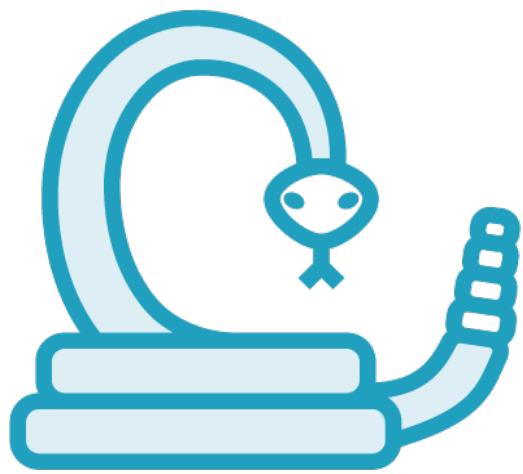


Introduction to Jupyter, Pandas, and Matplotlib

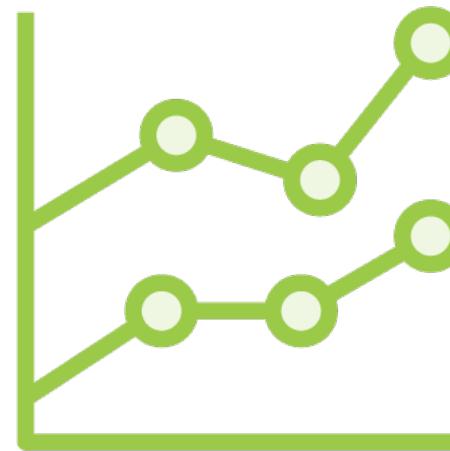


YK Sugishita
SOFTWARE DEVELOPER / DATA SCIENTIST
www.csdojo.io

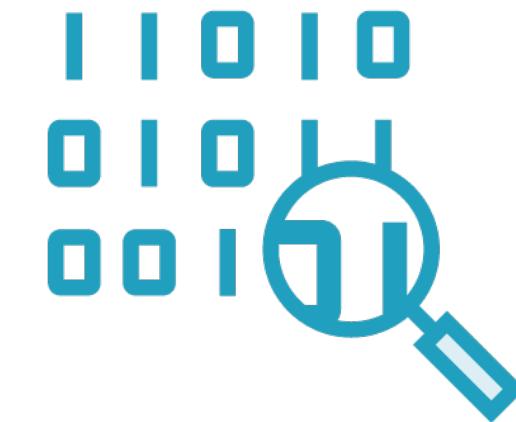
Technologies Used



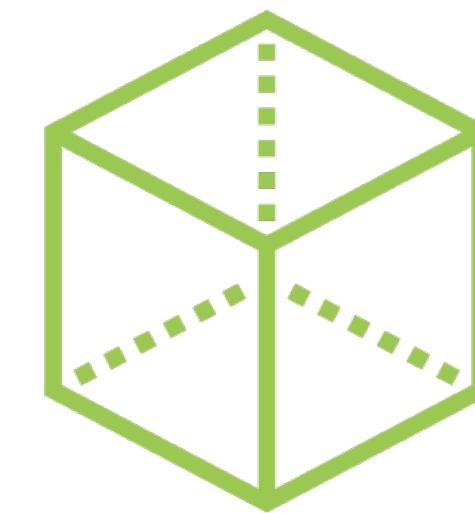
Python



Matplotlib



Pandas



Jupyter

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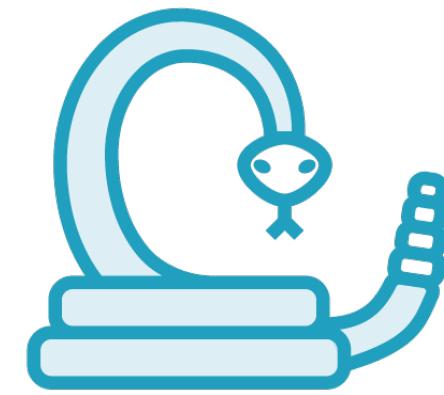
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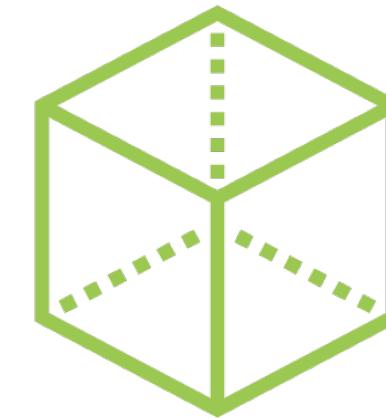
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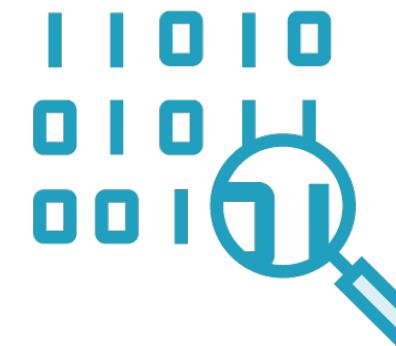
Anaconda



