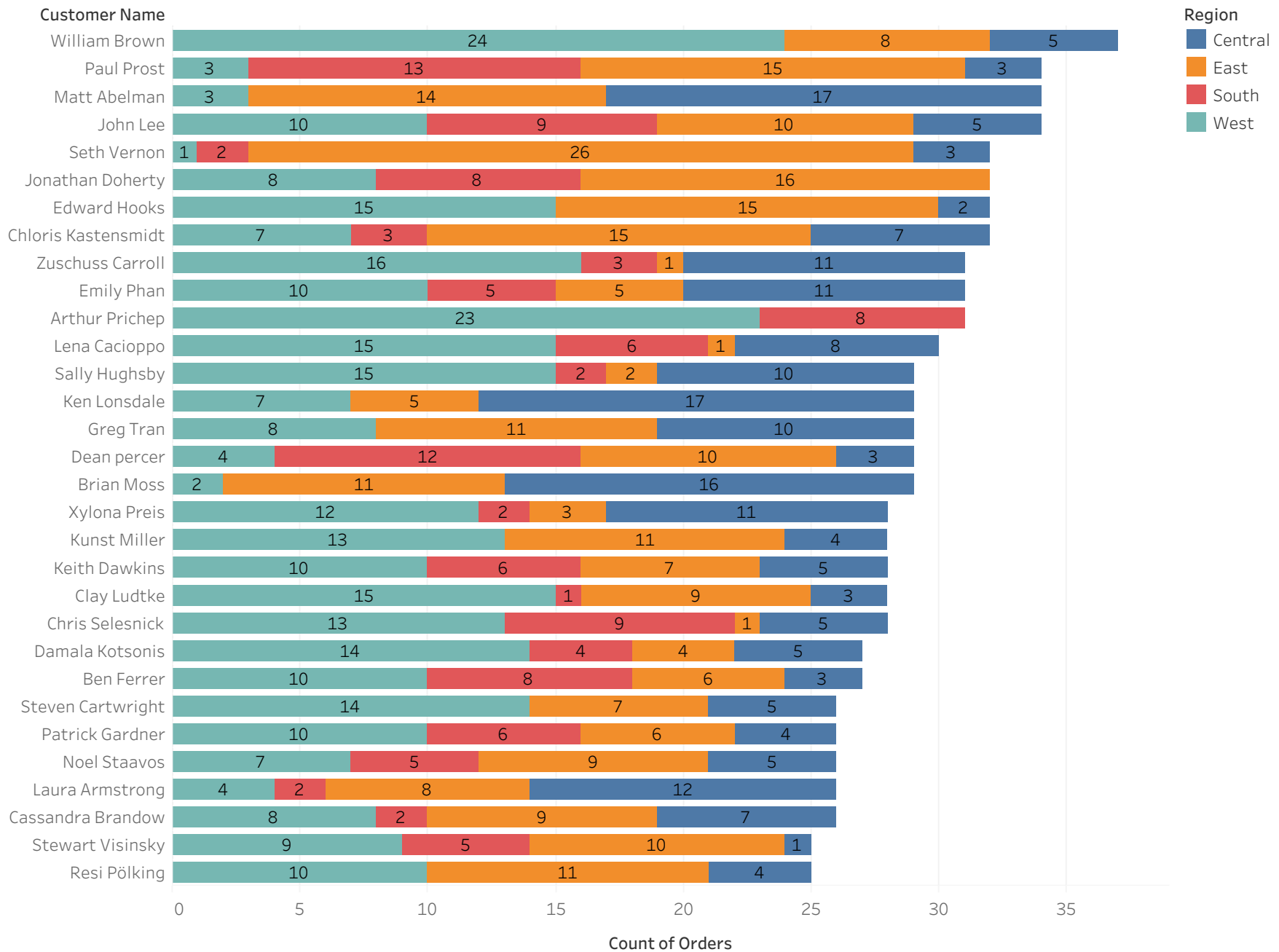


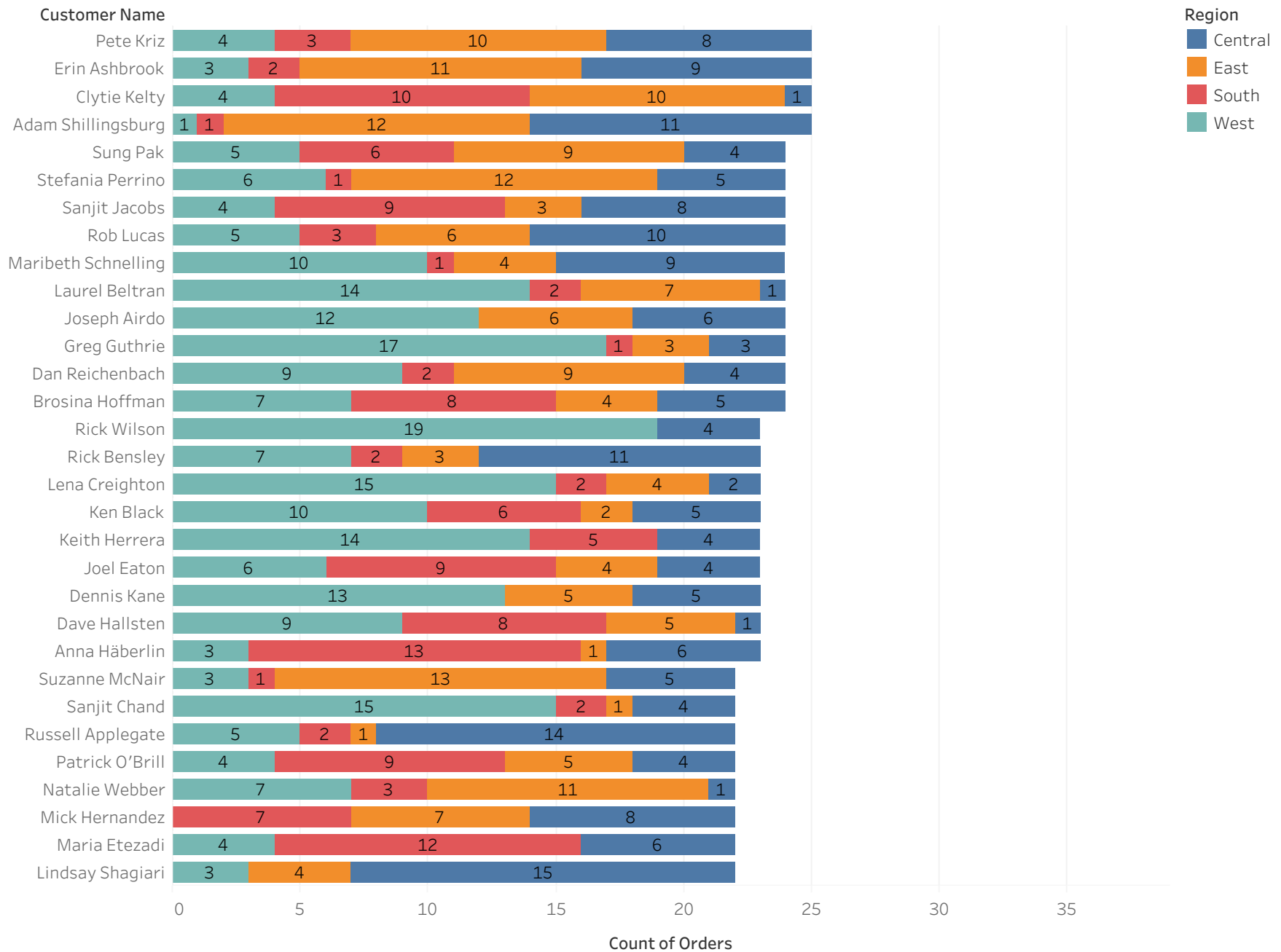
Sales and Profit by Category and SubCategory

		Segment					
Category	Sub-Catego..	Profit			Sales		
		Consum..	Corpora..	Home Office	Consum..	Corpora..	Home Office
Furniture	Chairs	13,235	8,345	5,010	172,863	99,141	56,445
	Furnishings	7,919	3,508	1,632	49,620	25,001	17,084
	Bookcases	-4,436	638	325	68,633	34,006	12,241
	Tables	-9,728	-4,906	-3,091	99,934	70,872	36,160
Office Supplies	Paper	15,535	10,362	8,157	36,324	23,883	18,272
	Binders	17,996	6,377	5,849	118,161	51,560	33,691
	Storage	7,104	9,131	5,044	100,492	79,791	43,560
	Appliances	6,982	7,430	3,726	52,820	36,589	18,124
	Envelopes	3,264	2,571	1,129	7,771	5,943	2,763
	Art	3,454	2,005	1,069	14,252	8,590	4,276
	Labels	3,076	1,761	709	6,709	4,102	1,675
	Fasteners	577	252	121	1,681	783	560
	Supplies	-1,658	339	130	25,741	19,435	1,497
Technology	Copiers	24,084	18,990	12,544	69,819	46,829	32,880
	Phones	23,837	11,766	8,912	169,933	91,153	68,921
	Accessories	20,736	12,707	8,493	87,105	48,191	32,085
	Machines	2,141	703	541	79,543	60,277	49,419

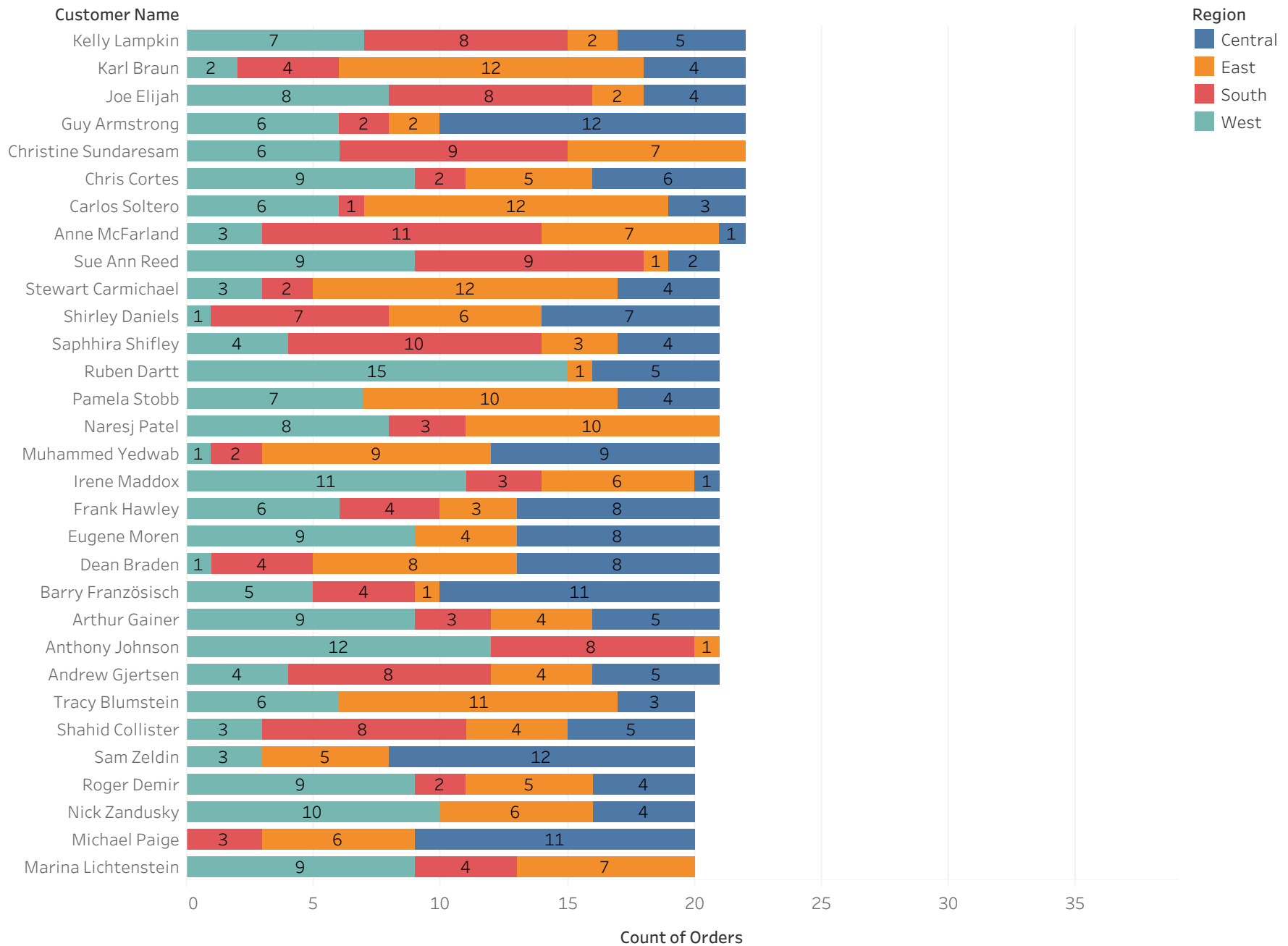
Orders by Customer



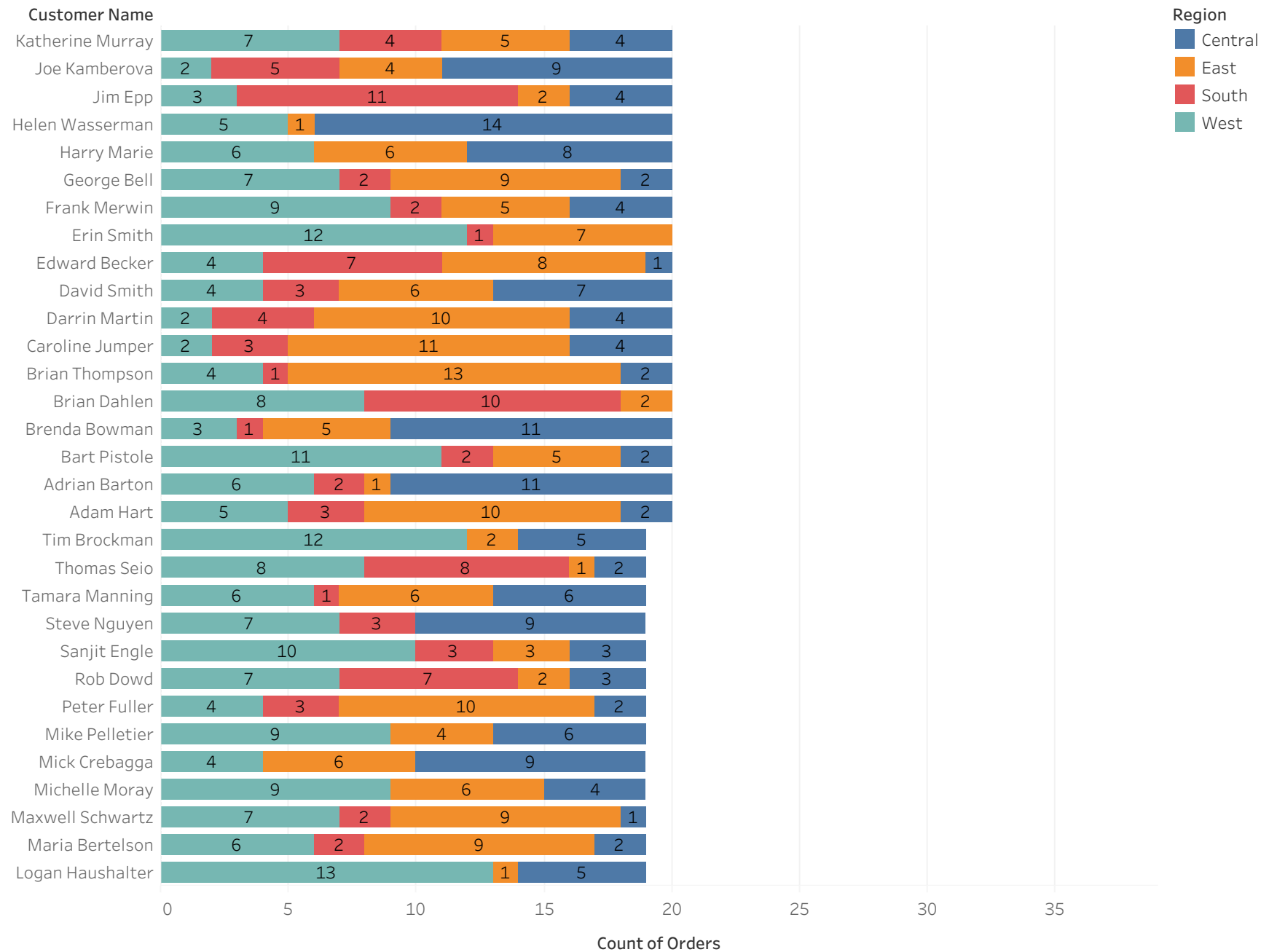
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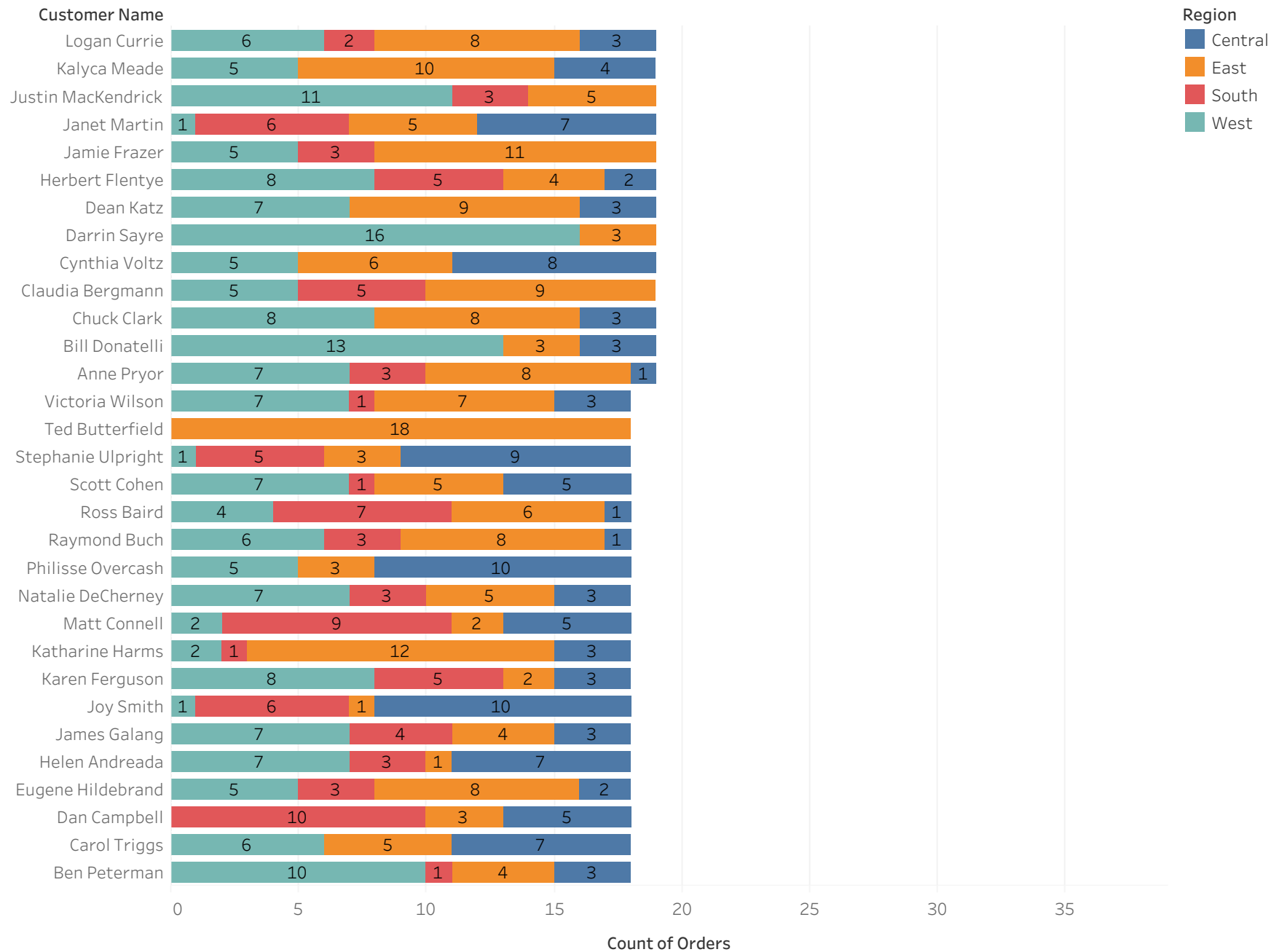
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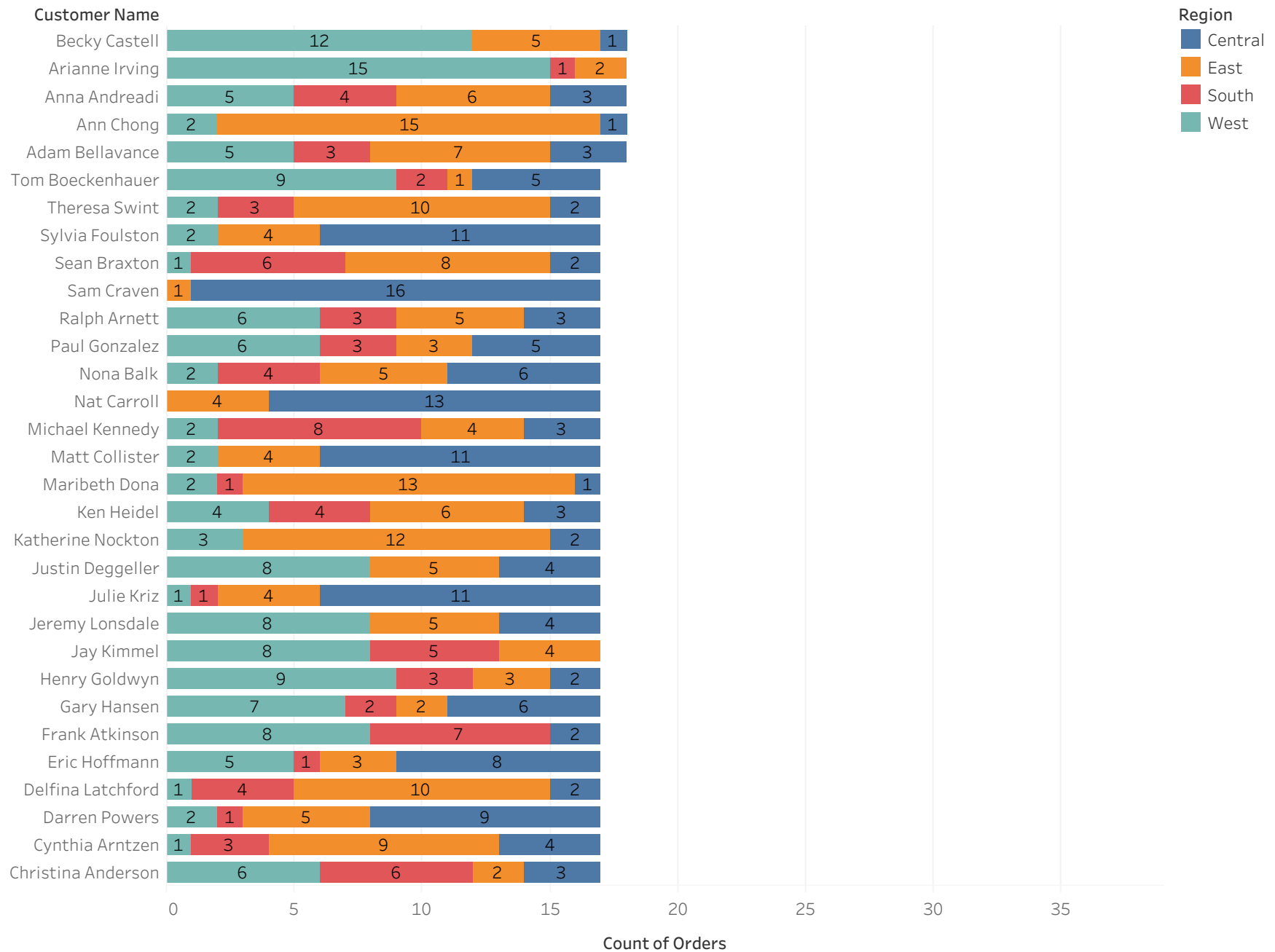
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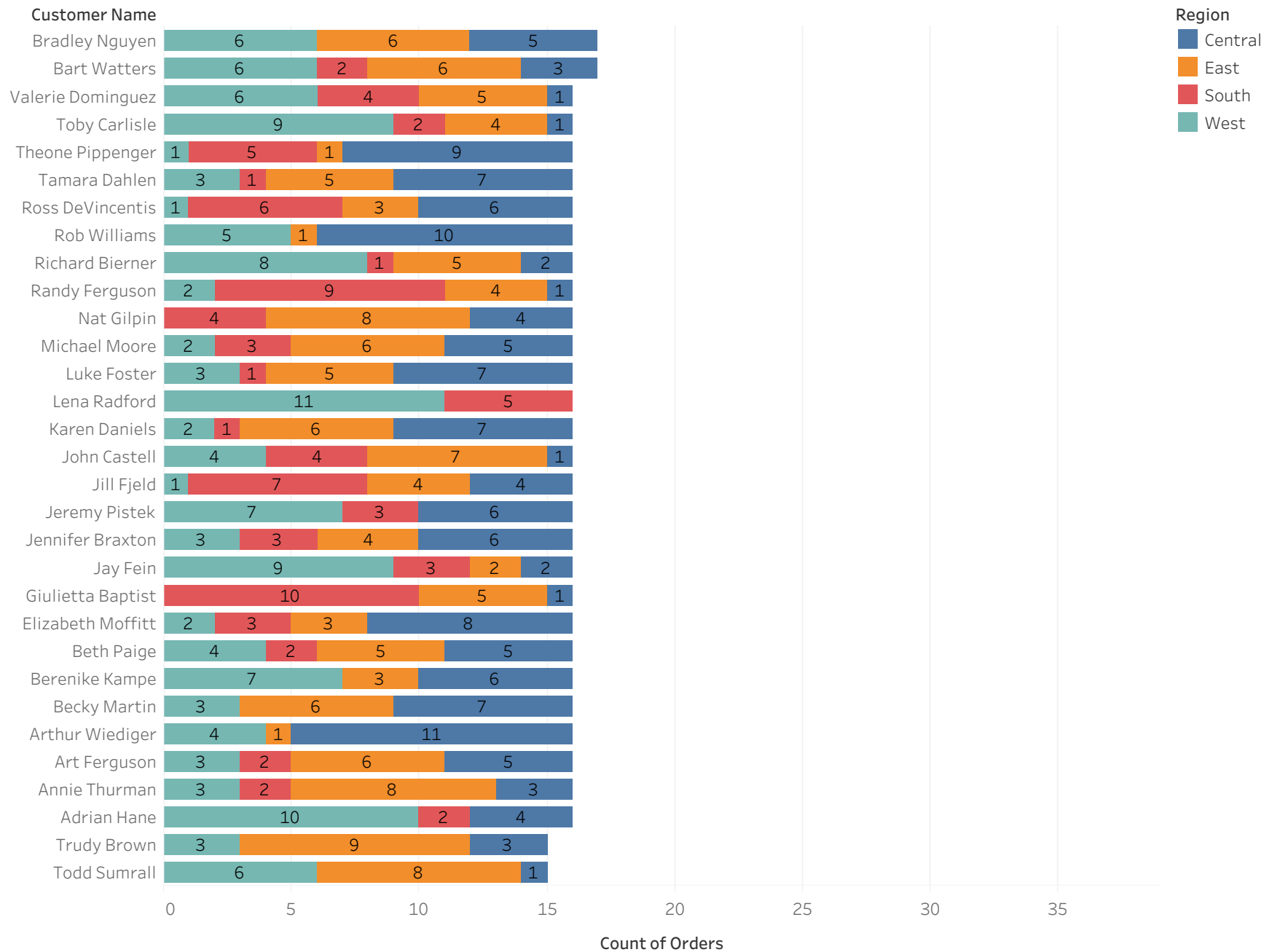
Orders by Customer



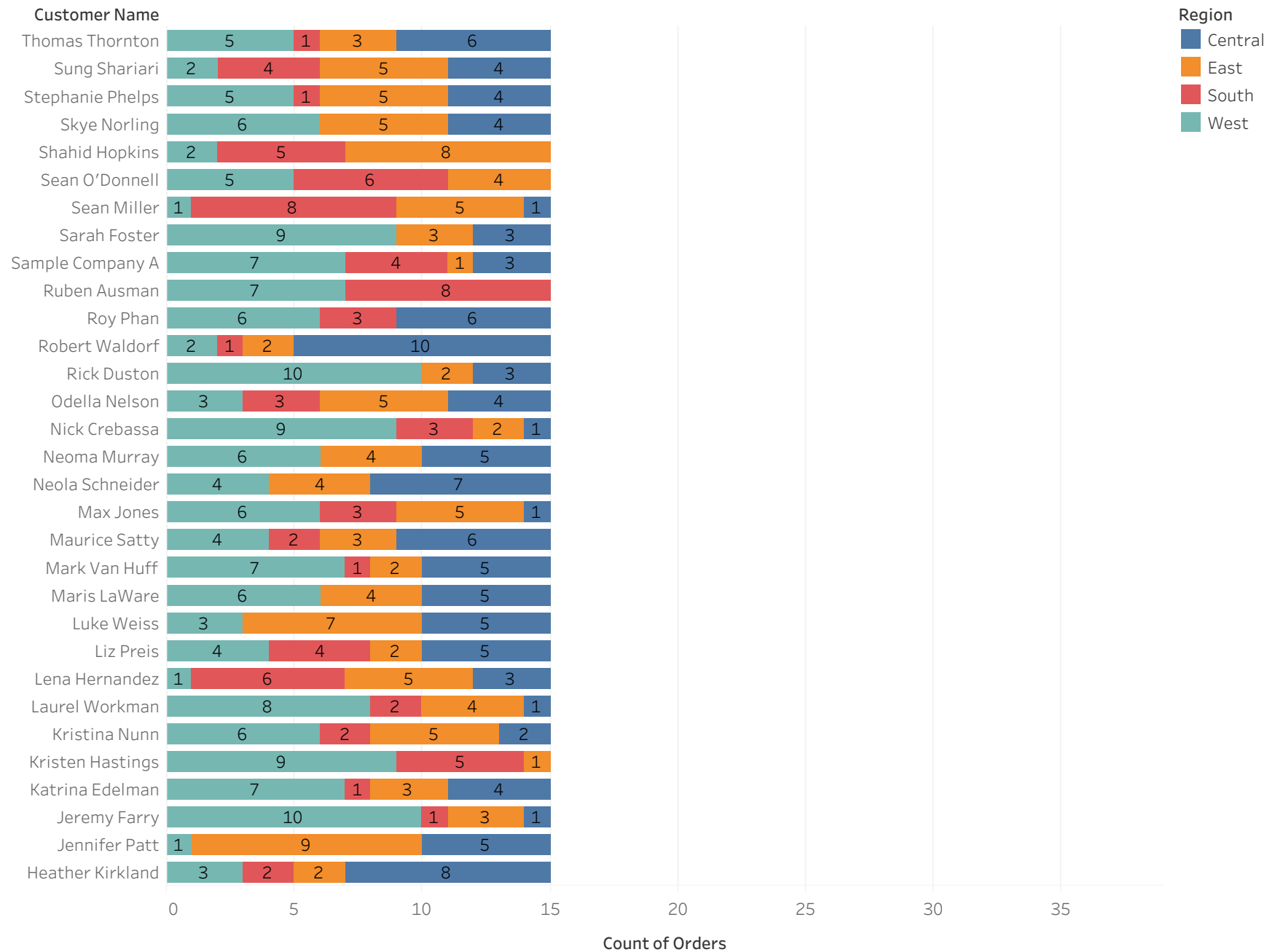
Orders by Customer



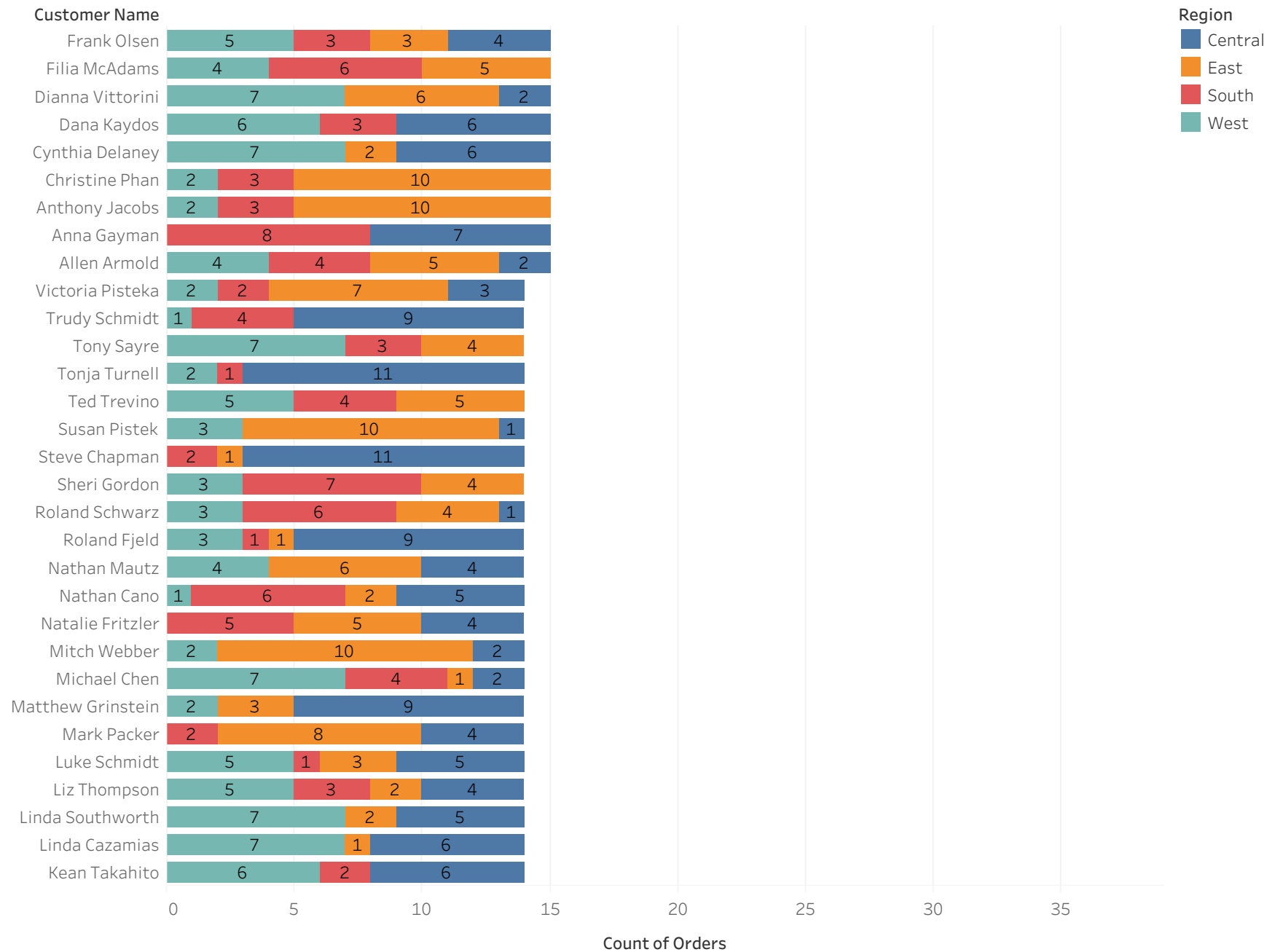
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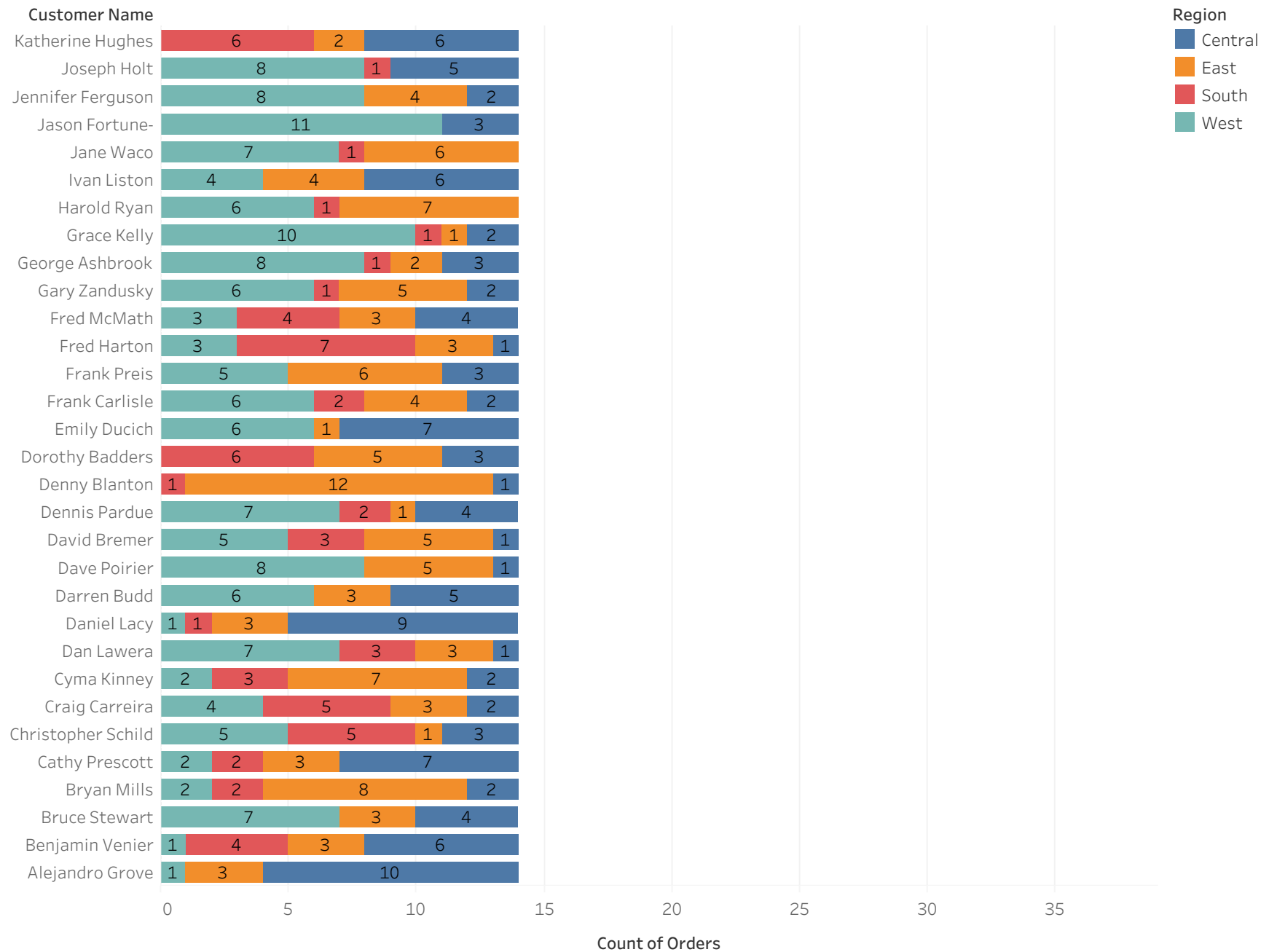
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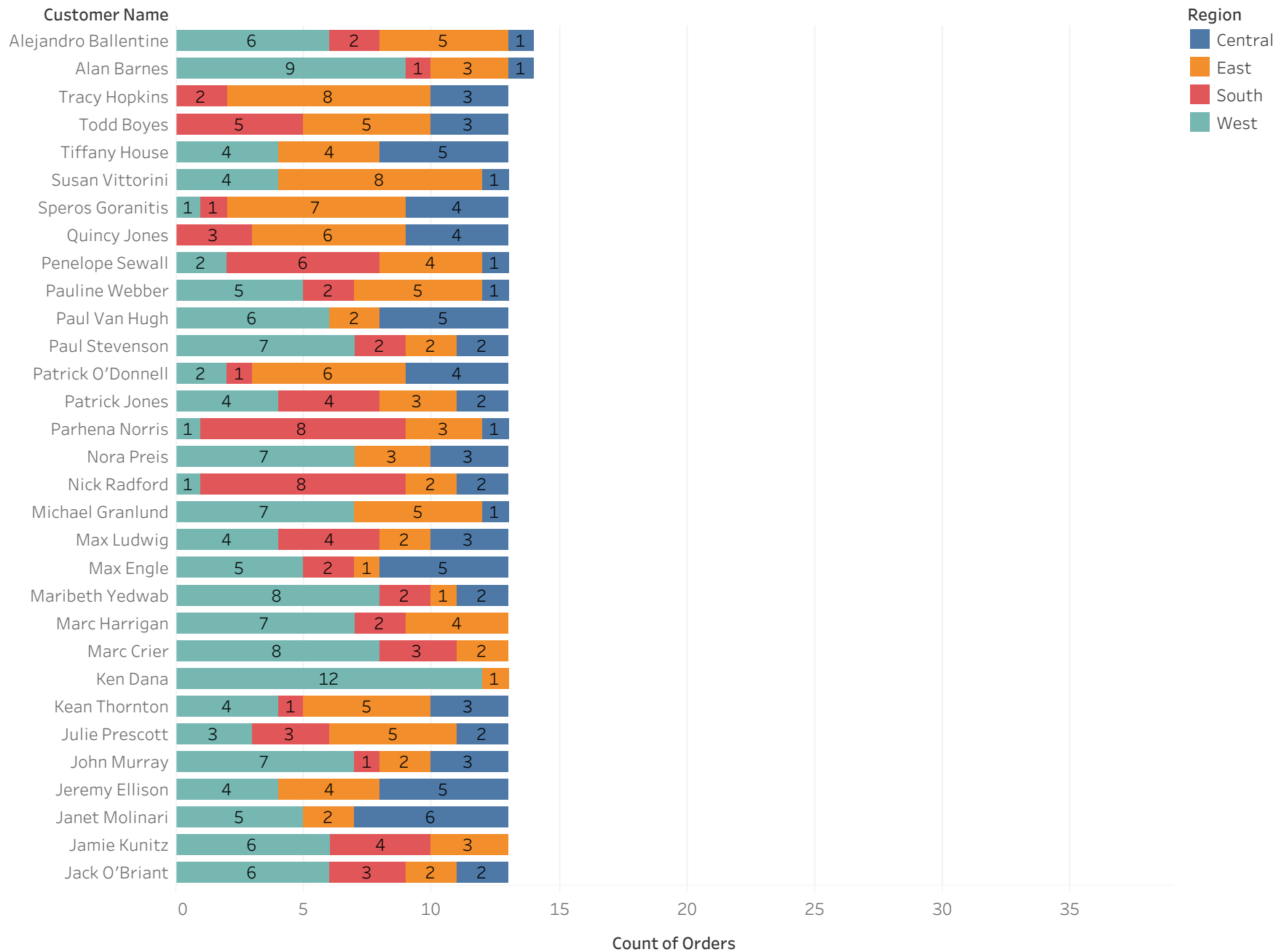
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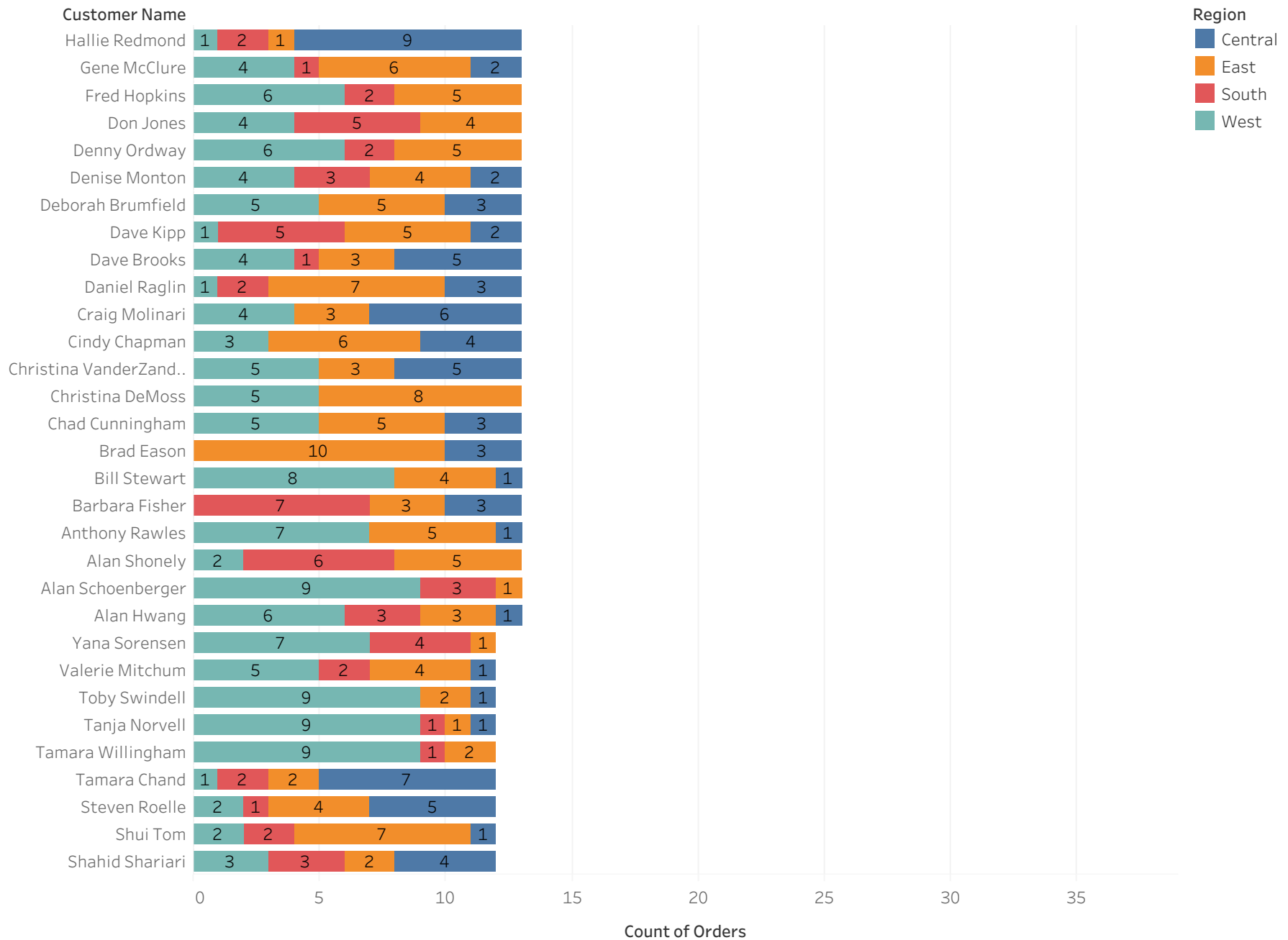
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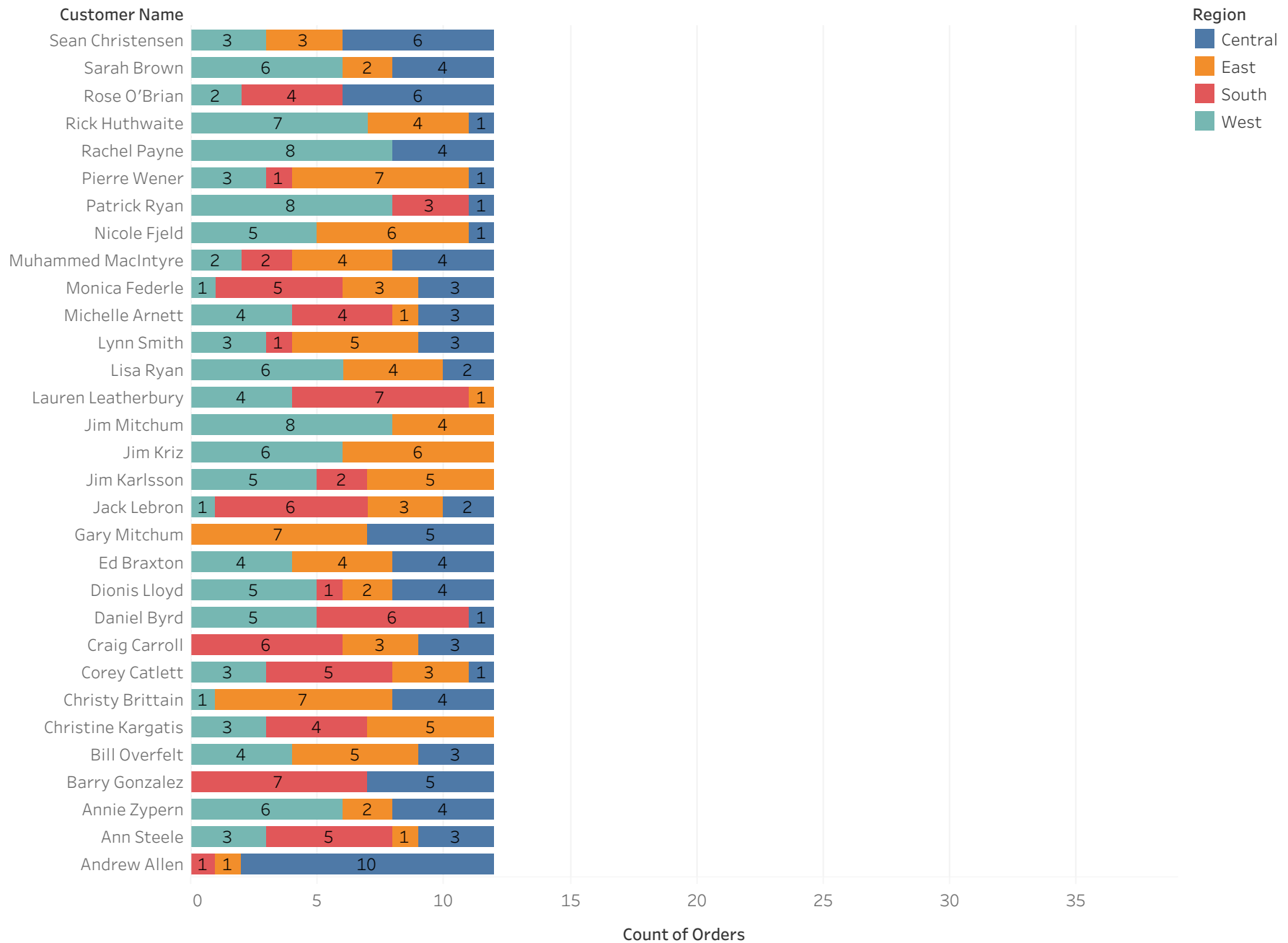
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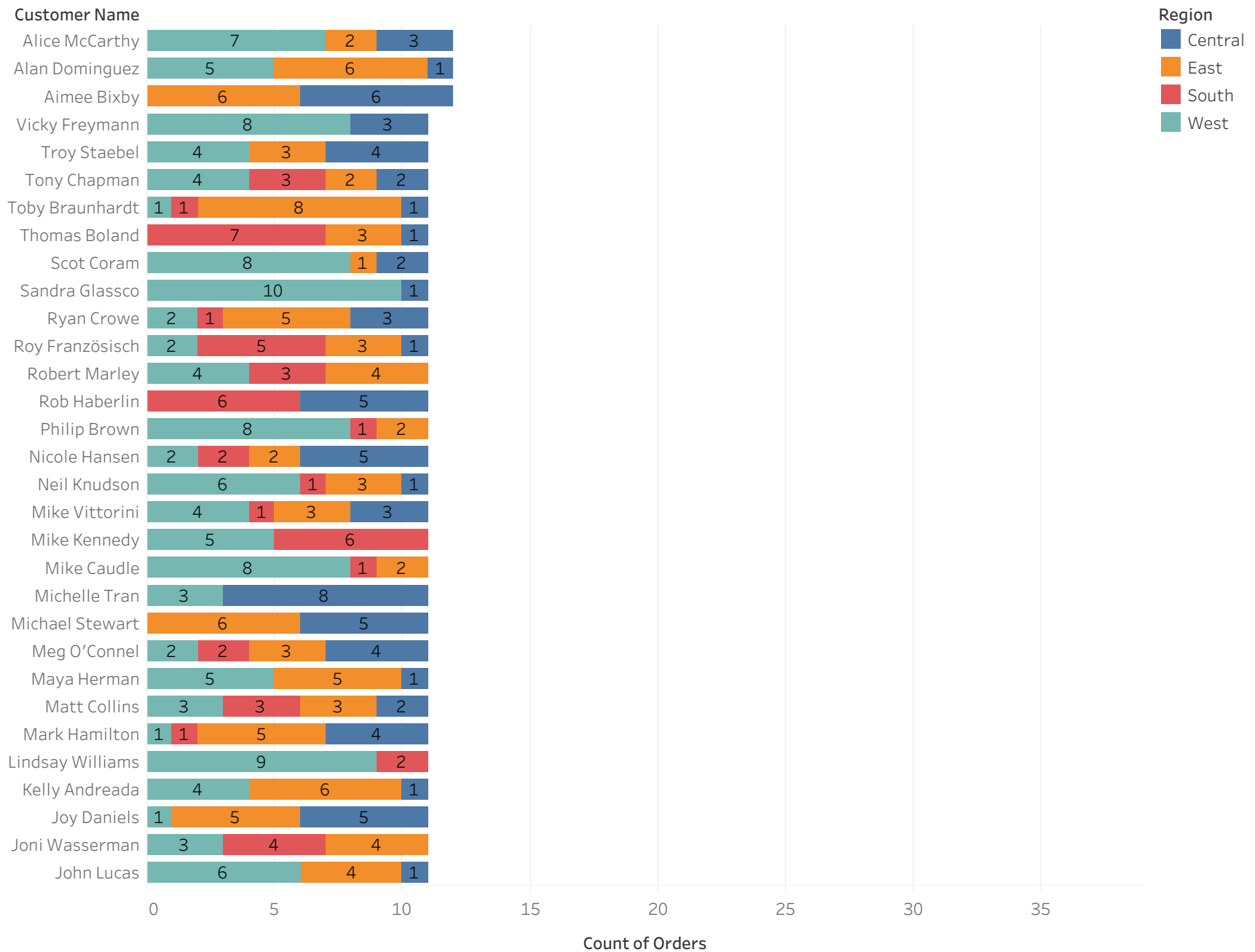
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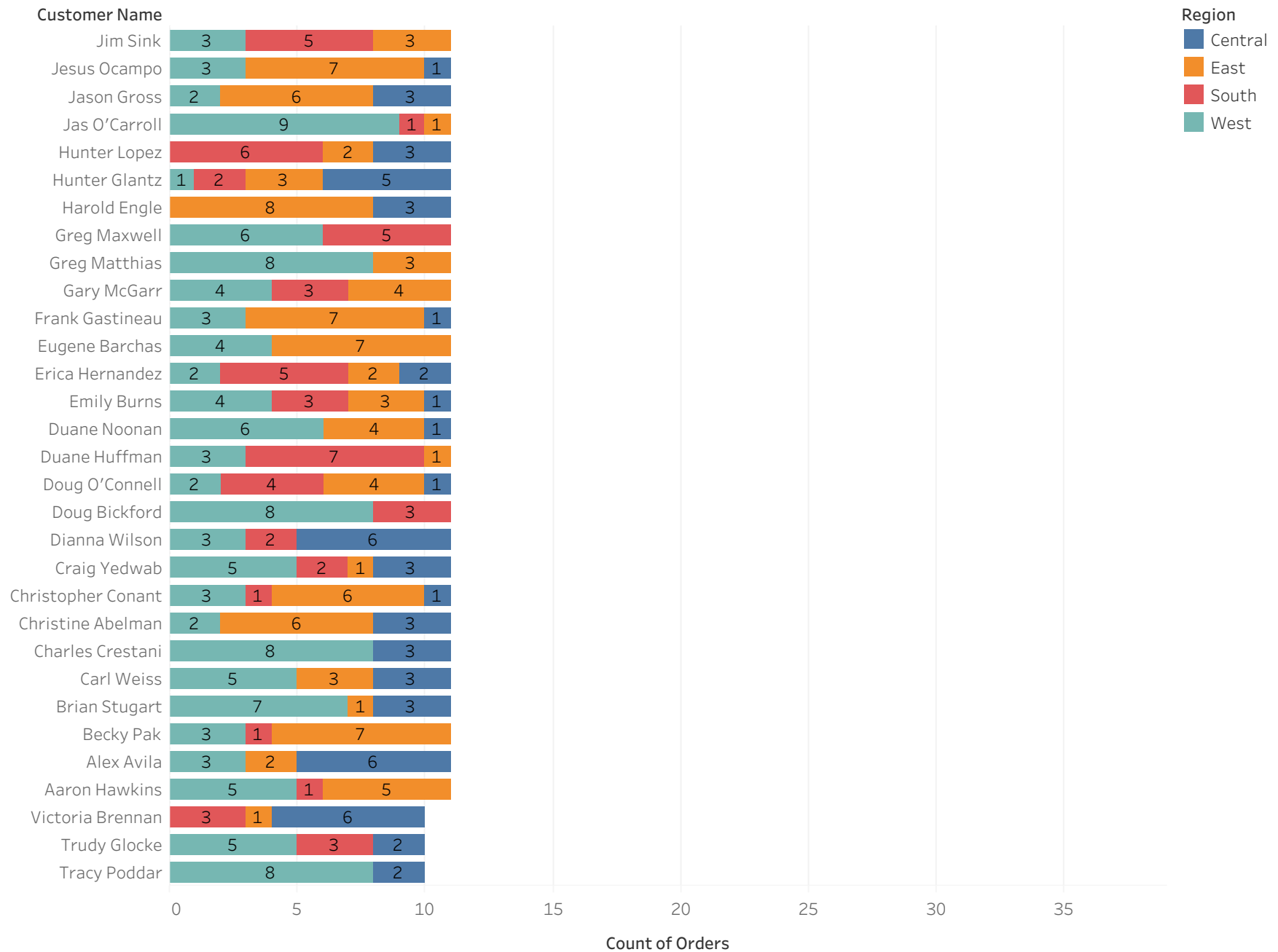
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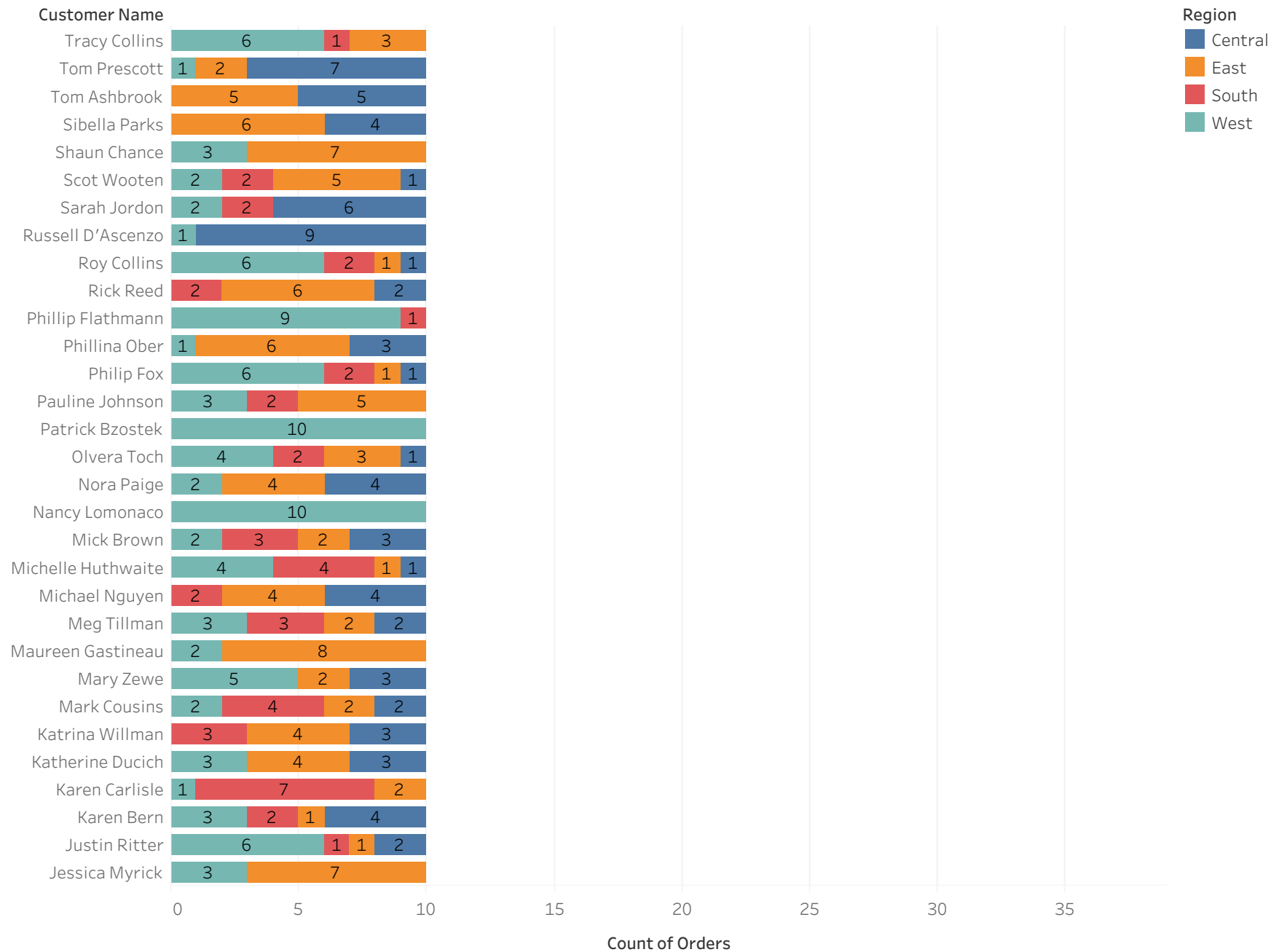
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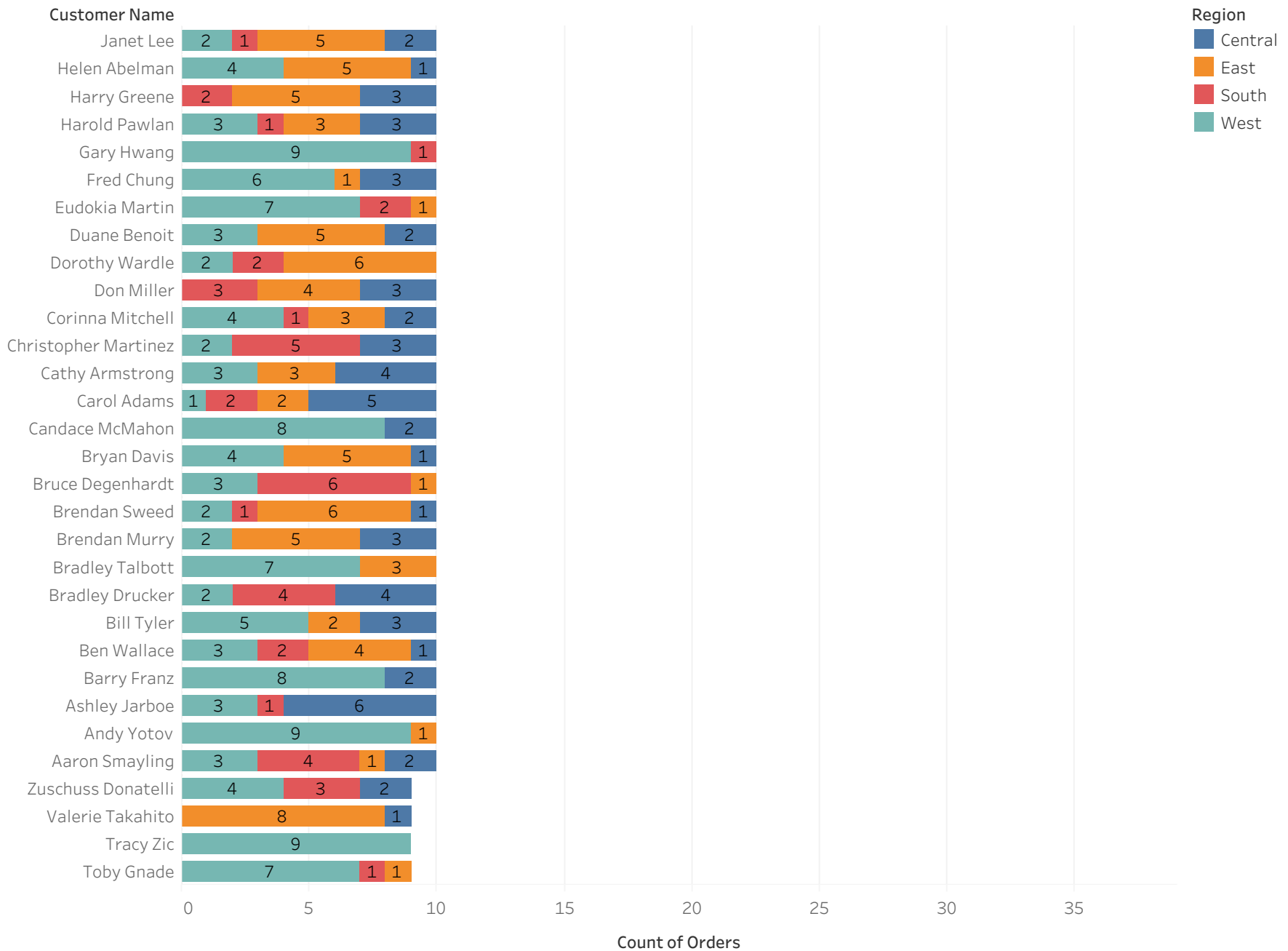
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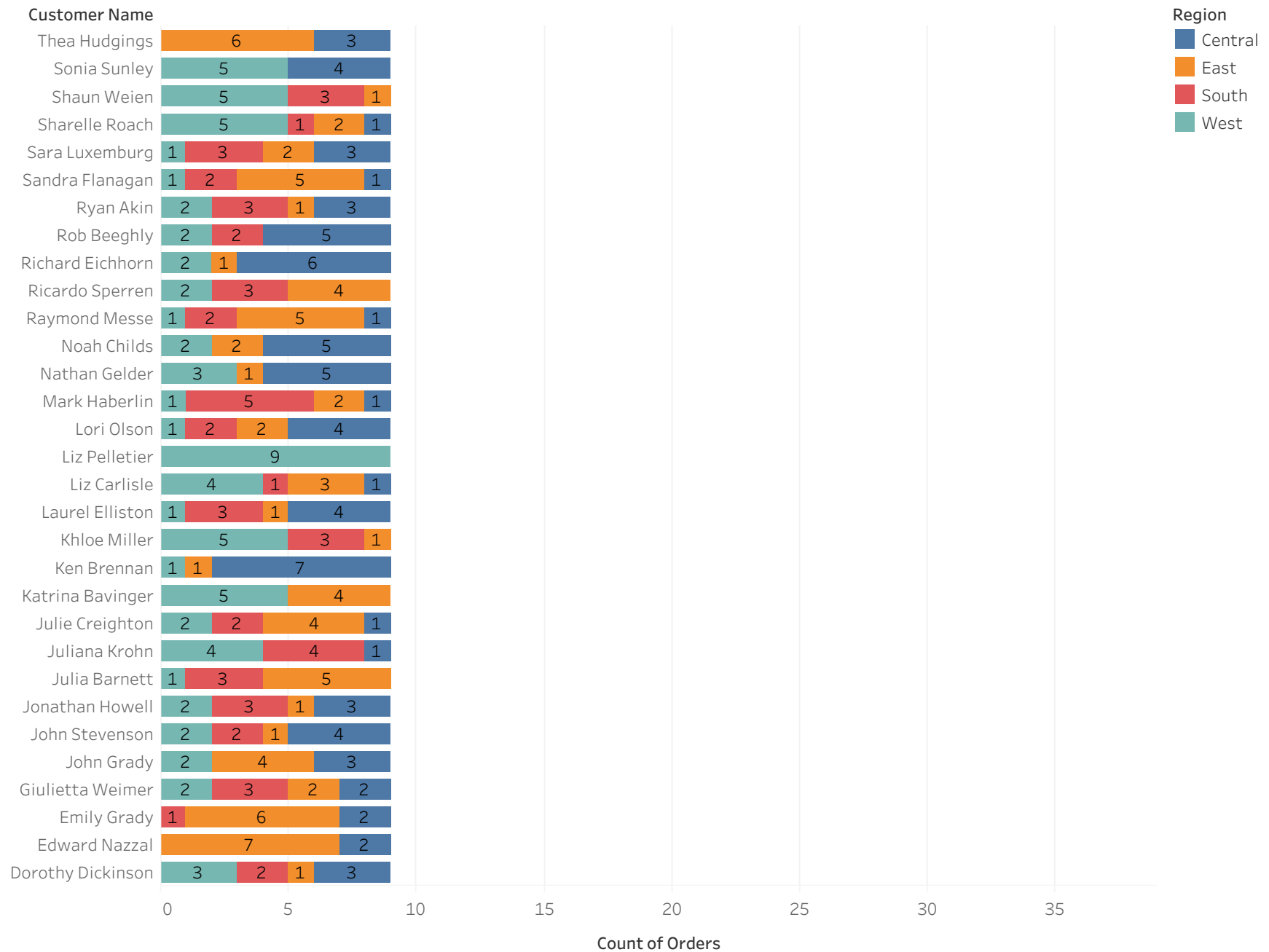
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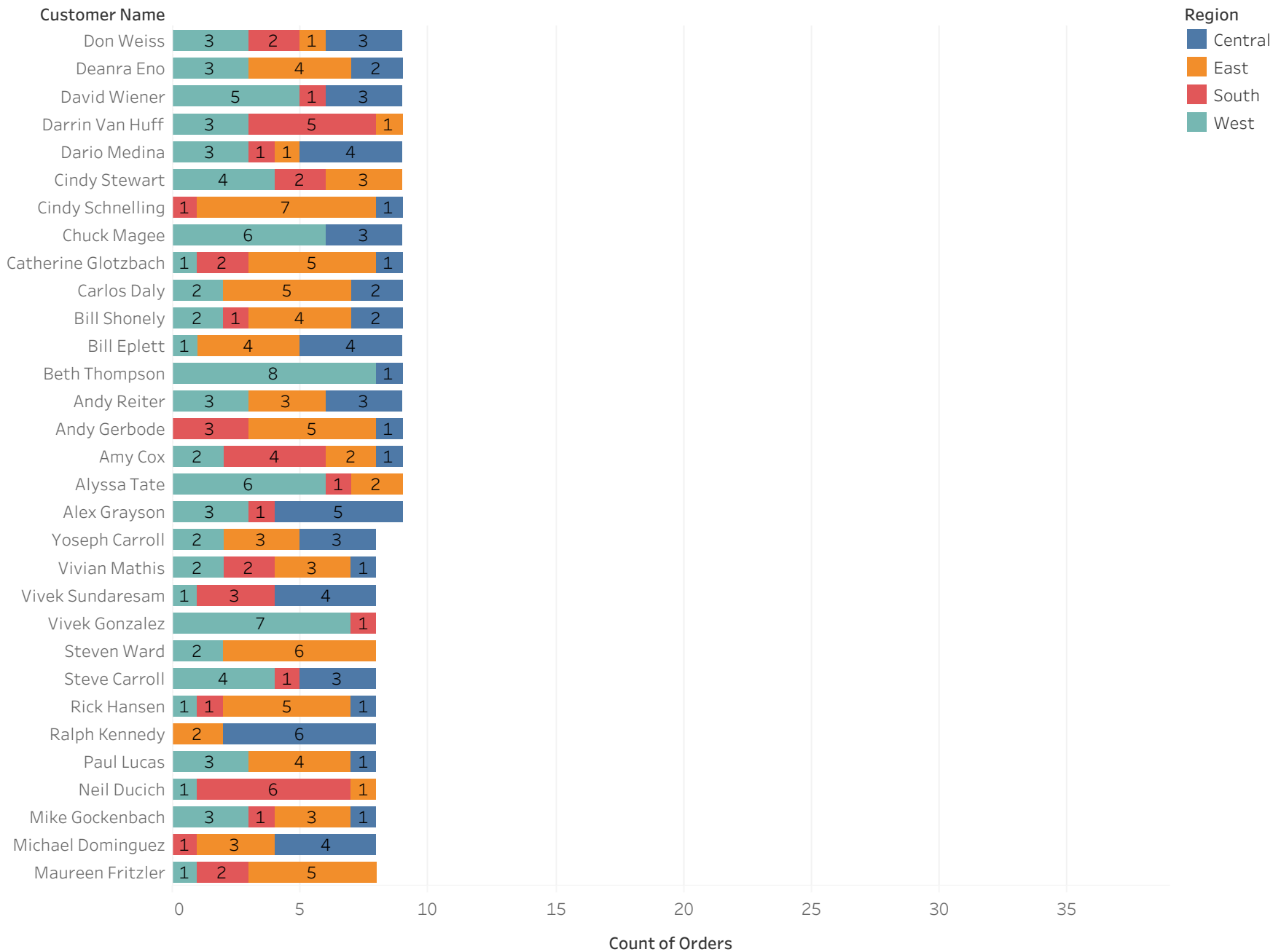
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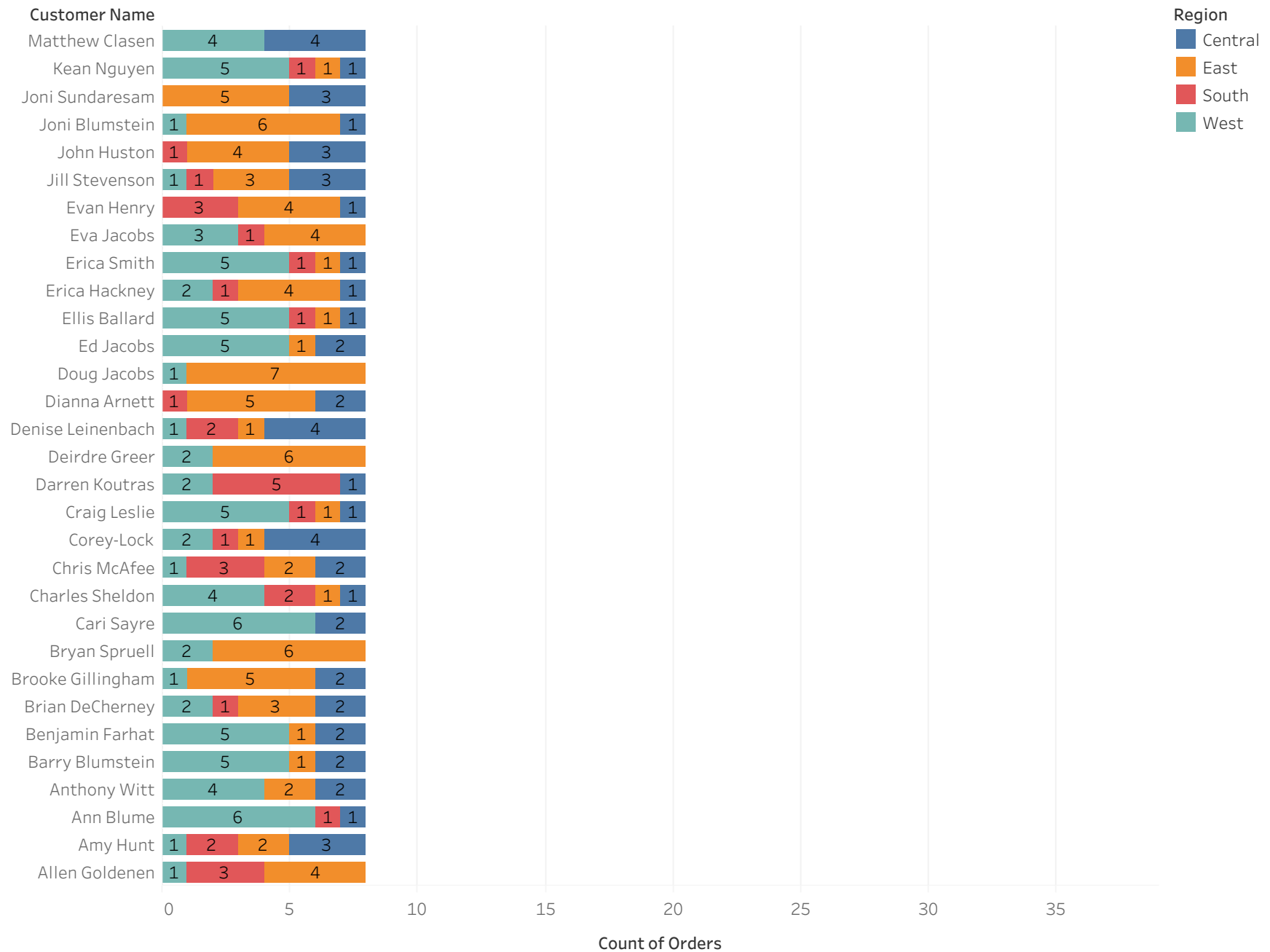
Orders by Customer



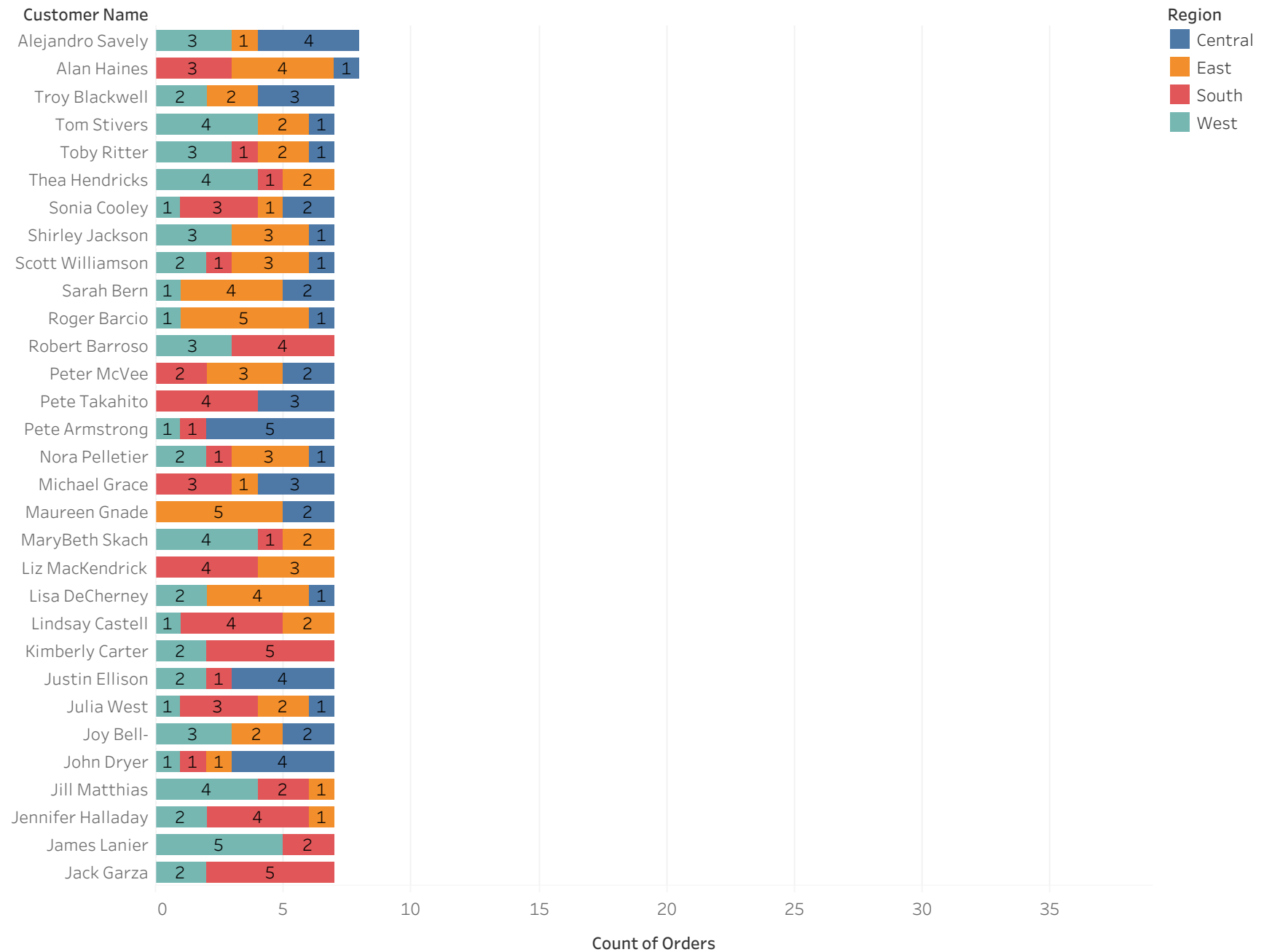
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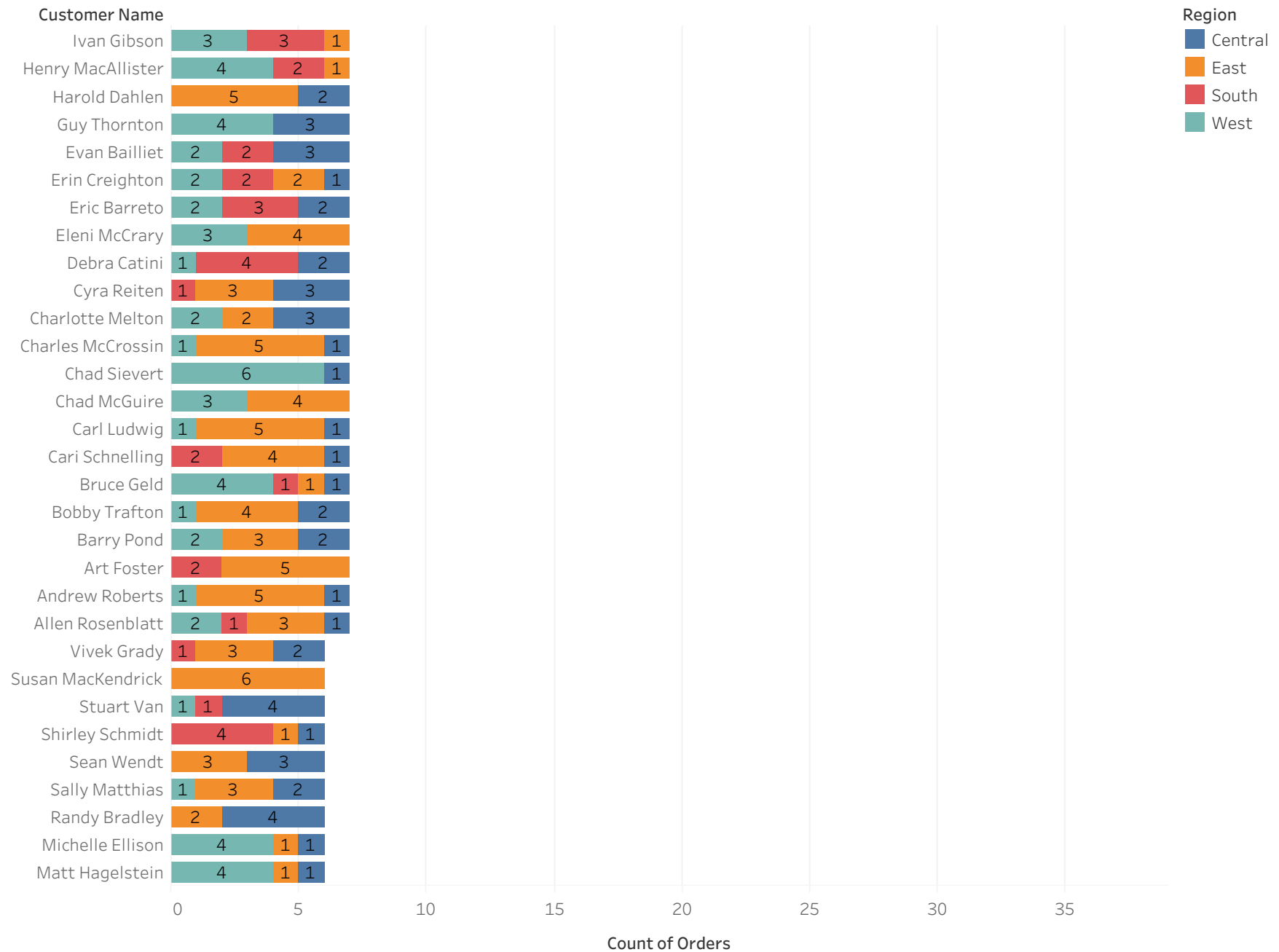
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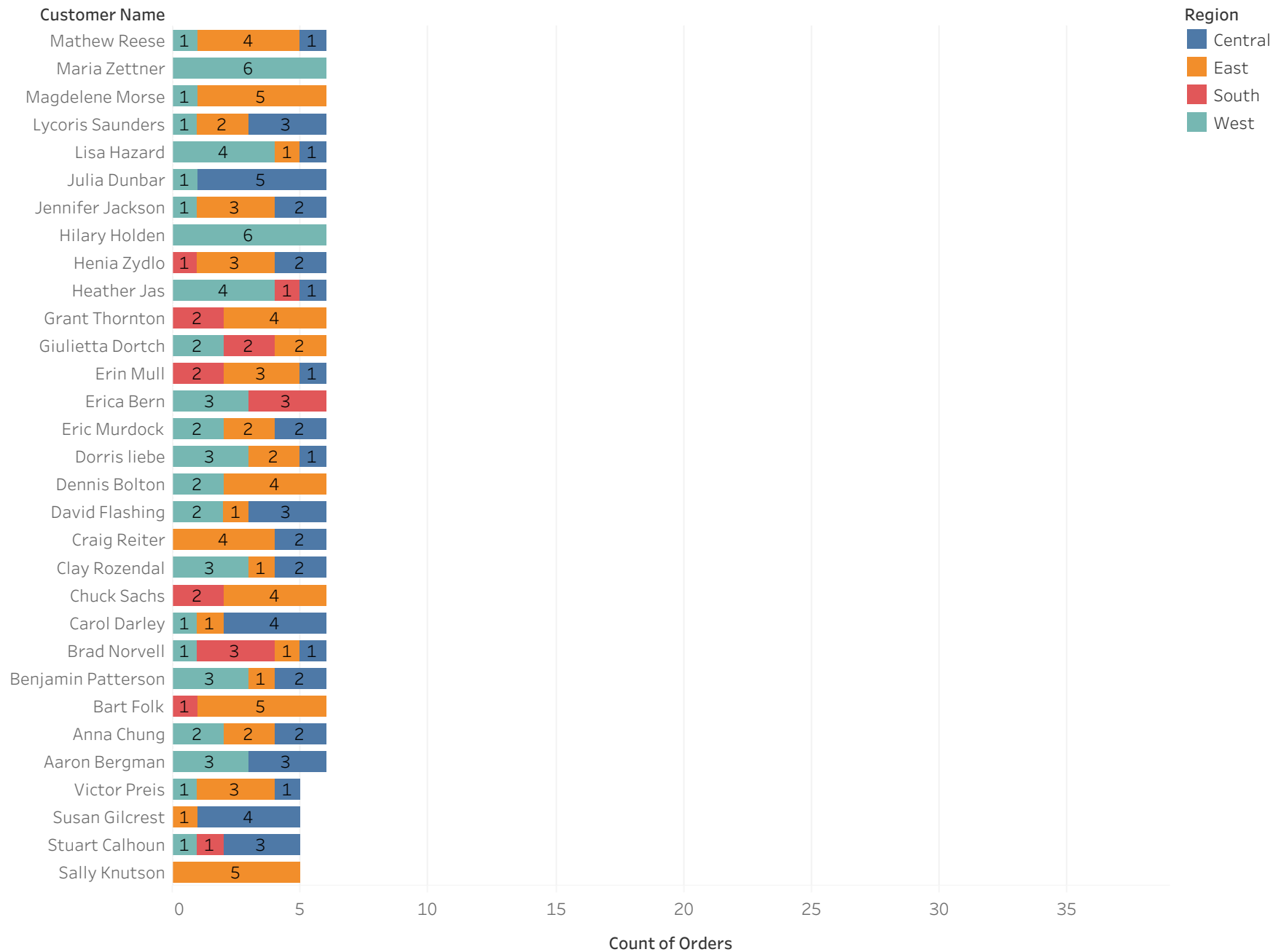
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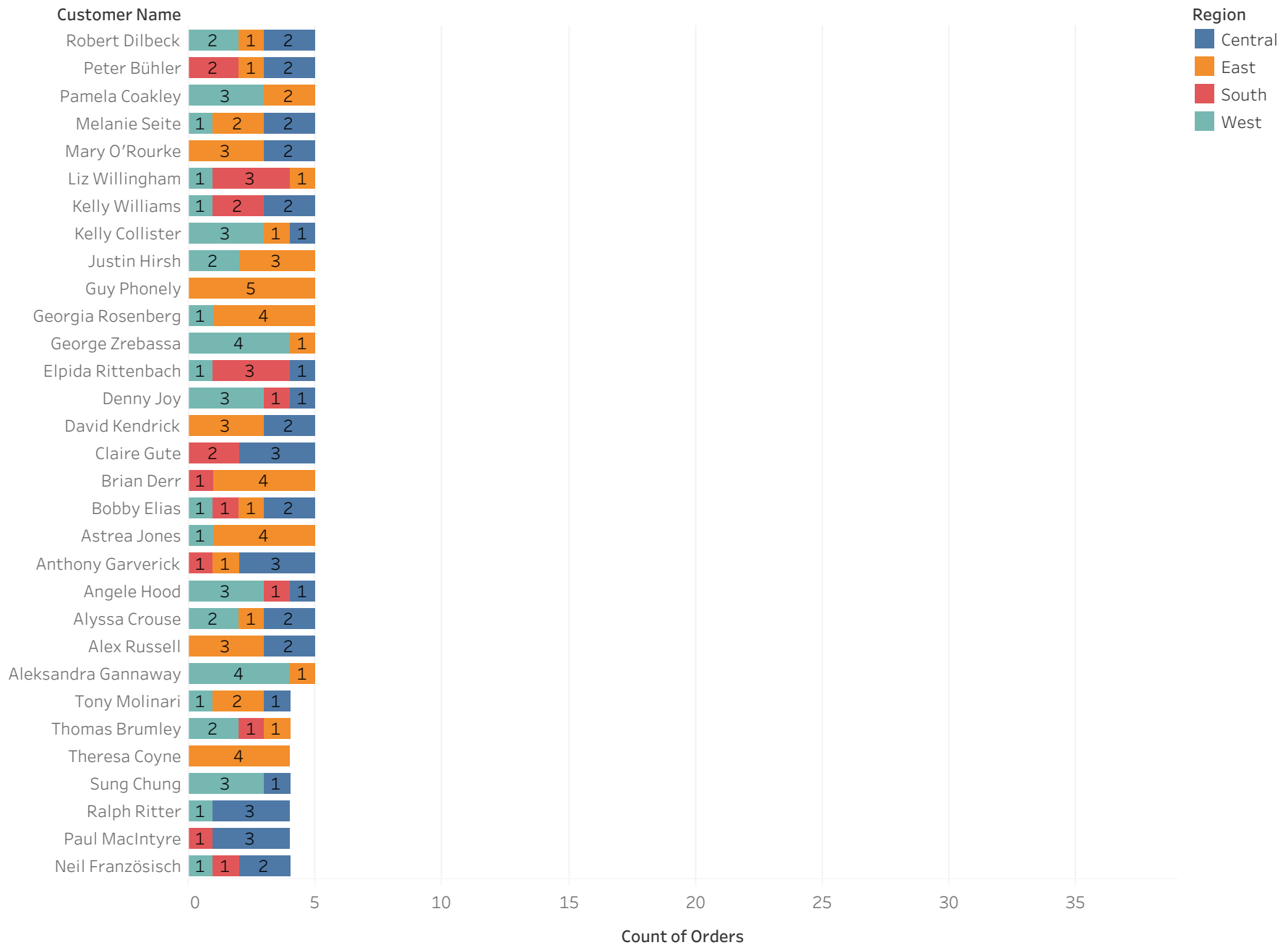
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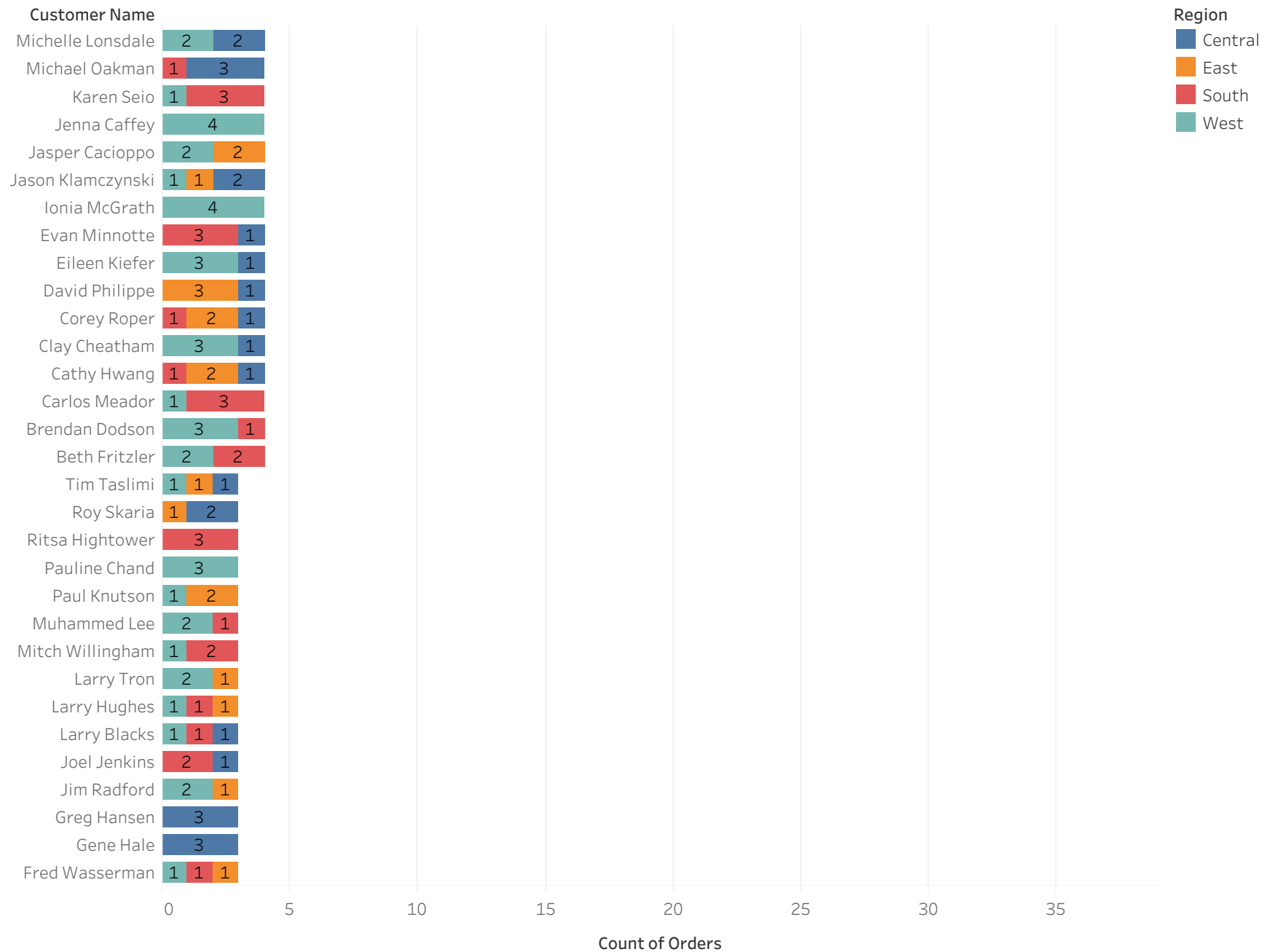
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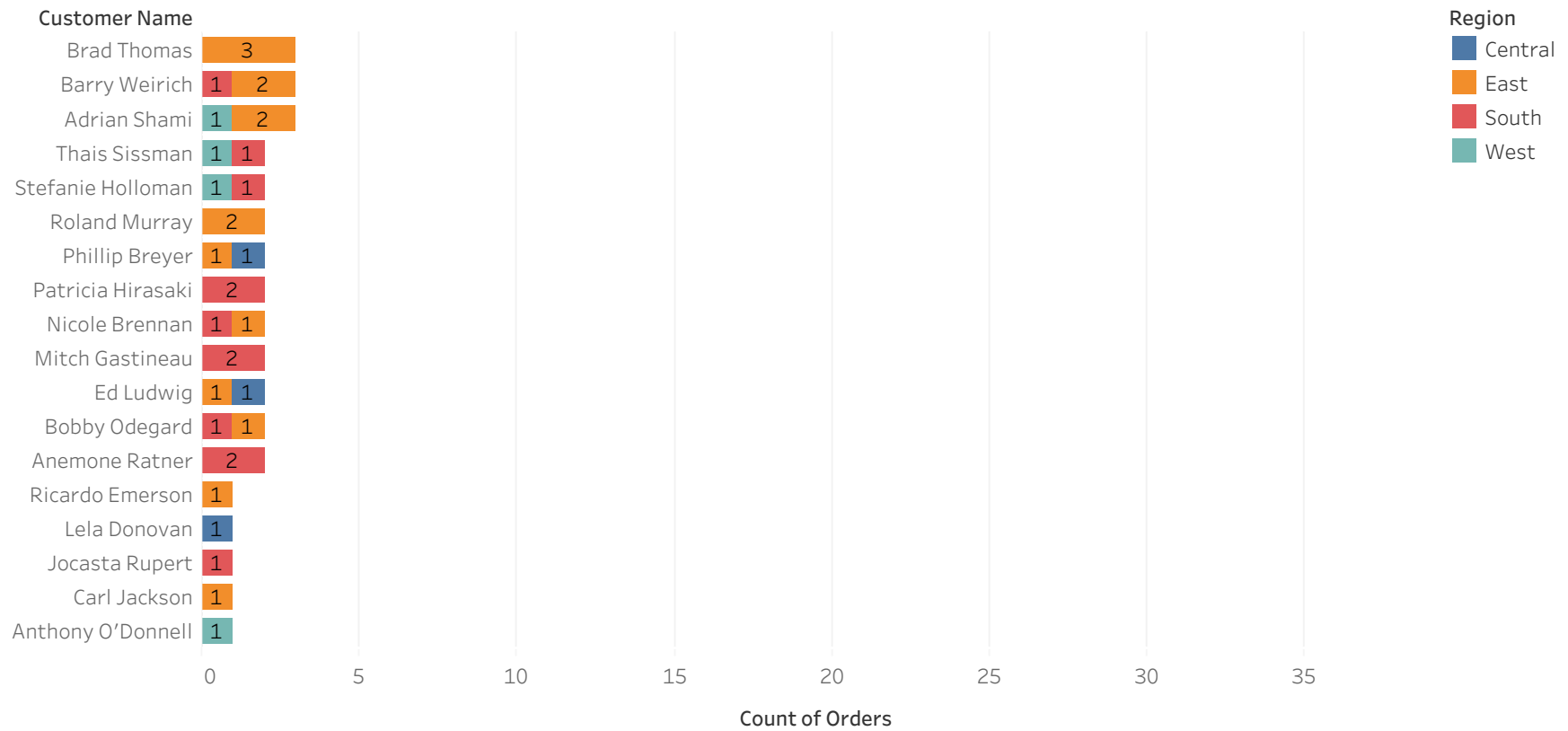
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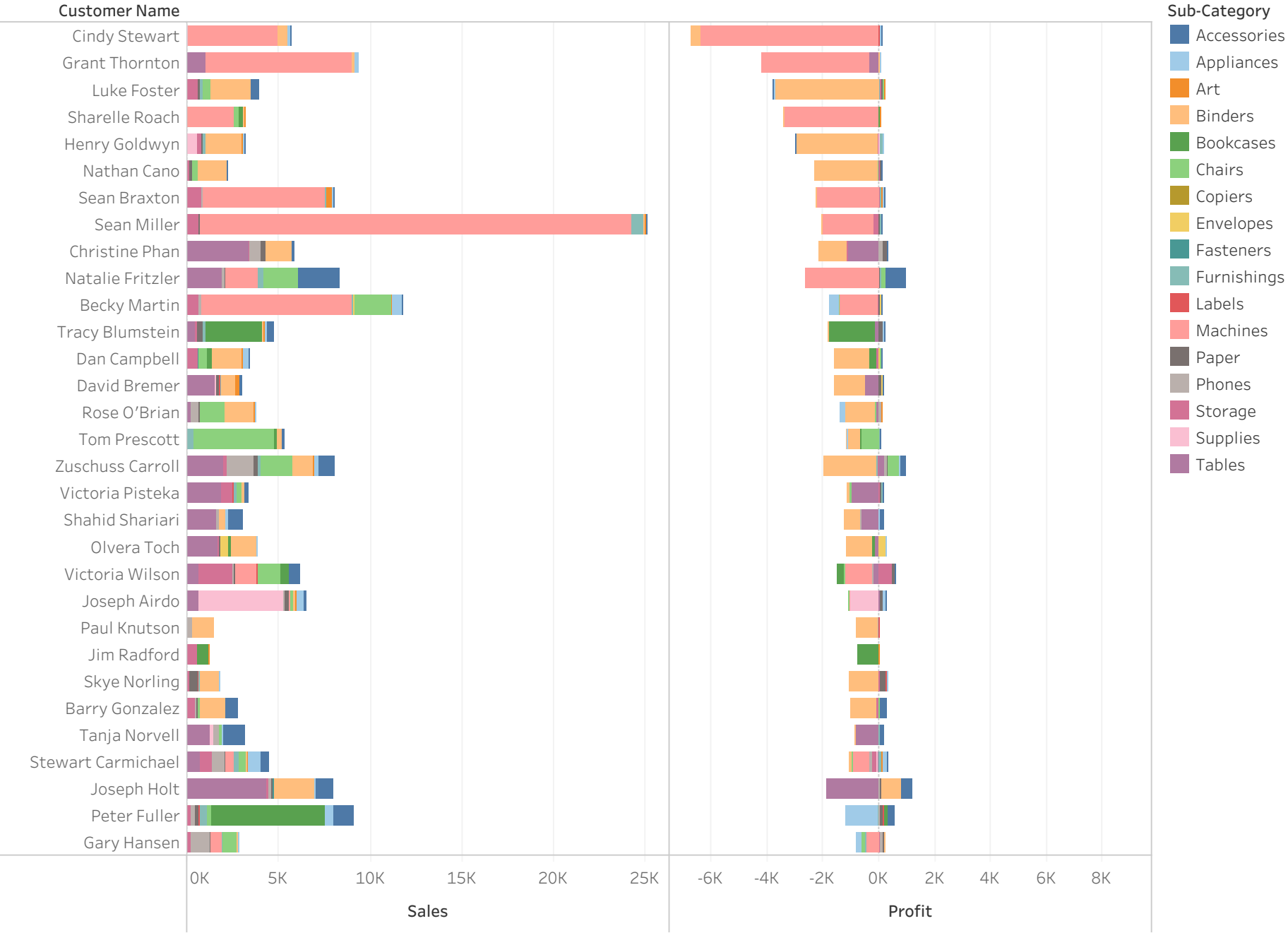
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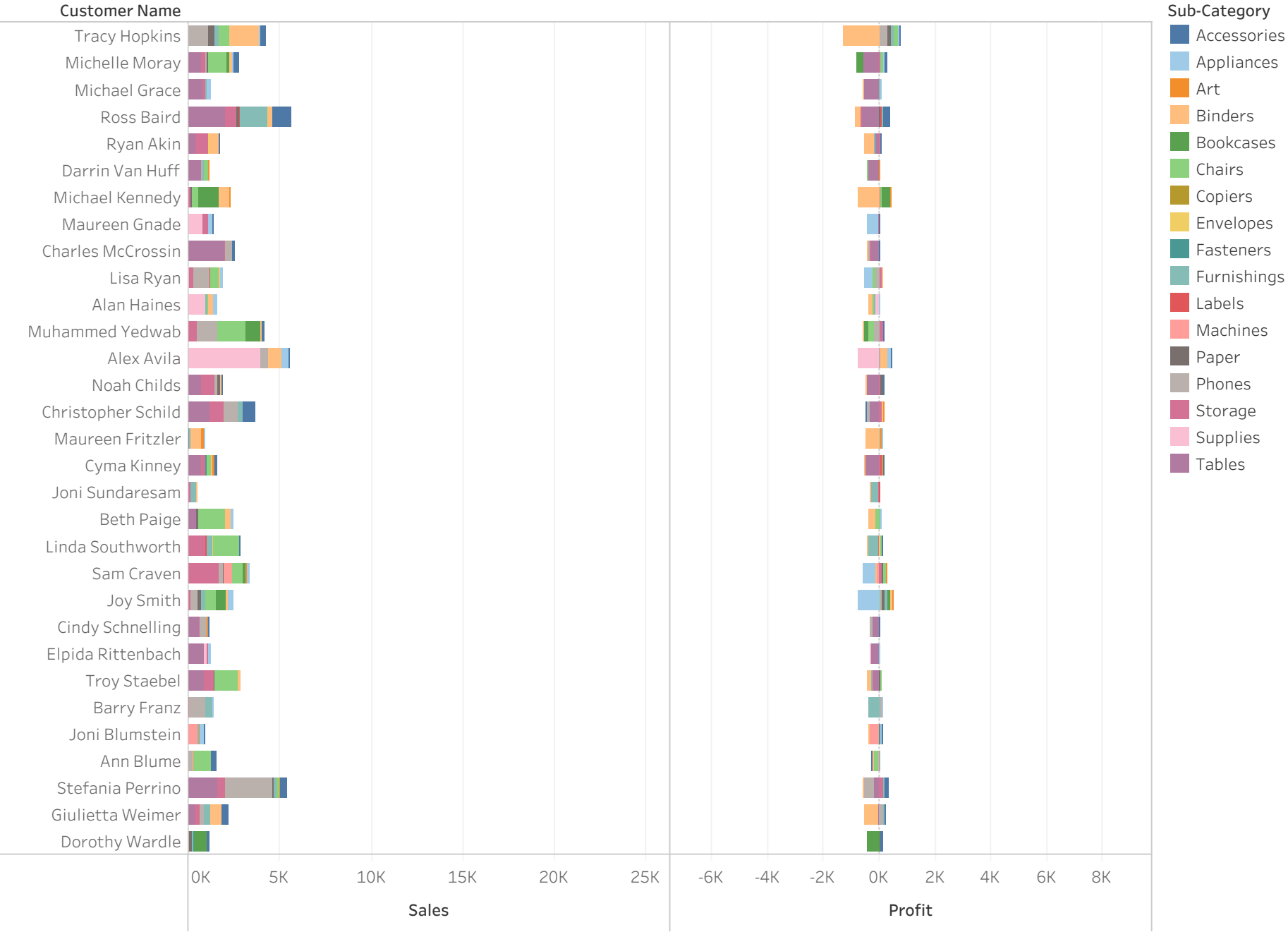
Orders by Customer



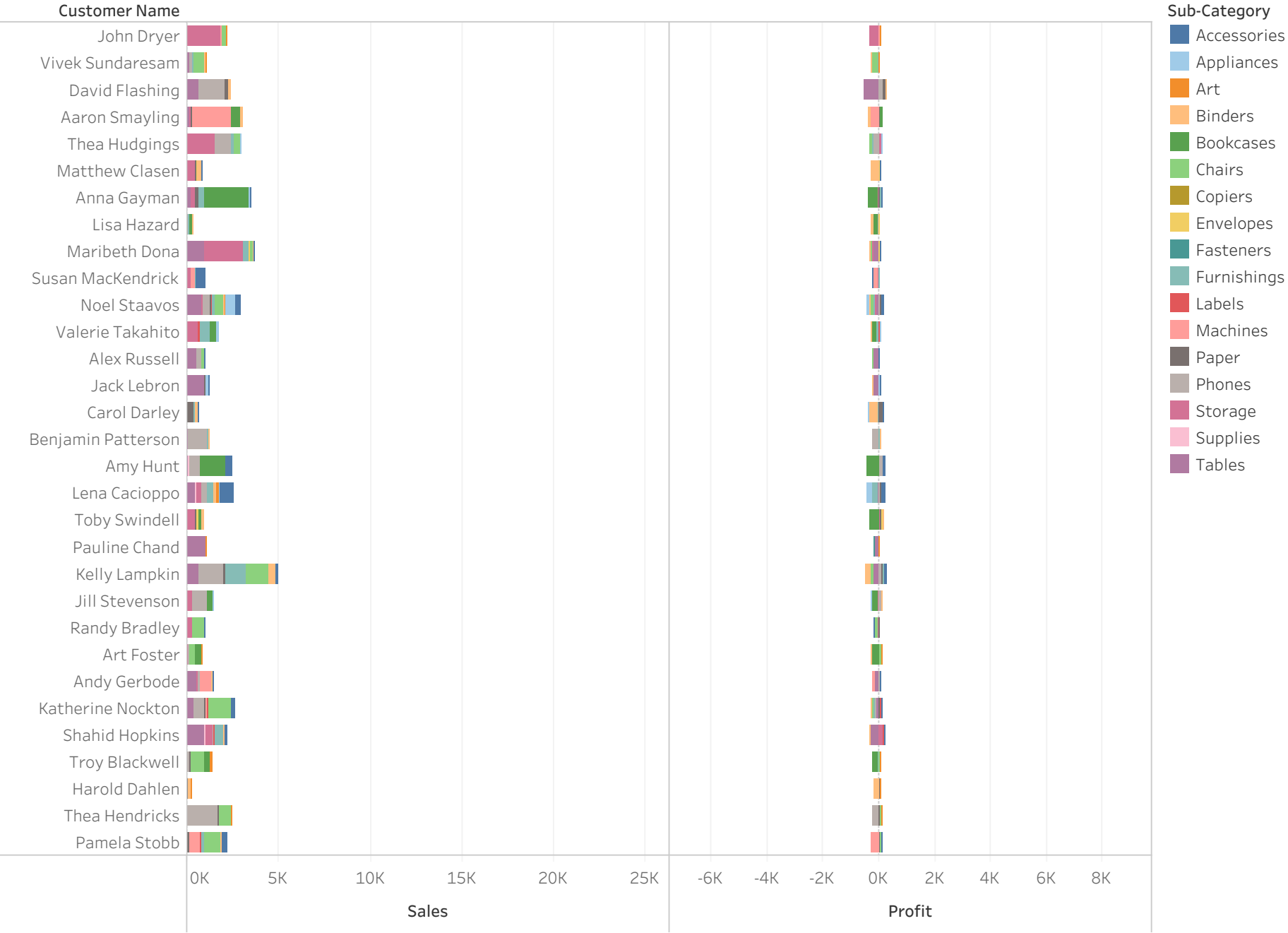
Customers by Profit and Sales



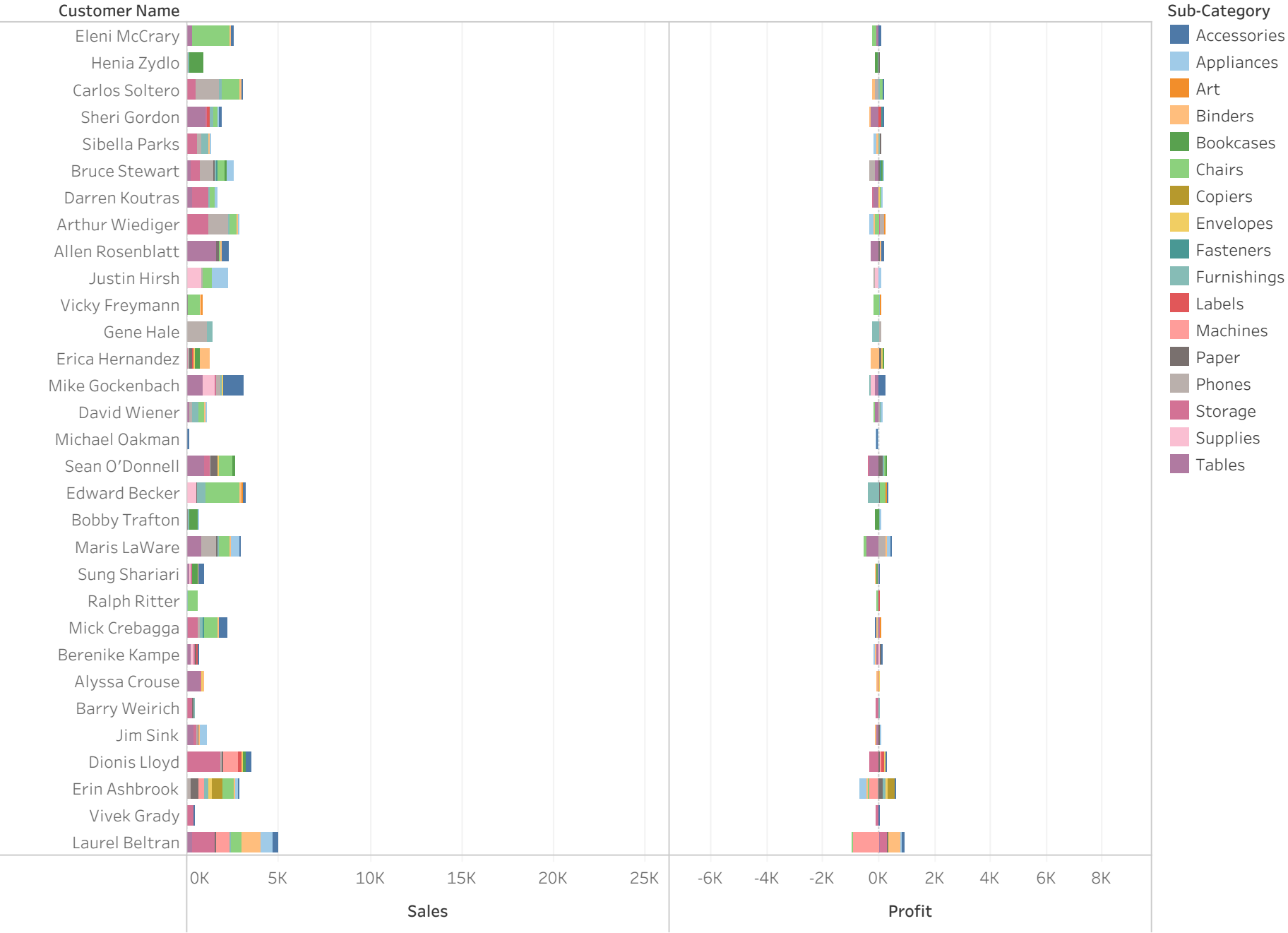
Customers by Profit and Sales



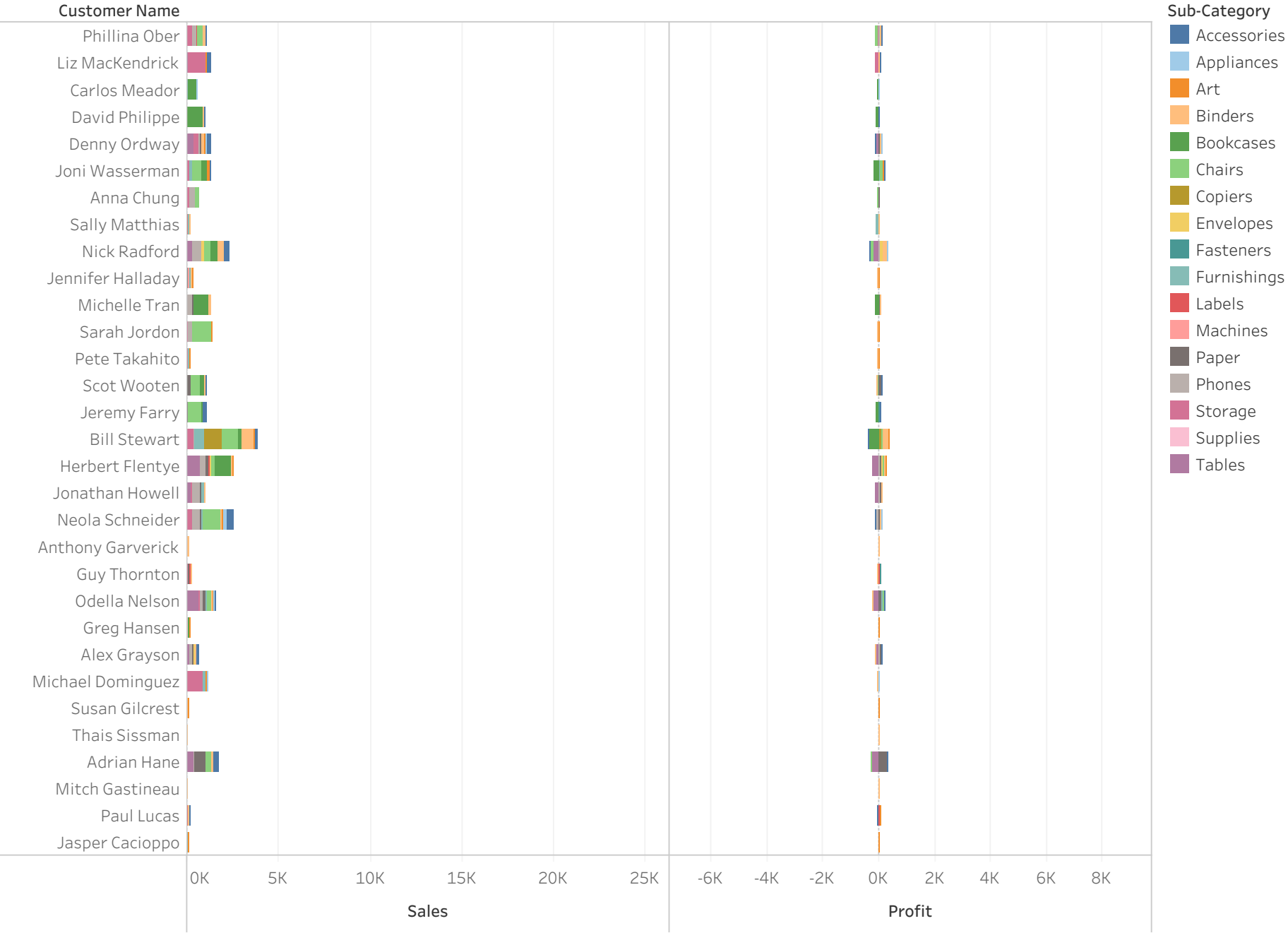
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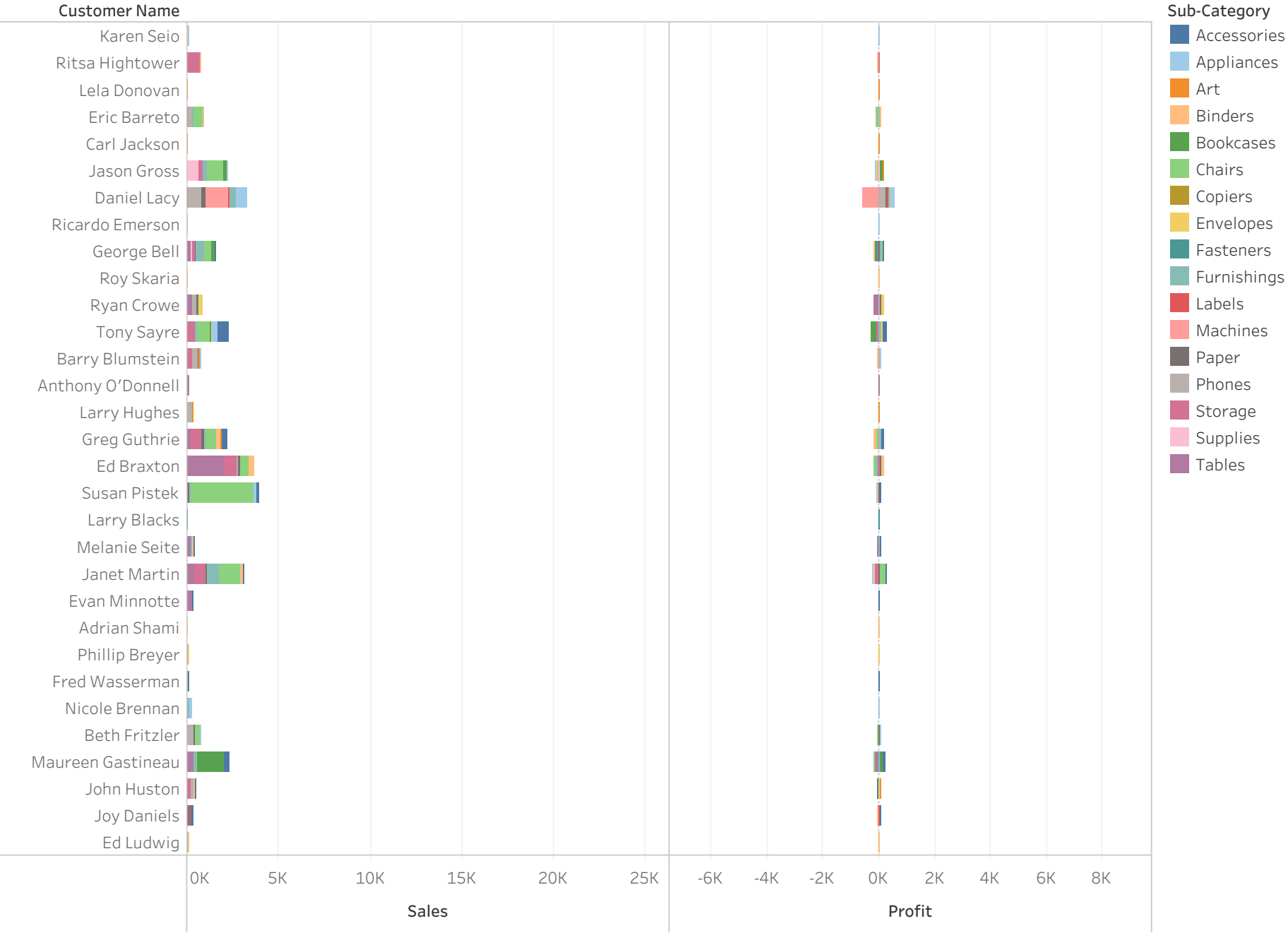
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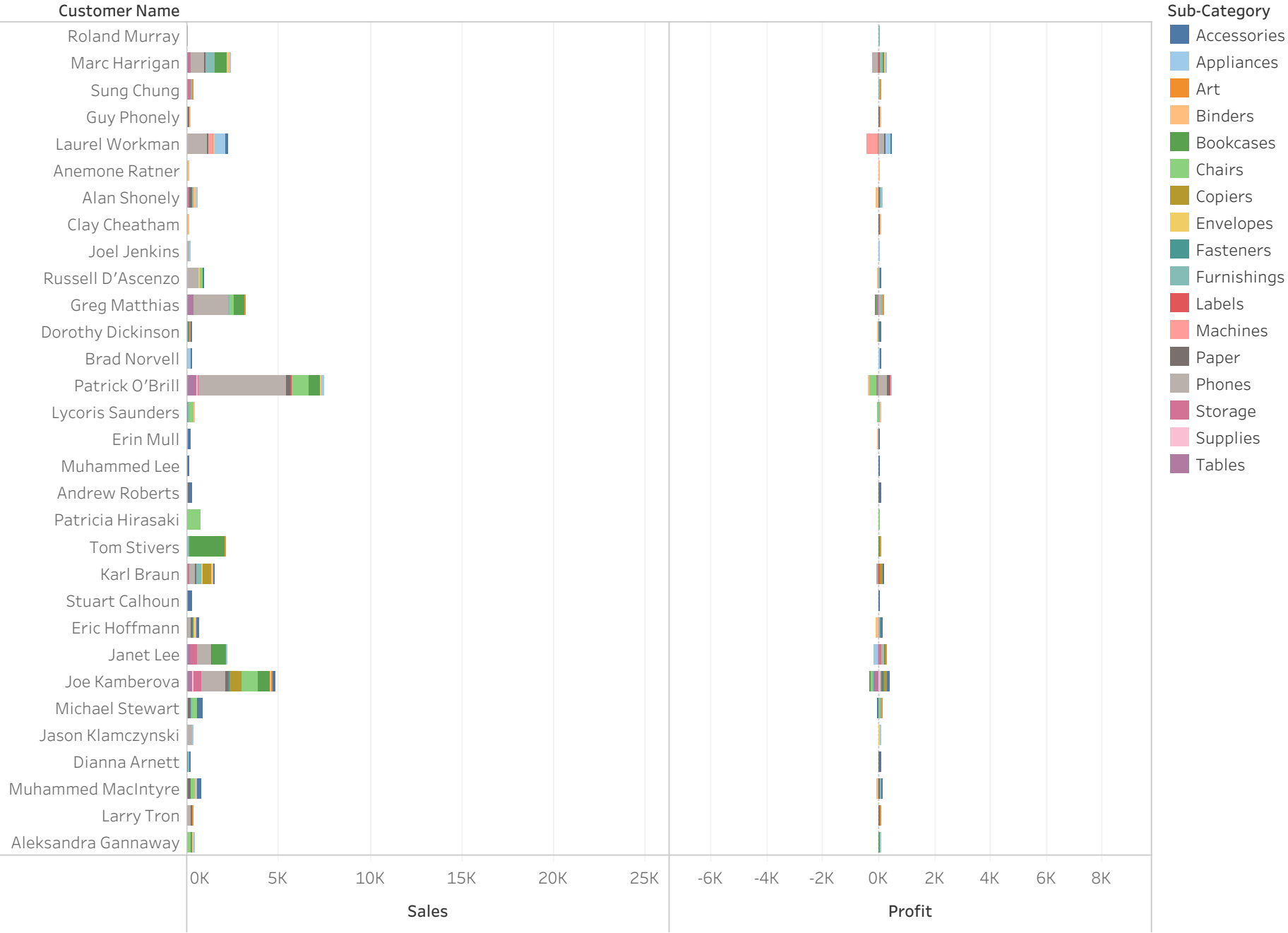
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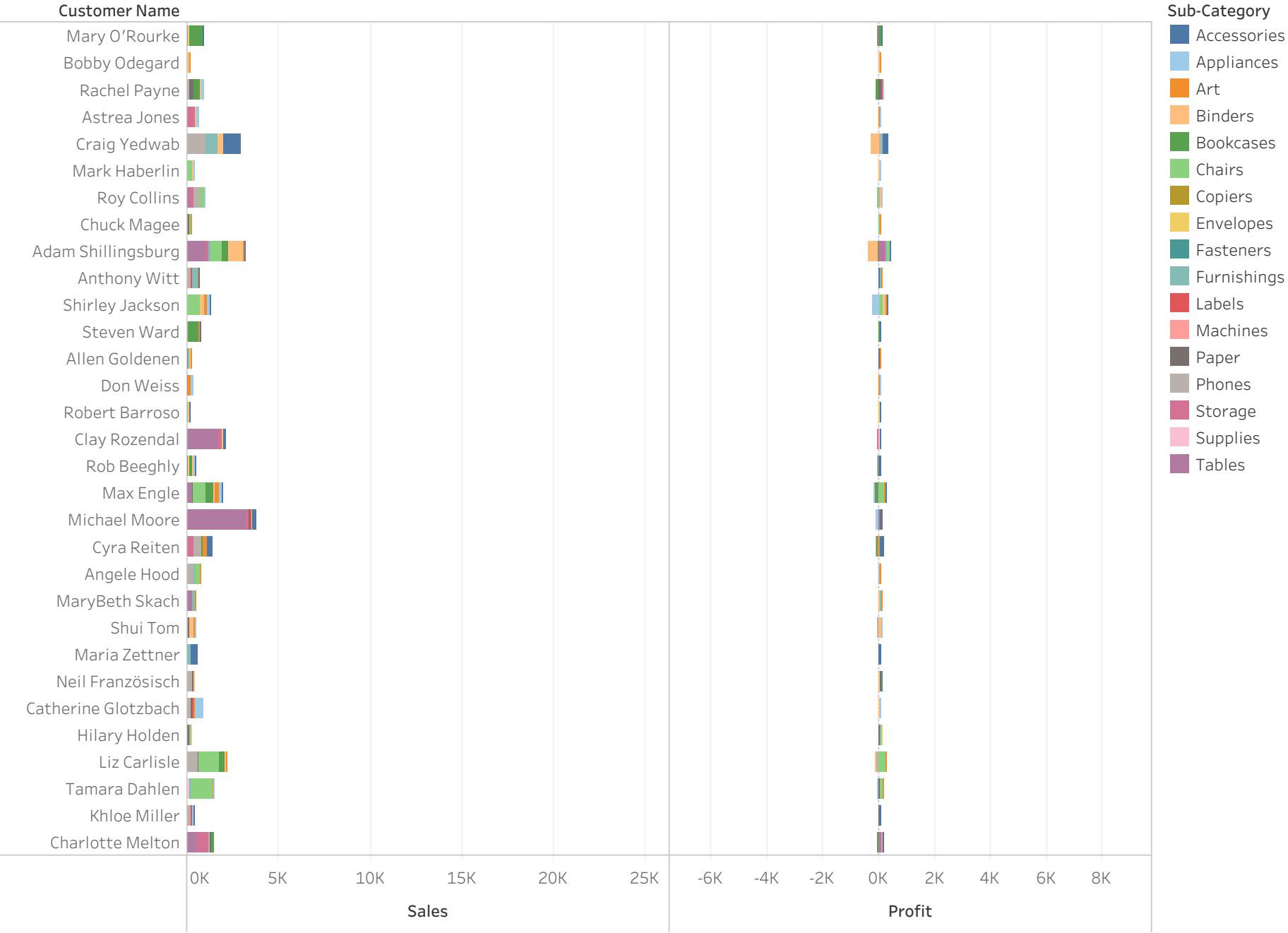
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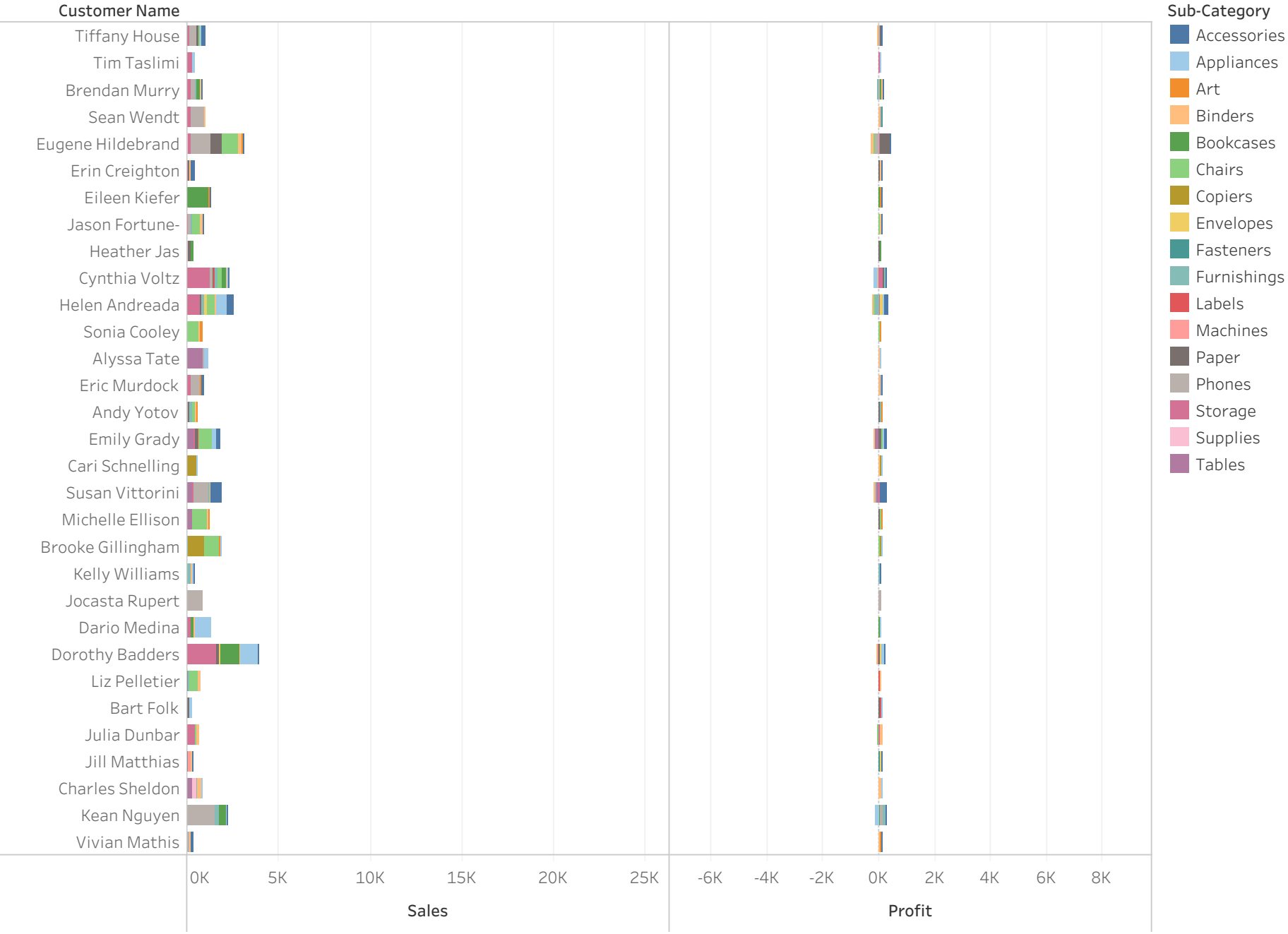
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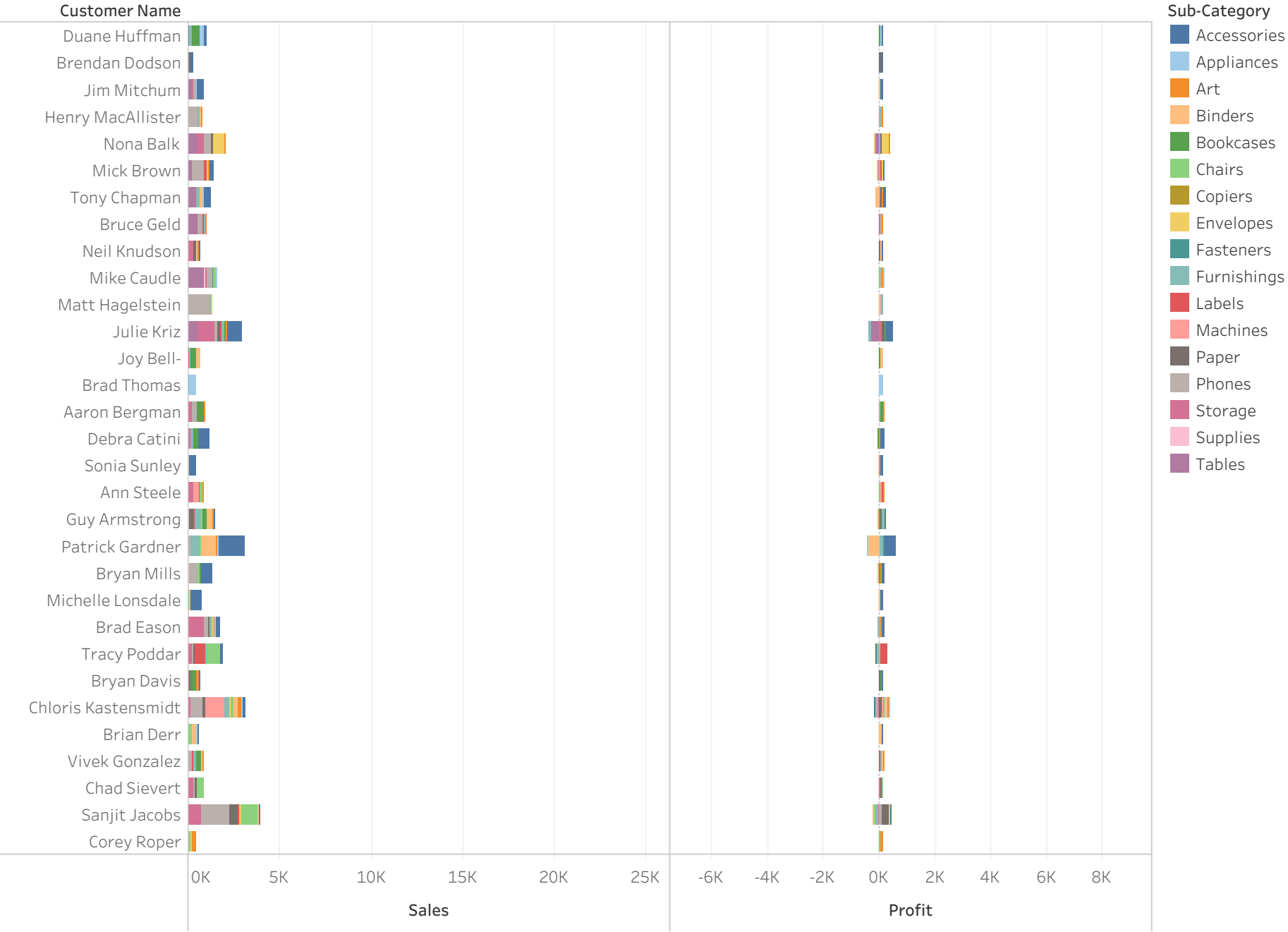
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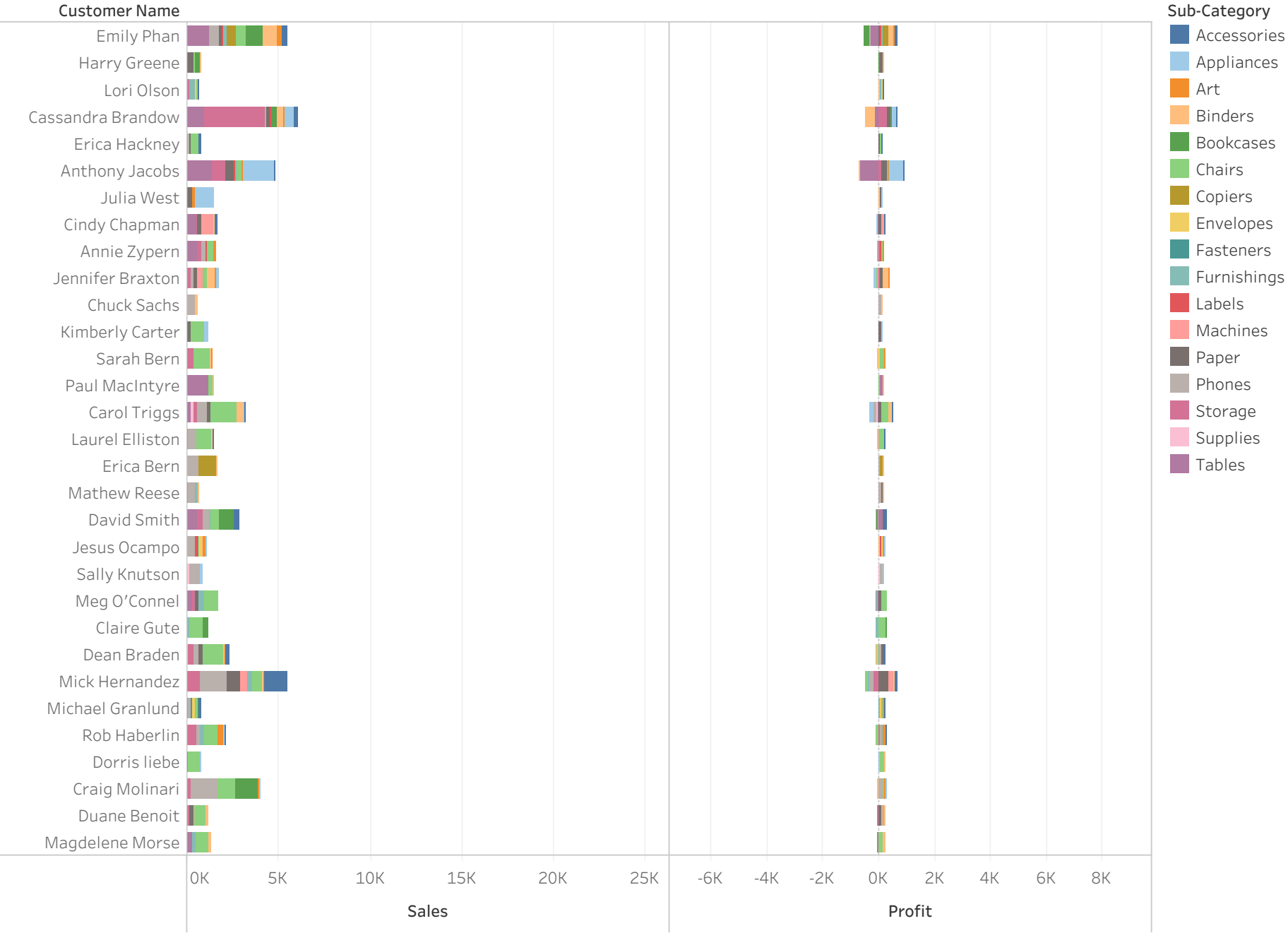
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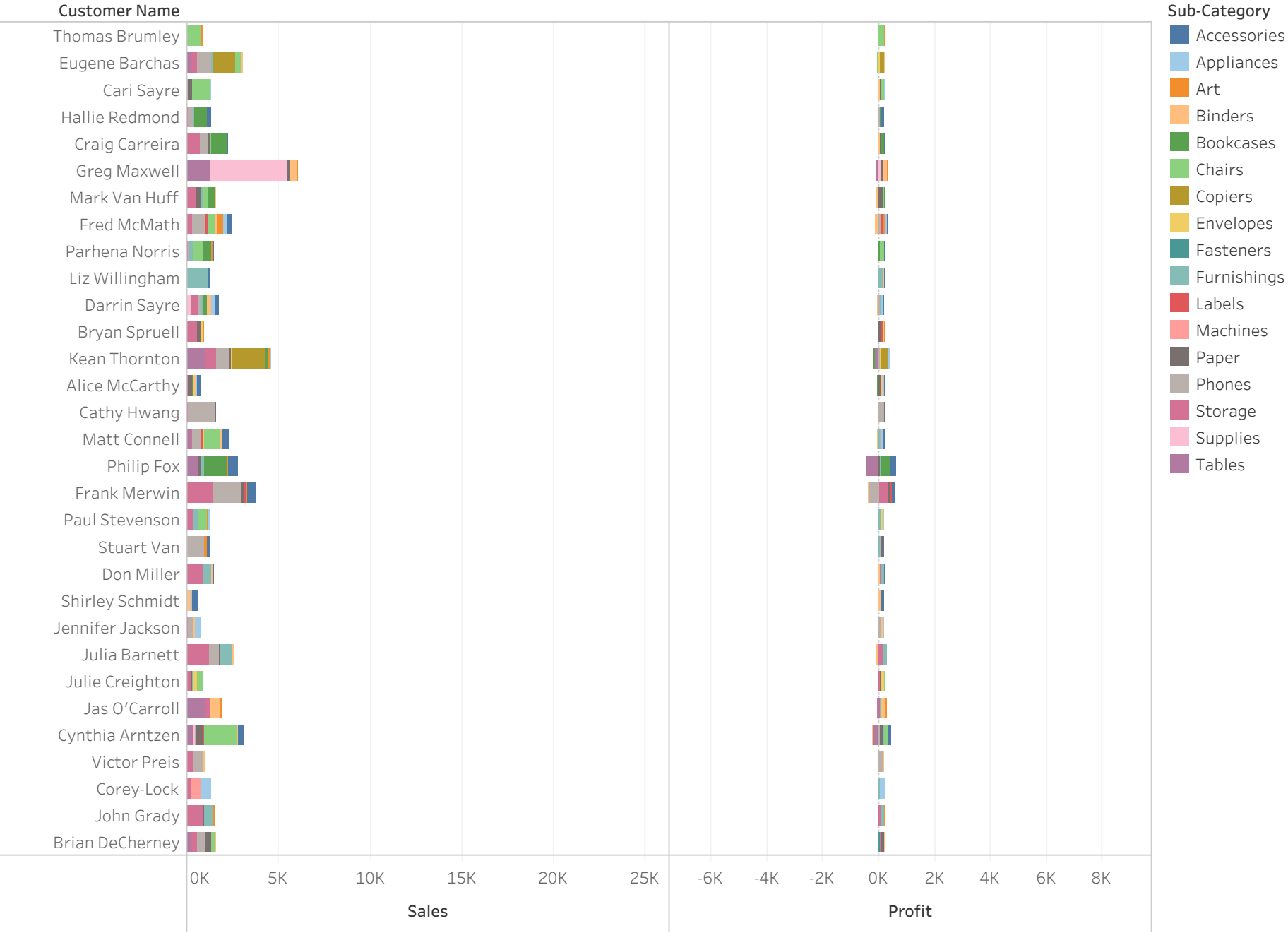
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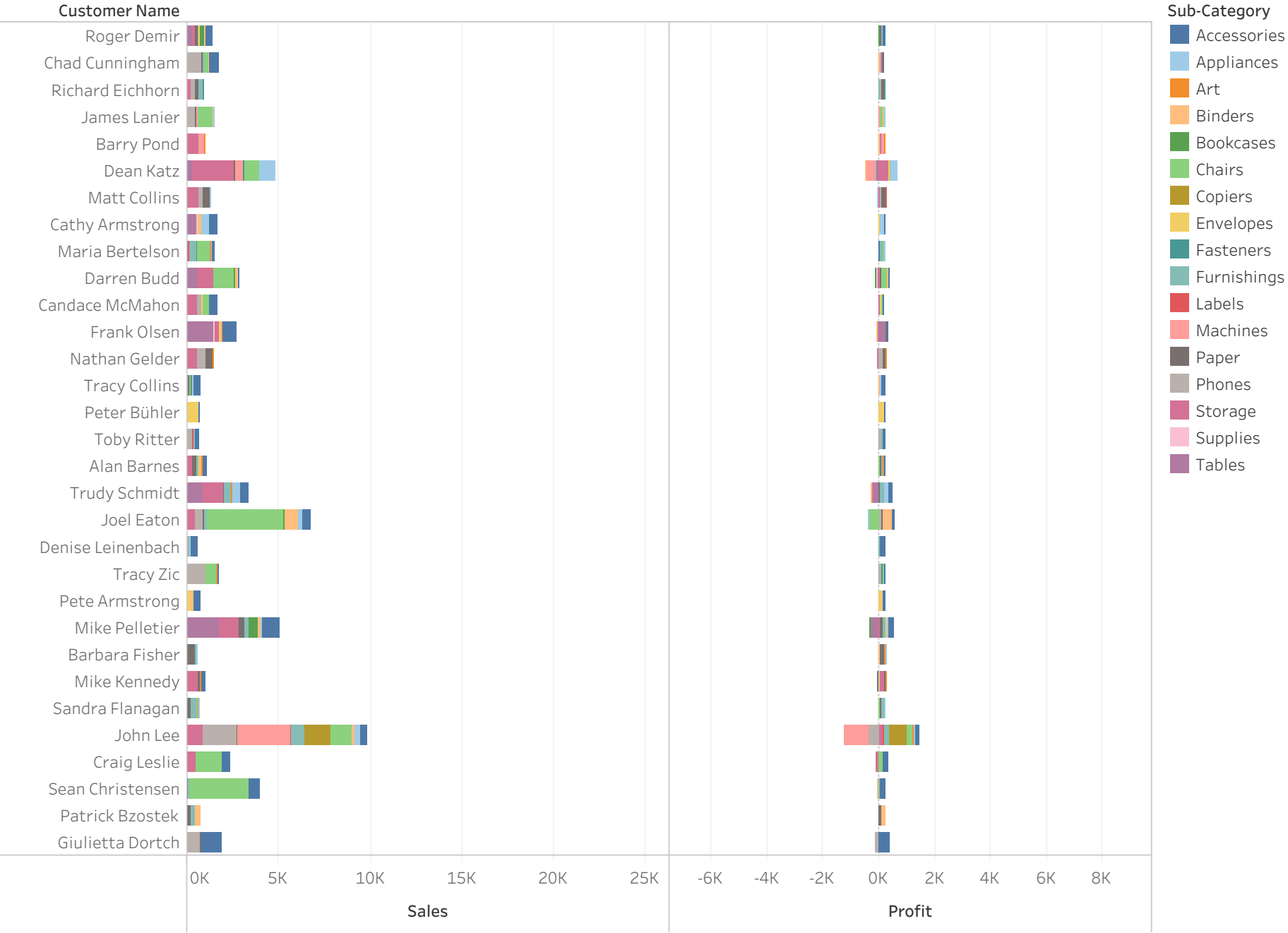
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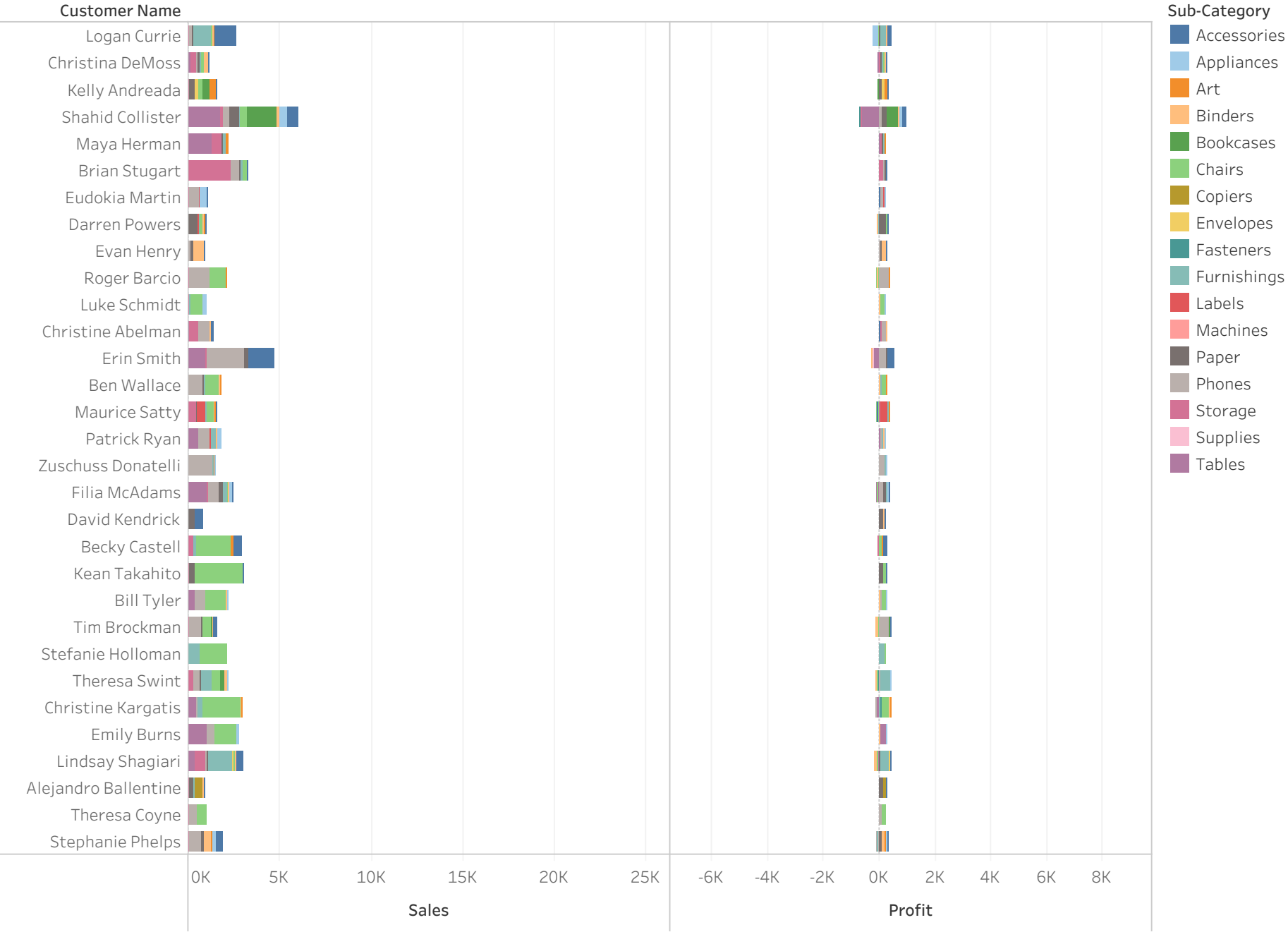
Customers by Profit and Sales



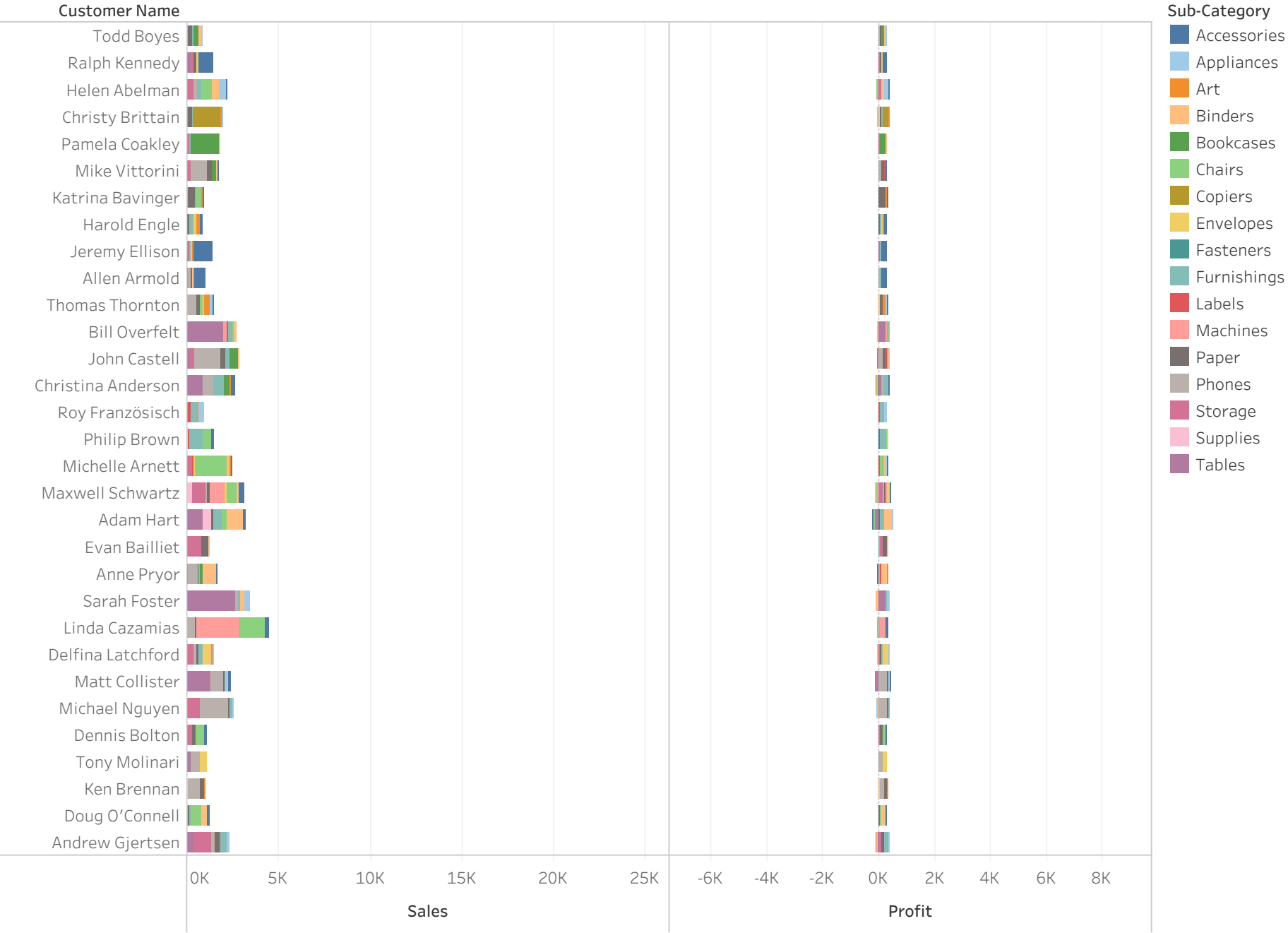
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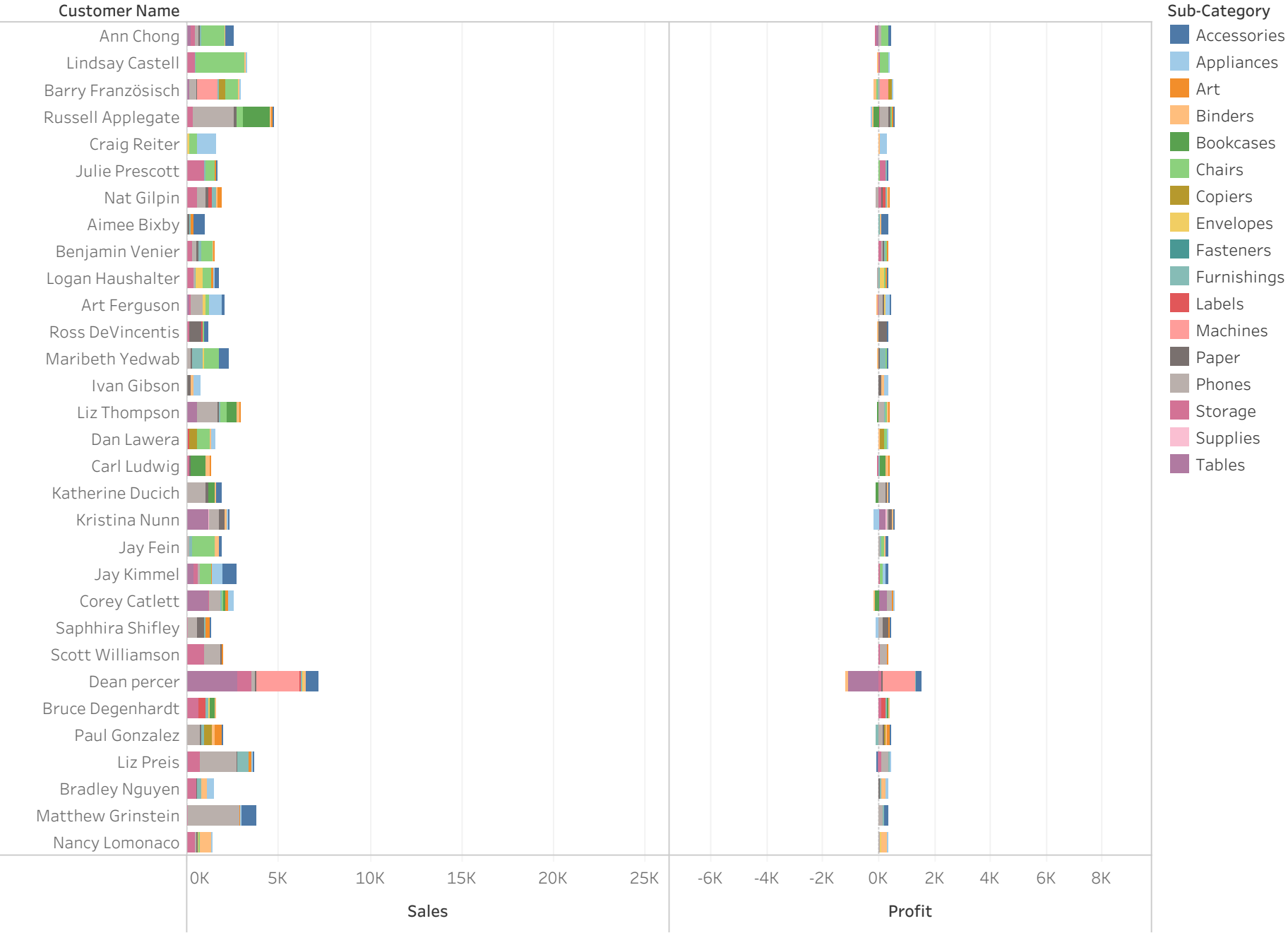
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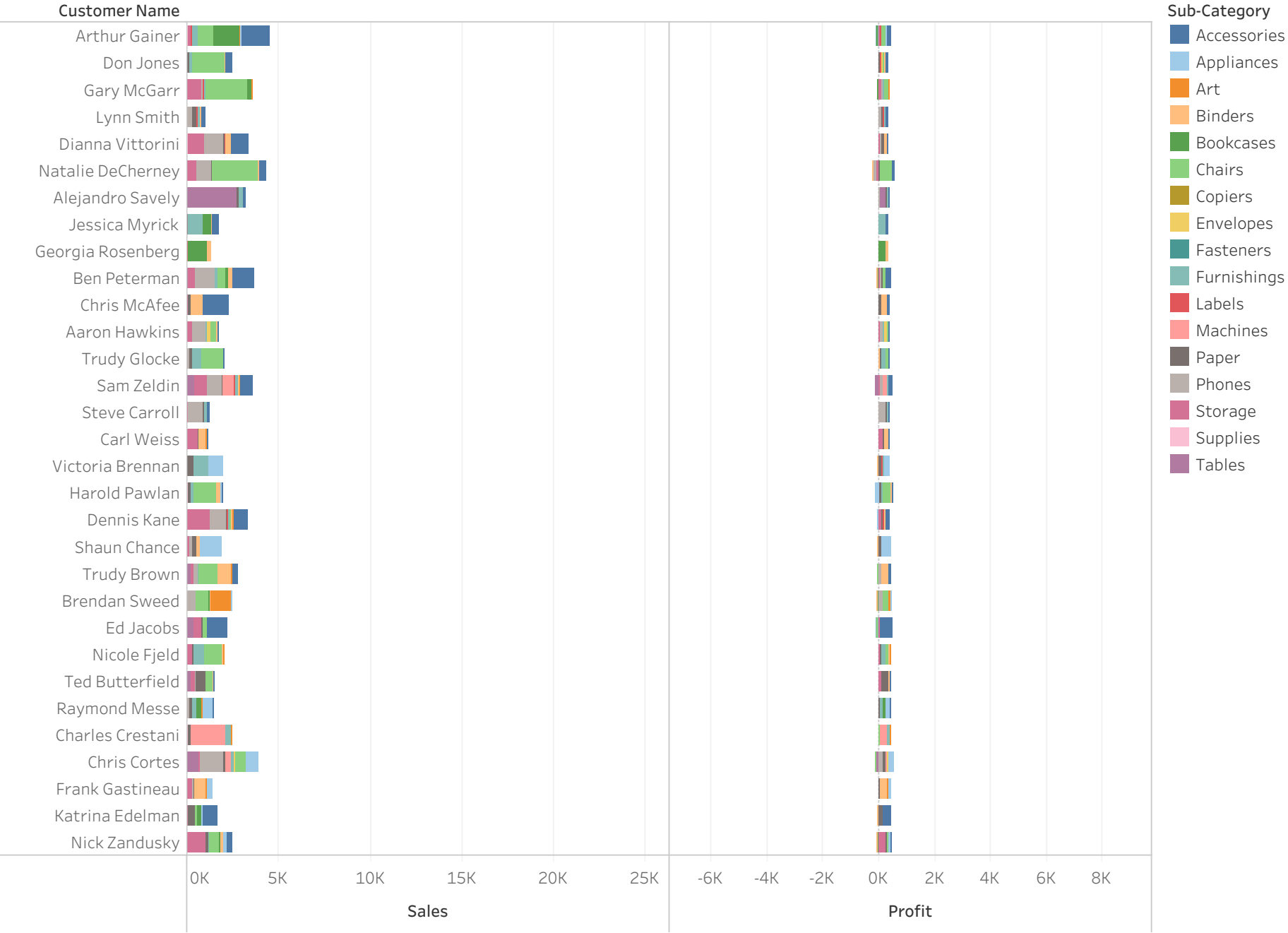
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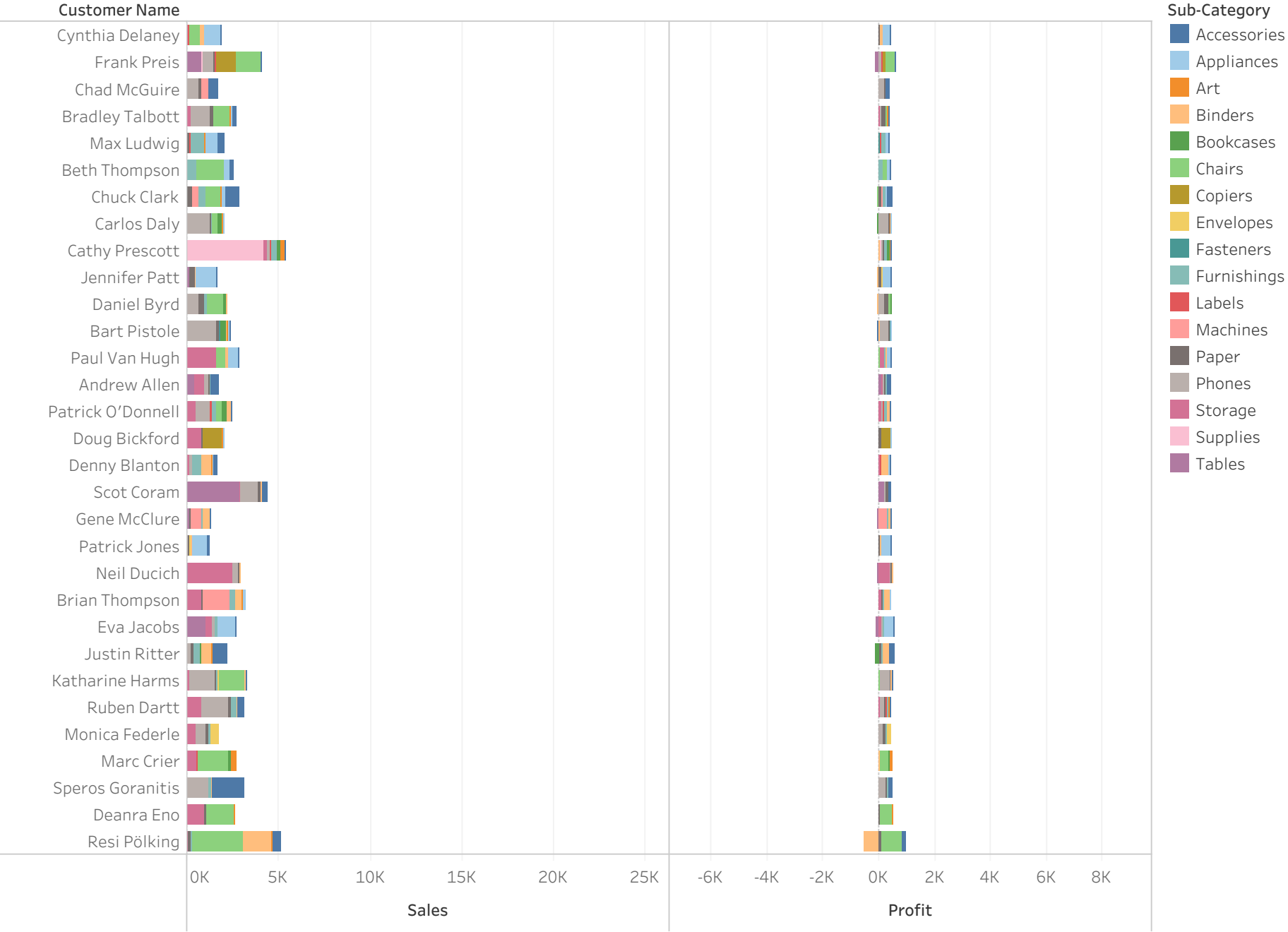
Customers by Profit and Sales



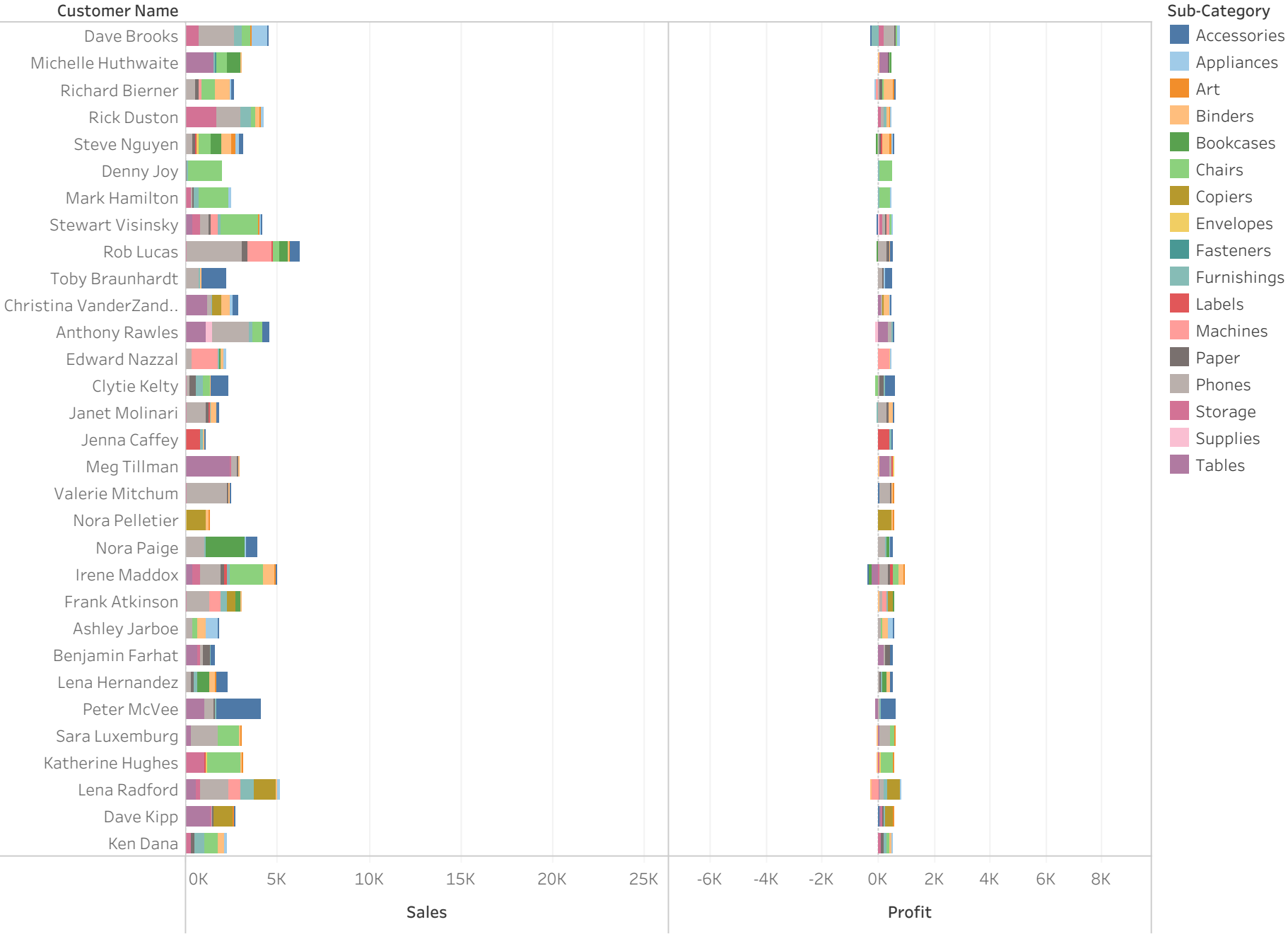
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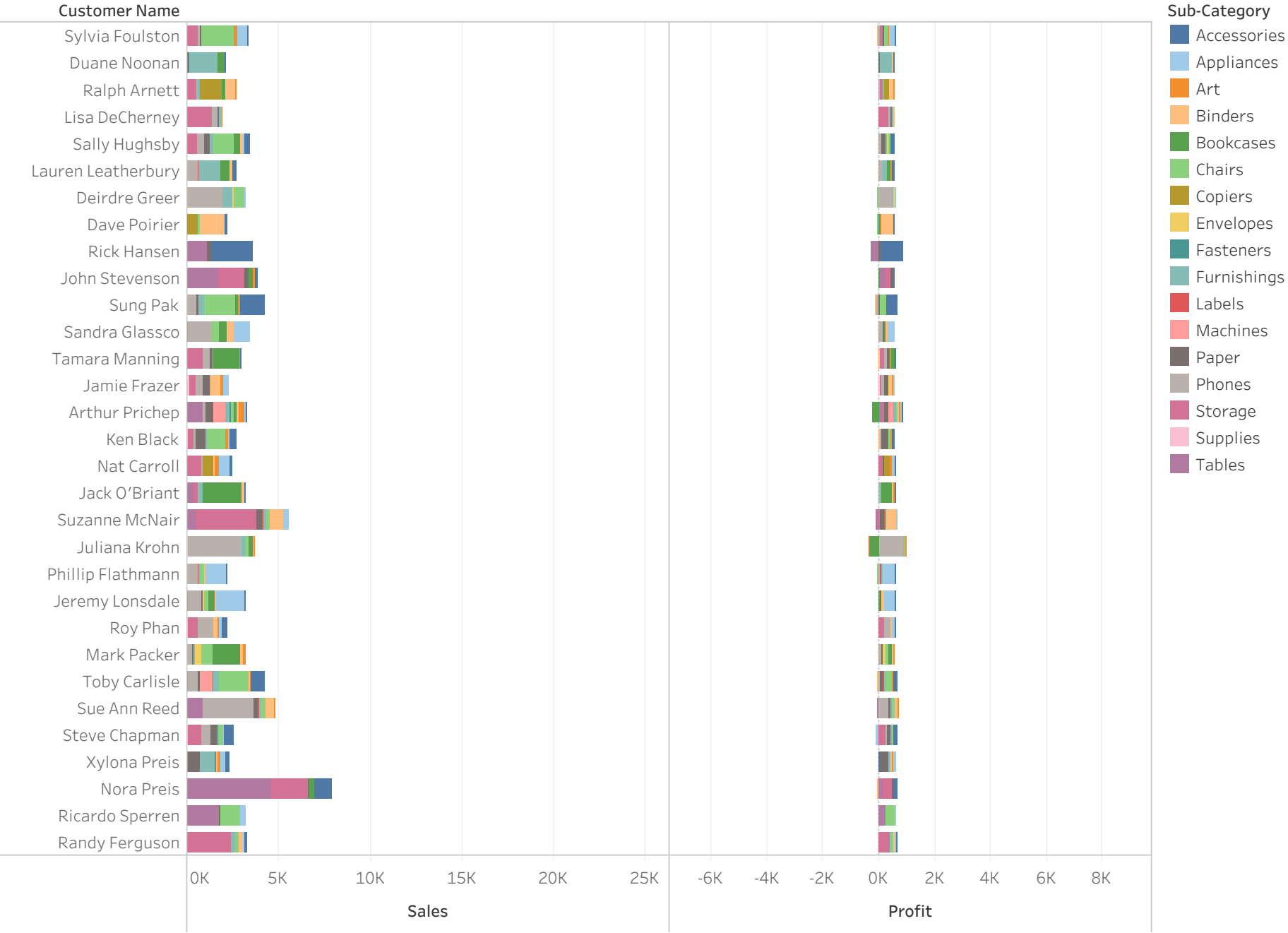
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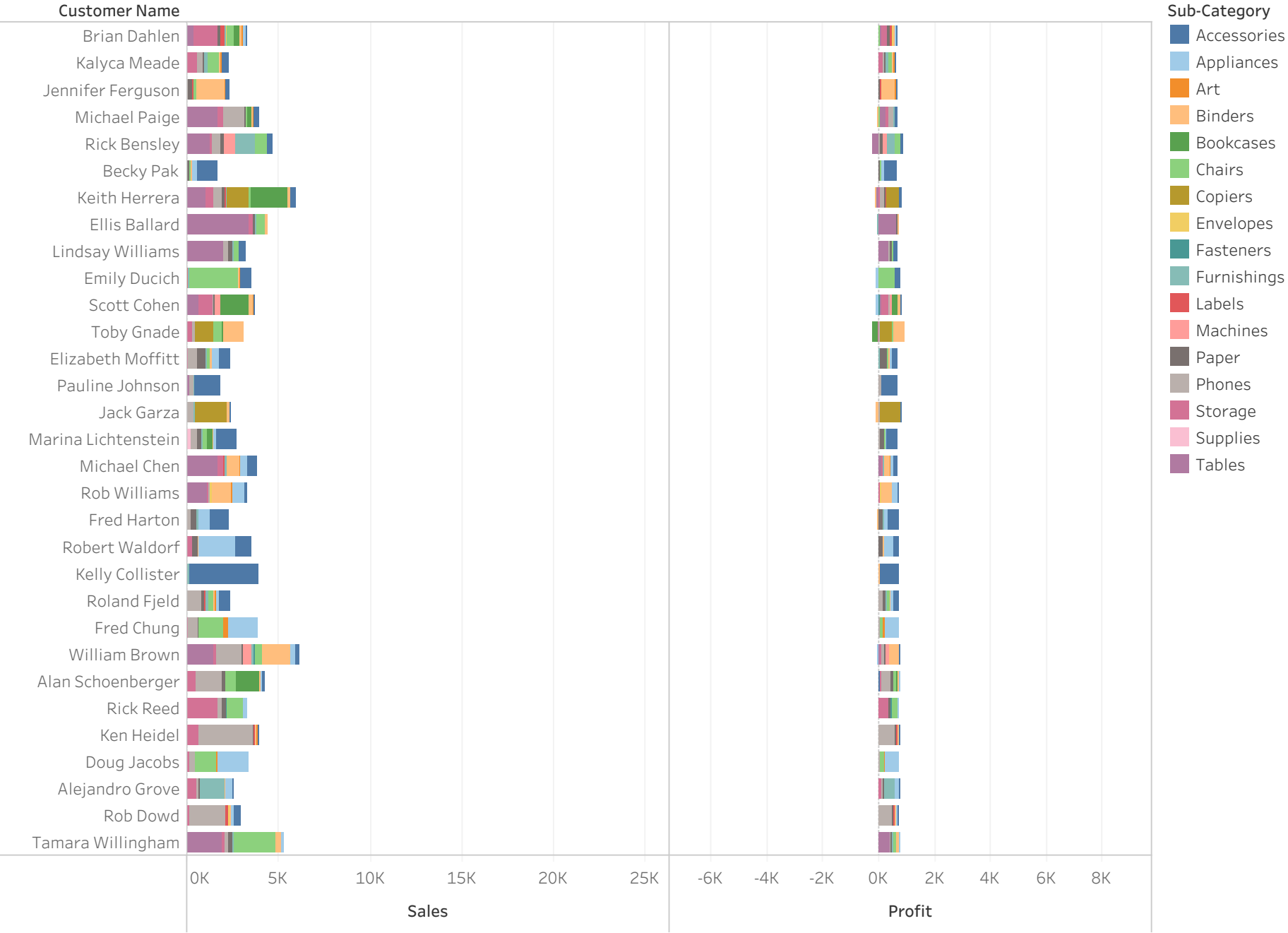
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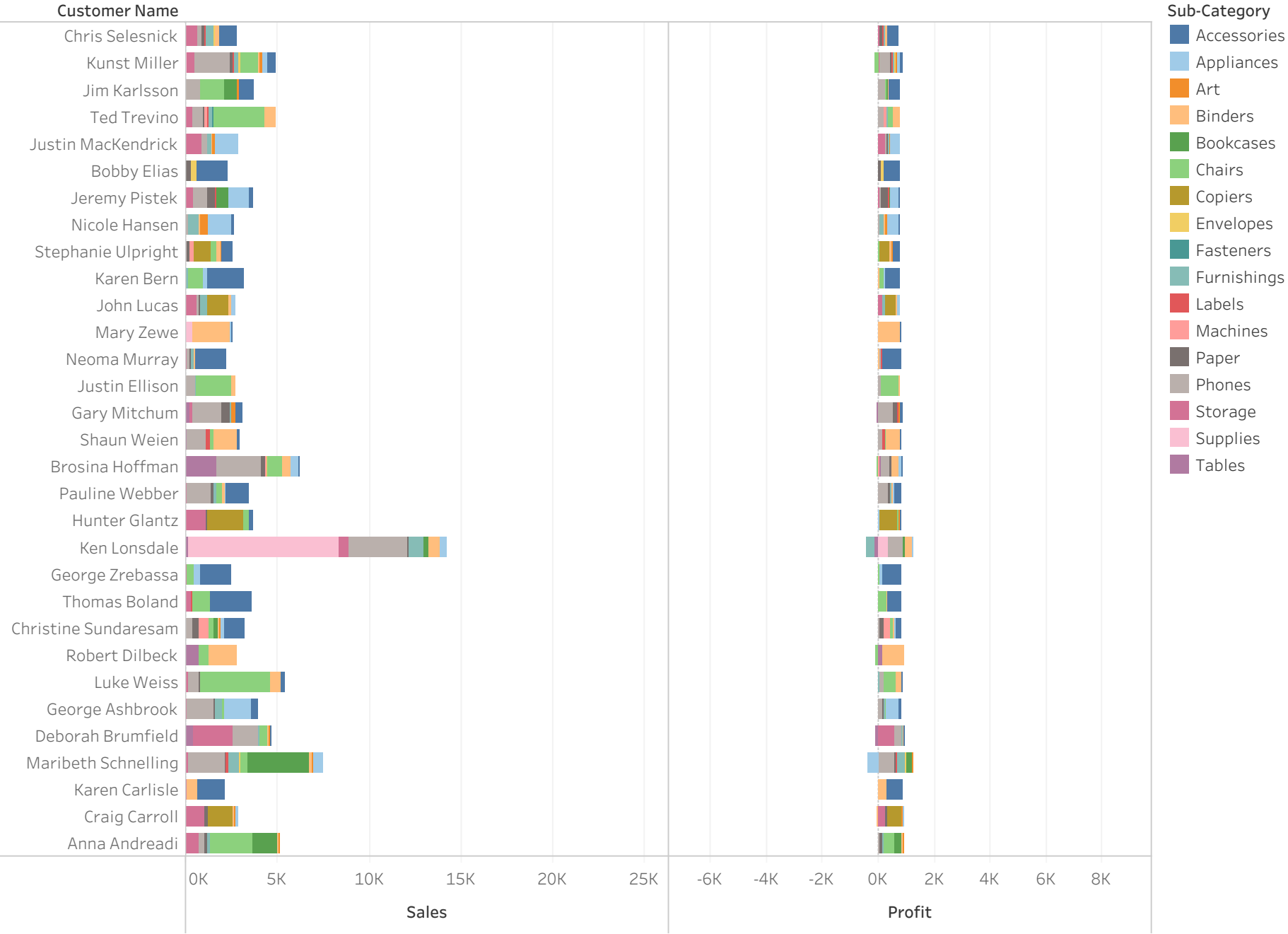
Customers by Profit and Sales



