S&DS 177
YData: COVID-19 Behavioral Impacts

shelter-in-place
order issued date

Jun

May
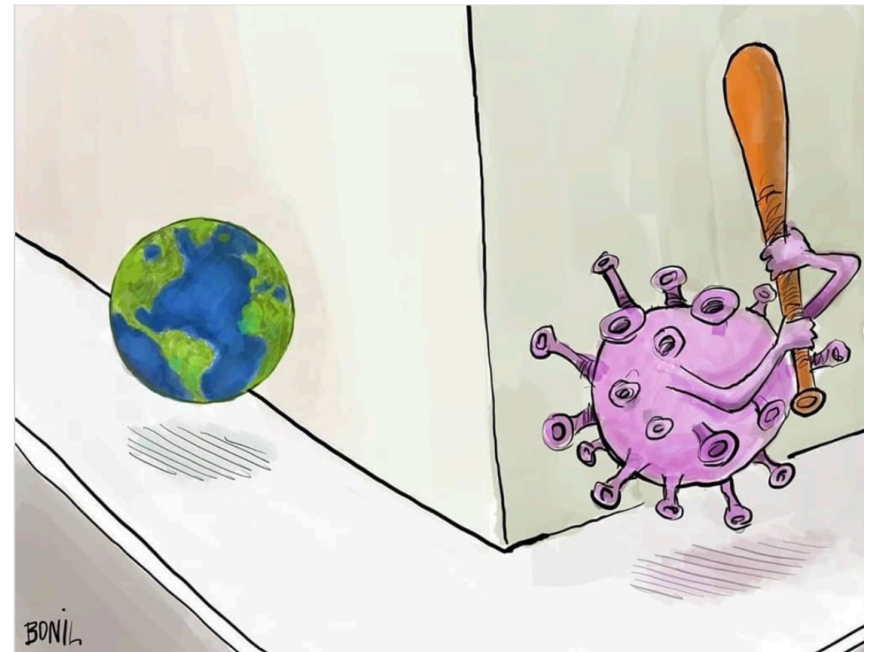
Apr

Mar

Feb
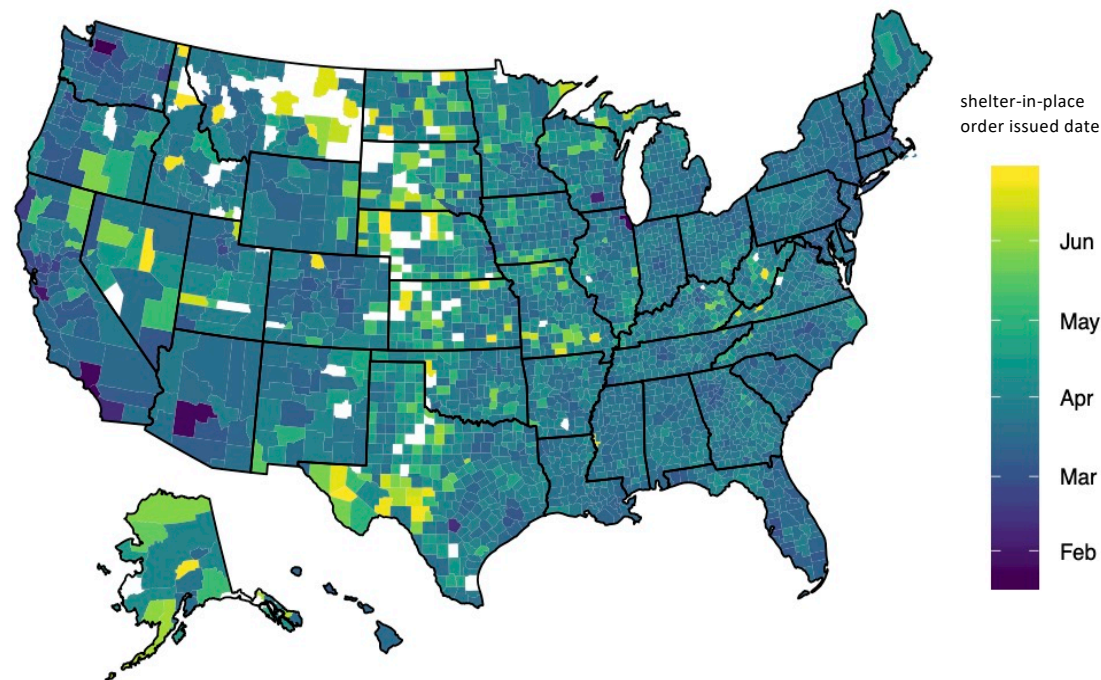
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Overview:

- Introduction of the course website

- Course overview & Discussion of the impact of pandemic

- Jupyter Notebook (Lab 0 discussion)

BONIL

Overview:

- Introduction of the course website

  - https://github.com/youpeiyan/YData_SDS177

  - Zoom WEEKLY Meeting: https://yale.zoom.us/j/7441844367

    - Use earbuds or headphones to avoid feedback and echoes.
    - Please turn on your video to better participate in class.

Lecture 1 (Feb 4, Thursday 9:25 – 11:15)

Overview:

- Introduction of the course website

- Course overview & Discussion of the impact of pandemic

Lecture 1 (Feb 4, Thursday 9:25 – 11:15) 1. Introduction of the course website

I will post all of our course notes (lecture/lab notes) and homework assignments on this website:
https://github.com/youpeiyan/YData_SDS177

- Homework & Solution (post after due)

- In-class practice (Jupyter Notebook)

- Slides (like this one)

- Datasets for this course

🖥 youpeiyan / **YData_SDS177**

<> Code   ⓘ Issues   ⭠⭢ Pull requests   ▶ Actions   ▦ Projects   📖 Wiki   ⓘ Security   📈 Insights

⑂ main ▾   ⑂ **1** branch   ⬡ **0** tags   Go to file   Add file ▾

👤 **youpeiyan** Add files via upload   fb1a307 now

📁 Homework   Add files via upload
📁 Lab   Add files via upload
📁 Lecture   Add files via upload
📄 README.md   Update README.md

README.md

YData_SDS177/577

Welcome to this connector course! This is where you can find all our course notes for Spring 2021 SDS (YData: COVID-19 Behavioral Impacts).