Python



Jupyter

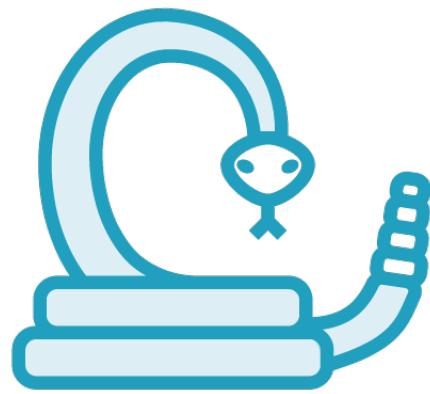


Pandas

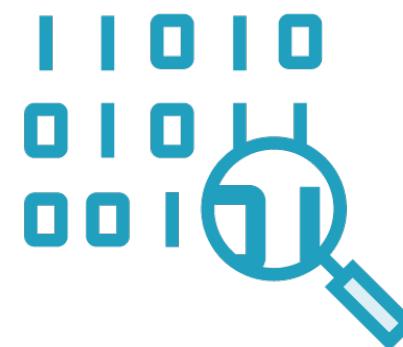


Matplotlib

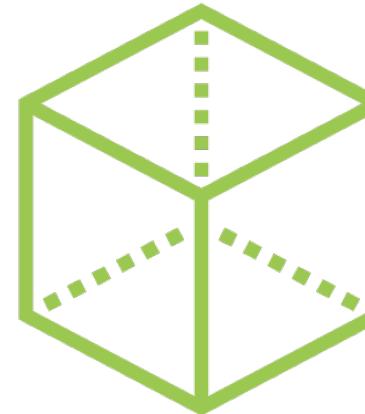
Anaconda



Python



Pandas



Jupyter

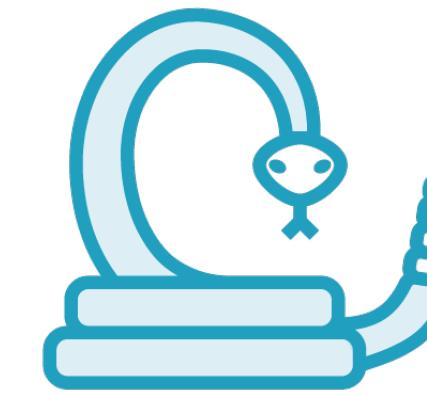


Matplotlib

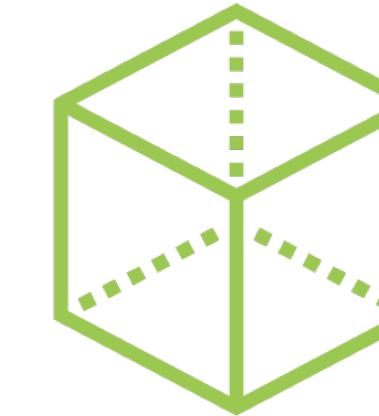
No Separate
Installation Required

Demo

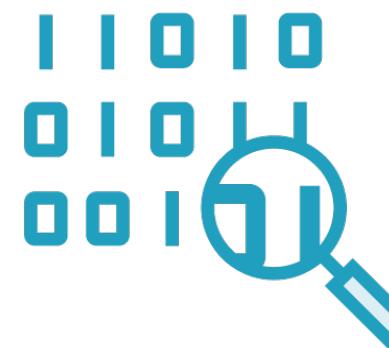
Anaconda



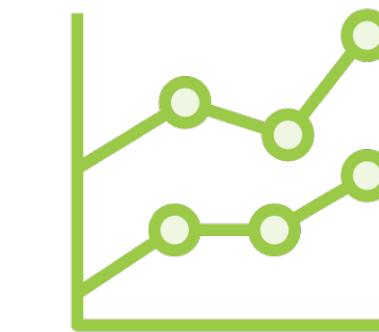
Python



Jupyter



Pandas



Matplotlib

Using Jupyter for the First Time

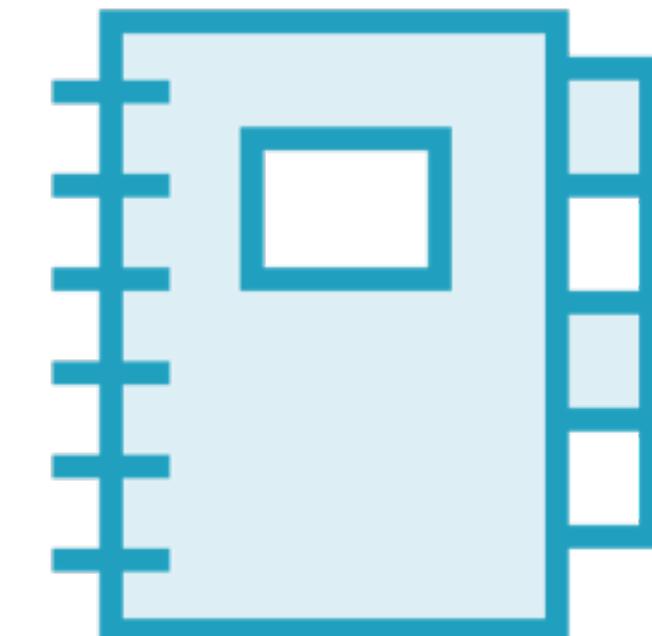
What is Jupyter?



