# **Python Workshop - Data Exploration, Matplotlib, and Seaborn (3 hours)**

In this workshop you will practice your data exploration and visualization skills. You will work in teams on this workshop.

1. Explore datasets in Python
2. Choose a dataset to focus on
3. Find a ‘story’ to tell with the data
4. Create a short presentation using charts created with Matplotlib or Seaborn

# **Part 1**

As you learned this week, there are many resources available to Python programmers, [including these datasets](https://github.com/mwaskom/seaborn-data) from the Seaborn project. You can access and use these datasets like any dataframe with this seaborn function: dataframe=sns.load\_dataset("mpg")

|  | **anagrams** | **flights** | **planets** |
| --- | --- | --- | --- |
|  | **anscombe** | **fmri** | **seaice** |
|  | **attention** | **geyser** | **taxis** |
|  | **brain\_networks** | **glue** | **tips** |
|  | **car\_crashes** | **healthexp** | **titanic** |
|  | **diamonds** | **iris** |  |
|  | **dots** | **mpg** |  |
|  | **dowjones** | **penguins** |  |
|  | **exercise** |  |  |

# **Part 2**

Look through some of the datasets to understand the mix of discrete dimensions and continuous measures.

Choose a dataset to focus on. Set a question or two based on your expectations:

* Does the data change over time ?
* Are there multiple continuous measures? Are they correlated
* How do aggregated measures vary by group?

# **Part 3**

Create several plots to see how the data is distributed (i.e, normal, skewed), what measures are correlated (pairplot, correlation matrix), behavior over time (if time is included), and categorical differences (pivot, bar charts, etc).

Choose 3-5 visualizations that help you tell a story. You can use Jupyter Lab to tell your story. Tell us which dataset you chose and why, what did you expect to find, and what you actually found.

We’ll convene 3:30 - 4:30 pm to discuss and share.

Teams assignments:

| **Room 1** | **Room 2** | **Room 3** | **Room 4** | **Room 5** |
| --- | --- | --- | --- | --- |
| Sol-Marie Quintero | Angelica Vera | Rosana Infante | Ess Guernah | Ali Ashfaq |
| Adam Shabana | Virna Brown | Timothy Yip | Marianna Beaute | Shaday Brown |
| Chad Crossman | Aaron Potts | Kosta Louvros | Kristian McCombs | Rosemary Espinal |
| Victor Mantilla Colon | Brenda Jerez | Daphney Oliveira | Diana Ospina | Chhaya Penn |
| Marcus Madison |  | Chrissy Taylor |  |  |