

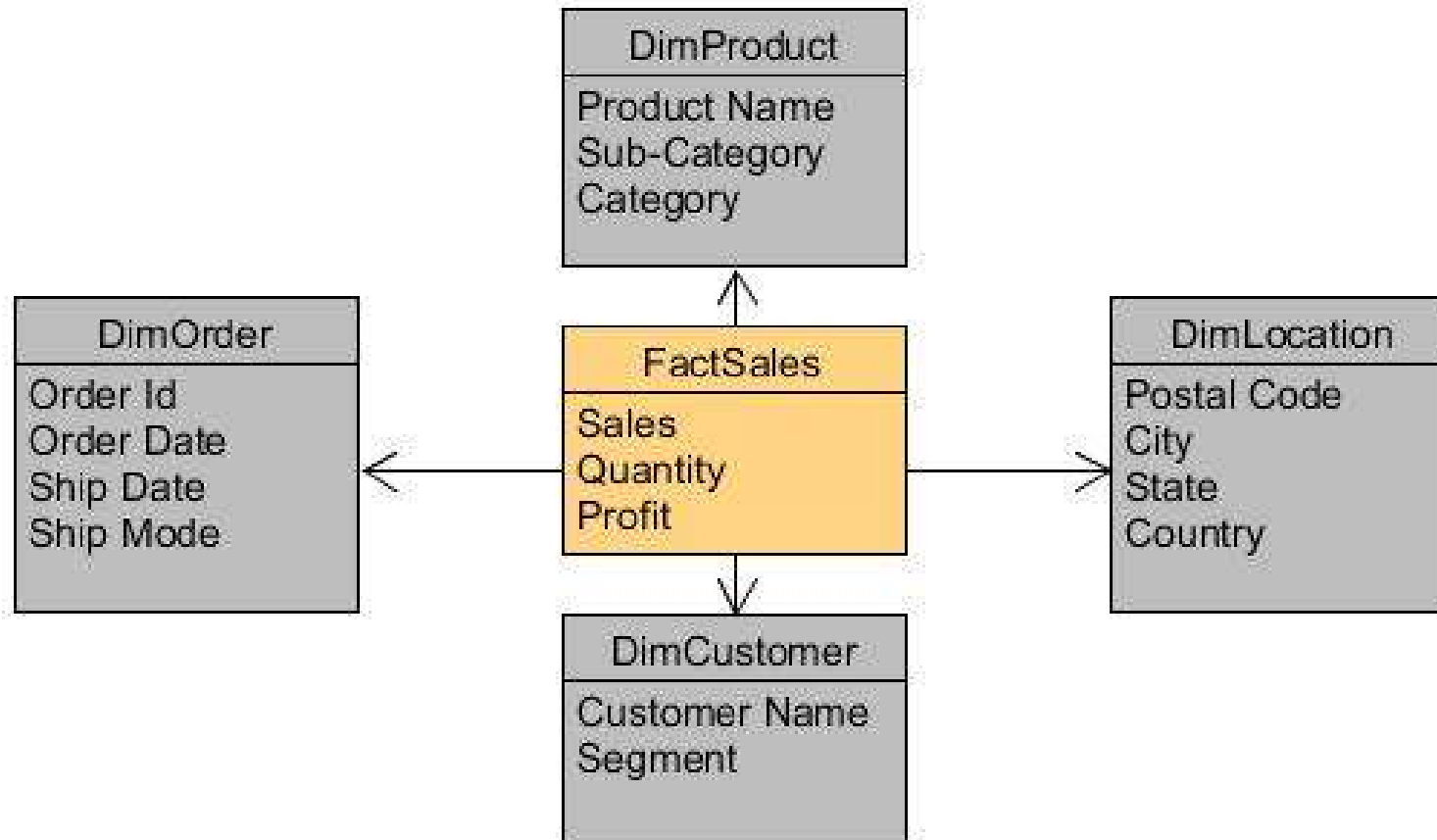
Tableau - Intro

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Outline

- Overview
- Cube Operations
- Continuous vs Discrete
- Table Calculations
- Context Filter
- Kinds of Visualizations

Multidimensional Data Model (Data Cube)



Saved Data Sources: *Sample - Superstore*

The screenshot shows the Tableau desktop application window titled 'Tableau - Book3'. The menu bar includes 'File', 'Data', 'Server', and 'Help'. The left sidebar contains the following options:

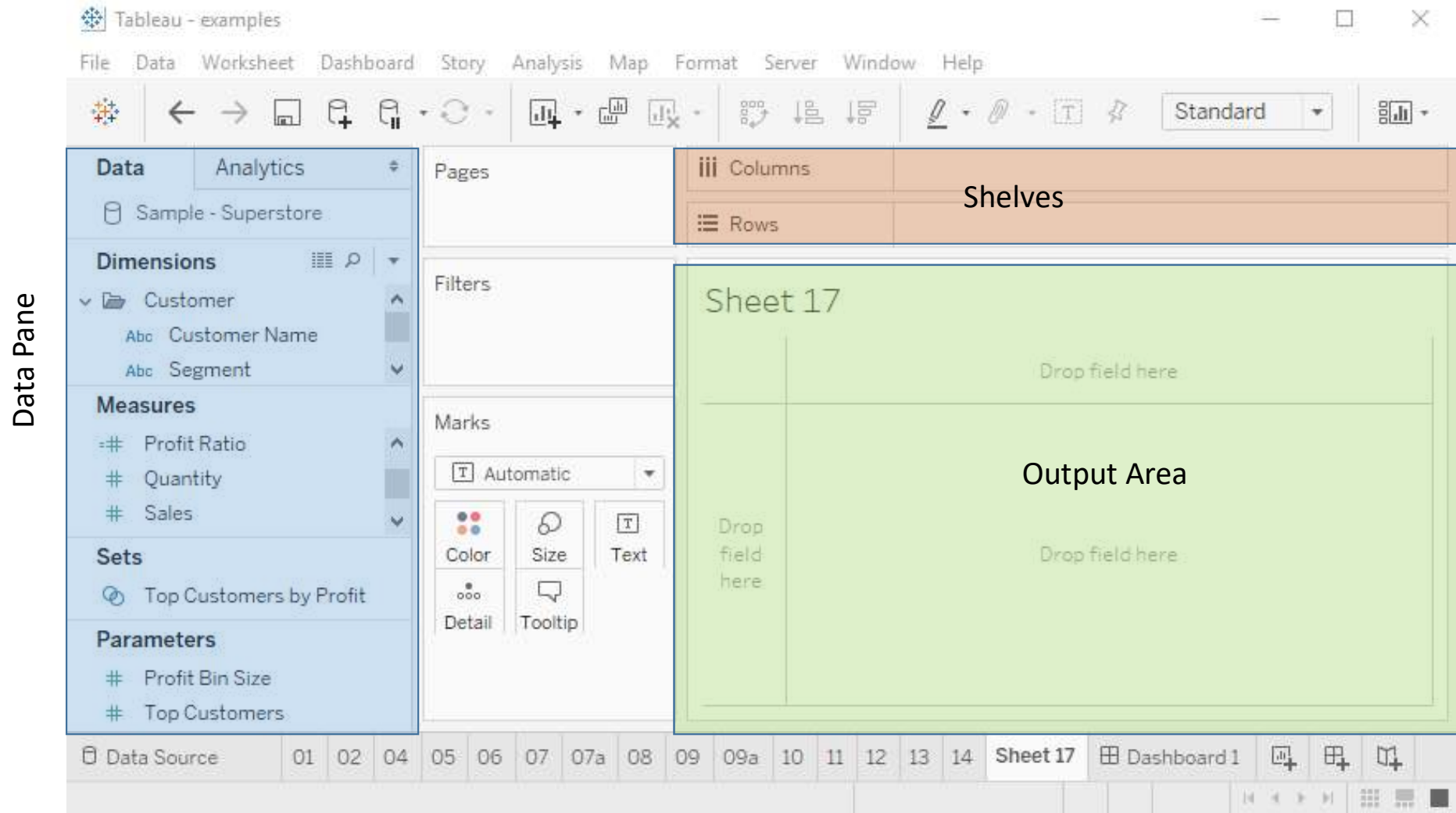
- Microsoft Excel
- Text file
- JSON file
- Microsoft Access
- PDF file
- Spatial file
- Statistical file
- More...
- To a Server
 - Tableau Server
 - Microsoft SQL Server
 - MySQL
 - Amazon Redshift
 - Oracle
 - More...
- Saved Data Sources
 - Sample - EU Superstore
 - Sample - Superstore** (circled)
 - World Indicators

The main workspace is divided into three sections:

- Open:** A grid of thumbnails for existing workbooks, including 'Completed Twitt...', 'In-class...', 'ccrime-star', 'ccrime-star-basis', 'ccrime-pbi', 'final_Tableau C...', 'chicago-crime', 'Create Spider M...', 'chicago-crime', 'foodm', 'crime', 'Cell Coloring', 'chicago-crime', 'RegionalSalesA...', and 'Superstore'. A blue arrow points from the 'Sample - Superstore' menu item to the 'chicago-crime' thumbnail in the second row.
- Open a Workbook:** A button to open a new workbook.
- Discover:** A sidebar with links for 'Training' (View all 87 training videos), 'Viz of the Week' (Explore viz of the week), 'Resources' (Get Tableau Prep, Blog - Parameter actions (now in beta) extend Tableau interactivity: Here's how and wh..., Forums), and an 'Update to 2019.1.3 Now' button at the bottom.