Write



Test



Organize

Browser Interface



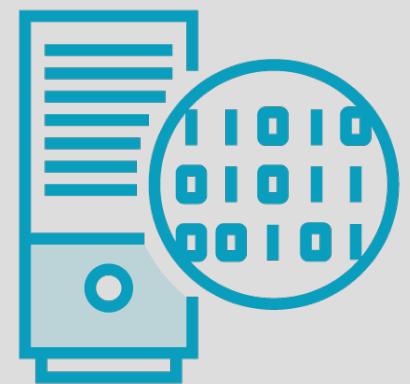
.....→

```
In [1]: a = "Hello World"
In [2]: print(a)
Hello World
```

Python Interpreter

```
● ○ ● yksu — jupyter_mac.command — python -bash — 80x24
Last login: Thu Mar 30 00:39:28 on ttys000
YKs-MacBook-Pro-2:~ yksu$ /Users/yksu/anaconda/bin/jupyter_mac.command ; exit;
[I 12:56:50.285 NotebookApp] Serving notebooks from local directory: /Users/yksu
[I 12:56:50.285 NotebookApp] 0 active kernels
[I 12:56:50.285 NotebookApp] The Jupyter Notebook is running at: http://localhost:8888/?token=1b2c092d0cfed4e04f126cd26778d0a59a788816baf46e6f
[I 12:56:50.285 NotebookApp] Use Control-C to stop this server and shut down all
kernels (twice to skip confirmation).
[C 12:56:50.286 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to login with a token:
http://localhost:8888/?token=1b2c092d0cfed4e04f126cd26778d0a59a788816baf
46e6f
[I 12:56:50.710 NotebookApp] Accepting one-time-token-authenticated connection from ::1
[I 12:57:57.848 NotebookApp] Creating new notebook in
[I 12:57:59.046 NotebookApp] Kernel started: 8bb24f91-f5a4-4806-8797-bd9dccede6a
5
[I 12:58:31.057 NotebookApp] Kernel restarted: 8bb24f91-f5a4-4806-8797-bd9dccede
6a5
[I 12:59:59.011 NotebookApp] Saving file at /Example Jupyter Notebook.ipynb
```



Python Interpreter

Demo

Using Jupyter for the First Time

- Create a new notebook file
- “Hello World” script
- Two different types of cell

Using Matplotlib for the First Time

Why Matplotlib?

