

## Function Parameters in Python

Reminder - things we already know

### Default values

```
>>> def return_number(number=5):
    return number
```

```
>>> return_number()
```

```
5
```

```
>>> return_number(3)
```

```
3
```

### \*args

In case we have an unknown amount of arguments, we can use \*. For instance:

```
>>> def multiply_many(*numbers):
    result = 1
    for number in numbers:
        result *= number
    return result
```

```
>>> multiply_many(5,6,7)
```

```
210
```

```
>>> multiply_many()
```

```
1
```

```
>>>
```

When we pass \*args, it's essentially a tuple object.

```
>>> def multiply_many(*numbers):
    print type(numbers)
```

```
>>> multiply_many()
<type 'tuple'>
```

## **\*\*kwargs**

**Our functions can receive a variant number of arguments.**

**Now we can try to provide arguments with names. This time, we'll get a dictionary.**

```
>>> def print_ages(**people):
for (name, age) in people.items():
    print "%s is %d years old." % (name, age)
```

```
>>> print_ages(Yaniv=38, Omer=26)
Omer is 26 years old.
Yaniv is 38 years old.
```

**We can also provide a dictionary to this function:**

```
>>> staff = {"Omerr": 26, "Yaniv": 38}
>>> print_ages(**staff)
Omerr is 26 years old.
Yaniv is 38 years old.
```

**Now let's mix things up...**

```
>>> def show_everything(number_one, number_two, *args, **kwargs):
    print (number_one, number_two, args, kwargs)
```

```
>>> show_everything()
Traceback (most recent call last):
  File "<pyshell#212>", line 1, in <module>
    show_everything()
TypeError: show_everything() takes at least 2 arguments (0 given)

>>> show_everything(1,2)
(1, 2, (), {})
```

```
>>> show_everything(1,2,3)
(1, 2, (3,), {})
```

```
>>> show_everything(1,2,3,4,5)
(1, 2, (3, 4, 5), {})
```

```
>>> show_everything(1,2,3,4,5, omer=1)
(1, 2, (3, 4, 5), {'omer': 1})
```

```
>>> show_everything(1,2,3,4,5, omer=1, yaniv=2)
(1, 2, (3, 4, 5), {'omer': 1, 'yaniv': 2})
```