8bn

Total Sales Revenue

559K

Total Cars Sold

13,61K

Avg Selling Price

68,32K

Avg Odometer

30,67

Avg Car Condition

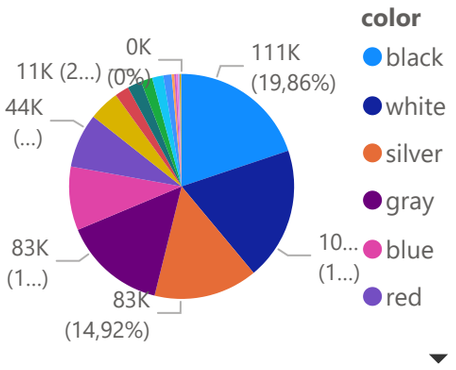
-0,01

% Diff Selling vs MMR

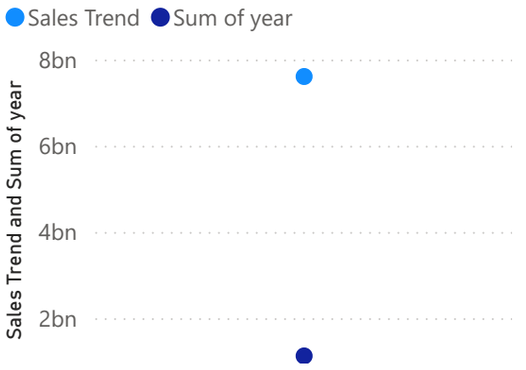
8bn

Sales Trend

Sales by Transmission by color



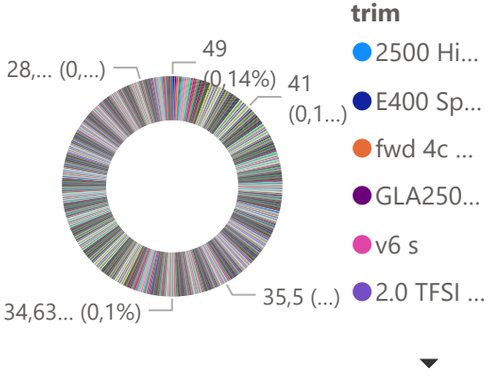
Sales Trend and Sum of year



559K

Sales by Transmission

Avg Condition by Body by trim



3. Explain deployment pipelines in Power BI Online. What stages do they include?

Deployment pipelines in Power BI Online are used to manage the gradual movement of Power BI content—from development to production—in a controlled and organized way. They allow teams to build reports, test changes, and then safely publish them for end users.

A deployment pipeline typically includes **three main stages**:

1. Development (Dev)

- This is the workspace where report creators build and modify datasets, reports, and dashboards.
- It is used for experimenting, updating data models, and creating visuals.
- Changes here are not visible to end users.

2. Test (or QA – Quality Assurance)

- All content from Development is deployed into the Test stage.
- The purpose is to validate the data, check calculations, and ensure the report works as expected.
- Developers and QA testers review performance, refresh behavior, and business logic.

3. Production (Prod)

- This is the final stage where content becomes available to business users.
- Only approved and tested reports are deployed here.
- Users access stable, reliable versions of the dashboards without accidental changes.

Benefits of deployment pipelines

- Version control
- Safe testing before going live
- Consistent and reliable report delivery
- Easy comparison and synchronization between stages

4. How can Power BI Service integrate with Microsoft Teams or SharePoint for collaboration?

Power BI integrates with **Microsoft Teams** and **SharePoint Online** to improve collaboration and make reports easier for teams to access and discuss.

Integration with Microsoft Teams

1. **Power BI App for Teams** – You can add the Power BI app inside Teams to view dashboards and reports without leaving Teams.
2. **Embed Reports in a Channel or Chat** – Reports can be added as a tab in any Teams channel for quick access.
3. **Share Links Directly in Chat** – Users can send report links and discuss insights in real time.
4. **Automatic Notifications** – Teams can send alerts when data changes or when someone shares a report.