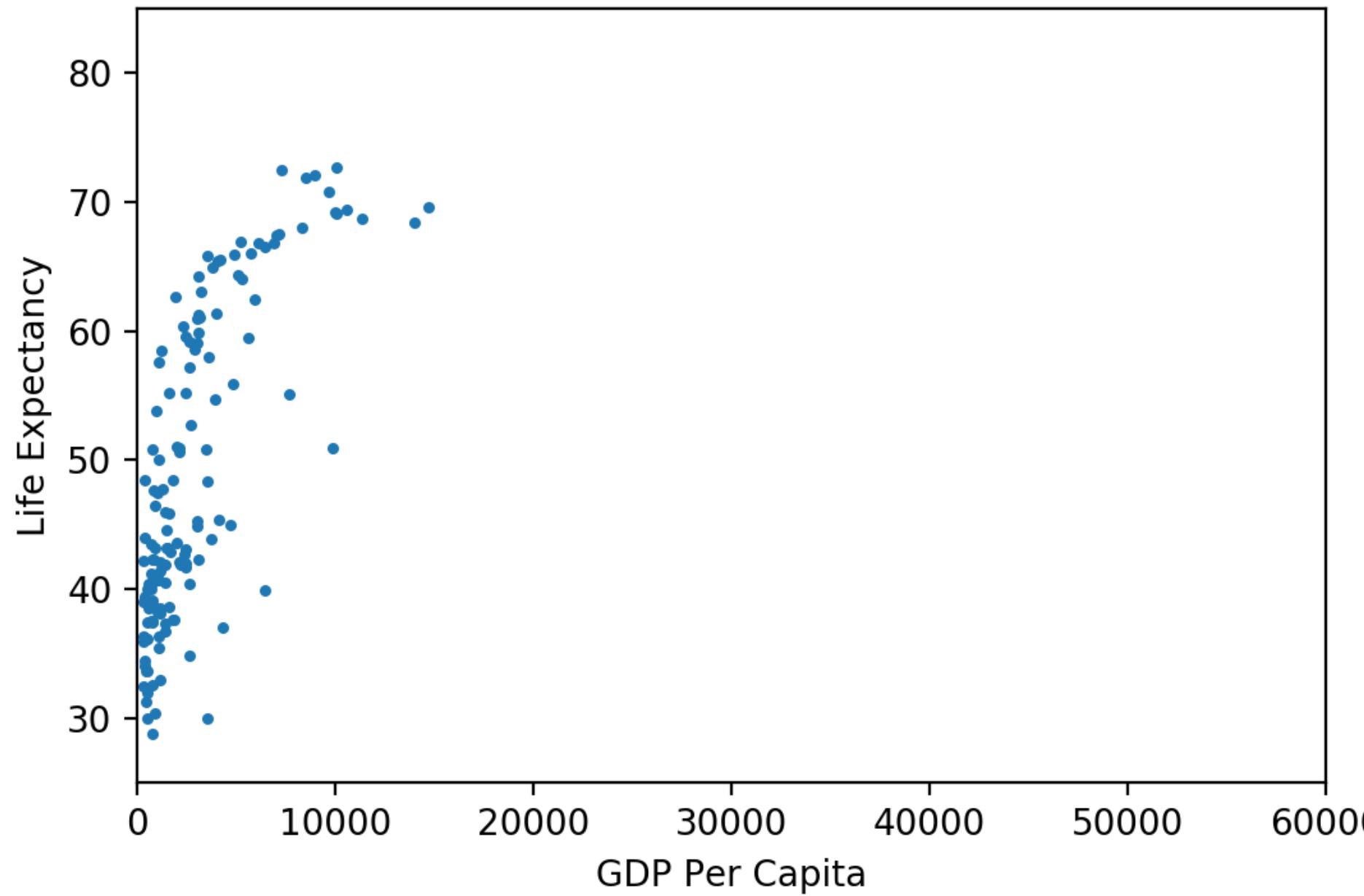


Easy to use

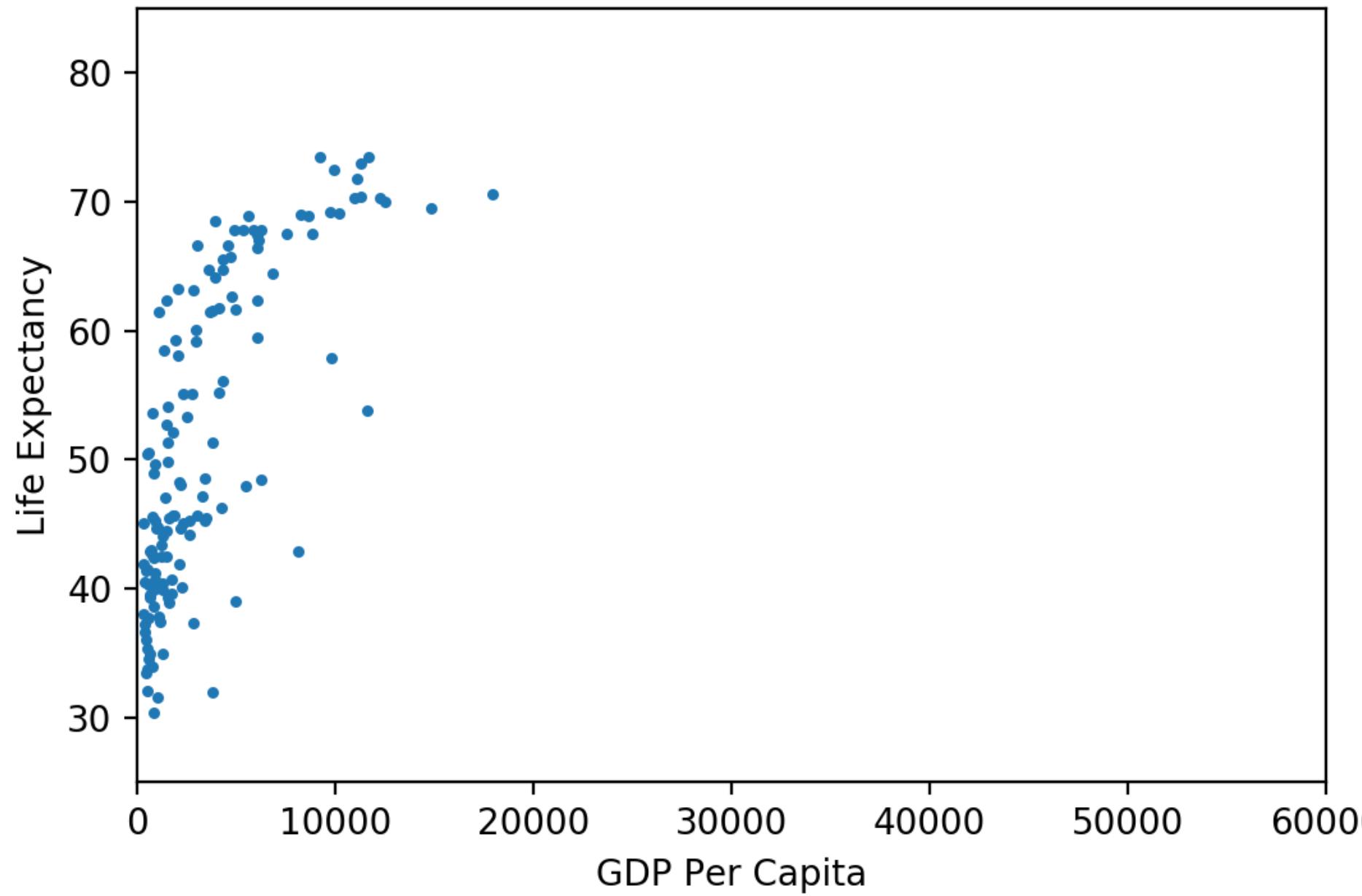


Most common

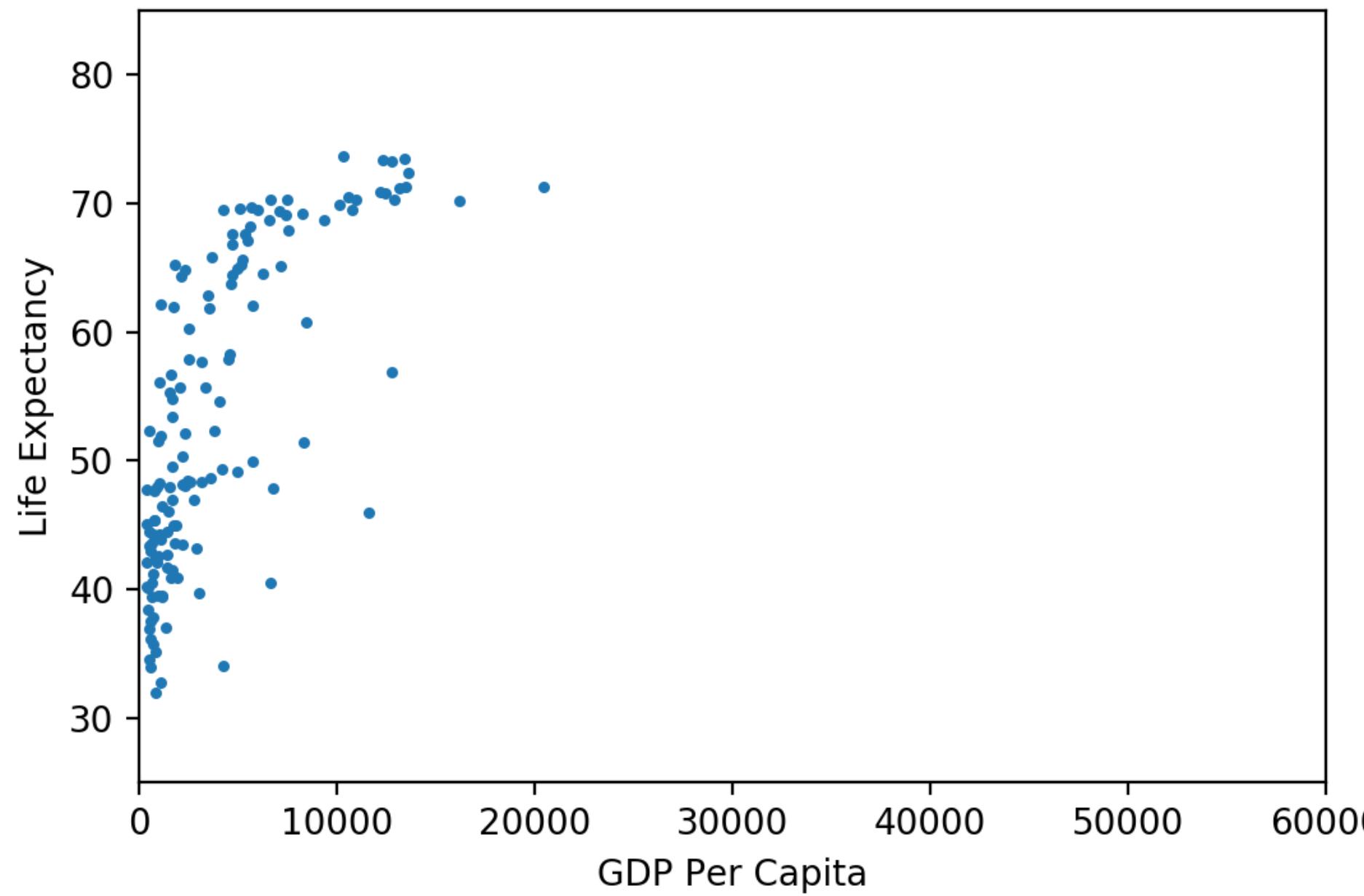
1952



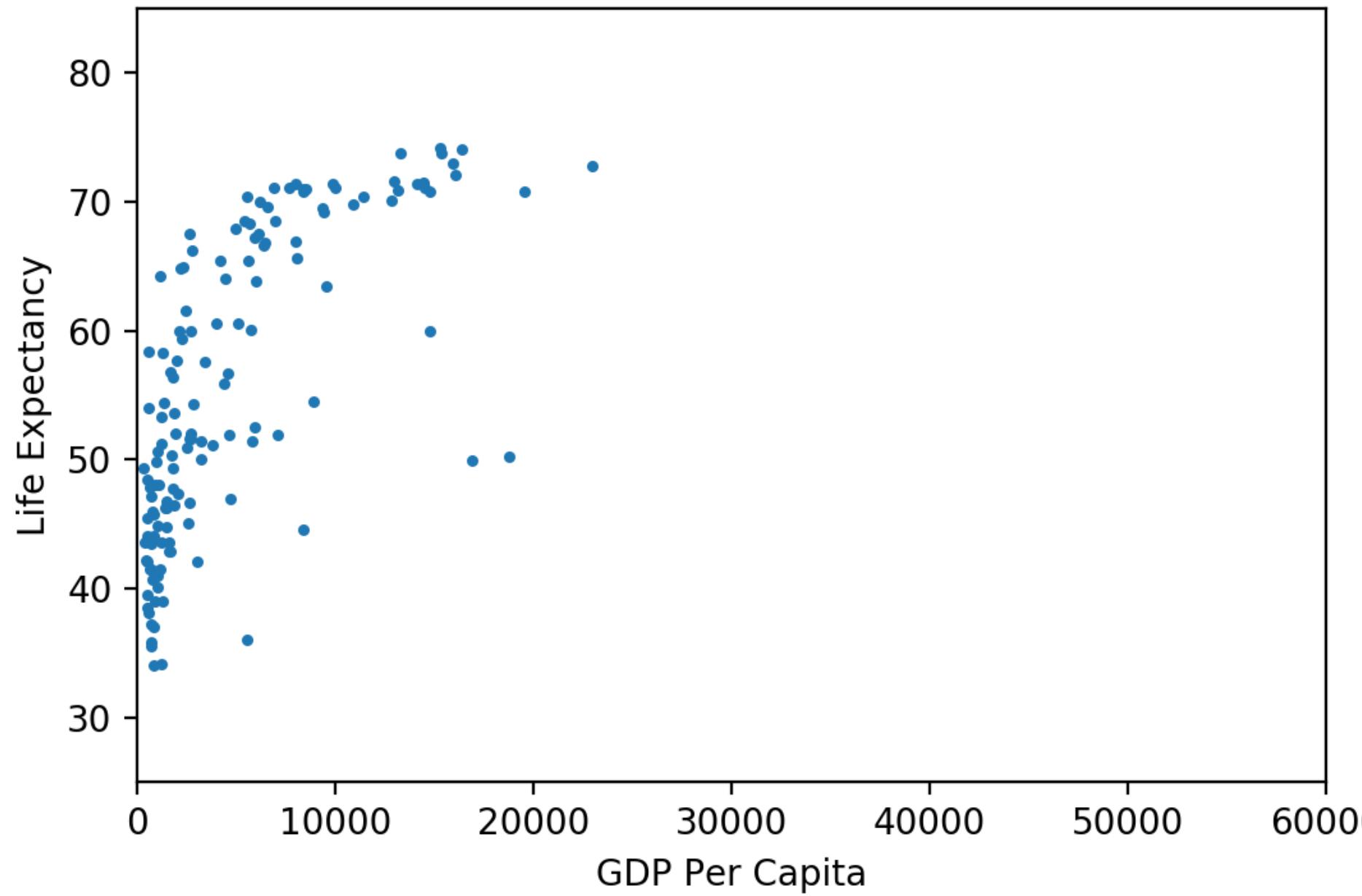
1957



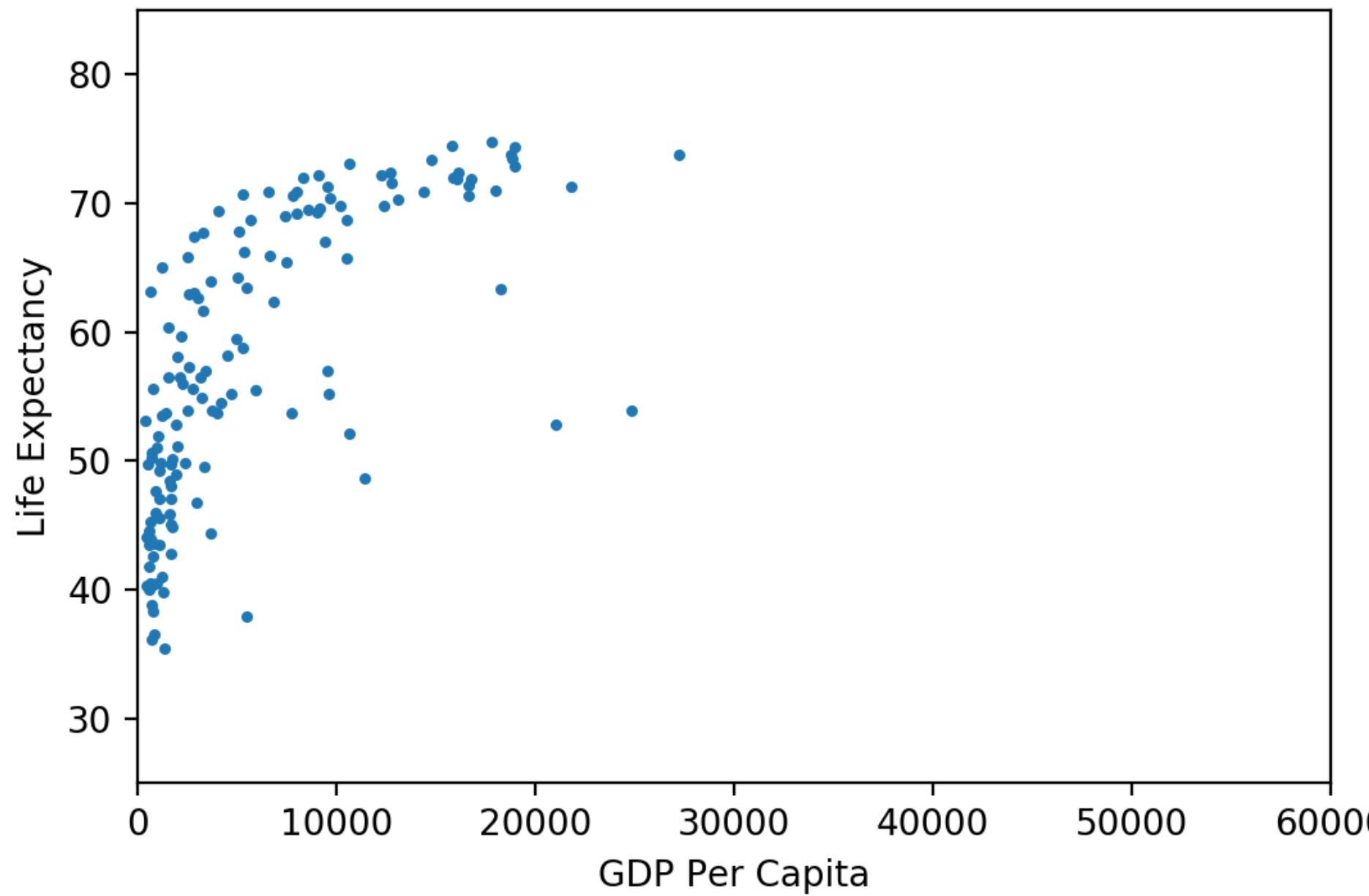
1962



