Task – 2 Summary Report

Understanding of the dataset:

- The dataset seems to comprise of customer issues/complaints and their resolution regarding vehicles.
- It gives details about the model, manufacturing plant, country, dealers, cost of repair, vehicle specifications etc. (Total 100 rows and 52 columns)

Problem Statement:

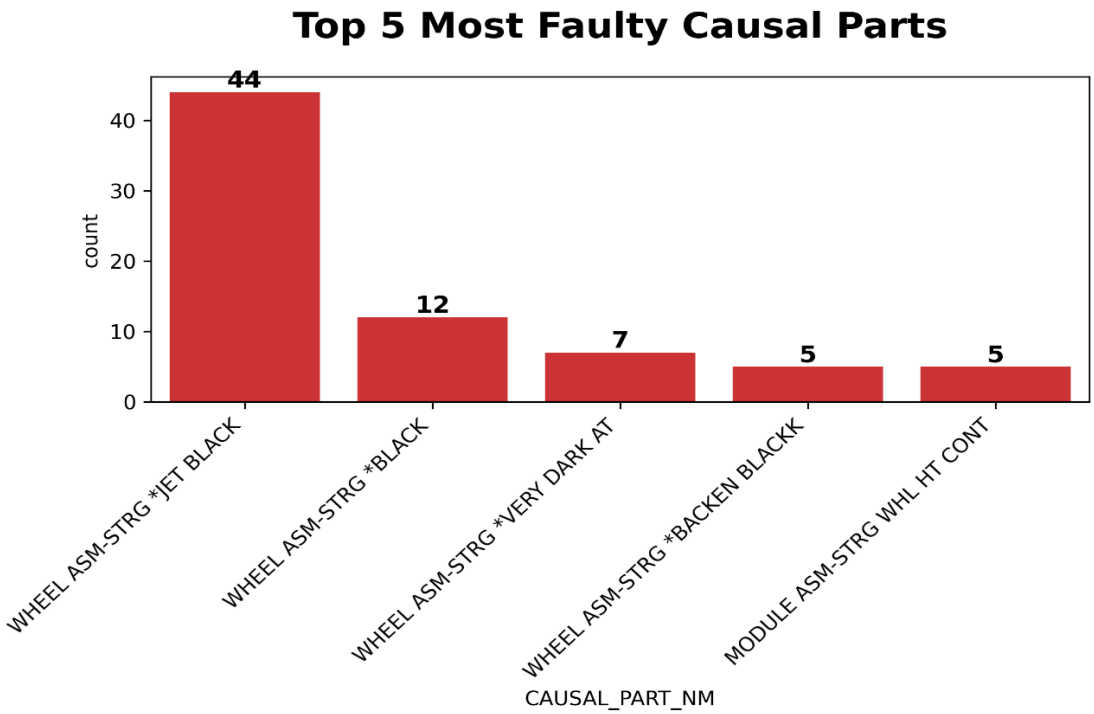
Analyzed the customer complaints and tried to categorize it along with the solution to address customer pain points and improve the faulty products by finding the root case of the issue. In the meantime, trying to reduce wastage of money for both company and customer, increasing operational efficiency, building customer trust and enhancing profit.

Limitations and descrepensies in dataset:

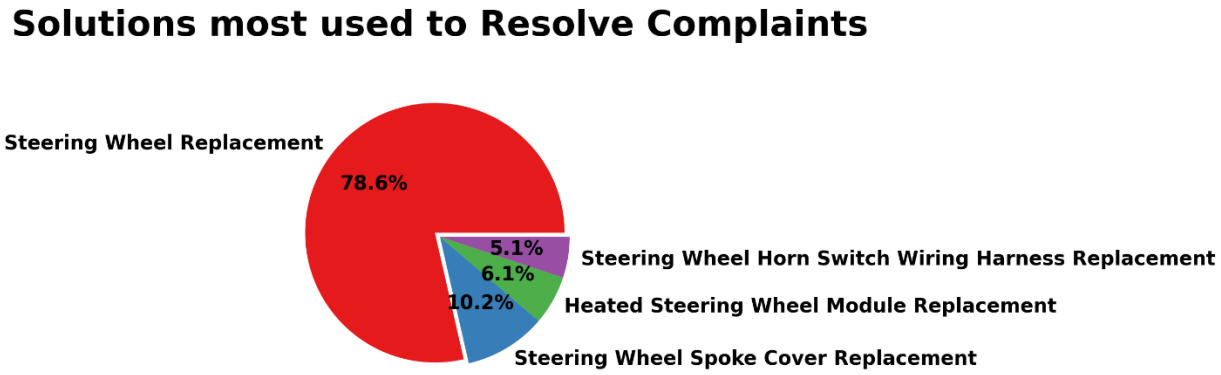
1. Some records in free text column are in other languages than English. These were very few in number so I categorized them in 'Other' category.
2. Also few records were null but mostly they were of not much significance so I filled them with N/A.
3. The data consist records from only 2 months so seasonal variability could not be found.
4. Certain column data types were modified for calculation purpose.
5. Used median to calculate expenses so as to get least affected by extreme values.

