

Application Details:

The application that we have chosen will visualize COVID-19 data. Users will register what county and state they are in and see the cases and deaths due to COVID in the area. It will also display to the user the colleges in the area and what COVID statistics are related to them. From the county they are viewing, users will also be able to see information on mask usage depending on whether the survey was filled out.

Project Repository:

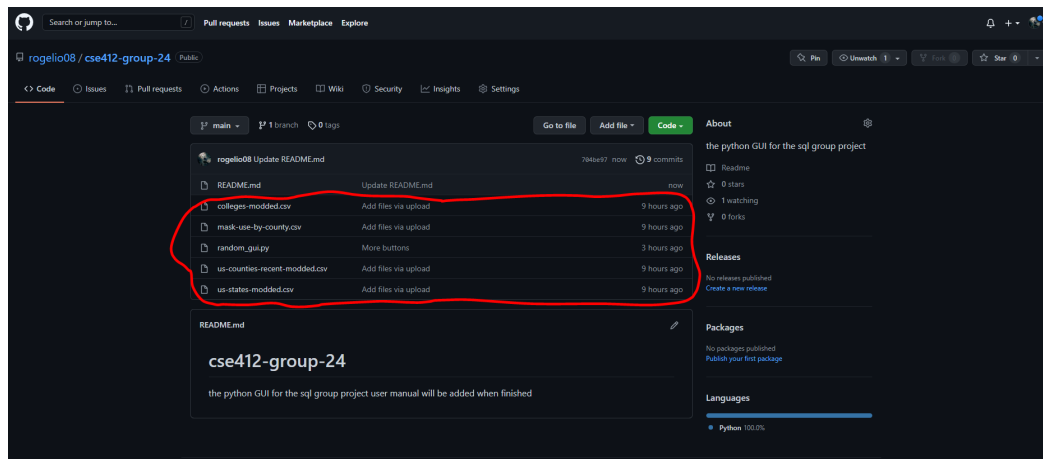
Database Dump:

Video Demonstration:

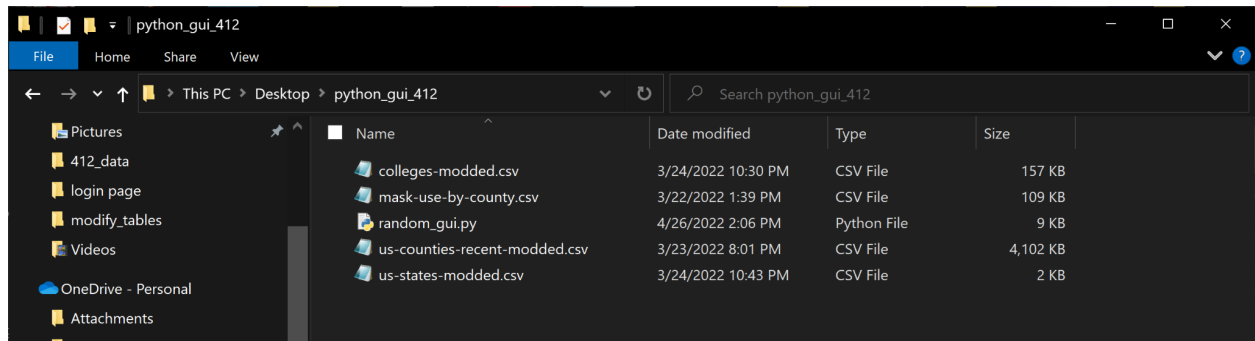
User Manual with Screenshots:

1. Download the necessary files (The .py file and 4 csv files) provided in the github link below:

<https://github.com/rogelio08/cse412-group-24> .



2. Make sure that all the files are in the same directory and folder (Here they're all in a folder called `python_gui_412` located on the desktop).