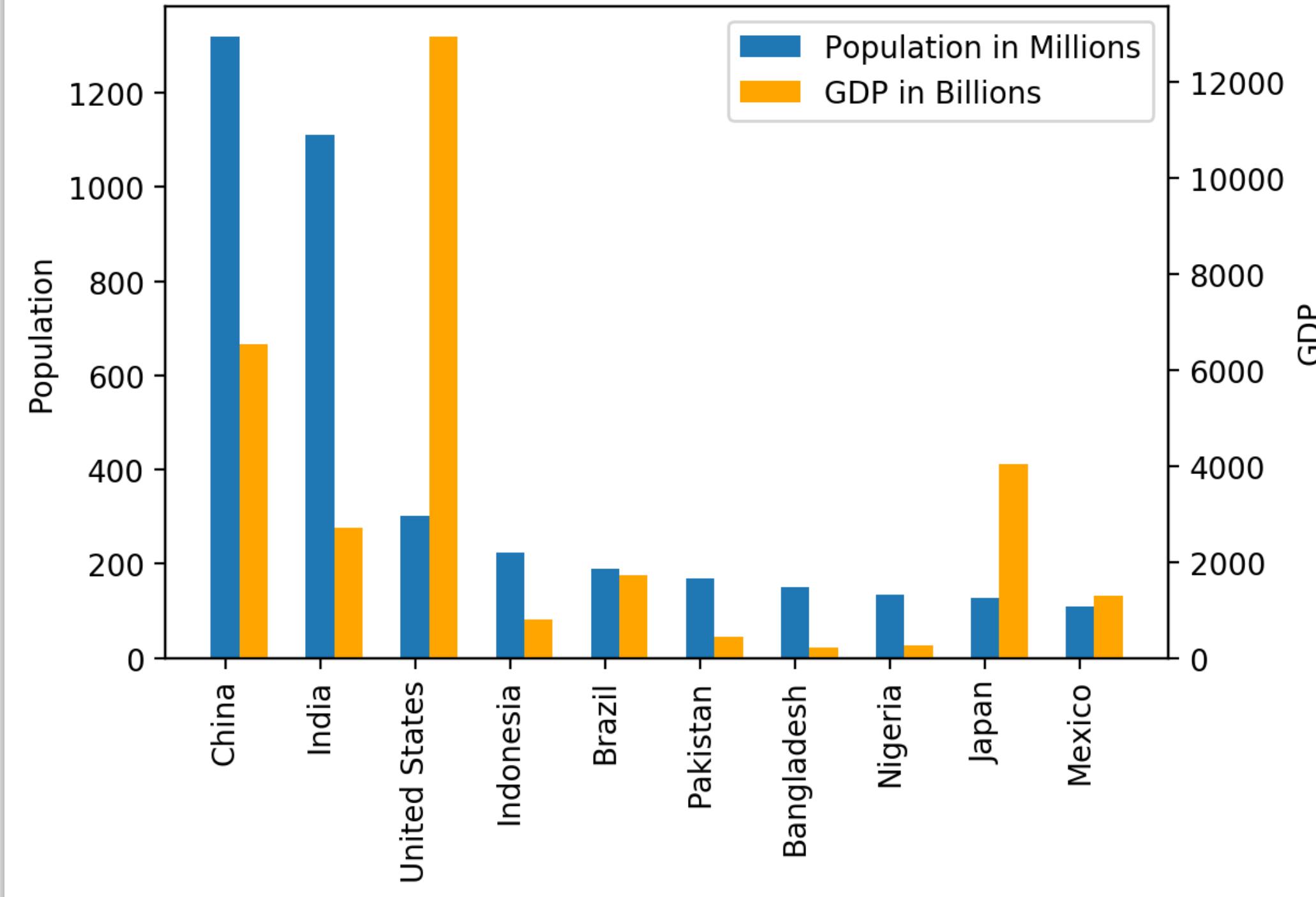
1967



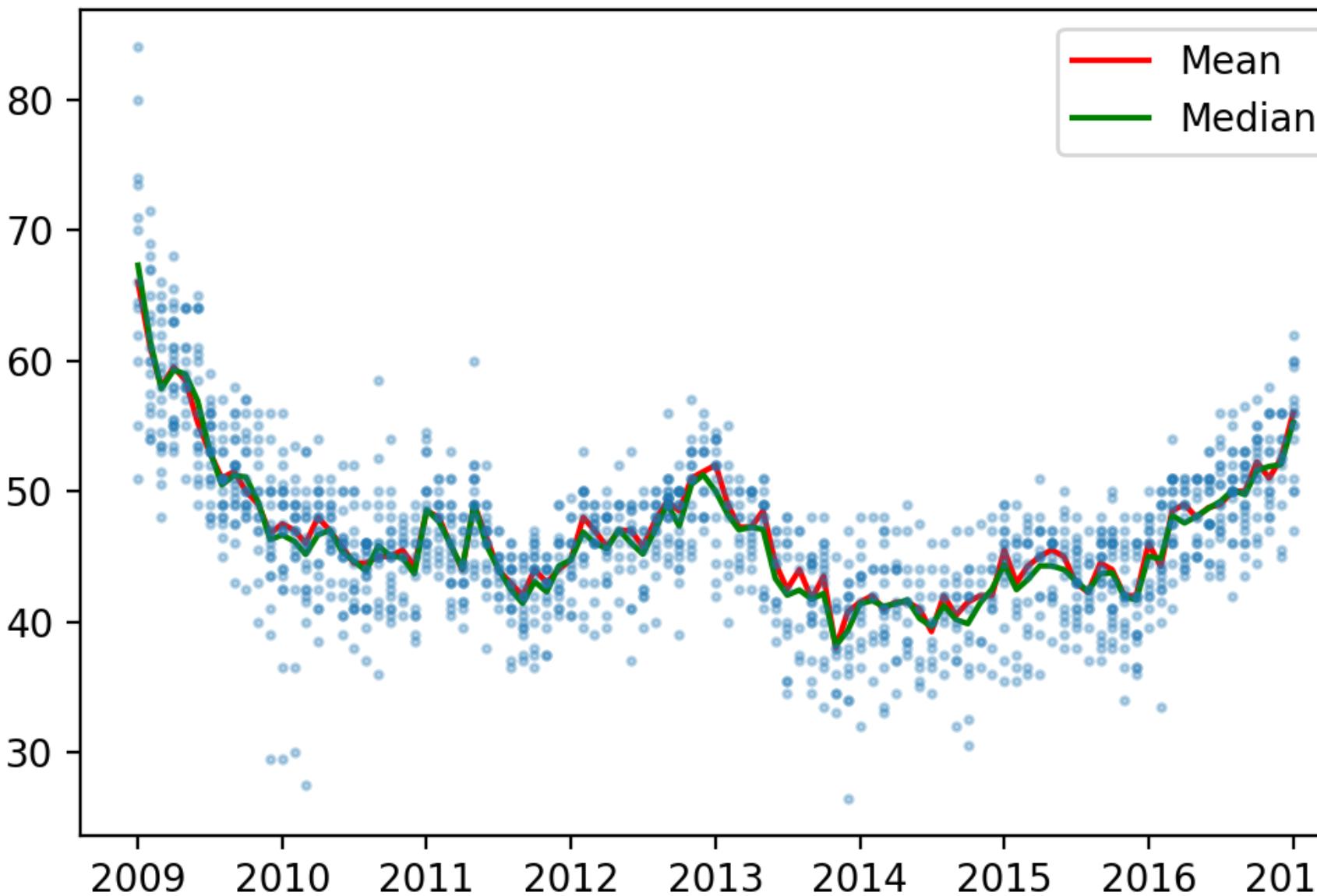
1972



10 Most Populous Countries



Obama's Approval Ratings



Demo

Using Matplotlib for the First Time

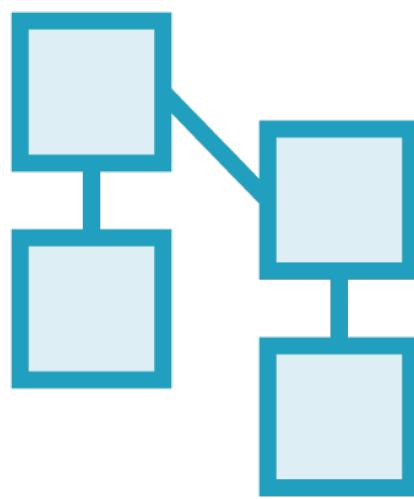
- Create a line chart