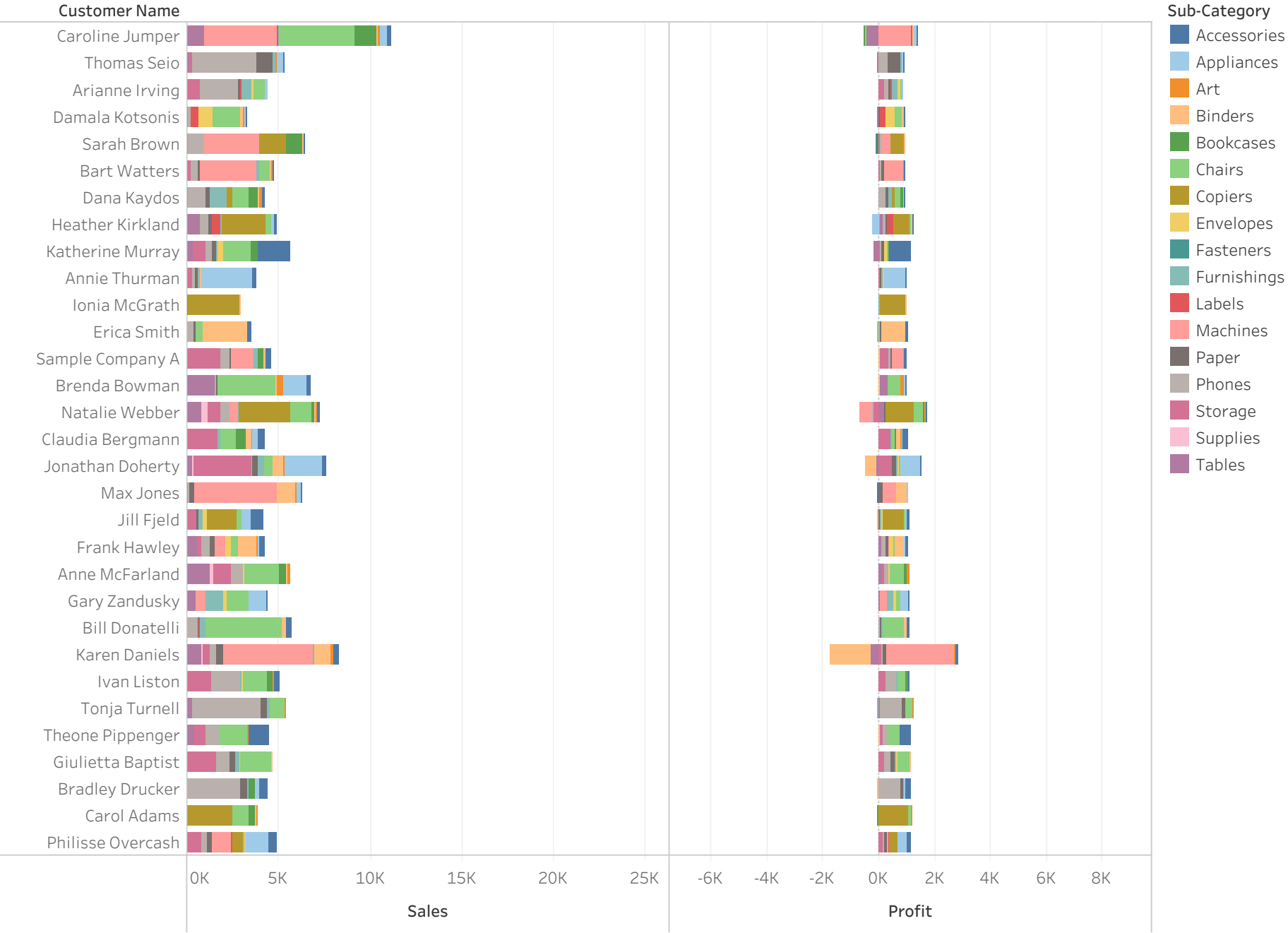
Customers by Profit and Sales



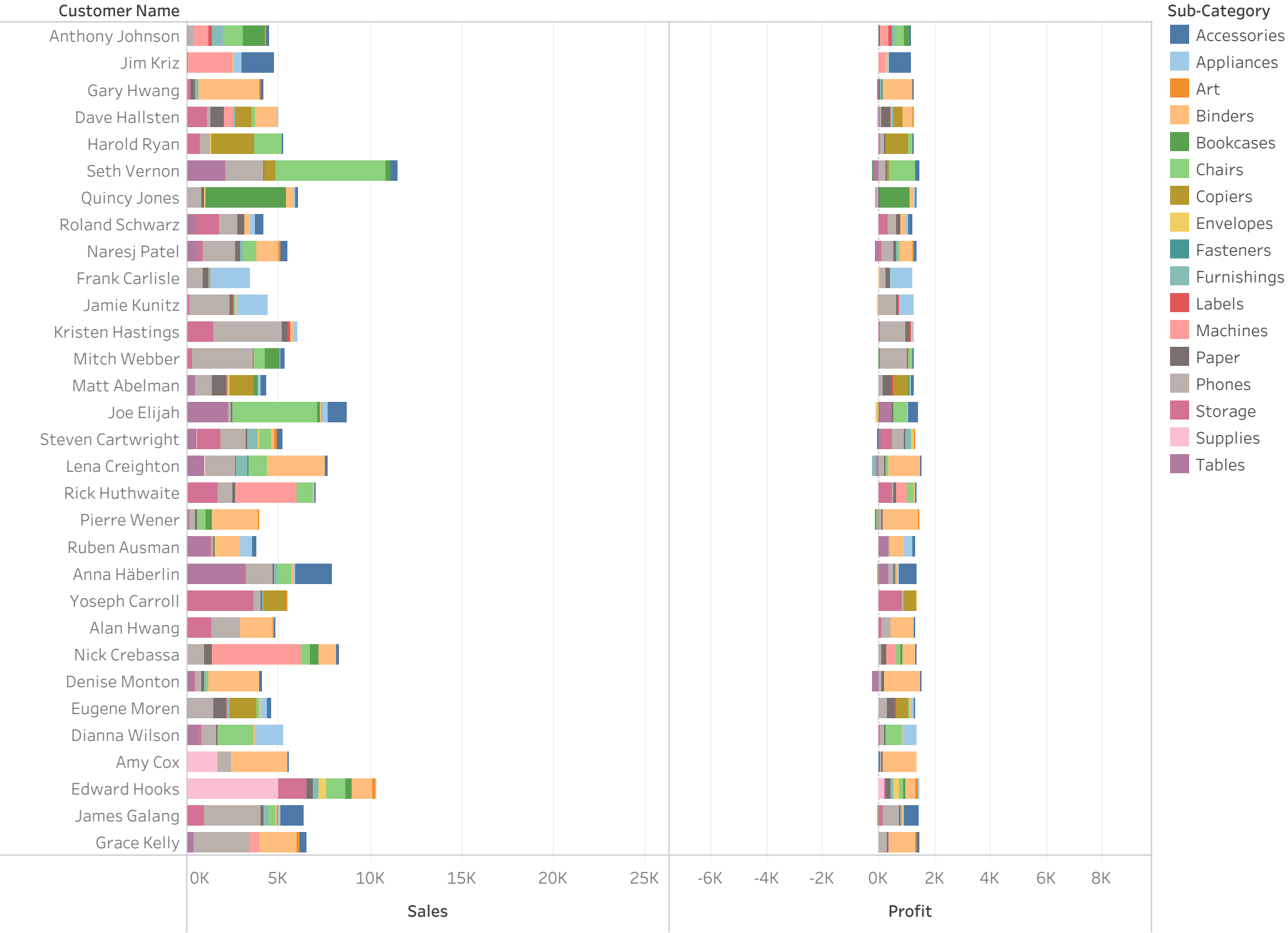
Customers by Profit and Sales



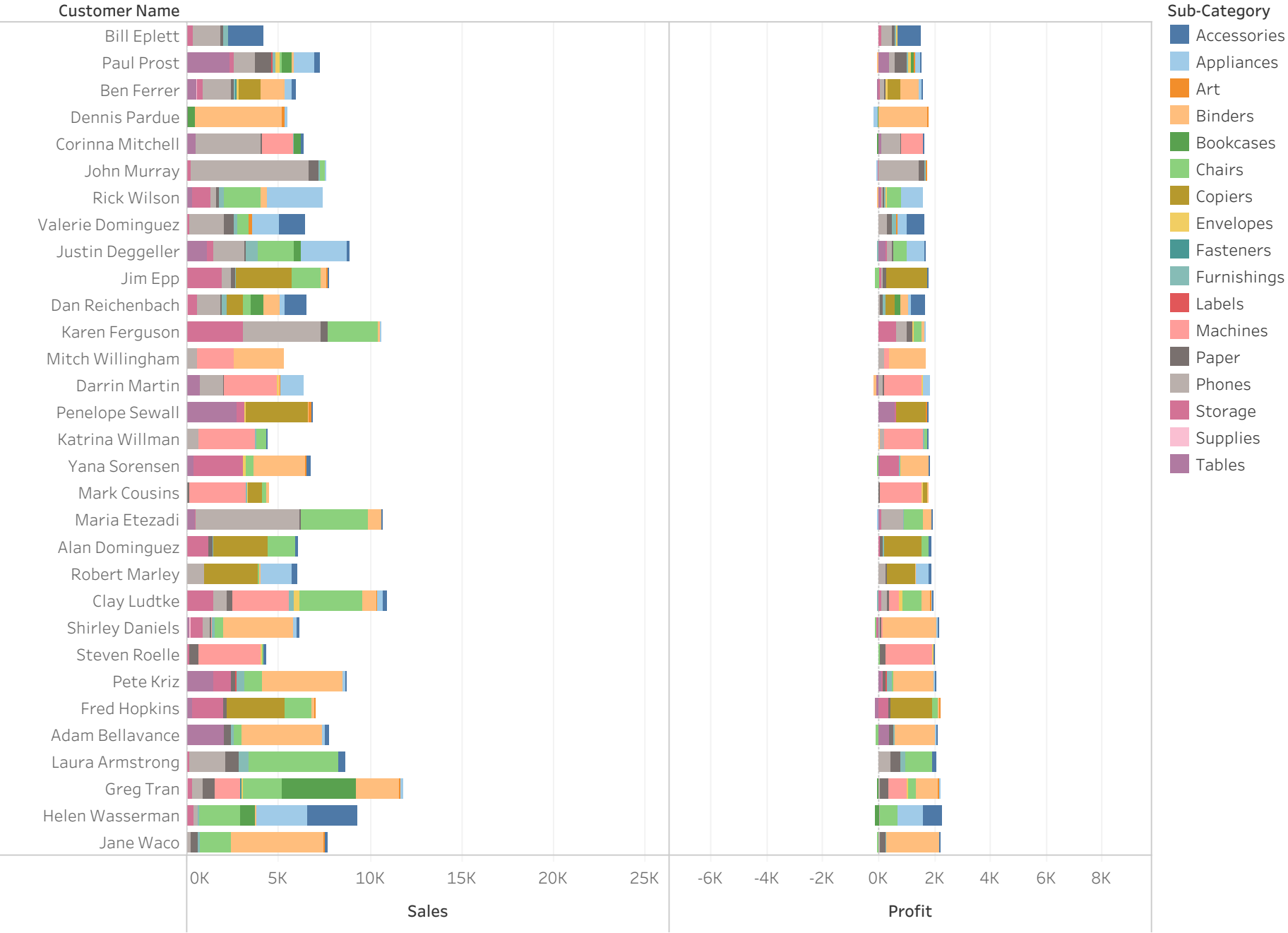
Customers by Profit and Sales



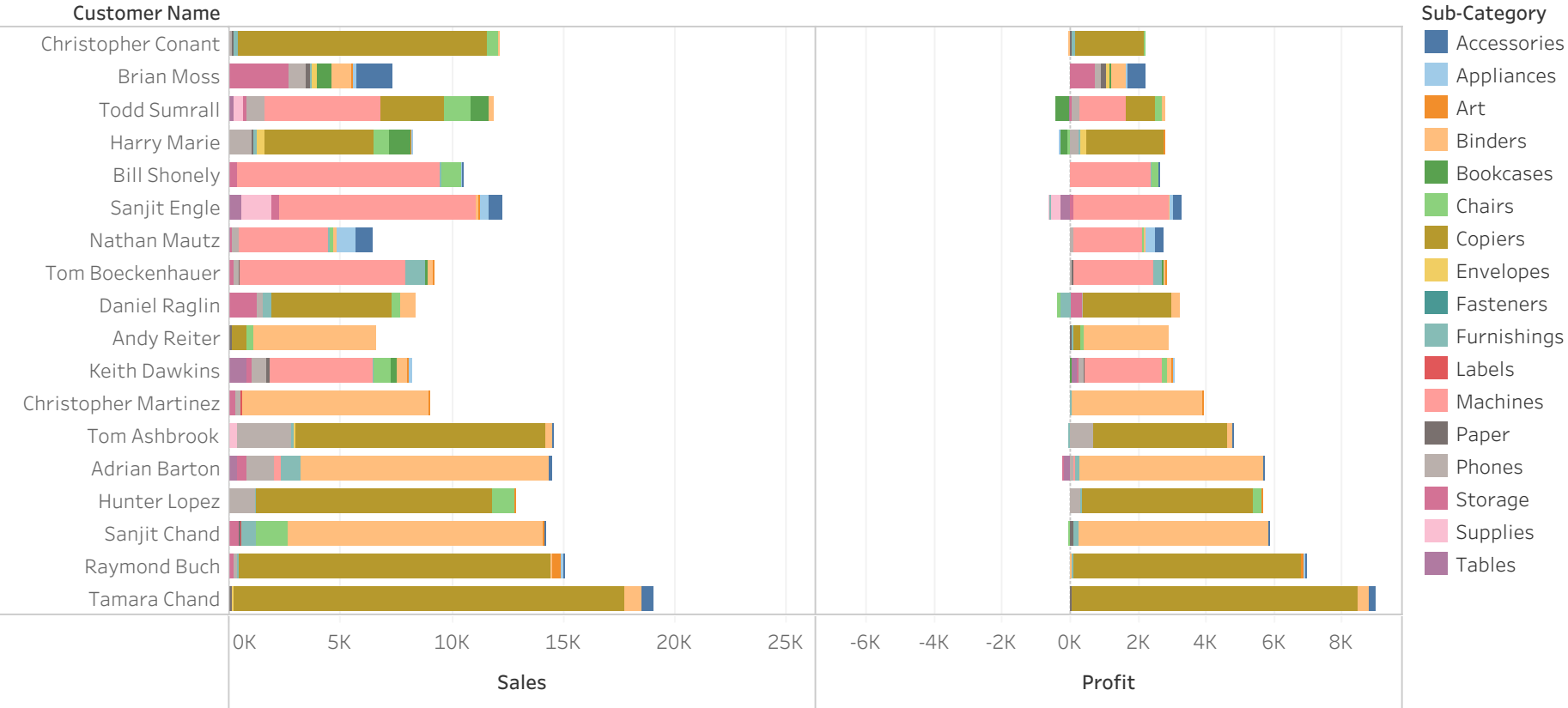
Customers by Profit and Sales



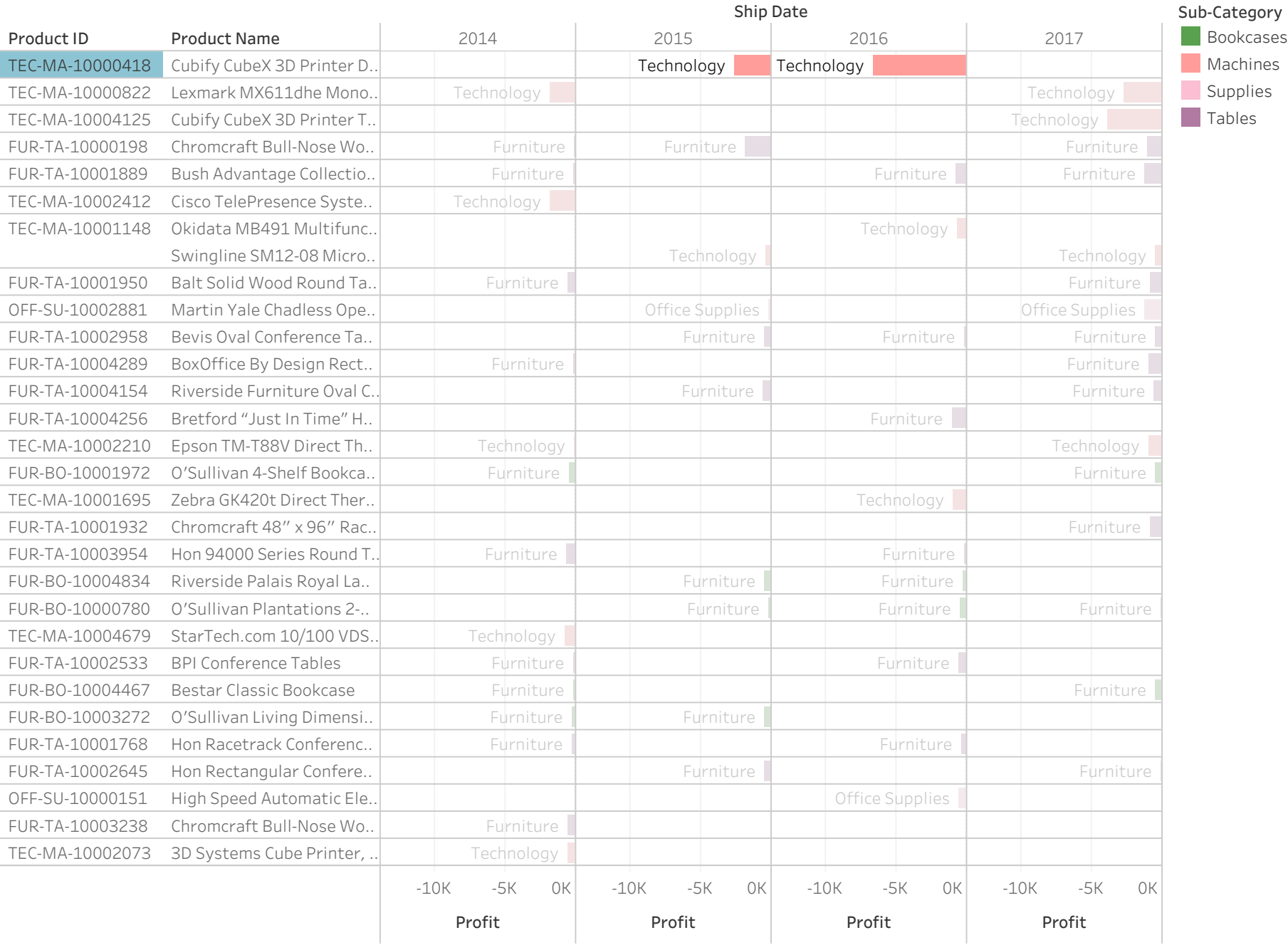
Customers by Profit and Sales



Customers by Profit and Sales



Customer Sales by SubCategory



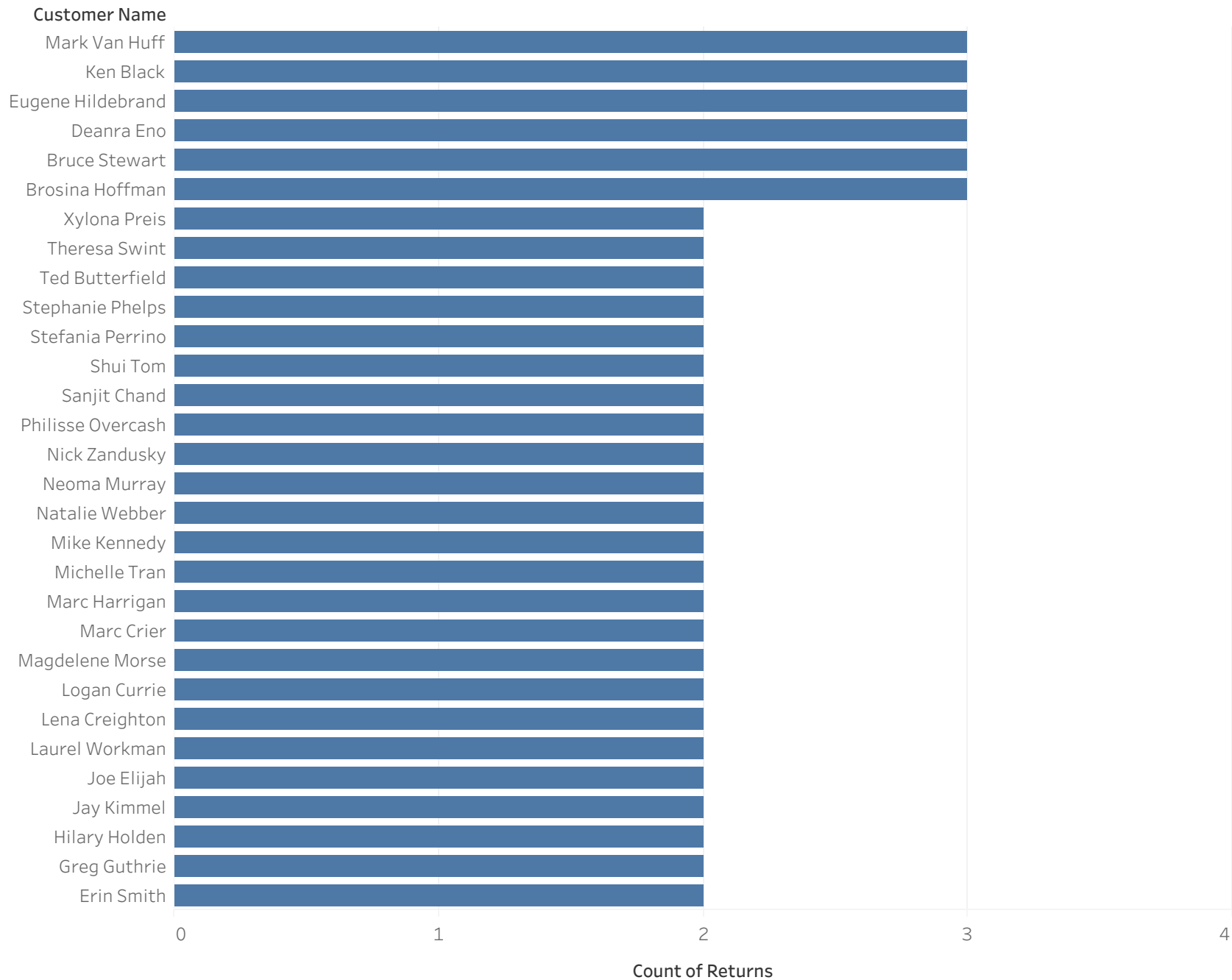
Customer Sales by SubCategory

		Ship Date												Sub-Category
Product ID	Product Name	2014			2015			2016			2017			
FUR-TA-10002041	Bevis Round Conference T..		Furniture									Furniture		Tables
FUR-TA-10004575	Hon 5100 Series Wood Ta..				Furniture			Furniture						Machines
FUR-TA-10000577	Bretford CR4500 Series Sl..		Furniture									Furniture		Supplies
TEC-MA-10001681	Lexmark MarkNet N8150 ..				Technology							Technology		Bookcases
FUR-TA-10002903	Bevis Round Bullnose 29" ..				Furniture							Furniture		Tables
FUR-TA-10002228	Bevis Traditional Confere..		Furniture					Furniture				Furniture		
FUR-TA-10002356	Bevis Boat-Shaped Confer..				Furniture			Furniture						
FUR-TA-10002530	Iceberg OfficeWorks 42" ..							Furniture						
FUR-BO-10002613	Atlantic Metals Mobile 4-..				Furniture									Bookcases
FUR-TA-10003473	Bretford Rectangular Con..		Furniture		Furniture									
FUR-TA-10004442	Riverside Furniture Stan..		Furniture									Furniture		
FUR-TA-10003008	Lesro Round Back Collecti..							Furniture				Furniture		
FUR-TA-10003715	Hon 2111 Invitation Serie..				Furniture			Furniture						
FUR-TA-10000849	Bevis Rectangular Confer..				Furniture							Furniture		
TEC-MA-10003356	Panasonic KX MC6040 Col..											Technology		Machines
FUR-BO-10001918	Sauder Forest Hills Librar..				Furniture									Bookcases
OFF-SU-10000646	Premier Automatic Letter ..							Office Supplies						Supplies
FUR-TA-10002607	KI Conference Tables				Furniture			Furniture						
FUR-TA-10004915	Office Impressions End Ta..											Furniture		Tables
FUR-TA-10001539	Chromcraft Rectangular C..		Furniture											
TEC-MA-10000904	Brother MFC-9340CDW LE..							Technology						Machines
FUR-TA-10004534	Bevis 44 x 96 Conference ..		Furniture					Furniture						
FUR-TA-10003469	Balt Split Level Computer ..				Furniture							Furniture		
FUR-BO-10003546	Hon 4-Shelf Metal Bookca..											Furniture		Bookcases
FUR-TA-10001039	KI Adjustable-Height Table							Furniture				Furniture		
FUR-BO-10004218	Bush Heritage Pine Collec..				Furniture									
TEC-MA-10001856	Okidata C610n Printer											Technology		Machines
TEC-MA-10003353	Xerox WorkCentre 6505D..		Technology											
TEC-MA-10003337	Okidata B401 Printer							Technology						Machines
FUR-BO-10002545	Atlantic Metals Mobile 3-..		Furniture											
		-10K	-5K	0K	-10K	-5K	0K	-10K	-5K	0K	-10K	-5K	0K	
		Profit			Profit			Profit			Profit			

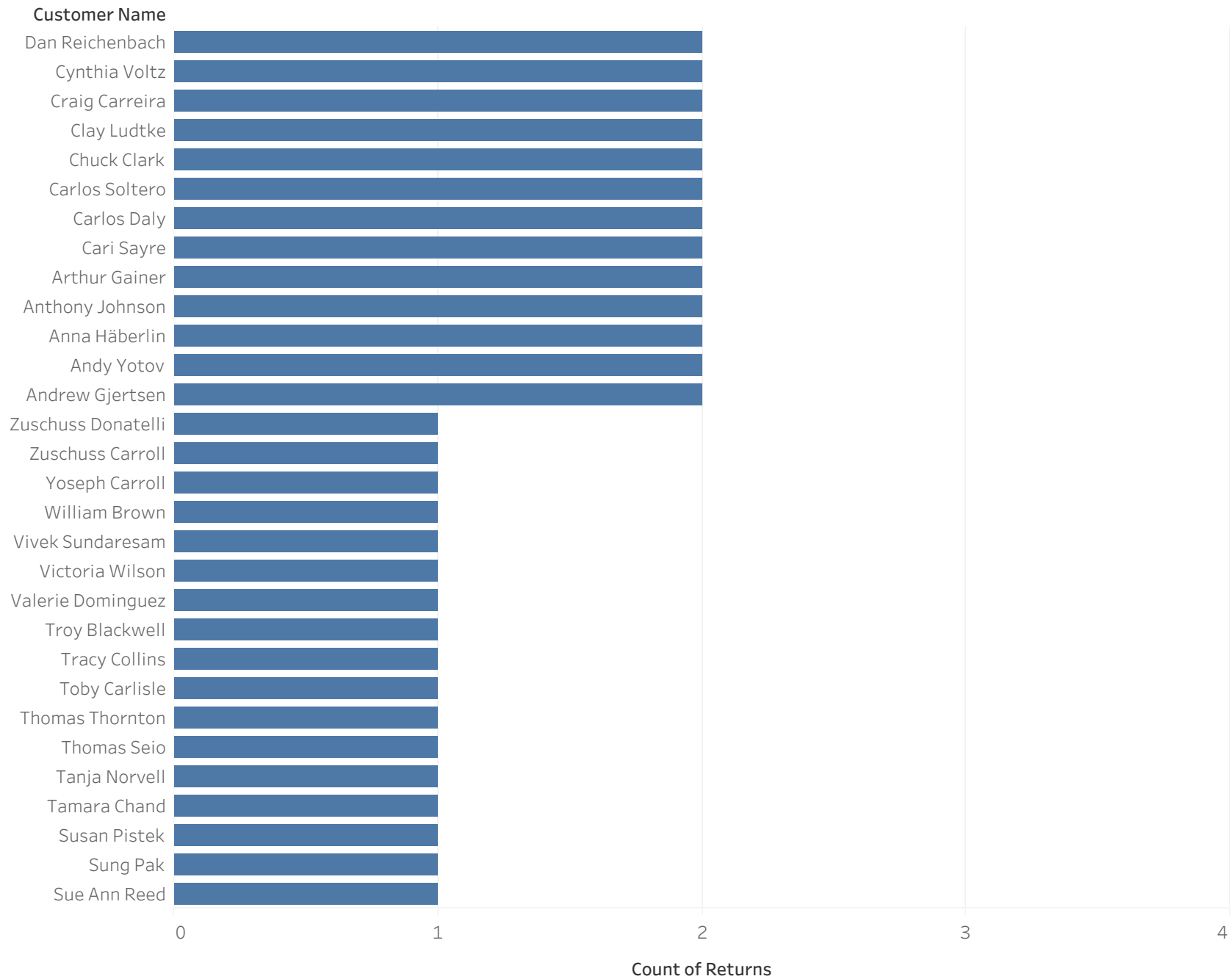
Customer Sales by SubCategory

		Ship Date												Sub-Category
Product ID	Product Name	2014			2015			2016			2017			
FUR-BO-10002268	Sauder Barrister Bookcas..					Furniture								Bookcases
FUR-BO-10001811	Atlantic Metals Mobile 5-..											Furniture		Machines
FUR-BO-10004357	O’Sullivan Living Dimensi..							Furniture						Supplies
FUR-TA-10001086	SAFCO PlanMaster Board..							Furniture						Tables
FUR-TA-10001095	Chromcraft Round Confer..							Furniture						
FUR-TA-10002774	Laminate Occasional Tabl..							Furniture						
FUR-BO-10001567	Bush Westfield Collection ..							Furniture						
FUR-BO-10003965	O’Sullivan Manor Hill 2-Do..					Furniture								
FUR-TA-10004175	Hon 30” x 60” Table with ..		Furniture											
TEC-MA-10004521	Epson Perfection V600 Ph..		Technology											
TEC-MA-10003589	Cisco 8961 IP Phone Charc..							Technology						
FUR-BO-10000468	O’Sullivan 2-Shelf Heavy-..											Furniture		
FUR-TA-10000617	Hon Practical Foundation..					Furniture								
FUR-BO-10001608	Hon Metal Bookcases, Bla..					Furniture								
FUR-BO-10003450	Bush Westfield Collection ..					Furniture								
FUR-BO-10003893	Sauder Camden County Co..							Furniture						
FUR-BO-10001601	Sauder Mission Library wi..											Furniture		
FUR-TA-10004607	Hon 2111 Invitation Serie..											Furniture		
FUR-BO-10004695	O’Sullivan 2-Door Barriste..					Furniture								
FUR-TA-10003569	Bretford CR8500 Series M..							Furniture						
FUR-BO-10000112	Bush Birmingham Collecti..											Furniture		
FUR-BO-10004015	Bush Andora Bookcase, M..							Furniture						
FUR-TA-10001857	Balt Solid Wood Rectangu..		Furniture											
FUR-TA-10002855	Bevis Round Conference T..											Furniture		
FUR-BO-10001798	Bush Somerset Collection ..											Furniture		
FUR-BO-10003660	Bush Cubix Collection Boo..					Furniture								
		-10K	-5K	0K	-10K	-5K	0K	-10K	-5K	0K	-10K	-5K	0K	
		Profit			Profit			Profit			Profit			

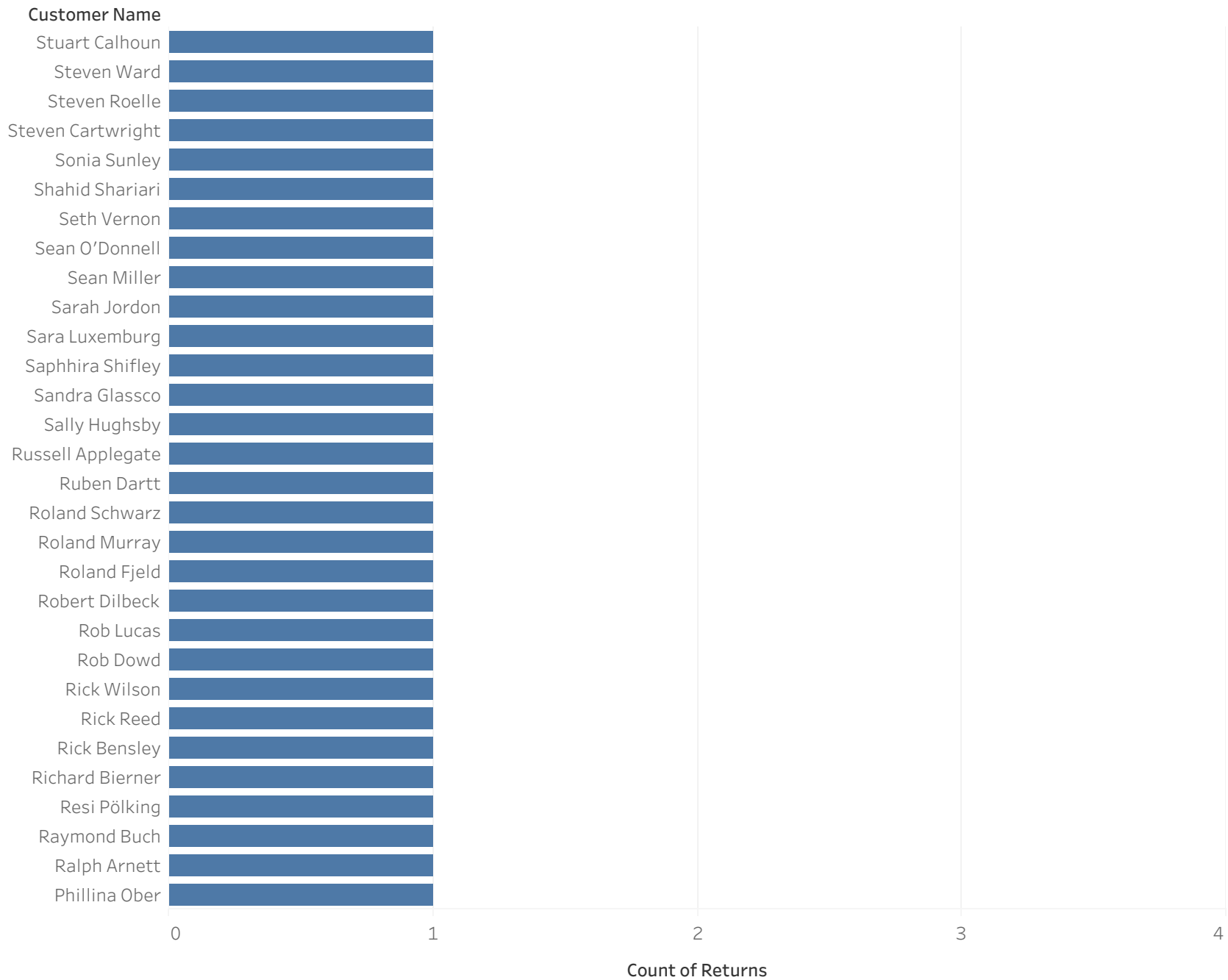
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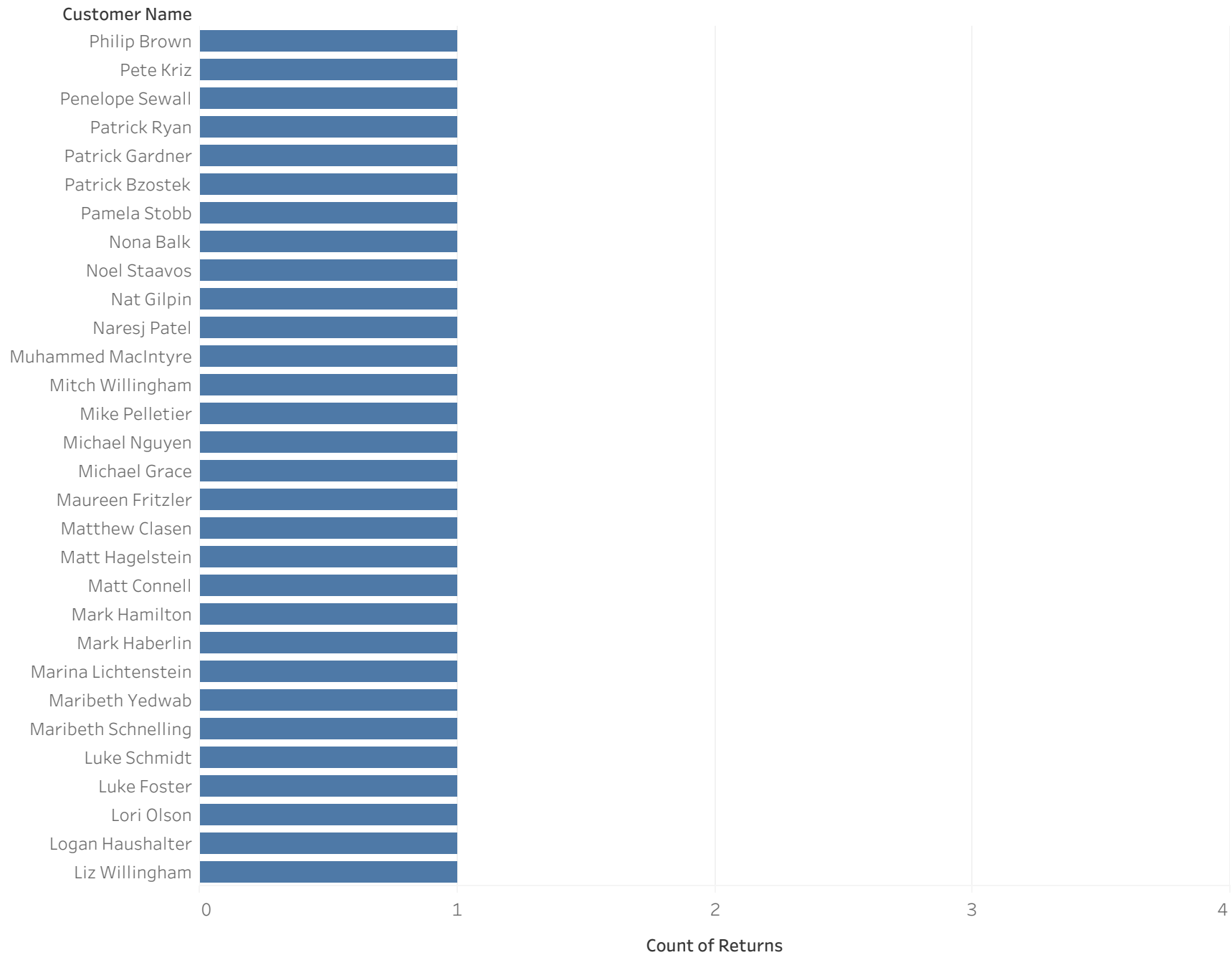
Customer Return Count



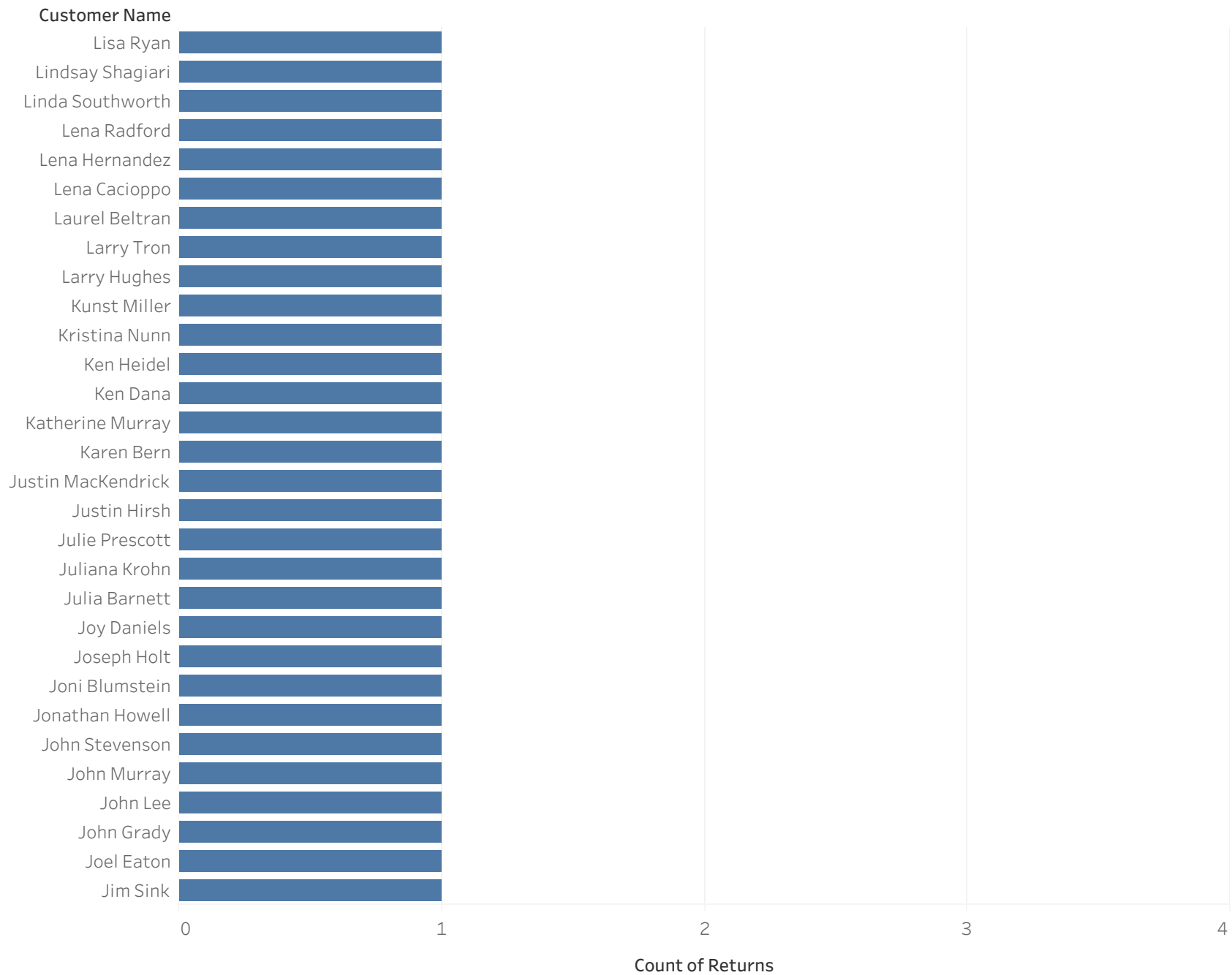
Customer Return Count



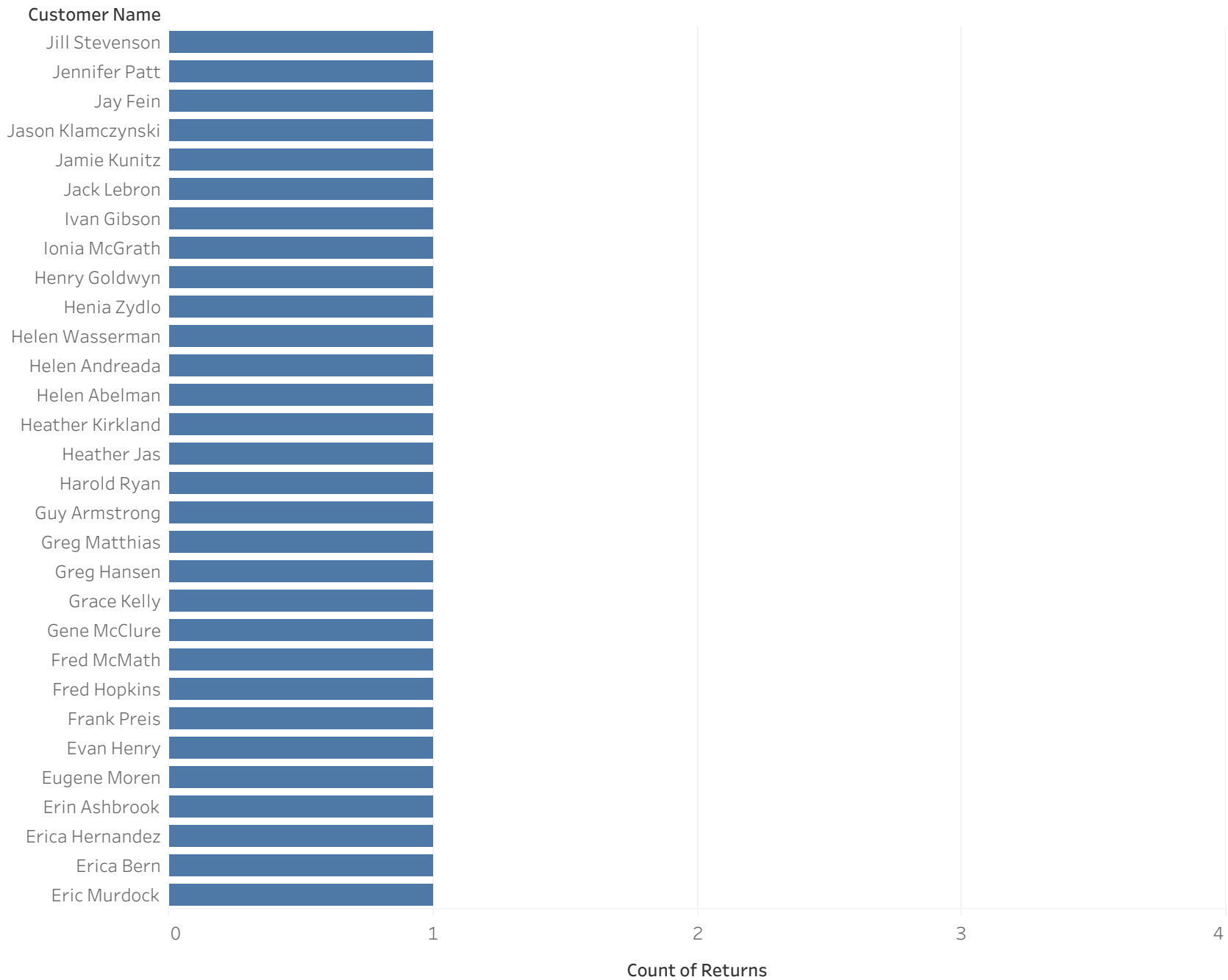
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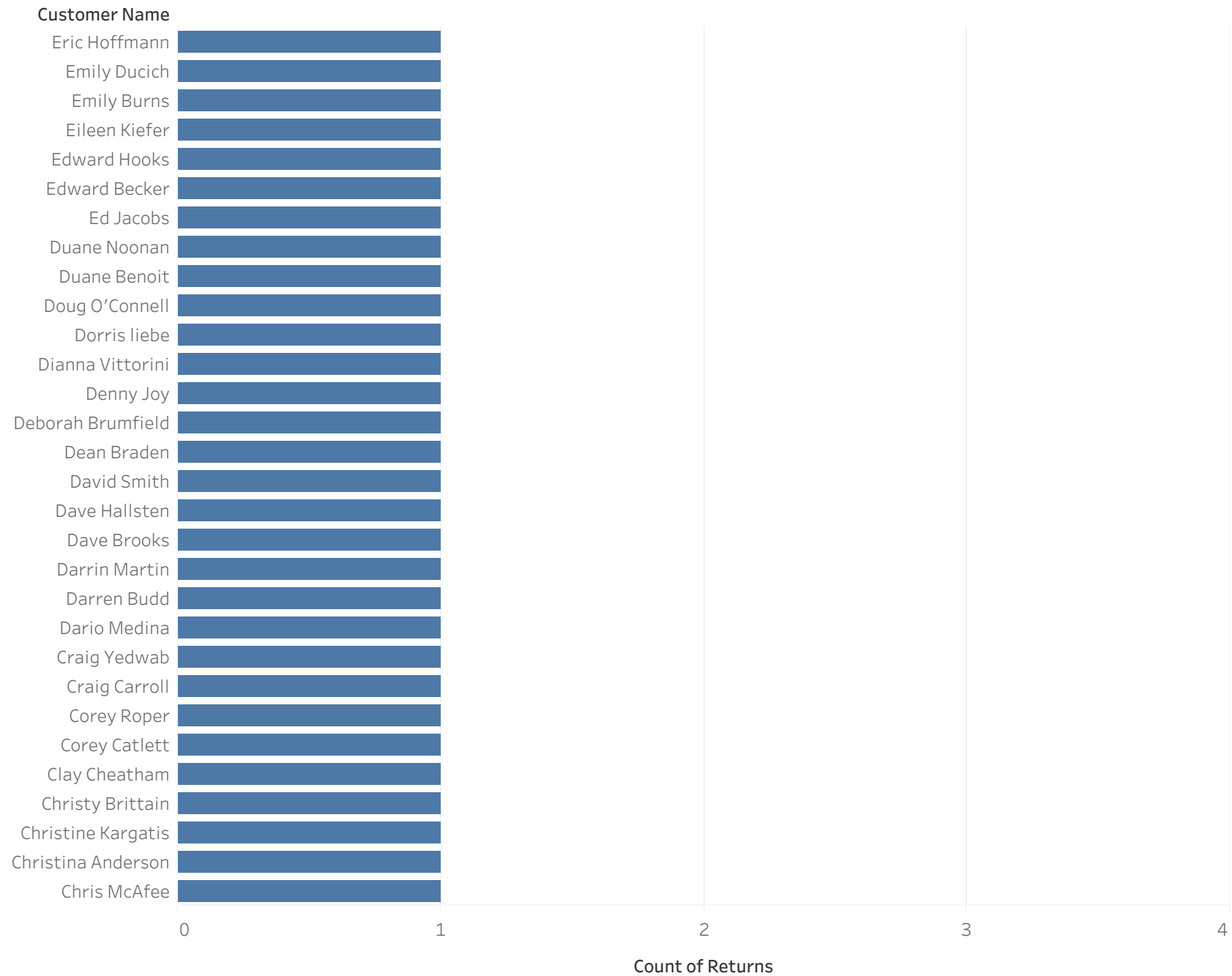
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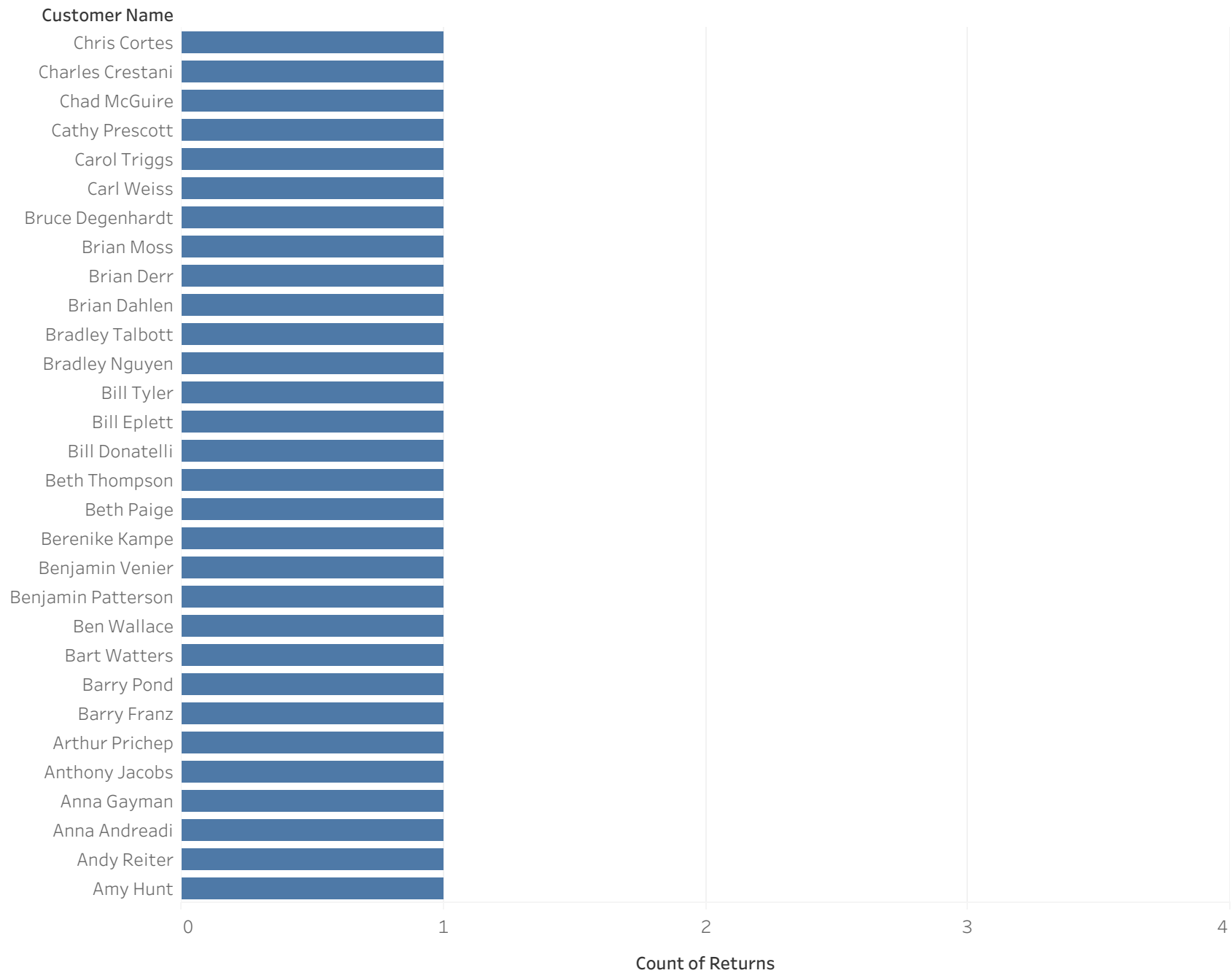
Customer Return Count



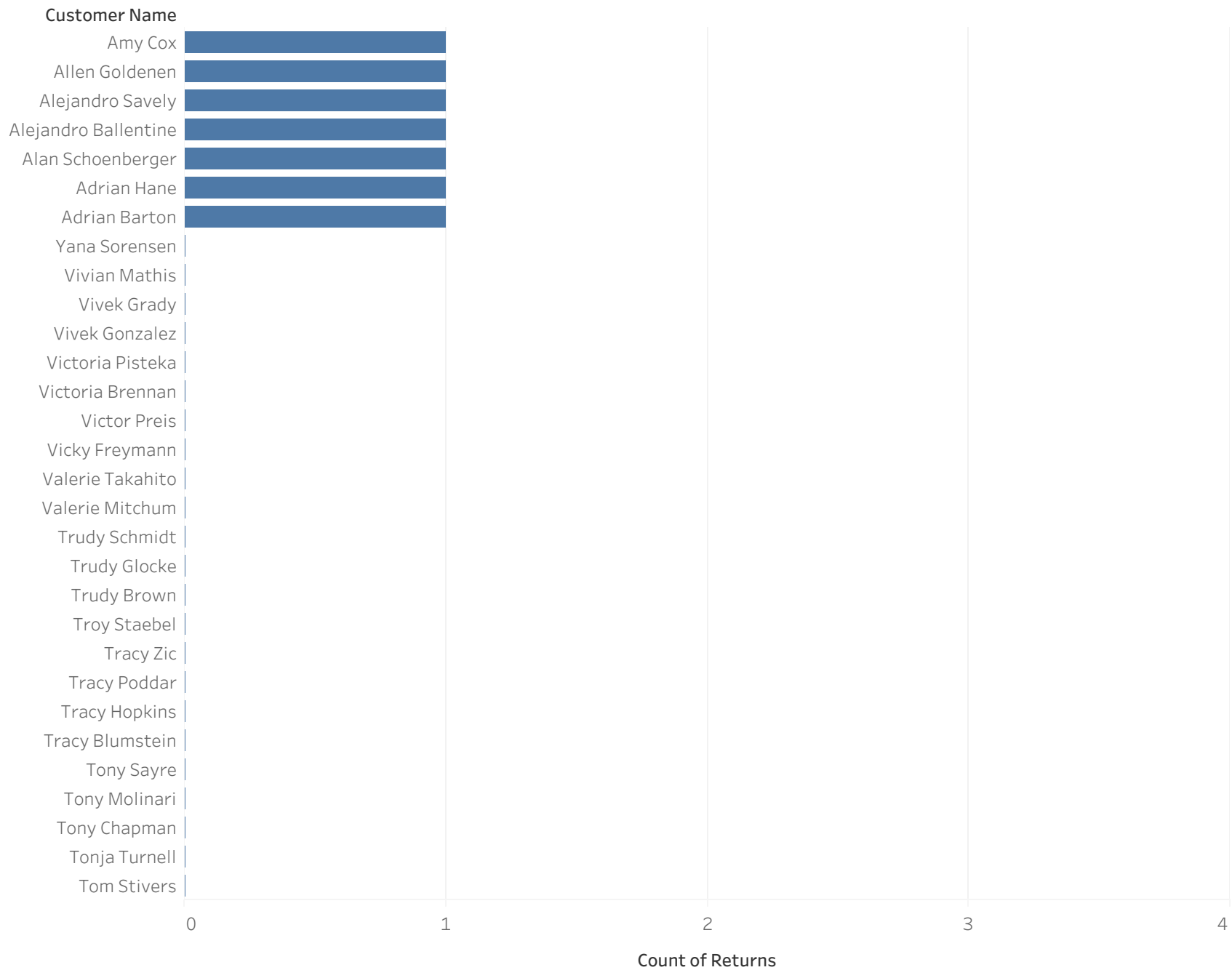
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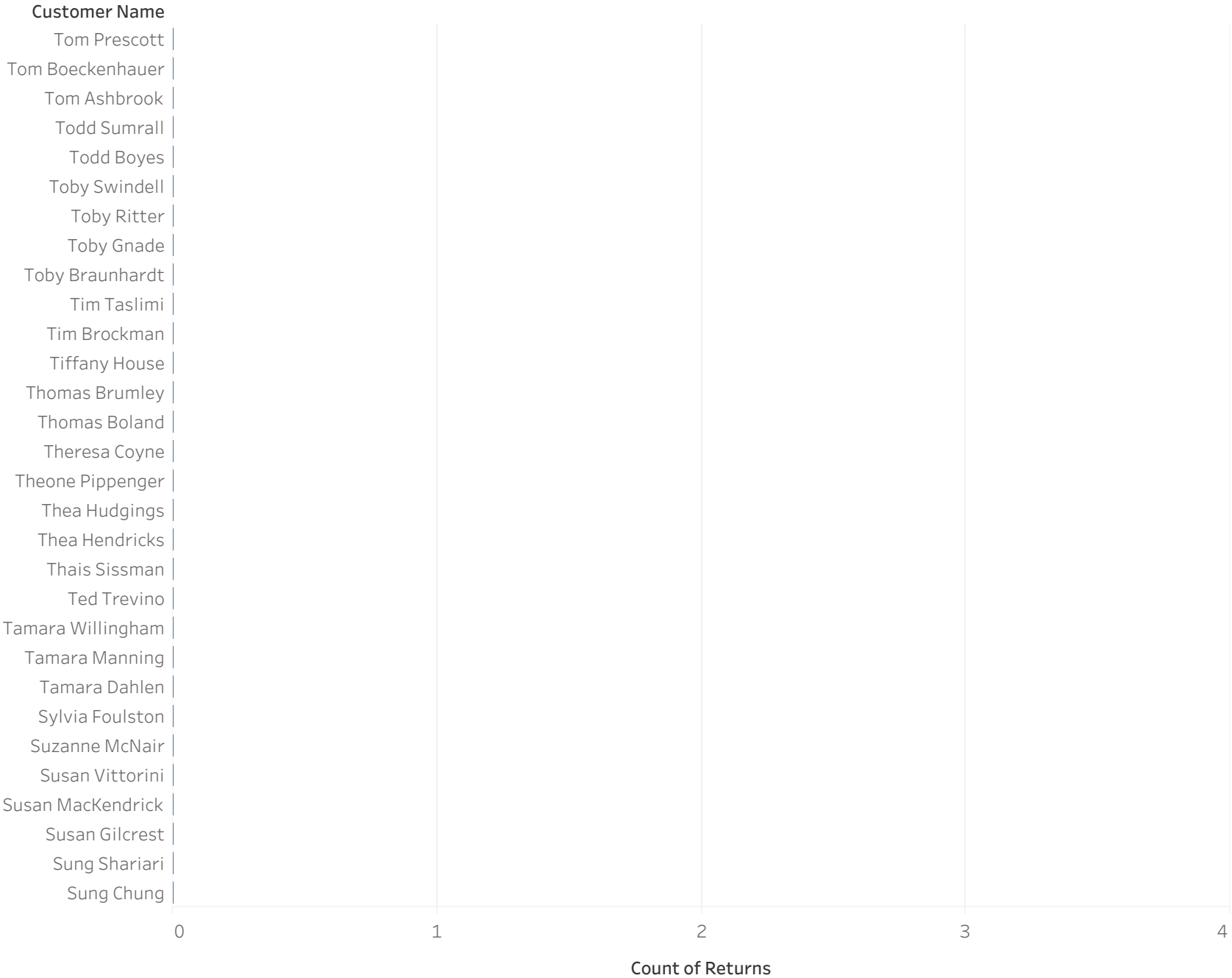
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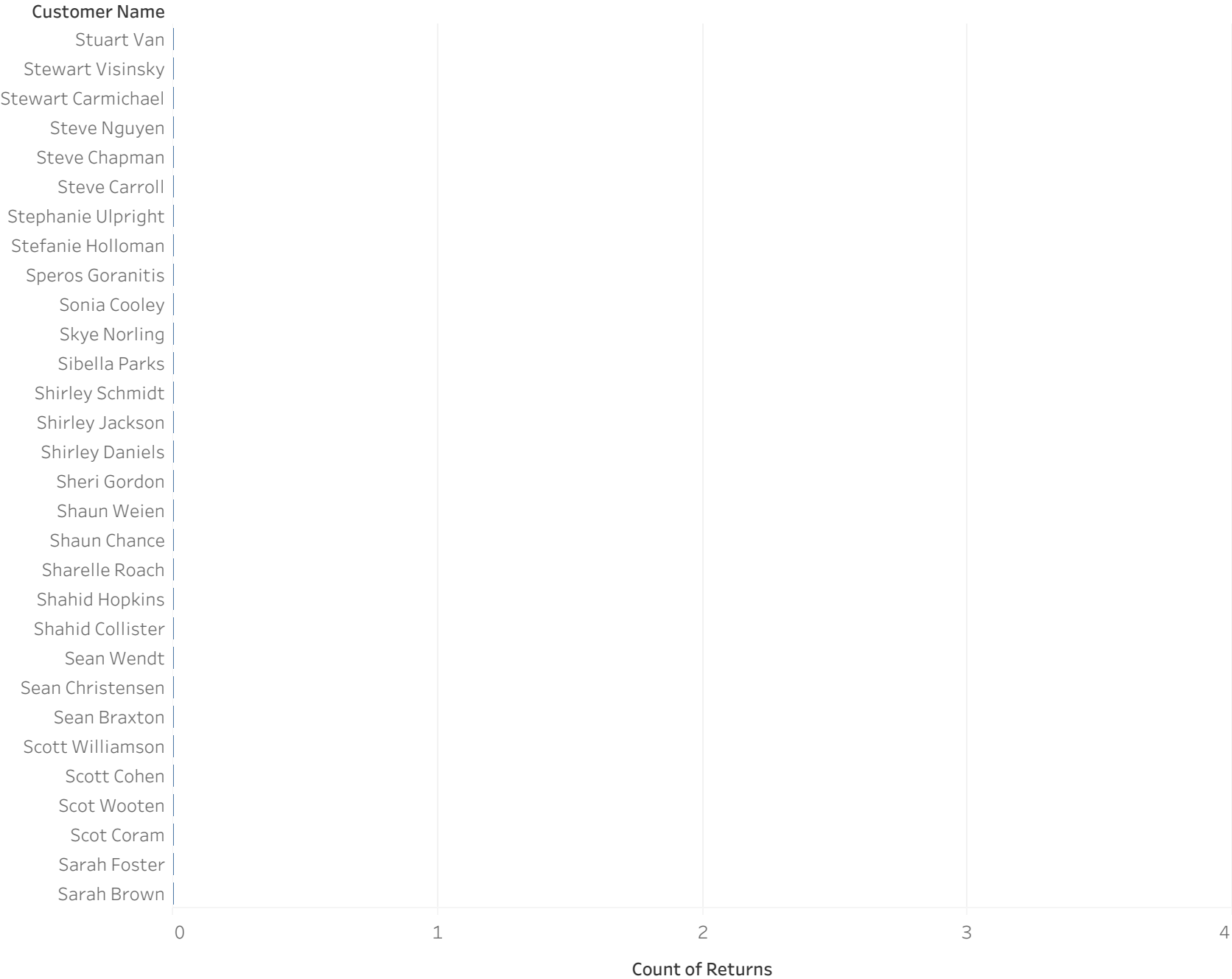
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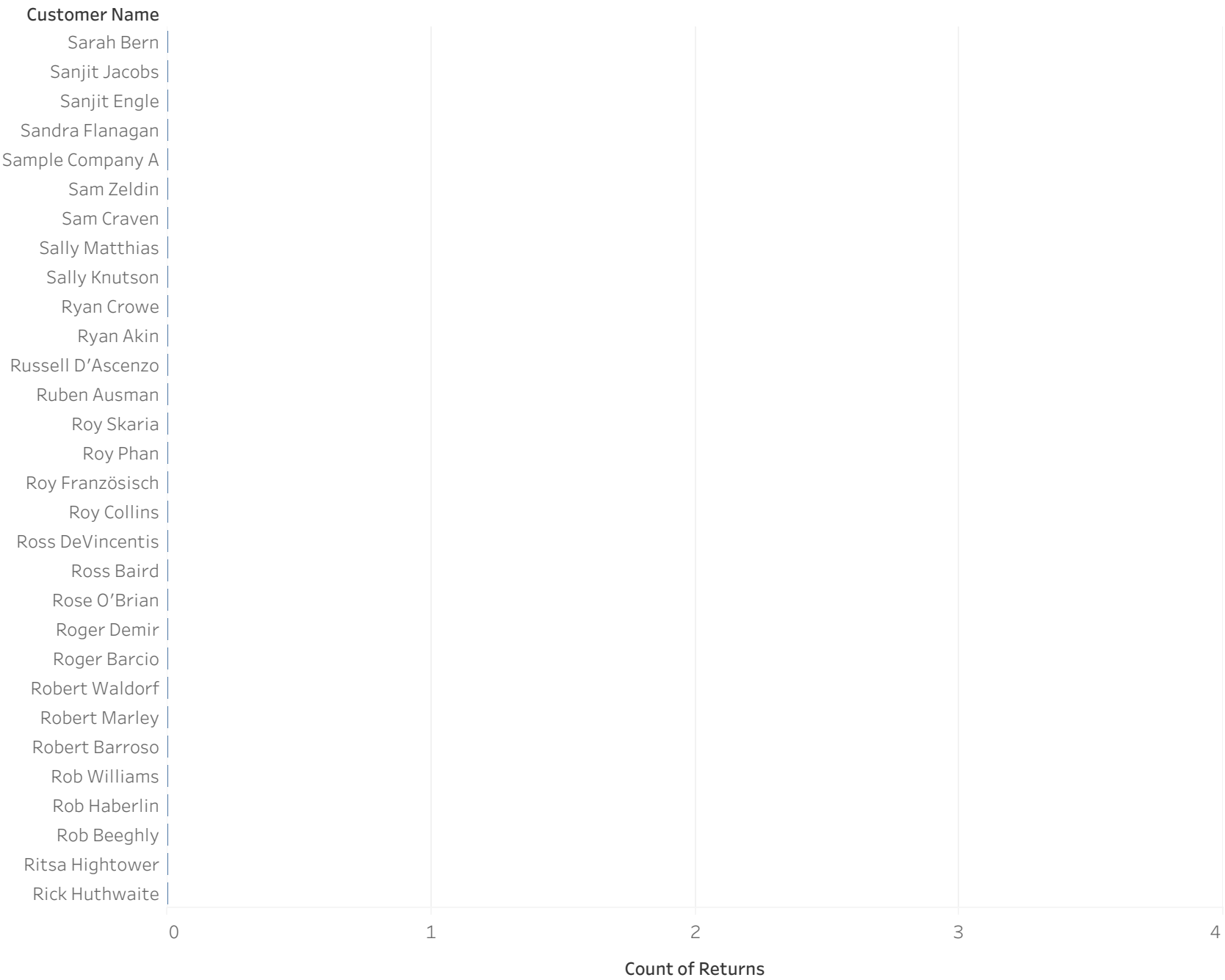
Customer Return Count



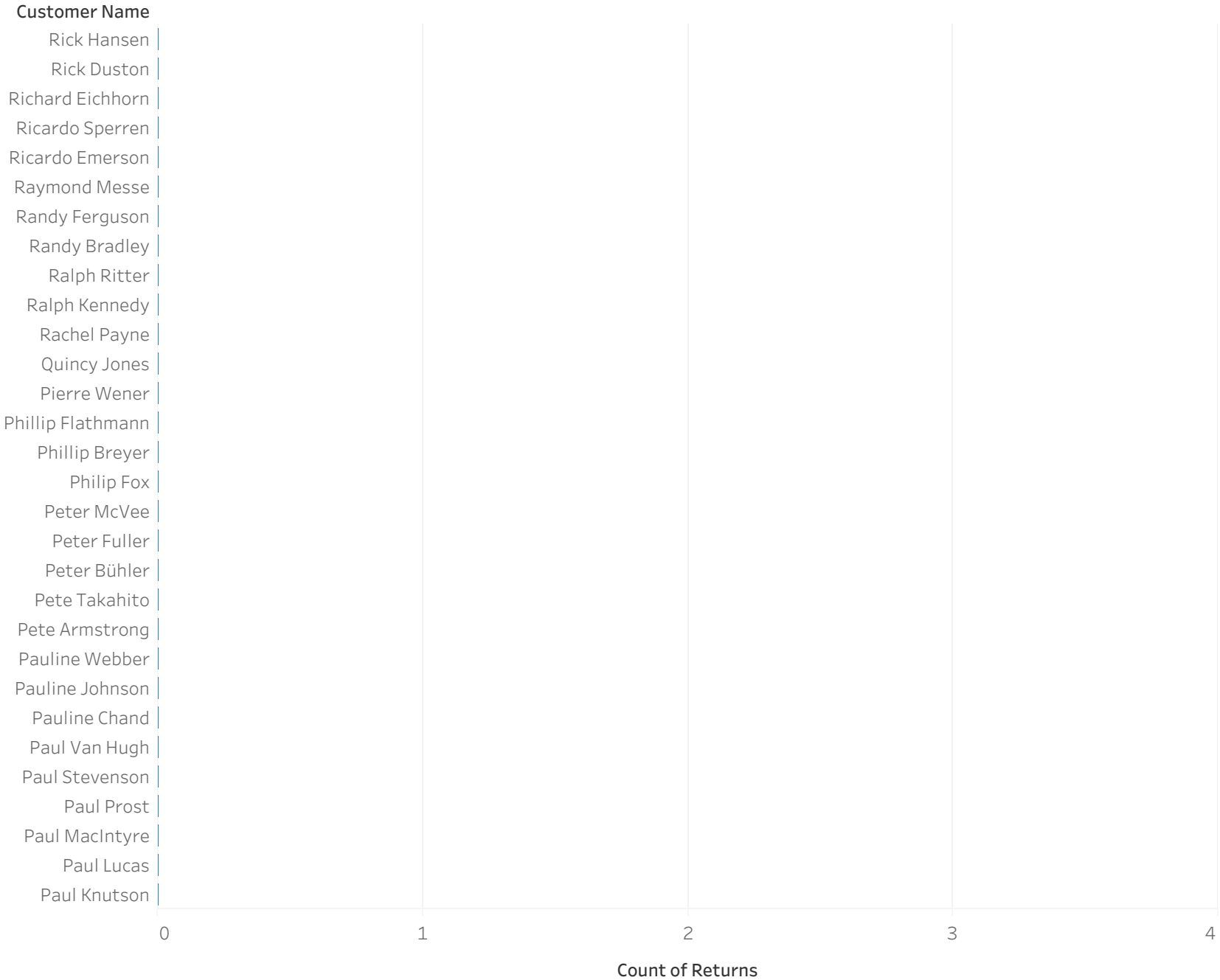
Customer Return Count



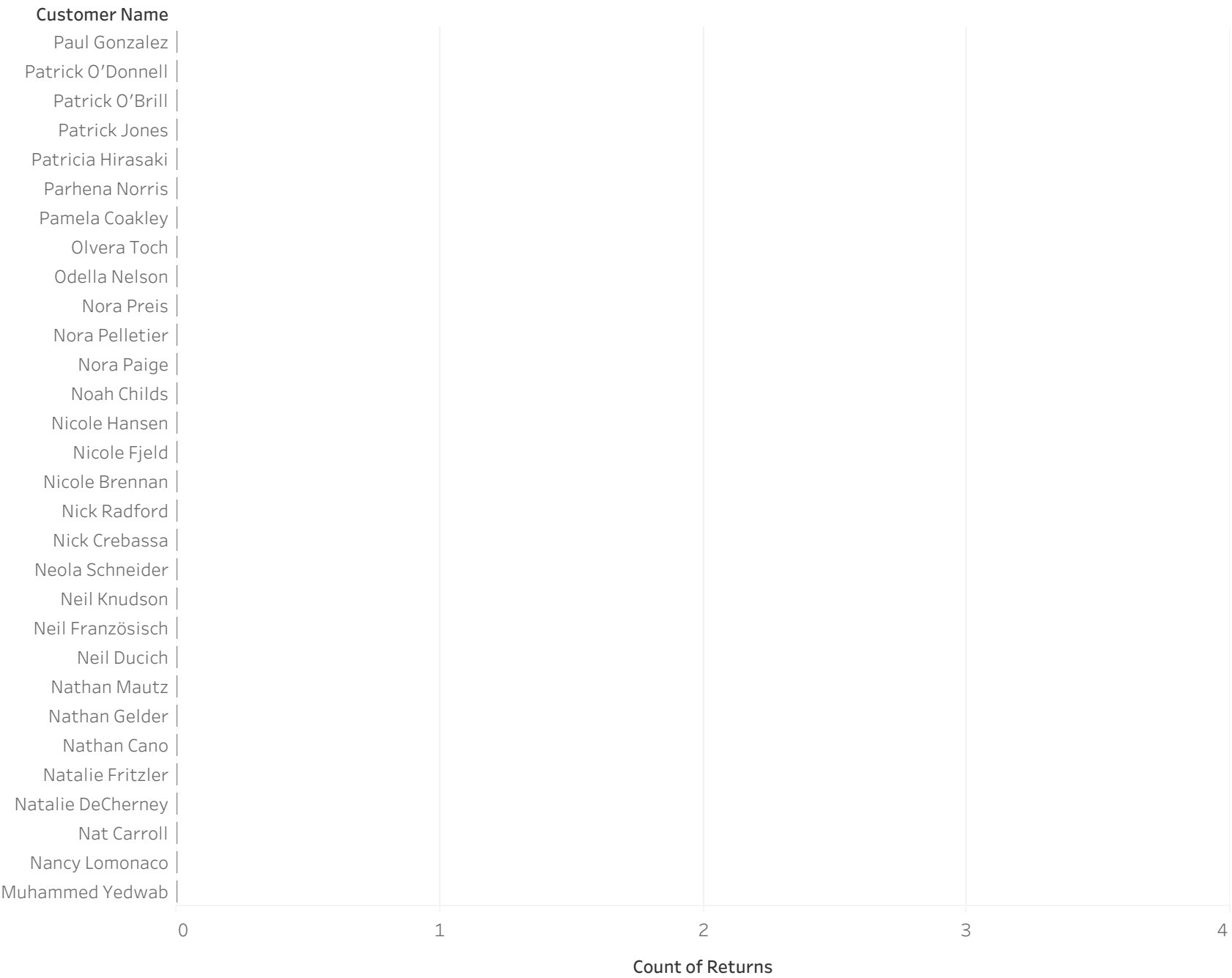
Customer Return Count



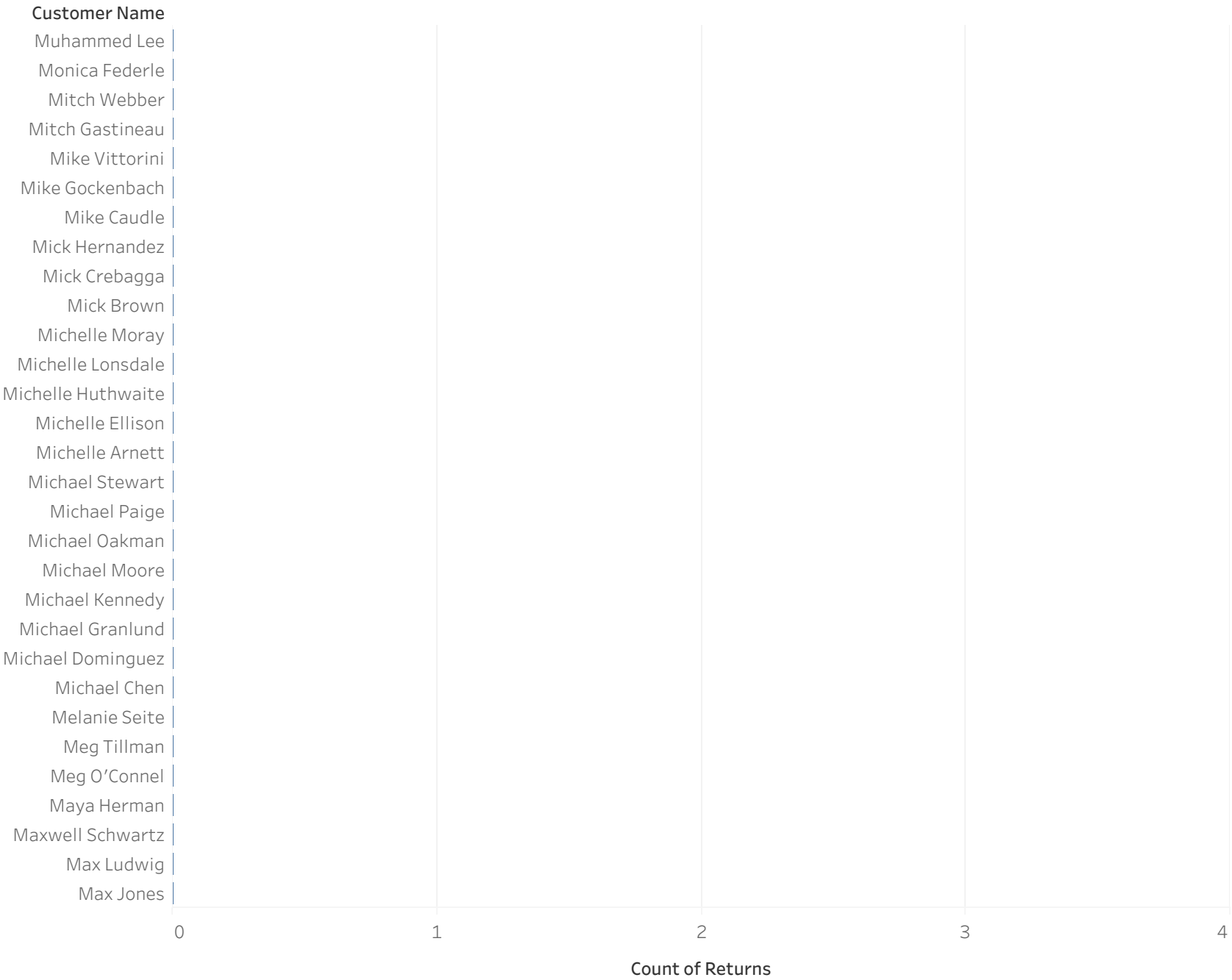
Customer Return Count



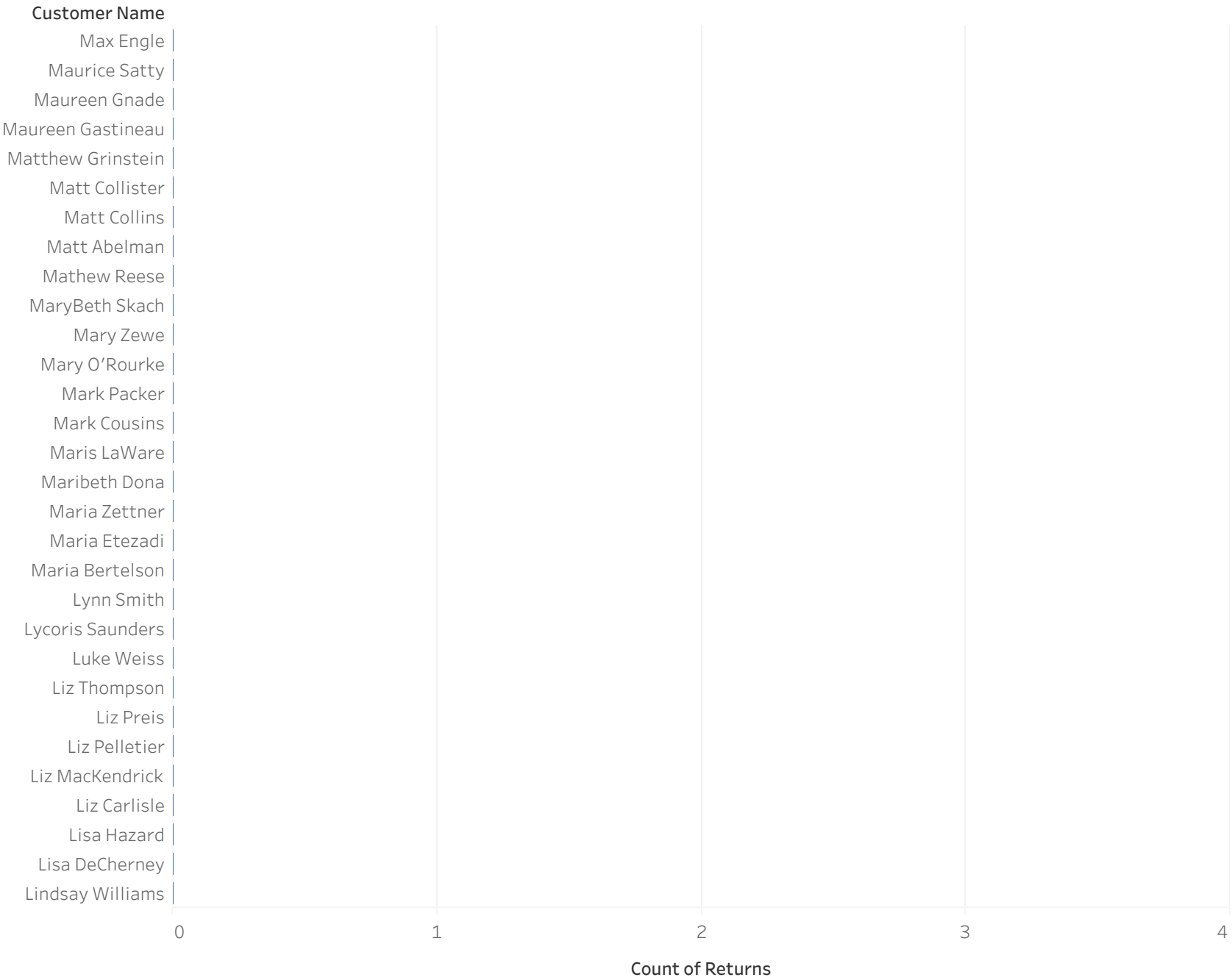
Customer Return Count



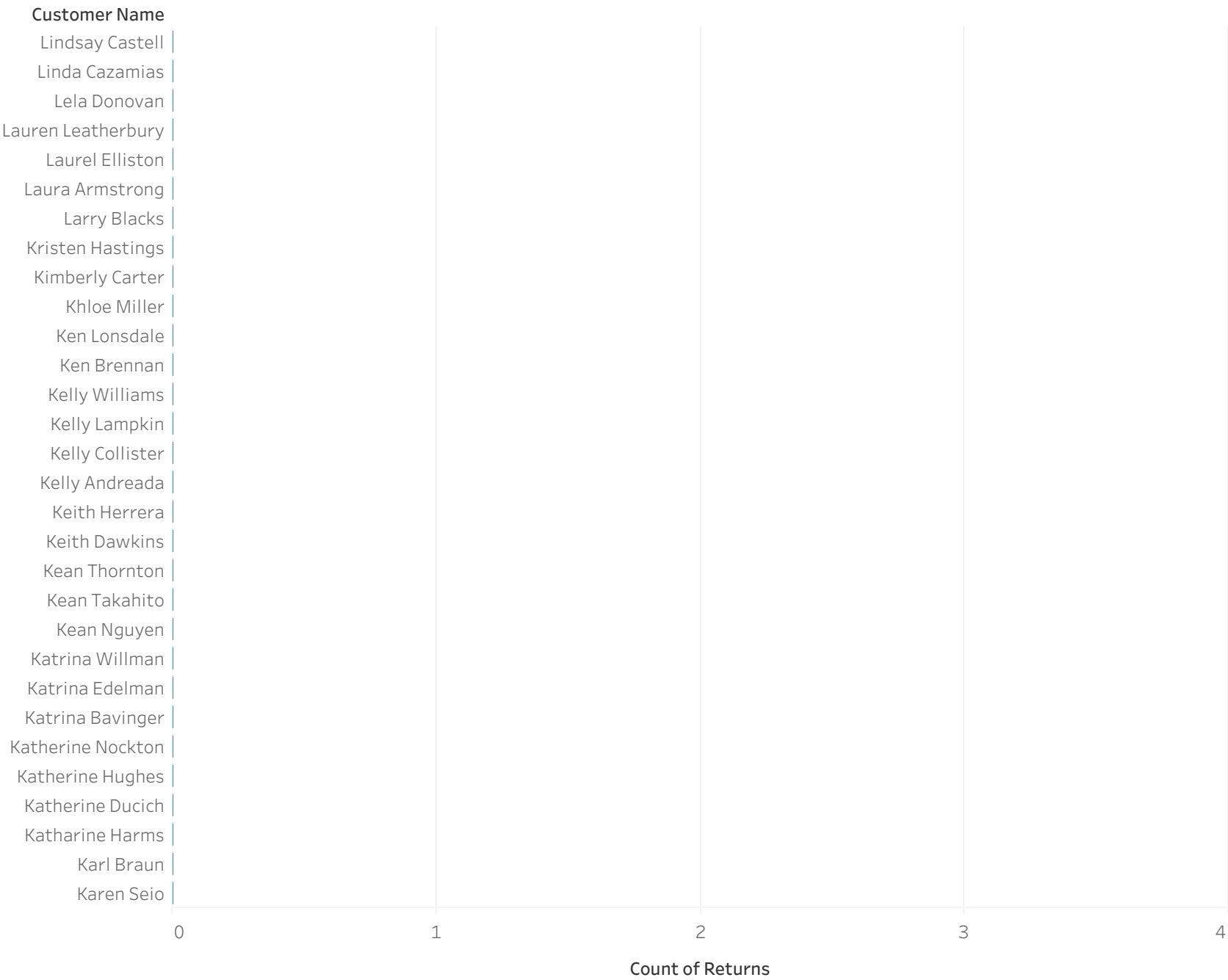
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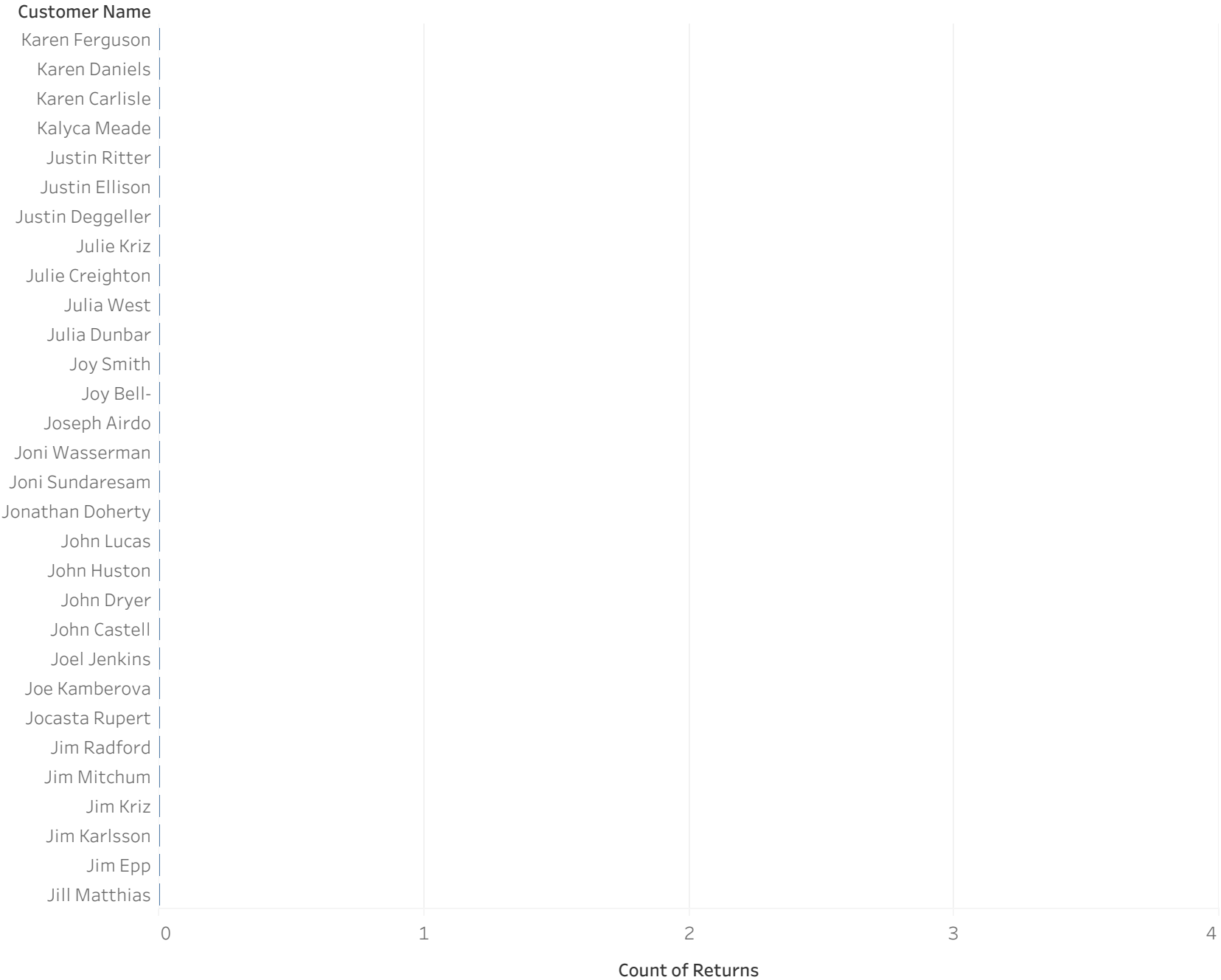
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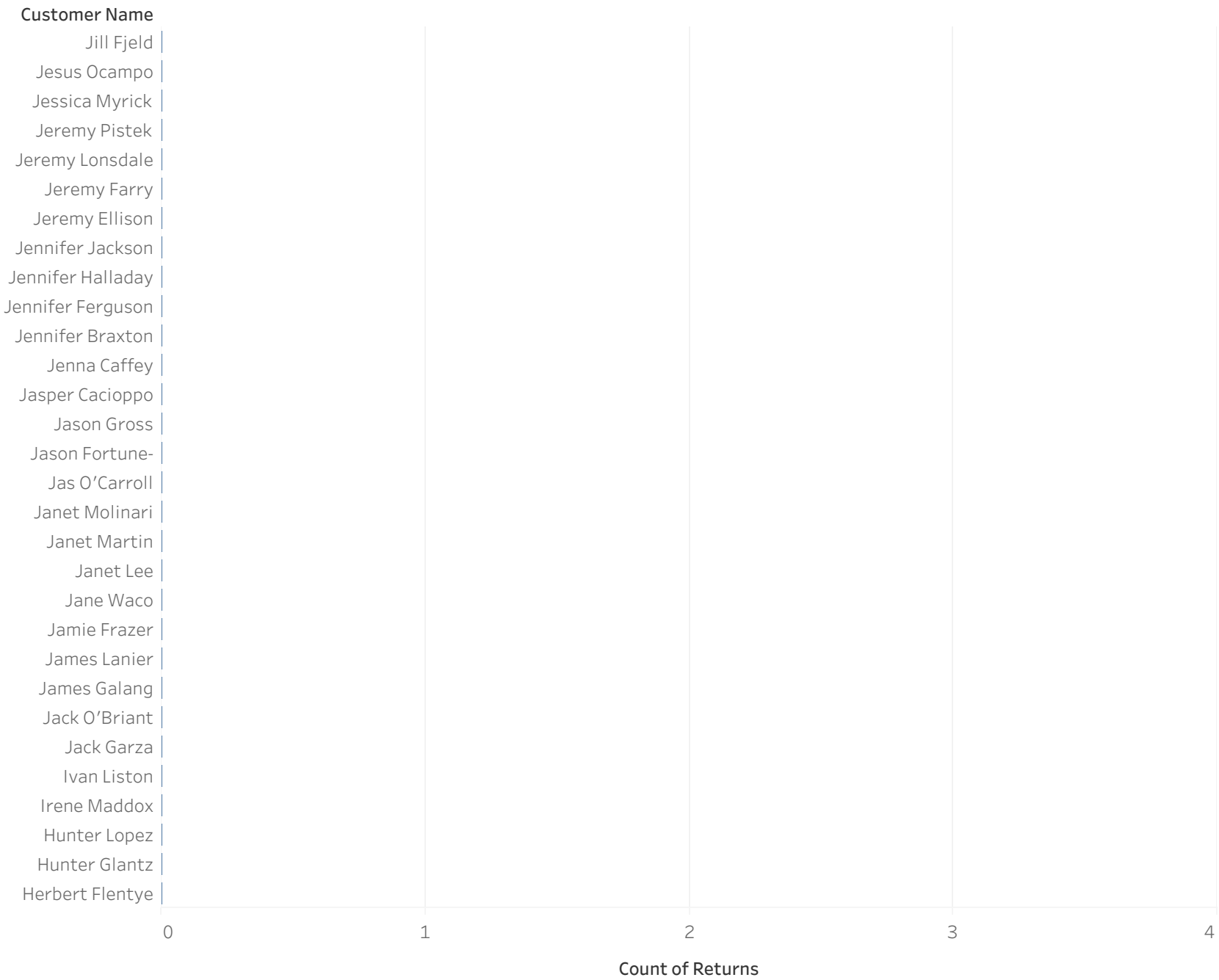
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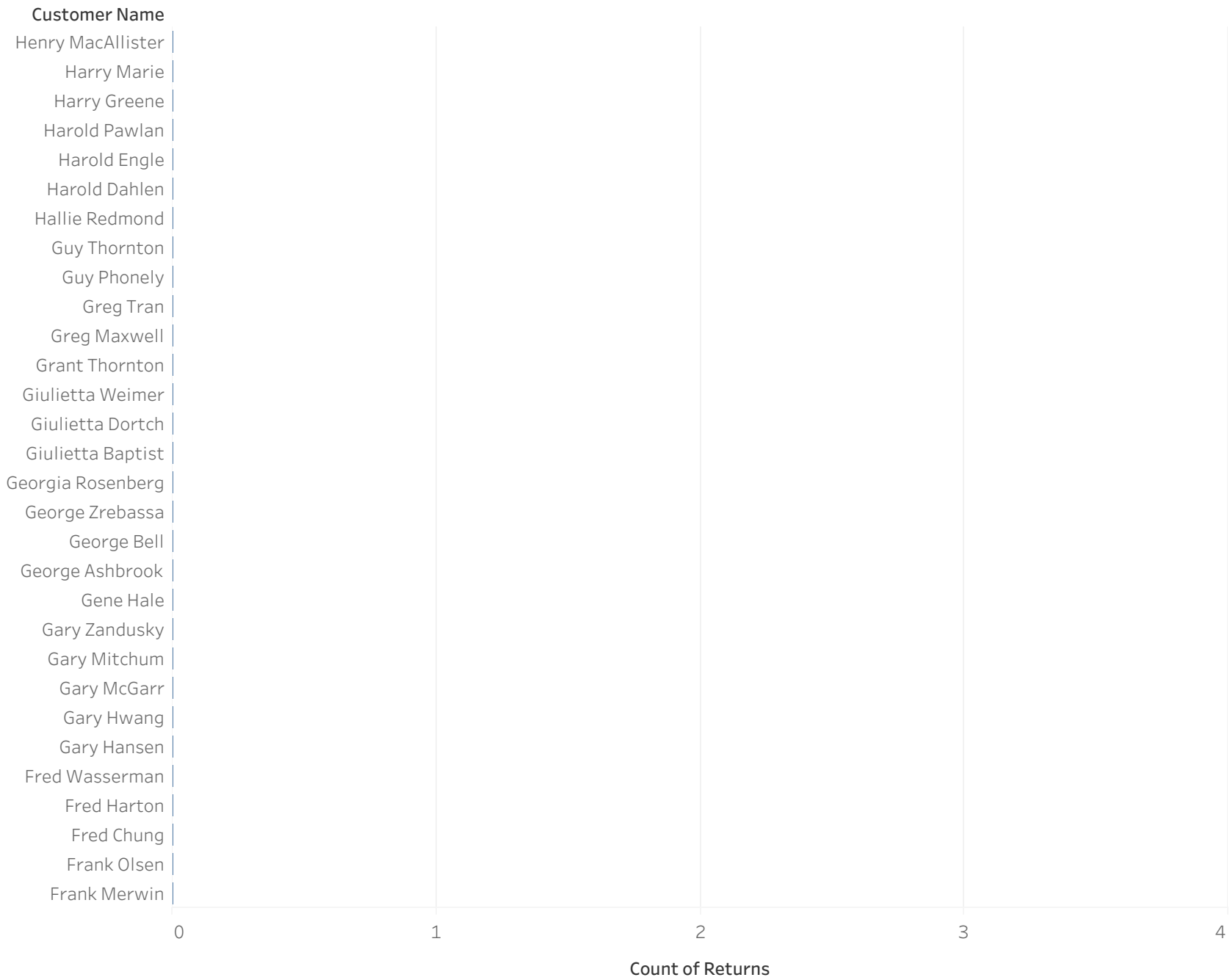
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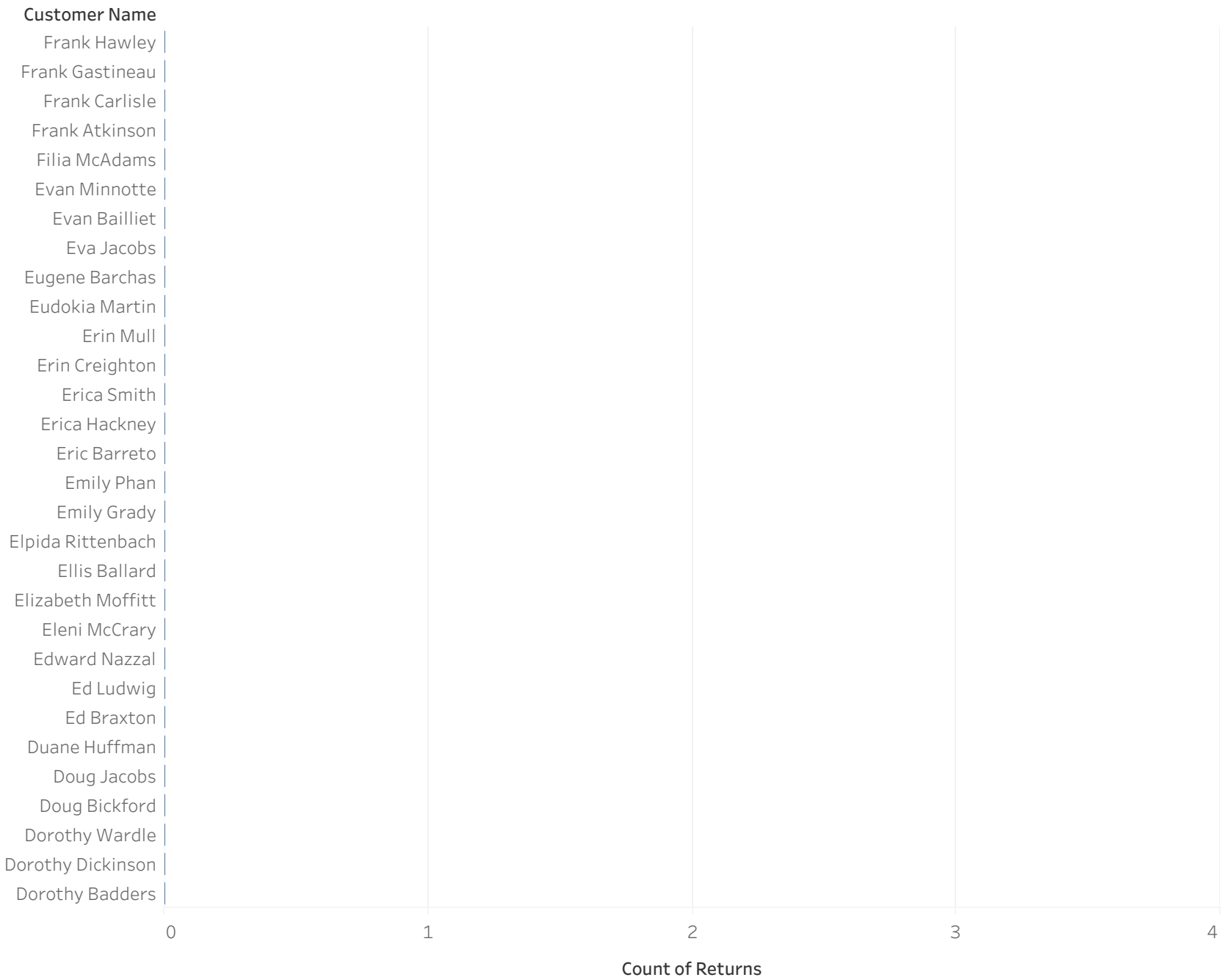
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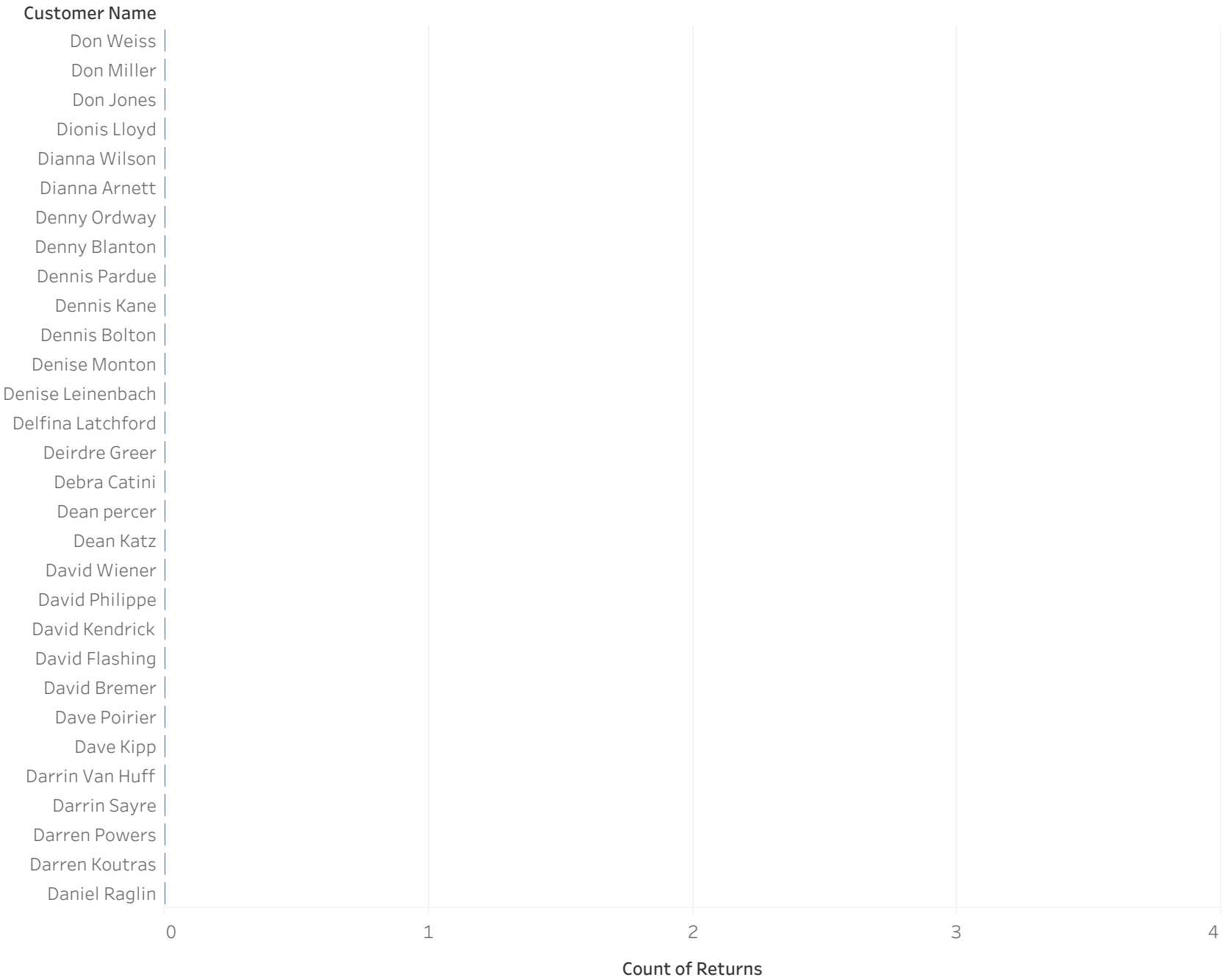
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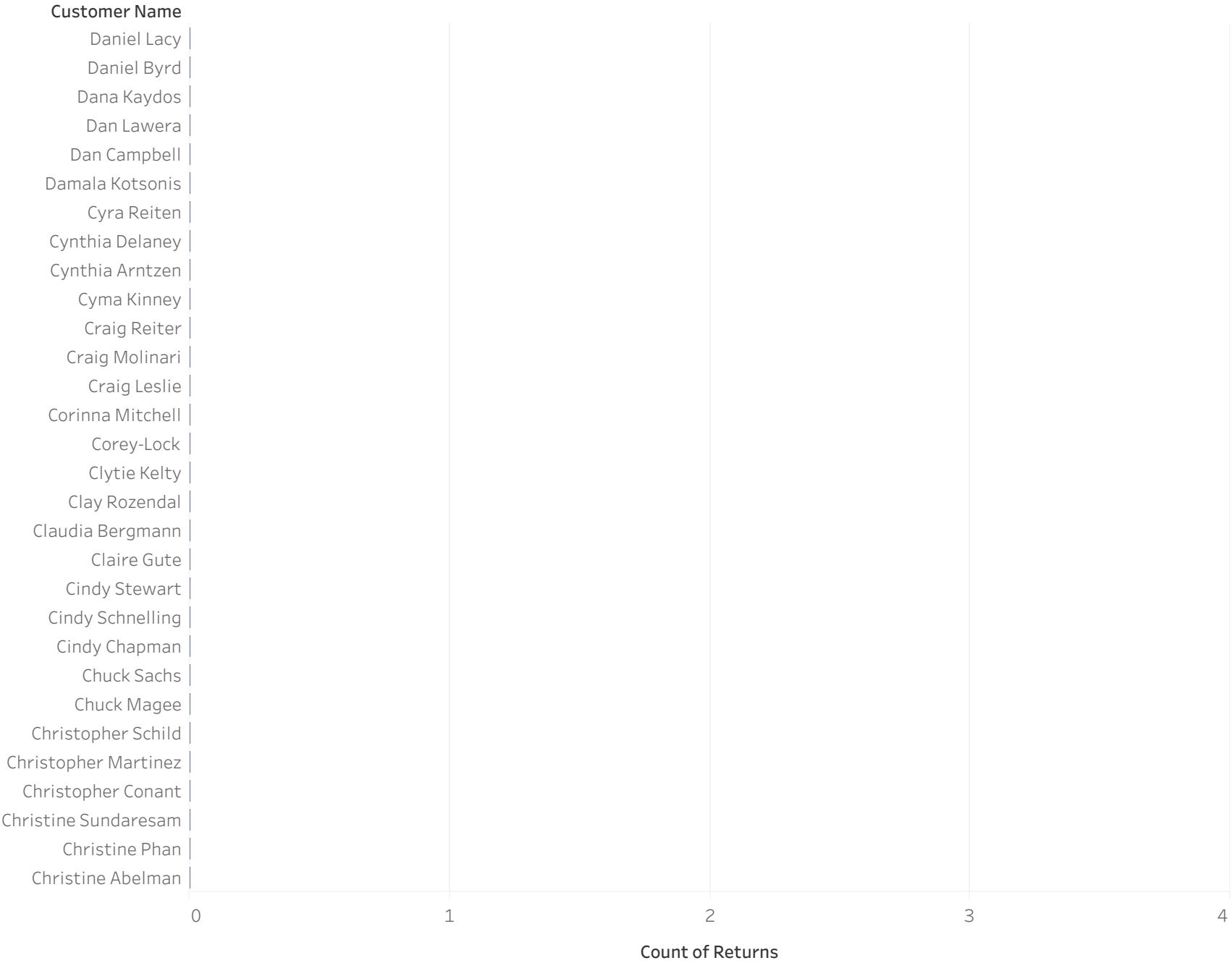
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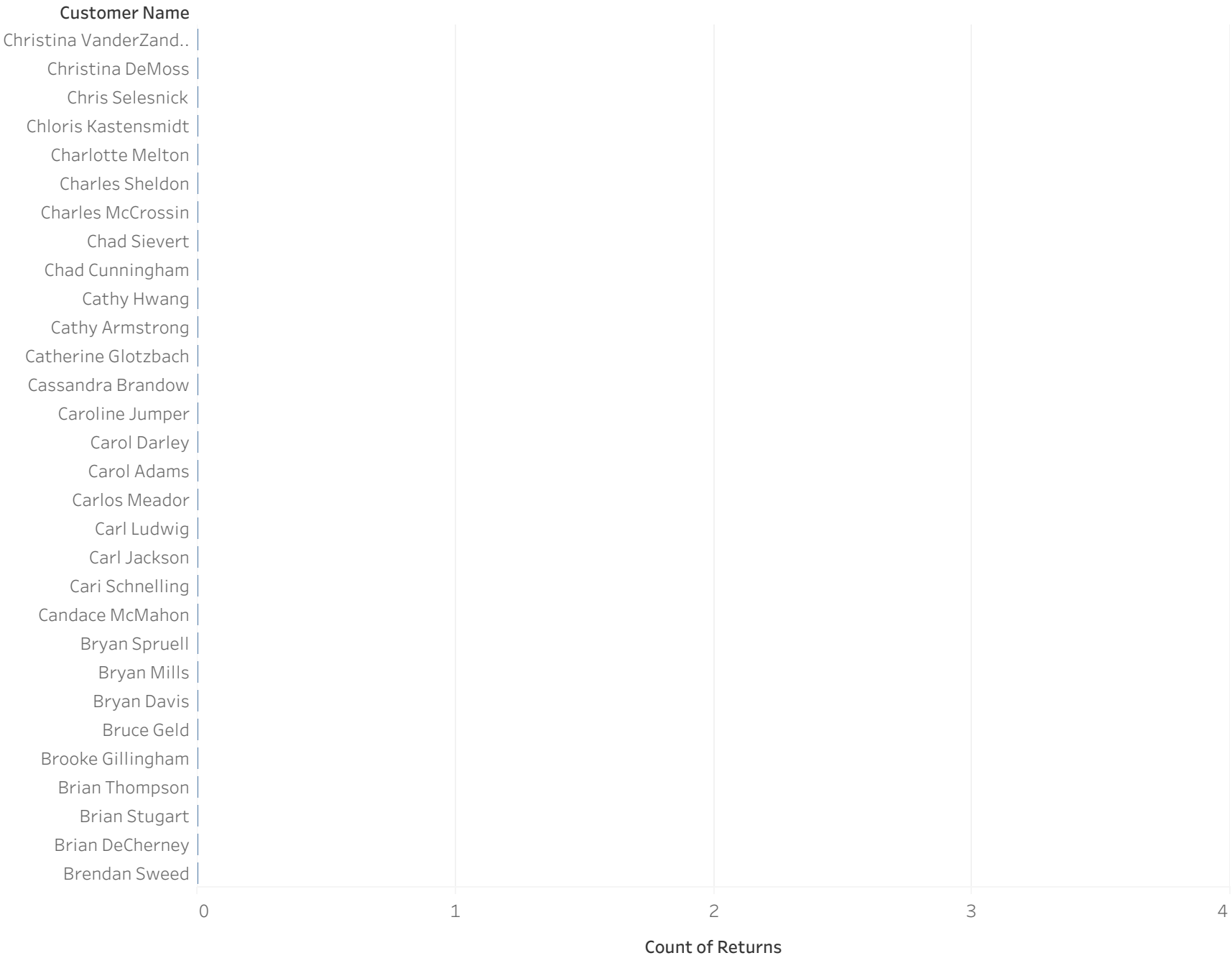
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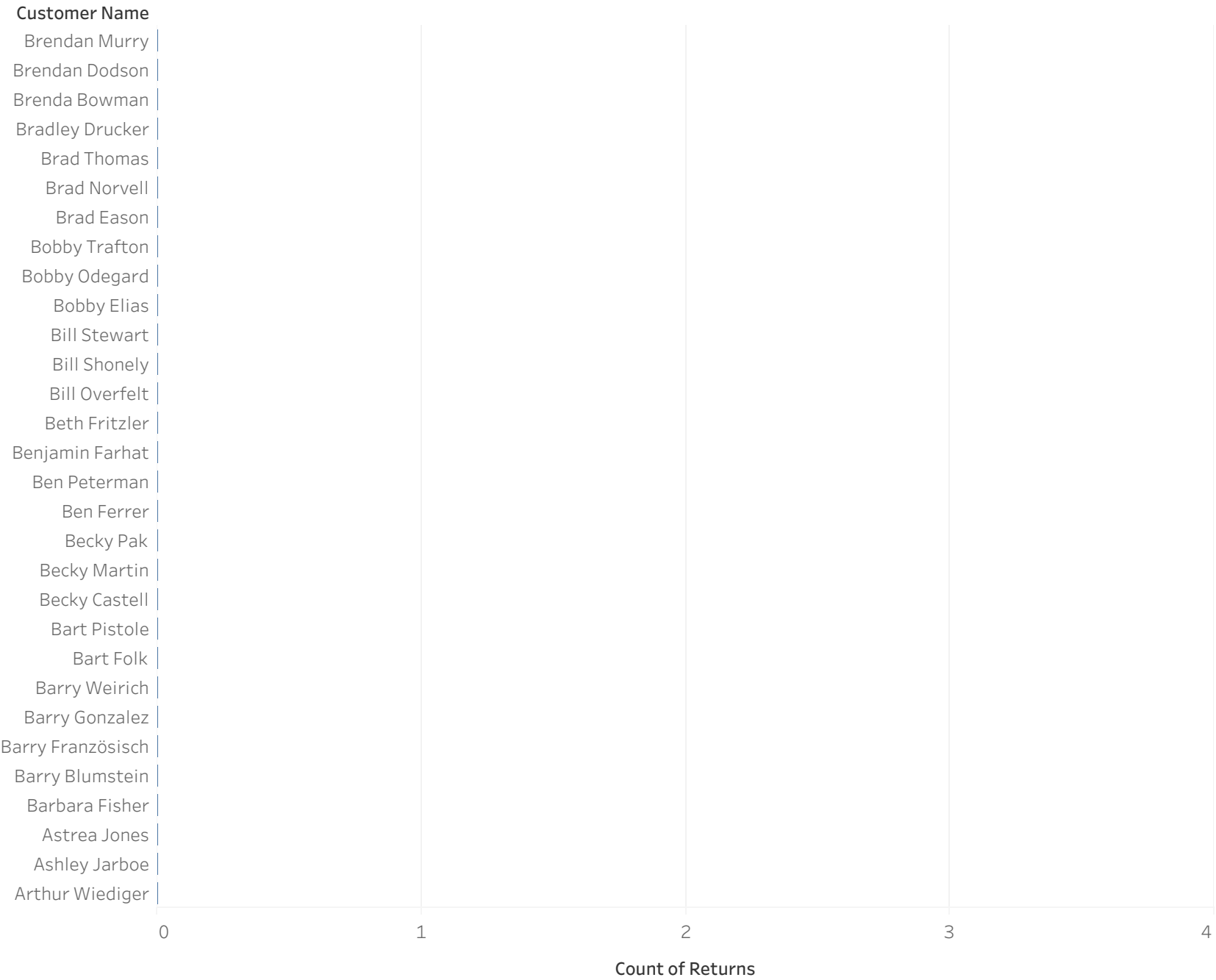
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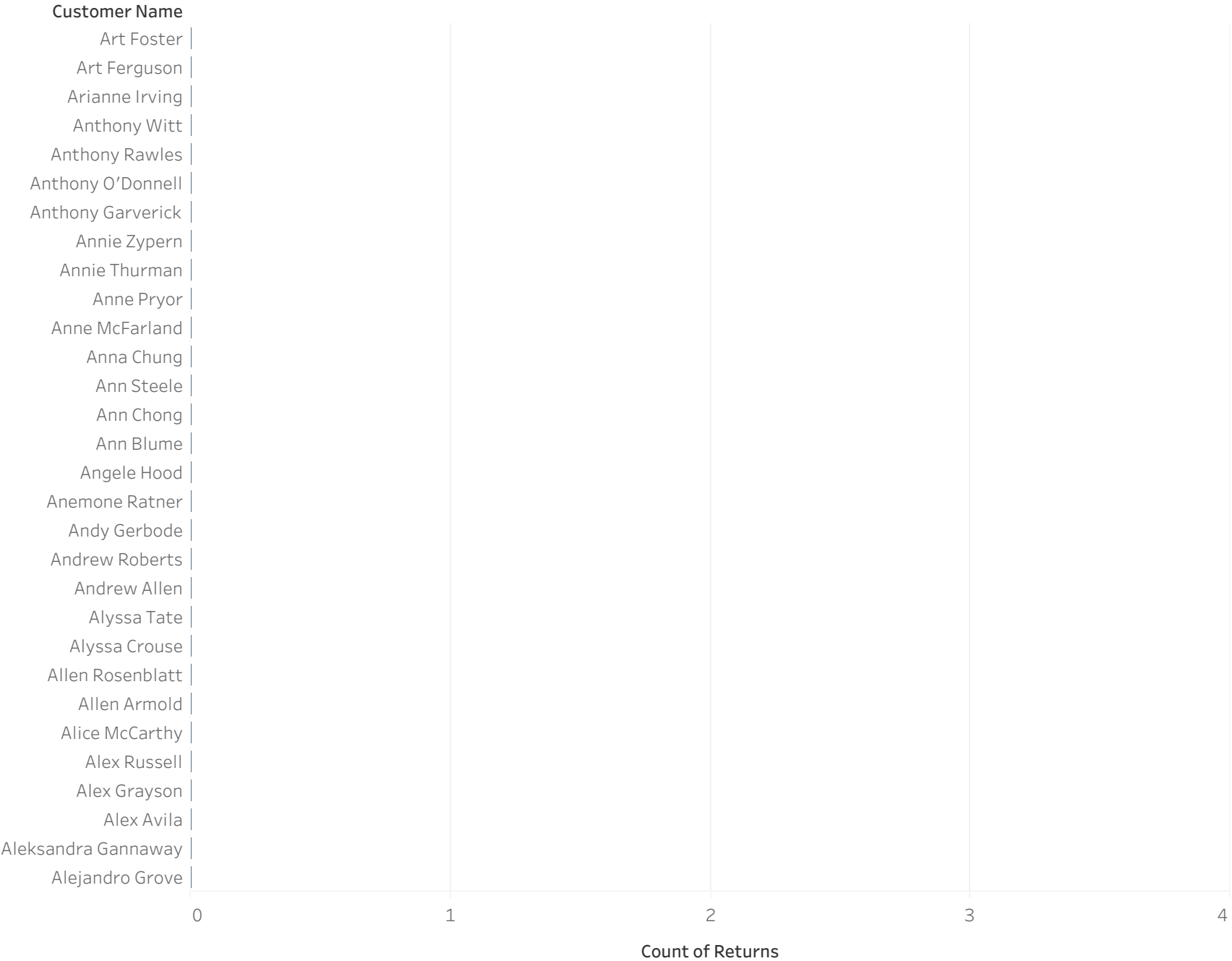
Customer Return Count



