

Final Project Milestone #4

CIS 9440 - Data Warehousing for Analytics

Final Project Milestone 4

Group Number 5

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1) List your final set of 5+ KPI's.

1. Number of Collisions by Year
2. Number of Collisions by Hour
3. Number of Victims by Month
4. Number of Victims by Age
5. Number of Collisions by Zip Code
6. Number of Cyclist Collisions by Year

2) Short description of Visualization that will be used for each KPI. **Why** will you use that type of visualization?

1. Number of Collisions by Year

Line Chart: A line chart would be ideal for this KPI because it allows us to see changes that occur over time. Our hypothesis here is that victims of collisions gradually increase over time as NYC gets more congested with more people driving.

This KPI allows us to investigate what year collisions are more likely to occur and can help identify any seasonalities (patterns) that exist.

2. Number of Collisions by Hour

Bar Chart (vertical): We want to use a bar chart here because they are great for comparing categorical variables (24 hours in this case).

This KPI can show which time collisions are more likely to occur. The Metropolitan Transportation Authority can use this insight to increase public transportation during crash- prone hours to disincentivize driving. Also, the New York City Department of Transportation can use this KPI to evaluate the proposed congestion pricing initiative.

3. Number of Victims by Month

Bubble Graph: A bubble graph here would be suitable because not only does it allow for us to see the months and year with more collisions, but also adds an additional dimension of the data where the size of the bubbles directly represent the collision numbers.

This can help the audience easily digest when most collisions take place and allow experts to perhaps better plan city traffic during months of high collisions.

4. Number of Victims by Age

Histogram: A histogram works well here because we can easily visualize the distribution of age groups more prone to collisions. It will break down the frequency of collisions by age group (bins). We can also further include in gender here too further see what the numbers are like for males vs females.

Public safety officials can create educational campaigns targeting the age and gender groups more likely to experience a collision. Influencers for each age group can persuade people to behave in ways that reduce traffic collisions.

5. Number of collisions by Zip Code

Tree Map: A tree map can be used here because they capture relative sizes of categories (in this case zip codes). This is especially helpful because we are mainly interested in only areas with the most collisions.

The New York City Department of Transportation can prioritize the zip codes with higher collisions with initiatives to reduce and prevent collisions. Also, they can compare successful interventions in the boroughs with fewer collisions and allocate more funds to the more affected boroughs.

6. Number of Cyclist Collisions by Year

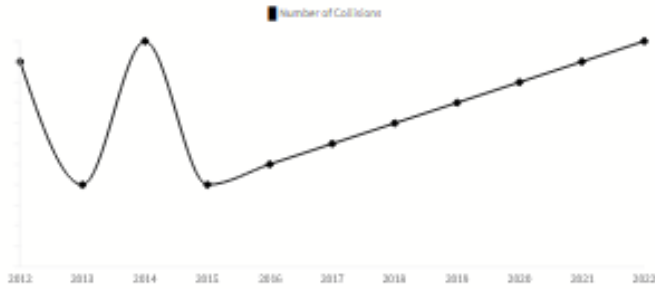
Line Graph: Similar to our “Number of Collisions by Year” KPI - a line chart would be ideal for this KPI because it allows us to see changes that occur over time.

We want to see how the introduction of city bikes since 2013 affected overall cyclist collisions (injuries and death).

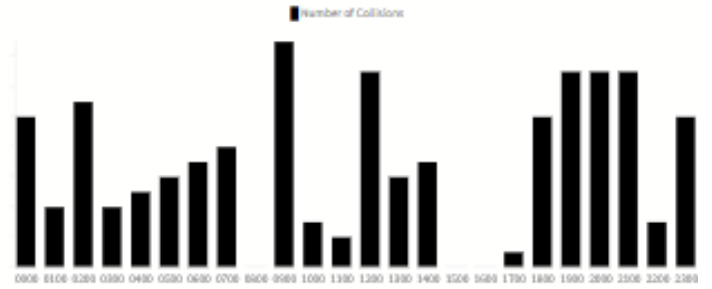
- 3) Paste a picture of your BI Application Wireframe (hand drawn image, google draw, any other format).