The 'Sample Workbooks' section at the bottom shows thumbnails for a dashboard, a map of the United States, and a bar chart.

User Interface



Tabular Visualization of Cube Data on 2 Dimensions

The screenshot shows the Tableau interface with the following components:

- Data:** Analytics, Sample - Superstore
- Dimensions:**
 - Customer
 - Customer Name
 - Segment
 - Order
 - Order Date
 - Order ID
 - Ship Date
 - Ship Mode
- Measures:**
 - Profit Ratio
 - Quantity
 - Sales

The Marks card is configured as follows:

- Marks: Automatic
- Color: (empty)
- Size: (empty)
- Text: (empty)
- Detail: (empty)
- Tooltip: (empty)
- Aggregation: SUM(Sales)

The Columns and Rows shelves are configured as follows:

- Columns: YEAR(Order Date)
- Rows: Segment

Aggregation (sum) of Sales on Year and Segment Level

	Order Date			
Segment	2015	2016	2017	2018
Consumer	\$266,097	\$266,536	\$296,864	\$331,905
Corporate	\$128,435	\$128,757	\$207,106	\$241,848
Home Office	\$89,716	\$75,239	\$105,235	\$159,463

Pivoting (Dice)

Segment	Order Date			
	2015	2016	2017	2018
Consumer	\$266,097	\$266,536	\$296,864	\$331,905
Corporate	\$128,435	\$128,757	\$207,106	\$241,848
Home Office	\$89,716	\$75,239	\$105,235	\$159,463



Year of Order Date	Segment		
	Consumer	Corporate	Home Office
2015	\$266,097	\$128,435	\$89,716
2016	\$266,536	\$128,757	\$75,239
2017	\$296,864	\$207,106	\$105,235
2018	\$331,905	\$241,848	\$159,463

Highlighting

Columns		Segment		
Rows		YEAR(Order Date)		
Sales by Year and Segment				
		Segment		
Year of Order Date	Consumer	Corporate	Home Office	
2015	\$266,097	\$128,435	\$89,716	
2016	\$266,536	\$128,757	\$75,239	
2017	\$296,864	\$207,106	\$105,235	
2018	\$331,905	\$241,848	\$159,463	

AGG(sales bad avg good)

- bad
- avg
- good

Totals

Segment	Order Date				Grand Total
	2015	2016	2017	2018	
Consumer	\$266,097	\$266,536	\$296,864	\$331,905	\$1,161,401
Corporate	\$128,435	\$128,757	\$207,106	\$241,848	\$706,146
Home Office	\$89,716	\$75,239	\$105,235	\$159,463	\$429,653
Grand Total	\$484,247	\$470,533	\$609,206	\$733,215	\$2,297,201

Tabular Visualization extended by Category (3 Dimensions)

Columns	YEAR(Order Date)	
Rows	Category	Segment

Category	Segment	Order Date			
		2015	2016	2017	2018
Furniture	Consumer	\$86,061	\$94,410	\$100,361	\$110,218
	Corporate	\$45,100	\$45,961	\$77,261	\$60,697
	Home Office	\$26,032	\$30,147	\$21,279	\$44,473
Office Supplies	Consumer	\$84,427	\$79,736	\$86,269	\$113,520
	Corporate	\$48,938	\$34,901	\$54,231	\$92,606
	Home Office	\$18,411	\$22,596	\$43,439	\$39,971
Technology	Consumer	\$95,609	\$92,390	\$110,234	\$108,167
	Corporate	\$34,396	\$47,895	\$75,614	\$88,545
	Home Office	\$45,273	\$22,496	\$40,517	\$75,019

Filtering (Slicing)

Filters

Category

Marks

Automatic

Color Size Text

Detail Tooltip

SUM(Number ..

	Order Date			
Category	2015	2016	2017	2018
Furniture	421	452	562	686
Office Supplies	1,217	1,241	1,566	2,002
Technology	355	409	459	624

	Order Date			
Category	2015	2016	2017	2018
Furniture	421	452	562	686

Drill Down

Columns	YEAR(Order Date)
Rows	Category

	Order Date			
Category	2015	2016	2017	2018
Furniture	421	452	562	686

Columns	YEAR(Order Date)	
Rows	Category	Sub-Category

		Order Date			
Category	Sub-Catego..	2015	2016	2017	2018
Furniture	Bookcases	37	61	54	76
	Chairs	129	133	165	190
	Furnishings	184	200	257	316
	Tables	71	58	86	104