Customer Return Count



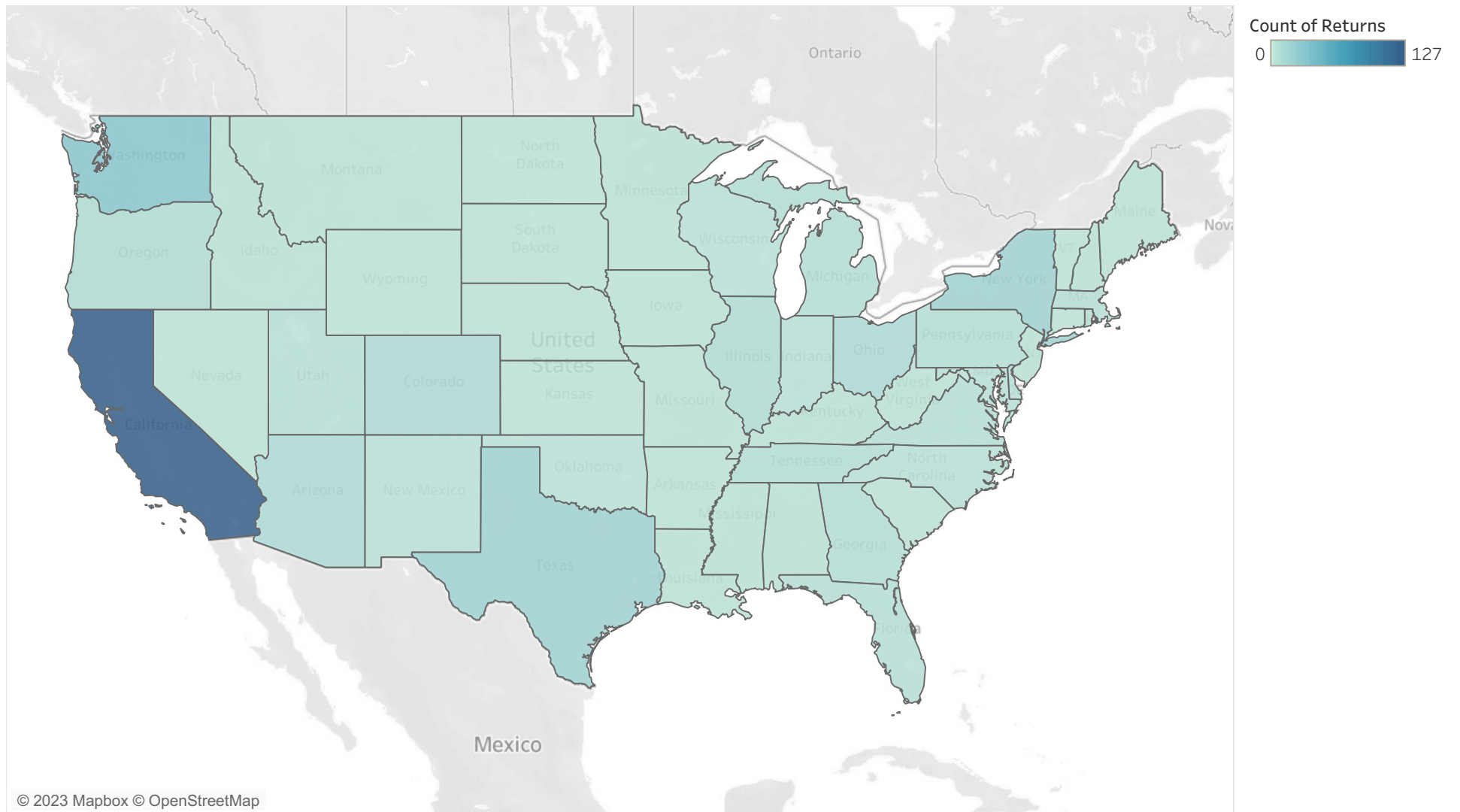
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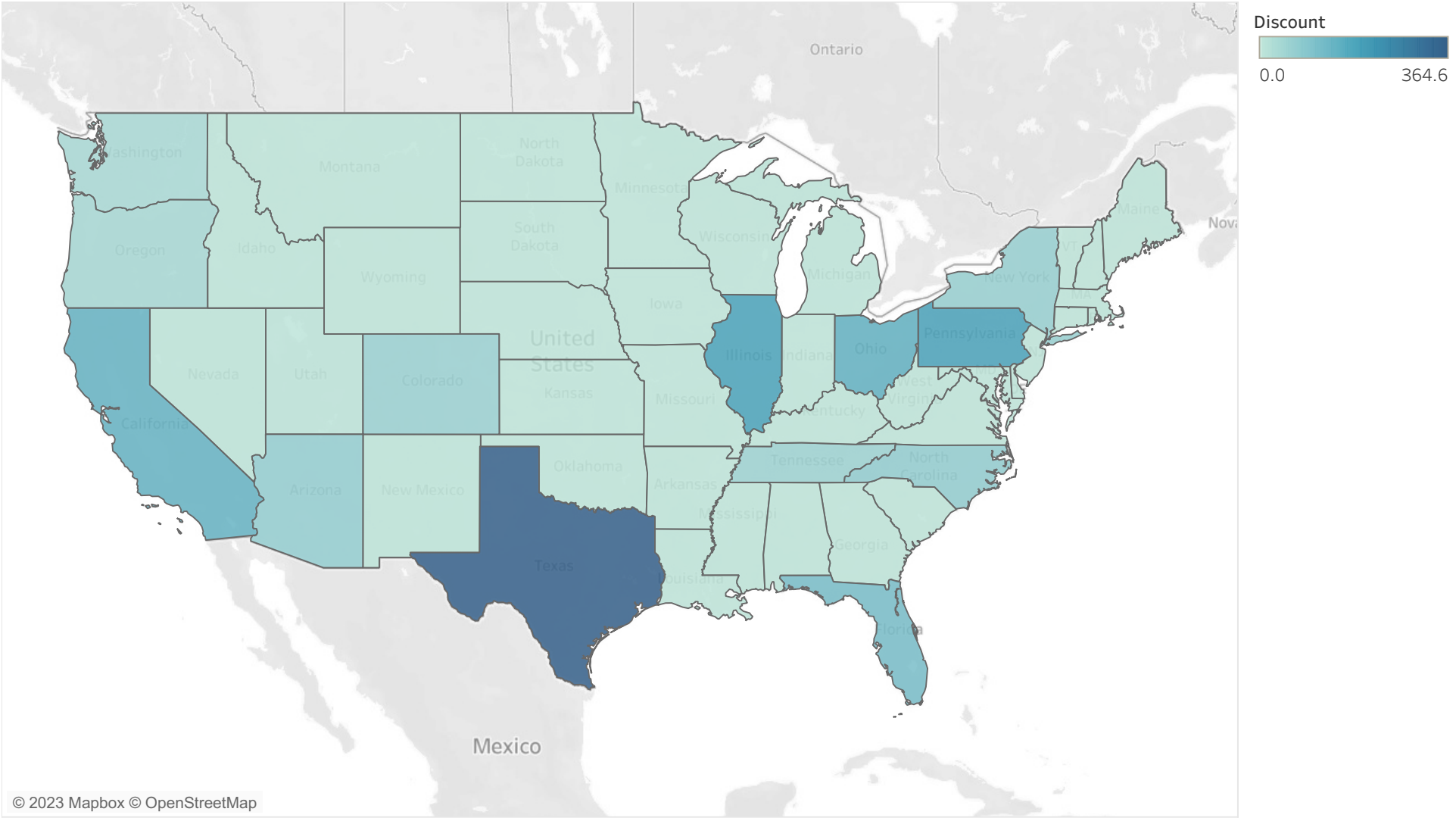
Customer Return Count



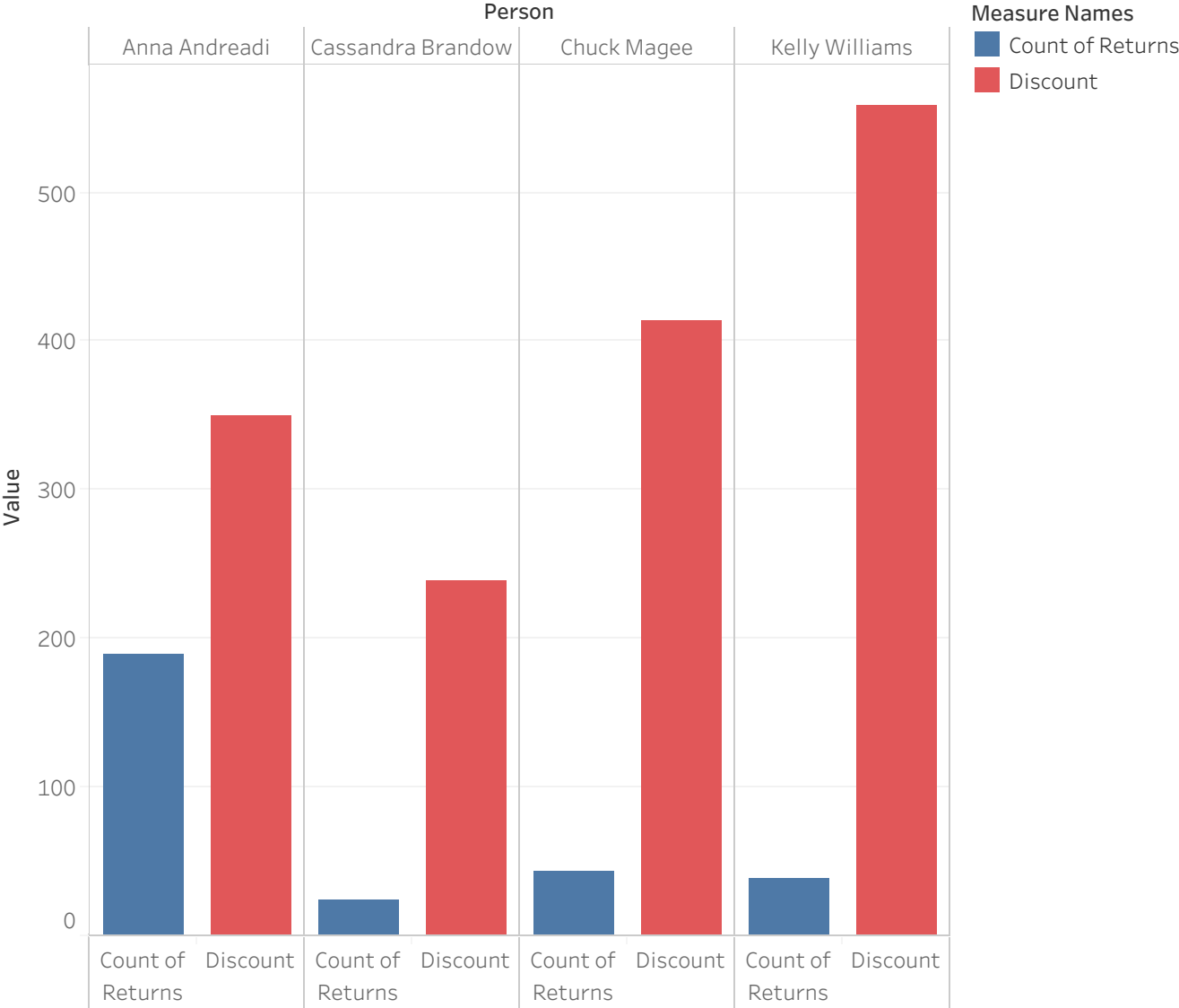
Returns by State



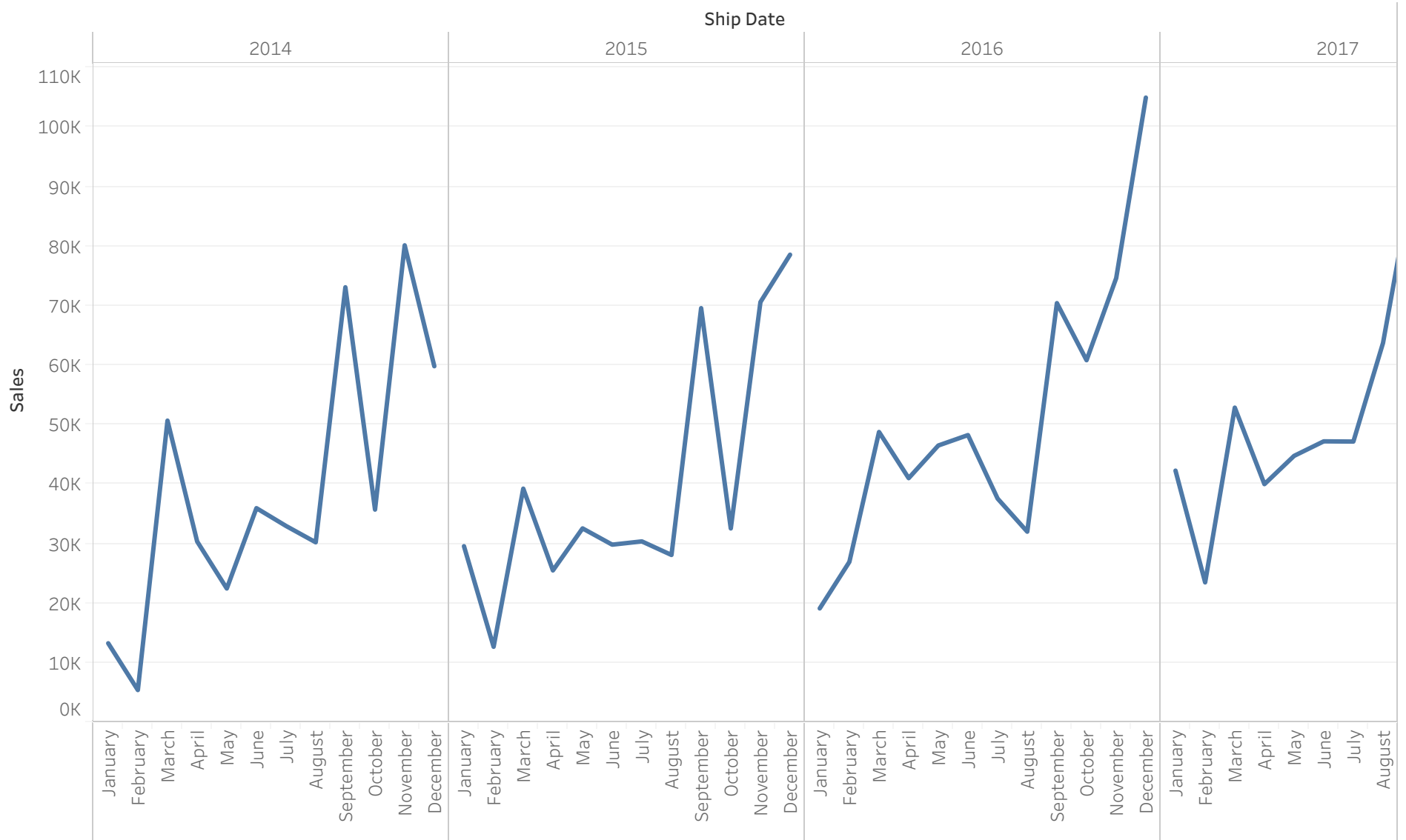
Discounts by State



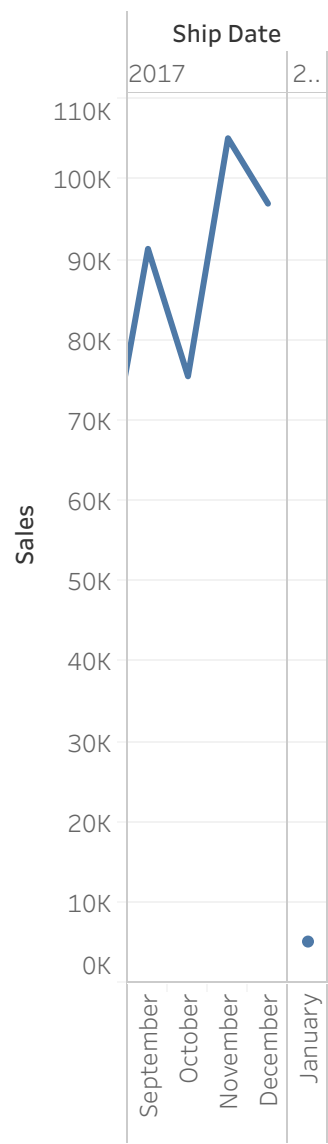
Customer Discount and Returns



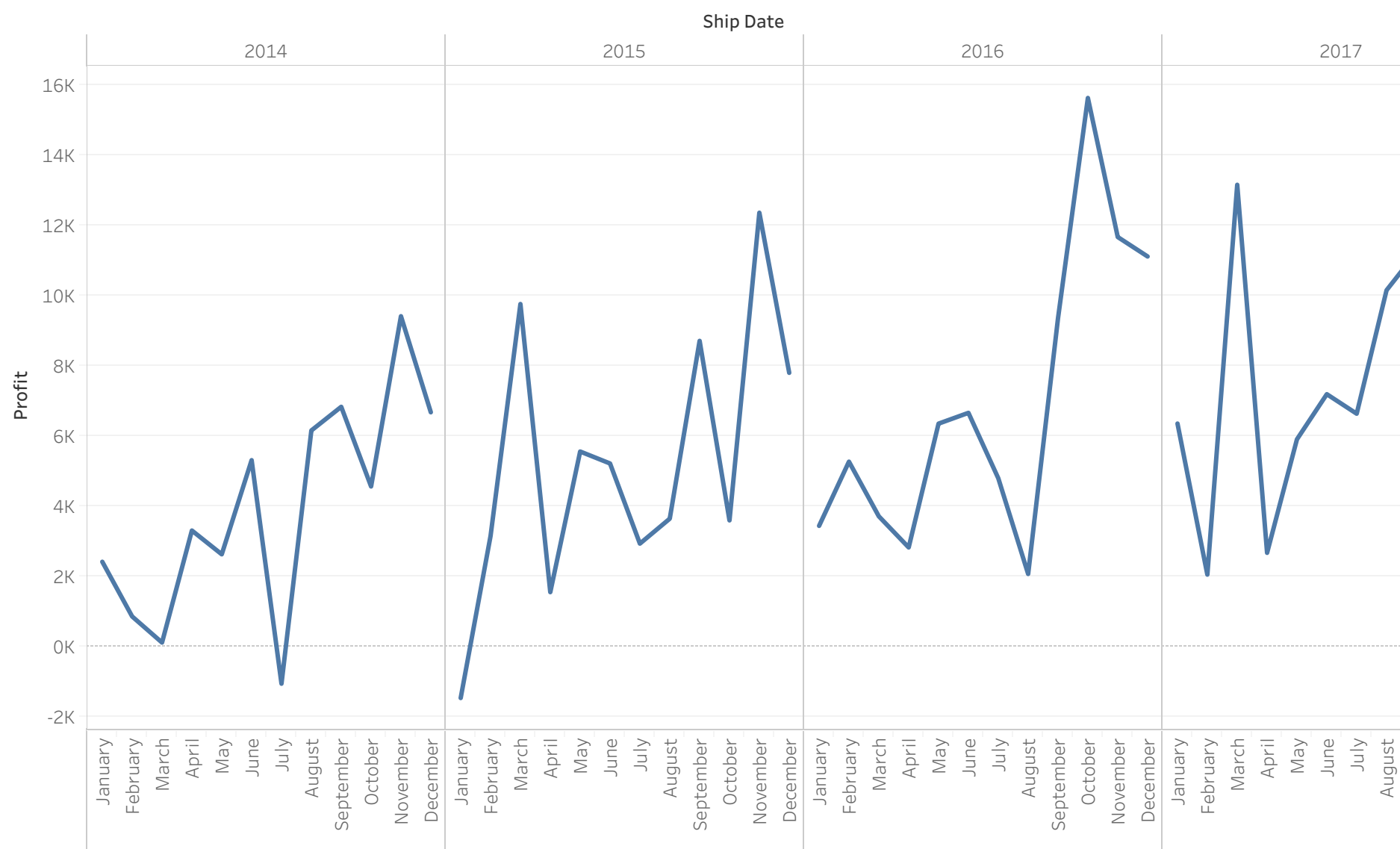
Annual Sales by Month



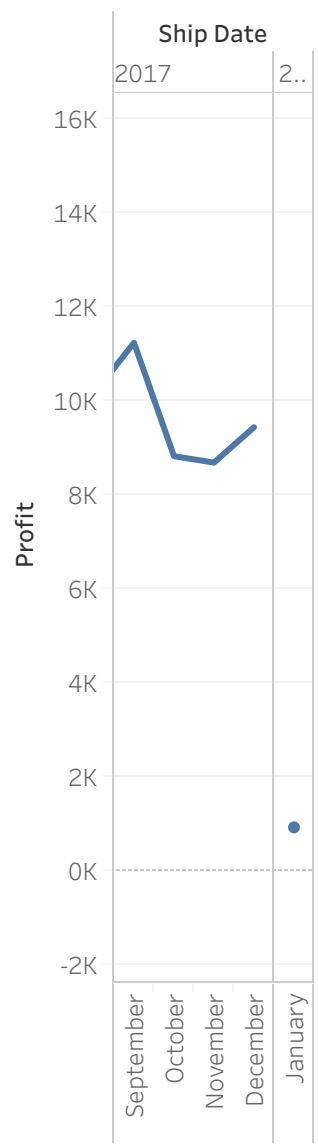
Annual Sales by Month



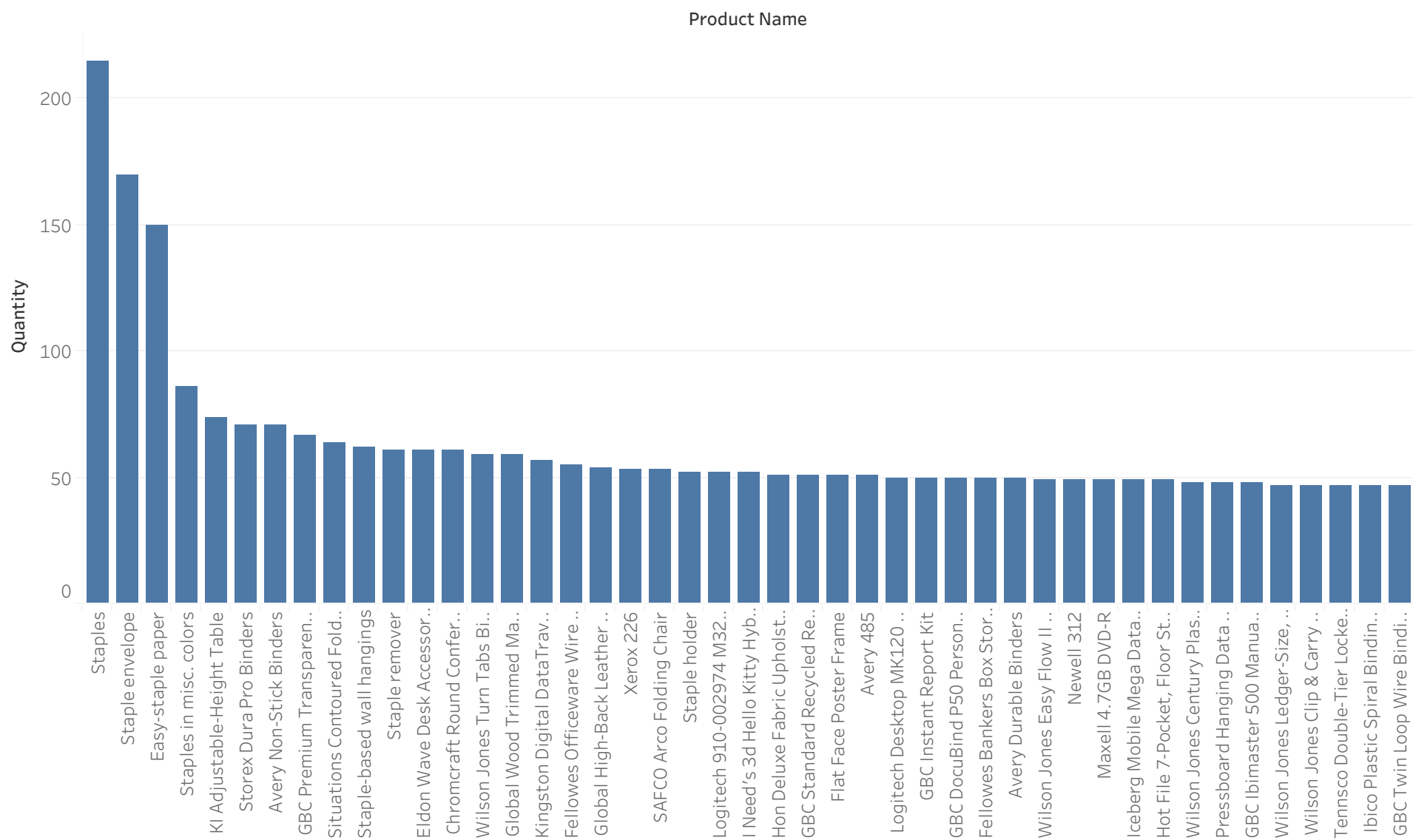
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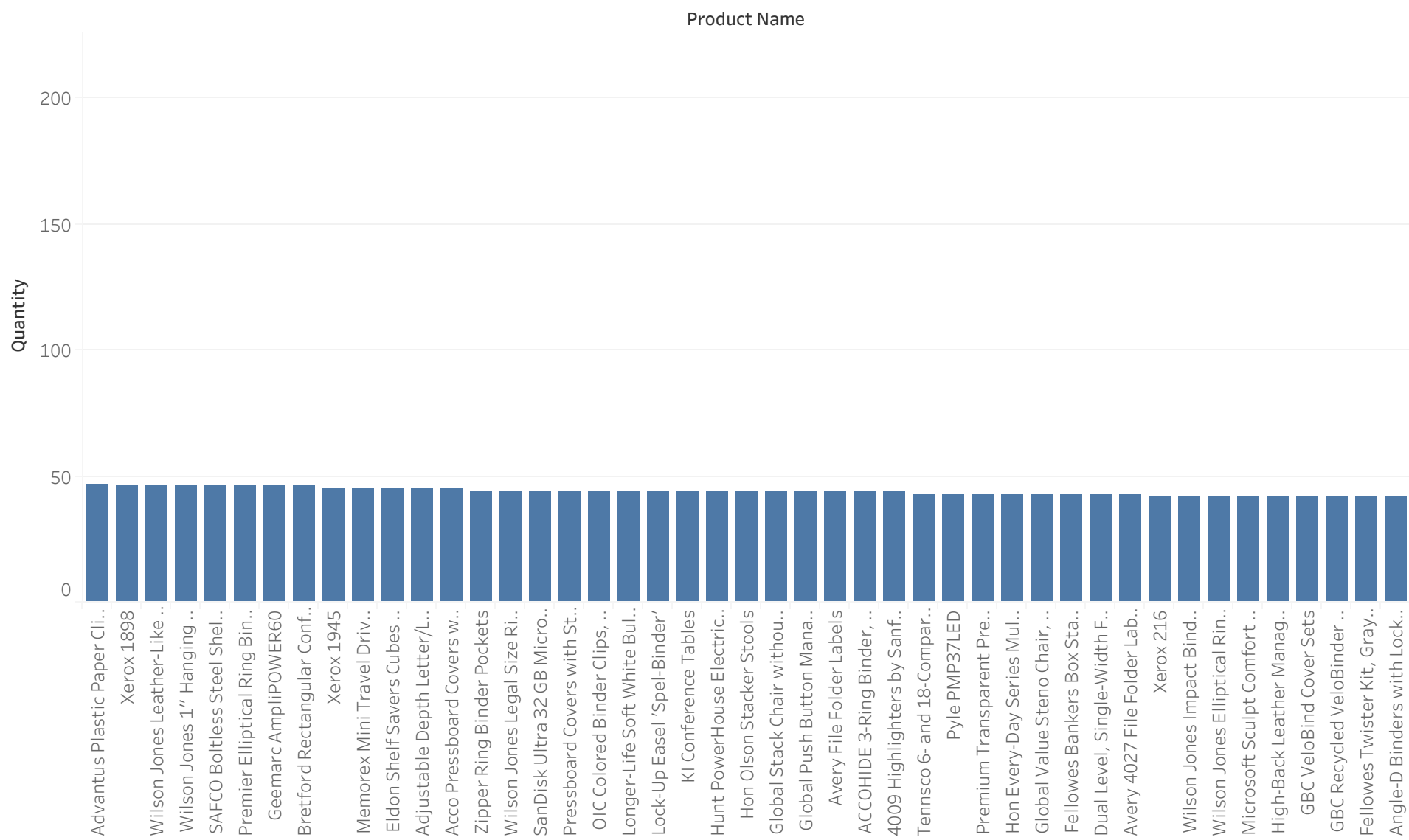
DataEx: AnnProfitMo