3. Open a terminal and `cd` into that folder

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\tarin> cd .\Desktop\
PS C:\Users\tarin\Desktop> cd .\python_gui_412\
PS C:\Users\tarin\Desktop\python_gui_412> ls

Directory: C:\Users\tarin\Desktop\python_gui_412

Mode                LastWriteTime         Length Name
----                -
-a----          3/24/2022 10:30 PM        160409 colleges-modded.csv
-a----          3/22/2022 1:39 PM        111385 mask-use-by-county.csv
-a----          4/26/2022 2:06 PM           8736 random_gui.py
-a----          3/23/2022 8:01 PM       4199699 us-counties-recent-modded.csv
-a----          3/24/2022 10:43 PM           2011 us-states-modded.csv

PS C:\Users\tarin\Desktop\python_gui_412> |
```

For example: `cd folder_name`

4. Make sure you have python installed then use it to run the `.py` file in the command line:

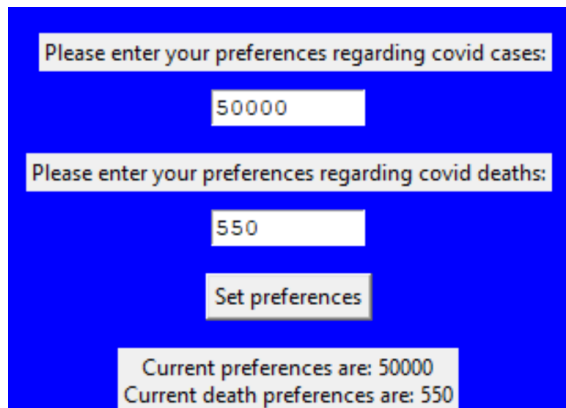
For example: `python random_gui.py`

5. The GUI window will pop up like the following:

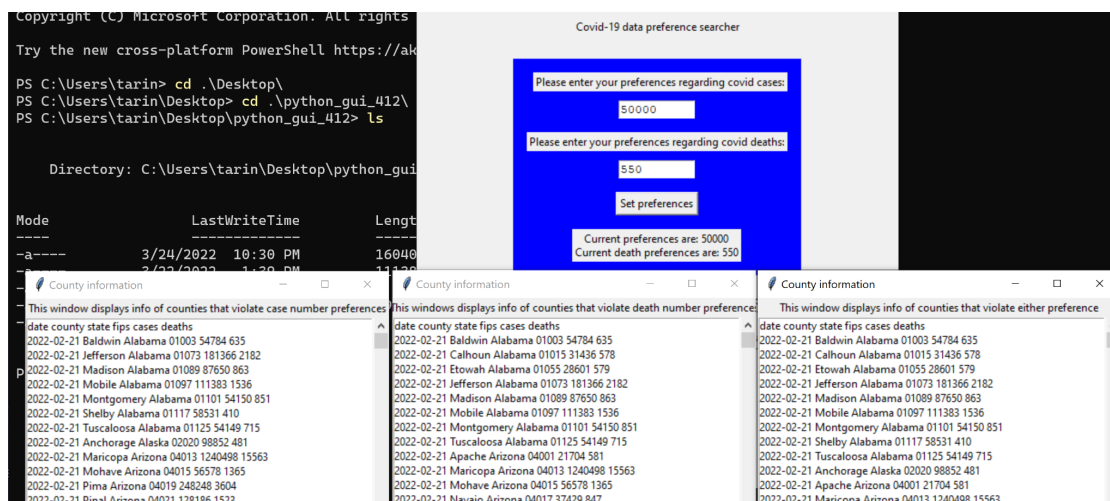
The screenshot shows a window titled "CSE 412 project" with standard window controls. Inside, the title "Covid-19 data preference searcher" is centered. A blue rectangular area contains the following elements: a label "Please enter your preferences regarding covid cases:" above a text input field with the value "100"; a label "Please enter your preferences regarding covid deaths:" above a text input field with the value "50"; a "Set preferences" button; and a status label "No preferences entered yet". Below the blue area, there are eight buttons arranged in four rows: "County violations via cases", "County violations via deaths", "County violations via either", "State violations via cases", "State violations via deaths", "State violations via either", "Mask usage in violating counties", and "US college violations via cases".

6. From here the user has options, they can either add their preferences to the two text fields in the blue box or click on any of the 8 buttons under the blue box to view all the data without queries.

