

## 02.18-modules-and-packages

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### 1

#### 1.1

Python .py Python ex1.py

```
In [1]: %%writefile ex1.py
```

```
PI = 3.1416

def sum(lst):
    tot = lst[0]
    for value in lst[1:]:
        tot = tot + value
    return tot

w = [0, 1, 2, 3]
print (sum(w), PI)
```

Writing ex1.py

```
In [2]: %run ex1.py
```

```
6 3.1416
```

```
import ex1.py
```

```
In [3]: import ex1
```

```
6 3.1416
```

```
In [4]: ex1
```

```
Out[4]: <module 'ex1' from '/home/jovyan/ex1.py'>
```

**Python**  
ex1.py

ex1.

```
In [5]: print (ex1.PI)
```

3.1416

```
In [6]: ex1.PI = 3.141592653  
        print (ex1.PI)
```

3.141592653

ex1.

```
In [7]: print (ex1.sum([2, 3, 4]))
```

9

**PythonPython**  
ex1 ex1.py print

```
In [8]: import ex1
```

reload

```
In [9]: from imp import reload  
        reload(ex1)
```

6 3.1416

```
Out[9]: <module 'ex1' from '/home/jovyan/ex1.py'>
```

```
In [10]: import os  
         os.remove('ex1.py')
```

## 1.2 \_\_name\_\_

```
.py __name__  
__name__ '__main__'
```

```
In [11]: %%writefile ex2.py
```

```
PI = 3.1416  
  
def sum(lst):  
    """ Sum the values in a list  
    """  
    tot = 0  
    for value in lst:  
        tot = tot + value  
    return tot  
  
def add(x, y):  
    " Add two values."  
    a = x + y  
    return a  
  
def test():  
    w = [0,1,2,3]  
    assert(sum(w) == 6)  
    print ('test passed.')  
  
if __name__ == '__main__':  
    test()
```

Writing ex2.py

```
In [12]: %run ex2.py
```

test passed.

```
test()
```

```
In [13]: import ex2
```

```
In [14]: ex2.PI
```

```
Out[14]: 3.1416
```

```
In [15]: import ex2 as e2
         e2.PI
```

```
Out[15]: 3.1416
```

### 1.3

```
In [16]: from ex2 import add, PI

         from add PI
```

```
In [17]: add(2, 3)
```

```
Out[17]: 5
```

```
*
```

```
In [18]: from ex2 import *
         add(3, 4.5)
```

```
Out[18]: 7.5
```

```
In [19]: import os
         os.remove('ex2.py')
```

### 1.4

```
foo/ - __init__.py - bar.py (defines func) - baz.py (defines zap)
foo
```

```
from foo.bar import func
from foo.baz import zap
```

```
bar baz foo .py
- foo Python - __init__.py foo
```

## 1.5

- re
- copy
- math, cmath
- decimal, fraction
- sqlite3
- os, os.path
- gzip, bz2, zipfile, tarfile
- csv, netrc
- xml
- htmllib
- ftplib, socket
- cmd
- pdb
- profile, cProfile, timeit
- collections, heapq, bisect
- mmap
- threading, Queue
- multiprocessing
- subprocess
- pickle, cPickle
- struct

## 1.6 PYTHONPATH

PythonPYTHONPATH

In [ ]: