In [1]:
```
s = 'Global Variable'

def func():
    print locals()
```

In [2]:
```
print globals()
```

```
{'_dh': [u'G:\\AnacondaPython\\PROGRAMS'], '__': '', '__builtin__': <module
'__builtin__' (built-in)>, '_i2': u'print globals()', 'quit': <IPython.core.a
utocall.ZMQExitAutocall object at 0x00000000055D6198>, '_iii': u'', '_i1':
u"s = 'Global Variable'\n\ndef func():\n    print locals()", 'exit': <IPytho
n.core.autocall.ZMQExitAutocall object at 0x00000000055D6198>, 'get_ipython':
<bound method ZMQInteractiveShell.get_ipython of <ipykernel.zmqshell.ZMQInter
activeShell object at 0x00000000055A1908>>, '_i': u"s = 'Global Variable'\n\n
def func():\n    print locals()", '__doc__': 'Automatically created module fo
r IPython interactive environment', '__builtins__': <module '__builtin__' (bu
ilt-in)>, '_ih': ['', u"s = 'Global Variable'\n\ndef func():\n    print local
s()", u'print globals()'], 'func': <function func at 0x0000000006D81A58>, '__
name__': '__main__', '___': '', '_': '', '_sh': <module 'IPython.core.shadown
s' from 'G:\AnacondaPython\lib\site-packages\IPython\core\shadowns.pyc'>,
's': 'Global Variable', '_ii': u'', 'In': ['', u"s = 'Global Variable'\n\ndef
func():\n    print locals()", u'print globals()'], '_oh': {}, 'Out': {}}
```

In [3]:
```
print globals().keys()
```

```
['_dh', '__', '__builtin__', '_i2', 'quit', '_i3', '_iii', '_i1', 'exit', 'ge
t_ipython', '_i', '__doc__', '__builtins__', '_ih', 'func', '__name__', '__
_', '_', '_sh', 's', '_ii', 'In', '_oh', 'Out']
```

In [7]:
```
globals()['func']
```

Out[7]:
```
<function __main__.func>
```

In [9]:
```
def hello(name='Jose'):
    return 'Hello '+name
hello()
```

Out[9]:
```
'Hello Jose'
```

In [10]:
```
greet = hello
```

In [11]:
```
greet
```

Out[11]:
```
<function __main__.hello>
```

In [12]:
```
greet()
```

Out[12]:
```
'Hello Jose'
```

In [13]:
```
del hello
hello()
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-13-25b0ff13a30d> in <module>()
      1 del hello
----> 2 hello()

NameError: name 'hello' is not defined
```

In [14]:
```
greet()
```

Out[14]:
```
'Hello Jose'
```

In [15]:
```
def hello(name='Jose'):
    print 'The hello() function has been executed'

    def greet():
        return '\t This is inside the greet() function'

    def welcome():
        return "\t This is inside the welcome() function"

    print greet()
    print welcome()
    print "Now we are back inside the hello() function"
hello()
```

```
The hello() function has been executed
         This is inside the greet() function
         This is inside the welcome() function
Now we are back inside the hello() function
```

In [16]:
```
def hello(name='Jose'):

    def greet():
        return '\t This is inside the greet() function'

    def welcome():
        return "\t This is inside the welcome() function"

    if name == 'Jose':
        return greet
    else:
        return welcome
x=hello()
```

In [17]:
```
x
```

Out[17]:
```
<function __main__.greet>
```

In [18]:
```
print x()
```

```
         This is inside the greet() function
```

In [19]:
```
def hello():
    return 'Hi Jose!'

def other(func):
    print 'Other code would go here'
    print func()
```

In [20]:
```
other(hello)
```

```
Other code would go here
Hi Jose!
```

In [24]:
```
def new_decorator(func):

    def wrap_func():
        print "Code would be here, before executing the func"

        func()

        print "Code here will execute after the func()"

    return wrap_func

def func_needs_decorator():
    print "This function is in need of a Decorator"
x=new_decorator(func_needs_decorator)
x()
```

```
Code would be here, before executing the func
This function is in need of a Decorator
Code here will execute after the func()
```