Function

In [3]:
```
def greet():
    print('hello')
    print('good morning team')
```

In [4]:
```
def greet():
    print('hello')
    print('good morning team')
greet()
```

```
hello
good morning team
```

In [5]:
```
def greet():
    print('hello')
    print('good morning team')
greet()

def greet():
    print('hello')
    print('good morning team')
greet()
```

```
hello
good morning team
hello
good morning team
```

In [6]:
```
def greet():
    print('hello')
    print('good morning team')
greet()

print()

def greet():
    print('hello')
    print('good morning team')
greet()
```

```
hello
good morning team

hello
good morning team
```

In [7]:
```
def greet():
    print('hello')
    print('good morning team')
greet()

print()

def greet():
    print('hello')
```

```
    print('good morning team')
greet()

print()

def greet():
    print('hello')
    print('good morning team')
greet()
```

```
hello
good morning team

hello
good morning team

hello
good morning team
```

In [8]:
```
def greet():
    print('hello')
    print('good morning team')
greet()
print('**************')
greet()
print('**************')
greet()
```

```
hello
good morning team
**************
hello
good morning team
**************
hello
good morning team
```

In [9]:
```
def greet():
    print('hello')
    print('good morning team')
greet()
```

```
hello
good morning team
```

In [10]:
```
# function with argument

def add(x,y):
    c=x+y
    print(c)

add(5,6)
```

```
11
```

In [11]:
```
# function with argument

def add(x,y):
    c=x+y
    return c
add(5)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[11], line 6
      4     c=x+y
      5     return c
----> 6 add(5)

TypeError: add() missing 1 required positional argument: 'y'
```

In [ ]:
```
def add(x,y):
    c=x+y
    return c

add(5,6,7)
```

In [ ]:
```
def add(x,y,z):
    c=x+y
    return c

add(5,6,7)
```

In [ ]:
```
def add(x,y,z):
    c=x+y+z+m
    return c

add(5,6,7)
```

In [ ]:
```
def add(x,y,z,m):
    c=x+y+z+m
    return c

add(5,6,7,8)
```

In [12]:
```
def greet():
    print('hello')
    print('good morning team')
greet()

def add(x,y):
    c = x+y
    return c

add(5,6)
```

```
hello
good morning team
```

Out[12]: 11

In [13]:
```
def greet():
    print('hello')
    print('good morning team')

def add(x,y):
    c = x+y
    return c

def sub(x,y):
    d = x-y
```

```
    return d

greet()
print(add(5,6))
print(sub(5,6))
```

```
hello
good morning team
11
-1
```

In [14]:
```
def add_sub(x,y):
    c = x+y
    d = x-y
    return c,d

result = add_sub(4,5)
print(result)
print(type(result))
```

```
(9, -1)
<class 'tuple'>
```

In [15]:
```
def add_sub(x,y):
    c = x+y
    d = x-y
    return c, d

result, result1 = add_sub(4,5)

print(result)
print(result1)
print(type(result))
```

```
9
-1
<class 'int'>
```

In [16]:
```
def add_sub_mul(x,y):
    c = x+y
    d = x-y
    e = x*y
    return c, d, e

add, sub, mul = add_sub_mul(4,5)

add
sub
mul
```

Out[16]: 20

update

In [17]:
```
def update():
    x = 8
    print(x)
update()
```

```
8
```

In [18]:
```
def update():
    x = 8
    print(x)
update(8)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[18], line 4
      2     x = 8
      3     print(x)
----> 4 update(8)

TypeError: update() takes 0 positional arguments but 1 was given
```

In [19]:
```
def update(x):
    x = 8
    return x

update(100)
```

Out[19]: 8

In [20]:
```
def update(x):
    x = 8
    return x

a = 15
update(a)
print(a)
```

```
15
```

7th

positional argument

In [23]:
```
def person(name,age):
    print(name)
    print(age)

person('nit',22)
```

```
nit
22
```

In [25]:
```
def person(name,age):
    print(name)
    print(age)

person('nit')
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[25], line 5
      2     print(name)
      3     print(age)
----> 5 person('nit')

TypeError: person() missing 1 required positional argument: 'age'
```

In [26]:
```
def person(name,age):
    print(name)
    print(age)

person(22)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[26], line 5
      2     print(name)
      3     print(age)
----> 5 person(22)

TypeError: person() missing 1 required positional argument: 'age'
```

In [27]:
```
def person(name,age):
    print(name)
    print(age)

person('nit',22,23,45,56)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[27], line 5
      2     print(name)
      3     print(age)
----> 5 person('nit',22,23,45,56)

TypeError: person() takes 2 positional arguments but 5 were given
```

In [28]:
```
def person(name, age):
    print(name)
    print(age)

person(22,'nit')
```

```
22
nit
```

In [29]:
```
def person(name, age):
    print(name)
    print(age-1)

person(22,'nit')
```

```
22
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[29], line 5
      2     print(name)
      3     print(age-1)
----> 5 person(22,'nit')

Cell In[29], line 3, in person(name, age)
      1 def person(name, age):
      2     print(name)
----> 3     print(age-1)

TypeError: unsupported operand type(s) for -: 'str' and 'int'
```

