# 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.

Text

Description automatically generated

Command: create database brian\_engel;

Creates the database for the project

A picture containing text

Description automatically generatedCommands: create table Parts\_Maintenance(Vehicle\_ID BIGINT, ST varchar(15), Repair varchar(50), Reason varchar(50), Year INT, Make varchar(50), Body\_Type varchar(50);

LOAD DATA INFILE ' ‘/home/codio/workspace/FleetMaintenanceRecords.csv' INTO TABLE discounts FIELDS TERMINATED BY ',' ENCLOSED BY '"' LINES TERMINATED BY '\r\n' IGNORE 1 ROWS;

Creates the table Parts\_Maintenance and imports the data from FleetMaintenanceRecords.csv into it.

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

         Description automatically generatedCommand: SELECT repair, COUNT(\*) FROM Parts\_Maintenance GROUP BY repair ORDER BY COUNT(\*) DESC;
      2. The part replaced most is the fuel tank. After that the tires are are the next 2 most damaged and the windshield is right after that. You could say that the tires are the most damaged if you add the replacements and repairs together.
   2. Is there a region of the country that experiences more part failures and replacements than others?
   3. Text

      Description automatically generatedNote: I created another table named regions with columns state and region in order to do inner joins and pull up regions instead of individual states
   4. Command: SELECT regions.region, COUNT(\*) FROM Parts\_Maintenance INNER JOIN regions ON regions.state = Parts\_Maintenance.ST GROUP BY regions.region ORDER BY COUNT(\*) DESC;
      1. Identify region:
         1. The midwest needs more repairs than the rest of the country.
      2. How might the fleet maintenance team use the information to update its maintenance schedule?
         1. They should probably schedule more preventative maintenance in the midwest to keep the vehicles on the road.
   5. Which parts are being replaced most due to corrosion or rust?
      1. Graphical user interface, text

         Description automatically generated with medium confidenceCommand: SELECT repair, reason, COUNT(\*) FROM Parts\_Maintenance WHERE reason = ’Rust’ or reason = ’Corrosion’ GROUP BY repair ORDER BY COUNT(\*) DESC;
      2. The parts being replaced the most for rust and corrosion are the wheel arch, fender, rocker panel, and brake line.
   6. Which parts are being replaced most because of mechanical failure or accident, like a flat tire or rock through the windshield?
      1. Text

         Description automatically generatedCommand: SELECT repair, reason, COUNT(\*) FROM Parts\_Maintenance WHERE reason != ’Rust’ or reason != ’Corrosion’ GROUP BY repair ORDER BY COUNT(\*) DESC;
      2. The top four mechanical failures are holes in the fuel tank, tire replacement and repair, and windshield replacement.
2. **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. It appears that the most common repairs come from mechanical issues most likely from running over something on the road. This would explain the hole in the fuel tank and flat tires. The next highest one (cracked windshield) is most likely from rocks kicking up off the road. The only real solution to these is to slow down. As for the breakdown on the actual regions more information is required. The Midwest has more repairs than any other region, but if there are more deliveries or the average milage is higher than it might be on par for the rest of the country.
3. **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. SELECT repair, COUNT(\*) FROM Parts\_Maintenance GROUP BY repair ORDER BY COUNT(\*) DESC;
      2. Gives the repair and how many times it shows up in the database.
      3. SELECT regions.region, COUNT(\*) FROM Parts\_Maintenance INNER JOIN regions ON regions.state = Parts\_Maintenance.ST GROUP BY regions.region ORDER BY COUNT(\*) DESC;
      4. Joins state to a region and shows how many repairs are in each region.
      5. SELECT repair, reason, COUNT(\*) FROM Parts\_Maintenance WHERE reason = ’Rust’ or reason = ’Corrosion’ GROUP BY repair ORDER BY COUNT(\*) DESC;
      6. Shows the repair and the cause if it was rust or corrosion and the amount of times it was repaired.
      7. SELECT repair, reason, COUNT(\*) FROM Parts\_Maintenance WHERE reason != ’Rust’ or reason != ’Corrosion’ GROUP BY repair ORDER BY COUNT(\*) DESC;
      8. Shows the repair and the cause if it was not rust or corrosion and the amount of times it was repaired.
   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. The benefits of using queries to retrieve information are that you don’t have to manually search through thousands of lines of information, which would be next to impossible and very easy to mess up.
4. **Explain how the functions in the analysis tool** allowed you to organize the data and retrieve records quickly.
   1. The functions in MYSQL, namely the COUNT() function, make it extremely easy to organize data by ordering it by that particular line. Also without it even if you queried everything perfectly you would still have to count it all which can be very problematic with anything but very small lists.