

Bright Motors Car Sales Analysis (BRIGHTLEARN)

Purpose: Business Insights for a New Head of Sales using Historical Car Sales Data from Bright Motors

1. INTRODUCTION & INSTRUCTIONS

1.1 INTRODUCTION

You have been provided with a dataset titled “**Bright Car Sales**”, which captures daily transactional and pricing information for vehicles sold by Bright Motors.

Bright Motors has recently appointed a **new Head of Sales**, whose mission is to expand the dealership network, improve sales performance, and optimize inventory. Your role, as a **Junior Data Analyst**, is to extract actionable insights from the historical car sales data and prepare a presentation that will help guide future sales and marketing strategies.

2. OBJECTIVE

Use your data analytics, SQL, and data visualization skills to help Bright Motors understand:

- Which car makes and models generate the most revenue
 - The relationship between price, mileage, and year of manufacture
 - Which regions or locations have the highest sales volumes
 - Emerging trends in customer purchasing preferences
 - Recommendations to increase dealership profitability and efficiency
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3. TOOLS ALLOWED

You may use any of the following tools (or equivalents):

Coding / SQL Platforms:

- Snowflake

- Microsoft SQL Server
- Databricks
- Google BigQuery
- MySQL Workbench

Data Visualization:

- Microsoft Excel
- Power BI
- Google Sheets
- Google Looker Studio

Presentation / Reporting:

- Microsoft PowerPoint
- Canva

Project Planning:

- Miro
- Figma

4. TASKS (Detailed)

Task 1 — Planning & Architecture (Miro or equivalent)

Create a Miro board (or any whiteboard tool) that outlines:

1. **Data Flow / Architecture Diagram** showing:
 - **Source:** car sales dataset (CSV/Excel file)
 - **ETL Pipeline:** data cleaning (e.g., removing duplicates, handling missing values, currency formatting)
 - **Storage:** Snowflake or chosen SQL database
 - **Analysis Layer:** SQL and visualization tools (Excel / Power BI)
 - **Presentation Layer:** PowerPoint / Canva
2. **Key Insights to Deliver:**
 - Revenue by car make and model
 - Sales distribution by year and fuel type
 - Regional performance (city or province)

- Average selling price trends over time

3. Key Calculations:

- $\text{Total_Revenue} = \text{Selling_Price} * \text{Units_Sold}$
 - $\text{Profit_Margin} = (\text{Selling_Price} - \text{Cost_Price}) / \text{Selling_Price} * 100$
 - Grouping by Make, Model, Year, Region, and Fuel_Type
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Task 2 — Data Processing in Snowflake (or chosen SQL platform)

Steps:

1. Convert the provided Excel file into a CSV file.
 2. Load the CSV file into Snowflake (or equivalent).
 3. Perform data cleaning and transformations:
 - Convert text-based prices (e.g., '15,000') to numeric format.
 - Create a new column `total_revenue = selling_price * units_sold`.
 - Calculate `profit_margin` and categorize cars by performance tiers (e.g., *High Margin*, *Medium Margin*, *Low Margin*).
 - Group transactions by time periods (month, quarter, or year).
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Task 3 — Data Analysis & Visualization (Excel / Power BI / Google Looker Studio)

- After transforming your data in Snowflake, export the processed dataset to Excel or connect Power BI directly to your database.
 - Use slicers for region, fuel type, and year to allow interactivity.
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Task 4 — Presentation to the Head of Sales

- Create a professional presentation that summarizes findings and recommendations.
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5. SUBMISSION GUIDELINES

Required files:

- Miro Plan / Architecture Diagram (image or link)
 - Processed Dataset Spreadsheet (car_sales_processed.xlsx)
 - Presentation File (BrightMotors_Presentation.pdf)
 - SQL Script (car_sales_queries.sql)
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6. TIPS & NOTES

- Ensure all prices are converted to numeric formats (remove commas or currency symbols).
 - Handle missing or inconsistent values carefully.
 - Use clear and consistent column names in Snowflake.
 - Include short insight notes in your dashboards.
 - Your presentation should be visually appealing and concise.
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End of Case Study