Key Observations:

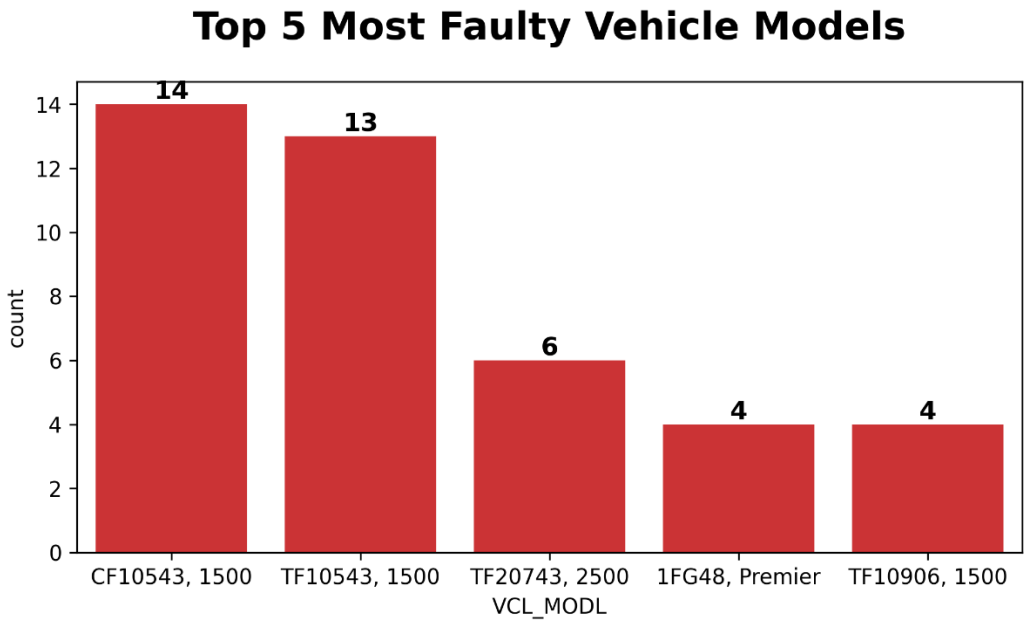
1. **WHEEL ASM-STRG *JET BLACK part** of the vehicle is **rsponsible significantly (44%)** for the **issues** in the vehicle.



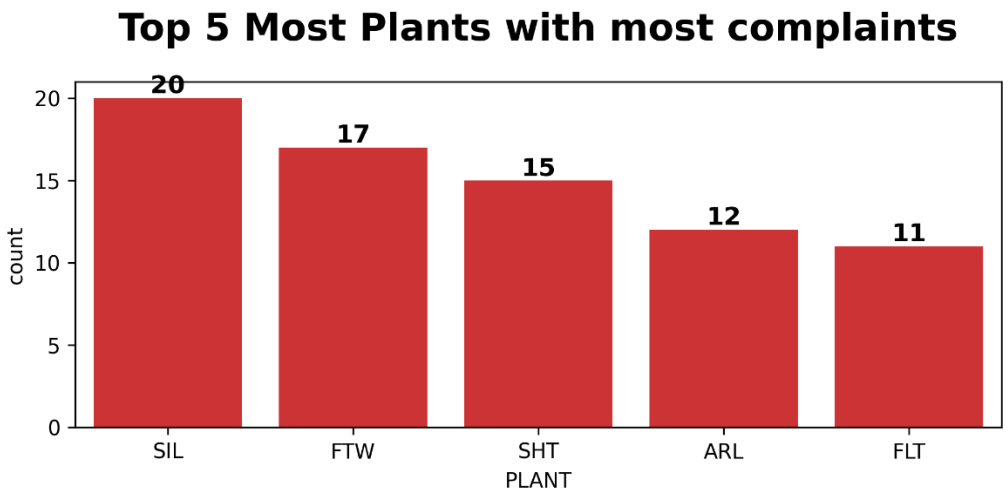
2. **Replacing the Steering Wheel of the vehicle is the most go to solution (78.6%)** for resolving customer issues. It forms a little more than 3 quarters of the solution.



