



## DAD 220 Analysis and Summary Template

Replace the bracketed text in this template with your responses and any supporting screenshots. Then submit it to the Module Five Activity for grading and feedback. Rename this document by adding your last name to the file name before you submit.

1. **Analyze the data** you've been provided with to **identify themes**:

a. Which parts are being replaced most?

i.

```
mysql> select count(*), Repair
-> from PartsMaintenance
-> Group by Repair
-> Order by Count(*) DESC;

+-----+-----+
| count(*) | Repair |
+-----+-----+
| 95 | Fule tank |
| 74 | Tire repair |
| 66 | Tire replacement |
| 63 | Windshield replacement |
| 56 | Battery replacement |
| 55 | Wheel Arch |
| 54 | Fender replacement |
| 53 | Rocker Panel |
| 52 | Brake line replacement |
| 51 | Struts |
| 49 | Cab corner panel |
| 47 | Shocks |
| 37 | Dent Repair Left Fender |
| 28 | Transmission |
| 25 | Dent Repair Rear |
+-----+-----+
15 rows in set (0.02 sec)
```

This screenshot shows that Fuel tanks at 95 and Tire repair at 74 are being replaced the most.

b. Is there a region of the country that experiences more part failures and replacements than others?

i. Identify region:

```
mysql> select count(*), Regions.Region
-> from PartsMaintenance
-> inner join Regions
-> On PartsMaintenance.State = Regions.State
-> Group By Region
-> Order by Count(*) DESC;

+-----+-----+
| count(*) | Region |
+-----+-----+
| 260 | Midwest |
| 208 | Northeast |
| 186 | Southeast |
| 66 | West |
| 63 | Southwest |
+-----+-----+
5 rows in set (0.00 sec)

mysql> █
```



This screenshot shows the MIDWEST has the most repairs at the count of 260.

- ii. How might the fleet maintenance team use the information to update its maintenance schedule?
  1. The information that is shown can make an impact on requiring more inspections of vehicles. Also, more staff in the MIDWEST can make things easier and quicker for repairs.
- c. Which parts are being replaced most due to corrosion or rust?
  - i.

```
mysql> select count(*), Reason, Repair
-> from PartsMaintenance
-> Where Reason Like '%corrosion%'
-> or Reason LIKE '%rust%'
-> Group by Reason,
-> Repair order by Reason DESC;
```

count(*)	Reason	Repair
49	Rust	Cab corner panel
54	Rust	Fender replacement
53	Rust	Rocker Panel
47	Rust	Shocks
51	Rust	Struts
55	Rust	Wheel Arch
52	Corrosion	Brake line replacement
46	Corrosion	Fule tank

```
8 rows in set (0.00 sec)

mysql> █
```

This screenshot shows that wheel arch at 55 is being replaced the most. Also from highest to lowest after whell arch is fender replacement at 54, rocker panel at 53, brake line replacement at 52, struts at 51, cab corner panel at 49, shocks at 47, and fuel tank at 46.

- d. Which parts are being replaced most because of mechanical failure or accident, like a flat tire or rock through the windshield?

i.

```
mysql> SELECT Repair, Reason, COUNT(*) AS TotalCount
-> FROM PartsMaintenance
-> WHERE Reason LIKE '%mechanical%'
-> OR Reason LIKE '%accident%'
-> OR Reason LIKE '%flat%'
-> OR Reason LIKE '%rock%'
-> OR Reason LIKE '%crack%'
-> OR Reason LIKE '%dent%'
-> GROUP BY Repair, Reason
-> ORDER BY Repair, TotalCount DESC;
```

Repair	Reason	TotalCount
Tire repair	Flat- reparable	74
Tire replacement	Flat- hole not reparable	66
Windshield replacement	Crack	63

```
3 rows in set (0.00 sec)

mysql> █
```

This screenshot shows that the parts being replaced most due to mechanical failures or accidents are tire repair = 74, tire replacement = 66, and windshield replacement = 63.

2. **Write a brief summary of your analysis** that takes the information from Step 1 and presents it in a way that nontechnical stakeholders can understand.
  - a. Based on the provided data, the Midwest region has the highest number of reported repairs at 260 instances, emphasizing a need for targeted maintenance efforts in that area. Nationwide, fuel tanks are the most frequently replaced part, totaling 95 instances, urging attention to this component. When examining the reasons for addressing corrosion or rust, the wheel arch precedes 55 replacements. Additionally, in cases of mechanical failures or accidents, tire repairs lead to 74 instances. This analysis informs non-technical stakeholders of critical areas for focus, suggesting a strategic approach that includes prioritizing maintenance in the Midwest, addressing fuel tank concerns, and proactively managing wheel arch issues related to rust. Efforts to standardize terminology in accident-related data would enhance the accuracy of our findings, promoting a more precise understanding for stakeholders.
3. **Outline the approach** that you took to conduct the analysis.
  - a. What queries did you use to identify trends or themes in the data?
    - i. I adopted a multifaceted approach, utilizing queries to extract meaningful insights. I employed GROUP BY statements to identify themes, facilitating data collation into partitions for better understanding. For instance, I created a new table that incorporated the state's region, merging it with maintenance records to represent repairs versus regions visually. Additionally, I utilized SELECT, FROM, COUNT, UNION,



GROUP BY, ORDER BY, and DESC commands to craft queries tailored to the analysis needs. These included organizing data in an organized fashion, retrieving specific numbers, combining results, and presenting outcomes in descending order for enhanced clarity.

- b. What are the benefits of using these queries to retrieve the information in a way that allows you to provide valuable information to your stakeholders?
  - i. Using queries, especially with GROUP BY statements, ensures a visually impactful data representation. This approach prevents the loss of meaning if queries were solely based on the State without considering the region. The benefits of employing these queries lie in obtaining data in an organized and visually impactful manner, allowing stakeholders to grasp the pertinent information quickly without unnecessary details. The ability to weed through data efficiently ensures ease of access to specific information, streamlining the presentation and enhancing its value.
4. **Explain how the functions in the analysis tool** allowed you to organize the data and retrieve records quickly.
  - a. The tools I used, like COUNT(), made organizing and finding information easy. For example, if we wanted to know how often something happened, I could quickly use COUNT() instead of manually counting each. The tools also helped in putting similar data together with commands like UNION. This made seeing trends faster and getting the specific information we needed without extra details. The analysis tools, like COUNT and UNION, made organizing and finding specific information quick and simple. The COUNT function saved time by counting things automatically, and UNION helped combine similar data for a faster overview. These tools made organizing and finding what we needed easy, making the information easy for everyone to understand.