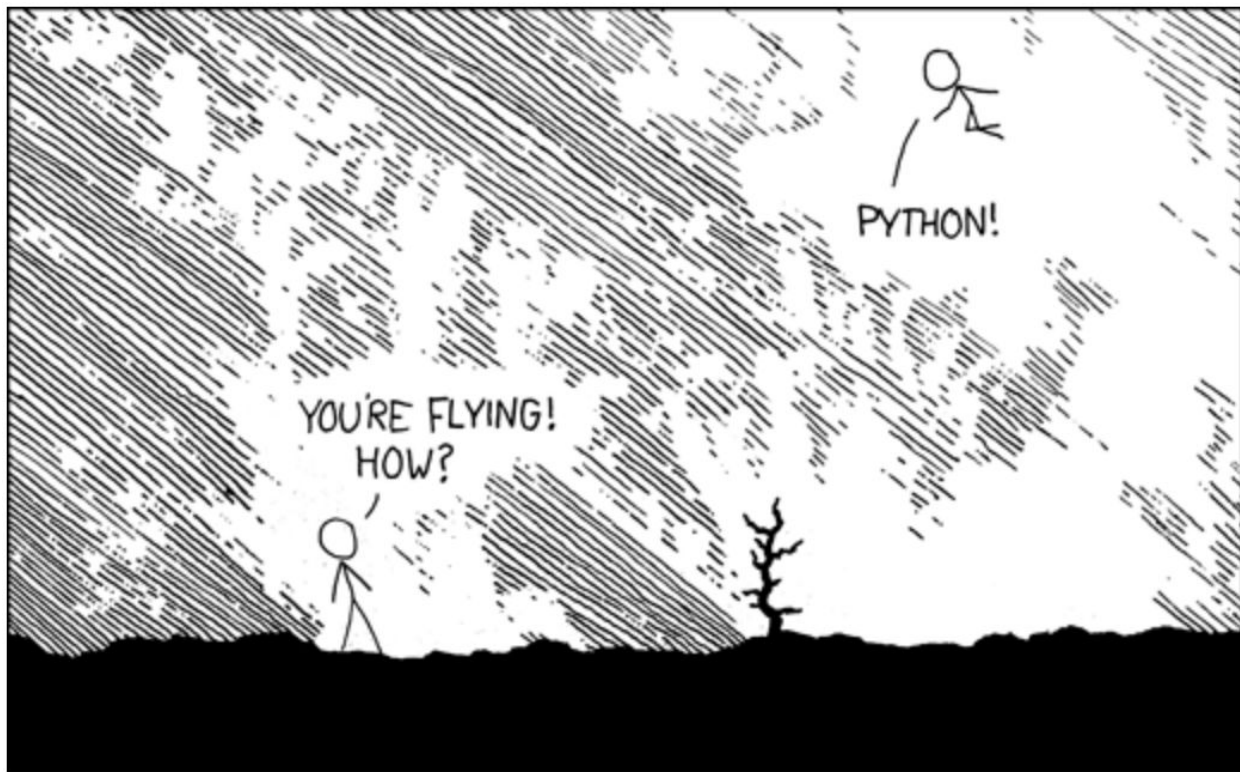
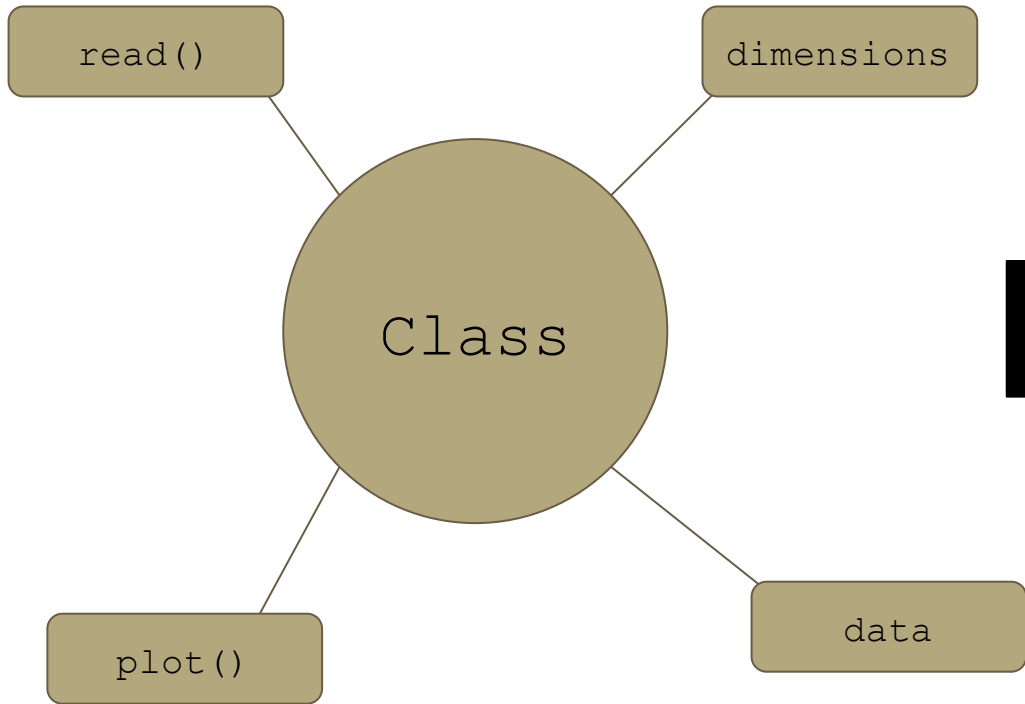

