Dashboard Fundamentals

Agenda

- Designing effective dashboards
- storytelling with data
- Dashboard design principles
- case studies

Dashboard

- A dashboard is a visual display of the most important information needed to achieve one or more objectives, consolidated and arranged on a single screen so the information can be monitored at a glance.
- Dashboards typically provide at-a-glance views of key performance indicators (KPIs) relevant to a particular objective or business process.
- They are often used in business and data analytics to provide insights into various aspects of performance, trends, and patterns.

Creating a dashboard in Tableau

1. **Connect to Data:** Load your dataset into Tableau by connecting to a file, server, or database.
2. **Prepare Data:** Clean and prepare your data for analysis. This might include filtering, grouping, or pivoting data.
3. **Create Worksheets:** Build individual charts and visualizations using the data. These can include bar charts, line graphs, maps, etc.
4. **Combine into a Dashboard:** Drag and drop these worksheets onto a new dashboard canvas.
5. **Arrange and Format:** Arrange the visualizations in a way that makes sense. Use containers to align items, and format the dashboard to ensure it's visually appealing.
6. **Add Interactivity:** Add filters, actions, and other interactive elements to make the dashboard dynamic and user-friendly.
7. **Publish and Share:** Once satisfied, publish the dashboard to Tableau Server, Tableau Online, or export it for sharing.

Home page

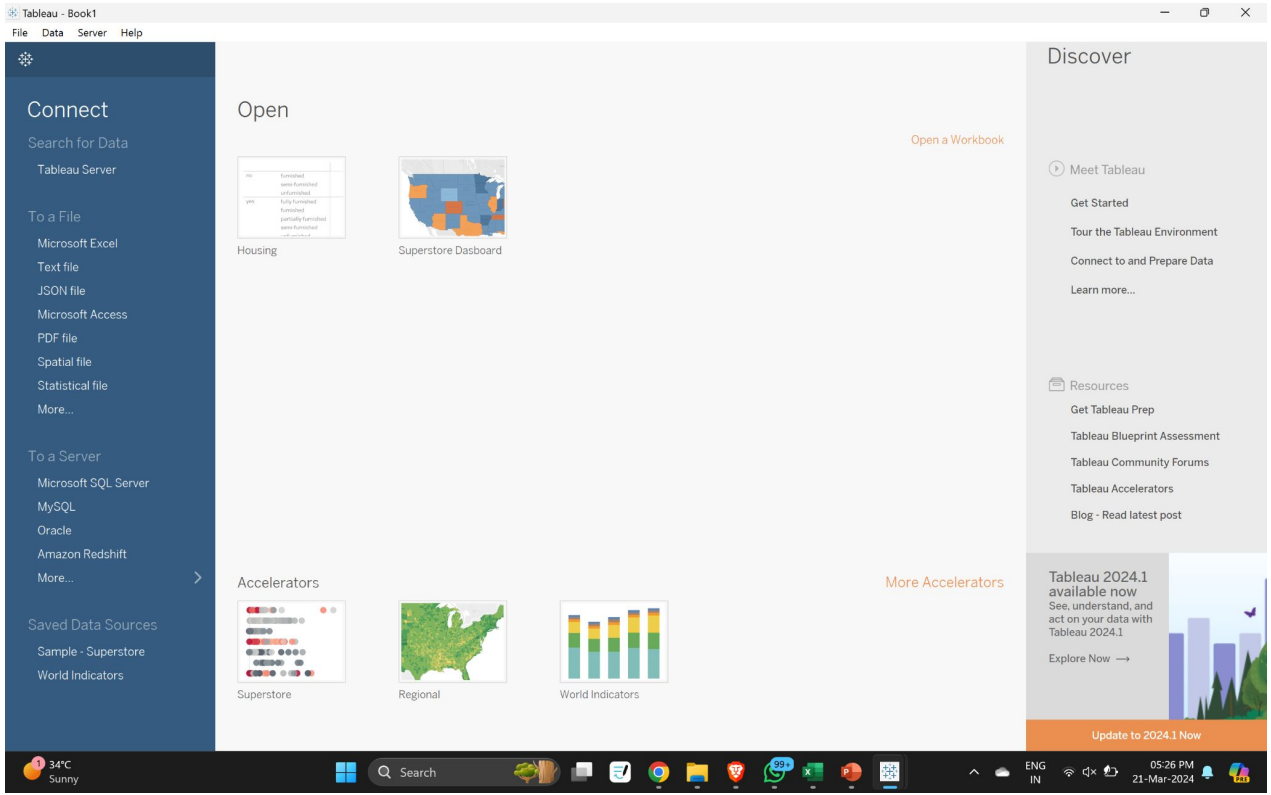
Tableau - Book1
File Data Server Help
Connect
Search for Data
Tableau Server
To a File
Microsoft Excel
Text file
JSON file
Microsoft Access
PDF file
Spatial file
Statistical file
More...
To a Server
Microsoft SQL Server
MySQL
Oracle
Amazon Redshift
More...
Saved Data Sources
Sample - Superstore
World Indicators
Open
Open a Workbook
Housing
Superstore Dasboard
Accelerators
More Accelerators
Superstore
Regional
World Indicators
Discover
Meet Tableau
Get Started
Tour the Tableau Environment
Connect to and Prepare Data
Learn more...
Resources
Get Tableau Prep
Tableau Blueprint Assessment
Tableau Community Forums
Tableau Accelerators
Blog - Read latest post
Tableau 2024.1 available now
See, understand, and act on your data with Tableau 2024.1
Explore Now
Update to 2024.1 Now
34°C Sunny
Search
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Load your dataset into Tableau by connecting to a file, server, or database.

Open Tableau: Launch Tableau Desktop.

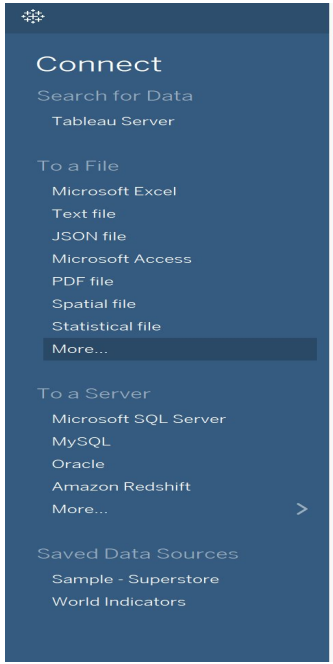
Connect to Data Source: Click on the "Connect" pane on the start page. Choose your data source type, such as Excel, text file, SQL Server, MySQL, PostgreSQL, etc.

Data Connection: For file-based data, browse and select your file. For server-based data, enter the necessary credentials and details to connect to the server.

Data Preview: Tableau provides a preview of the data so you can verify the correct dataset has been loaded.

Connect your data

Connect to more



Clean and prepare your data for analysis. This might include filtering, grouping, or pivoting data.

Data Pane: Once connected, your data will appear in the Data Pane. Drag and drop fields to view them.

Data Interpreter: For Excel and text files, use Tableau's Data Interpreter to clean the data automatically.

Filters: Apply filters to exclude irrelevant data.

Groups and Sets: Create groups and sets to categorize and segment your data.

Calculated Fields: Create calculated fields for derived metrics.

Pivot Data: Pivot columns to rows or vice versa if necessary for analysis.

Data Blending: Combine data from multiple sources using data blending.

Build individual charts and visualizations using the data. These can include bar charts, line graphs, maps, etc.

New Worksheet: Click on the "New Worksheet" icon.

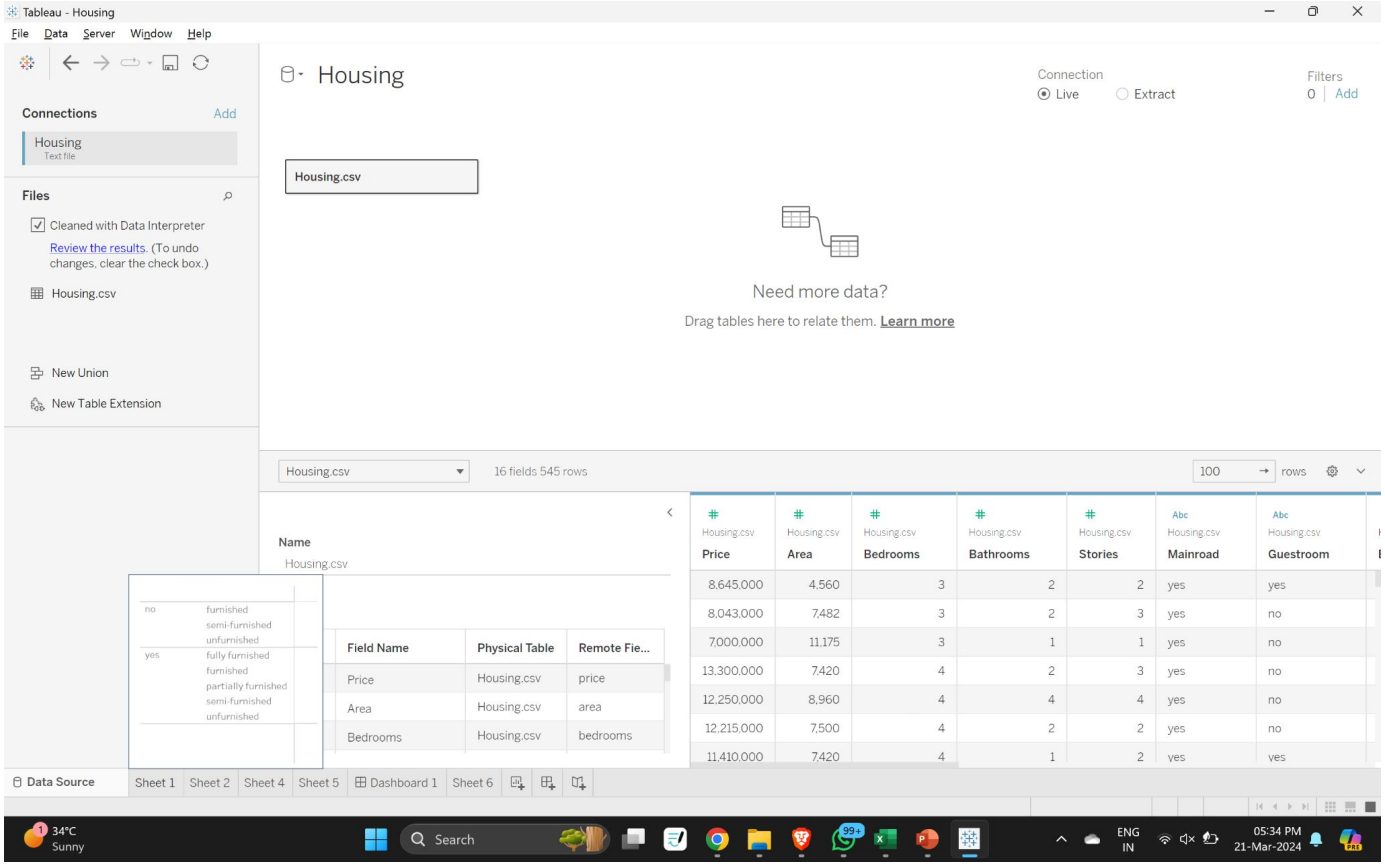
Drag Fields: Drag and drop fields from the Data Pane to Rows and Columns shelves to create visualizations.

