**MIS 433 PROJECT**

This project will make use of COVID-19 data from Johns Hopkins University. The goal is to reproduce the structure and display relatively similar output as shown in the next section and examples that follow. Each component contains information that you will need to include by coding it. A brief demo video is provided along with snapshots of the program’s output towards the bottom of this page (under JUPYTER EXAMPLE).

Your program must be dynamic, meaning that it can provide COVID-19 information on any state the user inputs in the prompt. This will require referencing variables within your code. To be clear, your program must look like the examples provided. This includes the line spacing and indentation. What will not be identical are the COVID-19 statistics since the cases and death counts change daily.

The source links for the project are the same ones from Module 7:

* For the COVID-19 data set related to reported cases, [**click here**](https://www.google.com/url?q=https://github.com/CSSEGISandData/COVID-19/raw/master/csse_covid_19_data/csse_covid_19_time_series/time_series_covid19_confirmed_US.csv&sa=D&ust=1606782254921000&usg=AOvVaw1moM4JZG2_QdD3hdnWi8eX).
* For the COVID-19 data set related to reported deaths, [**click here**](https://www.google.com/url?q=https://github.com/CSSEGISandData/COVID-19/raw/master/csse_covid_19_data/csse_covid_19_time_series/time_series_covid19_deaths_US.csv&sa=D&ust=1606782254921000&usg=AOvVaw3Nur-pe5bhBCI4QiUQLzXH).

You may reuse code from your homework assignments (especially Module 7). The libraries used for this project are pandas and matplotlib. Use the ggplot style for the data visualization background.

The project must be in a Jupyter notebook file format that includes three code cells:

* The first cell is your code within a user defined function without parameters/arguments. Name this function covid().
* The second cell will call the covid function. In the input prompt, enter your name and a state of your choice to display the output related to new COVID-19 cases.
* The third cell will call the covid function. In the input prompt, enter your name and a state of your choice to display the output related to new COVID-19 deaths.

This project must be completed by yourself. If you have any questions related to the project, use the discussion forum that will be viewable by everyone. I will try my best to respond to your question within 24 hours on business days. If a question is sent to me via email which I believe is a question that can be asked on the discussion board, I will reply by asking you to post it to the discussion thread first, where I will then respond.

Submit your completed Jupyter file (ipynb) and PDF file to Blackboard.  Be sure that your output demonstrates that it is dynamic, as shown in the demo examples on the last portion of this page.

**Required Components of the Program’s Output:**

Hello. Please enter your name: **\_1\_\_**

It has been **\_2\_\_**days since the US outbreak of COVID-19. For which state would you like to view COVID-19 information?

   Enter state: **\_3\_\_**

Okay, **\_4\_\_**. Here's the information for **\_5\_\_**:

Based on the last reported date: **\_6\_\_**, the number of new COVID-19 cases in **\_7\_\_** is **\_8\_\_**.

The number of new deaths is **\_9\_\_**.

The number of cases **\_10\_\_** from the previous day count of **\_11\_\_**.

The number of deaths **\_12\_\_** from the previous day count of **\_13\_\_**.

The total number of COVID-19 cases in **\_14\_\_** is **\_15\_\_** and the total number of reported deaths is **\_16\_\_**.

**\_17\_\_**, please select which data visualization to view for **\_18\_\_**:

   Enter 1 to view the 15-day trend for new reported cases.

   Enter 2 to view the 15-day trend for new reported deaths.

Enter number: **\_19\_\_**

*[A bar chart will be displayed]*

The 15-day average of new reported **…** is **\_20\_\_**, ranging between **\_21\_** and **\_22\_\_**.

**Notes on the program’s output:**

The information provided next to each number below corresponds to the blank lines above. Develop the code for each item below to display the correct information.

1. Prompt user for their name
2. The number of days since the US outbreak
3. Prompt user to enter a state
4. The user’s name from the earlier input prompt
5. The state name from the earlier input prompt
6. The most recent date in the data
7. The state name from the earlier input prompt
8. The number of new cases for the specific state
9. The number of new deaths for the specific state
10. If the new cases increased or decreased from previous day by the state
11. The number of new cases reported for the previous day by the state
12. If the new deaths increased or decreased from previous day by the state
13. The number of new cases reported for the previous day by the state
14. The state name from the earlier input prompt
15. The total number of cases for the state
16. The total number of deaths for the state
17. The user’s name from the earlier input prompt
18. The state name from the earlier input prompt
19. Prompt the user to enter a number that will display a specific data visual (see About the Data Visualization below number 20 for more information)
20. Depending if the user enters 1 or 2, display the 15-day average for new cases *or* deaths trend.  Also replace **…** for the word cases or deaths as needed (see the last output line under bar charts in Jupyter Example below).

About the Data Visualizations

* There will be two bar charts that need to be programmed—one for the most recent 15-day trend of new reported cases and the other for new reported deaths for the state entered in the prompt. The bar chart will be displayed based on the user input (1 or 2).
* The chart title must include the state
* The x/y axis labels must be displayed and rotated
* Your tick labels will be slightly different since your data is more recent
* The figure size for the charts should be (10,8)
* Below each chart, display the average of the 15-day trend and the range as shown in the Jupyter Example below.
* You will need to view the example file for formatting specifics