**Understand COVID-19 through Python Plotting**

**Introduction**

As the COVID-19 pandemic is still ravaging the world, everyone is trying to stay at home as often as possible to avoid getting infected or infect other people. It is important, therefore, to understand what the COVID-19 data looks like and how to interpret the various data such as daily changes and total cases. Most of these data are shown clearly in what is called **histograms** or **bar charts**. In this tutorial, you will be introduced to what is a histogram or bar chart, why a histogram or bar chart is useful and how to use them.

We will be using the computational programming language ***Python*** to draw histograms or bar charts. Don't worry, you don't need to know Python in advance, this tutorial will also introduce you to simple Python programming.

At the end of the tutorial, you will be able to use real data to plot your own COVID-19 cases for your selected counties, states or across the US.

**Running the tutorial**

* Go to <https://mybinder.org/v2/gh/claireshiye/GK12/master>, and then click open the folder **covid\_data\_analysis**.
* First open file **Histogtam\_Tutorial.ipynb** and follow the tutorial and enter your answers to the practice below.

**Answers for the tutorial**

1. Example 1: Which age range of people likes to watch Demon Slayer the most?

A: people at about early 10s(any answer that is close to this is correct).

A screenshot of a cell phone

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1. **Example 1: Which age ranges of men/women like to watch Demon Slayer the most?**

**A: At about late 20s to early 30s for men, and at about early 10s for women** (any answer that is close to this is correct).

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1. Practice 1: Copy/paster your screenshot here

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1. Example 2: Which Harry Potter book has the biggest share of revenue?

A: The first book, Harry Potter and the Sorcerer’s Stone

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1. Example 2: Copy/paster your screenshot here

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* Then go back to the Home page and open file COVID-19\_cases\_histogram.ipynb and finish the project.

1. Plot 1: Copy/paster your screenshot here

A: e.g., state\_confirm\_cases, state\_death\_cases = get\_state('IL')

plt.bar(ind1, state\_confirm\_cases, color='lightseagreen')

This plot is for the state of Illinois.

A picture containing comb

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1. Plot 2: Copy/paster your screenshot here

A: e.g., county\_confirm\_cases, county\_death\_cases = get\_county('Cook County', 'IL')

plt.bar(ind2, county\_confirm\_cases, color=my\_cmap(my\_norm(ind2)))

This plot is for Cook County in Illinois

A close up of a logo

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1. Plot 3: Most of the states have less than how many total number of cases in the plot? Copy/paster your screenshot here

A: Less than about 100 million total cases.

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