Information Visualization GEOM90007

Assignment 2 : Data Visualisation with Tableau

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The aim of this dashboard is to identify ways to decrease the number of road accidents in the State of Victoria.
In this dashboard I have explored how the width and the number of lanes of the roads impact accidents, along with other related factors like Road Surface, Speed Zones, and the Road Geometry.

I have used 5 worksheets for the dashboard.

1. **Accidents and Average Speeds(Dual Axis Symbol Map)** : In this we can see the number of accidents in Victoria segregated by cities and the average speeds in those cities. From this we can identify which cities have a high number of accident count and find its correlation with the Average speeds in those cities. For example, the City "*Casey*" has recorded *3,504* accidents in the last 5 years while having an average speed zone of *72.06 kmph.*
2. **Speed and Accident Count(Tree Map)** : In this worksheet we can see the number of accidents incorporated with each unique speed zones. For example, the maximum number of accidents are in the speed zone of *60kmph*. This worksheet has been used as a filter in the dashboard, by selecting *60kmph* we can see the number of accidents in each city in Victoria having 60kmph speed limit. Example : The city of *Geelong* has *1,046 accidents*.
3. **Road Geometry and Accident Type(Horizontal Bars)** : Using this worksheet we can see the number of accidents corresponding to different Road geometries at the accident location and find its correlation with the accident type. For example, when the accident has taken place at a "*Cross intersection"* most of the accidents been "*Collision with Vehicle"*. This worksheet also acts as a filter in the dashboard, similar to worksheet 2.
4. **Road Width and Accident Count(Symbol Map) :** In this worksheet we can see the number of accidents in different roads in Victoria, and the road width and the number of lanes. For example "*Maroondah Highway"* has *2.528* number of lanes on average and is incorporated with *618* accidents.
5. **Road Surface, Width and Accident Count(Area Chart)** : In this chart we can see the number of accidents in different types of road surfaces and identify its correlation with the seal width of the road. For example, *Asphalt* road surface has the highest number of accidents *21,749* when having a road seal width of *7.40.*

All of the 5 worksheets have some form of interaction with other worksheets. This has been achieved using appropriate filters and actions.
For example, By clicking on a city/county on worksheet 1, we can get how many accidents are there in that county corresponding to each speed zone and the various road geometries at the accident locations segregated by the accident type. Like, From worksheet 1, we can see by hovering on the map on "*Wellington*" has *702* accidents and an average speed of *85.16kmph*. By clicking on the area corresponding "*Wellington"* we can see most of the accidents have taken place in the speed zone of 100kmph(From worksheet 2) and majority of the accidents have taken place "*Not at intersection*" and "*Collision with a fixed object"*(From worksheet 3).
Similar page level aggregations can be applied from each page to page with related data to the source page.

Appendix

- Road crashes(last 5 years), https://discover.data.vic.gov.au/dataset/crashes-last-five-years
  File Name - Crashes_Last_Five_Years.csv
- Road Width and Number of Lanes, https://vicroadsopendata-vicroadsmaps.opendata.arcgis.com/datasets/road-width-and-number-of-lanes
  File Name - 119919a1-6826-45dc-b987-ca4d9ab06bc9.shp
- Crash Stats, https://discover.data.vic.gov.au/dataset/crash-stats-data-extract
  File Name - Roads_Data.csv (Generated by join between ACCIDENT.csv and ACCIDENT_LOCATION.csv)