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Python Quick Tips

Functions, Methods and Libraries

Python Quick Tips #2

Functions, Methods and Packages

Functions

In part 1, we already used **functions**

Functions

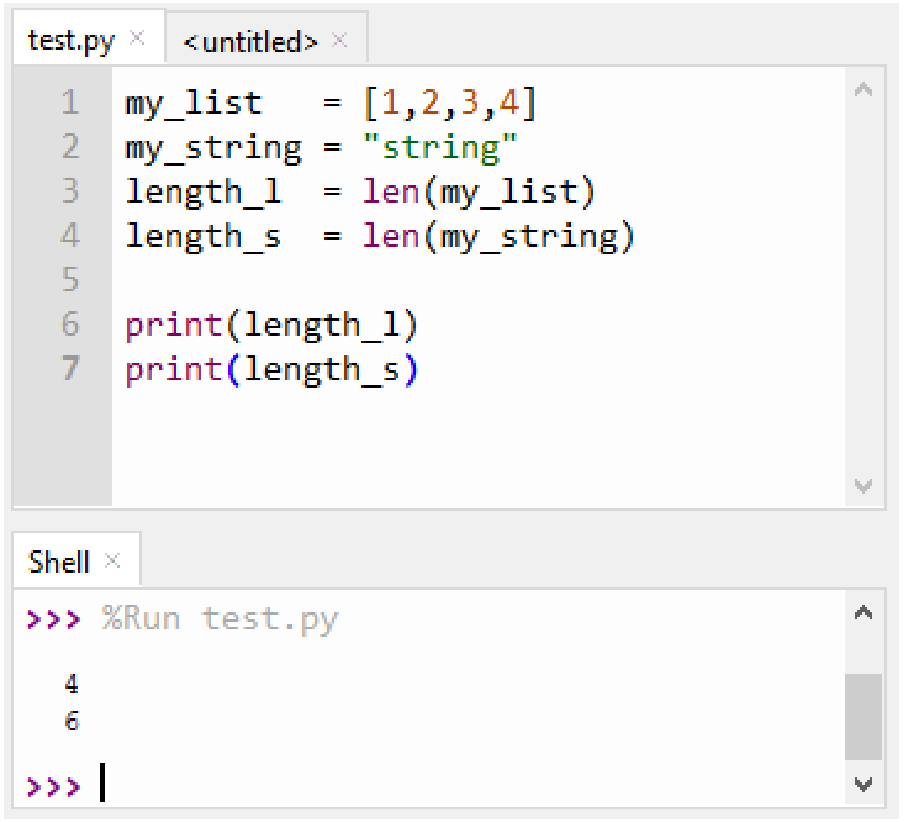
Syntax (typically)
Function(object**)**

Functions are **called by name**, and then passed data to operate upon

Functions

Example

len(variable)



```
my_list   = [1,2,3,4]
my_string = "string"
length_l  = len(my_list)
length_s  = len(my_string)

print(length_l)
print(length_s)
```

```
>>> %Run test.py

  4
  6

>>>
```

