Python Programming
Return and Default

Mostafa S. Ibrahim
Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher
PhD from Simon Fraser University - Canada
Bachelor / Msc from Cairo University - Egypt
Ex-(Software Engineer / ICPC World Finalist)

Return keyword

- Remember
  - Res = min(5, 2)
- Keyword **return** returns some result from our function
- Once the function finds the word return, it **terminates** the function!
  - Observe code difference
- Observe lines 9 & 14 marks for PEP

```python
2
3   def our_min(first, second):
4       if first < second:
5           return first
6       else:
7           return second
8
9   def our_max(first, second):
10      if first > second:
11          return first
12      return second
13
14  a, b = 5, 20
15  print(our_min(a, b))    # 5
16  print(our_max(a, b))    # 20
17
```

Multiple returns

```python
def f():
    return 1, 2, 3

a, b, c = f()
print(a, b, c)      # 1 2 3

together = f()
print(type(together))    # <class 'tuple'>

x, y, z = together       # unpack
print(x, y, z)  # 1 2 3

# ValueError: too many values to unpack (expected 2)
#x, y = together

# ValueError: not enough values to unpack (expected 5, got 3)
#x, y, z, w1, w2 = together
#print(w1)

my_tuple = (5, 6, 7)      # Create tuple
x, y, z = together        # unpack

# More on tuples later
```

No return

```python
2    # function with no return
3    def our_print(first, second):
4        print('Sum =', first + second)
5        print('Multiplication =', first * second)
6
7
8    res = our_print(1, 2)
9
10   print(res)  # None
11
12
```

Default Arguments

```python
# a, b: non-default argument
# c, d: default argument
# the function accepts from 2 to 4 arguments
def my_sum(a, b, c = 1, d = 2):
    return a + b + c + d


print(my_sum(1, 2, 3, 4))    # 10
print(my_sum(3, 7))          # 13

# TypeError: my_sum() takes from 2 to 4 positional arguments but 5 were given
#my_sum(1, 2, 3, 4, 5)

# SyntaxError: non-default argument follows default argument
#def my_sum(a = 1, b, c = 1, d = 2):
#    return a + b + c + d
```

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."