The datasets (given the limited size of files in GitHub) can be accessed through the following Google Drive
https://drive.google.com/drive/folders/1SLPLMpgdzcn79iMBOYhh9CmOZaw7odpE
The datasets are for teaching purpose only. Please do not share the datasets with others unless you reserve permission.
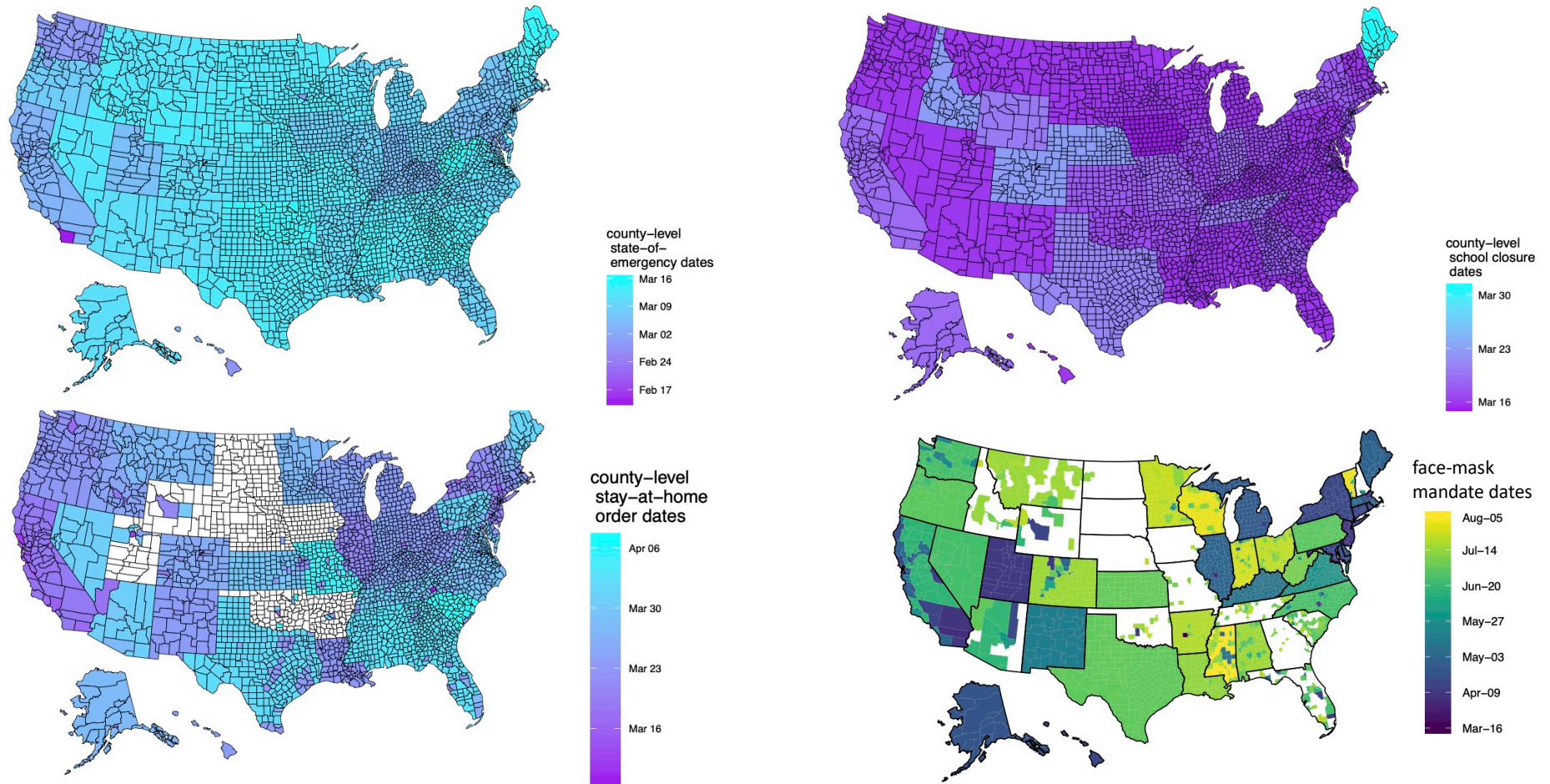
Lecture 1 (Feb 4, Thursday 9:25 – 11:15) 2. Course overview & Discussion of the impact of pandemic

- List non-pharmaceutical policies that you have heard when the COVID-19 pandemic started.

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Lecture 1 (Feb 4, Thursday 9:25 – 11:15) 2. Course overview & Discussion of the impact of pandemic

- List non-pharmaceutical policies that you have heard when the COVID-19 pandemic started.

- What about the trend of cases and deaths?