7. To enter preferences simply enter any integer values into the two text fields in the blue box then click the “Set preferences” button. You’ll know it worked if the “No preferences entered yet” field changes to reflect your entered preferences.

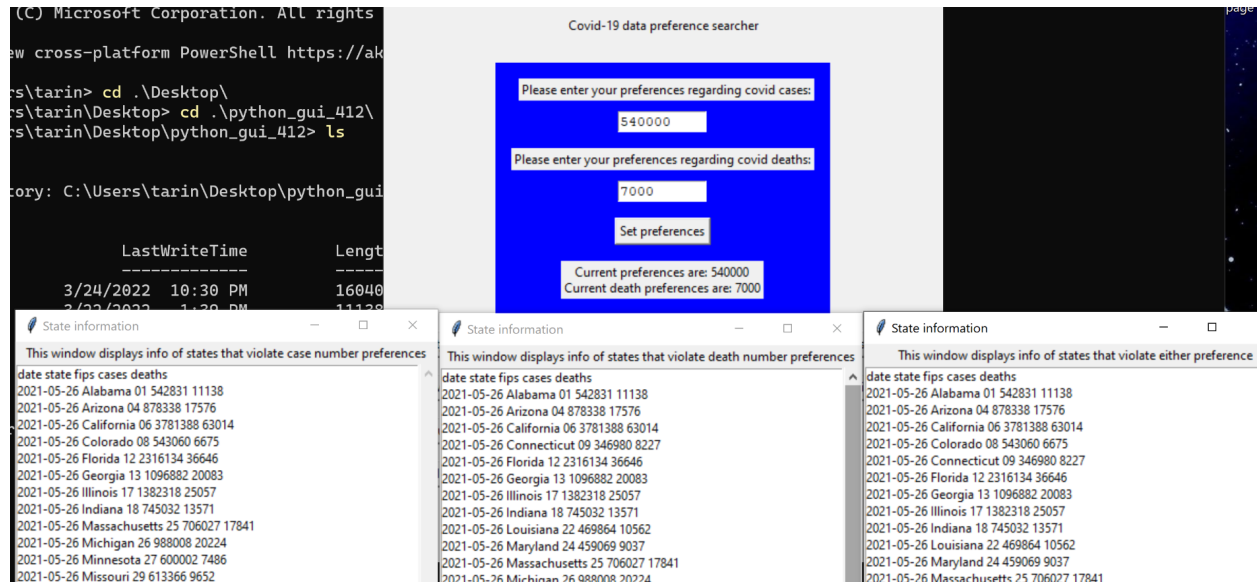


8) The first 3 buttons return data based on queries made using the preferences the user enters and sets using the blue box. “County violations via cases” will return the information of counties with a case number that is higher than the preference the user entered. “County violations via deaths” does the same but uses the users death preference value and the “via either” returns all counties that violate one or both preferences.

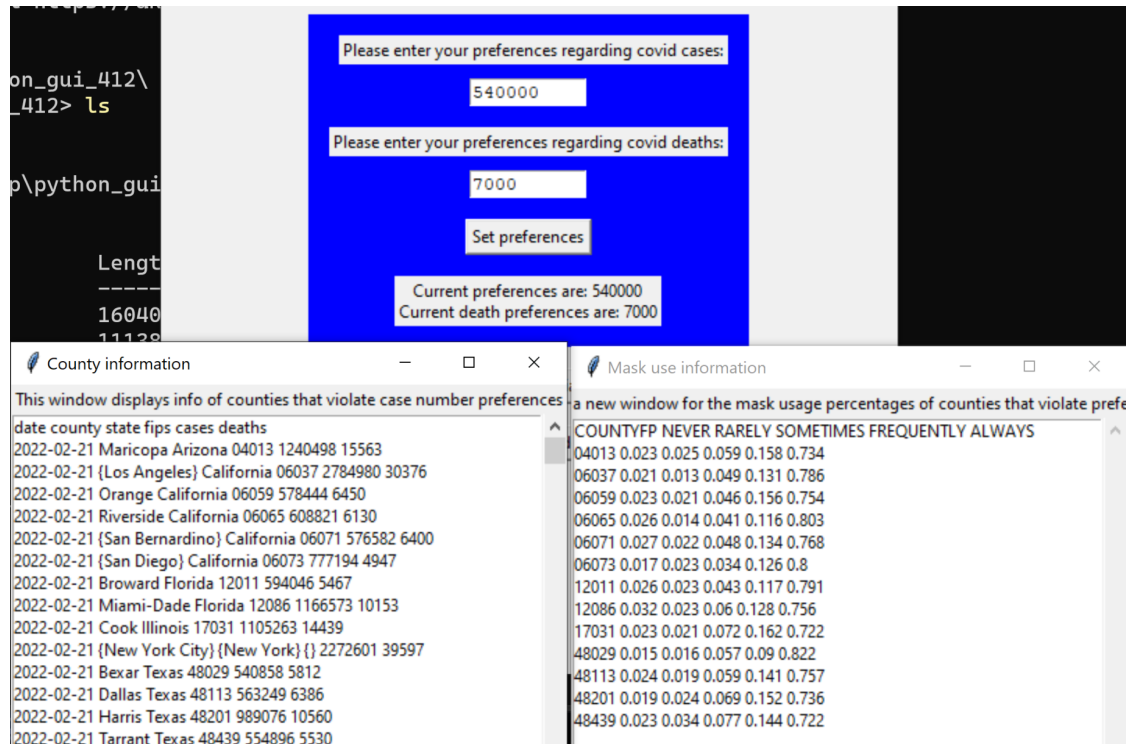


Here we see that in the case preference based query Calhoun doesn’t appear because it only has around 32000 cases which doesn’t violate the preferences.

9) The next row of buttons functions the exact same way as the county buttons, only it uses data for states. Note that the state data had larger case and death numbers so user preferences will have to be larger as well to make noticeable changes in query output.



10) The mask use button will return the percentage results of a mask usage survey from counties that violate user preferences. Note that the data used to make the table identifies counties by their FIPS so users will have to map that themselves. It's also important to know the data for the county table was collected over the span of a year and a half so it will often repeat the same group of counties a dozen times while the mask usage will only report on them once



We can see the FIPS from the mask use table match that of the county violations by case number query results.

11) The last aspect is the US college violations via cases button where data on US colleges that violate user case number preferences is returned. It's important to note that in terms of scale the college table has the smallest values so preferences that cut data from the state and county tables will often cut all the data from the college table so make sure to scale the preferences down a little for better results.

