Power BI Final Dashboard — Car Sales Dashboard (answers & ready-to-use recipes)

Below I've translated your requirements into practical steps, Power Query snippets, DAX measures, and visualization / interaction recommendations you can drop into Power BI Desktop. Use these directly (rename tables/columns if your dataset names differ).

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1. Power Query — cleaning & calculated columns

Remove bad rows

- Filter out rows with missing Make, Model or SellingPrice.

#"Filtered Rows" = Table.SelectRows(Source, each ([make] <> null and [model] <> null and [sellingprice] <> null))

Change types

- saledate → Date
- sellingprice, mmr, odometer → Decimal Number
- VIN → Text

Create Sale Month / Year / Quarter

= Table.AddColumn(#"Changed Type", "Sale Year", each Date.Year([saledate]), Int64.Type)

= Table.AddColumn(#"Added Year", "Sale Month", each Date.Month([saledate]), Int64.Type)

= Table.AddColumn(#"Added Month", "MonthName", each Date.ToText([saledate],"MMMM"))

= Table.AddColumn(#"Added MonthName", "Sale Quarter", each "Q" & Number.ToText(Date.QuarterOfYear([saledate])))

Price Category (Low / Medium / High) — example by percentile

// after loading, compute percentiles in PQ or use DAX. Simple M bucket:

= Table.AddColumn(#"PrevStep","Price Category", each if [sellingprice] < 10000 then "Low" else if [sellingprice] < 25000 then "Medium" else "High")

(Adjust thresholds to business rules or compute quantiles.)

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2. Data model recommendations

- Build a star schema: Fact table Sales (your CSV), lookup tables: Date, Make, Model, State, Seller, BodyType, Transmission.
- Date[Date] (1) -> Sales[saledate] (many) — mark Date as date table.
- Avoid bi-directional relationships except where necessary for cross-filtering.

- Create a small MMR lookup if MMR is per Make/Model/Year — or include MMR in your fact.

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3. Core KPIs — DAX measures

Replace Sales with your table name.

Total Sales Revenue

```
Total Sales Revenue = SUM(Sales[sellingprice])
```

Total Cars Sold (COUNT of VIN)

```
Total Cars Sold = DISTINCTCOUNT(Sales[VIN])
```

Average Selling Price

```
Avg Selling Price = AVERAGE(Sales[sellingprice])
```

Average Car Condition

```
Avg Condition = AVERAGE(Sales[condition])  // or [car_condition]
```

Average Odometer Reading

```
Avg Odometer = AVERAGE(Sales[odometer])
```

% Difference: Selling Price vs MMR

```
Price vs MMR % =
AVERAGEX(
  Sales,
  DIVIDE(Sales[sellingprice] - Sales[mmr], Sales[mmr], 0)
)
```

- Format as Percentage.

% Above MMR (count of cars sold above MMR / total)

```
Count Above MMR = CALCULATE(COUNTROWS(Sales), Sales[sellingprice] > Sales[mmr])
Pct Above MMR = DIVIDE([Count Above MMR], [Total Cars Sold], 0)
```

Avg Selling Price by Make (measure — works in visuals with Make on axis)

```
Avg Selling Price by Make = CALCULATE([Avg Selling Price], ALLEXCEPT(Sales, Sales[Make]))
```

Top 5 Car Brands by Sales Volume (use in a visual — Top N filter)
No measure needed; use bar chart visual with Make and Total Cars Sold, then apply Top N filter (Top 5 by Total Cars Sold). Alternatively:

Sales Volume by Make = CALCULATE([Total Cars Sold], Sales[Make])

Avg Condition by Body Type

Avg Condition by Body = AVERAGE(Sales[condition])

(Place BodyType on visual axis.)

Sales by Transmission Type

- Use Total Sales Revenue or Total Cars Sold with Transmission as axis.

Price Deviation from MMR (Variance / Avg Deviation)

- Absolute / signed:

Avg Price Deviation = AVERAGEX(Sales, Sales[sellingprice] - Sales[mmr])

Avg Price Deviation % = AVERAGEX(Sales, DIVIDE(Sales[sellingprice] - Sales[mmr], Sales[mmr], 0))

- Variance (spread) — use standard deviation:

Price Deviation StdDev = STDEVX.P(Sales, Sales[sellingprice] - Sales[mmr])

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4. Time Intelligence measures & fields

Date table is required. Example measures:

Monthly Sales Trend

Monthly Sales =

CALCULATE(

  [Total Sales Revenue],

  DATESMTD('Date'[Date])

)

For a line chart by Date[Month], use Total Sales Revenue with Date[Month] on axis.

YTD / MTD / QoQ

Sales YTD = TOTALYTD([Total Sales Revenue], 'Date'[Date])

Sales MTD = TOTALMTD([Total Sales Revenue], 'Date'[Date])

Extract Year/Month/Quarter — done in Power Query (see above) or DAX calculated columns:

Sale Year = YEAR(Sales[saledate])

Sale MonthNumber = MONTH(Sales[saledate])

Sale MonthName = FORMAT(Sales[saledate],"MMMM")

Sale Quarter = "Q" & FORMAT(Sales[saledate],"Q")

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5. Advanced DAX & Ranking / Classification

What-If Parameter for MMR margin (±%)

- In Modeling > New Parameter: MMR Margin from -0.2 to 0.2 step 0.01 default 0.05
- The parameter creates a table and a slicer. Use measure:

Adjusted MMR = SUMX(Sales, Sales[mmr] * (1 + SELECTEDVALUE('MMR Margin'[MMR Margin Value], 0)))

DAX Classification: Fair / Overpriced / Underpriced

Price Classification =

VAR AdjMMR = Sales[mmr] * (1 + SELECTEDVALUE('MMR Margin'[MMR Margin Value], 0))

VAR DiffPct = DIVIDE(Sales[sellingprice] - AdjMMR, AdjMMR, 0)

RETURN

SWITCH(

  TRUE(),

  DiffPct > 0.05, "Overpriced", // > +5%

  DiffPct < -0.05, "Underpriced", // < -5%

  "Fair"

)

(Adjust thresholds or tie them to What-If parameter slices.)

RANKX to rank best-selling models

- Rank by units sold:

Model Sales Rank =

RANKX(

  ALLSELECTED(Sales[Model]),

```
  CALCULATE([Total Cars Sold]),
  ,
  DESC,
  DENSE
)
```

RANKX for price within Make

```
Price Rank within Make =
RANKX(
  FILTER(ALL(Sales), Sales[Make] = EARLIER(Sales[Make])),
  Sales[sellingprice],
  ,
  DESC,
  DENSE
)
```

(Consider making this a calculated column if you need row-level rank.)

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6. Visuals & UX mapping (what to put where)

Page: Executive Summary

- KPI tiles: Total Sales Revenue, Total Cars Sold, Avg Selling Price, Pct Above MMR.
- Line chart: Monthly Sales Trend (Date axis).
- Card + small trend sparkline for Avg Price Deviation %.

Page: Brand & Model Insights

- Bar chart: Top Brands by Sales Volume (Top N filter).
- Matrix: Make > Model with Total Cars Sold and Avg Selling Price.
- Decomposition Tree: Make > Model > Year.

Page: Price vs MMR

- Scatter plot: sellingprice (Y) vs mmr (X) with color by Price Classification and size by odometer.
- Histogram / density: Price Deviation %.

Page: Vehicle Condition & Mileage

- Box plot or violin (if custom visual) of odometer by body type.
- Bar: Avg Condition by Body Type.

Page: Geographic

- Map: Sales by State (use Filled Map or Bubble Map).
- Treemap: Seller-wise revenue.

Interactivity

- Slicers: Make, Model, Year, Body, Transmission, Color, State, Seller.
- Sync slicers across pages; provide a Reset button (Bookmark).
- Tooltips: create report page tooltips showing VIN, condition, odometer, mmr, sellingprice.

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7. Filters, bookmarks & drillthrough

- **Drillthrough**: Create a drillthrough page Model Detail and enable fields Make, Model. Users right-click a brand to drill to model detail.
- **Bookmarks**: Save views: Brand View, Model View, Price Analysis.
- **Buttons**: Add “Back” and “Reset Filters” (bookmark action).

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8. Performance tips

- Reduce cardinality: group rare Model values into “Other”.
- Use aggregations for very large datasets.
- Prefer measures over calculated columns unless you need row-level values.
- Remove unused columns before import.

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9. Export & Sharing

- Create PDF / PowerPoint exports via File > Export.
- Publish to Power BI Service, create an App, configure scheduled refresh and permissions.
- Configure mobile view for key KPIs.

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10. Bonus: Example measure for "% Above MMR Price (by Make)"

Pct Above MMR by Make =

VAR Above = CALCULATE(COUNTROWS(Sales), Sales[sellingprice] > Sales[mmr])

VAR Total = CALCULATE(DISTINCTCOUNT(Sales[VIN]))

RETURN DIVIDE(Above, Total, 0)

Place Make on the visual axis to see per-make percentages.