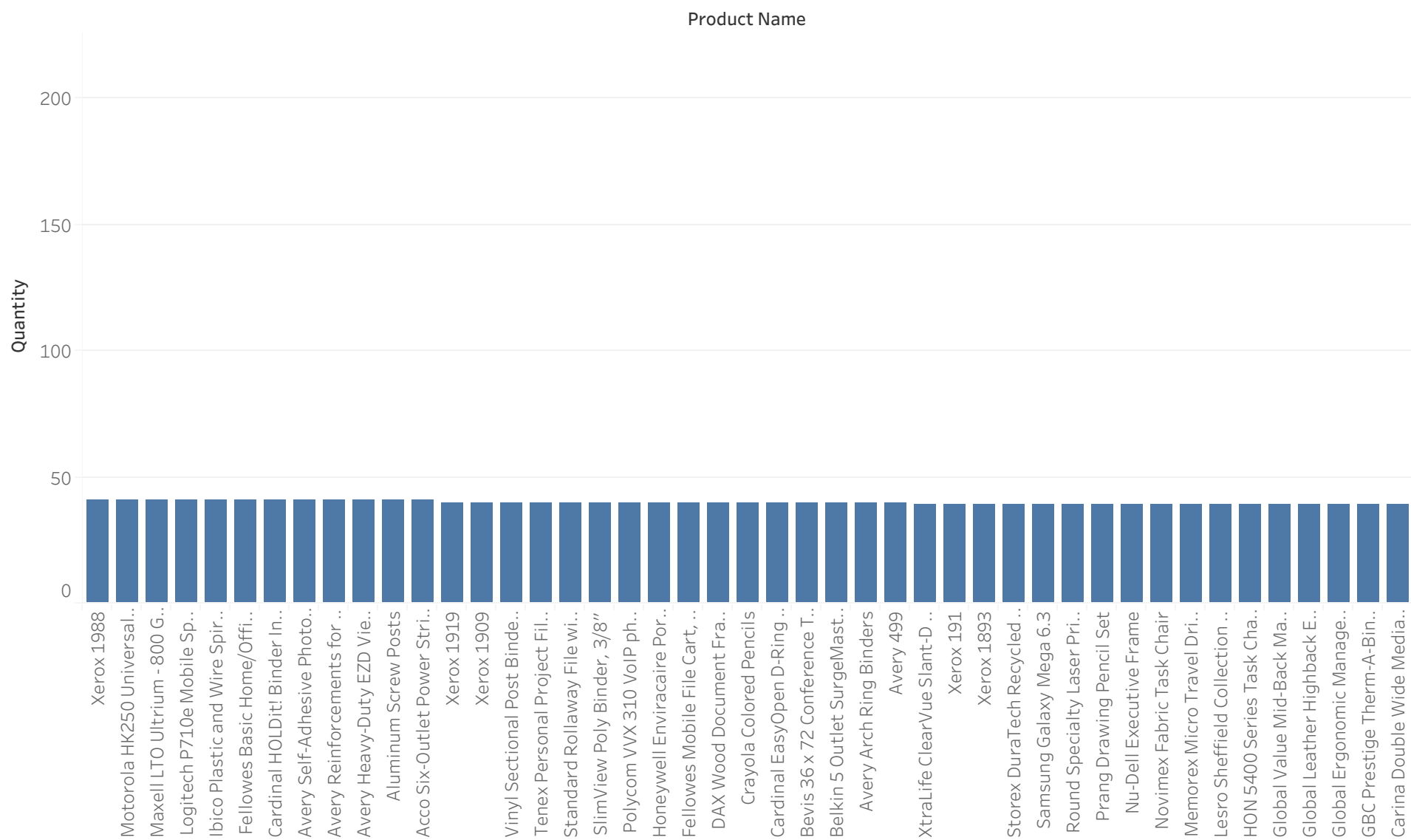
Popular Products



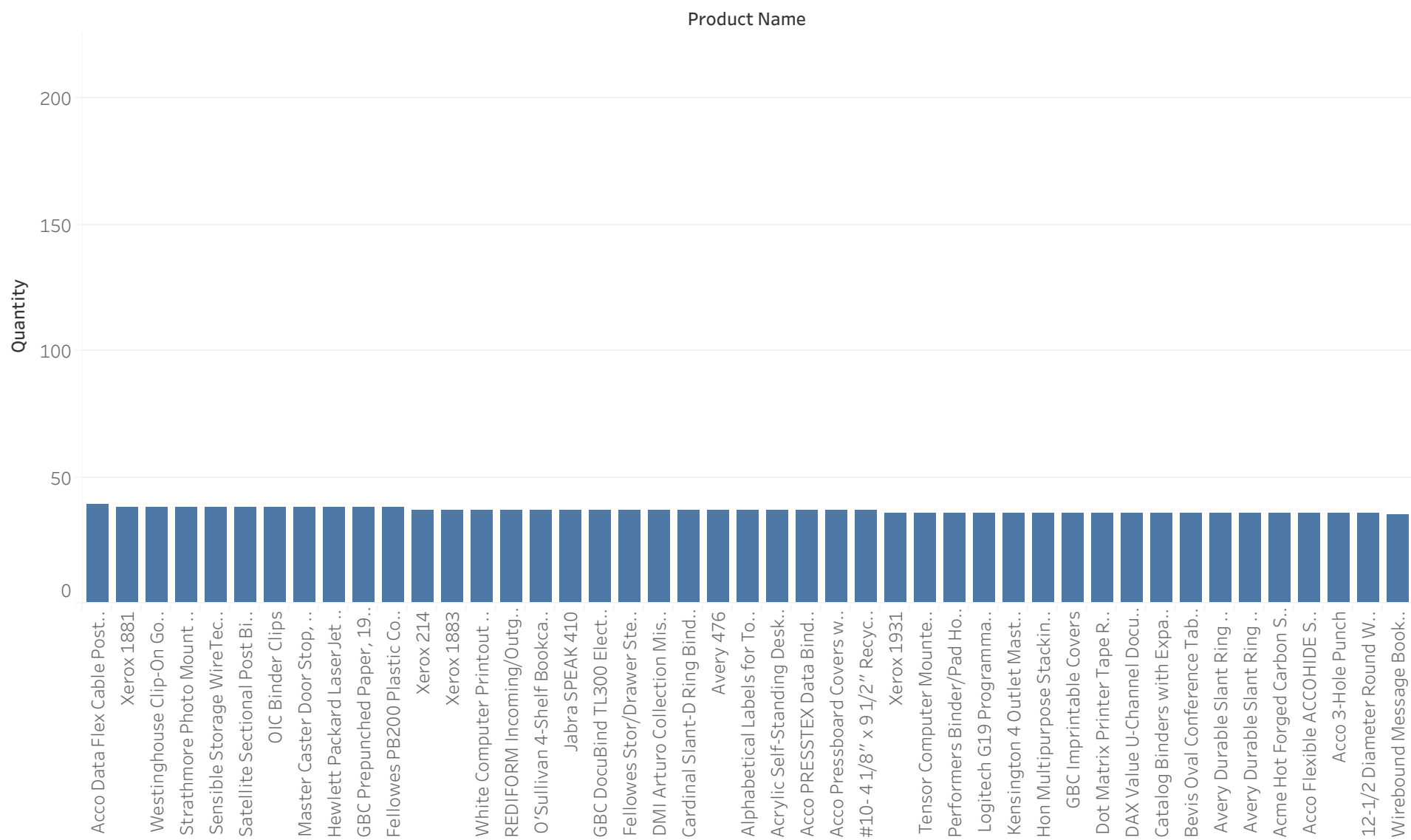
Popular Products



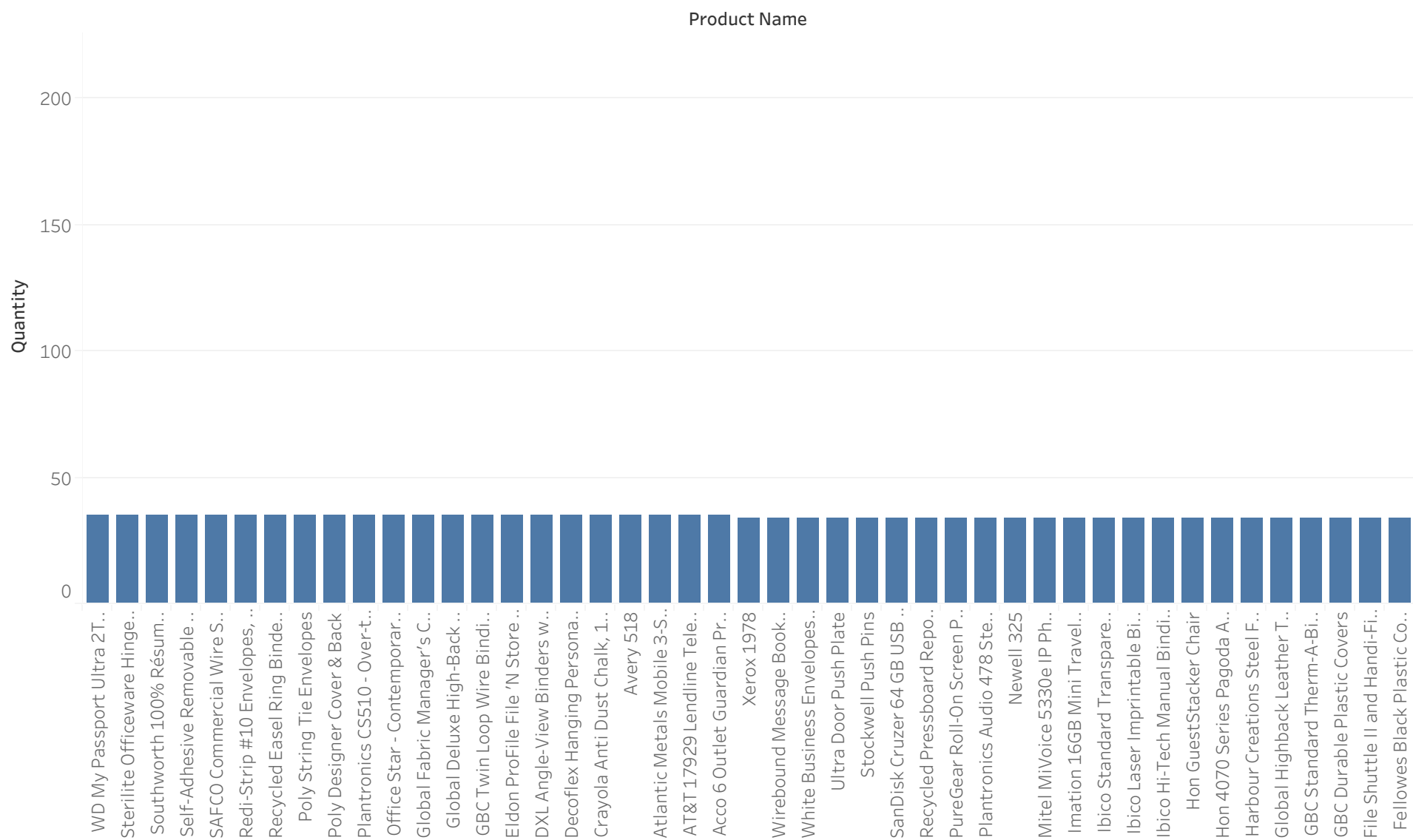
Popular Products



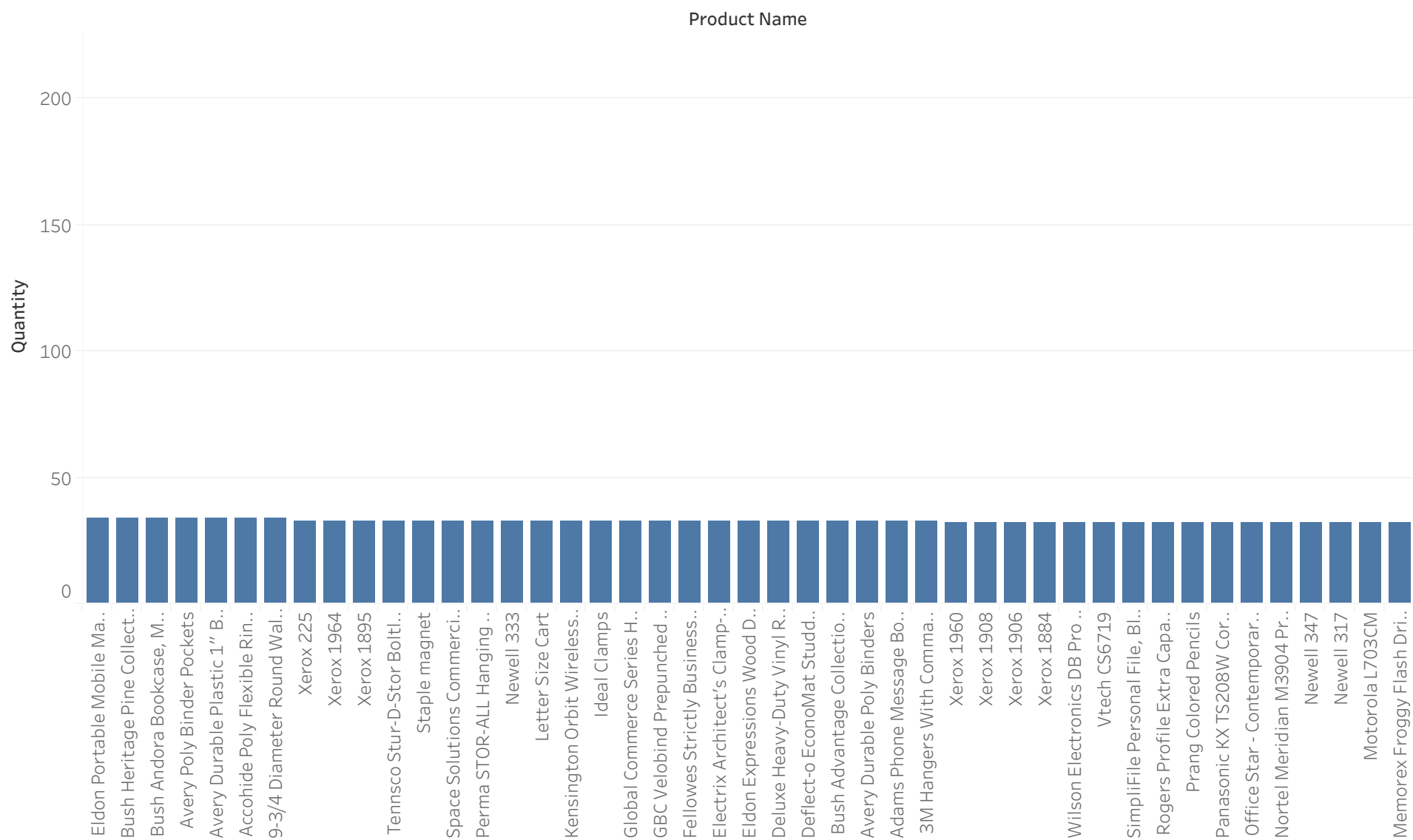
Popular Products



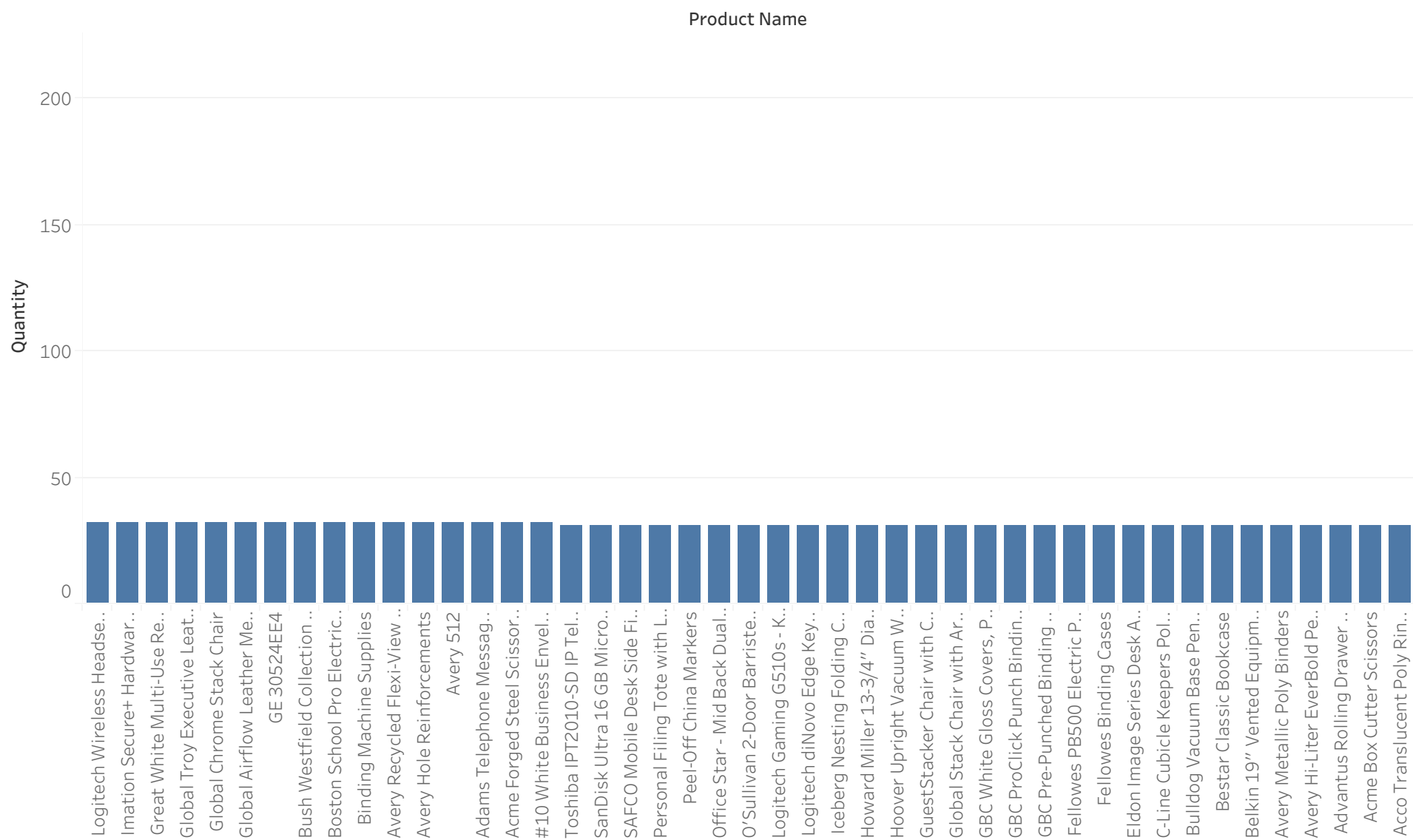
Popular Products



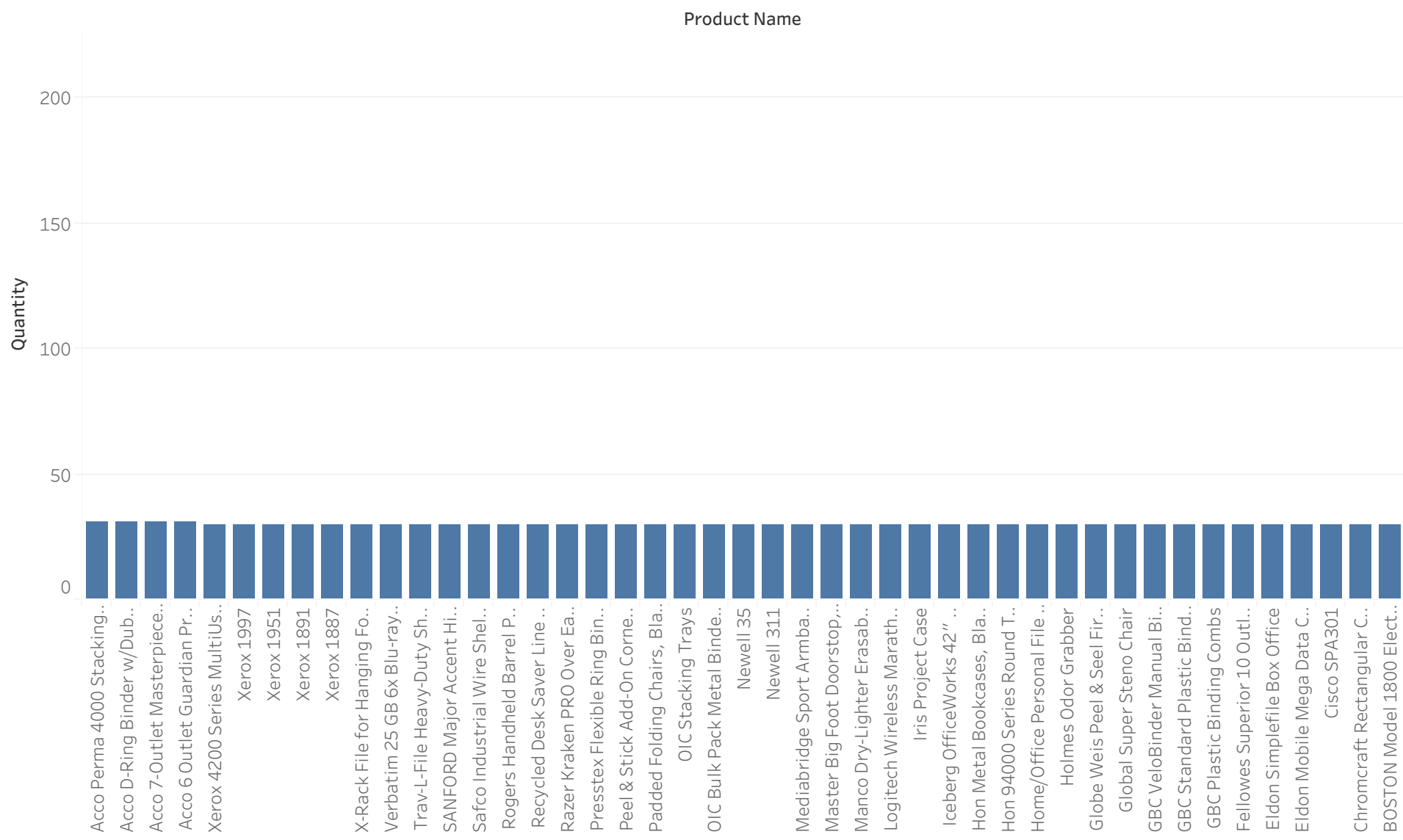
Popular Products



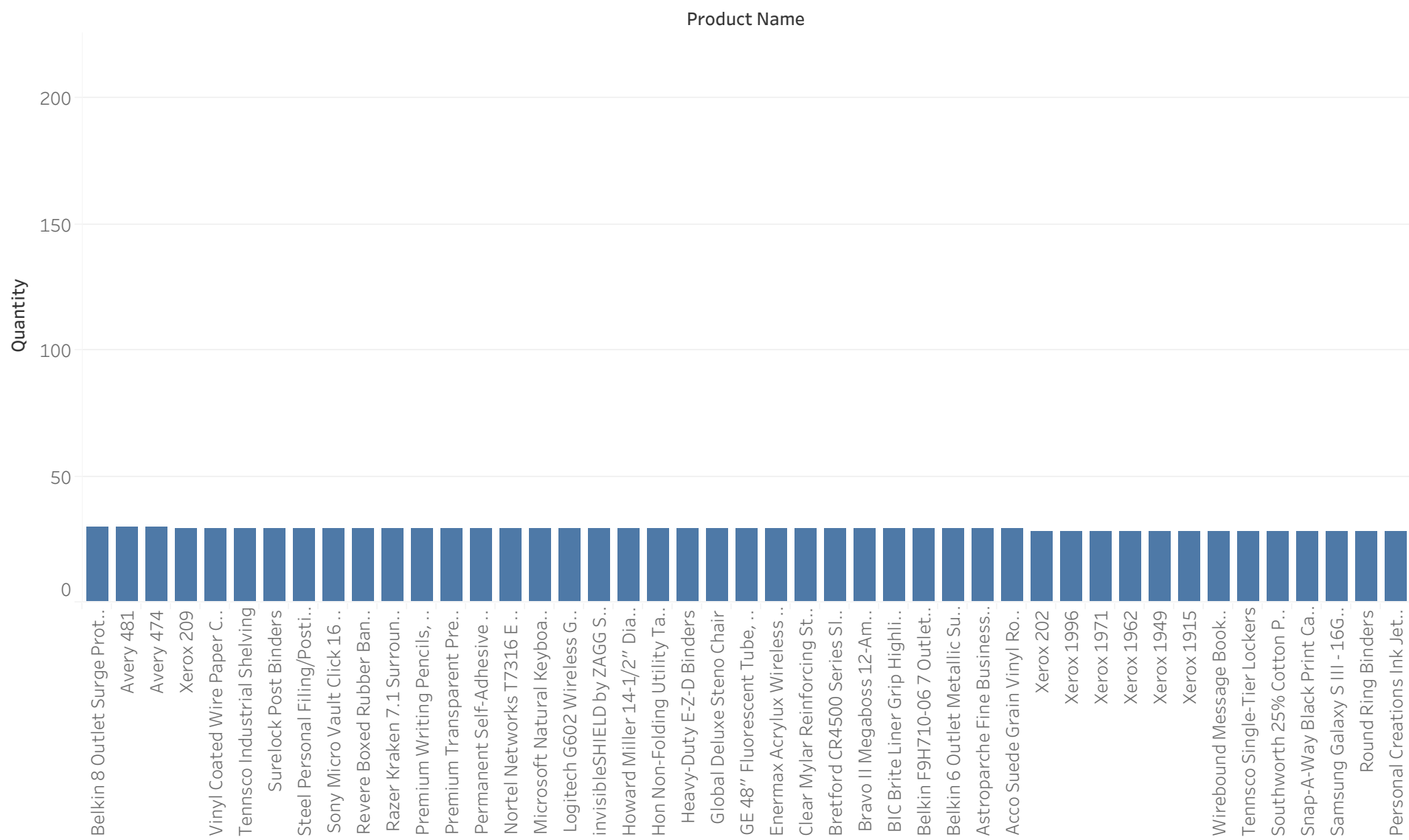
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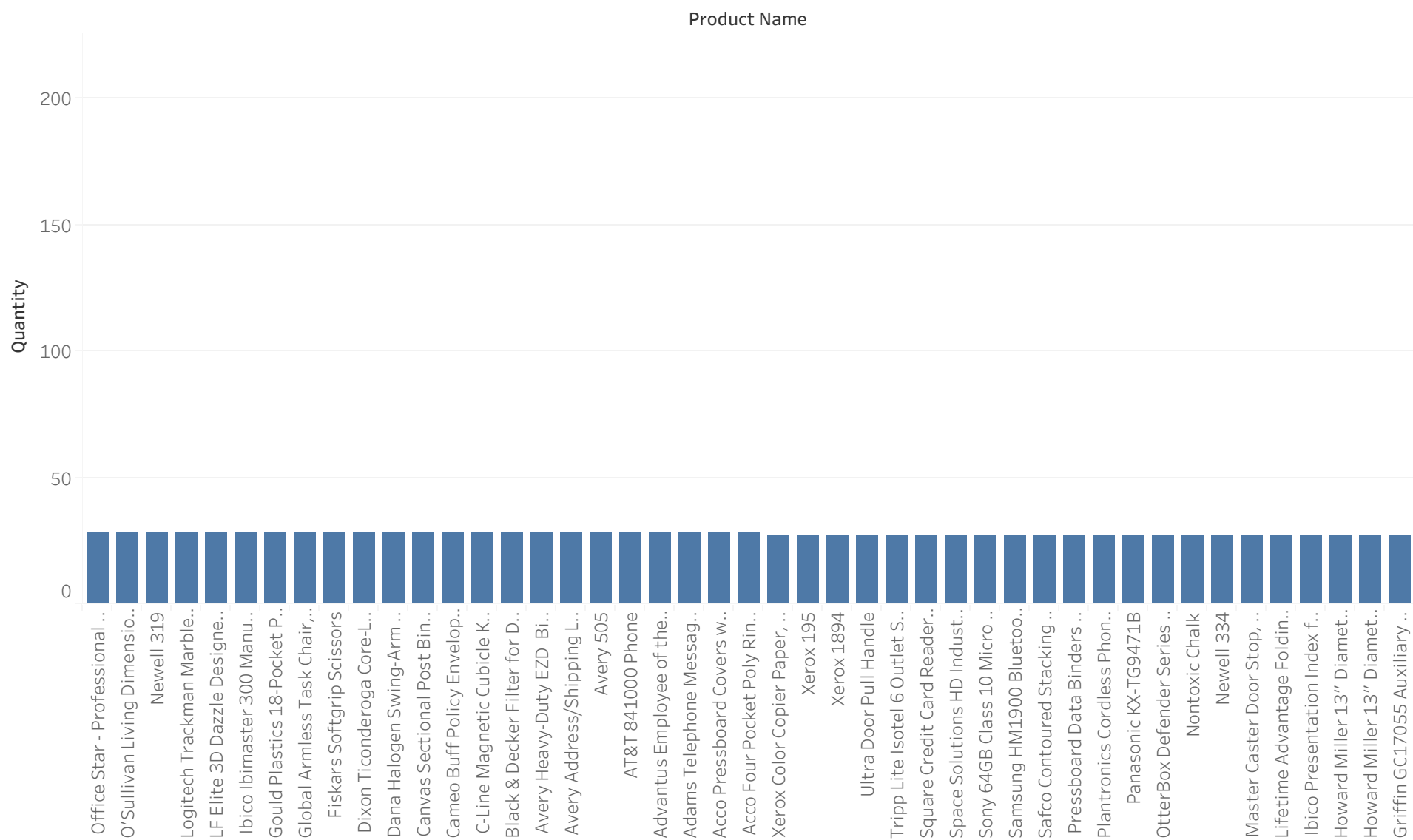
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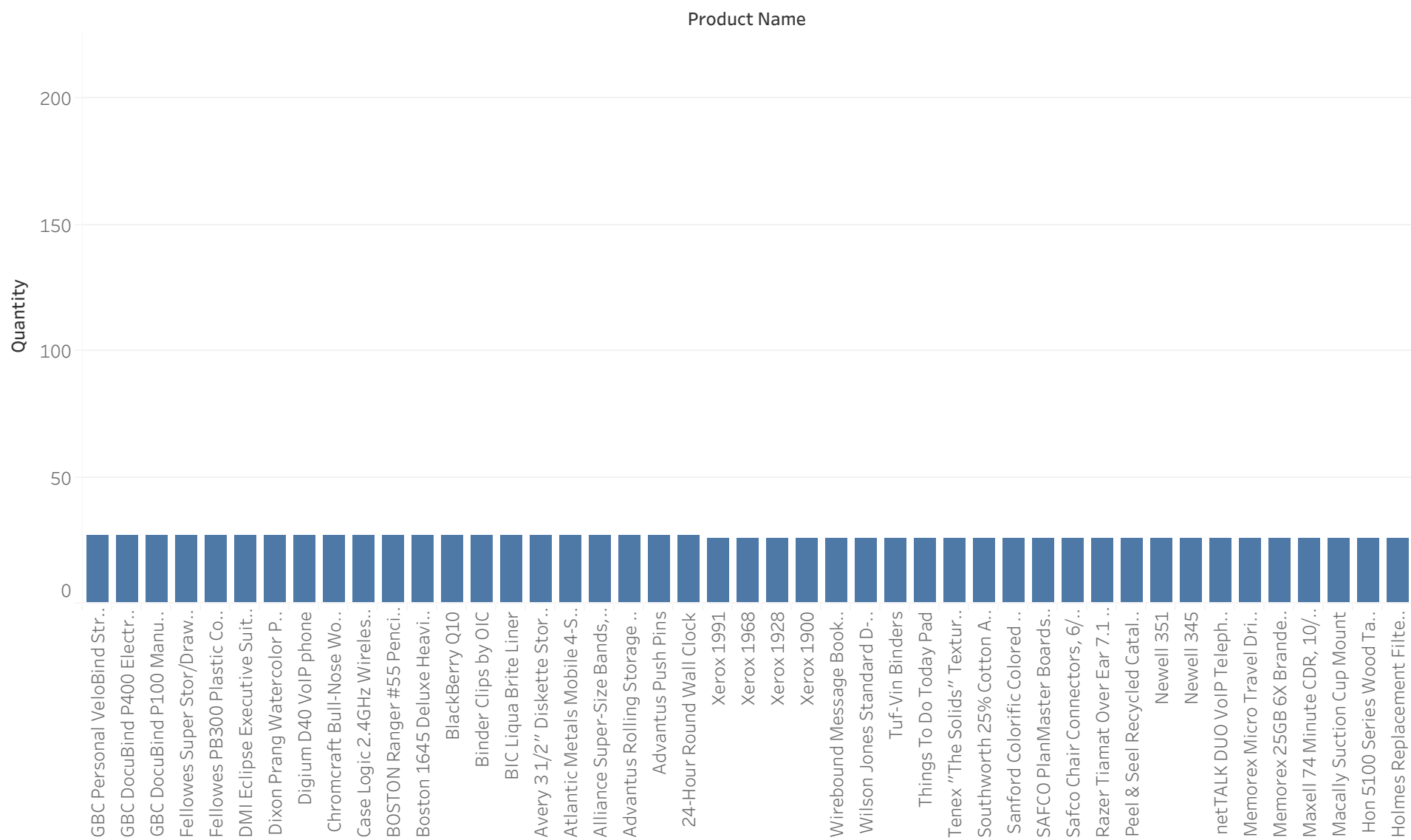
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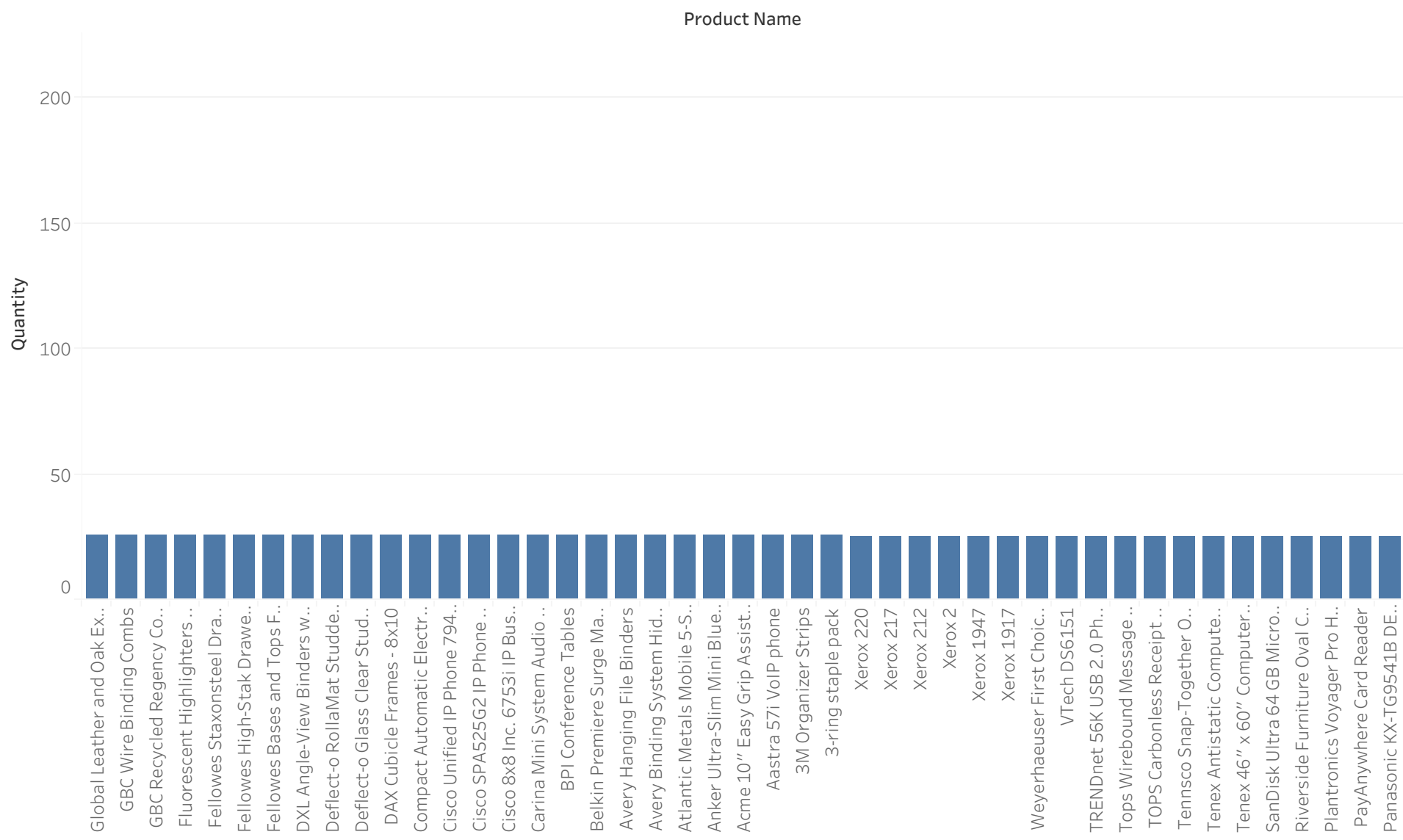
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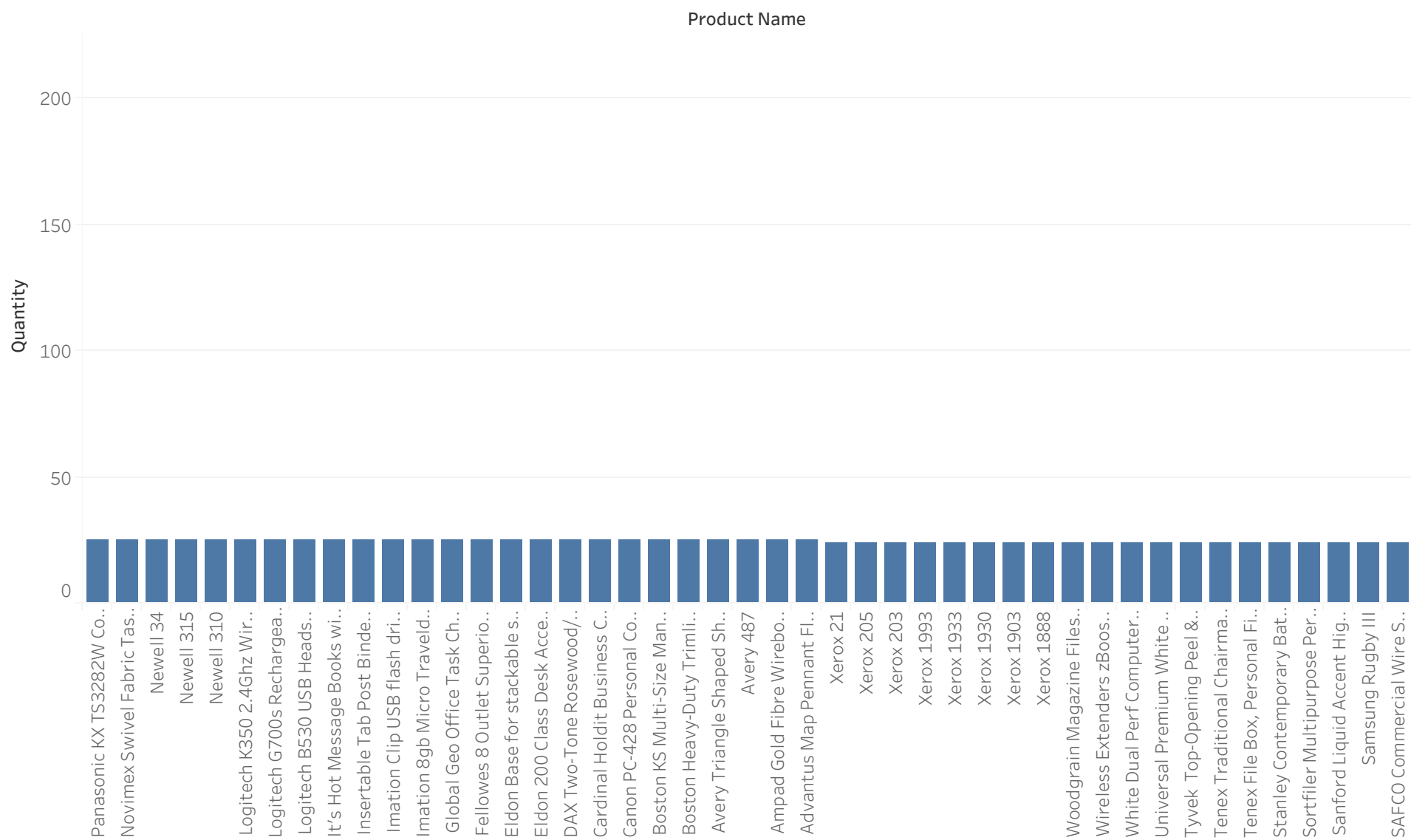
Popular Products



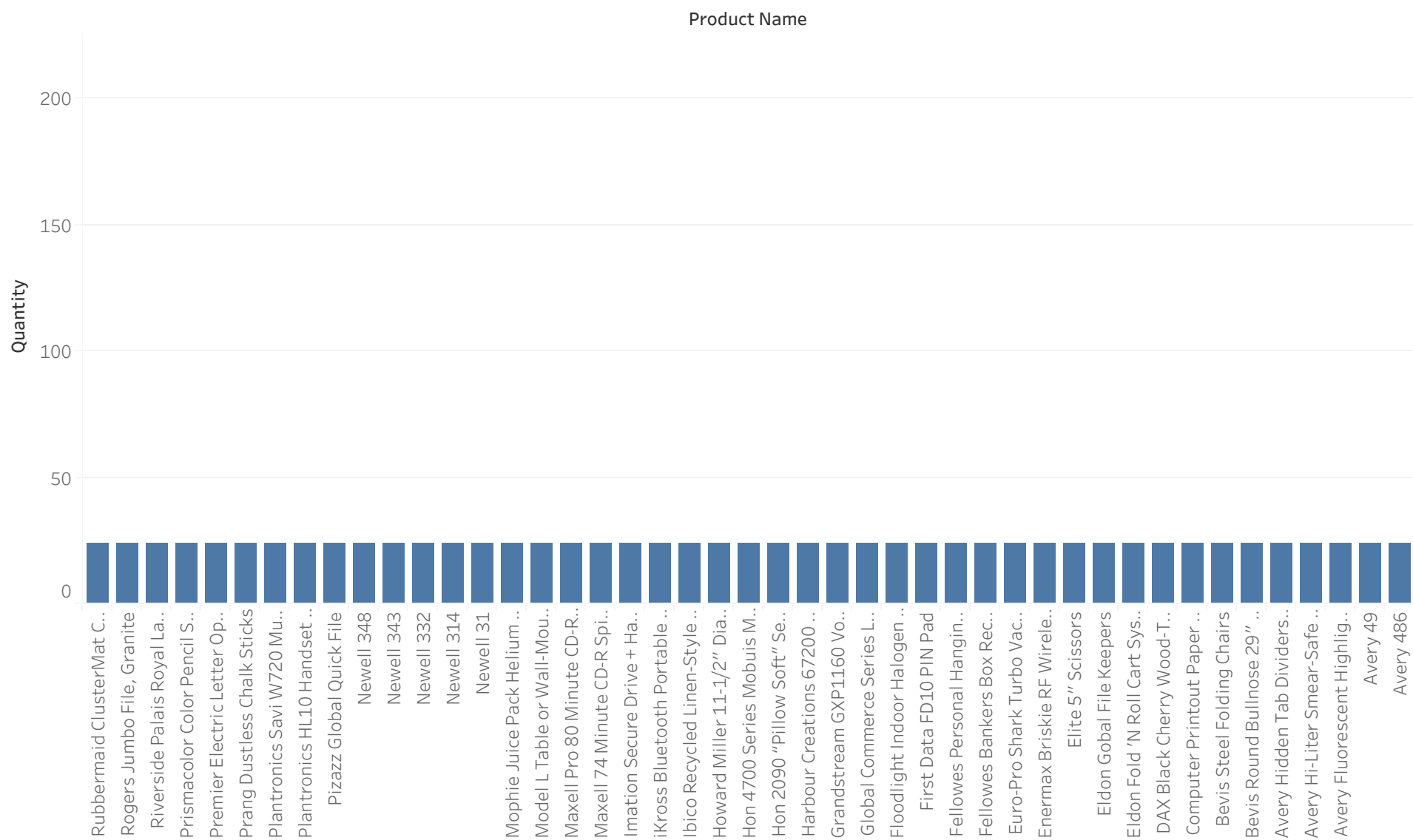
Popular Products



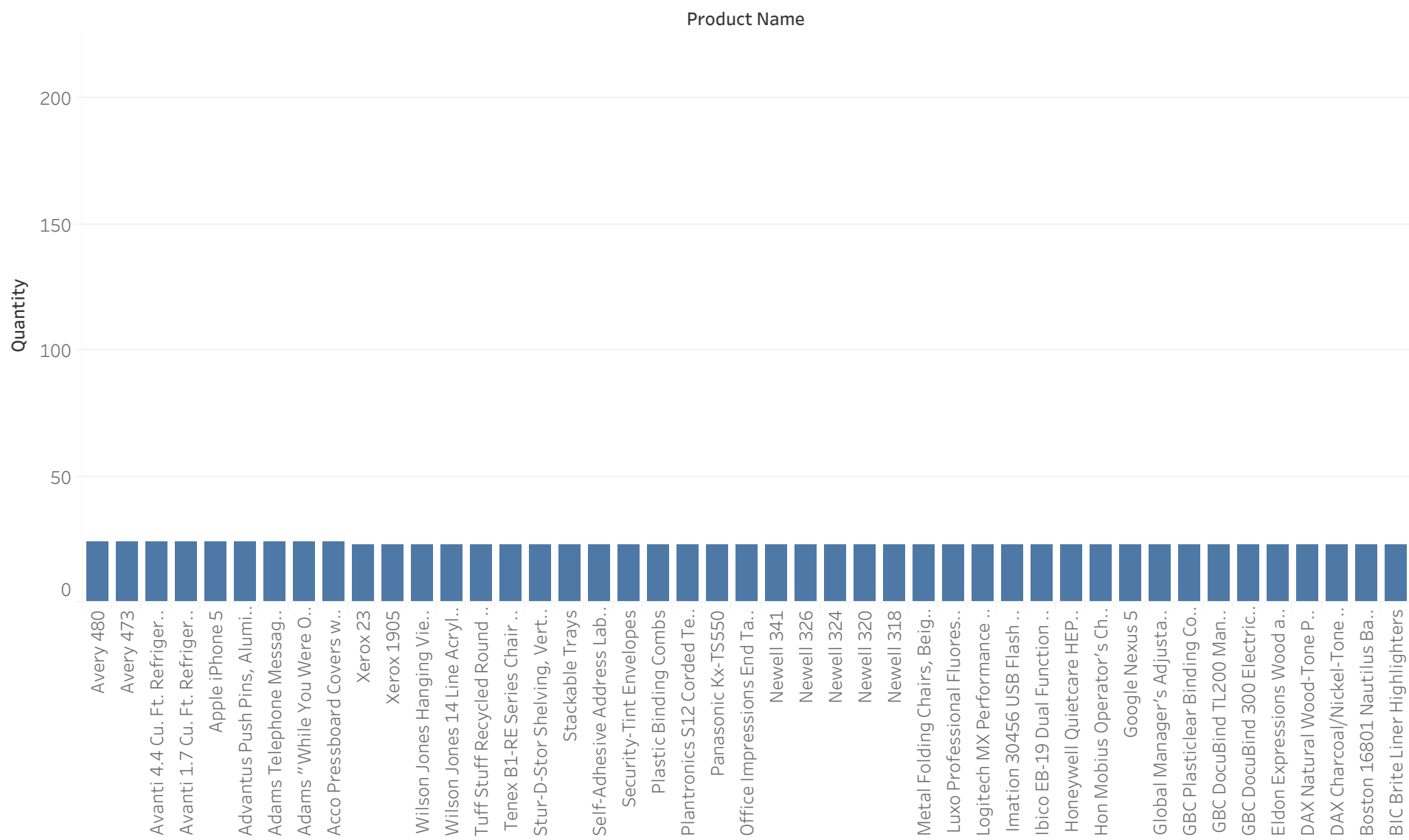
Popular Products



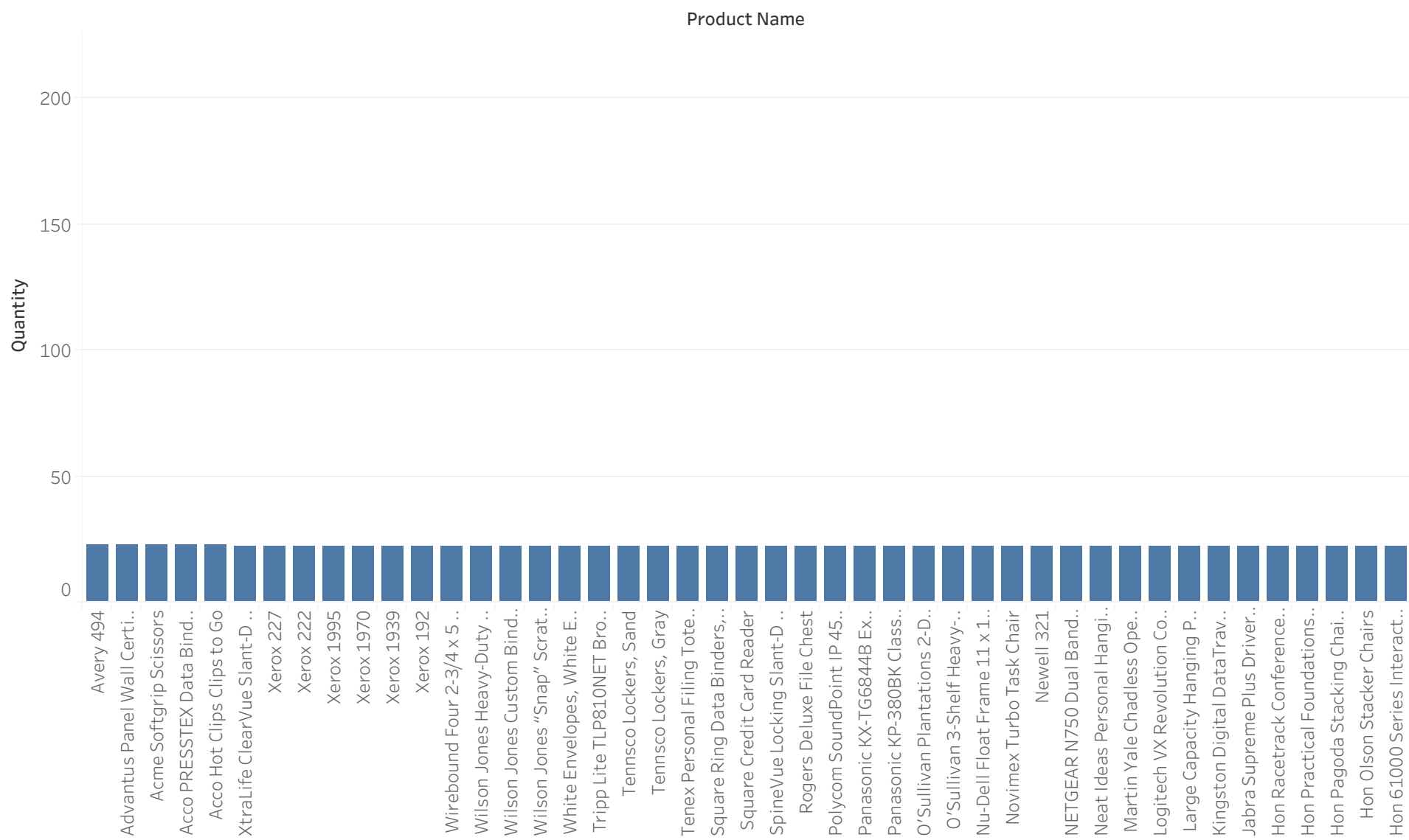
Popular Products



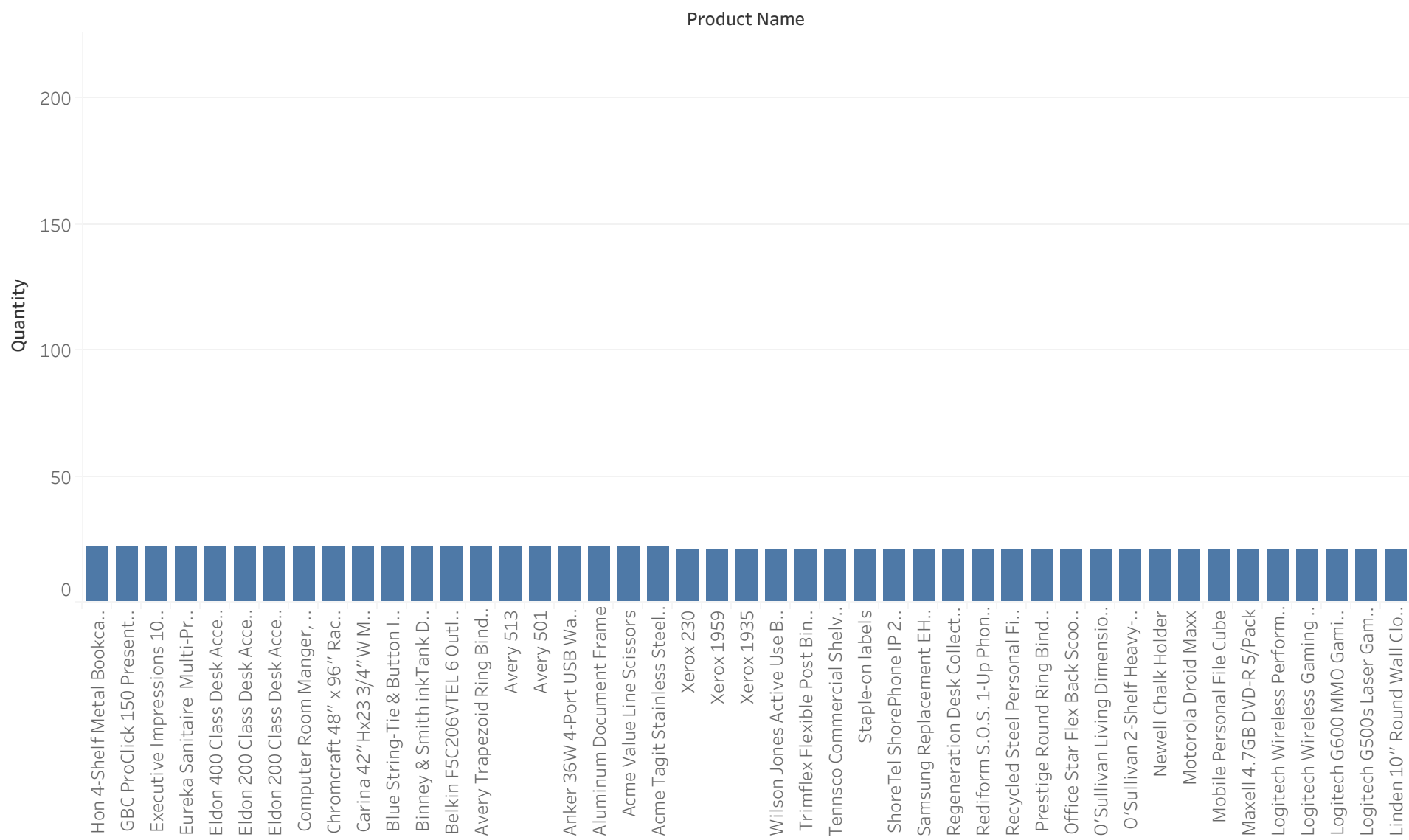
Popular Products



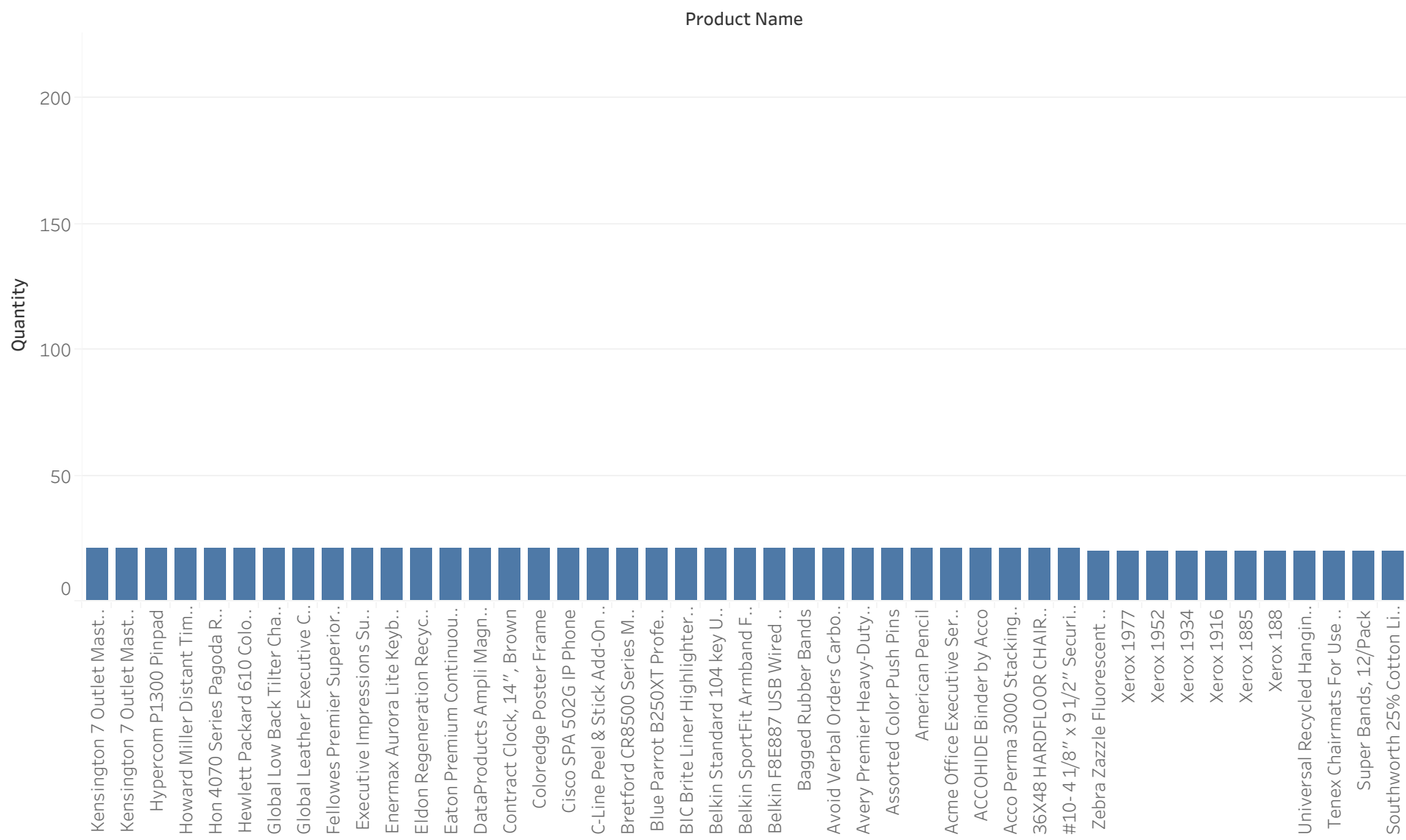
Popular Products



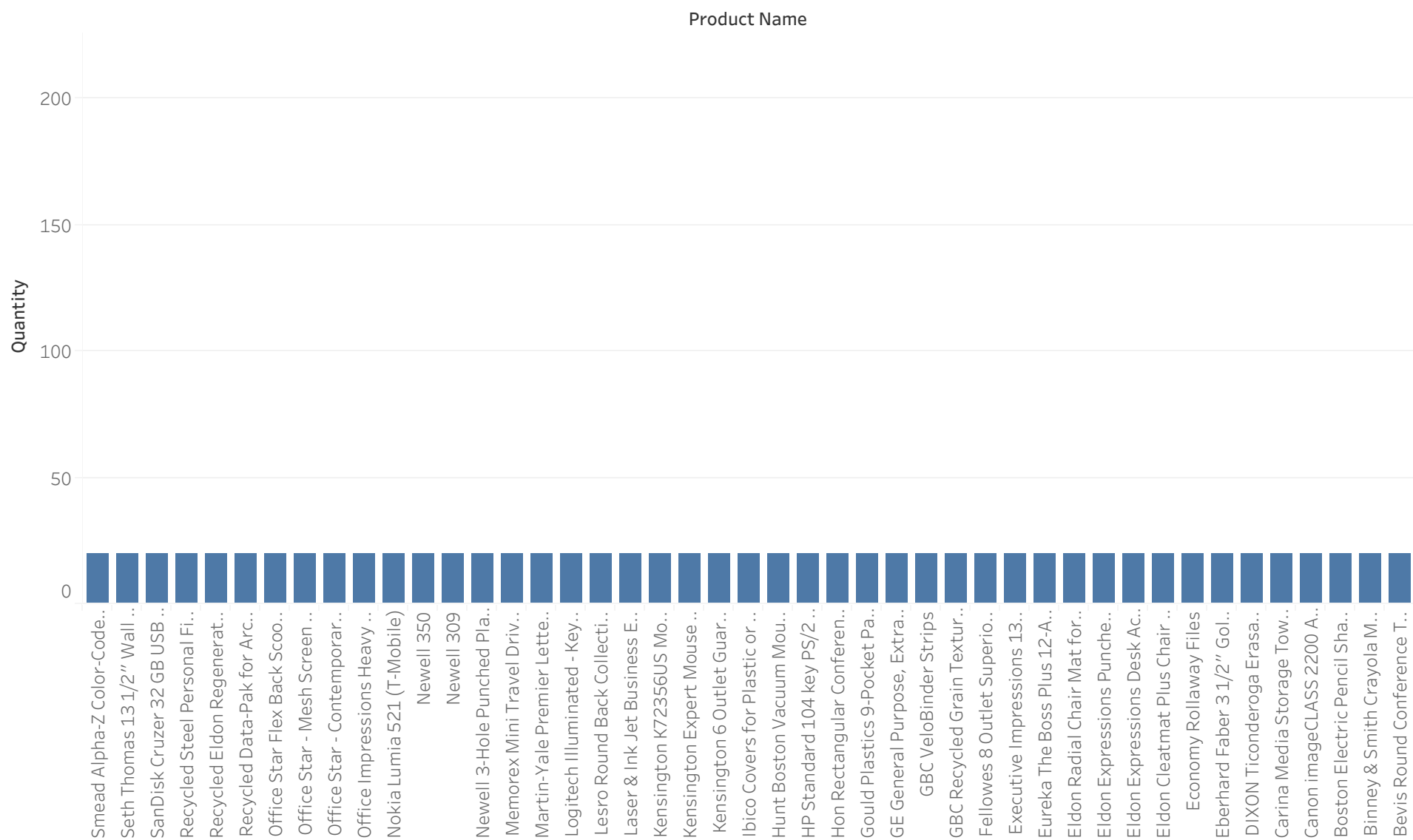
Popular Products



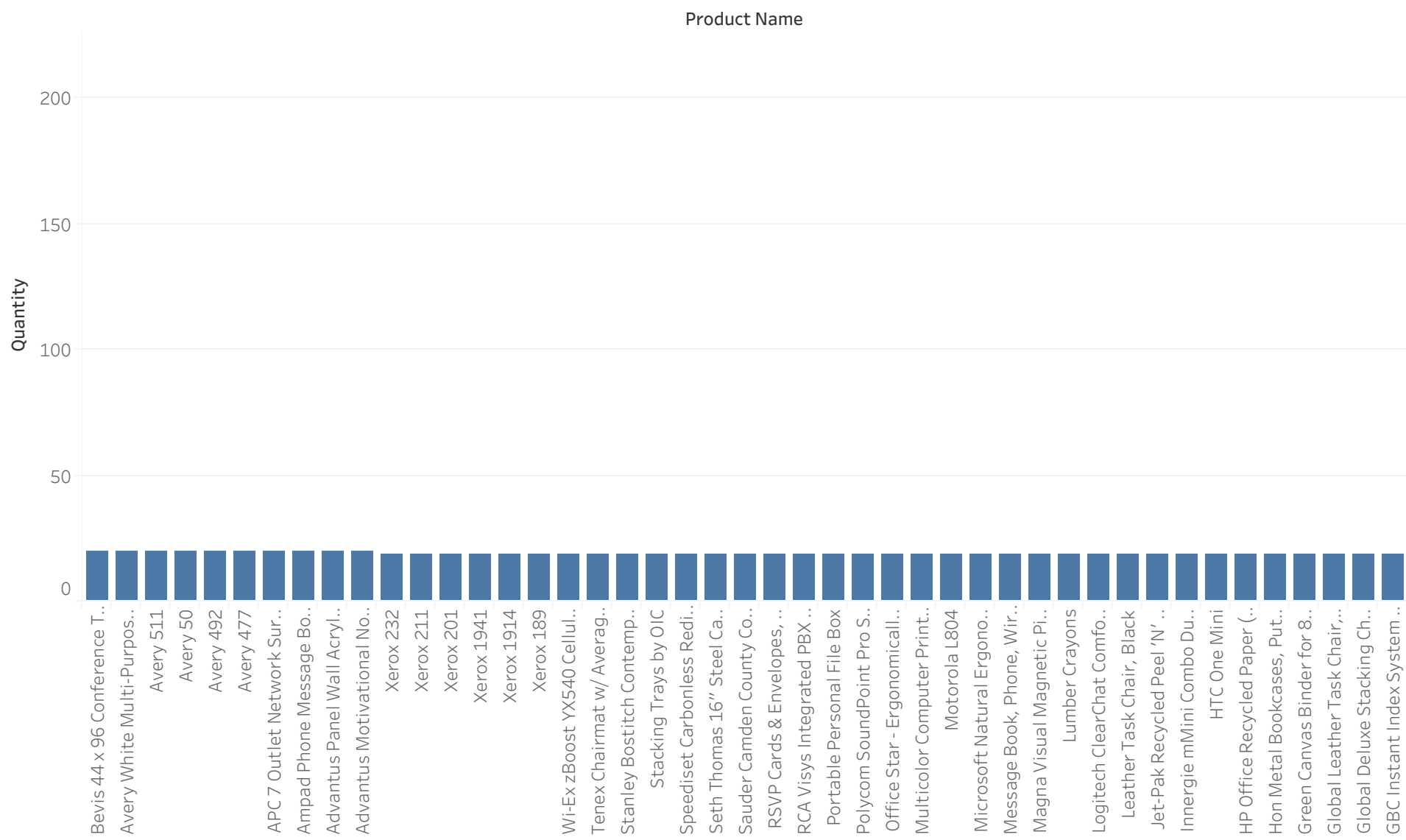
Popular Products



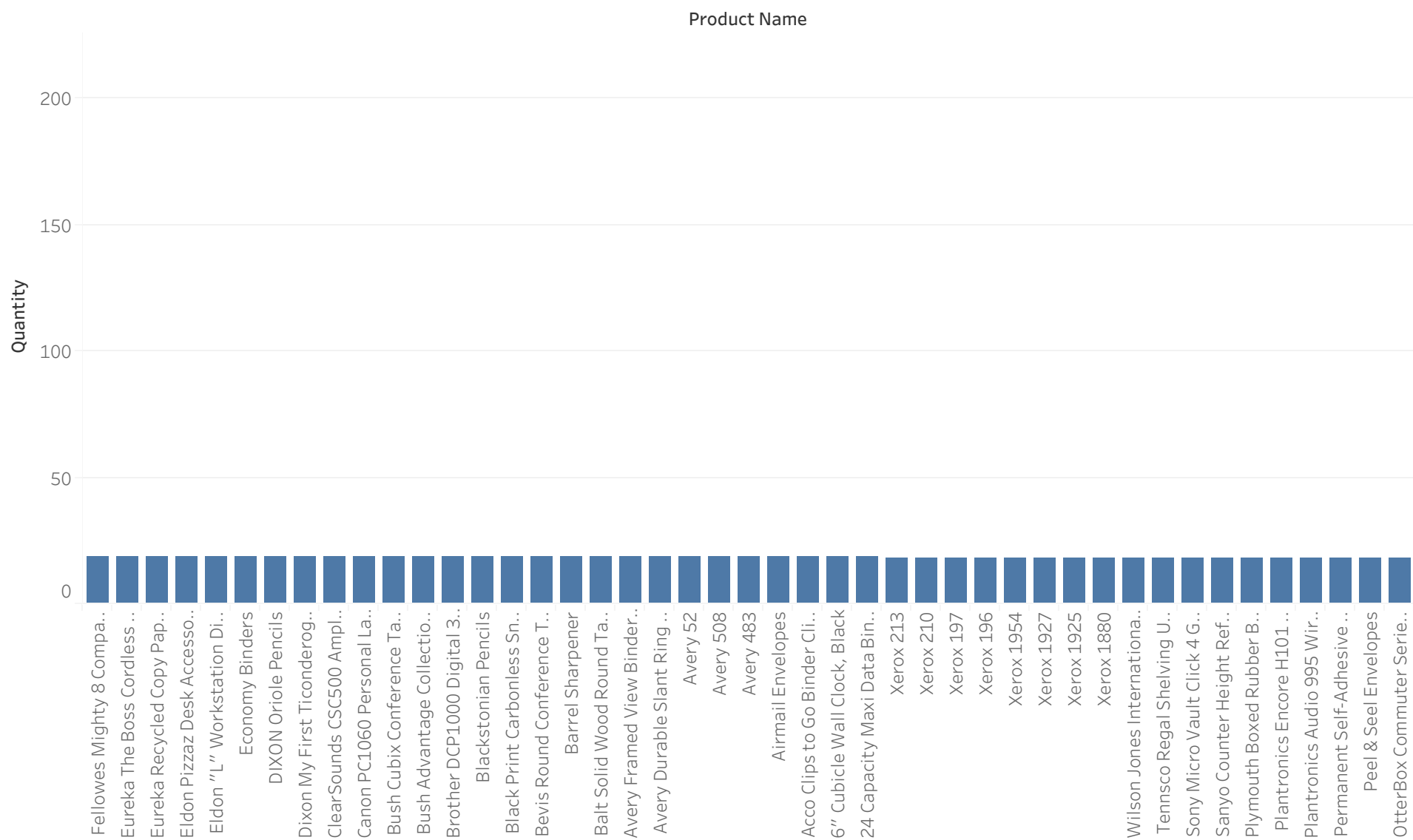
Popular Products



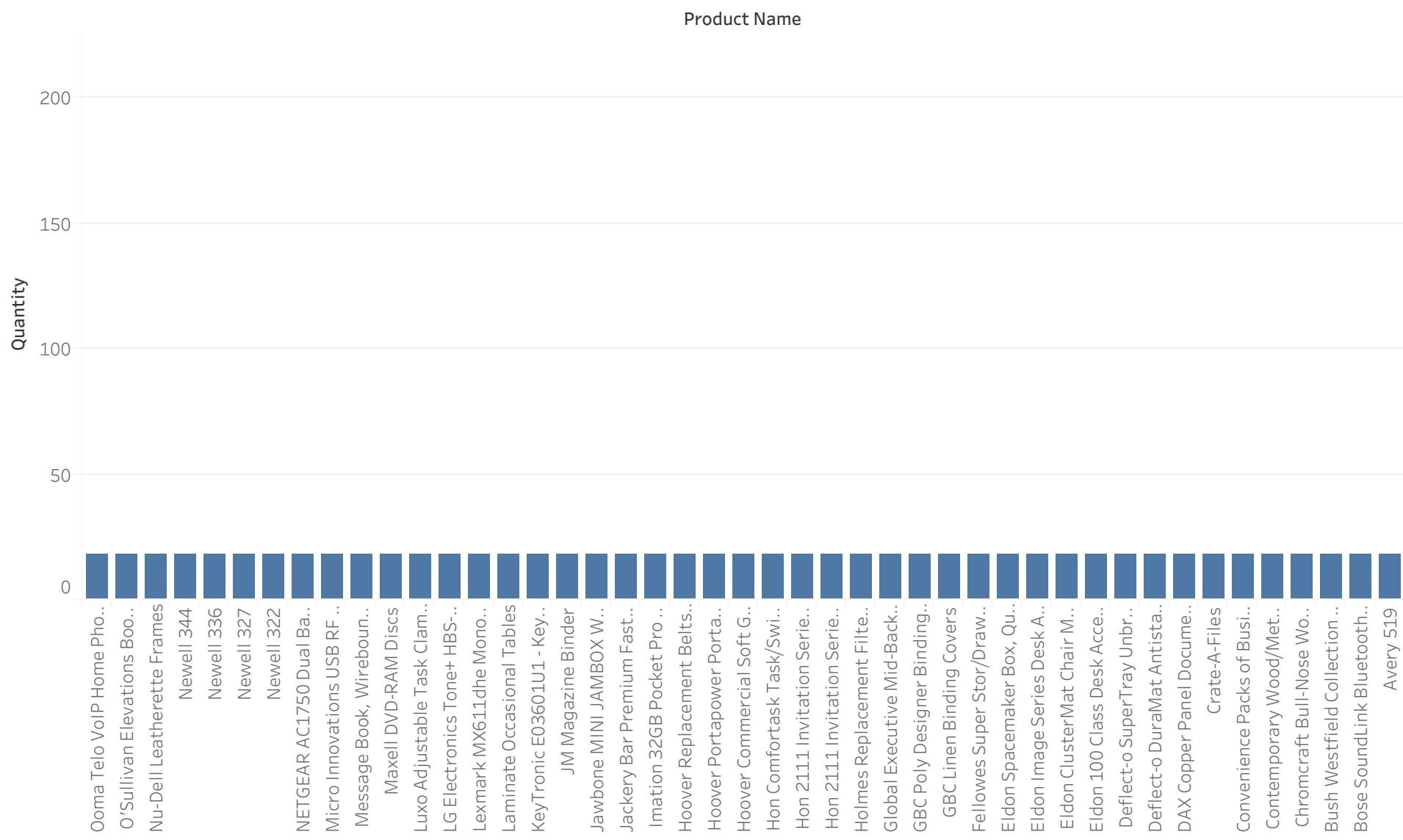
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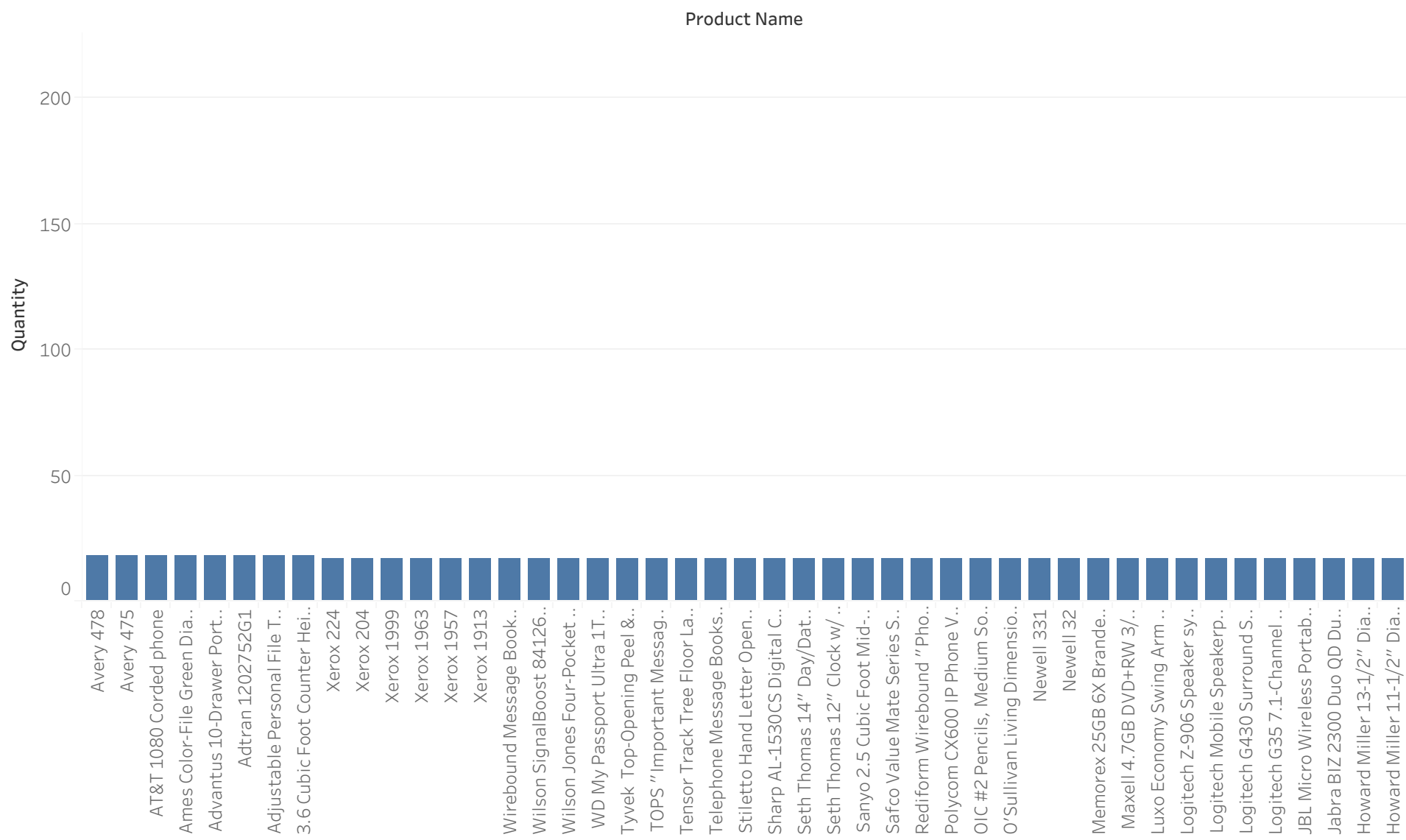
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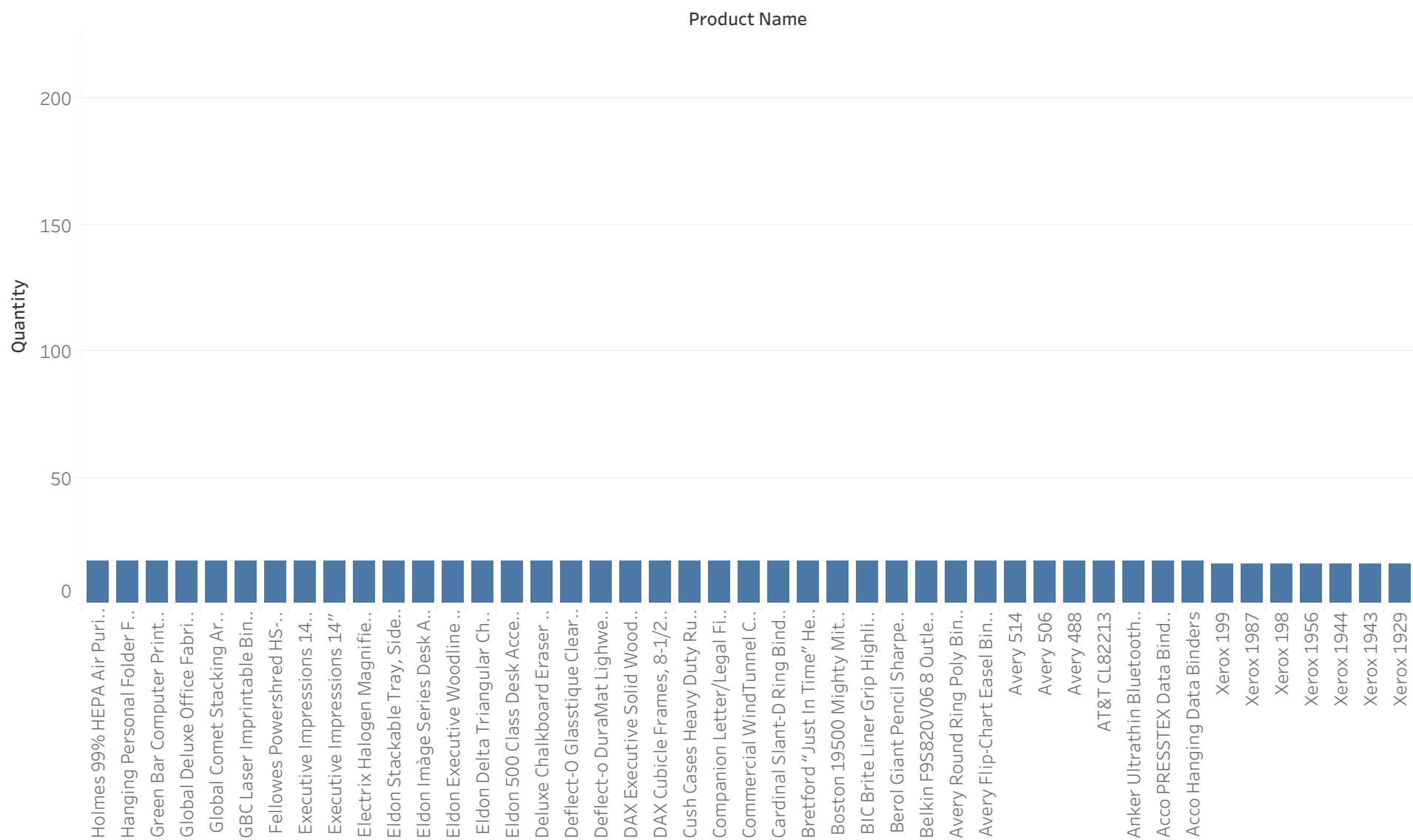
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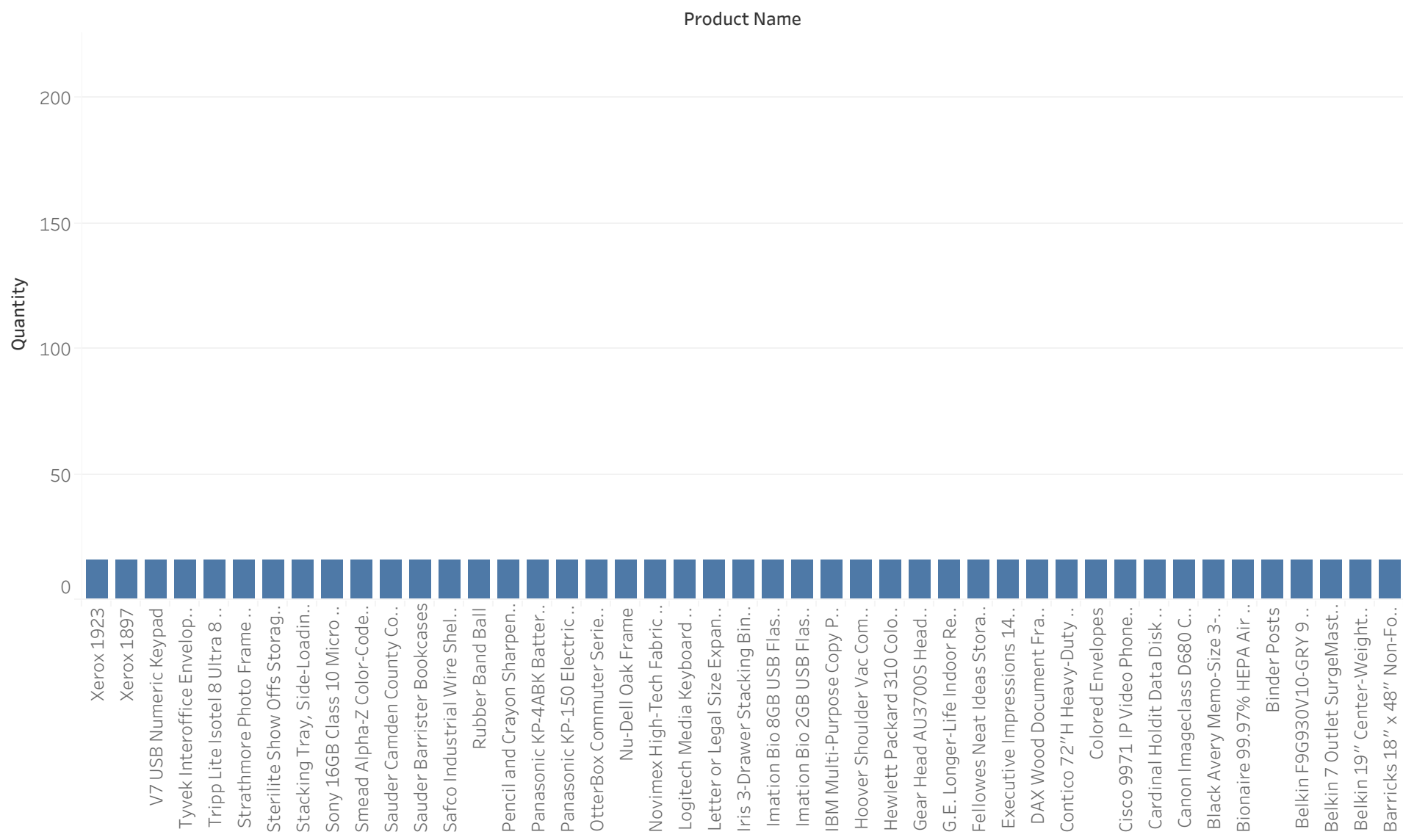
Popular Products