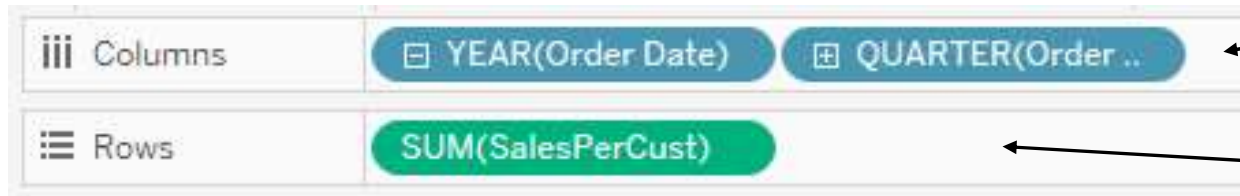
Continuous vs Discrete

Columns	QUARTER(Order ..)
Rows	SUM(SalesPerCust)

continuous (green)



Continuous vs Discrete



discrete (blue)

continuous (green)

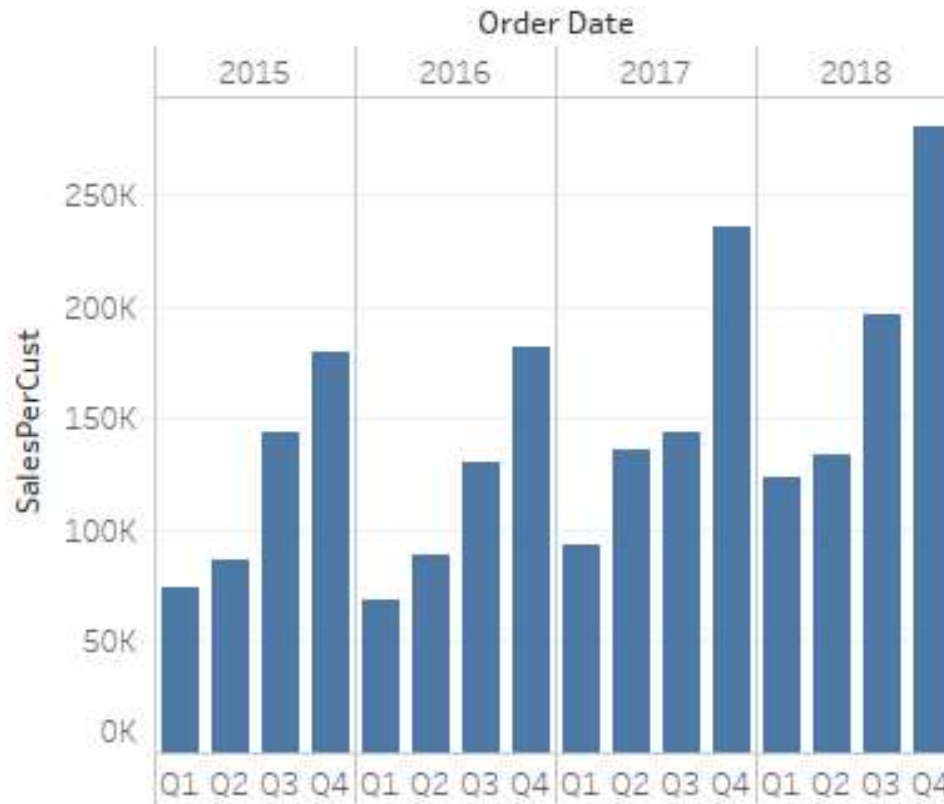


Continuous vs Discrete



discrete (blue)

continuous (green)



as bar chart

Table Calculations (Percentages)

Calculation Type

Percent of Total

Compute total across all pages

Compute Using

Table (across)

Table (down)

Table

Cell

Specific Dimensions

Category	Order Date				Grand Total
	2015	2016	2017	2018	
Furniture	6.84%	7.42%	8.66%	9.38%	32.30%
Office Supplies	6.61%	5.97%	8.01%	10.71%	31.30%
Technology	7.63%	7.09%	9.85%	11.83%	36.40%
Grand Total	21.08%	20.48%	26.52%	31.92%	100.00%

Table Calculations (Percentages)

Percent of Total

Compute total across all pages

Compute Using

Table (across)

Table (down)

Table

Cell

Specific Dimensions

Category	Order Date				Grand T..
	2015	2016	2017	2018	
Furniture	21.19%	22.98%	26.81%	29.03%	100.00%
Office Supplies	21.11%	19.09%	25.58%	34.23%	100.00%
Technology	20.96%	19.47%	27.07%	32.50%	100.00%
Grand Total	21.08%	20.48%	26.52%	31.92%	100.00%

Table Calculations (Percentages)