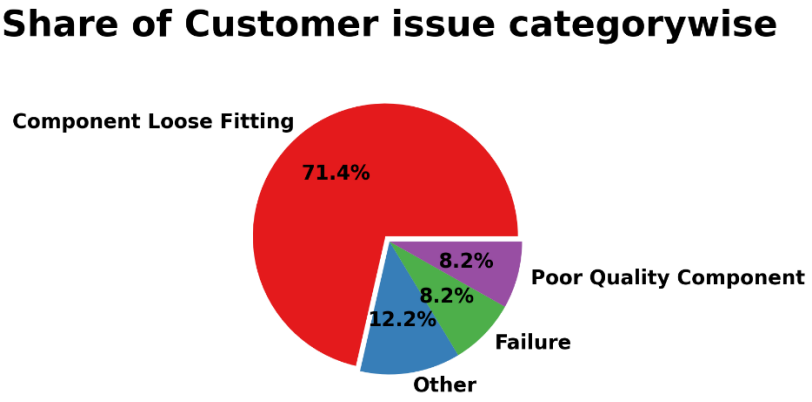
3. **1500 Line Series** is from where the **most complaints** are recieved. Within it also, **CF10543 and TF10543 vehicle models** are most **faulty.**



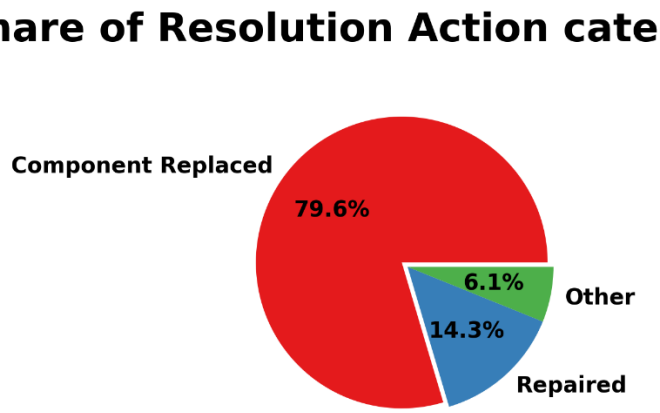
4. **Median Repair Expenses** are relativley **higher** in vehicle models **6MB26 (line series - LUX-1) and 6F10906 (Line series - 1500).**
5. **Repair of WHEEL ASM-STRG *BACKEN BLACKK causal part** is comparatively **expensive** than other causal parts.
6. Expenses on all resolutions for the complaints are almost similar but **Steering Wheel Horn Switch Wiring Harness Replacement** is **slightly more expensive.**
7. **SIL, FTW and SHT plants** are top 3 in terms of manufacturing defective/poor quality vehicle as more **complaints(almost 50%)** are recieved in vehicles manufactured in these plants.



8. **Component loose Fitting** is the most **recurring issue making up 71.4%** of the customer complaints.



9. **Component Replacement** makes up the maximum chunk of the **issue resolution process** which is **almost 80%** .



Insights and Recommendations:

1. The manufacturing company must **focus on proper fitting of components** and fastening screws to ensure they remain intact for long time.
2. Replacing the component may cause the company extra expenses and wither customer trust. Customers also find it difficult to get the original parts replaced apart from bearing the repair cost. So ensuring **good quality products with good fitting.**

3. **Special focus** can be laid **on plants SIL, FTW and SHT** by **regular inspection and visits** to check **quality control**.
4. **Special care** needs to be made while **assembling Steering Wheel Horn Switch Wiring Harness** as these have maximum faults.
5. **Review of vehicle models CF10543 and TF10543 of Line series - 1500** can be made to check why these models are the cause of customer issue.
6. **WHEEL ASM-STRG *JET BLACK part** of the vehicle must be **quality checked** and the new parts must be **made readily available** through inventory management so that it can be easily replaced on demand.

Further possible improvements:

1. Categorizing free texts more accurately.
2. Exploring other columns and finding correlations.
3. Claening and standardizing data in a more better way.
4. Referred ChatGPT to get reference of some python functions. It can further be utilized to optimize codes and automate the process.