1. **Write a Python program to print "Hello Python"?**

**Ans:-**

# Python program to print "Hello Python"

**print** ('Hello Python')

**Output:**

Hello Python

1. **Write a Python program to do arithmetical operations addition and division.?**

**Ans:-**

# Here, we are storing the first input numbers in num1

num1 = input('Enter first number: ')

# Here, we are storing the second input numbers in num2

num2 = input('Enter second number: ')

# Here, we are declaring a variable sum to store the result

# Here, we are using the arithmetical operator to add the two numbers

sum = float(num1) + float(num2)

# Here, we are printing the sum of the given two numbers

**print**('The sum of {0} and {1} is {2}'.format(num1, num2, sum))

**Output:**

Enter first number: 10

Enter second number: 20

The sum of 10 and 20 is 30.0

# Here, we are storing the first input numbers in num1

num1 = input('Enter first number: ')

# Here, we are storing the second input numbers in num2

num2 = input('Enter second number: ')

# Here, we are declaring a variable min to store the result

# Here, we are using the arithmetical operator to subtract the two numbers

min = float(num1) - float(num2)

# Here, we are printing the subtraction of the given two numbers

**print**('The subtraction of {0} and {1} is {2}'.format(num1, num2, min))

**Output:**

Enter first number: 10

Enter second number: 20

The subtraction of 10 and 20 is -10

1. **Write a Python program to find the area of a triangle?**

**Ans:-**

**Mathematical formula:**

Area of a triangle = (s\*(s-a)\*(s-b)\*(s-c))-1/2

Here is the semi-perimeter and a, b and c are three sides of the triangle. Let's understand the following example.

**See this example:**

**# Three sides of the triangle is a, b and c:**

**a = float(input('Enter first side: '))**

**b = float(input('Enter second side: '))**

**c = float(input('Enter third side: '))**

**# calculate the semi-perimeter**

**s = (a + b + c) / 2**

**# calculate the area**

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

**print('The area of the triangle is %0.2f' %area)**

**Output:**

**Enter first side: 5**

**Enter second side: 6**

**Enter third side: 7**

**The area of the triangle is 14.70**

1. **Write a Python program to swap two variables?**

**Ans:-**

By using arithmetic operators

* **Using addition and Subtraction operator:**

P = int( input("Please enter value for P: "))

Q = int( input("Please enter value for Q: "))

# To Swap the values of two variables using Addition and subtraction operator

P = P + Q

Q = P - Q

P = P - Q

**print** ("The Value of P after swapping: ", P)

**print** ("The Value of Q after swapping: ", Q)

**Output:**

Please enter value for P: 15

Please enter value for Q: 43

The Value of P after swapping: 43

The Value of Q after swapping: 15

* **Using multiplication and division operator**

P = int( input("Please enter value for P: "))

Q = int( input("Please enter value for Q: "))

# To Swap the values of two variables using Addition and subtraction operator

P = P \* Q

Q = P / Q

P = P / Q

**print** ("The Value of P after swapping: ", P)

**print** ("The Value of Q after swapping: ", Q)

**Output:**

Please enter value for P: 23

Please enter value for Q: 14

The Value of P after swapping: 14.0

The Value of Q after swapping: 23.0

### By using comma operator

P = int( input("Please enter value for P: "))

Q = int( input("Please enter value for Q: "))

# To Swap the values of two variables

P, Q = Q, P

**print** ("The Value of P after swapping: ", P)

**print** ("The Value of Q after swapping: ", Q)

**Output:**

Please enter value for P: 12

Please enter value for Q: 43

The Value of P after swapping: 43

The Value of Q after swapping: 12

1. **Write a Python program to generate a random number?**

**Ans:-**

### 1. Generating a Random Number - Using the random() function

# Importing the random module

**import** random

# Using random function from the random module

n = random.random()

# Printing Results

**print**("Random Number between 0 to 1:", n)

**print**("Random Number between 0 to 1:", random.random())

**print**("Random Number between 0 to 1:", random.random())

**Output:**

Random Number between 0 to 1: 0.11835380687392505

Random Number between 0 to 1: 0.2563622979831378

Random Number between 0 to 1: 0.4344921246881883

### 2. Generating a Number within a Given Range - Using the randint() function

**Example - 1: Generating a random integer between 0 to 50 using the randint() function**

# Importing the random module

**import** random

# Using randint function from the random module

n = random.randint(0, 50)

# Printing Results

**print**("Random Number between 0 to 50:", n)

**print**("Random Number between 0 to 50:", random.randint(0, 50))

**print**("Random Number between 0 to 50:", random.randint(0, 50))

**Output:**

Random Number between 0 to 50: 12

Random Number between 0 to 50: 18

Random Number between 0 to 50: 8

**Example - 2: Generating a random integer between 100 to 200 using the randint() function**

# Importing the random module

**import** random

# Using randint function from the random module

n = random.randint(100, 200)

# Printing Results

**print**("Random Integer between 100 to 200:", n)

**print**("Random Integer between 100 to 200:", random.randint(100, 200))

**print**("Random Integer between 100 to 200:", random.randint(100, 200))

**Output:**

Random Integer between 100 to 200: 175

Random Integer between 100 to 200: 145

Random Integer between 100 to 200: 167

### Using a for-loop to create a list of random integers

**Example - Creating a list of random integers using for loop**

# Importing the random module

**import** random

# Creating a list

rand\_list = []

# Using a for loop from 0 to 9

**for** i **in** range(0, 10):

    # Generates a random integer between 1 to 50

    n = random.randint(1, 50)

    # Appending the ramdom integer

    rand\_list.append(n)

# Printing Results

**print**("List of random integers:", rand\_list)

**Output:**

List of random integers: [50, 25, 43, 48, 24, 20, 39, 45, 32, 28]

### 3. Generating a list of random integers using the random.sample()

**Example - Generating a random number list using sample() function**

# Importing the random module

**import** random

# Generates a list of random numbers between 10 and 40

random\_list1 = random.sample(range(10, 40), 10)

# Creating a sample list

list\_ = [1, 2, 3, 4, 5, 6, 7, 8, 9 , 10]

# Generates a list of random numbers

random\_list2 = random.sample(list\_, 5)

# Printing Results

**print**("List of random integers one:", random\_list1)

**print**("List of random integers two:", random\_list2)

**Output:**

List of random integers one [34, 21, 15, 25, 17, 10, 37, 18, 20, 30]

List of random integers two [4, 8, 5, 9, 1]

### 4. Generating a Random Number Using the Uniform() in Python

# Importing the random module

**import** random

# Generate a random number between 0 and 1

random\_number1 = random.uniform(0, 1)

random\_number2 = random.uniform(0, 1)

random\_number3 = random.uniform(0, 1)

# Displaying result

**print**("Random Number 1:", random\_number1)

**print**("Random Number 2:", random\_number2)

**print**("Random Number 3:", random\_number3)

**Output:**

Random Number 1: 0.9036830628327847

Random Number 2: 0.5129018404378839

Random Number 3: 0.10637532891792578