Mark Types: Change the mark type (bar, line, area, etc.) based on your needs.

Shelves and Cards: Use various shelves and cards (e.g., Color, Size, Label, Detail, Tooltip) to enhance the visualization.

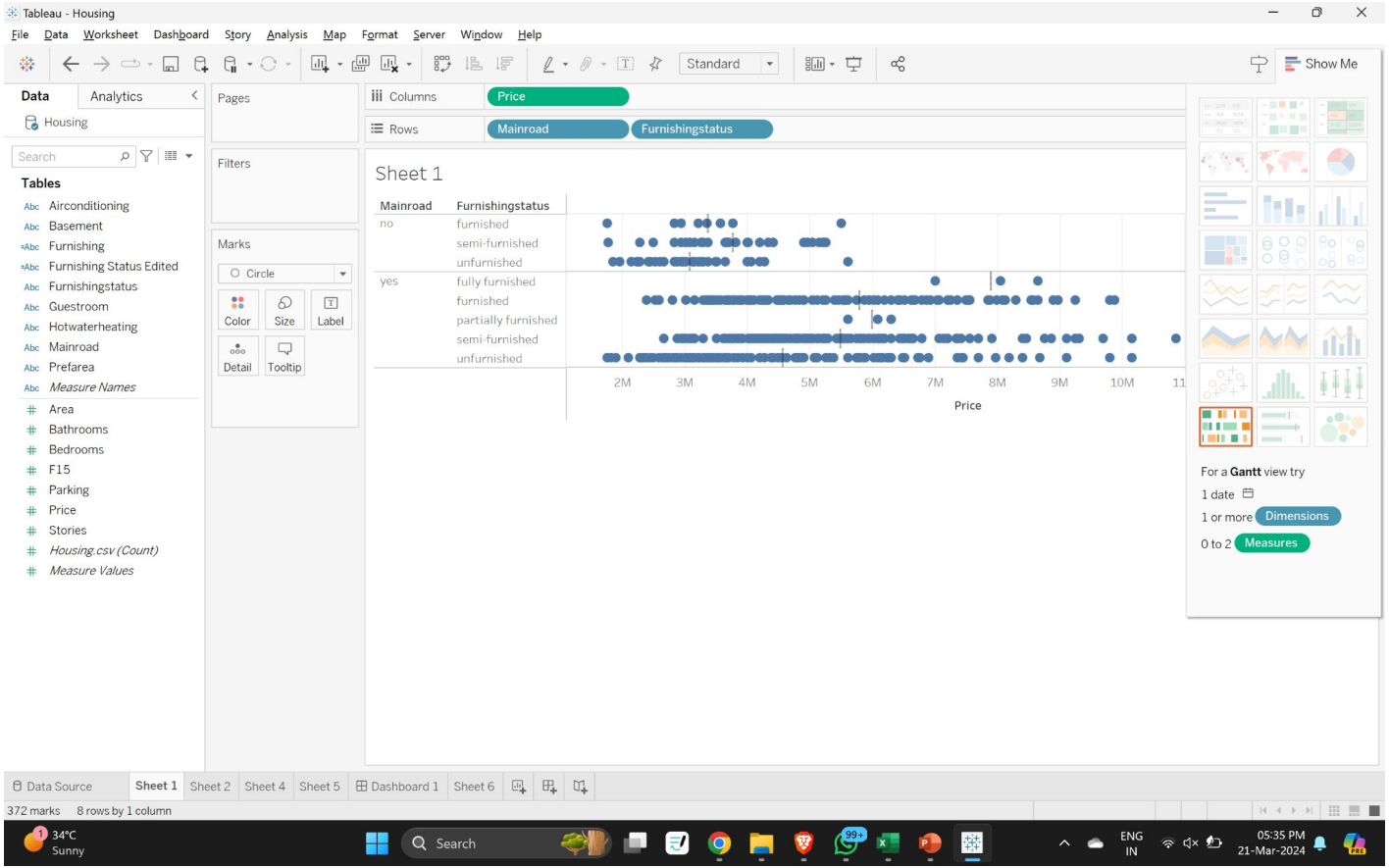
Show Me: Use the "Show Me" panel for suggestions on best visualization types for your selected data.

Move to sheet 1 to create your first visualisation



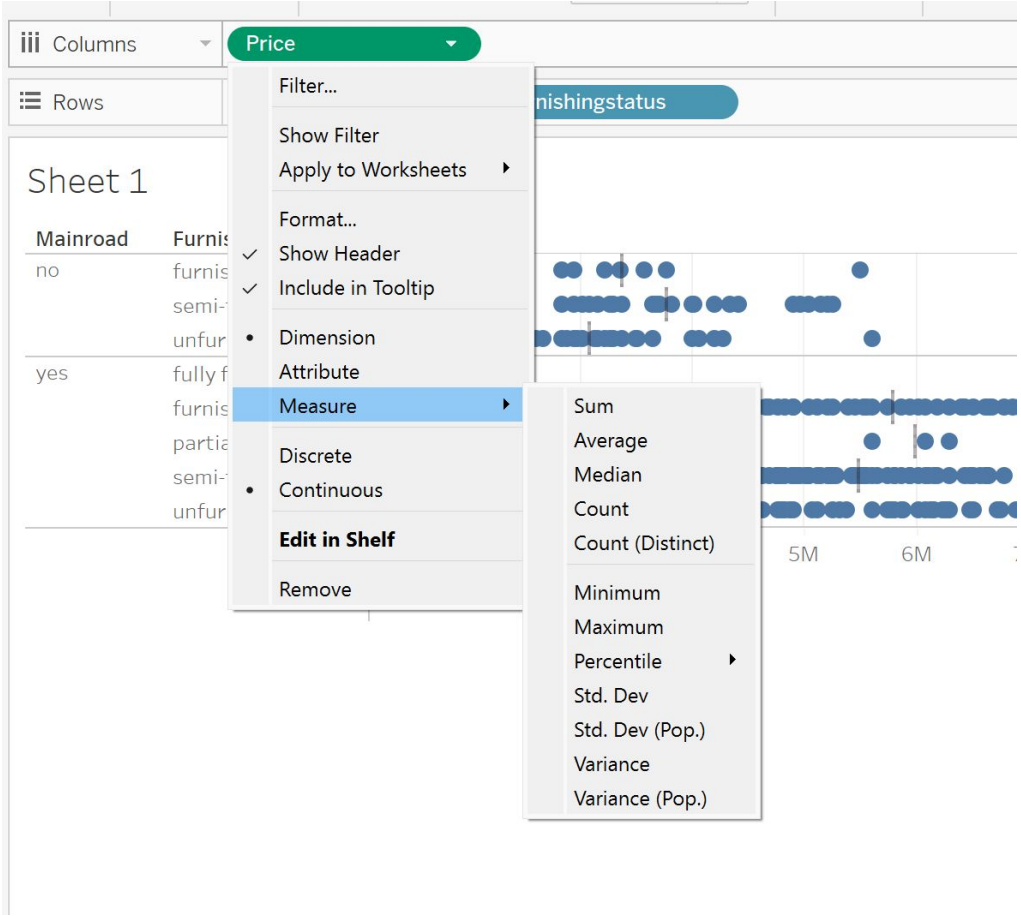
At the bottom left corner

Drag and place columns in rows and columns to get your appealing chart



Measure & Dimension

Click the down arrow to change it to a dimension or measure.


