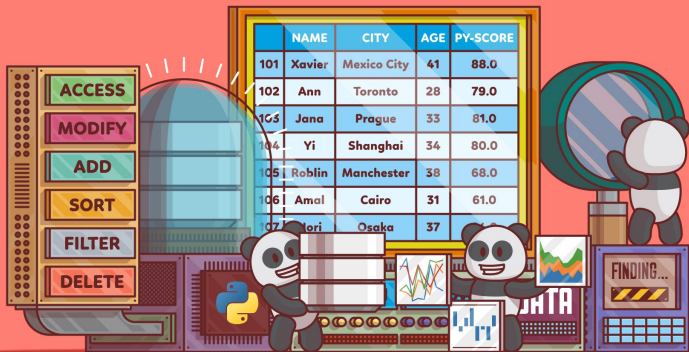


Pandas : transition douce d'Excel vers Python

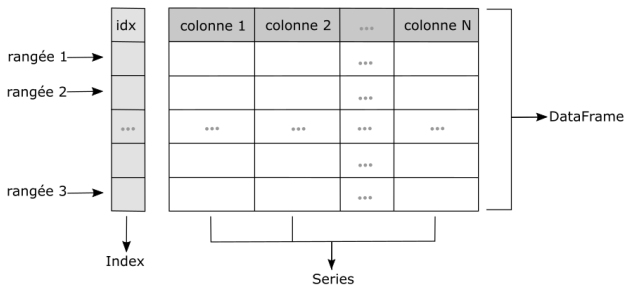


Real Python

- ▶ Facilite le traitement des données sous forme tableau
- ▶ Usage comme base de données
- ▶ Montée en taille avec *Dask*
- ▶ Brique de base dans beaucoup d'autres bibliothèques
- ▶ Permet de faire facilement statistiques/visualisations exploratoires

Structure d'un tableau

Structure d'un tableau *Pandas*



Tellement de possibilités

- ▶ Pour voir tout ce qu'il est possible de faire :
`https://pandas.pydata.org/pandas-docs/stable/user_guide/cookbook.html`
- ▶ Pour **voir** les opérations : `https://pandastutor.com/`

Support d'autres usages : ex. Geopandas

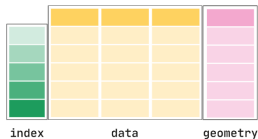
Introduction to GeoPandas

This quick tutorial introduces the key concepts and basic features of GeoPandas to help you get started with your projects.

Concepts

GeoPandas, as the name suggests, extends the popular data science library `pandas` by adding support for geospatial data. If you are not familiar with `pandas`, we recommend taking a quick look at its [Getting started documentation](#) before proceeding.

The core data structure in GeoPandas is the `geopandas.GeoDataFrame`, a subclass of `pandas.DataFrame`, that can store geometry columns and perform spatial operations. The `geopandas.GeoSeries`, a subclass of `pandas.Series`, handles the geometries. Therefore, your `GeoDataFrame` is a combination of `pandas.Series`, with traditional data (numerical, boolean, text etc.), and `geopandas.GeoSeries`, with geometries (points, polygons etc.). You can have as many columns with geometries as you wish; there's no limit typical for desktop GIS software.



Examples Gallery

The following examples show off the functionality in GeoPandas. They highlight many do with this package, and show off some best-practices.



Plotting with CartoPy and GeoPandas



Choro legends



Choropleth classification schemes from PySAL for use with GeoPandas



Creating a GeoDataFrame from a DataFrame with coordinate



Using GeoPandas with Rasterio to sample point data



Adding a scale bar to a matplotlib plot



Overlays



Clip Vector Data with GeoPandas



Adding a background map to plots

De Pandas aux statistiques

Intégration de Pandas dans le *workflow*

- ▶ Mise en forme propre de tableaux
- ▶ Traitements exploratoires (statistiques et visualisations)
- ▶ Traitements plus avancés avec d'autres bibliothèques :
 - ▶ Statsmodel, Scikit-learn, Pingouin, etc. pour les statistiques
 - ▶ Matplotlib, Seaborn, etc. pour les visualisations

Structure d'une visualisation avec Matplotlib