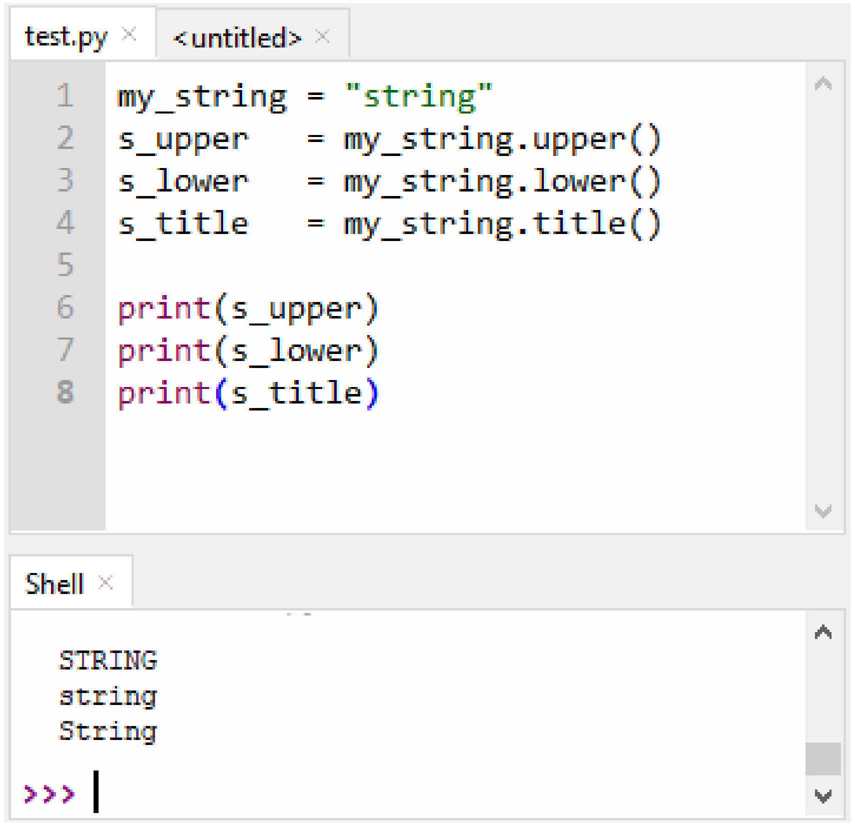
Methods

Syntax (typically)
object**.method()**

Methods are **called by name**, and associated with an object

Methods

Example
string.**upper()**

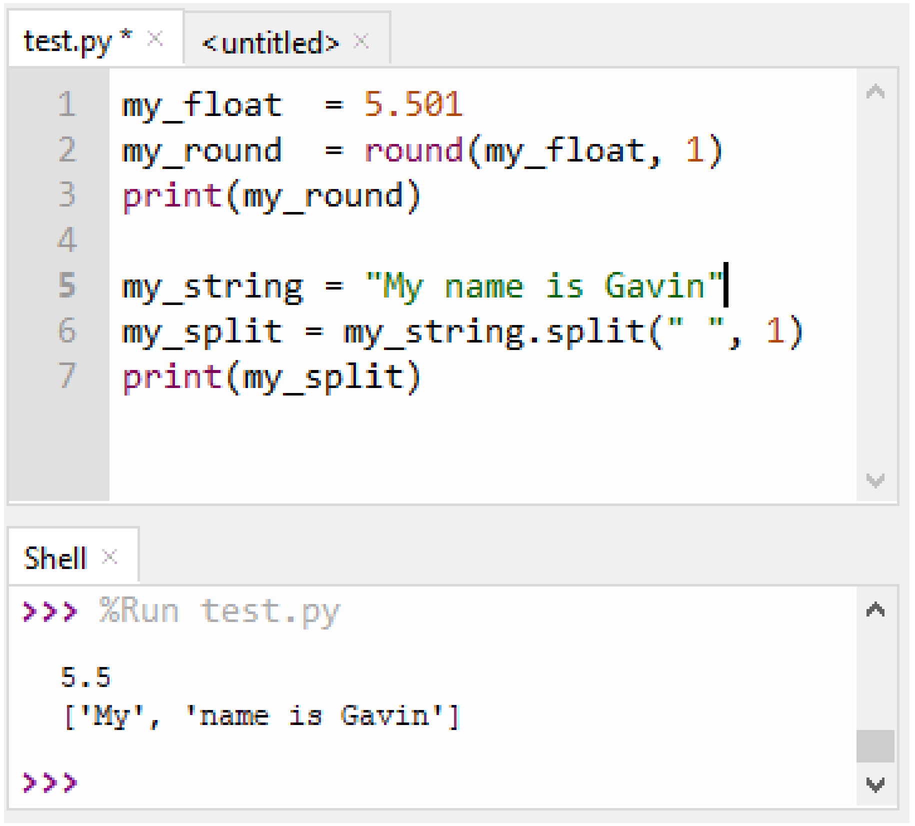


```
my_string = "string"
s_upper    = my_string.upper()
s_lower    = my_string.lower()
s_title    = my_string.title()

print(s_upper)
print(s_lower)
print(s_title)
```

```
STRING
string
String
>>> 
```

(multiple, fields)

Some methods or functions require/allow multiple fields.