2. Course overview & Discussion of the impact of pandemic

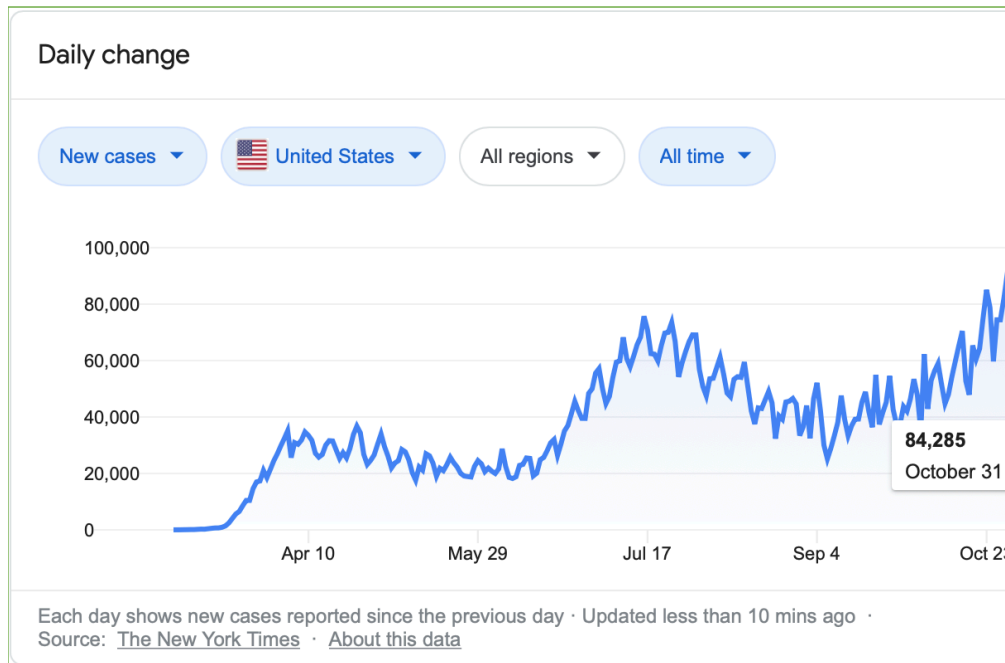- List non-pharmaceutical policies that you have heard when the COVID-19 pandemic started.

- What about the trend of cases and deaths?

Daily change

New cases ▼   🇺🇸 United States ▼   All regions ▼   All time ▼

100,000

80,000

60,000

40,000

20,000

0

          Apr 10   May 29   Jul 17   Sep 4   Oct 23

84,285
October 31

Each day shows new cases reported since the previous day · Updated less than 10 mins ago ·
Source: The New York Times · About this data

- Any reaction or response did you, your family, you friends, your neighbors take?
- And when?

Daily change

Deaths ▼   🇺🇸 United States ▼   All regions ▼   All time ▼

3,000

2,000

1,000

0

          Apr 22   Jun 7   Jul 23   Sep 7   Oct 23

848
October 31

Each day shows deaths reported since the previous day · Updated less than 10 mins ago ·
Source: The New York Times · About this data