Percent of Total

Compute total across all pages

Compute Using

Table (across)

Table (down)

Table

Cell

Specific Dimensions

Category	Order Date				Grand T..
	2015	2016	2017	2018	
Furniture	32.46%	36.24%	32.65%	29.38%	32.30%
Office Supplies	31.34%	29.17%	30.19%	33.56%	31.30%
Technology	36.20%	34.60%	37.16%	37.06%	36.40%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%

Context Filter: Goal: Top 3 in Consumer

Top 5 overall

Customer Name	
Sean Miller	\$25,043 Home Office
Tamara Chand	\$19,052 Corporate
Raymond Buch	\$15,117 Consumer
Tom Ashbrook	\$14,596 Home Office
Adrian Barton	\$14,474 Consumer
Ken Lonsdale	\$14,175 Consumer

Problem: Parallel Filtering

- Filter wrt Consumer
- Filter Top 3 Customer
- Intersection contains only *Raymond Buch*

Filters

- Segment: Consumer
- Customer Name

Top 3 Customers

Segment	Customer Name	
Consumer	Raymond Buch	\$15,117

Solution: Turn Segment into Context Filter (applied first)

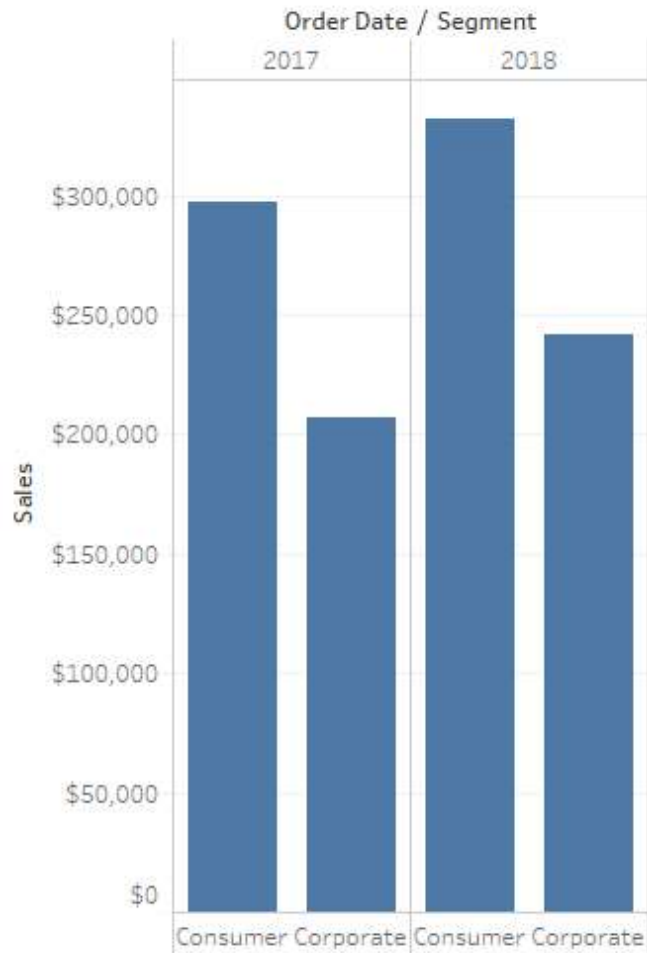
Filters

- Segment: Consumer
- Customer Name

Top 3 Customers

Segment	Customer Name	
Consumer	Raymond Buch	\$15,117
	Adrian Barton	\$14,474
	Ken Lonsdale	\$14,175