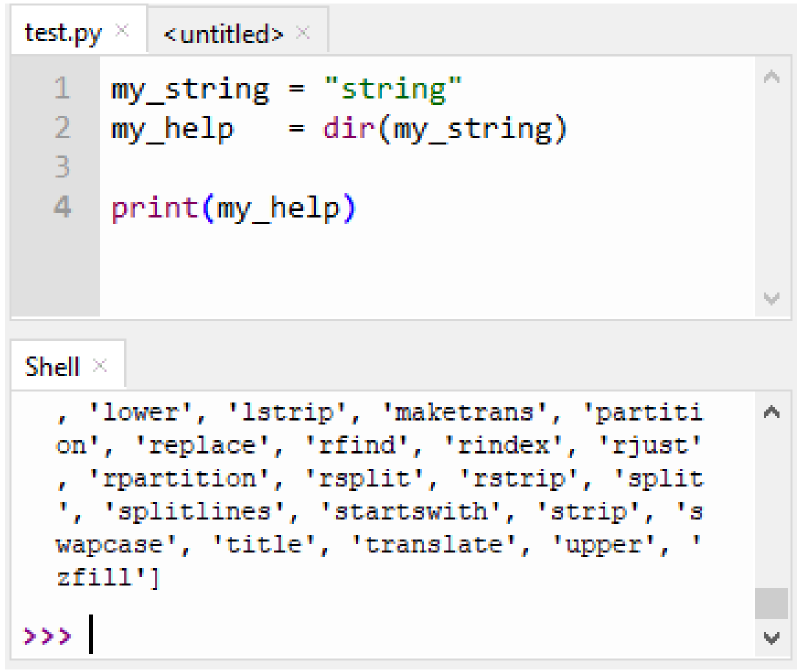
```
my_float  = 5.501
my_round  = round(my_float, 1)
print(my_round)

my_string = "My name is Gavin"
my_split = my_string.split(" ", 1)
print(my_split)
```

```
>>> %Run test.py

  5.5
  ['My', 'name is Gavin']

>>>
```

Finding Help

Function
dir(object)

Exposes all attributes of object


test.py <untitled>

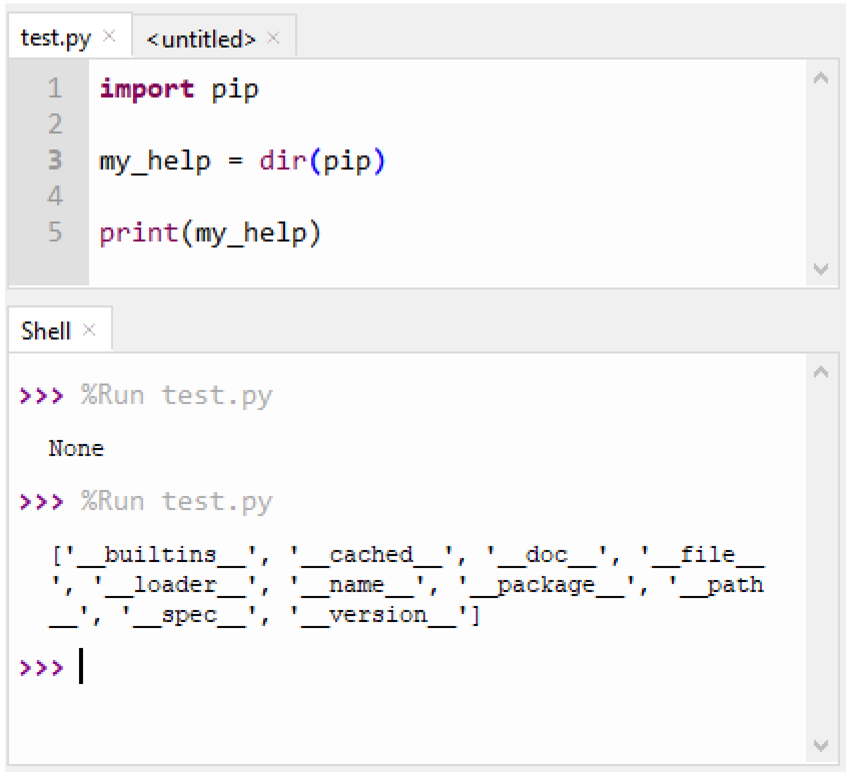
```
my_string = "string"
my_help   = dir(my_string)

print(my_help)
```

Shell

```
, 'lower', 'lstrip', 'maketrans', 'partiti
on', 'replace', 'rfind', 'rindex', 'rjust'
, 'rpartition', 'rsplit', 'rstrip', 'split
', 'splitlines', 'startswith', 'strip', 's
wapcase', 'title', 'translate', 'upper', '
zfill']

>>> |
```