- Save a chart as an image file

Using Pandas for the First Time

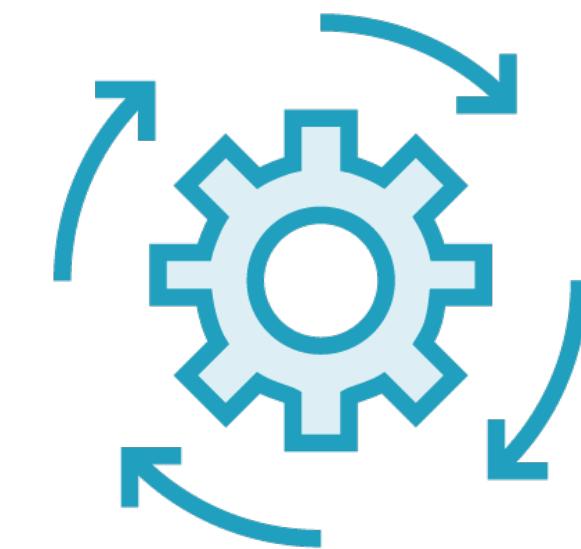
What is Pandas?



Import



Organize



Process

Demo

Using Pandas for the First Time

- Create a DataFrame
- Select data with boolean indexing
- Make plots with data in a DataFrame

Importing Data with Pandas

countries.csv

country	continent	year	lifeExpectancy	population	gdpPerCapita
Afghanistan	Asia	1952	28.801	8425333	779.4453145
Afghanistan	Asia	1957	30.332	9240934	820.8530296
Afghanistan	Asia	1962	31.997	10267083	853.10071
.					
Zimbabwe	Africa	1997	46.809	11404948	792.4499603
Zimbabwe	Africa	2002	39.989	11926563	672.0386227
Zimbabwe	Africa	2007	43.487	12311143	469.7092981

Demo

Importing Data with Pandas

- Import a CSV file as a DataFrame
- Plot the imported data