# DAD 220 Module Five Activity Template

Complete these steps as you work through the directions for this activity. Refer to the guidelines and rubric for help with how to complete these steps. Rename this template by adding your last name to the file name. Replace the bracketed text in the template with your responses and supporting screenshots as you complete the activity. Size each screenshot and its explanation to fit approximately one-quarter of the page. Review the Template Screenshot Example linked in the guidelines and rubric for this assignment to see how screenshots for your assignment should look. Submit the completed template for grading and feedback.

1. **Analyze the data** provided in FleetMaintenanceRecords **to** **identify themes**.
   1. Review part-replacement frequencies and types. Then create a hypothesis that the fleet management team can use to better handle maintenance.
      1. Create a table called Parts Maintenance. Put this table in the database named after yourself.
      2. Load the data set from the ‘/home/codio/workspace’ path and run queries to find the results. You should use the following line terminators when importing: \n.
      3. Answer the following questions and provide supporting screenshots.
         1. Which parts are being replaced most often?

‘Fuel tank’ is the most replaced part

A computer screen shot of a program

Description automatically generated

* + - 1. Which region or regions of the country experience more part failures and replacements than others?
         1. Identify the region or regions with more reasons for the replacement of parts.
         2. Use the Region Definitions sheet to identify states in each region. Where is AK and HI in the regions list? They should be in WEST region! These were added to correct the list of regions.

A screenshot of a computer program

Description automatically generated

* + - * 1. How might the fleet maintenance team use the information to update its maintenance schedule?

A screen shot of a computer

Description automatically generated

Increase maintenance and spare parts warehousing in the Midwest and Eastern Regions

* + - 1. Which parts are being replaced most often due to corrosion or rust?

A computer screen shot of a black screen

Description automatically generated

Wheel Arch, Fender and rocker Panels are the most common items being replaced, all for rust.

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

Tires, Windshields and batteries are the most often replaced items.

A computer screen shot of a black screen

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1. **Write a** brief **summary of** your **analysis** thattakes the information from step one and presents it in a way that nontechnical stakeholders can understand. Write your response in paragraph form.

The data analysis shows that there is a meaningfully higher percentages of repairs in the midwest, northeast and south east compared to regions of west and south west. Corrosion is a possible cause, with corrosion/rust contributing to high replacement of items such as Wheel arch, Fenders, and rocker panels.

For non corrosion related repairs, accidents are a major contributor with tire replacements and repairs being the top service events, followed by windshield replacements and battery replacements.

From the accidents, it would be recommended to have an increased stock readiness for tires, windshields and batteries in the areas noted with higher service calls.

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?

Querries were ran to look at regional information to identify if locations are a contributing factor, in this case 3/5 regions were significantly higher than the remaining two regions.

Additional querries were ran to look for trends, these included looking for environmental aging effects such as rust or corrosion. This can highlight a design flaw that would need to be engineering resolution.

Finally, querries were ran to look at ‘accident’ type events such as dead batteries, tire punctures, broken windshields, dents, and similar. These are localized events that can be expected to be handled at all locations, and data can be used to identify appropriate stock volumes for the local repair depots.

* 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?

By consolidating the information into trends, demographic regions, and similar data sets, it allows a fast summary view of the high value targets that can be addressed and applied to targeted locations if applicable.

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

Using the analysis tool, combinatorial and selective logic allowed the tool to create summary data in a tabular format that is easily understood, and creates a repeatable search command that can be used to refresh the data on-demand or in periodic updates without the need to hand analyze the data each time.