Bar Charts



Bubble Chart



Tree Map

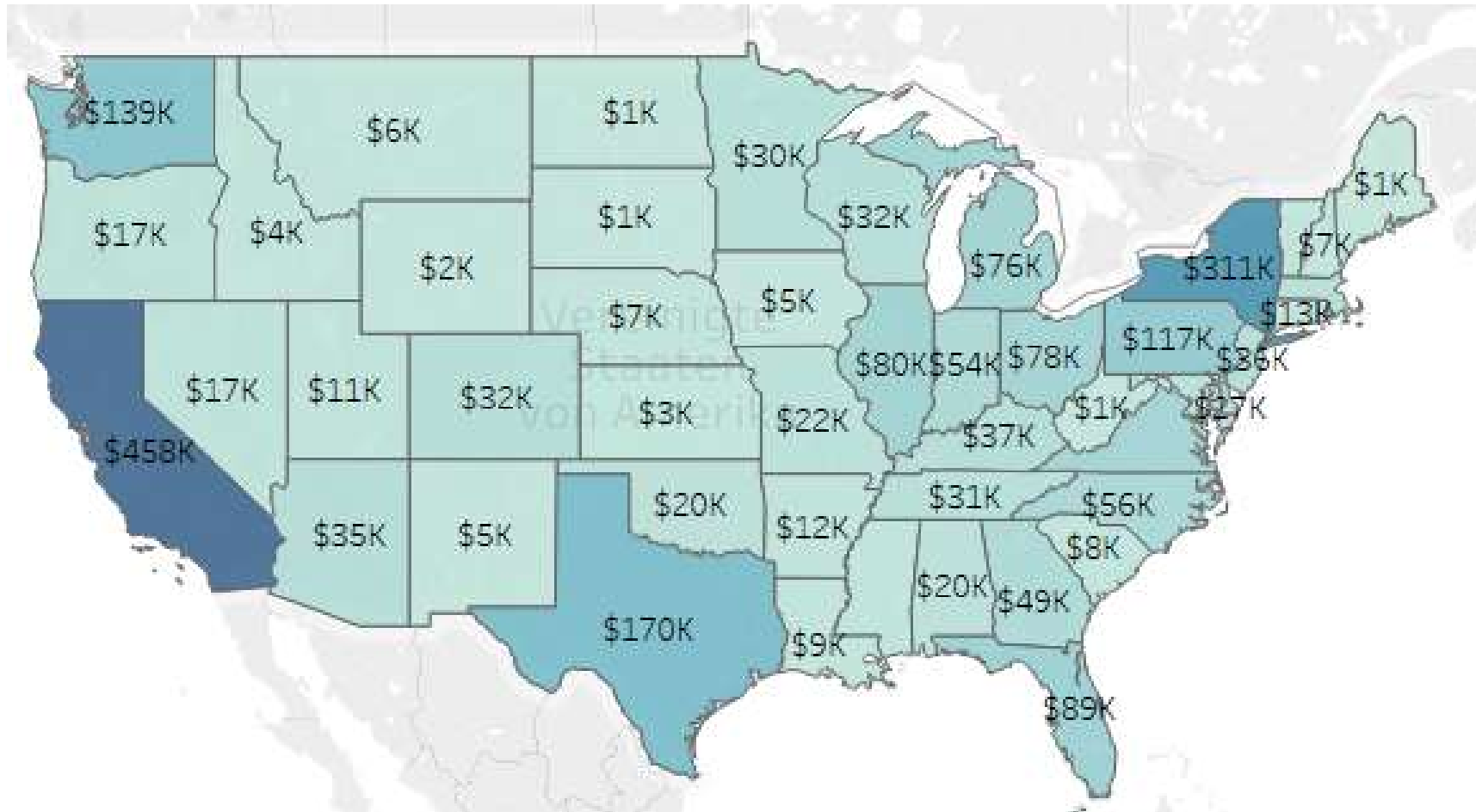


Highlight Table

Category	Segment		
	Consumer	Corporate	Home Office
Furniture	\$391.049	\$229.020	\$121.931
Office Supplies	\$363.952	\$230.676	\$124.418
Technology	\$406.400	\$246.450	\$183.304

