Instructions on how to use and interact with the project.

Overview

The NIBRS download archives include two files each for setting up and loading the data into PostgreSQL.

The jupyter notebook contains a series of data analyses and visualizations focusing on offender data. It utilizes libraries such as Pandas, Matplotlib, and NumPy for data manipulation and plotting.

1. **Prerequisites**
   * Ensure you have Python and **PostgreSQL** installed on your system.
   * The notebook requires libraries such as Pandas, Matplotlib, and NumPy.
2. **Data Files**
   * The analysis requires a specific dataset named 'offenders\_data.csv' located in a folder named 'Resources'. Ensure this file is in the correct location before running the notebook.
3. **Loading into a local database**

To load into postgres, use ‘createdb’ to create a database and then run the following to setup the basic database structure and load the common code lookup tables:

* *psql your\_db\_name < postgres\_create.sql*

You then can run the following command in the NIBRS annual zipfile downloaded to load that data into your database:

* *psql your\_db\_name < postgres\_load.sql*

1. **Running the Notebook**
   * Open the notebook in a Jupyter environment (JupyterLab, Jupyter Notebook, or similar).
   * Run each cell sequentially to ensure all variables and imported libraries are correctly initialized.

Notebook Structure

1. **Import Libraries**
   * The notebook begins by importing necessary Python libraries.
2. **Data Loading**
   * The 'offenders\_data.csv' file is loaded into a Pandas DataFrame.
3. **Data Visualization and Analysis**
   * The notebook includes several sections where data is analyzed and visualized:
     + Histogram of offender ages.
     + Count plot of offense types by offender ages.
     + Pie and bar charts for the distribution of offenders by sex and race.
     + Horizontal bar chart for the number of offenders by city.

Reference for my data

*Federal Bureau of Investigation. (2022). National Incident-Based Reporting System (NIBRS) Tables. Retrieved from https://cde.ucr.cjis.gov/LATEST/webapp/#/pages/downloads*