In [1]:
```
# function for pring even number from list
def list_fun(x):
    for i in x:
        if i%2==0:
            print(f"{i} is even")
        else:
            print(f"{i} is odd")
```

In [2]:
```
list_fun([1,2,45,34])
```

```
1 is odd
2 is even
45 is odd
34 is even
```

In [3]:
```
# Write a program to create a function that takes two arguments, name and age,
def fun(name,age):
    print(f"My name is {name}. I am {age} years old")
```

In [4]:
```
fun("Siya",23)
```

```
My name is Siya. I am 23 years old
```

In [15]:
```
# Create a function with variable length of arguments
def func(*args):
    for i in args:
        print(i)
```

In [16]:
```
func(20,30,40)
```

```
20
30
40
```

In [17]:
```
func("Siya","Seeta")
```

```
Siya
Seeta
```

In [18]:
```
# Return multiple values from a function
def calculation(a,b):
    addition=a+b
    substraction=a-b
    multiplication=a*b
    division=a/b
    return addition, substraction, multiplication, division
```

In [19]:

```
calculation(25,45)
```

Out[19]:

```
(70, -20, 1125, 0.5555555555555556)
```

In [20]:

```
def calculation(a, b):
    return a + b, a - b

# get result in tuple format
# unpack tuple
add, sub = calculation(40, 10)
print(add, sub)
```

```
50 30
```

In [22]:

```
# Create a function with a default argument
def average(a,b,c=5):
    avg=(a+b+c)/3
    print(avg)
```

In [23]:

```
average(1,2)
```

```
2.6666666666666665
```

In [24]:

```
average(1,2,3)
```

```
2.0
```

In [25]:

```
# function with default argument
def show_employee(name, salary=9000):
    print("Name:", name, "salary:", salary)

show_employee("Ben", 12000)
show_employee("Jessa")
```

```
Name: Ben salary: 12000
Name: Jessa salary: 9000
```

Create an inner function to calculate the addition in the following way

Create an outer function that will accept two parameters, a and b

Create an inner function inside an outer function that will calculate the addition of a and b

At last, an outer function will add 5 into addition and return it

In [35]:
```
def calculation(a,b):
    print("a: ",a, "b: ",b)
    def add(a,b):
        addition=a+b
        return addition
    addi=add(a, b)
    return addi+5
```

In [36]:
```
calculation(2,3)
```

```
a:  2 b:  3
```

Out[36]:
```
10
```

In [37]:
```
calculation(25,5)
```

```
a:  25 b:  5
```

Out[37]:
```
35
```

In [38]:
```
# outer function
def outer_fun(a, b):
    square = a ** 2

    # inner function
    def addition(a, b):
        return a + b

    # call inner function from outer function
    add = addition(a, b)
    # add 5 to the result
    return add + 5

result = outer_fun(5, 10)
print(result)
```

```
20
```

In [39]:
```
# Create a recursive function
# Write a program to create a recursive function to calculate the sum of number

# A recursive function is a function that calls itself again and again.
```

In [45]:
```
def add(n):
    if n:
        return n+add(n-1)
    else:
        return 0
```

In [46]:
```
add(10)
```

Out[46]:
```
55
```

In [47]:
```
add(20)
```

Out[47]:
```
210
```

In [49]:
```
# Assign a different name to function and call it through the new name
# Below is the function display_student(name, age).
# Assign a new name show_tudent(name, age) to it and call it using the new name
def display_student(name,age):
    print(name,age)
display_student("Amrita",23)
```

```
Amrita 23
```

In [52]:
```
show_student=display_student
show_student("Rutuja",24)
```

```
Rutuja 24
```

In [56]:
```
# Generate a Python list of all the even numbers between 4 to 30
def even(start, end):
    e=[]
    for x in range(start, end):
        if x%2==0:
            e.append(x)
    return e
```

In [57]:
```
even(4,30)
```

Out[57]:
```
[4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28]
```

In [58]:
```
# Find the largest item from a given list
x = [4, 6, 8, 24, 12, 2]
print(max(x))
```

```
24
```

In [7]:
```
def lar(list1):
    l=list1[0]
    for x in list1:
        if x>l:
            l=x
    print(f"{l} is lagrest item")
```

In [8]:
```
lar([4, 6, 8, 24, 12, 2])
```

```
24 is lagrest item
```

In [ ]:
```
```