the values
print("Name:", name)
print("Age:", age)
print("Height:", height)
print("Is Student:", is_student)
print("Marks List:", marks)
```

```
Height: 5.9
Is Student: True
Marks List: [85, 90, 78]
```

```
#5. Declare these variables (x, y and z) as integers. Assign a value of 9 to x, Assign a value of 7 to y, perform
#addition, multiplication, division and subtraction on these two variables and Print out the result.
x = 9
y = 7

# Addition
z = x + y
print("Addition:", z)

# Multiplication
z = x * y
print("Multiplication:", z)

# Subtraction
z = x - y
print("Subtraction:", z)

# Division
z = x / y
print("Division:", z)
```

```
Addition: 16
Multiplication: 63
Subtraction: 2
Division: 1.2857142857142858
```

```
#6. Write a program to compute the length of the hypotenuse (c) of a right triangle using Pythagoras theorem.
# p is perpendicular
# b is Base
# H is hypotenuse
p = int(input("Enter Perpendicular:"))
b = int(input("Enter base:"))
H = ((p**2)+(b**2))**(1/2)

print("Hypotenuse:",H)
```

```
Enter Perpendicular:3
Enter base:4
Hypotenuse: 5.0
```

```
#7. Write a program to find simple interest.
Principal = float(input("Enter Principal:"))
Rate = float(input("Enter Rate:"))
Time = float(input("Enter Time:"))
SI = (Principal*Rate*Time)/100
print("Simple Interest:",SI)
```

```
Enter Principal:1000
Enter Rate:2.5
Enter Time:2
Simple Interest: 50.0
```

```
#8. Write a program to find area of triangle when length of sides are given.
length1 = float(input("Enter 1st side:"))
length2 = float(input("Enter 2nd side:"))
length3 = float(input("Enter 3rd side:"))

# Calculating Semi-perimeter
s = (length1 + length2 + length3) / 2
# Using Heron's Formula
A = (s * (s - length1) * (s - length2) * (s - length3)) ** 0.5

print("Area",A)
```

```
Enter 1st side:5
Enter 2nd side:4
Enter 3rd side:3
Area 6.0
```

```
#9. Write a program to convert given seconds into hours, minutes and remaining seconds.
total_sec = int(input("Enter seconds: "))

# 1. Get hours (3600 seconds in 1 hour)
h = total_sec // 3600
```

```
m = (total_sec % 3600) // 60

# 3. Get the final leftover seconds
s = total_sec % 60

print("Hours:", h)
print("Minutes:", m)
print("Seconds:", s)
```

```
Enter seconds: 2000
Hours: 0
Minutes: 33
Seconds: 20
```

```
#10. Write a program to swap two numbers without taking additional variable.
x = int(input("Enter 1st no:"))
y = int(input("Enter 2nd no:"))
x , y = y , x
print("Swapped Values:")
print(x)
print(y)
```

```
Enter 1st no:5
Enter 2nd no:7
Swapped Values:
7
5
```

```
#11. Write a program to find sum of first n natural numbers.
n = int(input("Enter a number: "))

# Use // for integer division to avoid getting a .0 decimal
sum_n = (n * (n + 1)) // 2

print("The sum is:", sum_n)
```

```
Enter a number: 5
The sum is: 15
```

```
#12. Write a program to print truth table for bitwise operators (&, | and ^ operators).
print("A B A&B A|B A^B")
for a in [0,1]:
   for b in  [0,1]:
    print(a, b, a & b, a | b, a ^ b)
```

```
A B A&B A|B A^B
0 0 0 0 0
0 1 0 1 1
1 0 0 1 1
1 1 1 1 0
```

```
#13. Write a program to find left shift and right shift values of a given number.
num = 8
print("Left shift:", num <<1)
print("Right shift:", num >>1)
```

```
Left shift: 16
Right shift: 4
```

```
#14. Using membership operator find whether a given number is in sequence (10,20,56,78,89)
seq = (10,20,56,78,89)
num = 56
print(num in seq)
```

```
True
```