The image shows two overlapping windows from a software application. The top window, titled 'Covid-19 data preference searcher', has a blue background and contains two input fields for preferences. The first field is labeled 'Please enter your preferences regarding covid cases:' and has the value '5000' entered. The second field is labeled 'Please enter your preferences regarding covid deaths:' and has the value '500' entered. Below these fields is a 'Set preferences' button. At the bottom of the window, it displays 'Current preferences are: 5000' and 'Current death preferences are: 500'. The bottom window, titled 'College information', has a white background and displays a list of colleges that violate case numbers. The list includes columns for date, state, county, city, ipeds_id, college, cases, and notes. The data is as follows:

date	state	county	city	ipeds_id	college	cases	notes
2021-05-26	Arizona	Maricopa	Tempe	104151	{Arizona State University}	6766 2261	{}
2021-05-26	Florida	Alachua	Gainesville	134130	{University of Florida}	9914 3158	{}
2021-05-26	Georgia	Clarke	Athens	139959	{University of Georgia}	6391 1635	{}
2021-05-26	Illinois	Champaign	Champaign	145637	{University of Illinois Urbana-Champaign}	6766 2123	{}
2021-05-26	Indiana	Monroe	Bloomington	151351	{Indiana University Bloomington}	8607 1736	{}
2021-05-26	Indiana	Tippecanoe	{West Lafayette}	243780	{Purdue University}	6230 2258	{}
2021-05-26	Michigan	Washtenaw	{Ann Arbor}	170976	{University of Michigan}	6116 2873	{}
2021-05-26	Ohio	Franklin	Columbus	204796	{Ohio State University}	8008 2186	{}
2021-05-26	Pennsylvania	Centre	{State College}	214777	{Penn State University}	7691 2685	{}
2021-05-26	{South Carolina}	Pickens	Clemson	217882	{Clemson University}	7597 2370	{}
2021-05-26	{South Carolina}	Richland	Columbia	218663	{University of South Carolina}	5228 1879	{}
2021-05-26	Texas	Brazos	{College Station}	228723	{Texas A&M University}	5576 2809	{}
2021-05-26	Utah	Utah	Provo	230038	{Brigham Young University}	5369 1368	{}
2021-05-26	Wisconsin	Dane	Madison	240444	{University of Wisconsin-Madison}	7708 2298	{}

The following is a link to a Youtube video that demonstrates these functionality

Youtube video:

<https://youtu.be/rtiSm52jJ0M>