Finding Help

Also works for libraries



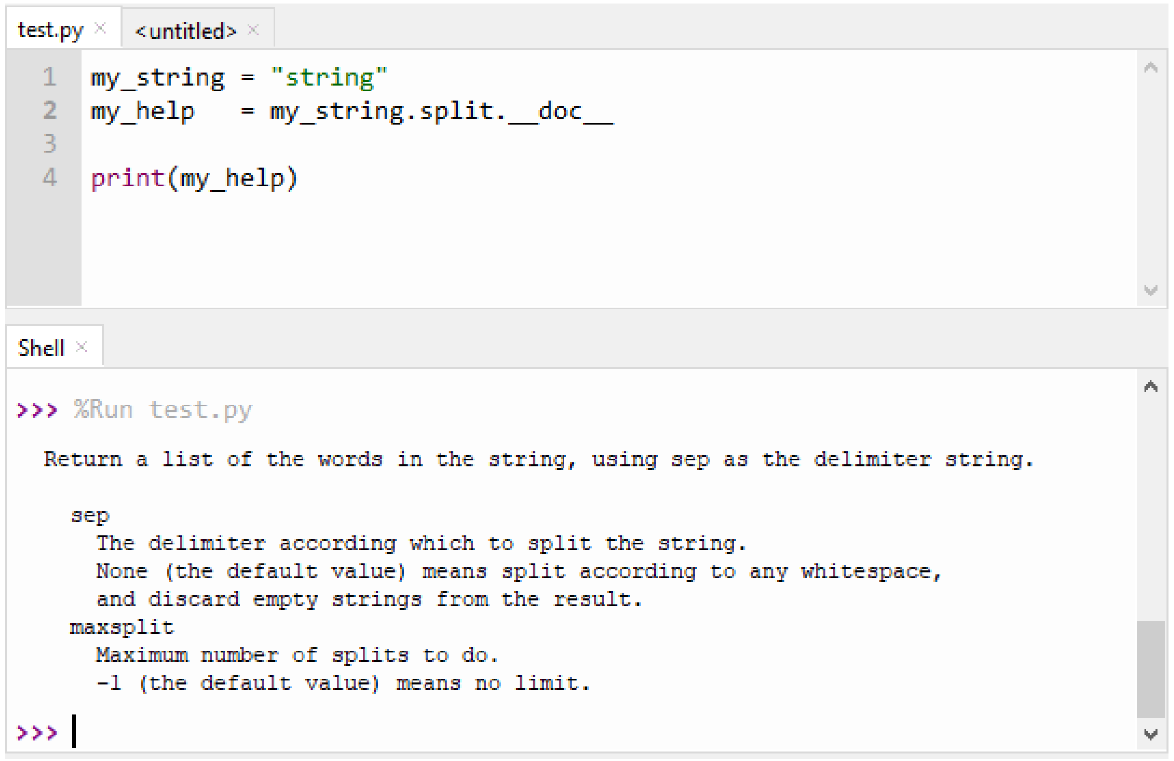
```python
import pip

my_help = dir(pip)

print(my_help)
```

```
>>> %Run test.py
  None
>>> %Run test.py
  ['__builtins__', '__cached__', '__doc__', '__file__
  ', '__loader__', '__name__', '__package__', '__path
  __', '__spec__', '__version__']
>>> 
```

Finding Help

Method
object.__doc__

Exposes documentation of object



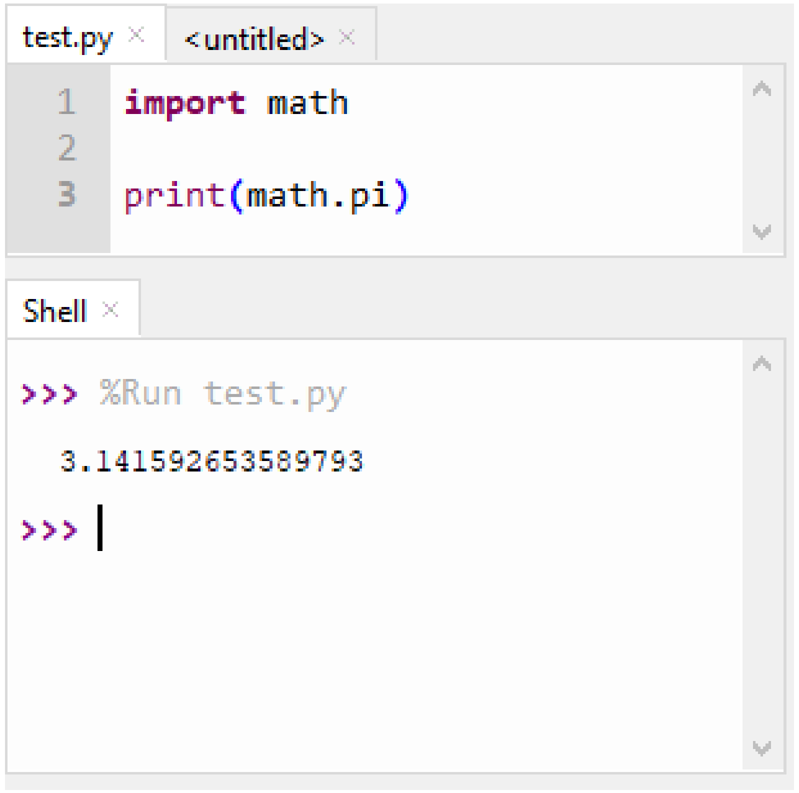
```
my_string = "string"
my_help   = my_string.split.__doc__

print(my_help)
```

```
>>> %Run test.py

  Return a list of the words in the string, using sep as the delimiter string.

    sep
      The delimiter according which to split the string.
      None (the default value) means split according to any whitespace,
      and discard empty strings from the result.
    maxsplit
      Maximum number of splits to do.
      -1 (the default value) means no limit.

>>> 
```