Columns
Price
Rows
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Sheet 1
Mainroad
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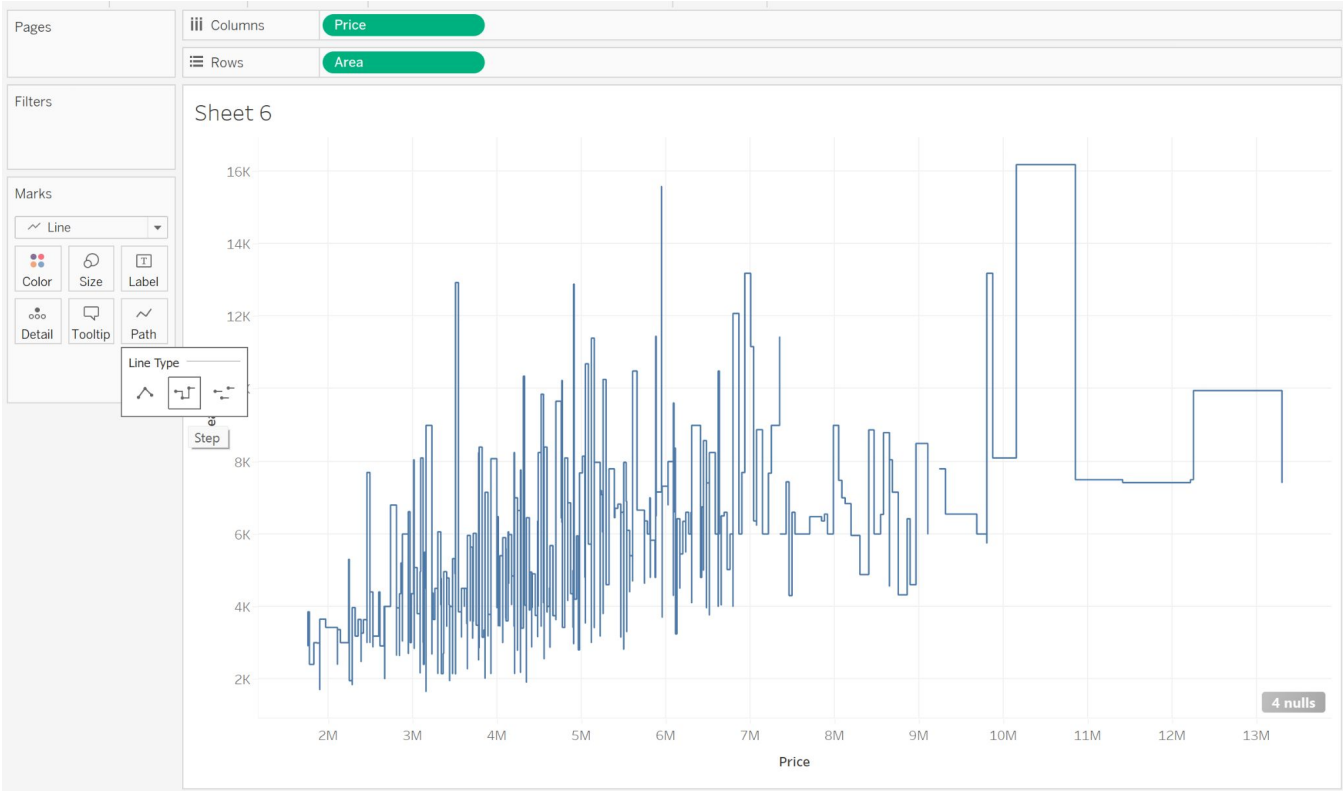
no
furnis
semi-
unfur
yes
fully f
furnis
partia
semi-
unfur
5M
6M
Filter...
Show Filter
Apply to Worksheets
Format...
Show Header
Include in Tooltip
Dimension
Attribute
Measure
Discrete
Continuous
Edit in Shelf
Remove
Sum
Average
Median
Count
Count (Distinct)
Minimum
Maximum
Percentile
Std. Dev
Std. Dev (Pop.)
Variance
Variance (Pop.)

Line chart


Pages
Columns
Price
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Area
Filters
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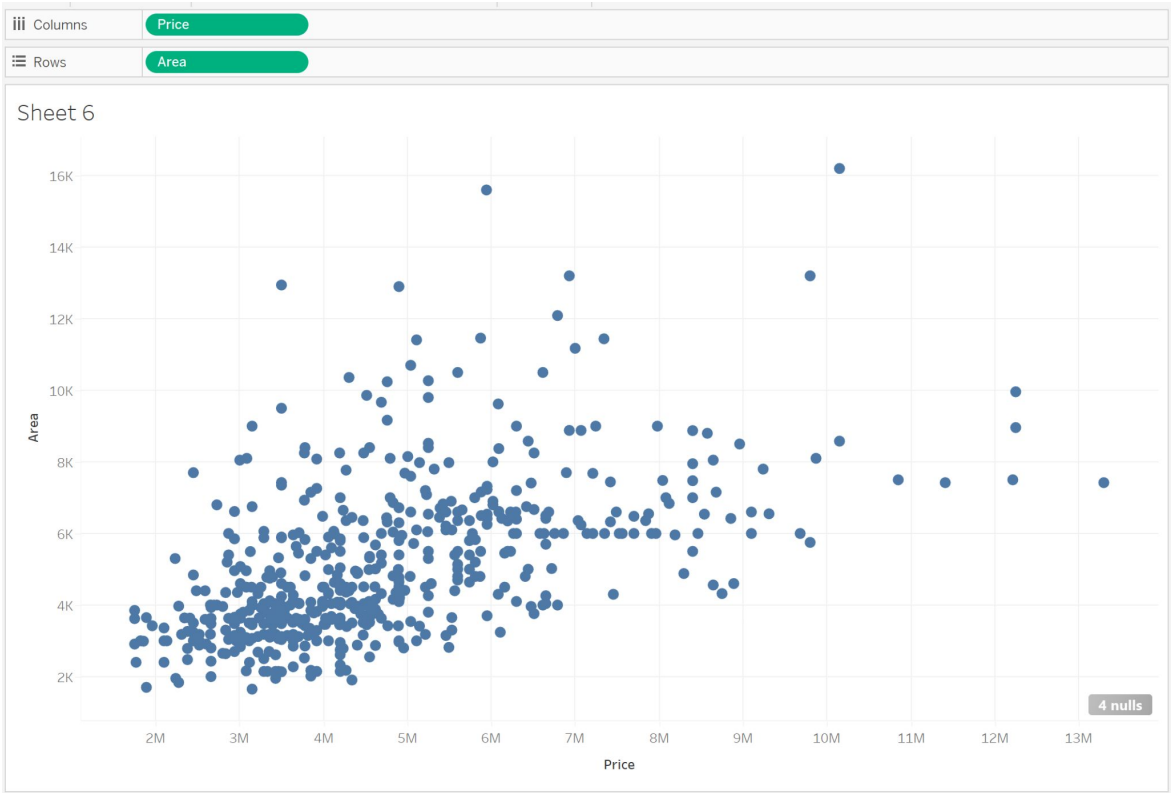
Tooltip
Path
Line Type
Step
Sheet 6
16K
14K
12K
8K
6K
4K
2K
2M
3M
4M
5M
6M
7M
8M
9M
10M
11M
12M
13M
Price
4 nulls

