

A stylized graphic of a human eye in the center, with a blue iris and a pupil that contains a circuit board pattern and the letters 'AI'. The eye is surrounded by a white, hand-drawn style outline. The background is a light blue gradient.

# **Visualization in Tableau**

# Simple Bar chart: Sales by Category (Superstore)

- Open Tableau, connect to sample\_-superstore.xls → choose the Orders sheet (or the main sheet).
- Drag **Category** to Rows.
- Drag **SUM(Sales)** to Columns.
- Sort **descending** (click the sort icon on the toolbar or right-click **Category** → Sort → Field: **SUM(Sales) Descending**).
- Drag **SUM(Sales)** to **Label on Marks card** to show values.
- Rename sheet: **Sales by Category**.

# Sorted horizontal bars: Top States by Sales (Superstore)

- New sheet.
- Drag **State** to Rows.
- Drag **SUM(Sales)** to Columns.
- Sort **descending**.
- Right-click **State** → **Keep Only top 10 by SUM(Sales)** or create a Top N filter:
- Drag **State** to **Filters** → **Top** → **By field** → **Top 10 by SUM(Sales)**.
- **Swap axes** if you want **horizontal bars** (or keep as is).
- **Add label**: drag **SUM(Sales)** to Label.
- **Add color by Region**: drag **Region** to Color.

# Donut chart (Segment share)

- New sheet.
- Create a **pie** and **then donut**:
- Drag **Segment** to **Color on Marks** (use Pie mark).
- Create **Angle using SUM(Sales)** (drag **SUM(Sales)** to **Angle**).
- Drag **Segment** to **Label** and **set label to show Percent of Total**:
- **Label → Text → insert SUM(Sales)** and **then quick table calculation → Percent of Total**.
- To make donut: Create a duplicate axis — create a calculated field  $\text{Zero} = 0$ , put it on Columns, dual axis, and synchronize—(or simply accept pie). Or put a white circle sheet as a dashboard overlay.

# Histogram / Bins (HR Age distribution)

- New sheet.
- **Right-click Age → Create → Bins.** Choose bin size, e.g., 5 years (or show students how to change).
- Name: **Age (bin).**
- **Drag Age (bin) to Rows.**
- Drag **Number of Records** (or COUNT(Employee Number)) to Columns.
- **Change to Bar mark;** add labels.
- Show axis to interpret.

# Line chart + Moving average: Sales over time (Superstore)

- New sheet.
- Drag **Order Date** to Columns → choose continuous **MONTH(Order Date)** or EXACT DATE based on dataset.
- Drag **SUM(Sales)** to Rows. This draws the line.
- Right-click **SUM(Sales)** on the axis → **Add Trend Line (optional)**.
- To show **moving average**:
- Click on **SUM(Sales)** pill → Quick Table Calculation → Moving Average.

# Map: Sales by State (Superstore)

- New sheet.
- Drag **State** to **Detail (Marks card)** – Tableau will detect geography.
- Drag **SUM(Sales)** to Color.
- Change mark to **Map** or **Filled Map** if using polygon.
- Add labels: drag **State** to **Label** optionally.
- Add tooltip: **SHOW** sum of Sales and sum of Profit.

# Scatter plot with trend line (Sales vs Profit at Customer or Product level)

- New sheet.
- Aggregate at **Customer or Product level**: drag **Customer ID or Product Name** to **Detail**.
- Drag **SUM(Sales)** to Columns.
- Drag **SUM(Profit)** to Rows.
- Change **mark to Circle**.
- Drag **SUM(Quantity)** or Sales to Size to show magnitude.
- Add Trend Line: **Analytics pane** → drag **Trend Line** → **Linear**.
- **Show  $R^2$  and slope** (right click trend line → **Describe**).

