

```
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")
```

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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 :
```

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    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]: #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]: #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]: #iterate over dictionaries 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
```

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In [ ]:
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