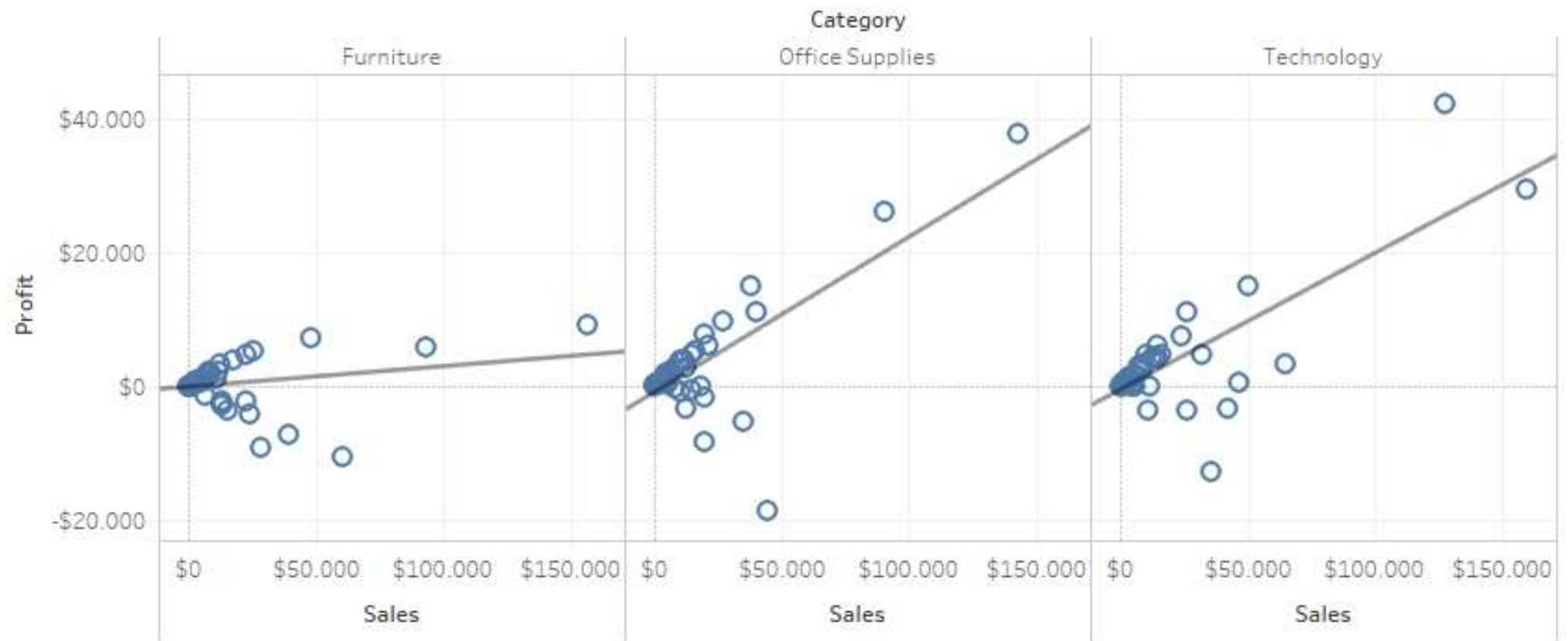


Maps



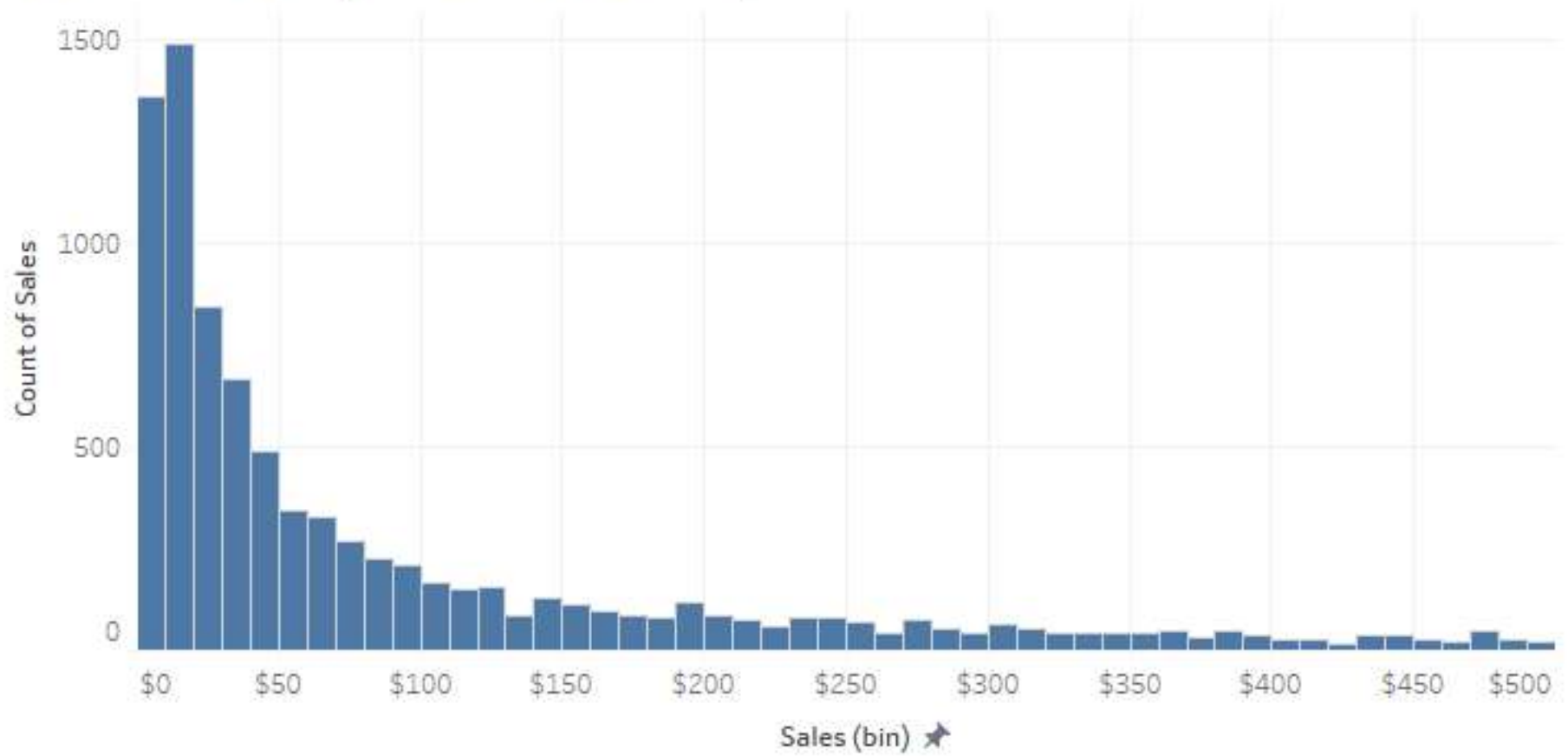
Scatter Plots – with Trend Line

Profit wrt. Sales per Category on State Level

