In [4]:
```
#Area of Triangle
b = 20
h = 10
area = 0.5 * b * h
print("Area of triangle :", area)
```

```
Area of triangle : 100.0
```

In [10]:
```
#Swap two variables
a = 25
b = 45
temp = a
a = b
b = temp
print("After swapping the numbers : ", a,b)
```

```
After swapping the numbers :  45 25
```

In [11]:
```
#Number is Positive, Negative or Zero
a = -55.60
if(a > 0) :
    print("Number is positive")
elif(a < 0) :
    print("Number is negative")
else :
    print("Number is zero")
```

```
Number is negative
```

In [12]:
```
#Number is Odd or Even
n=21
if(n % 2 == 0) :
    print("Number is even")
else :
    print("Number is odd")
```

```
Number is odd
```

In [23]:
```
#Prime Number
n = 11
flag = False
if n > 1 :                    # checking the factors
    for i in range(2, n) :
        if n % i == 0 :
            flag = True       # if factor is found setting flag to true
            break
if flag :                     # if flag is true
    print("Number is not prime")
else :
    print("Number is prime")
```

```
Number is prime
```

In [22]:
```
#Armstrong Number
num = 120
sum = 0
temp = num
#sum of the cube of each digit
while temp > 0 :
    digit = temp % 10
    sum += digit ** 3
    temp //= 10
if num == sum :
    print("It is an armstrong number")
```

```
else :
    print("It is not an armstrong number")
```

```
It is not an armstrong number
```

In [36]:
```
#Factorial of a number
num = 21
factorial = 1
if num < 0 :                            # check if num is positive negative or zero
    print("Factorial don't exist")
elif num == 0 :
    print("Factorial of 0 is 1")
else :
    for i in range(1, num + 1) :
        factorial = factorial * i
    print("Factorial of number is :", factorial)
```

```
Factorial of number is : 51090942171709440000
```

In [38]:
```
#Reverse sentence
string = "Patience and Practice "
s = string.split()[::-1]
print(" ".join(s))
```

```
Practice and Patience
```

In [35]:
```
#Palindrome or not
string = input("Enter string :")
if(string == string [::-1]):
    print("The string is a palindrome")
else :
    print("The string is not a palindrome")
```

```
Enter string :abc
The string is not a palindrome
```

In [39]:
```
#Maximum of three numbers
def maximum(a, b, c) :
    if (a >= b) and (a >= c) :
        largest = a
    elif (b >= a) and (b >= c) :
        largest = b
    else :
        largest = c
    return largest
a = 10
b = 14
c = 12
print(maximum(a, b, c))
```

```
14
```

In [40]:
```
#Sum of all numbers in a list
total = 0
numbers = [10, 20, 30, 40, 50]
for ele in range(0, len(numbers)) :
    total = total + numbers[ele]
print("Sum of numbers in a list : ", total)
```

```
Sum of numbers in a list :  150
```

In [42]:
```
#Accept string which contains all vowels
string =  input('Enter the string : ')
string = string.lower()
Vowels = set("aeiou")
for char in string :
```

```
    if char in Vowels :
        Vowels.remove(char)
print("Entered String is : ", string)
if len(Vowels) == 0 :
    print("The string contains all vowels")
else :
    print("The string does not contain all vowels")
```

```
Enter the string : ekamdeep kaur
Entered String is :  ekamdeep kaur
The string does not contain all vowels
```

In [45]:
```
#Multiply all the elements in the list
total = 1
numbers = [1, 2, 3, 4, 5]
for x in numbers :
    total *= x
print("Multiple of all elements in list is :", total)
```

```
Multiple of all elements in list is : 120
```

In [52]:
```
#Create a tuple
MyTuple = ("Ekamdeep", "kaur", "chug")
print(MyTuple)
```

```
('Ekamdeep', 'kaur', 'chug')
```

In [53]:
```
#Create a tuple with different data types
MyTuple = ("Ekamdeep", 18, True)
print(MyTuple)
```

```
('Ekamdeep', 18, True)
```

In [54]:
```
#Check whether an element exists in a tuple
MyTuple = ("Ekamdeep", 18, True)
print("kaur" in MyTuple)
print(18 in MyTuple)
```

```
False
True
```

In [51]:
```
#Create a set
MySet = {"rbnb", "college", "shrirampur"}
print(MySet)
```

```
{'shrirampur', 'college', 'rbnb'}
```

In [55]:
```
#Iterate over sets
MySet = set("college")
for val in MySet :
    print(val)
```

```
o
c
g
e
l
```

In [57]:
```
#create set difference
s1 = set(["rbnb", "college", "shrirampur"])
s2 = set(["St.Xavier", "school", "shrirampur"])
s3 = s1.difference(s2)
print(s3)
s4 = s2.difference(s1)
print(s4)
```

```
{'college', 'rbnb'}
{'St.Xavier', 'school'}
```

In [58]:
```python
#sort a dictionary by value
import operator
d = {1:2, 3:4, 4:3, 2:1, 0:0}
sorted_d = sorted(d.items(), key = operator.itemgetter(1))
print("Dictionary in ascending order by value :", sorted_d)
sorted_d = sorted(d.items(), key = operator.itemgetter(1), reverse = True)
print("Dictionary in descending order by value :", sorted_d)
```

```
Dictionary in ascending order by value : [(0, 0), (2, 1), (1, 2), (4, 3), (3, 4)]
Dictionary in descending order by value : [(3, 4), (4, 3), (1, 2), (2, 1), (0, 0)]
```

In [60]:
```python
#add a key to a dictionary
d = {10:0, 0:20}
print(d)
d.update({1:2})
print(d)
```

```
{10: 0, 0: 20}
{10: 0, 0: 20, 1: 2}
```

In [65]:
```python
#iterate over dictonaries using for loops
d = {'Red' : 1, 'Blue' : 2, 'Green' : 3}
for color_key, value in d.items() :
    print(color_key, 'to', d[color_key])
```

```
Red to 1
Blue to 2
Green to 3
```

In [ ]: