

1) Write a Python function to sum all the numbers in a list. ¶

Sample List : (8, 2, 3, 0, 7)

In [1]:

```
def sum(numbers):
    total = 0
    for x in numbers:
        total += x
    return total
print(sum((8, 2, 3, 0, 7)))
```

20

2) Write a Python function to multiply all the numbers in a list.

Sample List : (8, 2, 3, -1, 7)

In [2]:

```
def multiply(numbers):
    total = 1
    for x in numbers:
        total *= x
    return total
print(multiply((8, 2, 3, -1, 7)))
```

-336

3) Write a Python function to check whether a number is in a given range.

In [3]:

```
def test_range(n):
    if n in range(3,9):
        print( " %s is in the range"%str(n))
    else :
        print("The number is outside the given range.")
test_range(5)
```

5 is in the range

4) Write a Python function that takes a list and returns a new list with unique elements of the first list.

Sample List : [1,2,3,3,3,3,4,5] Unique List : [1, 2, 3, 4, 5]

In [4]:

```
def unique_list(l):
    x = []
    for a in l:
        if a not in x:
            x.append(a)
    return x

print(unique_list([1,2,3,3,3,3,4,5]))
```

[1, 2, 3, 4, 5]

5) Write a Python function that takes a number as a parameter and check the number is prime or not.

Note : A prime number (or a prime) is a natural number greater than 1 and that has no positive divisors other than 1 and itself

In [5]:

```
def test_prime(n):
    if (n==1):
        return False
    elif (n==2):
        return True;
    else:
        for x in range(2,n):
            if(n % x==0):
                return False
        return True
print(test_prime(9))
```

False

6) Write a Python program to print the even numbers from a given list.

In [6]:

```
def is_even_num(l):
    enum = []
    for n in l:
        if n % 2 == 0:
            enum.append(n)
    return enum
print(is_even_num([1, 2, 3, 4, 5, 6, 7, 8, 9]))
```

[2, 4, 6, 8]

7) Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts

the number as an argument.

In [7]:

```
def factorial(n):
    if n == 0:
        return 1
    else:
        return n * factorial(n-1)
n=int(input("Input a number to compute the factiorial : "))
print(factorial(n))
```

Input a number to compute the factiorial : 6
720

8) Write a Python function to check whether a number is perfect or not. Go to the editor

According to Wikipedia : In number theory, a perfect number is a positive integer that is equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself (also known as its aliquot sum). Equivalently, a perfect number is a number that is half the sum of all of its positive divisors (including itself). Example : The first perfect number is 6, because 1, 2, and 3 are its proper positive divisors, and $1 + 2 + 3 = 6$. Equivalently, the number 6 is equal to half the sum of all its positive divisors: $(1 + 2 + 3 + 6) / 2 = 6$. The next perfect number is $28 = 1 + 2 + 4 + 7 + 14$. This is followed by the perfect numbers 496 and 8128.

In [8]:

```
def perfect_number(n):
    sum = 0
    for x in range(1, n):
        if n % x == 0:
            sum += x
    return sum == n
print(perfect_number(6))
```

True

9) Write a Python function to create and print a list where the values are square of numbers between 1 and 30 (both included).

In [16]:

```
def printValues():  
    l = list()  
    for i in range(1,21):  
        l.append(i**2)  
    print(l)  
  
printValues()
```

```
[1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225, 256, 289, 324, 361, 400]
```