North America COVID 19 (NAC19) Scraper User Guide

Overview:

The NAC19 Scraper is a Python application with a GUI written in PyQt which shows COVID19 related information for Mexico, Canada, and the USA. It shows cases/deaths for each state/province in the aforementioned nations and displays a static heat map based on that information which can be changed. It also contains a section for currently trending COVID-19 news articles. Furthermore, there are other buttons whose purpose is given by their name. The scraper automatically refreshes due to the sources it pulls information from already being updated.

Welcome User! This tutorial outlines the layout of the Covid-19 Scraper program and how to successfully use it in a step by step guide.

Step 1: Look to the top right corner of the program. This area displays a heat map of Covid-19 cases. The map displays the location of Covid-19 cases and shows the intensity starting from cool colors to warm. There are three separate maps for each country. Click on each button to show that respective map, only one map can be showed at a time.

Step 2: In the upper left-hand corner of the program is a table that outlines the Country, Province/State, Covid-19 Cases, and Deaths in a drop down menu.

Step 2a: From left to right are the countries displayed on the North America Map: Canada, United States, and Mexico. Select which country you wish to view and click the drop down menu to display all the states/provinces within the country.

Step 2b: Once you have decided on which state you wish to view, click the drop down menu to view the Covid-19 statistics. The data is divided from top to bottom: starting with cases, and then deaths.

Step 3: The bottom left corner contains the following two buttons: the Source Button and Developer Button. Starting from the left, the Source button displays the sources used to create this program. On the right, the Developer button displays the creators who contributed to the creation of this program in an image, once clicked on.

Step 4: In the bottom-right corner is the news sections which displays an up to date list of trending news related to Covid-19. Each news article includes a title, the source link, and the date published.

Extended Tutorial - Changing Choropleth Maps (Excel Required)

Step 1: Open desired Excel xlsx file for country whose map wants to be adjusted.

Step 2: Follow the given link to make a choropleth map:
https://www.youtube.com/watch?v=PiLhIOJ0I1A

Step 3: Capture the screen of the end choropleth map through the capture screen button on the top left of Excel

Step 4: Place the image copied to your clipboard in paint or an equivalent by pasting it

Step 5: Save the image as a .jpg file

Step 6: Find the project directory

Step 7: Delete the image/map of the country whose map you would like to change

Step 8: Place the new map/image in the directory of the project and rename it to the name of the image/map you just deleted

Required Dependencies:

Note: The following libraries need to be pip installed if not already.
- lxml
- pandas
- bs4
- openpyxl
- PyQt5
- requests

To view and edit the raw information pulled from the scrapers, Excel is required. Excel is required to make a choropleth map should one want to change one.

An internet connection is required for the app to run due to pulling information from the web.

Sources:

Data Sources
https://en.wikipedia.org/wiki/COVID-19_pandemic_in_the_United_States
https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Mexico
https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html?topic=tilelink

Libraries/Forks used
https://en.wikipedia.org/wiki/Pandas_(software)
https://pillow.readthedocs.io/en/latest/index.html
https://docs.python.org/3/howto/urllib2.html?highlight=metadata
https://realpython.com/beautiful-soup-web-scraper-python/
https://docs.python.org/3/library/importlib.metadata.html
https://towardsdatascience.com/lets-make-a-map-using-geopandas-pandas-and-matplotlib-to-make-a-chloropleth-map-dddc31c1983d
https://realpython.com/openpyxl-excel-spreadsheets-python
https://doc.qt.io/qt-5/stylesheet-reference.html
https://doc.qt.io/qtforpython/PySide2/QtGui/QFont.html#more
https://doc.qt.io/qtforpython/PySide2/QtWidgets/QTreeView.html
https://docs.python.org/3/howto/urllib2.html
https://www.youtube.com/watch?v=PiLhIOJ0I1A

General issues
stackoverflow.com
Python Docs
Teacher Marie

Book reference
Violent Python by TJ O'Connor