You Can Know Python and IDL

— It doesn't have to be a big deal —

```
IDL> help
```





```
matthew:dev>> ./batch.py --name density -v  
Making plots of density
```

Bridge over troubled water?

There are even Python-to-IDL and IDL-to-Python bridges

Example 1, IDL to Python Objects

In IDL:

```
IDL> np = Python.Import('numpy')
IDL> coords = np.random.random([10,2])
IDL> x = coords[0,*]
IDL> y = coords[1,*]
IDL> r = np.sqrt(x^2+y^2)
IDL> t = np.arctan2(y,x)
IDL> print, r
IDL> print, t
```

Bridge over troubled water?

There are even Python-to-IDL and IDL-to-Python bridges

Example 2, IDL to Python Command Line Mode

In IDL you can directly enter Python "command-line mode" by typing three ">>>" characters and pressing the **Enter** key:

```
IDL> >>>
>>> import numpy as np
>>> coords = np.random.random((10,2))
>>> x,y = coords[:,0], coords[:,1]
>>> r = np.sqrt(x**2+y**2)
>>> t = np.arctan2(y,x)
>>> print(r)
>>> print(t)
>>>
IDL>
```

At the end, press the **Enter** key to re-enter the normal IDL command mode.

Bridge over troubled water?

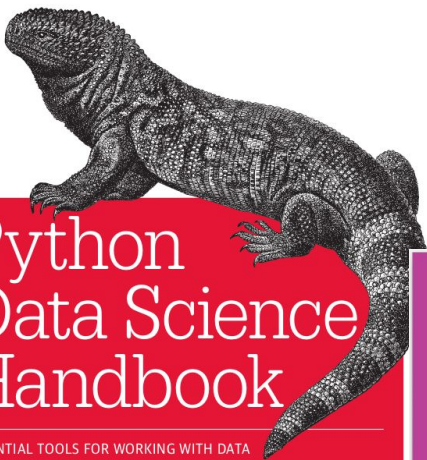
There are even Python-to-IDL and IDL-to-Python bridges

Example 3, Python to IDL

In Python, you can easily access all IDL functionality:

```
>>> from idlpy import *
>>> import numpy as np
>>> coords = np.random.random((10,2))
>>> x,y = coords[:,0], coords[:,1]
>>> r = IDL.sqrt(x**2+y**2)
>>> t = IDL.atan(y,x)
>>> print(r)
>>> print(t)
```

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A Whirlwind Tour of Python



Jake VanderPlas



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Open source is good for science

Snakes on a Spaceship—An Overview of Python in Heliophysics

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