**Power BI**

# **General Points**

1. **Platform**: Power BI is a Windows-only business intelligence tool used for data visualization, reporting, and dashboarding.
2. **Installation**: Available for free download from the Microsoft Store.

# **Key Interface Elements**

## **🧰 Ribbon (Top Toolbar)**

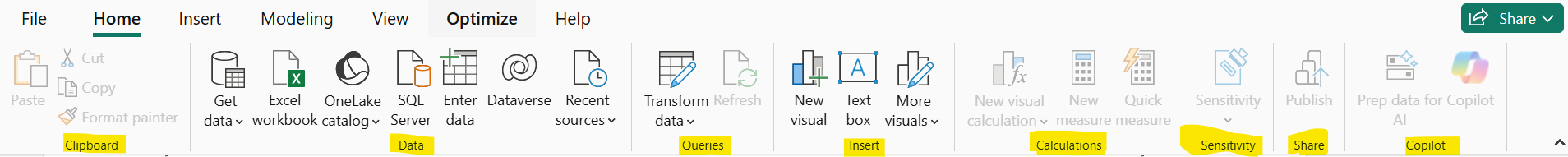
Located at the **top of the screen**, similar to Excel or Word

* + Contains tabs like:
    - **Home**: Clipboard, data import, transformations, visuals, calculations, sharing.
    - **Insert**: Add visuals, text boxes, images.
    - **Modeling**: Manage relationships, create measures and columns.
    - **View**: Customize layout, themes, and panes.
    - **Optimize**: Performance tuning and query diagnostics.
    - **Help**: Access documentation and support.

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**In depth: -**

### **🔹 Home Tab**

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* **Clipboard:** Cut, copy, paste data or visuals.
* **Data:** Import data from Excel, SQL Server, Web, etc.
* **Transform Data:** Opens Power Query Editor for cleaning and shaping data.
* **Insert:** Add visuals, text boxes, images.
* **Calculations:** Create new measures, columns, and quick measures using DAX.
* **Sensitivity:** Apply data sensitivity labels for compliance.
* **Share:** Publish reports to Power BI Service or share with others.
* **Copilot Prep:** Prepares data for AI-assisted insights (if enabled).

### **🔹 Insert Tab**

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**1. Pages**

**New Page:** Adds a **blank canvas to** **your report**. Useful for organizing different sections or dashboards within the same report file.

**2. Visuals**

**New Visual:** Inserts a default chart (usually a bar chart) to start building a **visual quickly**.

**More Visuals:** Opens a visual gallery where you can choose from built-in charts (e.g., pie, line, map) or import custom **visuals from the marketplace**.

**3. AI Visuals**

**Key Influencers:** Analyzes data to show which factors impact a selected metric (e.g., what drives sales up or down).

**Decomposition Tree:** Breaks down a value (like total sales) into subcategories step-by-step. Great for root cause analysis.

**Q&A:** Lets users type natural language questions (e.g., “Total sales by region”) and Power BI creates the visual automatically.

**4. Power Platform**

**Paginated Report:** Adds a print-friendly report (like invoices or forms) that supports page-by-page formatting.

**Power Apps:** Embed a custom app directly into your report for data entry or workflows.

**Power Automate:** Add automated flows (e.g., send email when data updates) to make your report interactive and action driven.

**5. Elements**

**Text Box:** Add titles, labels, or notes to explain visuals or sections.

**Buttons:** Add interactive buttons for navigation (e.g., go to another page) or trigger actions.

**Shapes:** Insert design elements like rectangles, circles, or lines to improve layout and visual appeal.

**Image:** Add logos, icons, or reference images to brand or support your report.

**6. Sparklines**

**Add Sparkline:** Mini line charts inside a table or matrix to show trends over time. (May be disabled if not supported in the current visual.)

### **🔹 Modeling Tab**

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**1. Relationships**

* **Manage Relationships:** Define how tables are connected using keys (one-to-many, many-to-one). Essential for building a data model.

**2. Calculations**

* **New Measure:** Create a DAX formula that performs calculations on data (e.g., total sales, average profit).
* **New Column:** Add a calculated column to a table using DAX (e.g., profit = revenue - cost).
* **New Visual Calculation:** Create calculations directly tied to visuals (context-aware).

**3. Tables**

* **New Table:** Create a custom table using DAX (e.g., summary table, calendar table).

**4. Optimize**

* **Mark as Date Table:**Tag a table as a date table for time intelligence functions (e.g., YTD, QTD).
* **Change Detection / Page Refresh:**  
  Set up automatic refresh or detect changes in data for real-time updates.

**5. Parameters**

* **New Parameter:**  
  Create dynamic input values (e.g., select a range or filter) that users can control.

**6. Security**

* **Manage Roles:**  
  Set up Row-Level Security (RLS) to restrict data visibility based on user roles.
* **View As:**  
  Test how the report looks for different roles.

**7. Q&A Setup**

* Configure natural language queries so users can ask questions like “sales by region.”

**8. Language Schema**

* Set language options for model metadata (useful for localization or multilingual reports).

**🔹 View Tab  
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* **Themes:** Apply color schemes to reports.
* **Layout Options:** Show/hide panes like Filters, Bookmarks, Selection.
* **Page Size:** Adjust canvas size for printing or display.
* **Performance Analyzer:** Monitor visual load times.

### **🔹 Optimize Tab**

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* **Query Diagnostics:** Analyze performance bottlenecks in data loading**.**
* **Model Performance:** Tools to improve efficiency of large datasets.
* **Auto Aggregations:** Enable automatic summarization for faster queries.

### **🔹 Help Tab**

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* **Documentation:** Access official Microsoft guides.
* **Community:** Link to forums and user groups.
* **Tutorials:** Learn Power BI features interactively.
* **Feedback:** Submit issues or suggestions to Microsoft.

## **📂 View Pane (Left Sidebar)**

# *A screenshot of a computer AI-generated content may be incorrect.* Allows switching between different working views:

# **Report View** 🟦: Design dashboards using visuals.

# **Table/Data View** 📊: Inspect and clean raw data tables.

# **Model View** 🔗: Define relationships between tables (star schema, snowflake).

# **DAX View** 🧮: Write and test DAX (Data Analysis Expressions) formulas.

# **TMDL View** 📄: Advanced editing using Tabular Model Definition Language.

## **📊 Visualizations Pane**

This pane is used to **create, customize, and configure visuals** in your Power BI report.

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1. **Filters Pane (Left Side)**

* **Page-Level Filters**:  
  Apply filters that affect only the current report page.
* **Report-Level Filters**:  
  Apply filters across **all pages** in the report.
* **Visual-Level Filters**:  
  Apply filters to **specific visuals** only.

**2. Visualizations Pane (Center)**

* **Chart Types**:  
  Choose from various visuals:
  + Bar chart, Line chart, Pie chart
  + Table, Matrix
  + Map, Funnel, Gauge
  + Scatter plot, KPI, Card
* **Build Visual**:  
  Drag fields into:
  + **Values**: What you want to measure (e.g., Sales).
  + **Axis/Legend**: Categories or groupings (e.g., Region).
  + **Tooltips**: Extra info shown on hover.
  + **Drill-through**: Set up navigation to detailed pages.
* **Format Visual**:  
  Customize colors, labels, titles, borders, and interactions.

**3. Data Pane (Right Side)**

* **Fields List**:  
  Shows all tables and columns from your dataset.
* **Get Data**:  
  Button to import new data sources (Excel, SQL, Web, etc.).