Local Healthcare Costs tool

Abstract:

A python application that enables the user to quickly search for the lowest cost drug prices and compare hospitals in the Pittsburgh region based on charge data. The drug tool is a dynamic search. The hospital charge tool returns comparisons based on CMS/Medicare data 2014-2017 across 12 condition categories and 19 area hospitals.

Description:

- There are two functions:
    - Drug tool:
        - Input address and drug name and the tool returns the lowest cost generic and/or brand name drug and details on the pharmacy provider in the chosen area (mile radius).
    - Hospital charge tool:
        - Search by condition category and compare all hospitals, or
        - Compare two hospitals across all categories
            - The tool returns a comparison using average levels of overcharge (i.e., the average % difference in Hospital Charges and Actual Total Payments), and
            - Average levels of % uncovered (i.e., the average remaining share of Total Payments left to the patient after Medicare Payment)

Prerequisites:

- To run from base code, the program requires Python with installed packages including:
    - selenium
    - common packages including bs4, pandas, seaborn and matplotlib

- For **Selenium** along with installing the selenium library; you will have to install chromedriver.exe for your OS and change the executable path for the driver that you set up. For example:

```
driver = webdriver.Chrome(chrome_options=options, executable_path=r'C:\Users\14124\Desktop\chromedriver.exe')
driver1 = webdriver.Chrome(chrome_options=options, executable_path=r'C:\Users\14124\Desktop\chromedriver.exe')
```

  Make changes in the executable path according to where it is installed (the blue part in the above image)

- For the hospital charge portion of the tool, data has been collected and prepared. The main() program will function by drawing on prepared csv files including:
    - **'hospitals.csv'**
    - **'PA hospital scores.csv'**

User guide:

Running the program:

- After ensuring the prerequisites are in place and the appropriate data files are in the correct path, the main program can be executed.
- Note that the drug search tool is dynamic and will require more time to return output on searches.
- Program sequence: First user prompt:
    - 1. Search drugs prices
    - 2. Search hospital charges
    - 0. Quit
- Option 1: Drug tool
    - Prompt:
        - 1. To see data a drug
        - 0: To Quit
    - Select 1 and enter drug name, home address, distance within address (miles)
    - Tool returns chosen drug, generic and brand name, with lowest cost and pharmacy details
    - User may continue drug searches or return to menu
- Option 2: Hospital charge data
    - User prompt:
        - 1. Find hospital by illness category
        - 2. Compare two hospitals across categories
        - 0. Quit
    - Select 1 and choose the desired condition category:
    - Tool returns comparison of regional hospitals and their “overcharge” and “uncovered” average values
        - Overcharge %: (Total charges - Actual total payment) / Total charges
        - Uncovered %: (Actual total payments - Medicare payments) / Actual total payments
    - or Select 2 and choose two hospitals from the list to compare:

    - Tool returns comparison of two regional hospitals and their “overcharge” and “uncovered” average values across all condition categories
    - Tool also returns data table and visualization
    - Users may continue hospital charge searches or return to the main menu.
- Option 0: stop program