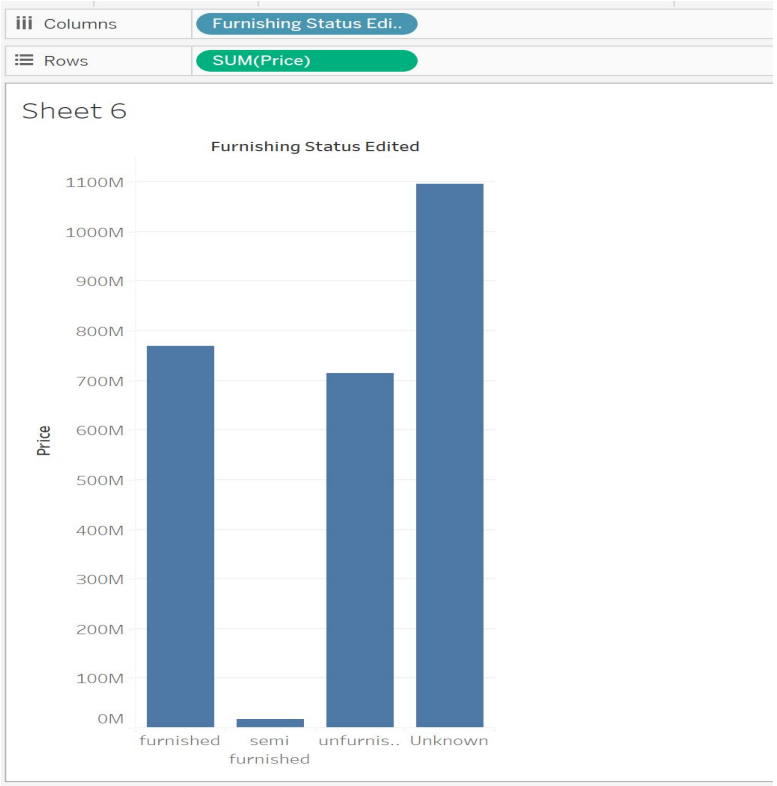
Scatter plot



Price(Dimension)

Area(Dimension)

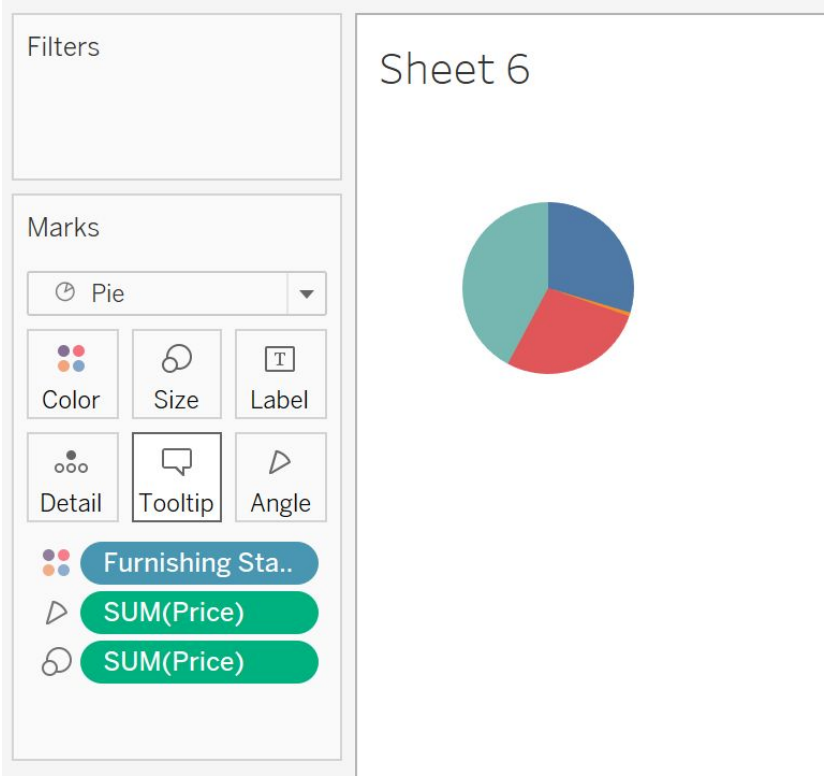
Column graph



Bar graph


Columns
SUM(Price)
Rows
Furnishing Status Edi..
Sheet 6
Furnishing Stat..
furnished
semi furnished
unfurnished
Unknown
0M
100M
200M
300M
400M
500M
600M
700M
800M
900M
1000M
1100M
Price