NYC Motor Vehicle Collision Transparency by Gabriel Fernandez and Jason Jiang

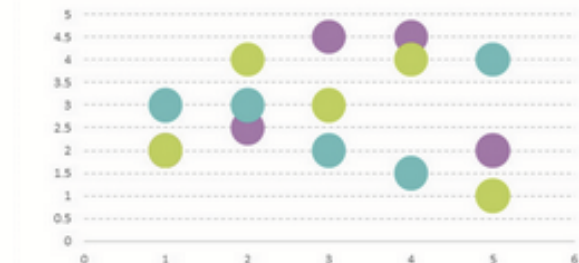
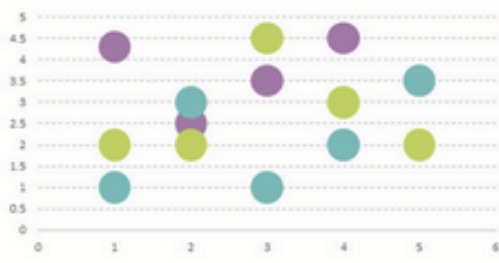
Number of Collisions by Year



Number of Collisions by Hour



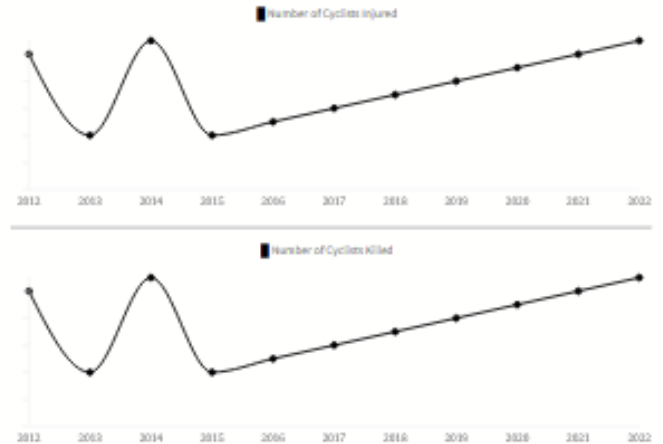
Number of Victims by Month



Number of Victims by Age



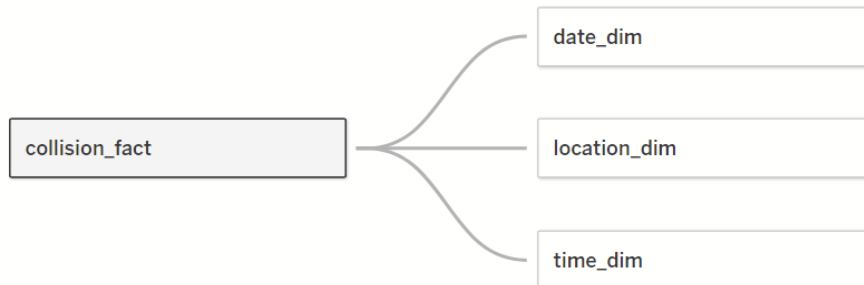
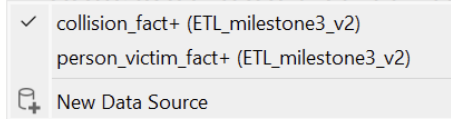
Cyclist Collisions per Year



Number of Collisions by Zip Code

- 4) Link to your Tableau Public dashboard & take a screenshot of your “Data Source” tab in Tableau after connecting. (Ensure this link works!)

collision_fact+ (ETL_milestone3_v2)



person_victim_fact+ (ETL_milestone3_v2)

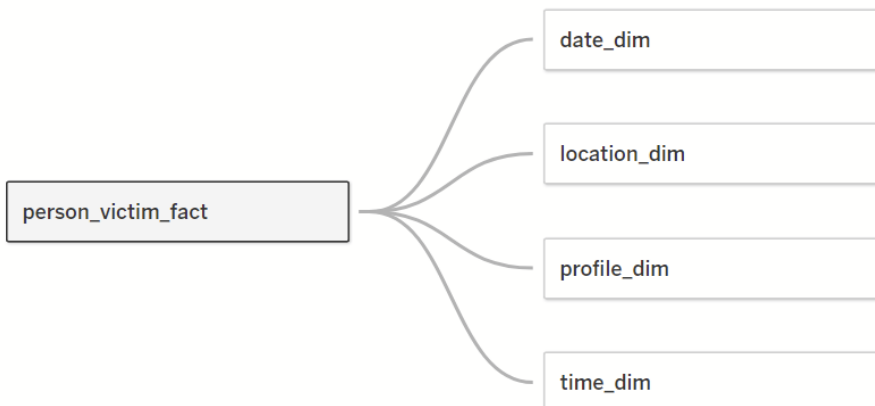
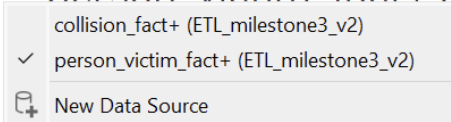


