Tableau Assignment

Instructions

- The assignment consists of 14 questions in all.
- The dashboards carry a weightage of 200 points.
- The 13 other questions carry 150 points.
- The charts for each of the 13 questions need to be created in the respective sheets of the workbook file provided.
- If the question asks for some information apart from visualization, use annotations to highlight the point/area of interest and answer the question.
- Use the DFT Road-Accident-Safety-Data-Guide Excel file to understand the mappings of variables to numbers. This is essential in helping you to interpret the numbers used in columns.
- The Tableau Workbook needs to be uploaded in the Assignment section for submission.

(Hint: Since most of the variables are mapped to numbers, they are allocated to the Measures tab by Tableau. You might want to convert them into Dimensions before proceeding as they represent categories.)

Questions

Use the accidents dataset to answer the following questions:

- **Dashboard (200 points)**
    - You are required to create 4 dashboards in the workbook provided.
    - A list of questions is given below. One sheet needs to be created for every question.
    - At the maximum, one dashboard should contain 3-4 questions. These questions should be chosen in a way that they are creating a story for that dashboard. Please feel free to use your creativity in clubbing questions and creating the story for the dashboard.
    - You should also think of adding dashboard actions, appropriate filters, tooltips as well as navigations to enhance the experience. You might also want to display top N observations for charts with too many variables.
    - Use "Story" feature of tableau to create a storyline from the given dataset. Analyse the 4 dashboards and create a final story to create actionable insights.

- **Questions to Answer (150 points)**
    1. Which day of the week has the highest number of accidents? Create a line/pie/tree chart that answers this question. Also, segment them into urban and rural areas.
    2. Under what weather conditions do most accidents occur? Create a suitable chart that visualizes it. Also the answer needs to be mentioned as an annotation in the chart.

3. Create a chart that shows the number of accidents against the type of road as well as the police department under whose jurisdiction it happens. Use point/ area annotation to highlight points/ areas of interest if necessary. Also mention the ratio of the number of fatal accidents to the number of slight accidents on the road type that has seen the maximum number of accidents. (Note: Accident indices are unique and their count returns the number of accidents.)

4. Create an area plot of the number of accidents coloured with their severity across time. You can choose the granularity, i.e. by month, year, quarters or by days. Your aim should be to help it show insights w.r.t. the relation with time, how the date plays a role in determining the rise or drop in accidents.

5. Among the given dimension attributes, which SINGLE dimension value is the highest contributor to accidents? (You have to look at one bar chart for each categorical attribute in the dataset to arrive at the answer.)

6. Given the combination of dimension attributes of <light conditions, road_surface_conditions, speed limit>, what is the combination of values that contributes to most accidents?

7. Using line graph for the three accident severities, find out at what speed the number casualties is the highest and at what speed the number of casualties is the least.

8. Using the latitude and longitude dimensions, highlight the regions of the geography that has the least and highest severity of accidents.

9. Using dual combination chart comprised of bar and line chart, show that number of vehicles and number of causalities are directly proportional to each other.

10. What is the impact of light conditions on the time of the day when most casualties occur? Use stacked bars with time on the x-axis and number of casualties on the y-axis.

11. Using area charts, show that between 8:00 hrs and 14:00 hrs, the light conditions are perfect (value 1).

12. Contrast urban and rural casualties pattern during the weekend (Day of week 1,7) involving female drivers using the following chart types:
    a. Stacked bars
    b. 100% stacked bars

13. Are there any contrasting conditions between Fatal (value 1) and Slight Accident (Value 3) severities? If yes, then mention the conditions.