# DAD 220 Analysis and Summary Template

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CREATE TABLE Parts\_Maintenance (vehicle\_id VARCHAR(20), state VARCHAR(2), repair VARCHAR(50),reason VARCHAR(50), year INT, make VARCHAR(20), body\_type VARCHAR(50));

* I created a table Parts\_Maintenance which is included in the database named

after my last name.

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LOAD DATA INFILE '/home/codio/workspace/FleetMaintenanceRecords.csv'

INTO TABLE Parts\_Maintenance FIELDS TERMINATED BY ',' LINES TERMINATED BY '\r\n';

* This SQL query loaded data from a CSV file into the "Parts\_Maintenance" table using the LOAD DATA INFILE statement.

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

* Which parts are being replaced most?

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

FROM Parts\_Maintenance

GROUP BY PART\_REPAIR

ORDER BY NUMBER\_OF\_REPAIRS DESC;

* Based on the MySQL query result, the parts that are being replaced most frequently is Fuel tank-95 replacements. Other top replacement parts are: Tire repair - 74 replacements, Tire replacements - 66 replacements, Windshield replacement - 63 replacements, and Battery replacement - 56 replacements.
  1. Is there a region of the country that experiences more part failures and replacements than others?
     1. Identify region:
* Midwest has the highest part failures of 260 repairs compared to other regions.

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

FROM Parts\_Maintenance

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

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

FROM Parts\_Maintenance

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

UNION

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

FROM Parts\_Maintenance

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

ORDER BY NUMBER\_OF\_REPAIRS DESC;

* This query is a SQL statement that retrieves the count of part failures and replacements for different regions of the country from the "Parts\_Maintenance" table. It uses the UNION operator to combine the results of multiple SELECT statements, each representing a specific region. Based on the query result, "MIDWEST" region experiences the most part failures and replacements, with a count of 260.
  + 1. How might the fleet maintenance team use the information to update its maintenance schedule?
* This is very helpful for the maintenance team as they can make sure that they have the proper staff and needed supplies in that region to accommodate the anticipated repairs going forward.
  1. Which parts are being replaced most due to corrosion or rust?

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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 DESC;

* Wheel Arch is being replaced the most followed by fender replacement and rocker panel.
  1. Which parts are being replaced most because of mechanical failure or accident, like a flat tire or rock through the windshield?

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

FROM Parts\_Maintenance

WHERE UPPER(reason) LIKE '%FLAT%' OR UPPER(reason) LIKE '%CRACK%'

GROUP BY PART\_REPAIR

ORDER BY NUMBER\_OF\_REPAIRS DESC;

* Tire repairs are the most parts being repaired with 74 listed.

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.

After analyzing the provided data, it becomes evident that the Midwest region leads in reported repairs, totaling 260 instances, while the Northeast follows closely with 208 reports. Furthermore, the most frequently encountered repair issue nationwide pertains to fuel tank problems, with a total of 95 repairs, followed by tire-related issues at 74 instances. In terms of repairs associated with rust or corrosion, the most prevalent concerns include wheel arch, fender replacement, and rocker panel repairs.

1. **Outline the approach** that you took to conduct the analysis.
   1. What queries did you use to identify trends or themes in the data?

To identify data trends, I employed a "union" operation to gather information from all regions. Additionally, I utilized the "LIKE" statement to pinpoint the specific repair types I sought within the dataset.

* 1. 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?

The advantages of utilizing these queries are substantial, as they streamline the process of locating specific data and determining its source. This efficiency greatly simplifies future planning for stakeholders, eliminating the need to wait for parts to arrive before making necessary repairs.

1. **Explain how the functions in the analysis tool** allowed you to organize the data and retrieve records quickly.

In Codio, the functions were simplified through the use of various SELECT statements, making it straightforward to retrieve the desired information. This included selecting the specific region under investigation and obtaining the count of repairs for a particular part.