**Project-Phase II: Decision Making**

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IFT 598 Topic: Data Visualization & Reporting for IT

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April 16, 2023

# Section 1: Visualization Tools

Given that our dataset contains few columns and rows than most. Tableau will be used to create the visuals, and the dashboard will be combined with the seperate visualizations.

Tableau shines when there are few columns and rows in the data. Its drag-and-drop interface allows us to easily create visualizations. Tableau will also give simple features for changing the visualization also by giving it a new look.

# Section 2: Explanation of Required Data Pre-processing

We need to preprocess our database as this has some redundant values. We used to excel and

Python to analyze these and remove the columns from the dataset.

* Since every entry in the dataset has the same type i.e., Column – Type which has Sedan for all entries. This is a redundant attribute and would not help us in getting any information. So, we decided to remove it from the dataset.
* As all the values in Column – Condition is null, we cannot consider this column as it cannot be used for visualizations.
* Since every value in the dataset has the same type i.e., Column – Doors and Num\_Seats which has 4 and 5 for all entries. This is a redundant attribute and would not help us in getting any information. So, we removed it from the dataset.

# Section 3: List of Final Sets of Questions

1. Select car brand names that have the highest milage percent of total used cars.

2. Select car manufacture year by engine type and which has the highway mileage and miles traveled between 20k to 90k.

3. Which model cars have front headroom and front legroom display their brand names sorted by alphabetical order.

4. Select the brand names of the car which has the highest torque and engine types with speed levels sorted by size which brands and engine has highest torque and speed level

5. Show which brand of cars with their unique ID has several owners by car price and how many miles traveled.

6. Create how many used cars with repeated models were for sale in that year.

7. What percent of the total service records for every model car are sorted by miles?

8. Create using a brand of the cars and total used cars sorted by rear headroom with size and rear legroom with text.

9. Select the year of car manufacture based on the fuel tank capacity and model. Display single or multiple models while searching.

10. Display Which model car has the highest speed level and check for single or multiple models.

11. What is the average price of the car with brand and model that can be affordable within the desired price and available cars with the selected model?

12. How many cars and their types have the max front legroom and rear legroom, and which has the average city milage and display their brand and mode

# Section 4: Dashboard Plot

1. Bar chart representing car brand names that have the highest milage percent of total used cars. The Pre-attentive attributes used here are length and color.

A picture containing application

Description automatically generated

2. Line chart plotting car manufacture year by engine type and which has the highway mileage and miles traveled between 20k to 90k. Pre-attentive attributes are 2D position and color.

Chart, line chart

Description automatically generated

3. Side-by-side bars represent car models that have front headroom and legroom to display their brand names sorted by alphabetical order. PAA – Length, Color

Chart, bar chart

Description automatically generated

4. Side-by-side bars showing the brand names of the car which has the highest torque and engine types with speed levels sorted by size which brands, and engine has highest torque and speed level. PAA – Length and color hue.

Chart, bar chart

Description automatically generated

5. Side-by-side circles represent the brand of cars with their unique ID has several owners by car price and how many miles traveled. PAA – shape, 2D position.

A picture containing graphical user interface

Description automatically generated

6. Area charts showing how many used cars with repeated models were for sale in that year. PAA – Color, Length

Chart

Description automatically generated

7. Pie chart displaying the percentage of total service records for every model car are sorted by miles. PAA – color, size

Chart, bubble chart

Description automatically generated

8. Side-by-side bars for brand of the cars and total used cars sorted by rear headroom with size and rear legroom with text. PAA – Length, color

Graphical user interface, chart, application, bar chart

Description automatically generated

9. Line chart to select the year of car manufacture based on the fuel tank capacity and model and displaying single or multiple models while searching. PAA – Length, color.

Chart, line chart

Description automatically generated

10. Dual combination to display which model car has the highest speed level and check for single or multiple models. PAA – Length, color.

Chart, line chart

Description automatically generated

11. Stacked bar chart to represent the average price of the car with brand and model that can be affordable within the desired price and available cars with the selected model. PAA – length, color.

Chart

Description automatically generated

12. Bar chart to show how many cars and their types have the max front legroom and rear legroom, and which has the average city milage and displaying their brand and mode. PAA – Color and length.

A picture containing graphical user interface

Description automatically generated

**References**

Mural Link:

<https://app.mural.co/invitation/mural/dvproject8877/1680675307759?sender=u76046c07aa4d32556bd29877&key=2aebb45f-5f03-4433-9c3e-c471f1473814>