Importing Libraries

Syntax

import library



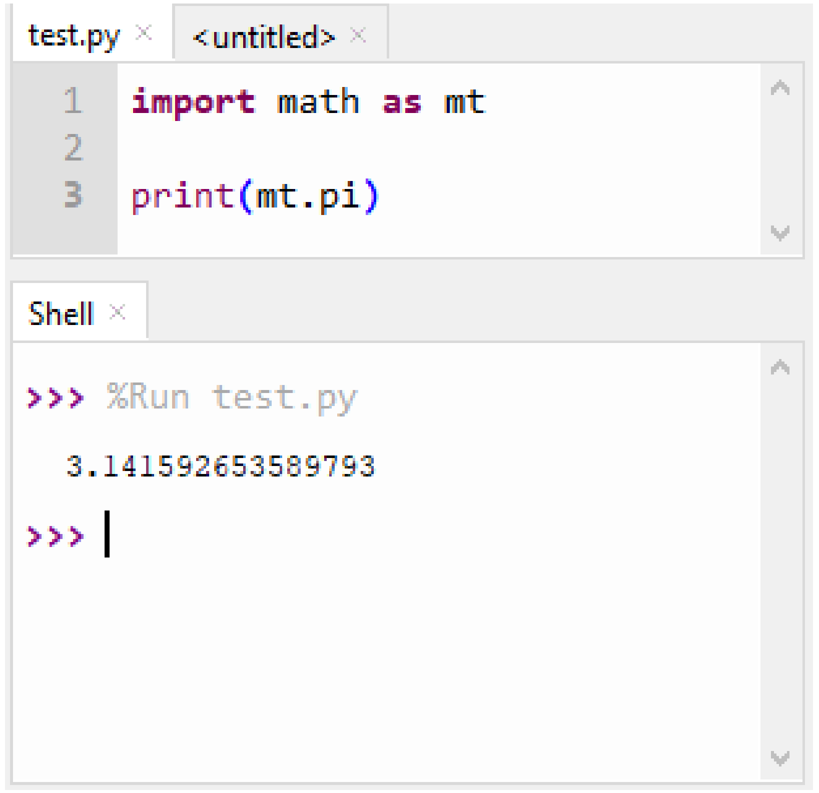
```
import math

print(math.pi)
```

```
>>> %Run test.py
  3.141592653589793
>>> 
```

Importing Libraries (Alias)

