

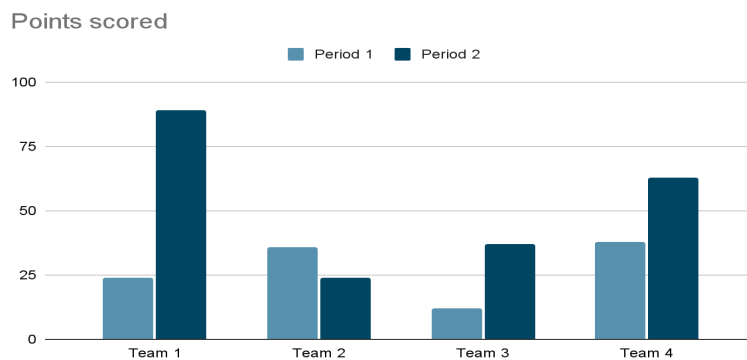
## Sprint 5 - Artifact

Features (analytics to implement):

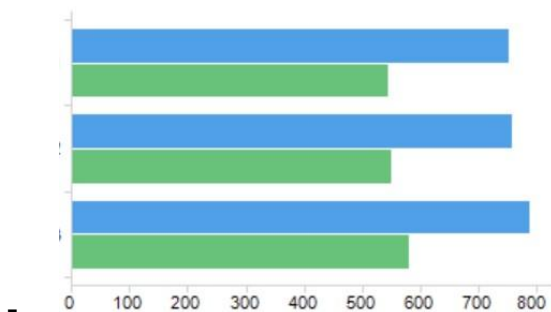
- Frequencies of violations given based on month of the year
- Repeat offenders
- Frequency of violations per county

GUI Design:

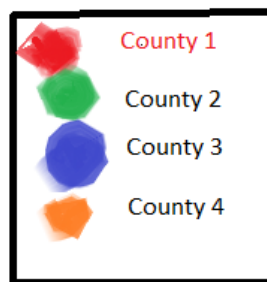
- Frequencies of violations given based on month of the year
  - Bar graph with x-axis as months and y-axis as violation frequencies, example:



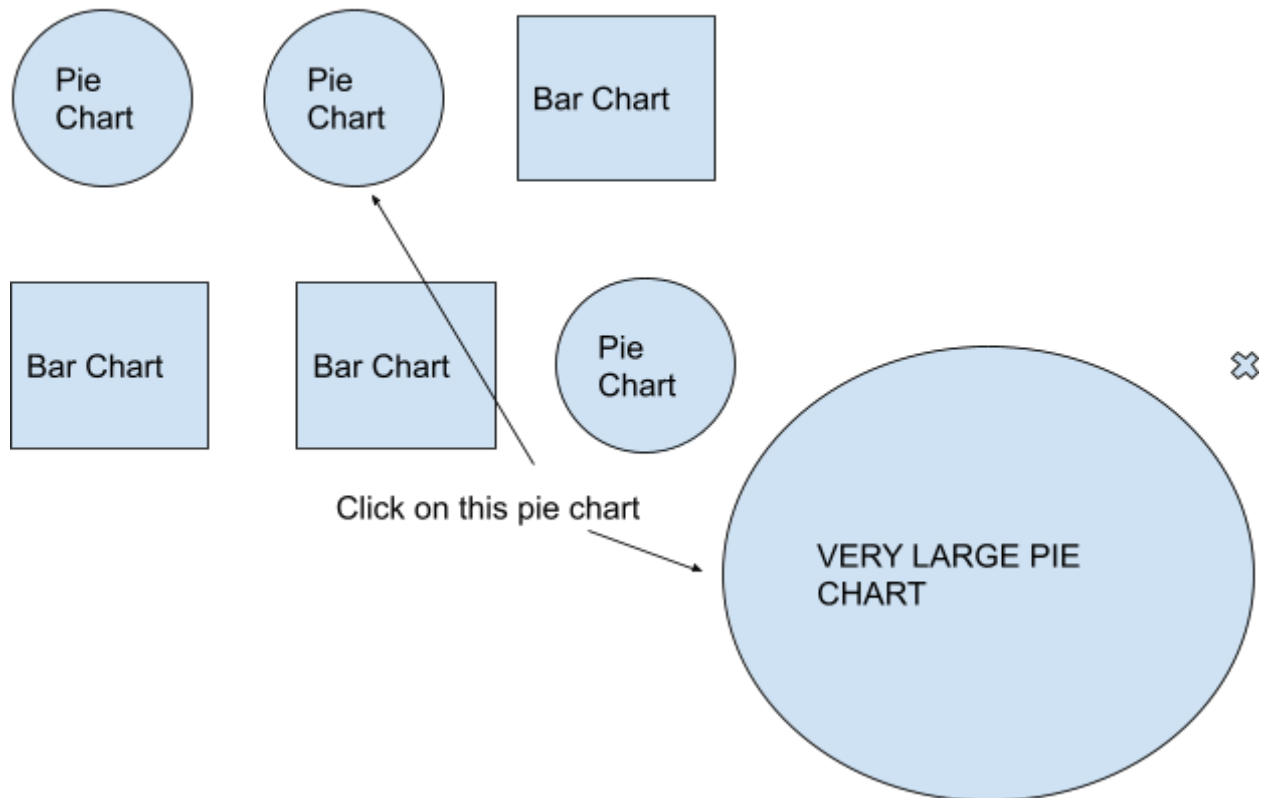
- Repeat offenders
  - Bar graph percentage repeats of each violation.
  - For example, if violation 3 has 4 repeats out of 100 offenses, then we display 4%.
  - X-axis: violation
  - Y-axis: % of repeats



