Introduction to Pandas

BILD 62

Objectives for today

- Create & manipulate Pandas dataframes
- Load a tabular file of genetic data into a Pandas dataframe
- Index and subset Pandas dataframes
- Generate descriptive statistics for Pandas dataframes

Name A Better Trio. I'll Wait😴

```
1 import numpy as np
2 import pandas as pd
3 import matplotlib.pyplot as plt
```
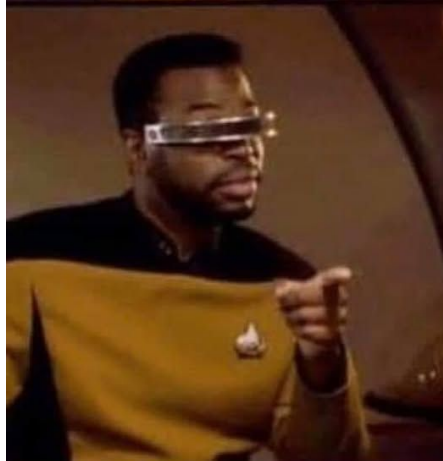
That's it.

There is no other way

```
1    import numpy
```

```
1    import numpy as np
```

learning numpy axis rules

print output array's shape until one of the the axis values works out

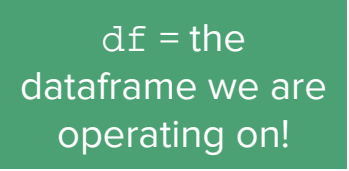**Pandas** is a useful module that creates "data frames"

- great for real-world, heterogeneous data
- similar to Excel spreadsheets (but way faster!)
- "numpy with labels"
- Smartly deals with missing data

Numpy:

	0	1	2
0			
1			
2			

Pandas:

	Height	Weight	Age
Amy			
Brad			
Caroline			

Useful Pandas methods

`df.mean()` Returns the mean of all columns

`df.corr()` Returns the correlation between columns in a data frame

`df.count()` Returns the number of non-null values in each data frame column

`df.max()` Returns the highest value in each column

`df.min()` Returns the lowest value in each column

`df.median()` Returns the median of each column

`df.std()` Returns the standard deviation of each column

For more useful functions, see this overview.

Resources

A Quick Introduction to the "Pandas" Python Library

10 minutes to pandas — pandas 1.5.3 documentation

Python Data Science with pandas