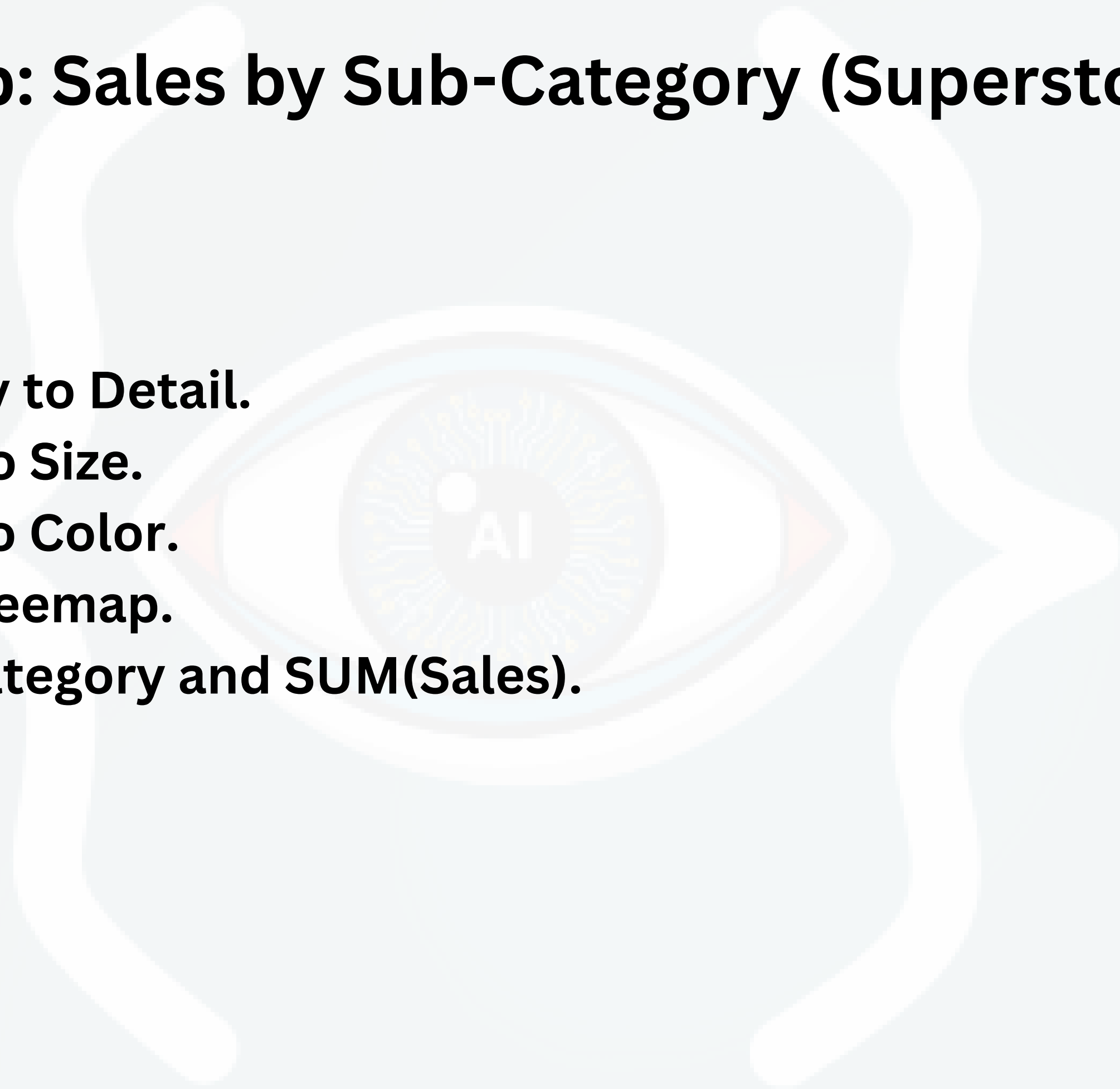


# Heatmap: Sales by State × Category

- New sheet.
- Drag **State** to Rows.
- Drag **Category** to Columns.
- Drag **SUM(Sales)** to Color on Marks card.
- Set mark to Square.
- Add labels or tooltip to show exact values.

# Tree map: Sales by Sub-Category (Superstore)

- New sheet.
- Drag **Sub-Category** to Detail.
- Drag **SUM(Sales)** to Size.
- Drag **SUM(Sales)** to Color.
- Change **mark** to Treemap.
- Add labels: **Sub-Category** and **SUM(Sales)**.



# Box plot: Monthly Income distribution by Department (HR)

- New sheet.
- Drag **Department** to Columns.
- Drag **Monthly Income** to Rows.
- On the show me → **drag Box Plot** into the view → choose “for every Cell” or **per Department**.
- Show **outliers and median**.

# Parameter + Top N: Dynamic Top N products by Sales

- Create a **parameter**:
- Right-click in **Data pane** → **Create** → **Parameter**.
- Name: **Top N**
- Data type: Integer, Current value: 10, Range: 1 to 100 (or All).
- **Create calculated field Rank by Sales:**
- **RANK\_UNIQUE(SUM([Sales]), 'desc')**
- Or use: **RANK(SUM([Sales]))**
- Create boolean calculated field Top N Filter:
- **RANK\_UNIQUE(SUM([Sales])) <= [Top N]**
- Drag **Product Name** to Rows and **SUM(Sales)** to Columns.
- Drag **Top N Filter** to **Filters** → **True**.
- Show **Parameter Control**: right-click **Top N** → **Show Parameter Control**.
- Sort and format.

# **Stacked Bar Chart — Sales by Region & Segment (Superstore)**

- **Open Tableau → connect to sample\_superstore.xls → Orders sheet.**
- **Drag Region → Columns.**
- **Drag Sales → Rows.**
- **Drag Segment → Color (on Marks card).**
- **Click Sort icon on toolbar to sort by highest total sales.**
- **Drag Sales → Label (to display values).**
- **Add totals:**
  - **Go to Analytics pane → drag Totals → Show Row Grand Totals.**

# Pie Chart — Gender-wise Attrition (HR Data)

- Open **Tableau** → connect to **sample\_superstore.xls** → **Orders** sheet.
- Drag **Region** → **Columns**.
- Drag **Sales** → **Rows**.
- Drag **Segment** → **Color** (on Marks card).
- Click **Sort icon** on **toolbar** to sort by highest total sales.
- Drag **Sales** → **Label** (to display values).
- Add **totals**:
  - Go to **Analytics** pane → drag **Totals** → **Show Row Grand Totals**.

## Pie Chart — Gender-wise Attrition

- Connect to **HR Data.xlsx**.
- Drag **Gender** → **Color**.
- Drag **Attrition** → **Filters** → **Select only Yes** (people who left).
- Drag **Gender** → **Label** (so names show).
- Drag **Employee Number** (or any unique ID) → **Angle** → set aggregation to **Count** (**Count of employees**).
- Or simpler: just drag **Attrition to Filters (Yes)**, then drag **Gender to Columns** and **Number of Records to Rows**, then use **Show Me** → **Pie Chart**.
- **Click Show Me** → **select Pie Chart**.
- **Right-click** → **Quick Table Calculation** → **Percent of Total** to show percentages.

### Optional Formula

- $\text{COUNT}([\text{Employee Number}]) / \text{TOTAL}(\text{COUNT}([\text{Employee Number}]))$

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