- Frequency of violations per county
  - Pie chart
  - Frequency & county name, top 10 or 15, lower total to other



### Analytics Page



## TEST CASES:

- Allow analytics for a custom search query
  - The user can search the data (for example, "Registration State==NY", then create analytics from the filtered data)
- Frequencies of violations given based on month of the year
  - As a user, I click on analytics tab in hamburger menu
    - Correct output: Analytics page shows up on screen with the six different analytics shown small on the screen
  - As a user, I click on the frequencies of violations given based on month of the year bar chart
    - Correct output: Frequencies of violations given based on month of the year bar chart is enlarged and shows on screen, with a little x in the upper right hand corner and a close button at the bottom
  - As a user, I click on the x in the upper right hand corner or the close button
    - Correct output: Analytics page is back with the 6 analytics small on the screen
- Repeat offenders
  - As a user, I click on analytics tab in hamburger menu
    - Correct output: Analytics page shows up on screen with the six different analytics shown small on the screen
  - As a user, I click on the repeat offenders bar chart
    - Correct output: Repeat offenders bar chart is enlarged and shows on screen, with a little x in the upper right hand corner and close button at the bottom
  - As a user, I click on the x in the upper right hand corner or the close button
    - Correct output: Analytics page is back with the 6 analytics small on the screen
- Frequency of violations per county
  - As a user, I click on analytics tab in hamburger menu
    - Correct output: Analytics page shows up on screen with the six different analytics shown small on the screen
  - As a user, I click on the frequencies of violations per county bar chart
    - Correct output: Frequencies of violations per county bar chart is enlarged and shows on screen, with a little x in the upper right hand corner and a close button at the bottom
  - As a user, I click on the x in the upper right hand corner or the close button
    - Correct output: Analytics page is back with the 6 analytics small on the screen

#### Done list of last sprint:

- Backend implementation of the analytics feature for most common Car Brands to receive violations
  - [finished by Ethan Bayer and verified by everyone]
- Backend implementation of the analytics feature for most common types of violations
  - [finished by Ethan Bayer and verified by everyone]
- Backend implementation of the analytics feature for violations given at a time of day
  - [finished by Ethan Bayer and verified by everyone]
- Frontend implementation of bar graph displaying violations given at a time of day
  - [finished by Jason Lin and verified by everyone]
- Frontend implementation of pie chart displaying most common car brands to receive violations
  - [finished by Diane Shan and verified by everyone]
- Frontend implementation of pie chart displaying most common types of violations
  - [finished by Diane Shan and verified by everyone]
- Add new analytics page that connects correctly to the menu
  - [finished by Diane Shan and verified by everyone]
- Implement enlargement of selected analytic
  - [finished by Diane Shan and verified by everyone]

#### ToDo Tasklist for this sprint:

- Allow user to create analytics from custom search filter
  - Acceptance Criteria: User can search data and get customized analytics
- Backend implementation of the analytics feature for frequencies of violations given based on month of the year
  - Acceptance Criteria: Return json object with correct frequencies of violations based on month of the year
- Backend implementation of the analytics feature for repeat offenders
  - Acceptance Criteria: Return json object with correct repeat offender rates
- Backend implementation of the analytics feature for frequency of violations per county
  - Acceptance Criteria: Return json object with correct frequencies of violations per county
- Frontend implementation of bar graph displaying frequencies of violations given based on month of the year
  - Acceptance Criteria: Bar graph displays with correct information for month of year
- Frontend implementation of bar graph displaying repeat offender rates

- Acceptance Criteria: Bar graph displays with correct information for repeat offenders
- Frontend implementation of pie chart displaying frequencies of violations per county
  - Acceptance Criteria: Pie chart displays with correct information for violations per county
- Frontend analytics page to adopt three new analytics
  - Acceptance Criteria: Analytics page has all 6 analytics shown on one page, revamp so that they are all bigger and display one after another
- Optimize earlier 3 analytics
  - Acceptance Criteria: Make it so that doesn't take so much time to load
  - Optimize the Car brands parsing data function to exclude any car brands which receive less than 1% of the violations and include them in a new variable called "Other".
  - Change the returned percentage format.
- Fix user input data function
  - Check user input violation time "am" or "pm"
  - Check summonsNum is a number