- Are some of those made voluntarily?
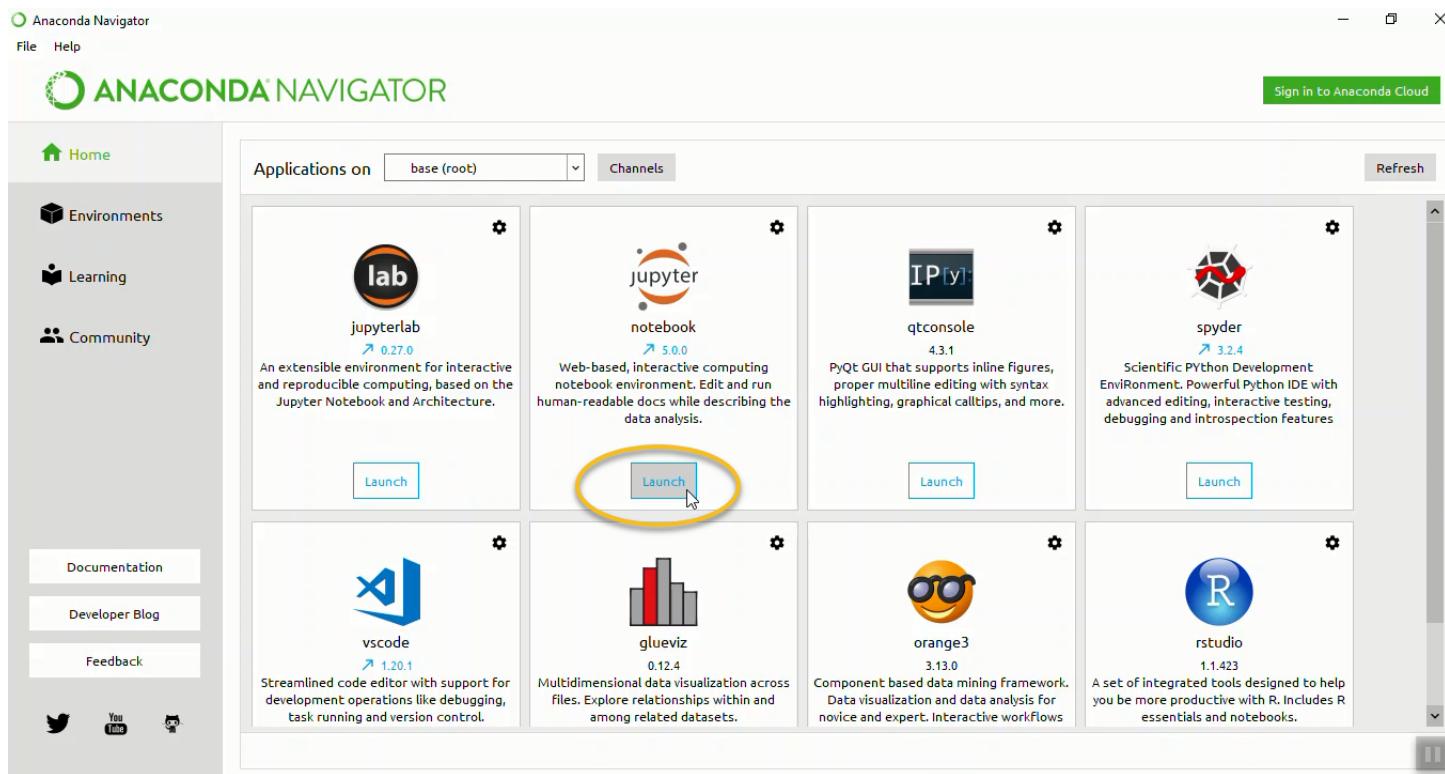- Or due to the policies we discussed?

What is this course all about?

- This is a connector course to the main data science course SDS123.

- Also an introduction to data science that emphasizes computational and programming.

- Focus on a special topic on COVID-19's Behavioral Impacts.

  - People alter behavior in response to infectious disease risk.

  - The COVID-19 epidemic last year was the first modern epidemic in the US, where most people were ordered by governments to reduce time in public.

  - With Python, we investigate how non-pharmaceutical interventions interact with voluntary or mandated behavioral shifts during epidemics.

   - Increased time at home?
    - Reduced trips to malls and parks?

- If you haven't done so, please download Anaconda at the following link: Anaconda.com/distribution
- Then, Launch Jupyter Notebook by clicking Launch

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- Then, Launch Jupyter Notebook by clicking Launch
- You can create a new Python3, or choose one downloaded in your folder.
- A new notebook will open as a new tab in your web browser.
- Now, let's open Lab0 named **YData177_Lab0.ipynb** in our course folder.