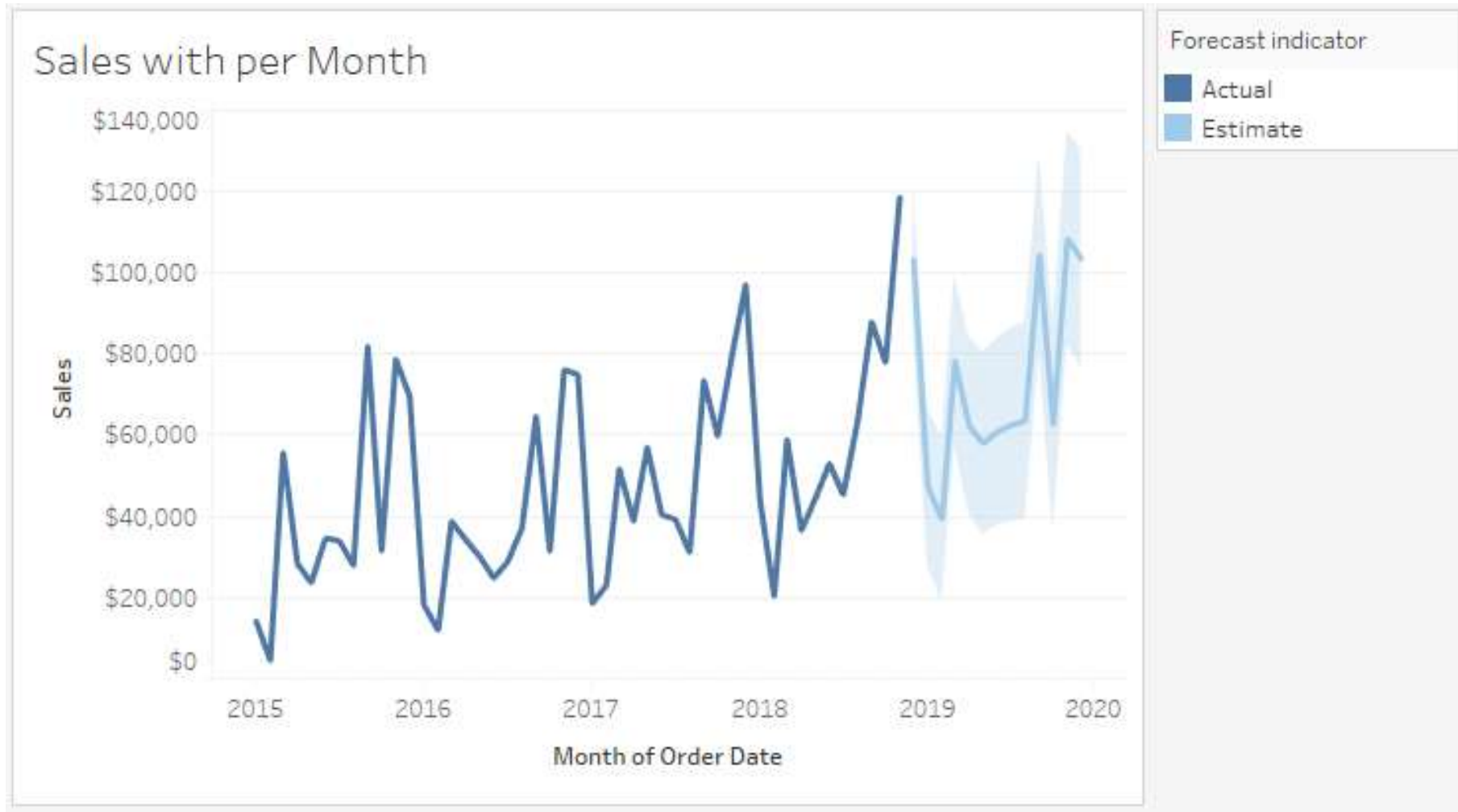


Histogram

Number of Sales per Bin - Bin Size 10\$



Line Diagram – with Forecast



Complex Table Calculations and Dual Axis

