Functions in Python

Block of statements that perform a specific task.

```
def func_name( param1, param2..) :
    #some work
    return val


func_name( arg1, arg2 ..) #function call
```

Function Definition

```
def sum(a, b):
    s = a + b
    return s

print(sum(2, 3))
```

Functions in Python

Built-in Functions

User defined Functions

print( )

len( )

type( )

range( )

Default Parameters

Assigning a default value to parameter, which is used when no argument is passed.

Let's Practice

WAF to print the length of a list. (list is the parameter)

WAF to print the elements of a list in a single line. (list is the parameter)

WAF to find the factorial of n. (n is the parameter)

WAF to convert USD to INR.

Recursion

When a function calls itself repeatedly.

#prints n to 1 backwards

```python
def show(n):
    if(n == 0):
        return
    print(n)
    show(n-1)
```

Base case

Recursion

```python
#returns n!
def fact(n):
    if(n == 0 or n == 1):
        return 1
    else:
        return n * fact(n-1)
```

Let's Practice

Write a recursive function to calculate the sum of first n natural numbers.

Write a recursive function to print all elements in a list.

Hint : use list & index as parameters.