

Python

Combining scripts and modules

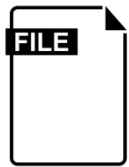
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A simple python module/script

In Python you will often want to write a module where most of your code is held and then use a separate script to interact with it.

In this contrived example we have:



`greetings.py`
(module)



`greeter.py`
(script)

How will it work?

When written, the script will be called like this:

```
$ python greeter.py
```

```
Nobody to greet!
```

```
$ python greeter.py Greta
```

```
Hello Greta
```

```
$ python greeter.py Harpo Chico Zeppo
```

```
Hello Harpo
```

```
Hello Chico
```

```
Hello Zeppo
```

The "greetings.py" module



`greetings.py`
(module)

Holds the function that actual does something:

```
def greet(someone):  
    print("Hello {0}".format(someone))
```

The "greeter.py" script



`greeter.py`
(script)

- defines the interaction between the "greetings.py" module and user input (from the command-line).

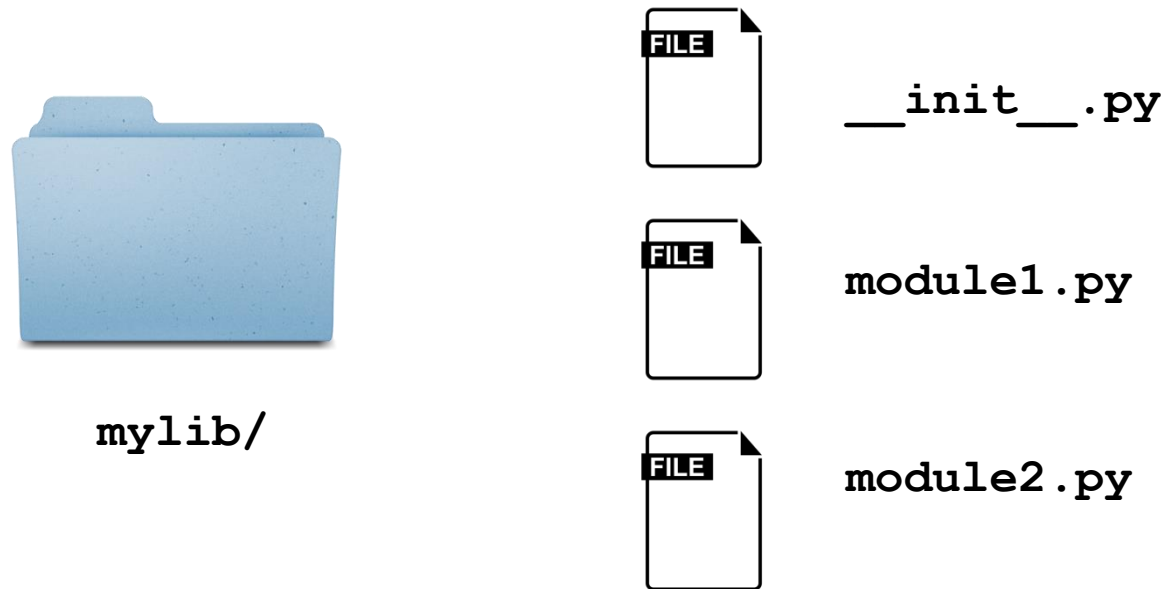
```
import greetings
import sys

if len(sys.argv) == 1:
    print("Nobody to greet!")
else:
    for person in sys.argv[1:]:
        greetings.greet(person)
```

A python "package"

In Python you will often want to group a set of modules into a **package** or **library**.

On the file system a library might look like this:



What does `__init__.py` do?



`__init__.py`

The "`__init__.py`" module is run when you import the name of the directory. It tells python that this directory is a Python *package*.

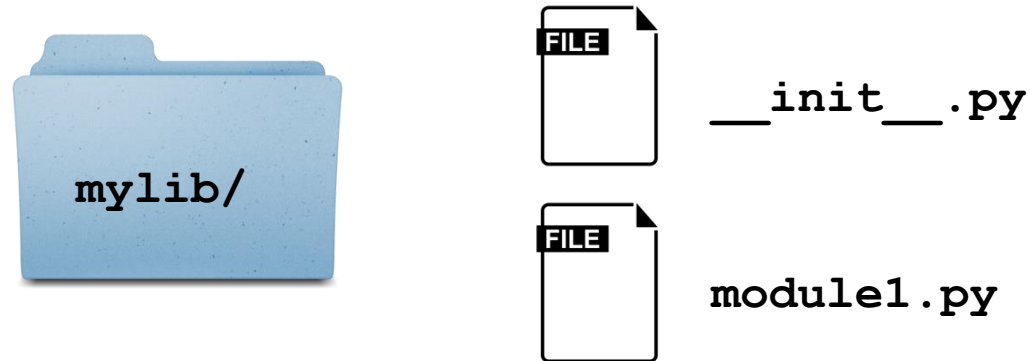
In this case it is called "mylib" so you would type:

```
>>> import mylib      # runs content of mylib/__init__.py
```

If "`__init__.py`" contained the line "`print(10)`" you would see:

```
>>> import mylib
10
```

Importing a package module



The existence of the "`___init___ .py`" module allows you to import modules within the package with:

```
>>> import mylib.module1  
>>> mylib.module1.runSomething(1, 2, 3)
```