Integration with SharePoint Online

1. **Embed Power BI Reports in SharePoint Pages** using the "Power BI web part," allowing users to view visuals directly on SharePoint.
2. **Centralized Document Collaboration** – SharePoint can store Power BI files like PBIX, datasets, or documentation.
3. **Access Control** – Permissions set in SharePoint can control who can view embedded Power BI reports.
4. **Better Workflow Management** – SharePoint workflows can be combined with Power BI content for business processes.

Below are the required visuals for the Car Sales Dashboard and a clear description of what each visual represents.

1. Line Chart – Monthly/Quarterly Sales Trend

This visual shows the overall sales trend over time.

It uses **Year/Month** from *saledate* and displays the **Total Sales Revenue**.

Purpose: to analyze how sales increase or decrease across months or quarters.

2. Bar Chart – Top Brands by Sales Volume

This visual displays the car brands with the highest number of sales.

It compares **Make** by **Total Cars Sold**.

Purpose: to identify the best-performing car brands.

3. Pie / Donut Chart – Distribution by Body or Transmission Type

This chart shows the distribution of sales across different **Body Types** (SUV, Sedan, Truck, etc.) or **Transmission Types** (Automatic, Manual).

Purpose: to understand customer preferences based on body or transmission.

4. Table / Matrix – Sales Summary by Make & Model

A detailed table showing **Make → Model** along with:

- Total Sales
- Average Selling Price
- Average Condition
- Average Odometer
- Price Difference %

Purpose: to view a complete breakdown of sales performance per brand and model.

5. Map – Sales by State

The map visual highlights total sales across different **States**.

Purpose: to analyze regional performance and identify high-selling areas.

6. KPI Tiles – Display Summary KPIs

The dashboard includes KPI cards showing the main metrics:

- Total Sales Revenue
- Total Cars Sold
- Average Selling Price
- Average Condition
- Average Odometer
- % Difference from MMR

Purpose: to provide quick insights at a glance.

7. Decomposition Tree – Make → Model → Year

This advanced visual allows drilling down into performance by:

1. Make
2. Model
3. Year

Purpose: to identify which factors contribute most to sales performance.

8. Treemap – Seller-wise Revenue Contribution

The treemap shows how much revenue each **Seller** contributes.

Purpose: to identify top-performing sellers and compare their revenue share.

1. Drill-through

Drill-through pages allow the user to right-click on a data point (e.g., a Make or Model) and navigate to a detailed report page.

Example:

Make → Model Details Page

Purpose:

- To view deeper insights about a specific brand or model
- To analyze model-level performance such as condition, odometer, and price comparison

2. Tooltips

Custom tooltips display additional information when the user hovers over a visual element.

Tooltip information includes:

- Condition
- Odometer
- Selling Price
- MMR
- Price Difference (%)

Purpose:

To show deeper details without leaving the main page.

3. Cross-Filtering and Cross-Highlighting

All visuals on the dashboard interact with each other.

Example:

- Clicking on a brand in the bar chart filters the line chart, map, table, and KPIs
- Selecting a body type filters all visuals to show only related cars

Purpose:

To allow dynamic, interactive data exploration.

4. Slicers

The dashboard includes slicers that let the user filter the entire report by:

- Make
- Model
- Year
- Body
- Transmission
- Color
- State
- Seller

Purpose:

To enable fast and easy filtering across different categories.

To switch between different analytical perspectives instantly.

5. Date Slicer

A special date slicer using **saledate** is added.

Features:

- Between
- Before
- After
- Relative date (Last 30 days, Last Year, etc.)

Purpose:

To filter the entire dashboard dynamically by time.

6. Drill-down (Hierarchy Navigation)

Some visuals (especially the decomposition tree and charts) allow drill-down:

Examples:

- Make → Model
- Model → Year
- Year → Month

Purpose:

To allow a multi-level analysis of sales trends.

7. Buttons & Page Navigation

Interactive buttons may be added for:

- Switching between “Brand View” and “Model View”
- Navigating between report pages
- Opening bookmark views

Purpose:

To improve user navigation and make the report more professional.