Tableau Public Dashboard Link:

<https://public.tableau.com/app/profile/jason.jiang4864/viz/NYCMotorVehicleCollisionTransparency/Dashboard>

(Optional, 5) Any notes for the professor about your visualization or template submission.

Changes since previous milestones:

1. Milestone 1:

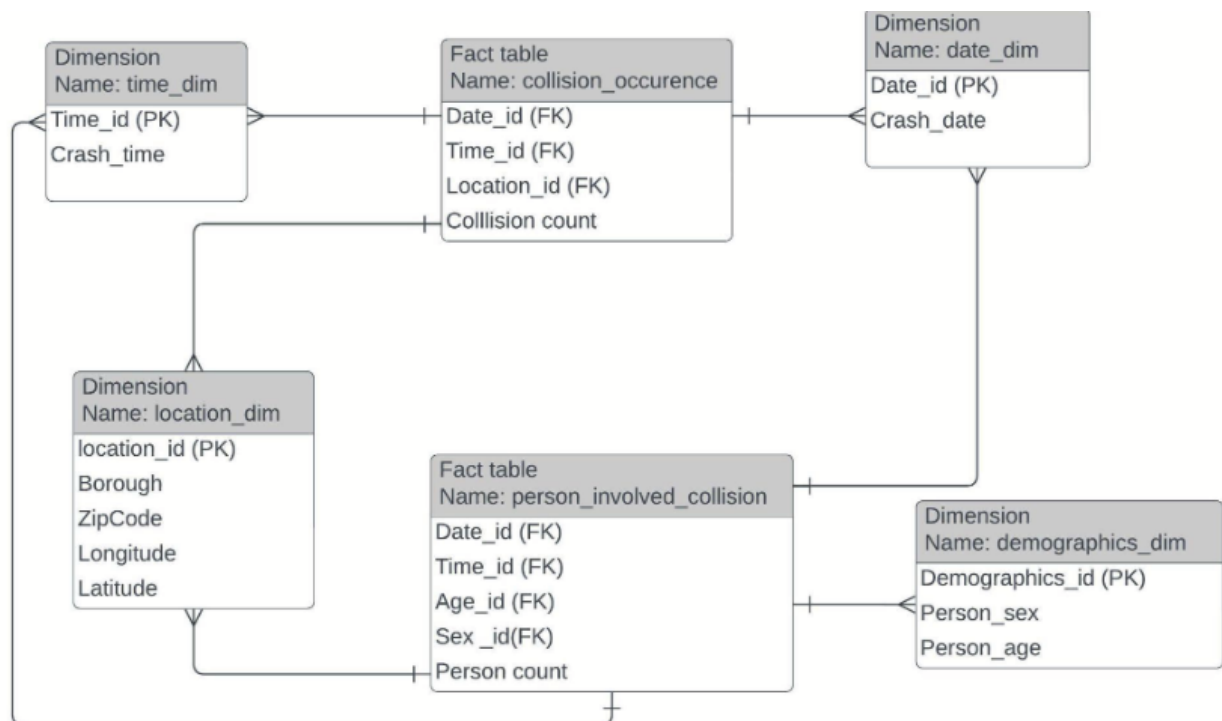
○ KPI Changes:

- Number of Collisions by Date → Number of Collisions by Year
- Number of Collisions by Sex → Number of Victims by Month
- Number of Collisions by Age → Number of Victims by Age
- New: Number of Cyclist Collisions by Year

2. Milestone 2 & 3:

○ Dimensional Model Change:

- Old:



■ New:

