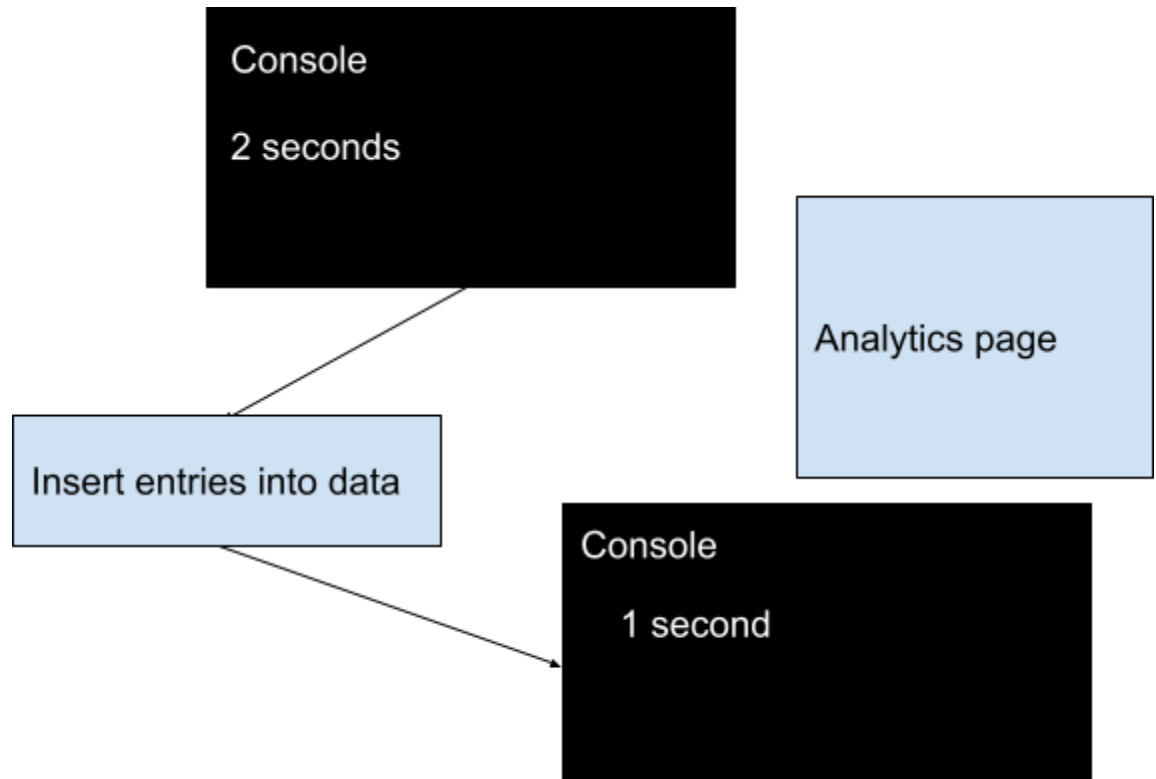Sprint 6 - Artifact

Features (incremental analytics):
- Incremental analytics for the Violations by time of day
  - Export data and incremental analytic functions
  - Sort data in backend
- Incremental analytics for Repeat Offenders (Change to be top 20 repeated violations)
  - Export data and incremental analytic functions
  - Sort data in backend

GUI Design:
- Show the improvement in performance in the console
  - start/end time, total run time on a task, etc

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TEST CASES:
- Incremental analytics for the violations by time of day
  - As a dev, I can access the incremental analytic functions in the delete, insert, and update routes
    - Correct Output: Confirmation of successful incremental analytic update in the backend console
  - As a user, I go to the the violations by time of day page

- - **Correct Output:** Chart of violations by time of day loads. Console shows a certain amount of time taken to load.
  - As a user, I go back to the home page and add new entries into the dataset
    - **Correct Output:** Confirmation of adding the new entries into the dataset and they are in the dataset
  - As a user, I go back to the analytics for violations by time of day
    - **Correct Output:** The new analytic loads quickly and takes a lot less time. Console will show less time than before.
- Incremental analytics for repeat offenders
  - As a dev, I can access the incremental analytic functions in the delete, insert, and update routes
    - **Correct Output:** Confirmation of successful incremental analytic update in the backend console
  - As a user, I go to the repeat offenders analytics page
    - **Correct Output:** Chart of repeat offenders loads. Console shows a certain amount of time taken to load.
  - As a user, I go back to the home page and add new entries into the dataset
    - **Correct Output:** Confirmation of adding the new entries into the dataset and they are in the dataset
  - As a user, I go back to the analytics for repeat offenders
    - **Correct Output:** The new analytics loads quickly and takes a lot less time. Console will show less time than before

Done list of last sprint:
- Backend implementation of the analytics feature for frequencies of violations given based on month of the year
  - [finished by Ethan Bayer and verified by everyone]
- Backend implementation of the analytics feature for repeat offenders
  - [finished by Ethan Bayer and verified by everyone]
- Backend implementation of the analytics feature for violations per county
  - [finished by Heng Tan and verified by everyone]
- Frontend implementation of bar graph displaying frequencies of violations given based on month of the year
  - [finished by Diane Shan and Heng Tan and verified by everyone]
- Frontend implementation of pie chart displaying violations per county
  - [finished by Diane Shan and verified by everyone]
- Frontend implementation of bar graph displaying repeat offenders]
  - [finished by Diane Shan and verified by everyone]

- Add three new features to analytics page and reformat to make easier to view
    - [finished by Heng Tan and Diane Shan and verified by everyone]
- Allow user to create analytics from custom search filter
    - [finished by Jason Lin and verified by everyone]
- Optimize analytics from Sprint 4
    - [finished by Ethan Bayer and Heng Tan and verified by everyone]
- Fix user input validation
    - [finished by Heng Tan and verified by everyone]

ToDo Tasklist for this sprint:
- Backend implementation of incremental analytics for violations based on time
    - Acceptance Criteria: increments correctly, doesn't take that long after making changes to the dataset
- Backend implementation of incremental analytics for repeat offenders
    - Acceptance Criteria: increments correctly, doesn't take that long after making changes to the dataset
- Need to Fix
    - Frontend Fix feature "Violations By time of date" and "frequencies of violations by month" graph does not show "%"
        - Acceptance Criteria: Show "%" in the graphs for the data
    - Frontend learn more button size
        - Acceptance Criteria: Decrease the size of the button to not take up the width of the whole page
    - Frontend "Learn more" info show all data
        - Acceptance Criteria: Show all the legend for the data in the graph and the counts for each value in the graph.
    - Backend and Frontend more works on "analyze current query"
        - Acceptance Criteria: Improve Analyze current query feature to show a better format of the data to the user
    - Backend send a table of each violation code with each violations respective name
        - Acceptance Criteria: Show a table with each violation code and their respective names to the user.