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INFORMATION VISUALIZATION

COMP9007

ASSIGNEMENT-2:

Where does VicRoads needs to improve the routes to avoid bicycle accidents having serious and fatal injuries on various Road Geometries in Metropolitan Regions of Victoria.

The Interactive Dashboard consists of two worksheets, one showing the Victoria state map and another showing a bar graph. Explaining the design of the worksheets in details:

1. The Victoria state map shows the Metropolitan regions of Victoria, i.e., Metropolitan North West Region and Metropolitan South East Region. The names of particular longitude and latitude are filtered according to these regions displaying them using circular shapes. These shapes are given a hue 1 color according to the count of bicycle accidents in the area. The worksheet is also made interactive on showing various road geometry of VicRoads. Overall, the worksheet shows the bicycle accidents in Melbourne's metropolitan regions on various Road Geometry of VicRoads.
2. The second worksheet mainly focuses on the severity of the accidents, which are considered severe injuries, fatal accidents, and other injuries. Similar filters are chosen on this worksheet to make a common standpoint on metropolitan regions. The bar graph shows the count of bicyclist accidents in various geometry in these regions accordingly. The animation is used on this worksheet to make the chart more pre-attentive to the users.

Overall, on the interactive dashboard, these two worksheets are made interactive by observing the data on various road geometries of VicRoads.

Observing the interactive dashboard, the question of which roads in metropolitan regions of Victoria can be improved for bicyclists can be answered. Looking at all the types of road geometries on the map, one can observe that the Cross Intersection, Not at Intersection, and T Intersection road geometries have many bicycle accidents. The data shows that at the center of the metropolitan Melbourne has the most serious bicycle accidents, which are as follows: 1,826 accidents at Not at intersection points, 1462 bicycle accidents at Cross Intersection, and 792 bicycle accidents at T intersection. Now, comparing with the severity of the accidents Not at Intersections, road geometry has more number of severe and fatal injuries, which is precisely 7,274 severe injuries and 377 fatal accidents.

In conclusion, VicRoads needs to improve the non-intersection road geometry in the Metropolitan Centre regions of Melbourne to avoid bicycle accidents where bicyclists have severe and fatal injuries.

APPENDIX-A [Dataset]

- *Discover.data.vic.gov.au. 2020. Crashes Last Five Years - Victorian Government Data Directory. [online] Available at: <https://discover.data.vic.gov.au/dataset/crashes-last-five-years> [Accessed 1 September 2020].*