In [30]:
```
def person(name, age):
    print(name)
    print(age-1)

person(age = 22, name = 'nit')
```

```
nit
21
```

In [31]:
```
def person(name, age,new_age):
    print(name)
    print(age-1)

person(age = 22, name = 'nit')
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[31], line 5
      2     print(name)
      3     print(age-1)
----> 5 person(age = 22, name = 'nit')

TypeError: person() missing 1 required positional argument: 'new_age'
```

In [33]:
```
def person(name, age,new_age):
    print(name)
    print(age-1)
    print(new_age)

person(age = 22, name = 'nit', new_age=23)
```

```
nit
21
23
```

default argument

In [34]:
```
def person(name, age=18):
    print(name)
    print(age)

person('nit')
```

```
nit
18
```

In [35]:
```
def person(name, age=18):
    print(name)
    print(age)

person('nit', 40)
```

```
nit
40
```

Variable length argument

In [37]:
```
def person(name, age):
    print(name)
    print(age)
```

```
person('nit',40, 50, 60, 70, 80)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[37], line 5
      2     print(name)
      3     print(age)
----> 5 person('nit',40, 50, 60, 70, 80)

TypeError: person() takes 2 positional arguments but 6 were given
```

In [38]:
```
def sum(a,b):
    c = a+b
    print(c)

sum(5,6,7,8)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[38], line 5
      2     c = a+b
      3     print(c)
----> 5 sum(5,6,7,8)

TypeError: sum() takes 2 positional arguments but 4 were given
```

In [39]:
```
def sum(a, *b):
    c = a+b
    print(c)

sum(5,6,7,8)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[39], line 5
      2     c = a+b
      3     print(c)
----> 5 sum(5,6,7,8)

Cell In[39], line 2, in sum(a, *b)
      1 def sum(a, *b):
----> 2     c = a+b
      3     print(c)

TypeError: unsupported operand type(s) for +: 'int' and 'tuple'
```

In [40]:
```
def sum(a, *b):
    #c = a+b
    print(type(a))
    print(type(b))

sum(5,6,7,8)
```

```
<class 'int'>
<class 'tuple'>
```

In [42]:
```
def sum(a, *b):
    c = a
    for i in b:
        c = c + i
```

```
    print(c)

sum(5,6,7,8)
```

```
26
```

In [43]:
```
def sum(a, *b):
    c = a
    for i in b:
        c = c + i
    print(c)

sum(5,6,7,8,9,20)
```

```
55
```

Kwargs

In [45]:
```
def person():
    person('ALEX', 36, 'JHON', 987767)
```

In [46]:
```
def person(name, *data):
    print(name)
    print(data)

person('ALEX' , 36, 'JHON', 987767)
```

```
ALEX
(36, 'JHON', 987767)
```

In [47]:
```
def person(name,*data):
    print(name)
    print(data)

person('ALEX' , age = 36, home_place='southcity' , mob=987767)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[47], line 5
      2     print(name)
      3     print(data)
----> 5 person('ALEX' , age = 36, home_place='southcity' , mob=987767)

TypeError: person() got an unexpected keyword argument 'age'
```

In [48]:
```
def person(name, **data):
    print('name')
    print(data)

person('ALEX', age = 36, home_place ='southcity', mob=987767)
```

```
name
{'age': 36, 'home_place': 'southcity', 'mob': 987767}
```

In [49]:
```
def person(name, **data):
    print('name')
    print(data)

person('ALEX', age = 36, home_place ='southcity', mob=987767, salary= 40000, mar
```

```
name
{'age': 36, 'home_place': 'southcity', 'mob': 987767, 'salary': 40000, 'married':
'yes'}
```

global variable & local variable

In [52]:
```
a = 10

def something():
    b = 15
```

In [53]:
```
a = 10

def something():
    b = 15

    print('in function',b)
    print('out function',a)
```

In [54]:
```
a = 10

def something():
    b = 15
    print('in function',b)

print('out function',a)
```

```
out function 10
```

In [57]:
```
a = 10

def something():
    a = 15

print('in function',a)

print('out function',a)
```

```
in function 10
out function 10
```

In [58]:
```
a = 10

def something():
    b = 15
    print('in function',b)
something()
print('out function',a)
```

```
in function 15
out function 10
```

In [59]:
```
a = 10

def something():
    print('in function',a)

something()
print('out function',a)
```

```
in function 10
out function 10
```

In [60]:
```
a = 10

def something():
    global a
    b = 15
    print('in function',b)
    print('global variable',a)

something()

print('out function',a)
```

```
in function 15
global variable 10
out function 10
```

In [63]:
```
a = 20

def something():
    global a
    a = 15
    print('in function',a)

    a = 15
something()
print('out function',a)
```

```
in function 15
out function 15
```

In [64]:
```
x = 10

def update_x():
    global x
    x += 5

update_x()
print(x)
```

```
15
```

In [65]:
```
x = 10

def update_x():
    globals()['x'] += 5

update_x()
print(x)
```

```
15
```

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: