🔧 STEP 1: Data Preparation

1.1 Load Data

- Import car_prices.csv into Power BI.
- Inspect the columns: make, model, year, body, color, state, seller, sellingprice, mmr, saledate, odometer, condition, transmission, vin.

1.2 Clean Data

- Remove rows where:
    - make or model or sellingprice is null.

🧮 STEP 2: Data Transformation & Calculated Columns

2.1 Create Calculated Columns:

Go to *Data View* → *New Column* and add:

DAX

КопироватьРедактировать

```
SaleMonth = FORMAT('car_prices'[saledate], "MMMM")

SaleYear = YEAR('car_prices'[saledate])

Quarter = "Q" & FORMAT('car_prices'[saledate], "Q")
```

DAX

КопироватьРедактировать

```
PriceCategory =

SWITCH(

    TRUE(),

    'car_prices'[sellingprice] < 10000, "Low",

    'car_prices'[sellingprice] < 20000, "Medium",

    "High"
```

)

DAX

КопироватьРедактировать

PriceVsMMR =

DIVIDE('car_prices'[sellingprice] - 'car_prices'[mmr], 'car_prices'[mmr])

DAX

КопироватьРедактировать

PriceStatus =

SWITCH(

    TRUE(),

    'car_prices'[sellingprice] > 'car_prices'[mmr]*1.05, "Overpriced",

    'car_prices'[sellingprice] < 'car_prices'[mmr]*0.95, "Underpriced",

    "Fair"

)

📊 STEP 3: DAX Measures (KPIs & Insights)

3.1 KPI Tiles

DAX

КопироватьРедактировать

Total Sales Revenue = SUM('car_prices'[sellingprice])

Total Cars Sold = COUNT('car_prices'[vin])

Average Selling Price = AVERAGE('car_prices'[sellingprice])

Average Condition = AVERAGE('car_prices'[condition])

Average Odometer = AVERAGE('car_prices'[odometer])

3.2 Advanced KPIs

DAX

КопироватьРедактировать

```
% Difference Selling vs MMR =
AVERAGEX('car_prices', DIVIDE('car_prices'[sellingprice] - 'car_prices'[mmr], 'car_prices'[mmr]))


% Above MMR =
DIVIDE(
    COUNTROWS(FILTER('car_prices', 'car_prices'[sellingprice] > 'car_prices'[mmr])),
    COUNTROWS('car_prices')
)
```

DAX

КопироватьРедактировать

```
Avg Selling Price by Make =
AVERAGEX(VALUES('car_prices'[make]), [Average Selling Price])
```

DAX

КопироватьРедактировать

```
Top5Brands =
TOPN(5, SUMMARIZE('car_prices', 'car_prices'[make], "CarsSold", COUNT('car_prices'[vin])), [CarsSold], DESC)
```

DAX

КопироватьРедактировать

```
Price Variance from MMR = VAR diff = 'car_prices'[sellingprice] - 'car_prices'[mmr]
RETURN diff
```

🗺️ STEP 4: Create Date Table for Time Intelligence

DAX

КопироватьРедактировать

```
DateTable = CALENDAR(MIN('car_prices'[saledate]), MAX('car_prices'[saledate]))
```

Add columns: Year, Month, Quarter, etc.

Then create a relationship:

- DateTable[Date] → car_prices[saledate]

🎨 STEP 5: Dashboard Design & Visuals

Use these visuals:

Visual Type	Content
Line Chart	Monthly/Quarterly Sales Trend
Bar Chart	Top Brands by Sales Volume
Pie/Donut	Body Type or Transmission Distribution
KPI Cards	Revenue, Cars Sold, Avg Price, etc.
Map	Sales by State
Matrix Table	Make vs Model Summary
Decomposition Tree	Make → Model → Year
Treemap	Seller-wise Revenue

🎛️ STEP 6: Add Interactivity

- Slicers: Make, Model, Year, Body, Transmission, Color, Seller, State
- Drill-through from Brand → Model Page

- Tooltips: Show condition, odometer, price status
- Enable cross-filtering between visuals

🚀 STEP 7: Bonus Features

What-If Parameter:

- Go to *Modeling > New Parameter*
- Create: MMR Margin % from -20% to +20%
- Use in DAX for analysis or visuals

RankX:

DAX

КопироватьРедактировать

Model Rank = RANKX(ALL('car_prices'[model]), [Total Sales Revenue], , DESC)

🔒 STEP 8: Formatting and Sharing

- Set themes, titles, align font size/style
- Add:
    - Bookmarks (Brand View, Model View, etc.)
    - Page Navigation (if multiple report pages)
    - Tooltips for cards and visuals

✅ FINAL EXPORT

- Save as .pbix
- Optionally publish to Power BI Service
- Share with others using workspace or link