Pie chart


Filters
Marks
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Color
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SUM(Price)
SUM(Price)
Sheet 6

Drag and drop these worksheets onto a new dashboard canvas.

New Dashboard: Click on the "New Dashboard" icon.

Dashboard Canvas: A blank canvas appears with a list of your worksheets on the left.

Add Sheets: Drag and drop individual worksheets from the left panel to the dashboard canvas.

Containers: Use horizontal or vertical containers to organize and align multiple visualizations.

Arrange the visualizations in a way that makes sense. Use containers to align items, and format the dashboard to ensure it’s visually appealing.

Arrange Visualizations: Position your visualizations logically, ensuring they fit well within the available space.

Format Dashboard: Format the dashboard by adjusting the size, adding borders, and applying background colors.

Text and Labels: Add text boxes for titles, descriptions, and labels to provide context.

Images and Logos: Insert images or logos to personalize the dashboard.

Tooltips: Customize tooltips to provide additional information when users hover over data points.

Tableau - Superstore [Read-Only]

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help

Show Me

Dashboard Layout

Default
Tablet
Phone

Device Preview

Size

min 1000x620 - auto

Sheets

- Performance
- Forecast
- What If Forecast
- Total Sales
- Sale Map
- Sales by Segment
- Sales by Product

Objects

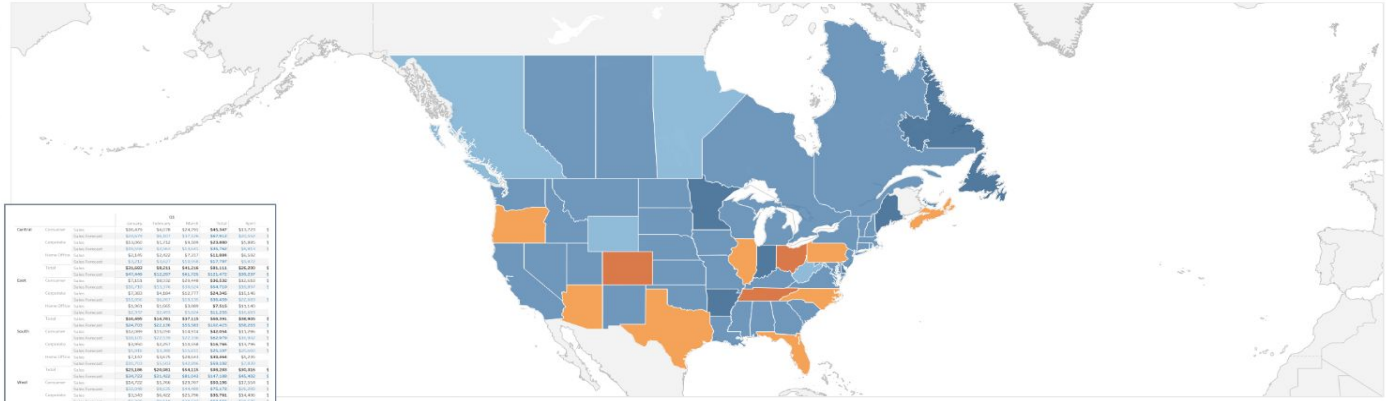
- Horizontal Container
- Vertical Container
- Text
- Extension
- Data Story
- Image
- Blank
- Workflow
- Web Page
- Navigation

Tiled Floating

Show dashboard title

Executive Overview - Profitability (All)

Sales	Profit	Profit Ratio	Profit per Order	Sales per Customer	Avg. Discount	Quantity
$2,326,534	$292,297	12.6%	$57.19	$2,908.17	15.54%	38,654



Region
(All)