Lecture 1 (Feb 4, Thursday 9:25 – 11:15)3. Jupyter Notebook
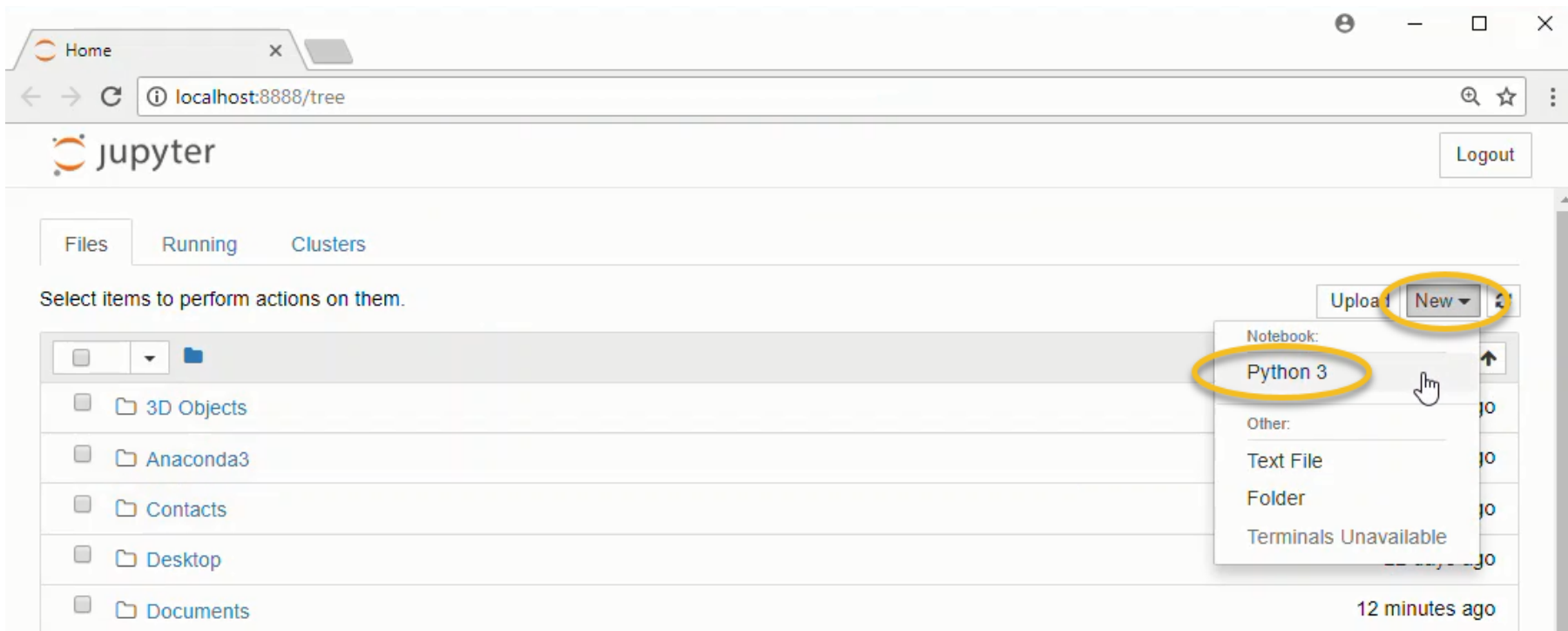
Index of **YData177_Lab0.ipynb**

1. <u>Jupyter Notebook</u>
    1.1 Text Cells
    1.2 Code Cells
    1.3 Writing Jupyter Notebook
    1.4 Errors
    1.5 The Kernel

2. <u>Import a Local Dataset</u>
    2.1 Loading data tables
    2.2 Selecting a subset of columns
    from a table
    2.3 Selecting a subset of rows from
    a table
    2.4 Using methods on values in a
    column of data in a table
    2.5 Sorting values in a column of
    data in a table

3. <u>Import an Online Dataset: COVID-19
    CASE/DEATH REPORTS in New York
    Times</u>

```
Table.read_table('url')
my_table.num_columns
my_table.num_rows


my_table.select('col_name_1', 'col_name_2', 'col_name3')
my_table.select(0,1,5)


my_table.take(2,5,6)


my_selected_column.sum()
my_selected_column.mean()
my_selected_column.max()


my_table.sort('col_name')


read_url('online_url')
pd.read_csv('online_url',sep=",")
```

Finally:

Way to save the file in both .pdf and .ipynb format (so any changes we made here can be saved and printed)

To produce the .pdf, please do the following in order to preserve the cell structure of the notebook:
1. Go to "File" at the top-left of your Jupyter Notebook
2. Under "Download as", select "HTML (.html)"
3. After the .html has downloaded, open it and then select "File" and "Print" (note you will not actually be printing)
4. From the print window, select the option to save as a .pdf

To produce the .ipynb, please do the following:
1. Go to "File" at the top-left of your Jupyter Notebook
2. Under "Download as", select "Notebook (.ipynb)"