1. What is the result of the code, and explain?
>>> X = 'iNeuron'
>>> def func():
print(X)
>>> func()
Ans: Result of the code is :
iNeuron
the function returns the value of global variable X after not finding one in its local scope.

In [1]:
```
X = 'iNeuron'
def func():
    print(X)
func()
```

```
iNeuron
```

2. What is the result of the code, and explain?
>>> X = 'iNeuron'
>>> def func():
X = 'NI!'
>>> func()
>>> print(X)
Ans:
The result of the code is:
iNeuron
The print function in the code will print the global variable X since the func() only defines a local variable X.

In [3]:
```
X = 'iNeuron'
def func():
    X = 'NI!'
func()
print(X)
```

```
iNeuron
```

3. What does this code print, and why?
>>> X = 'iNeuron'
>>> def func():
X = 'NI'
print(X)
>>> func()
>>> print(X)
Ans:
The code will print:
NI
iNeuron
The func() when called will print the local variable X=’NI’ and the print() will print the global variable X = ‘iNeuron’

In [5]:
```
X = 'iNeuron'
def func():
    X = 'NI'
    print(X)
func()
print(X)
```

```
NI
iNeuron
```

4. What output does this code produce? Why?
>>> X = 'iNeuron'
>>> def func():
global X
X = 'NI'
>>> func()
>>> print(X)
Ans: The output of this code is:
NI
The func() calls the global variable X and replaces its value as 'NI'.

In [6]:
```
X = 'iNeuron'
def func():
    global X
    X = 'NI'
func()
print(X)

```
```
NI
```

5. What about this code—what's the output, and why?
>>> X = 'iNeuron'
>>> def func():
X = 'NI'
def nested():
print(X)
nested()
>>> func()
>>> X
Ans:
The output of the code:
NI
iNeuron
X = 'NI' is in nested()'s global scope and since it has no X in its local scope, it'll print NI.

In [8]:
```
X = 'iNeuron'
def func():
    X = 'NI'
    def nested():
        print(X)
    nested()
func()
X
```
```
NI
```
Out[8]:
```
'iNeuron'
```

6. How about this code: what is its output in Python 3, and explain?
>>> def func():
X = 'NI'
def nested():
nonlocal X
X = 'Spam'
nested()
print(X)
>>> func()

Ans: The output is:
Spam
Nonlocal is used to modify the X defined in func() as "Spam" in the global scope.

In [9]:
```
def func():
    X = 'NI'
    def nested():
        nonlocal X
        X = 'Spam'
    nested()
    print(X)
func()
```

```
Spam
```