8. Bookmarks

Bookmarks are created for saving specific filtered views such as:

- Brand Performance View
- Model Performance View
- Geographic Sales View

Purpose:

8. Export & Sharing Features (Full Answers in English)

8.1 Bookmarks for different report views (e.g., Brand View, Model View)

Answer:

Bookmarks in Power BI allow you to capture the current state of a report page, including filters, visuals, and layout.

You can create multiple bookmarks such as:

- **Brand View** – shows top brands, brand KPIs, and brand-level visuals
- **Model View** – shows breakdown by model, model KPIs, and model trends

These bookmarks can be added to **buttons** for easy navigation between customized report states.

8.2 Report Page Tooltips

Answer:

Report Page Tooltips are separate report pages designed to show extra information when the user hovers over visuals.

Examples for the Car Sales Dashboard:

- Show **condition**
- Show **odometer**
- Show **selling price vs MMR comparison**
- Show **profitability indicators**

Tooltips help improve user experience by providing deeper information without cluttering the main page.

8.3 Page Navigation (if multiple pages)

Answer:

Page navigation helps users move between report pages such as:

- **Main Dashboard**
- **Brand Analysis Page**
- **Model Analysis Page**
- **Tooltip Page**
- **Seller Page** (optional)

Navigation can be created using buttons linked to bookmarks or directly to pages.

Ensures the report is easy to use and professionally structured.

8.4 Professional Formatting: titles, themes, tooltips, font consistency

Answer:

Professional formatting includes:

- Consistent **font sizes and font families**
- Clear **visual titles**
- Matching **color themes** (Power BI built-in themes or custom theme JSON)
- Aligned visuals with equal spacing
- Customized visual headers
- Standardized tooltips across all visuals
- Using **KPIs and cards** with clear labeling

This ensures the dashboard looks clean, modern, and business-ready.

8.5 Exporting and Sharing Options

Answer:

Power BI provides multiple ways to share the final dashboard:

- **Publish to Power BI Service**
- **Share report link** with workspace access
- Export options:
    - Export to **PDF**
    - Export to **PowerPoint**
    - Export summarized data from visuals
- Create **App** in Power BI Service for organization-wide sharing
- Set workspace permissions (Viewer, Member, Admin)

These features allow users to distribute the dashboard securely and professionally.

-0,01

Price Difference %

✅ 9. Bonus (Optional) Section — Full Answers (English)

Below are the optional advanced tasks you can include to make your dashboard more professional and score higher.

9.1 Create a What-If Parameter for MMR Margin (±5%, ±10%)

Answer:

A What-If parameter allows the user to interactively adjust the MMR margin and see how the selling price compares under different conditions.

Steps:

1. Go to **Modeling → New Parameter → Numeric Range**
2. Name: **MMR Margin (%)**
3. Range: **-10 to +10**
4. Increment: **1%**

This creates:

- Parameter table
- Slicer
- An automatically generated measure

You can use a custom measure:

```
Adjusted MMR = SUM(car_prices[mmr]) * (1 + 'MMR Margin (%)'[MMR Margin (%)]/100)
```

This makes the dashboard dynamic for pricing analysis.

9.2 Use RANKX to rank best-selling models

Answer:

You can rank models by sales volume using RANKX:

```
Model Sales Rank =
RANKX(
    ALL(car_prices[model]),
    CALCULATE(COUNT(car_prices[VIN])),
    ,
    DESC
)
```

Uses:

- In matrix tables
- Sorting visuals
- Highlighting top-performing models

This helps identify high-demand cars.

9.3 DAX Classification: "Fair", "Overpriced", or "Underpriced" (based on MMR vs Selling Price)

Answer:

Classification column or measure helps evaluate pricing fairness.

As a **Calculated Column**:

```
Price Status =
IF(
    car_prices[sellingprice] > car_prices[mmr] * 1.05,
    "Overpriced",
    IF(
        car_prices[sellingprice] < car_prices[mmr] * 0.95,
        "Underpriced",
        "Fair"
    )
)
```

Rules:

- **Overpriced:** Selling price > 105% of MMR
- **Underpriced:** Selling price < 95% of MMR
- **Fair:** Everything in between

This classification can be used in:

- Slicers
- Conditional formatting
- Tooltip
- Matrix
- Scatter chart