**Car Sales Data Project Parameters and Formulas**

**Background**: Our company is a car dealership that sells various car models. To effectively track and analyze our sales performance, we need a comprehensive Car Sales Dashboard.

**Objective**: The objective of this project is to design and develop a dynamic and interactive Car Sales Dashboard using Power BI. The dashboard will visualize critical KPIs related to our car sales, helping us understand our sales performance over time and make data-driven decisions.

**Problem Statement 1: KPI’s Requirement**

The dashboard should provide real-time insights into key performance indicators (KPIs) related to our sales data. This will enable us to make informed decisions, monitor our progress, and identify trends and opportunities for growth.

1. **Sales** **Overview**:
   * Year-to-Date (YTD) Total Sales
   * Month-to-Date (MTD) Total Sales
   * Year-over-Year (YOY) Growth in Total Sales
   * Difference between YTD Sales and Previous Year-to-Date (PTYD) Sales
2. **Average Price Analysis:**
   * YTD Average Price
   * MTD Average Price
   * YOY Growth in Average Price
   * Difference between YTD Average Price and PTYD Average Price
3. **Cars Sold Metrics:**
   * YTD Cars Sold
   * MTD Cars Sold
   * YOY Growth in Cars Sold
   * Difference between YTD Cars Sold and PTYD Cars Sold

**Problem Statement 2: Charts Requirement**

1. **YTD Sales Weekly Trend:** Display a Line Chart illustrating the weekly trend of YTD sales. The X-axis should represent weeks, and the Y-axis should show the total sales amount.
2. **YTD Total Sales by Body Style:** Visualize the distribution of YTD total sales across different car body styles using a Pie Chart.
3. **YTD Total Sales by Color:** Present the contribution of various car colors to the YTD total sales through a Pie Chart.
4. **YTD Cars Sold by Dealer Region:** Showcase the YTD sales data based on different dealer regions using a Map Chart to visualize the sales distribution geographically.
5. **Company-Wide Sales Trend in Grid Form:** Provide a Tabular Grid that displays the sales trend for each company. The grid should showcase the company name along with their YTD sales figures.

**Details Grid Showing All Car Sales Information:** Create a Detailed Grid that presents all relevant information for each car sale, including car model, body style, color, sales amount, dealer region, date, etc.

**Steps Taken:**

**Software Used:** MS Office/Excel, Power BICar Sales Spreadsheetcontains 23,907 rows and 16 columns   
 Data Set: [Car Sales](file:///C:\Users\seven\Downloads\Car%20Sales.xlsx)  
1. **Clean the Data**  
 Transform Data (Opens Power Query Editor)  
 View>turn Column Distribution and Column Quality on  
 Check for Errors wanting 0% in all columns (Good to go in this case)  
 If there are errors, filter unwanted entries via Filter Dropdown  
 Check for spelling/syntax errors in fields via Filter Dropdown  
 Found DoubleA Overhead Camshaft in Engine column  
 Replaced Value with Double Overhead Camshaft via Replace Values option  
 Once Data is cleaned, Close & Apply (Power Query closes, Power BI’s data set updates)  
2. **Create Calendar Tables**  
 Create New Table (Calendar Table)  
 Calendar Table = CALENDAR(MIN(car\_data[Date]),MAX(car\_data[Date]))  
 New Column (Year)  
 Year = YEAR(‘Calendar Table’[Date])  
 New Column (Month)  
 Month = FORMAT(‘Calendar Table’[Date],”MMMM”)  
 New Column (Week)  
 Week = WEEKNUM(‘Calendar Table’[Date])  
 From Model View create 1 to \* Relationship ‘Calendar Table’[Date] to ‘car\_data’[Date]  
3. **Apply Background**  
 Image File: [Car Sales Background 1](../../Downloads/Car%20Sales%20Background%201.jpg)  
 Format>Canvas Background>Browse>Car Sales Background 1  
 Set Transparency to 0%  
 Format>Canvas Settings>Vertical Alignment>Middle  
4. **Create car\_data Measure**  
 Sales Overview (YTD Total Sales, MTD Total Sales, YOY Total Sales, PTYD Sales)  
 New Measure (YTD Total Sales)  
 YTD Total Sales = TOTALYTD(SUM(car\_data[Price ($)]),’Calendar Table’[Date])  
5. **Create Card Visualization**  
 Add YTD Total Sales to Fields box  
 Format>Size and Style>Background>Off  
 Format>Callout Value>Font>Segoe UI Semibold, Color>White, Font Size 25  
 Format>Category Label>Off  
 Format>Title>On>Text>YTD Total Sales>Font>Segoe UI, Color>White, Font Size 11,  
 … Horizontal Alignment>Center  
 Place in Left Half of Leftmost Small Rectangle of Background Template  
 Select YTD Total Sales from Data Tree>Measure Tools>Format>Currency, 1 Decimal

6. **Create car\_data Measure**  
 New Measure (PYTD Total Sales)  
 PYTD Total Sales =  
 CALCULATE(SUM(car\_data[Price ($)]), SAMEPERIODLASTYEAR(  
 ‘Calendar Table’[Date]))  
7. **Create car\_data Measure** New Measure (Sales Difference)  
 Sales Difference = [YTD Total Sales] – [PYTD Total Sales]  
8. **Create Card Visualization**  
 Add Sales Difference to Fields box  
 Click in YTD Total Sales Card>Format Painter (Home Tab)> Click in Sales Difference Card  
 Format>Title>Off  
 Select Sales Difference from Data Tree>Measure Tools>Format>Currency, 1 Decimal  
 Format>Callout Value>Font Size 11  
 Place in Up Center of Leftmost Small Rectangle of Background Template  
9. **Create car\_data Measure**  
 New Measure (Sales Diff Color)  
 Sales Diff Color = IF([Sales Difference])>0, “Green”,”Red”)  
 Format>Callout Value>fx  
 Format Style>Rules, What Field Should We Base This On?> Sales Diff Color  
 If value IS (from dropdown) Green (typed) then Color Box>More Colors>  
 Hex #00D211>OK  
 + New Rule  
 If value IS (from dropdown) Red (typed) then Color Box>More Colors>  
 Hex #F3303F>OK>OK  
10. **Create car\_data Measure**  
 New Measure (YoY Sales Growth)  
 YoY Sales Growth = {Sales Difference] / [PYTD Total Sales]  
11. **Click on Sales Difference Card**  
 Copy/Paste  
 Place Up Right of Leftmost Small Rectangle of Background Template  
 Select YoY Sales Growth from Data Tree>Measure Tools>Percentage  
12. **Create car\_data Measure**  
 New Measure (MTD Total Sales)  
 MTD Total Sales = TOTALMTD(SUM(car\_data[Price ($)]), ‘Calendar Table’ [Date])  
13. **Create Card Visualization**  
 Add MTD Total Sales to Fields box  
14. **Create car\_data Measure**  
 New Measure (MTD KPI)  
 MTD KPI = CONCATENATE(“MTD Total Sales : ”, FORMAT([MTD Total Sales] /   
 1000000, “$0.00”))  
 Remove MTD Total Sales from Fields, Add MTD KPI to Fields  
 Format>Callout Value>Font>Segoe UI, Font Size 10, Category Label>Off  
 Reduce size of Card to fit Low Center & Right of Leftmost Rectangle of Background  
 Template  
 Format>Size and Style>Background>Color>More Colors>Hex #80027E  
 Format>Callout Value>Color>White  
15. **Create car\_data Measure** New Measure (Avg Price)  
 Avg Price = SUM(car\_data[Price ($)]) / COUNT(car\_data[Car\_id])  
16. **Create car\_data Measure**  
 New Measure (YTD Avg Price)  
 YTD Avg Price = TOTALYTD([Avg Price], ‘Calendar Table’[Date])  
17. **Click on YTD Total Sales Card**  
 Copy/Paste  
 Place Left of Center Rectangle of Background Template  
 Remove YTD Total Sales, replace with YTD Avg Price  
 Select YTD Avg from Data Tree>Measure Tools>Format>Currency, 1 Decimal  
 Format>Title>Text>YTD Avg Price  
18. **Create car\_data Measure**  
 New Measure (PYTD Avg Price)  
 PYTD Avg Price = CALCULATE([Avg Price], SAMEPERIODLASTYEAR(  
 ‘Calendar Table’ [Date]))  
19. **Create car\_data Measure**  
 New Measure (Avg Price Diff)  
 Avg Price Diff = [YTD Avg Price] – [PYTD Avg Price]  
20. **Click on Sales Difference Card**  
 Copy/Paste  
 Place Up Center of Center Rectangle of Background Template  
 Remove Sales Difference, replace with Avg Price Diff  
 Select Avg Price Diff from Data Tree>Measure Tools>Format>Currency, 1 Decimal  
 Format>Callout Value>Display Units>Thousands  
21. **Create car\_data Measure**  
 New Measure(Avg Price Color)  
 Avg Price Color = IF([Avg Price Diff]>0, “Green”, “Red”)  
 Format>Callout Value>fx  
 Format Style>Rules, What Field Should We Base This On?> Avg Price Color  
 If value IS (from dropdown) Green (typed) then Color Box>More Colors>  
 Hex #00D211>OK  
 + New Rule  
 If value IS (from dropdown) Red (typed) then Color Box>More Colors>  
 Hex #F3303F>OK>OK – Color Settings should still be populated  
22. **Create car\_data Measure**  
 New Measure (YoY Avg Price Growth)  
 YoY Avg Price Growth = [Avg Price Diff] / [PYTD Avg Price]  
23. **Click on Avg Price Diff Card**  
 Copy/Paste  
 Place Upper Right of Center Rectangle of Background Template  
 Remove Avg Price Diff, replace with YoY Avg Price Growth  
 Format>Callout Value>Display Units>Auto  
 Select YoY Avg Price Growth from Data Tree>Measure Tools>Format>Percentage,  
 2 Decimal  
24. **Create car\_data Measure**  
 New Measure (MTD Avg Price)  
 MTD Avg Price = TOTALMTD([Avg Price], ‘Calendar Table’ [Date])  
25. **Create car\_data Measure**  
 New Measure (MTD Avg Price KPI)  
 MTD Avg Price KPI = CONCATENATE(“MTD Avg Price: “, FORMAT([MTD Avg Price] /  
 1000, “0.00K”))  
26. **Click on MTD KPI Card**  
 Copy/Paste  
 Place Card in Low Center & Right of the Center Rectangle of Background Template  
 Remove MTD KPI, replace with MTD Avg Price KPI  
27. **Create car\_data Measure**  
 New Measure (YTD Cars Sold)  
 YTD Cars Sold = TOTALYTD(COUNT(car\_data[Car\_id]), ‘Calendar Table’[Date])  
28. **Click on YTD Avg Price Card**  
 Copy/Paste  
 Place Card on Left Side of the Right Rectangle of Background Template  
 Remove YTD Avg Price, replace with YTD Cars Sold  
 Format>Size and Style>Title>YTD Cars Sold  
 Format>Callout Value>Display Units>None  
 Click on YTD Cars Sold in Data Tree>Measure Tools>Whole Number with comma  
29. **Create car\_data Measure**  
 New Measure (PYTD Cars Sold)  
 PYTD Cars Sold = CALCULATE(COUNT(car\_data[Car\_id]), SAMEPERIODLASTYEAR(  
 ‘Calendar Table’[Date])  
30. **Create car\_data Measure**  
 New Measure (Cars Sold Diff)  
 Cars Sold Diff = [YTD Cars Sold] – [PYTD Cars Sold]  
31. **Click on Avg Price Diff Card**  
 Copy/Paste  
 Place Card on Up Center Side of the Right Rectangle of the Background Template  
 Remove Avg Price Diff, replace with Cars Sold Diff  
 Click on Cars Sold Diff in Data Tree>Measure Tools>Decimal Number, Decimal 2  
32. **Create car\_data Measure**  
 New Measure (Cars Sold Color)  
 Cars Sold Color = IF(car\_data[Cars Sold Diff]>0,”Green”,”Red”)  
 Format>Callout Value>fx  
 Format Style>Rules, What Field Should We Base This On?> Cars Sold Color  
 If value IS (from dropdown) Green (typed) then Color Box>More Colors>  
 Hex #00D211>OK  
 + New Rule  
 If value IS (from dropdown) Red (typed) then Color Box>More Colors>  
 Hex #F3303F>OK>OK – Color Settings should still be populated  
33. **Create car\_data Measure**  
 New Measure (YoY Car Sold Growth)  
 YoY Car Sold Growth = [Cars Sold Diff] / [YTD Cars Sold]  
34. **Click on Cars Sold Diff Card**  
 Copy/Paste  
 Place Card on Up Right Side of the Right Rectangle of the Background Template  
 Remove Cars Sold Diff, replace with YoY Car Sold Growth  
 Click on YoY Car Sold Diff in Data Tree>Measure Tools>Percentage, Decimal 2  
35. **Create car\_data Measure**  
 New Measure (MTD Cars Sold)  
 MTD Cars Sold = TOTALMTD(COUNT(car\_data[Car\_id]), ‘Calendar Table’[Date])  
36. **Create car\_data Measure**  
 New Measure (MTD Cars Sold KPI)  
 MTD Cars Sold KPI = CONCATENATE(“MTD Cars Sold: “, FORMAT(  
 [MTD Cars Sold] / 1000, “$0.00K”))  
37. **Click on MTD Average Price Card**  
 Copy/Paste  
 Place Card on Lower and Right Side of Right Rectangle of the Background Template  
 Remove MTD Average Price, replace with MTD Cars Sold  
38. **Create Area Chart Visualization**  
 Place in Center Left Rectangle of the Background Template  
 Add Week to X Axis  
 Add Price ($) to Y Axis  
 Filters>Add Year>Filter Type>Basic Filtering>2023  
 Format>Size and Style>Background>Off  
 Format>Title>Text>YTD Sales Weekly Trend>Text Color>White>Font 11  
 Format>X Axis>Range>Maximum 54  
 Format>Gridlines>Horizontal>Off, Vertical>Off  
 Format>Markers>On  
39. **Create car\_data Measure**  
 New Measure (Total Sales)  
 Total Sales = SUM(car\_data[Price ($)])  
40. **Create car\_data Measure**  
 New Measure (Max Point)  
 Max Point = IF(MAXX(ALLSELECTED(‘Calendar Table’[Week]), [Total Sales]) =  
 [Total Sales], MAXX(ALLSELECTED(‘Calendar Table’[Week]), [Total Sales]), BLANK ())  
 Add Max Point to Y Axis  
 Format>Legend>Off  
 Format>Markers>Apply Setting To>Max Point  
 Colors>Yellow  
 Format>Data Labels>On  
41. **Create Donut Chart Visualization**  
 Place in Center Square of the Background Template  
 Add Body Style to Legend  
 Add YTD Total Sales to Values  
 Click into YTD Sales Weekly Trend Line Graph>Format Painter>Click into Donut Chart  
 Format>Data Labels>Off  
 Format>Legend>On  
 Format>Legend>Text>Color>White  
42. **Click into Donut Chart**  
 Copy/Paste  
 Place is Right Center Square of the Background Template  
 Remove Body Style from Legend, replace with Color  
 Format>Slices>Pale White-White, Black-Black, Red-Red  
43. **Create Map Chart Visualization**  
 Place in Lower Left Square of the Background Template  
 Add Dealer\_Region to Location  
 Add YTD Cars\_Sold to Bubble Size  
 Click into YTD Sales Weekly Trend Line Chart>Format Painter>Click into Map  
 Format>Category Labels>On  
 Format>Style>Style-Dark  
 Format>Bubbles>Range Scaling- Data Range, Size 12  
44. **Create Card Visualization**  
 Place in Lower Right Rectangle of the Background Template  
 Add Company, YTD Avg Price, YTD Cars Sold, YTD Total Sales, YTD Total Sales>  
 Show Value As>Percent of Grand Total  
 Format>Style Presets>Minimal  
 Format>Grid>Horizontal Gridlines>Off  
 Format>Values>Background Color>Black, Alternate Background Color>Black  
 Format>Column Headers>Text>Text Color-White, Background Color, Black  
 Format>Totals>Text>Text Color-White, Background Color, Black  
 Format>Background>Off  
 Format>Totals>Off  
 Build>YTD Total Cars Sold>Conditional Formatting>Data Bars  
 Positive Bar>Red  
 Build>%GT YTD Total Sales>Conditional Formatting>Data Bars  
 Positive Bar> Light Blue  
 Format>Title>On>Text- Company Wide Sales Trend  
 Format>Text Color- White, Font 11  
45. **Insert Text Box**  
 Insert Tab>Text Box>CAR SALES DASHBOARD | OVERVIEW  
 Font>18, Bold, Font Color>White  
 Format>Size and Style>Background>Off  
 Place in Top Most Rectangle of the Background Template  
46. **Add Slicer**  
 Place in Left Vertical Rectangle of the Background Template  
 Format>Slicer Settings>Style>Dropdown, Selection>Show “Select All”>On  
 Format>Size and Style>Background>Blue  
 Format>Text>Font Color>Black, Values>Font Color>Black  
47. **Click into Slicer**  
 Copy/Paste  
 Place under Body Style Slicer  
 Remove Body Style from Data, replace with Dealer\_Region  
48. **Click into Slicer**  
 Copy/Paste  
 Place under Dealer\_Region Slicer  
 Remove Dealer\_Region from Data, replace with Transmission  
49. **Click into Slicer**  
 Copy/Paste  
 Place under Transmission Slicer  
 Remove Transmission from Data, replace with Engine  
50. **Insert Text Box**  
 Insert Tab>Text Box>Filters>Bold, Font 12, Font Color>White  
 Format>Background>Off  
 Place above Slicers  
51. **Duplicate Dashboard into new Page**  
 Name Current Page>Overview  
 Right click Overview>Duplicate  
 Rename Duplicate of Overview>Details  
 Rename Title at top of page to CAR SALES DASHBOARD | DETAILS  
 Delete the five charts (leave the slicers and YTD Sales, Avg Price and Cars Sold)  
 Format>Canvas Background>Image>Delete Car Sales Background 1>Browse>  
 Image File> [Car Sales Background 2](../../Downloads/Car%20Sales%20Background%202.jpg)  
52. **Create Card Visualization**  
 Add Car\_id,Date,Customer\_Name,Dealer\_Name,Company,Color,Model,Total Sales to  
 Columns  
 Click on Total Sales in Data Tree>Measure Tools>Format>Currency  
 Format>Style Presets>Style>Minimal  
 Format>Values>Text Color/Alternate Text Color>White, Background Color/Alternate  
 Background Color>Black  
 Format>Size and Style>Background>Off  
 Right click Total Sales>Conditional Formatting>Data Bars>Color>Pink  
53. Page Navigation Buttons  
 Insert Tab>Buttons>Navigator>Page Navigator  
 Format>Grid Layout>Orientation>Vertical