Effective Programming Practices for Economists

Data management with pandas

What is (modern) pandas?

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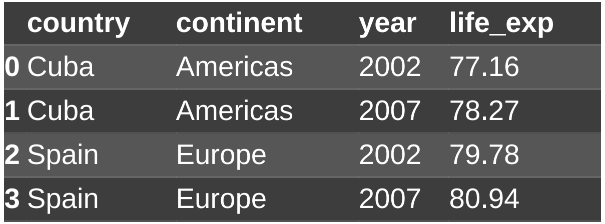
What is pandas?

- Industry standard DataFrame library in Python
- Covers all you need for data management
  - Loading datasets in many formats
  - Cleaning data
  - Generating variables
  - Reshaping datasets
- Compatible with all plotting and statistics libraries

What is a DataFrame?



	country	continent	year	life_exp
0	Cuba	Americas	2002	77.16
1	Cuba	Americas	2007	78.27
2	Spain	Europe	2002	79.78
3	Spain	Europe	2007	80.94

- Tabular data format
- Variables are columns
- Observations are rows
- Can be manipulated in Python

What is **modern** pandas?

- Pandas was created in 2008 and has some baggage
- With version 3.0 many things will improve
- Those features can already be enabled now:
  - More speed and less memory usage through better dtypes
  - Less confusion through copy-on-write
  - Better handling of missing values
  - Removal of the `` `inplace` `` argument

How to use modern pandas

- Install version 2.1 or higher of pandas
- Install version 13.0 or higher of pyarrow
- Set some options after import

```python
import pandas as pd

pd.options.mode.copy_on_write = True
pd.options.future.infer_string = True
```

- When loading datasets, use `` `engine="pyarrow"` `` if available