Syntax

import library **as** alias



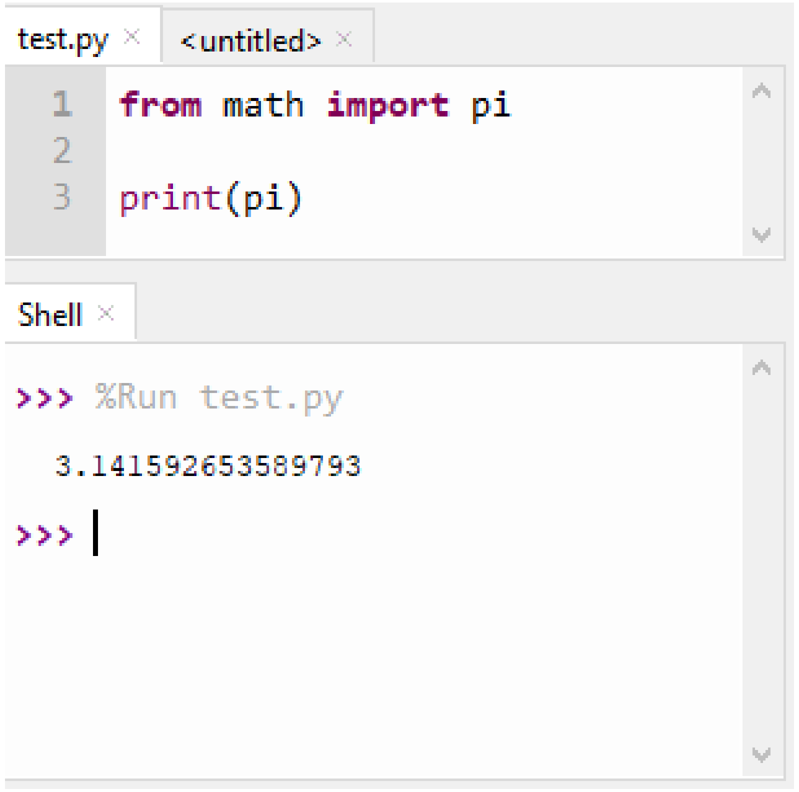
```
import math as mt

print(mt.pi)
```

```
>>> %Run test.py
  3.141592653589793
>>> 
```

Importing Attributes

Syntax

from library **import** attribute



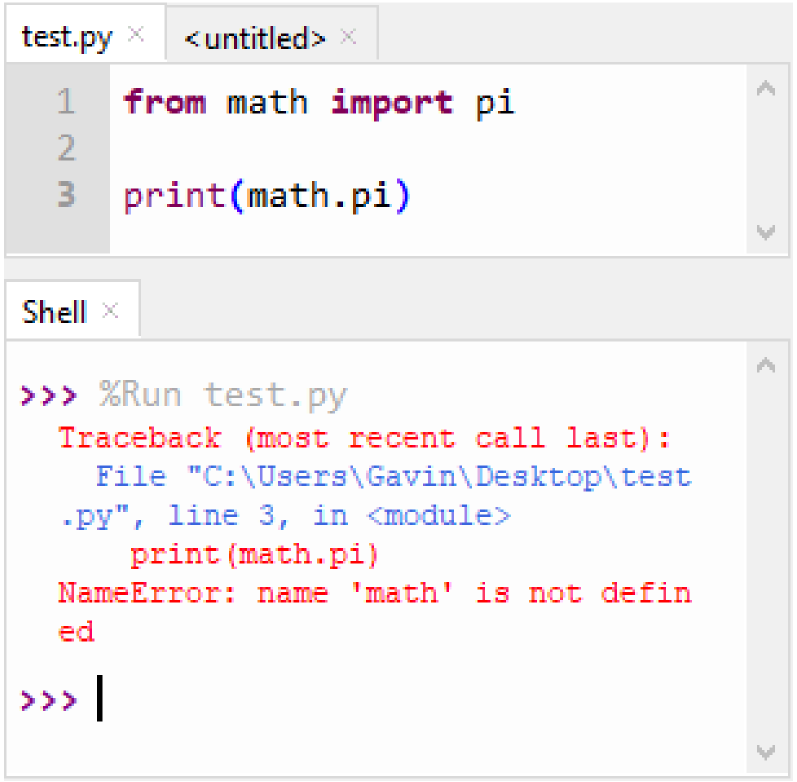
```
from math import pi

print(pi)
```

```
>>> %Run test.py
  3.141592653589793
>>> 
```

Importing Libraries (Limited)

Note

You lose **context**



```
from math import pi

print(math.pi)
```

```
>>> %Run test.py
  Traceback (most recent call last):
    File "C:\Users\Gavin\Desktop\test
  .py", line 3, in <module>
      print(math.pi)
  NameError: name 'math' is not defin
  ed

>>> 
```

Common Packages

Library Name	Reference
Regular expressions	re
Maths	math
DateTime	datetime
Operating System	os
PIP	pip
Iteration tools	itertools
Pillow	pil
MatPlotLib	matplotlib
Numerical Python	Numpy (np)
Pandas	Pandas (pd)

More Specific Packages

Library Name	Reference
Keras	keras
Tensor Flow	tensorflow (tf)
PyTorch	PyTorch
NLTK	nltk
Delorean	delorean
SciPy	scipy
Seaborn	seaborn (sb)

Next on #3

Working with Lists

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