# DAD 220 Analysis and Summary

1. **Analyze the data** you’ve been provided with to **identify themes**:
   1. Which parts are being replaced most? Fuel Tanks

A computer screen shot of a black screen

Description automatically generated

Code used:

SELECT repair AS PART\_REPAIR, COUNT(\*) AS NUMBER\_OF\_REPAIRS

FROM parts\_maintenance

GROUP BY PART\_REPAIR

ORDER BY NUMBER\_OF\_REPAIRS DESC;

* 1. Is there a region of the country that experiences more part failures and replacements than others?
     1. Identify region: Midwest

A computer screen with white text

Description automatically generated

Code used:

SELECT "SOUTHWEST" AS REGION, COUNT(\*) AS NUMBER\_OF\_REPAIRS

FROM parts\_maintenance

WHERE UPPER(state) IN ('AZ','NM','TX','OK')

UNION

SELECT "SOUTHEAST" AS REGION, COUNT(\*) AS NUMBER\_OF\_REPAIRS

FROM parts\_maintenance

WHERE UPPER(state) IN ('AR','LA','MS','AL','GA','FL','KY','TN','SC','NC','VA','WV','DE','MD')

UNION

SELECT "NORTHEAST" AS REGION, COUNT(\*) AS NUMBER\_OF\_REPAIRS

FROM parts\_maintenance

WHERE UPPER(state) IN ('PA','NJ','NY','CT','RI','MA','VT','ME','NH')

UNION

SELECT "WEST" AS REGION, COUNT(\*) AS NUMBER\_OF\_REPAIRS

FROM parts\_maintenance

WHERE UPPER(state) IN ('CA','OR','WA','ID','MT','CO','WY','NV','UT')

UNION

SELECT "MIDWEST" AS REGION, COUNT(\*) AS NUMBER\_OF\_REPAIRS

FROM parts\_maintenance

WHERE UPPER(state) IN ('KS','OK','MO','IA','ND','SD','NE','OH','IN','IL','WI','MI','MN')

ORDER BY NUMBER\_OF\_REPAIRS DESC;

* + 1. How might the fleet maintenance team use the information to update its maintenance schedule?
       1. The fleet maintenance team can use the information shown to decide where to allocate more time in their maintenance schedule. The numbers help show the team where maintenance is lacking and can be used to help improve those areas of focus.
  1. Which parts are being replaced most due to corrosion or rust? Wheel arch, fender, and rocker panel.

A screenshot of a computer program

Description automatically generated

Code used:

SELECT repair AS PART\_REPAIR, COUNT(\*) AS NUMBER\_OF\_REPAIRS

FROM parts\_maintenance

WHERE UPPER(reason) IN ('CORROSION','RUST')

GROUP BY PART\_REPAIR

ORDER BY NUMBER\_OF\_REPAIRS;

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

A computer screen shot of a black screen

Description automatically generated

Code used:

SELECT repair AS PART\_REPAIR, COUNT(\*) AS NUMBER\_OF\_REPAIRS

FROM parts\_maintenance

GROUP BY PART\_REPAIR;

1. **Write a brief summary of your analysis** thattakes the information from Step 1 and presents it in a way that nontechnical stakeholders can understand.
   1. In step one, we can break down the data given to help provide insight into where the biggest maintenance issues are occurring. For example, we can see that our focus needs to be in the Midwest region since that area has the highest number of part failures and replacements. From there, we can see which parts are being replaced the most and the reason for their replacements. Since snowfall occurs more often in the Midwest than other regions, more salt is used on the roads, and we can expect to see higher numbers for part failure due to corrosion and rust.
2. **Outline the approach** that you took to conduct the analysis.
   1. What queries did you use to identify trends or themes in the data?
      1. To identify trends or themes in the data multiple queries were used. The most common command used was the SELECT statement. This allows me to select rows in a table which can be used with the FROM clause to specify what rows I am selecting and from which table. To add to the SELECT statement I used the ORDER BY statement which can be used at the end of the SELECT statement to help sort the results of one or more columns selected. Using these commands helps narrow down our focus to provide specific results that are more organized and easier to locate in big sets of data.
   2. 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?
      1. Using these queries offers many benefits for retrieving information to provide valuable insight. Being able to customize the retrieval of the information allows me to specify exactly which columns and rows of data I want to retrieve to share with my stakeholders. Being able to sort and filter the results helps facilitate the organization of the data in the way it is presented clearly and easy to read. Properly using the right queries provides a clear and efficient way to retrieve data.
3. **Explain how the functions in the analysis tool** allowed you to organize the data and retrieve records quickly.
   1. Functions in SQL such as GROUP BY, JOIN, WHERE, DESC, COUNT, and many others help the user to efficiently organize and retrieve records quickly. These functions all play a crucial role in streamlining the data analysis process. When used properly, these functions allow companies access to data and records on the spot, which can also provide insights into trends and themes that enable the company to focus in more specific areas to improve.