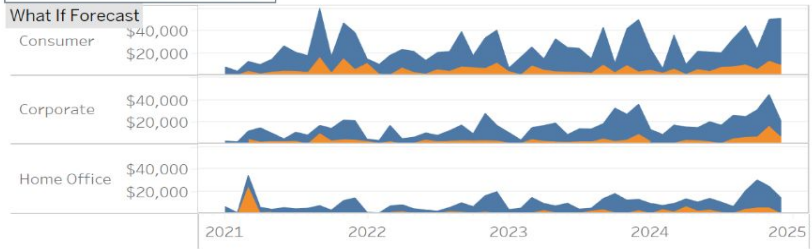
Order Date
03-Jan-2021 30-Dec-2024

Profit Ratio
-21.7% 37.0%

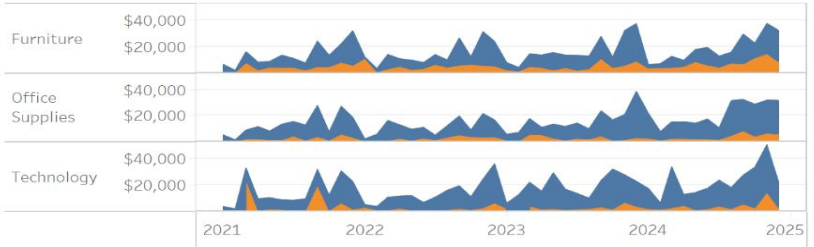
Profit Ratio
-50.0% 50.0%

What If Forecast

States/Provinces: **All**



Monthly Sales by Product Category - States/Provinces: **All**



Data Source | Overview | Product | Customers | Shipping | Performance | Commission Model | Order Details | Forecast | What If Forecast

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Add filters, actions, and other interactive elements to make the dashboard dynamic and user-friendly.

Filters: Add filter controls (dropdowns, sliders) for users to interact with the data.

Actions: Define actions like filter actions, highlight actions, and URL actions to make the dashboard interactive.

Parameters: Create parameters that users can manipulate to change views or calculations dynamically.

Dashboard Objects: Use dashboard objects like buttons, navigation, and blank spaces to enhance interactivity.

Publish the dashboard to Tableau Server, Tableau Online, or export it for sharing.

Publish: Click on the "Server" menu and choose "Publish Workbook" to Tableau Server or Tableau Online. Enter the required credentials.

Export: Export the dashboard as a PDF, image, or packaged workbook (TWBX) for offline sharing.

Share: Share the link to the dashboard with stakeholders, ensuring they have the necessary permissions to access it.

Embed: Embed the dashboard in web pages, applications, or portals using Tableau's embedding features.

Different stakeholders can benefit from dashboards

Executives: Need high-level overviews and KPIs to make strategic decisions.

Managers: Require more detailed performance metrics to manage teams and projects effectively.

Analysts: Use dashboards to drill down into data and perform in-depth analysis.

Sales and Marketing Teams: Monitor campaign performance, sales targets, and customer insights.

Operations Teams: Track process efficiencies, resource allocations, and operational performance.

Designing an effective dashboard

Know Your Audience: Understand the needs, skills, and preferences of the dashboard users.

Set Clear Objectives: Define what the dashboard needs to achieve and what questions it should answer.

Simplify: Keep the design simple and avoid clutter. Use clear and concise titles and labels.

Use Appropriate Visualizations: Choose the right type of chart or graph for the data being presented.

Ensure Readability: Use a clear layout, readable fonts, and appropriate color schemes.

Provide Context: Include filters, legends, and explanatory notes where necessary.

Test and Iterate: Test the dashboard with real users and iterate based on feedback.

Steps Involved in Storytelling with Data

Understand Your Data: Get to know the data set, including its structure, variables, and potential insights.

Define the Narrative: Establish the key message or story you want to tell with the data.

Select Key Data Points: Identify the most relevant data points that support your narrative.

Choose Visualizations: Select the types of charts or graphs that best represent the data and support the story.

Build the Story: Arrange the visualizations in a logical sequence that builds the narrative.

Add Context and Insights: Provide annotations, explanations, and insights to help the audience understand the story.

Review and Refine: Review the story for clarity and impact, and refine as necessary.

Dashboard Design Principles

Clarity: Ensure the information is clear and easy to understand.

Efficiency: Make sure the dashboard enables users to get the information they need quickly.

Consistency: Use consistent design elements and visualization types.

Emphasis: Highlight the most important information to draw users' attention.

Balance: Create a visually balanced layout to enhance readability and usability.

Interactivity: Incorporate interactive elements to allow users to explore data further.

Case Study 1: Retail Sales Dashboard

Objective: Track sales performance across different regions and product categories.

Key Metrics: Total sales, sales by region, sales by product category, year-over-year growth.

Visualizations: Bar charts for regional sales, pie charts for product categories, line graphs for sales trends.

Outcome: Improved ability to identify high-performing regions and products, enabling targeted marketing and sales strategies.

Case Study 2: Healthcare Management Dashboard

Objective: Monitor patient flow and resource utilization in a hospital.

Key Metrics: Patient admissions, bed occupancy rates, average length of stay, resource allocation.

Visualizations: Heat maps for bed occupancy, line charts for admission trends, bar charts for resource usage.

Outcome: Enhanced capacity planning and resource management, leading to reduced patient wait times and improved care delivery.

Case Study 3: Marketing Campaign Dashboard

Objective: Evaluate the effectiveness of marketing campaigns.

Key Metrics: Conversion rates, cost per acquisition, campaign ROI, engagement metrics.

Visualizations: Funnel charts for conversion rates, bar charts for cost analysis, line graphs for engagement trends.

Outcome: Better understanding of campaign performance, enabling more effective allocation of marketing budget and strategies.

Thank You!