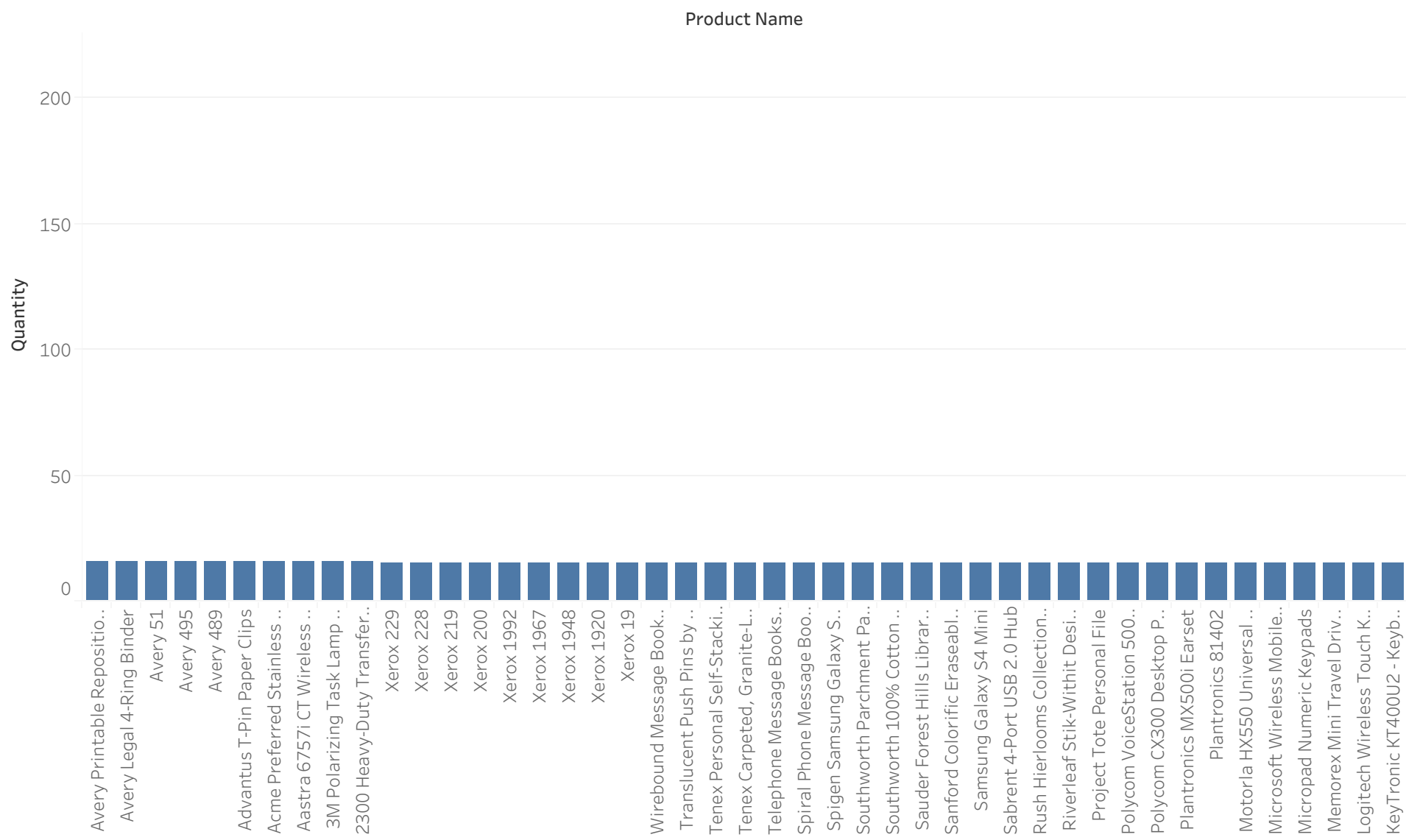
Popular Products



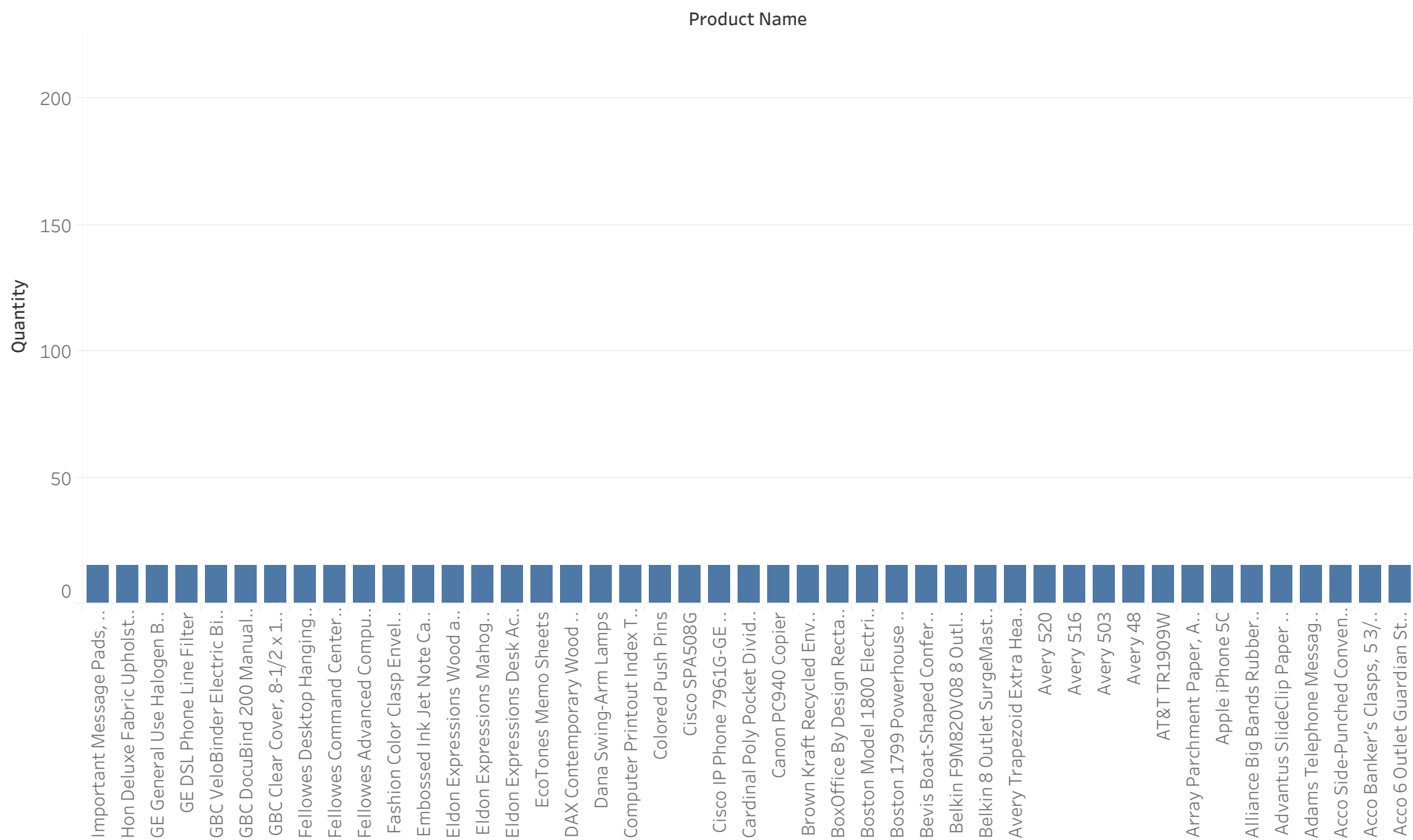
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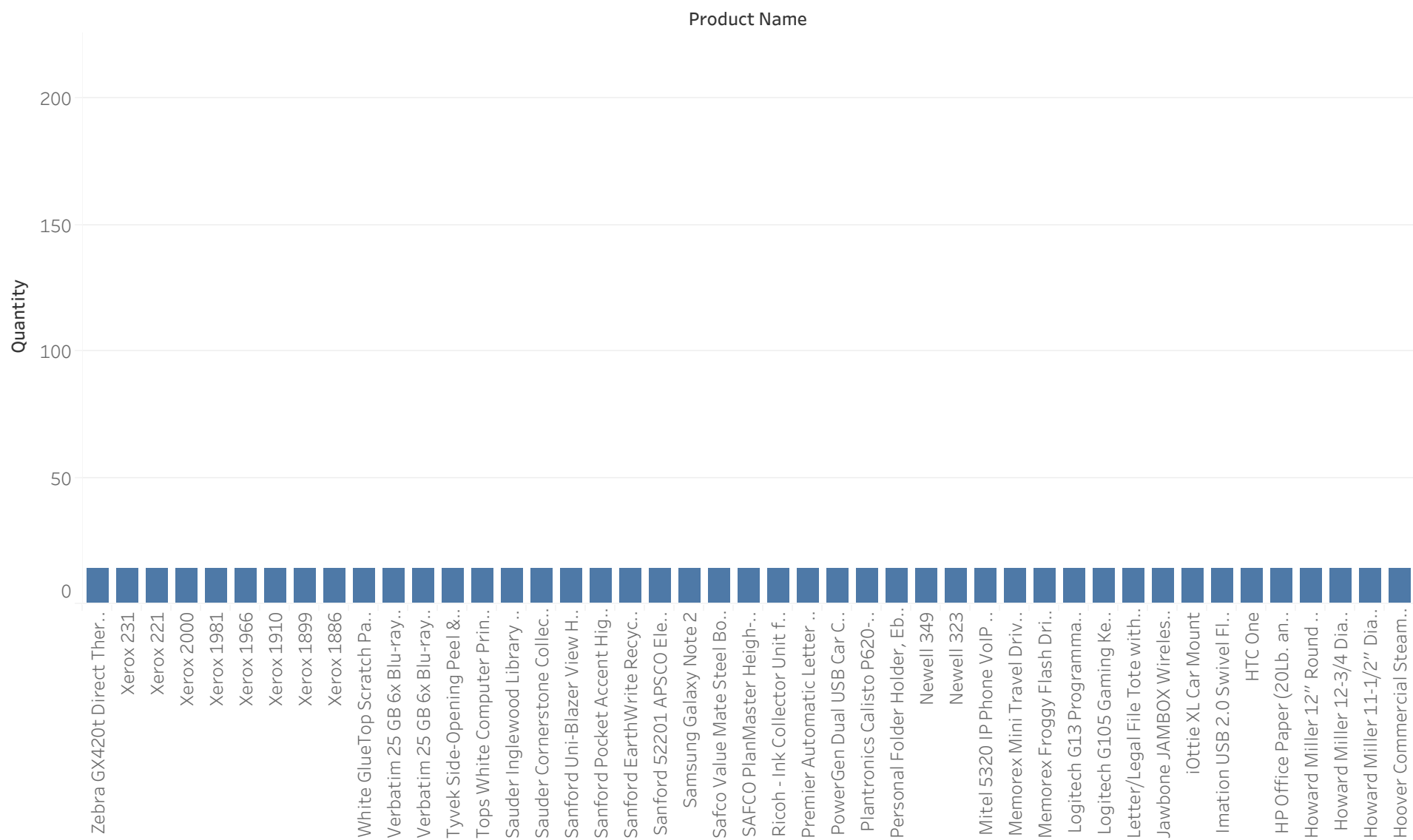
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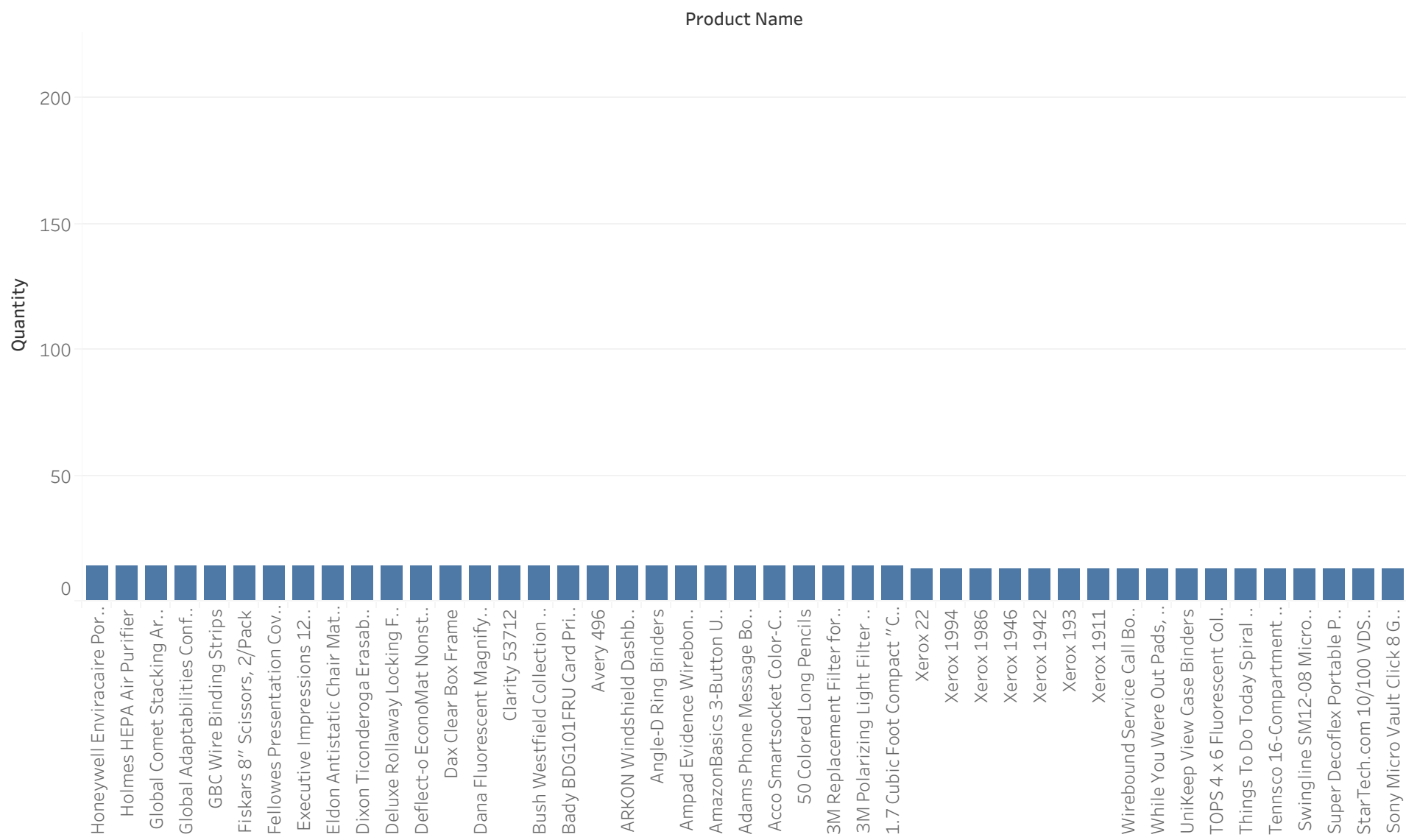
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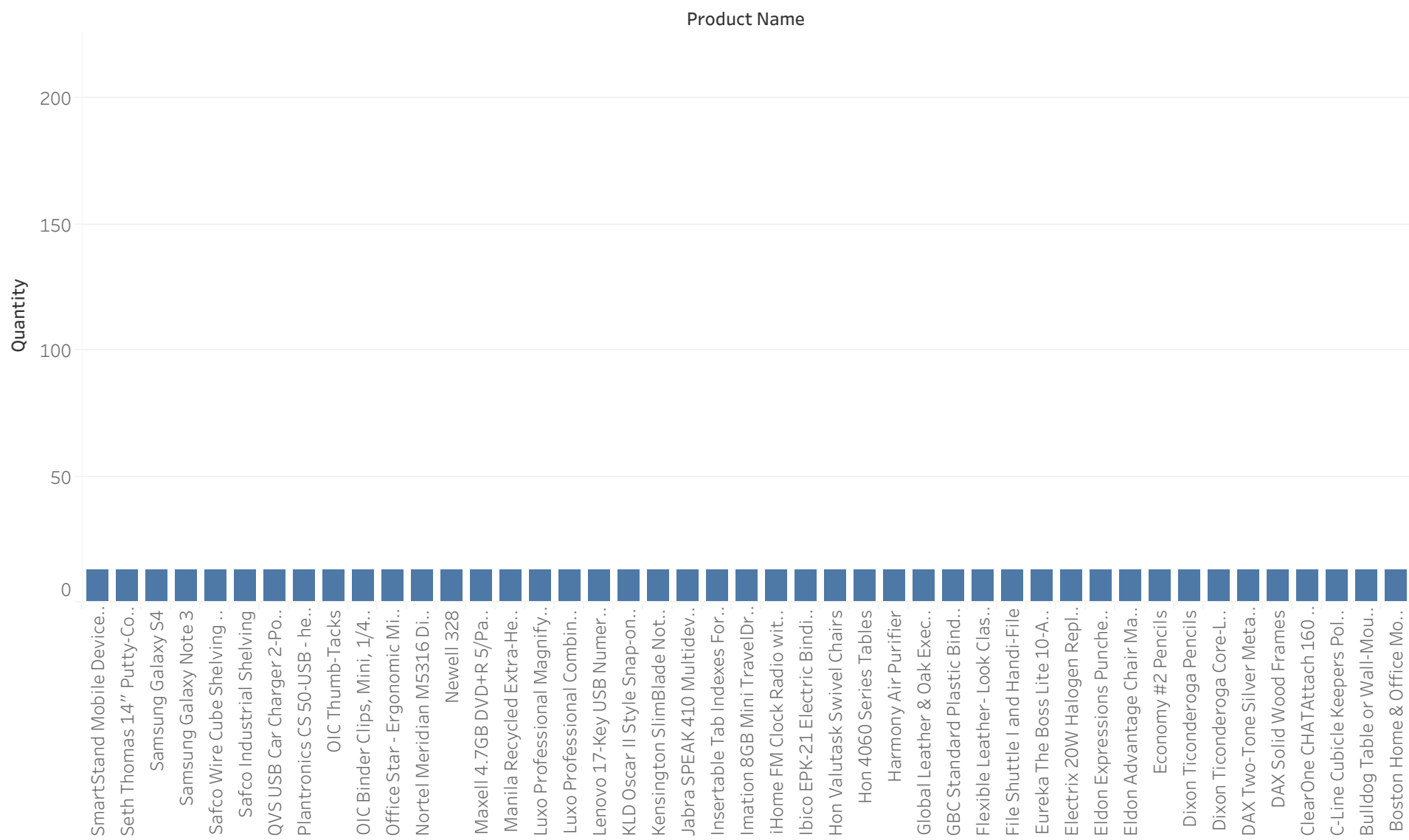
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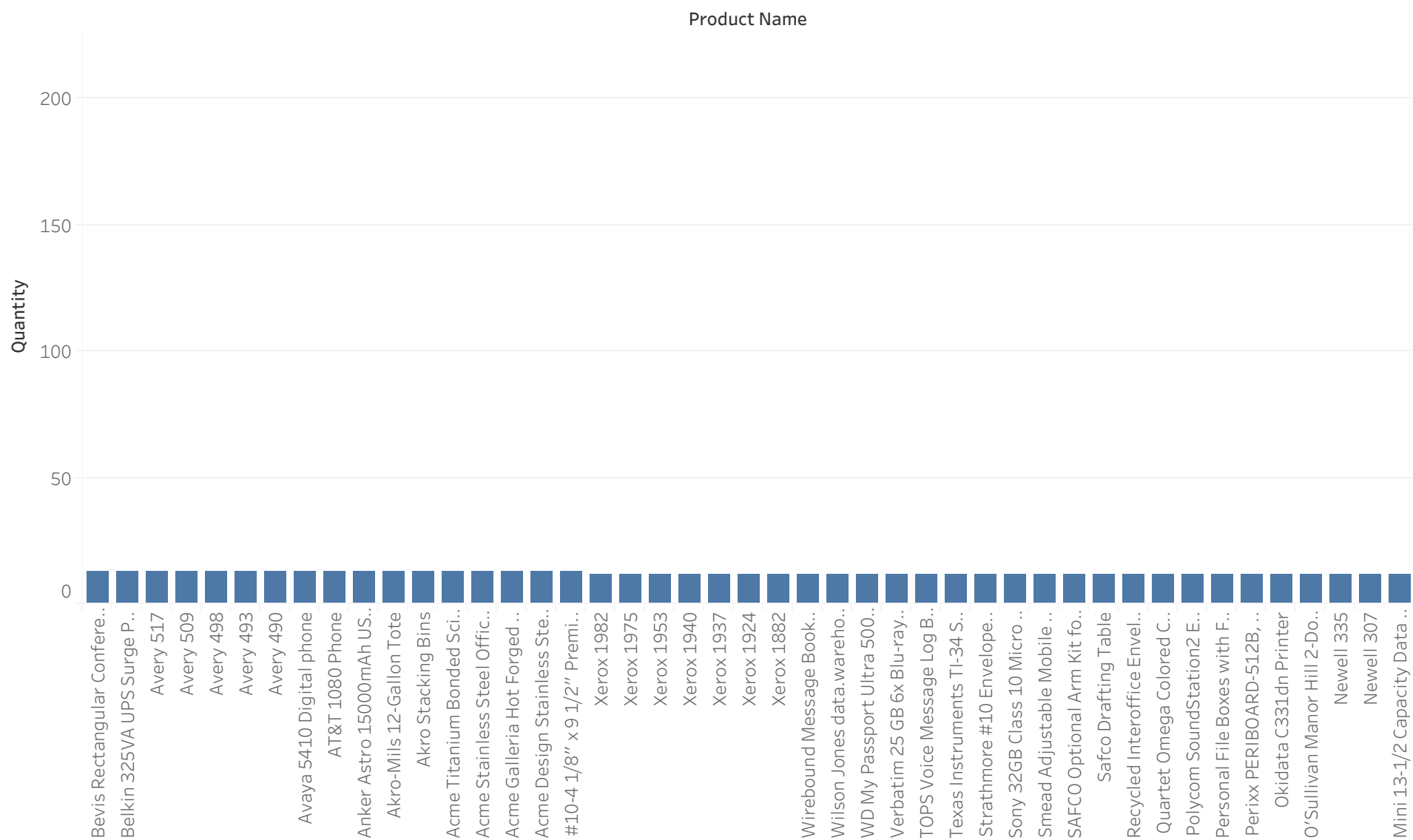
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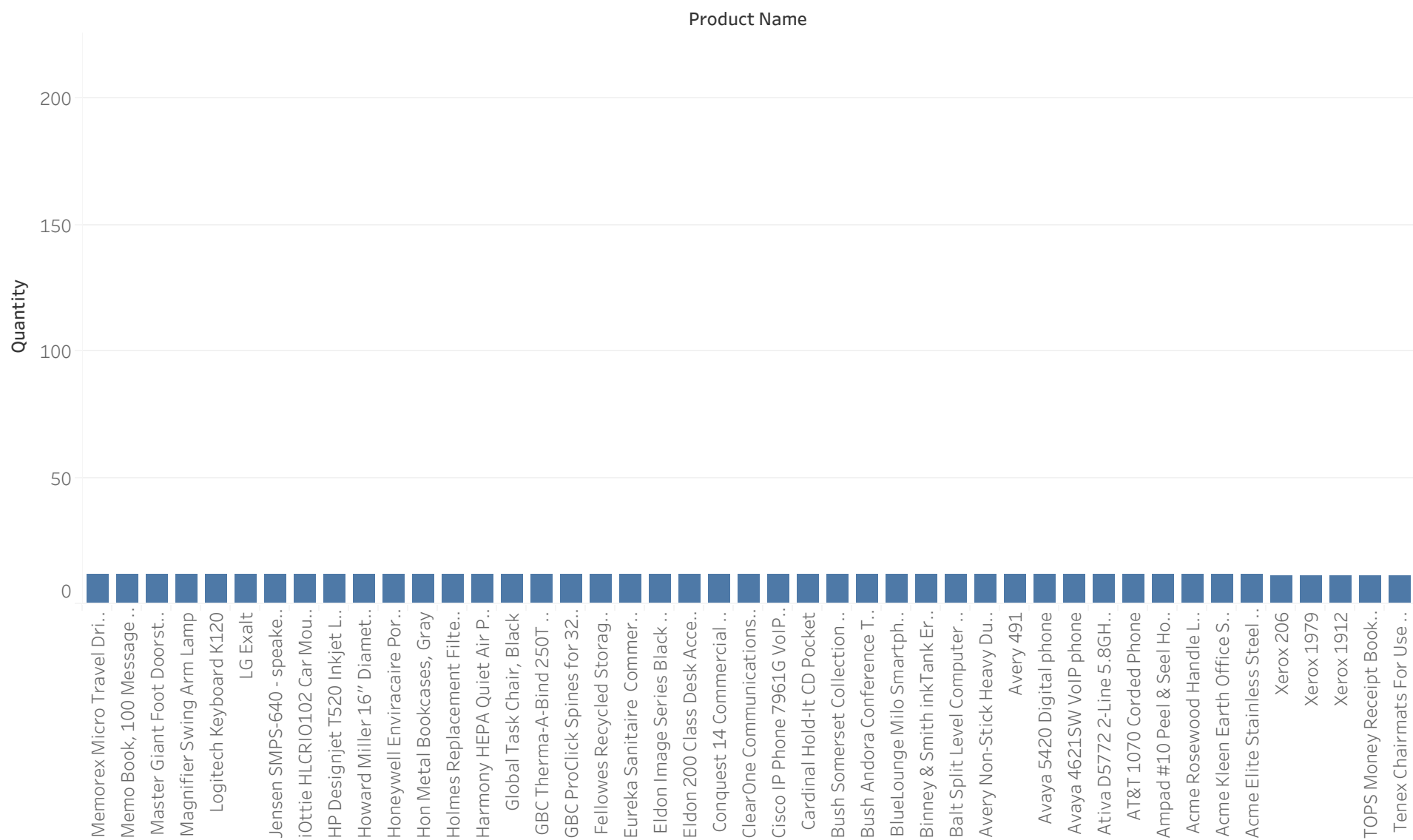
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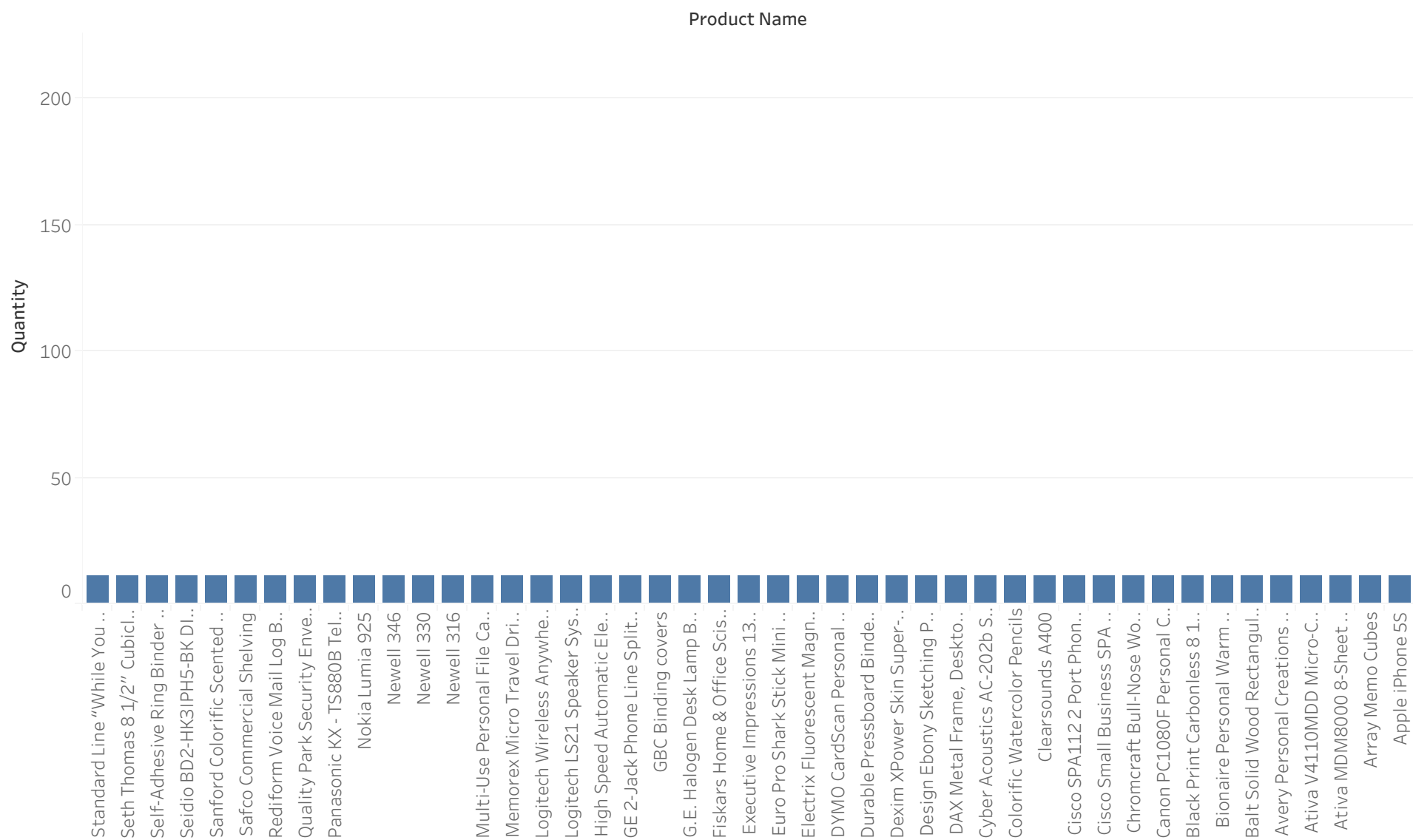
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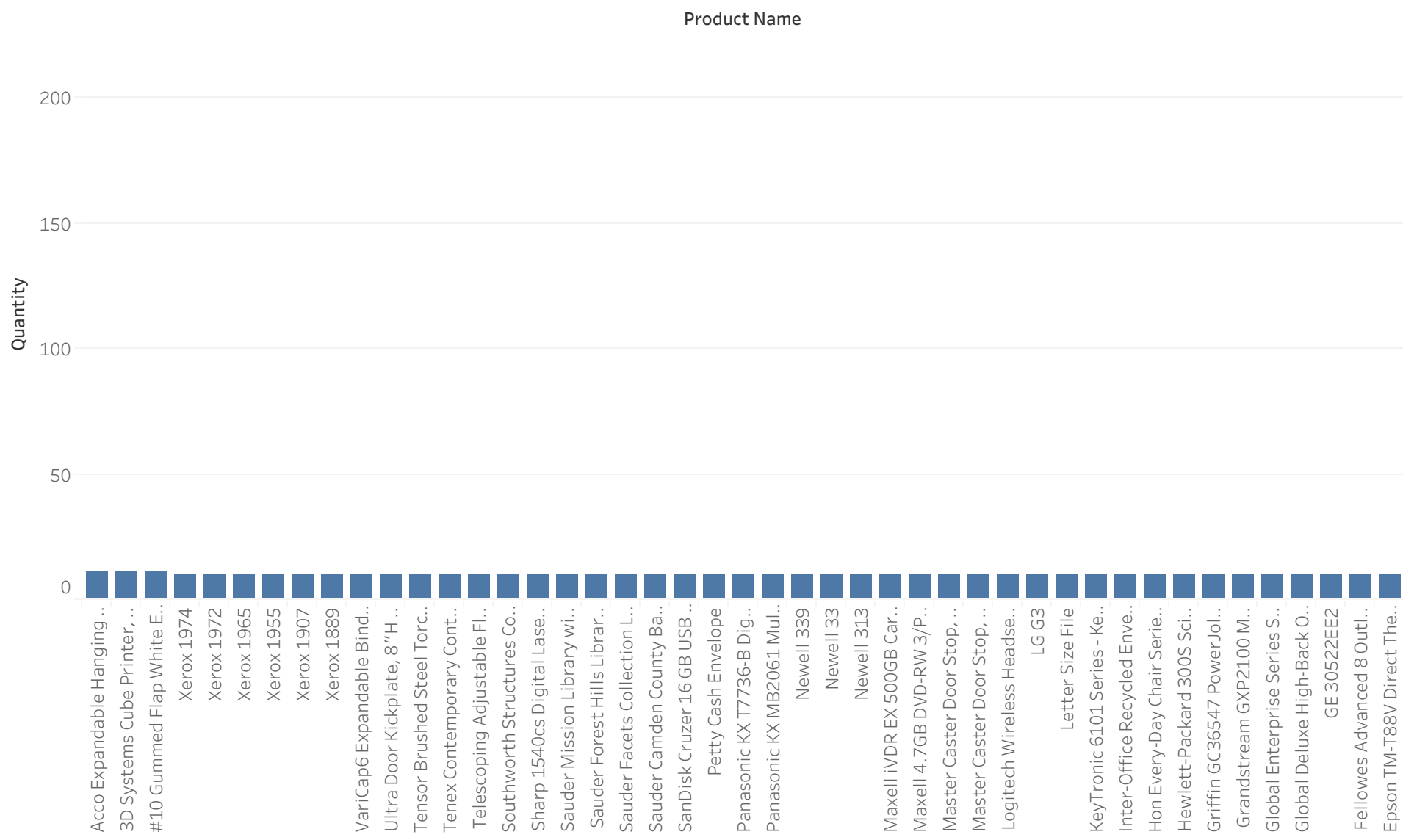
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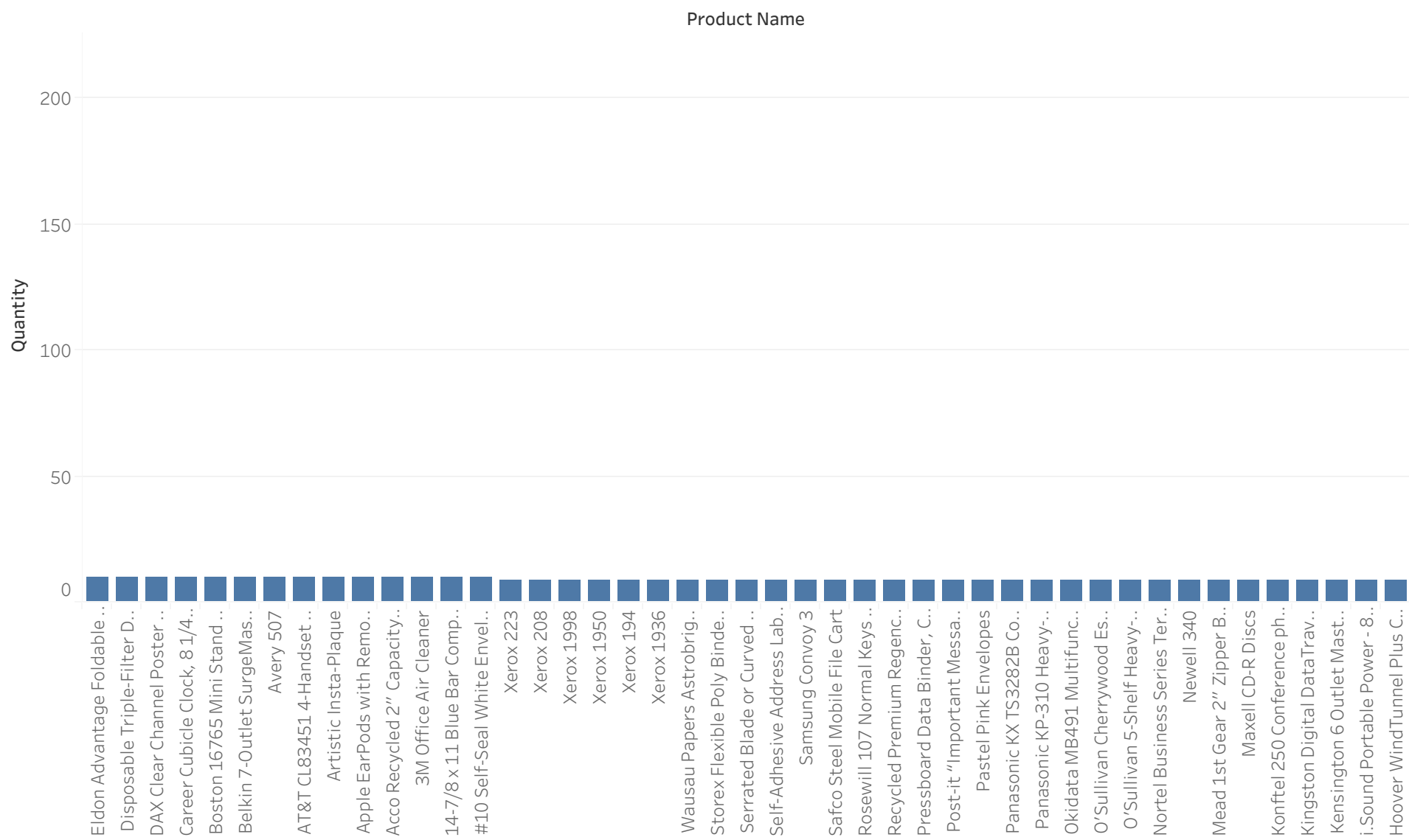
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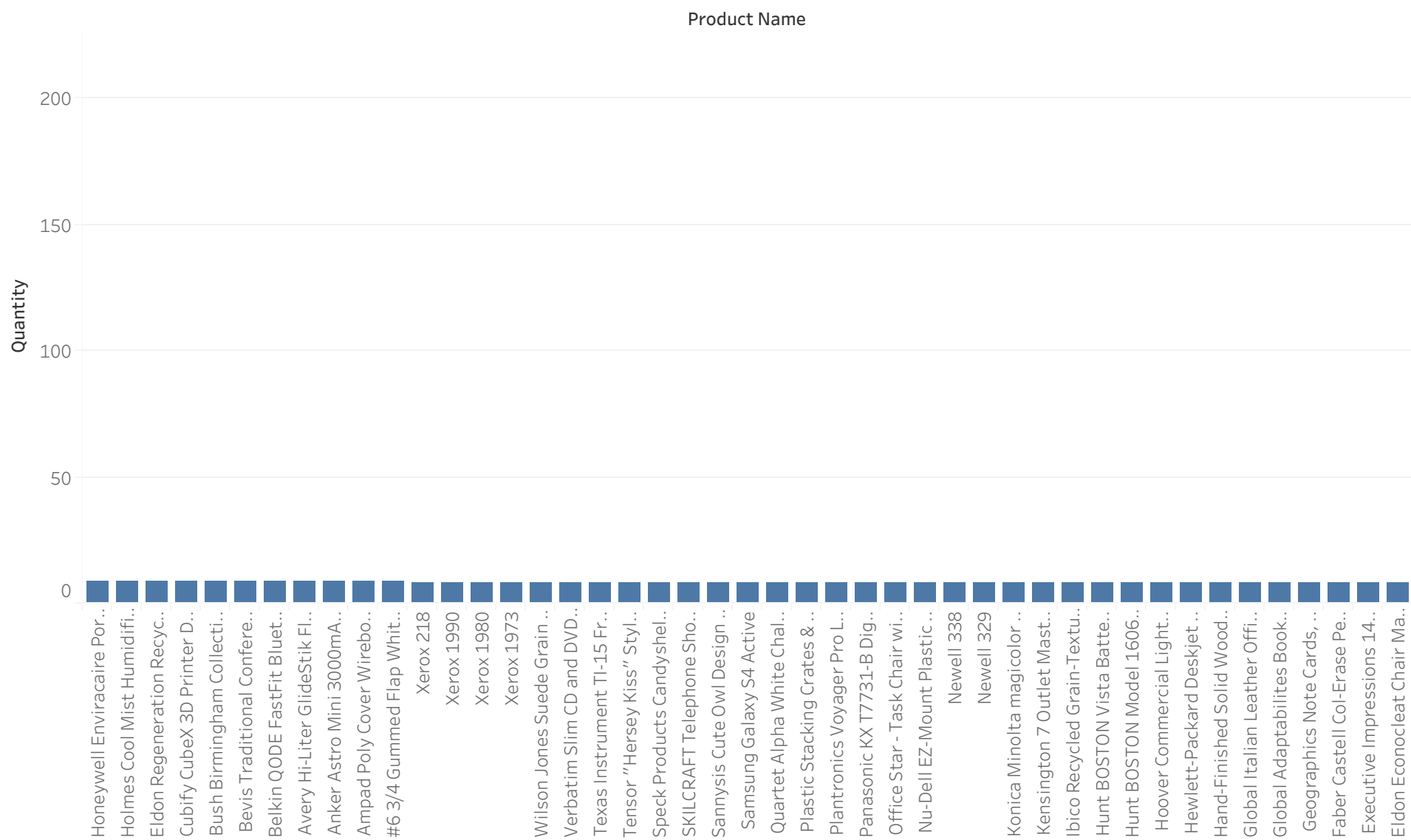
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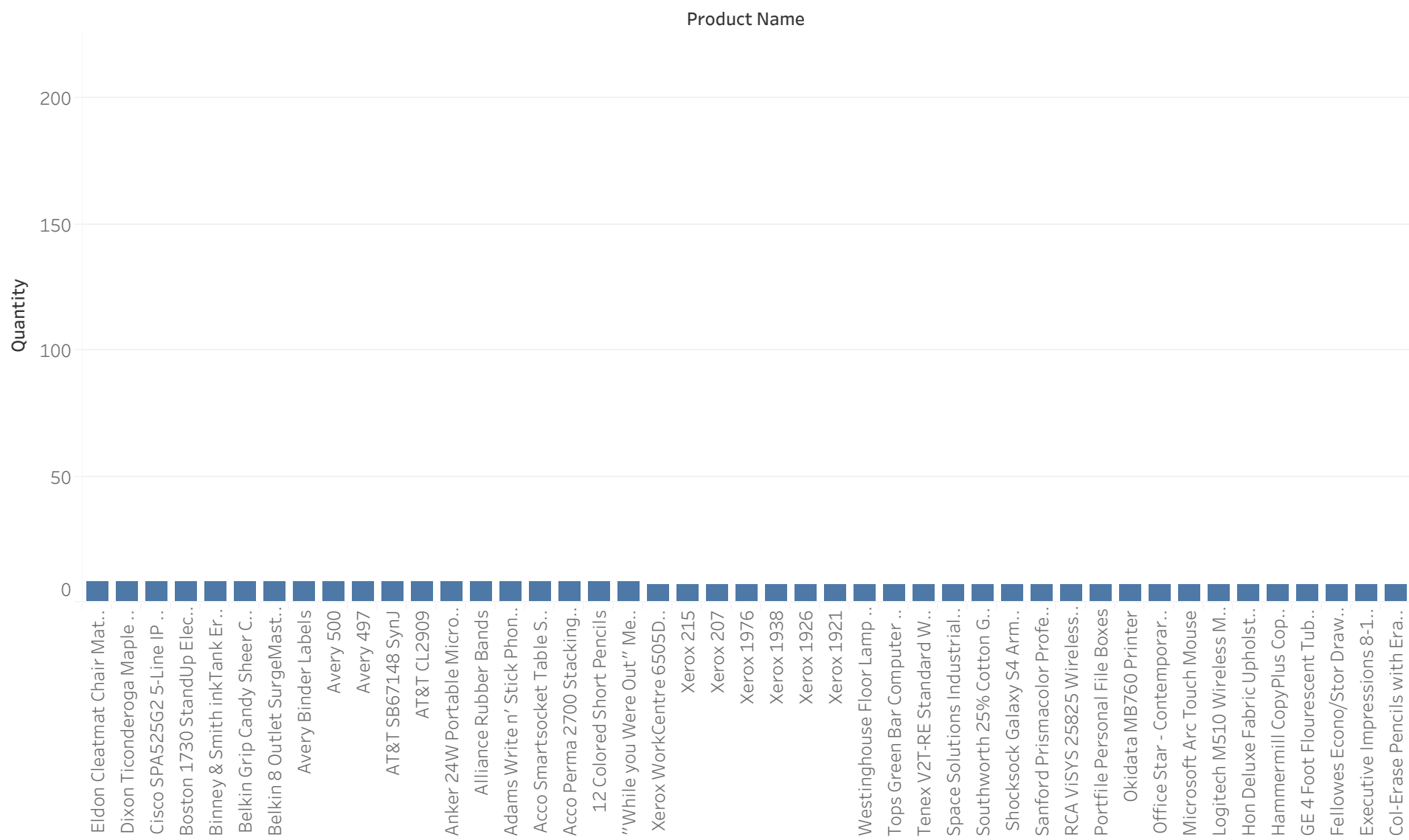
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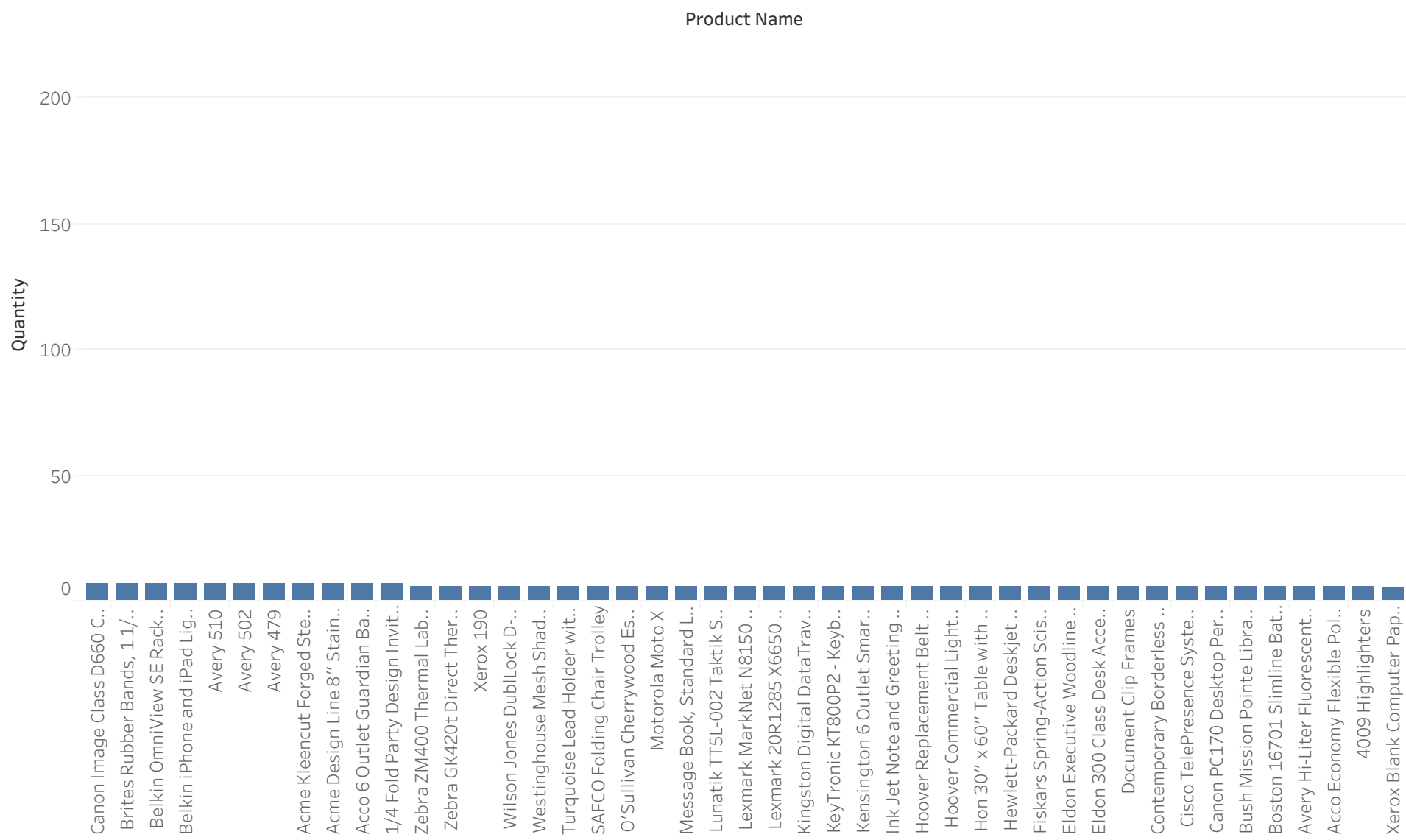
Popular Products



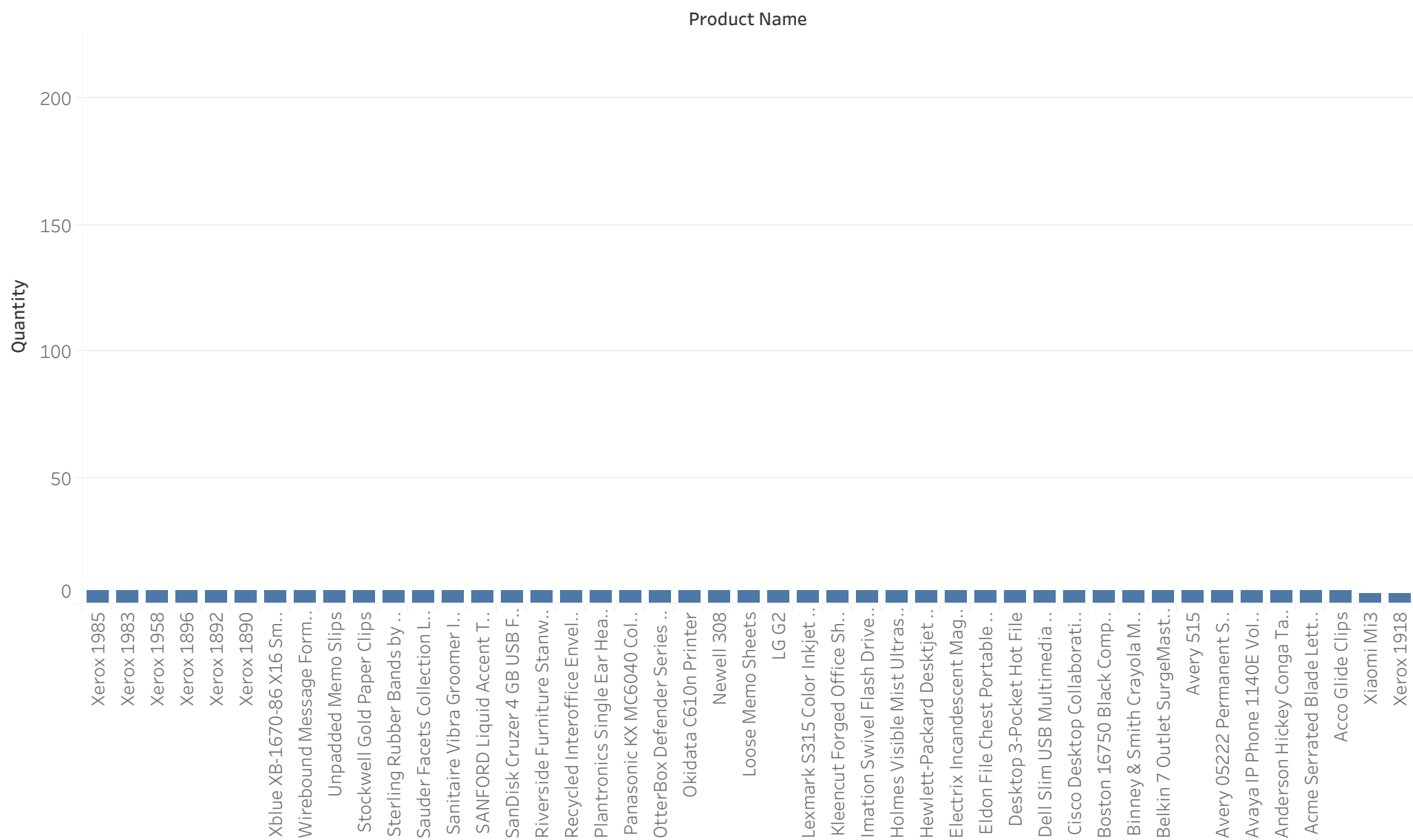
Popular Products



Popular Products



Popular Products



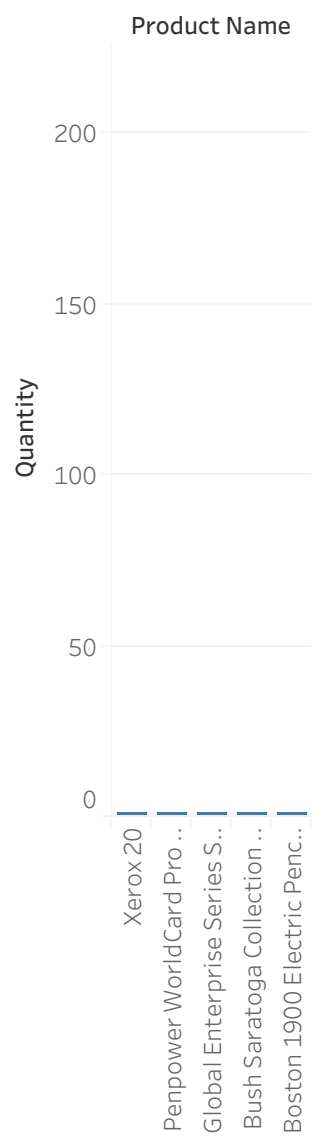
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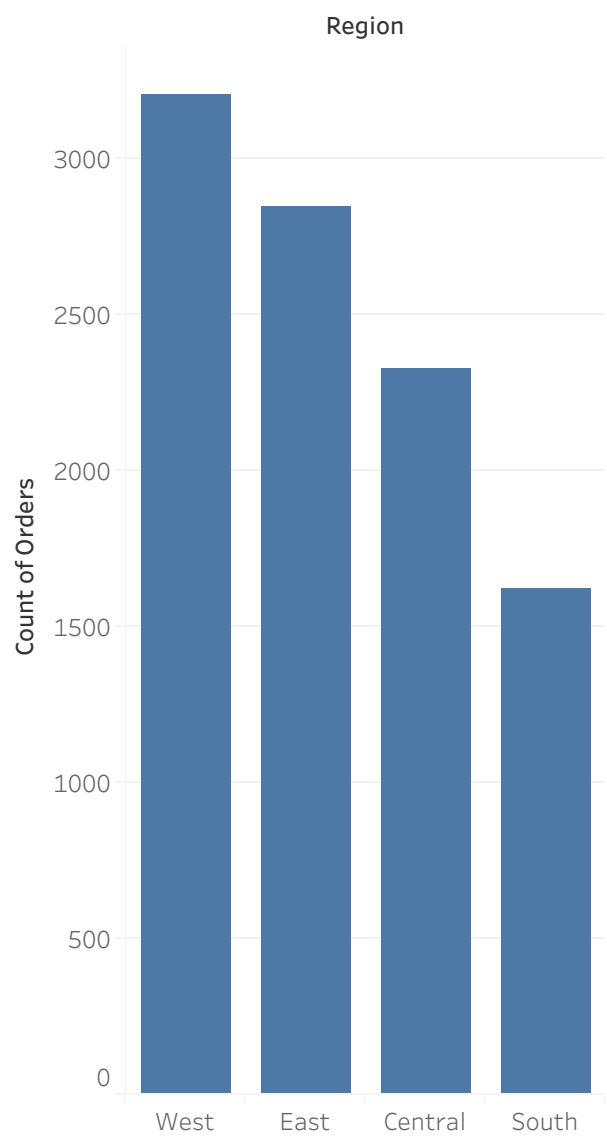
Popular Products



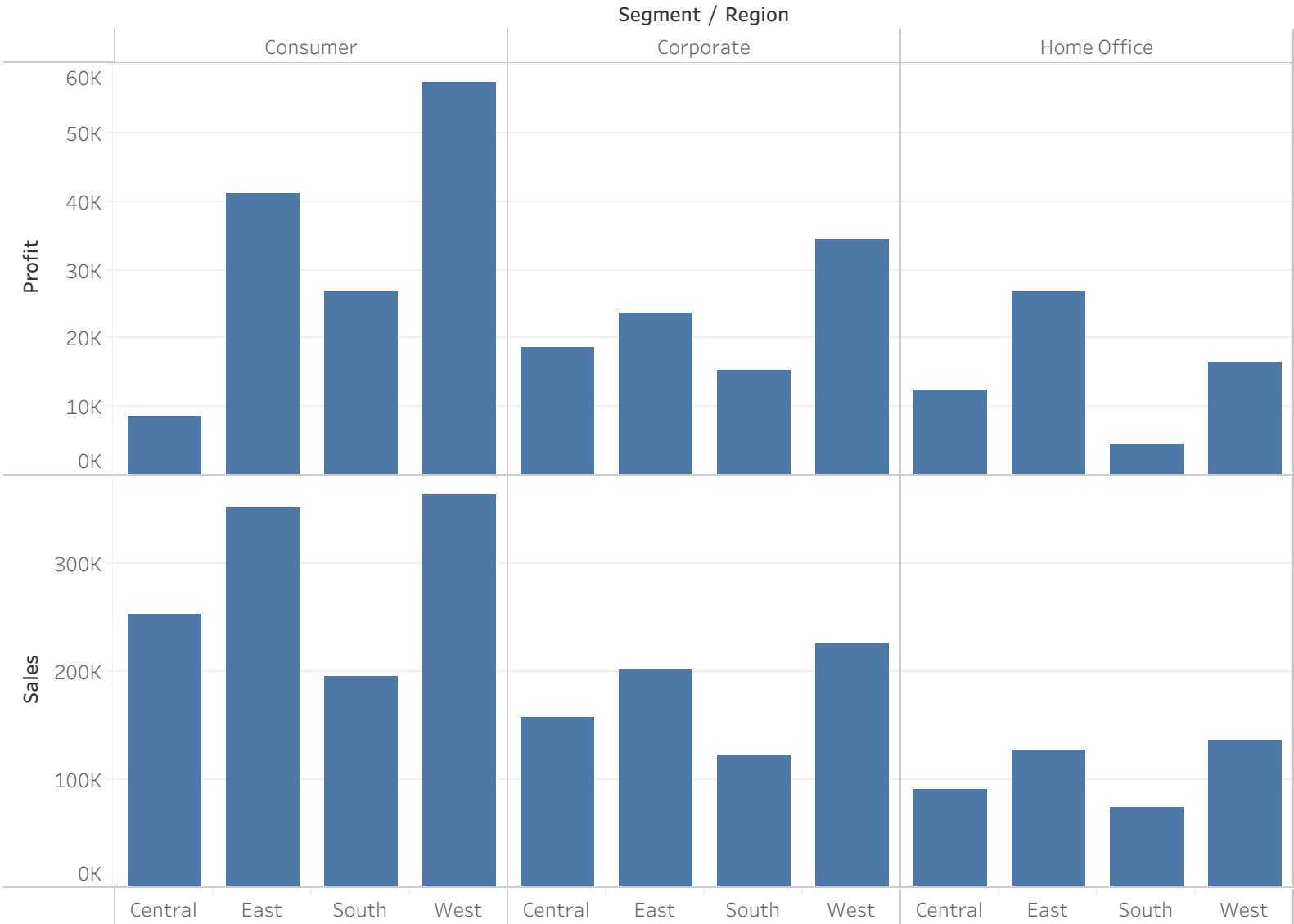
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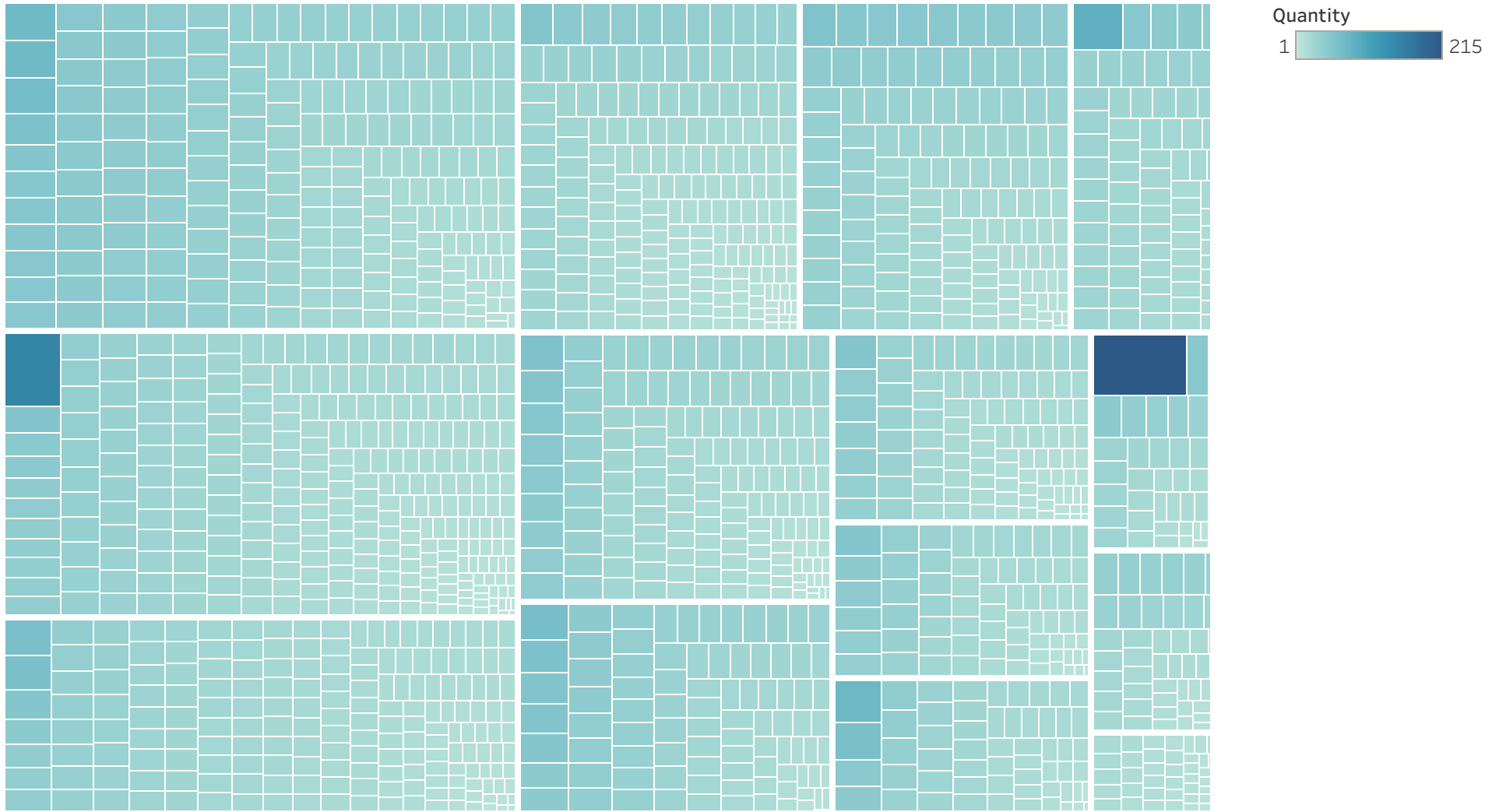
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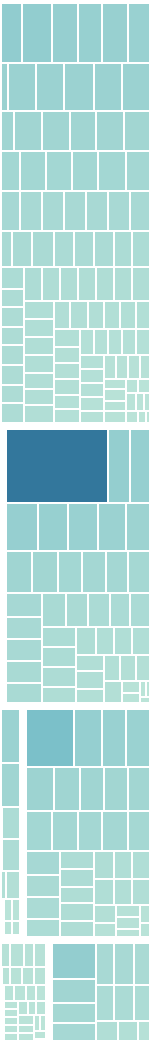
Customer Segments by Region



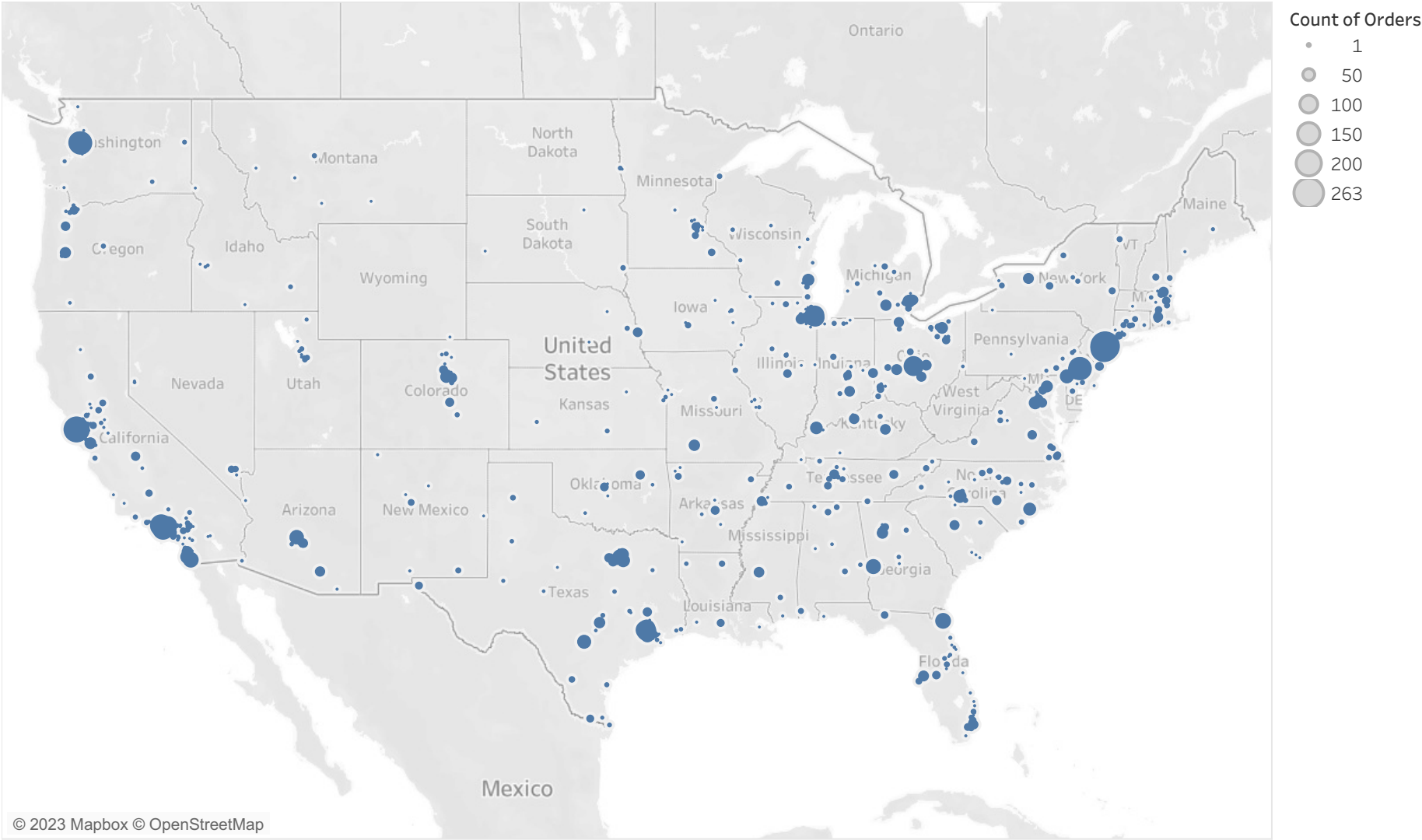
Popular Products x SubCat



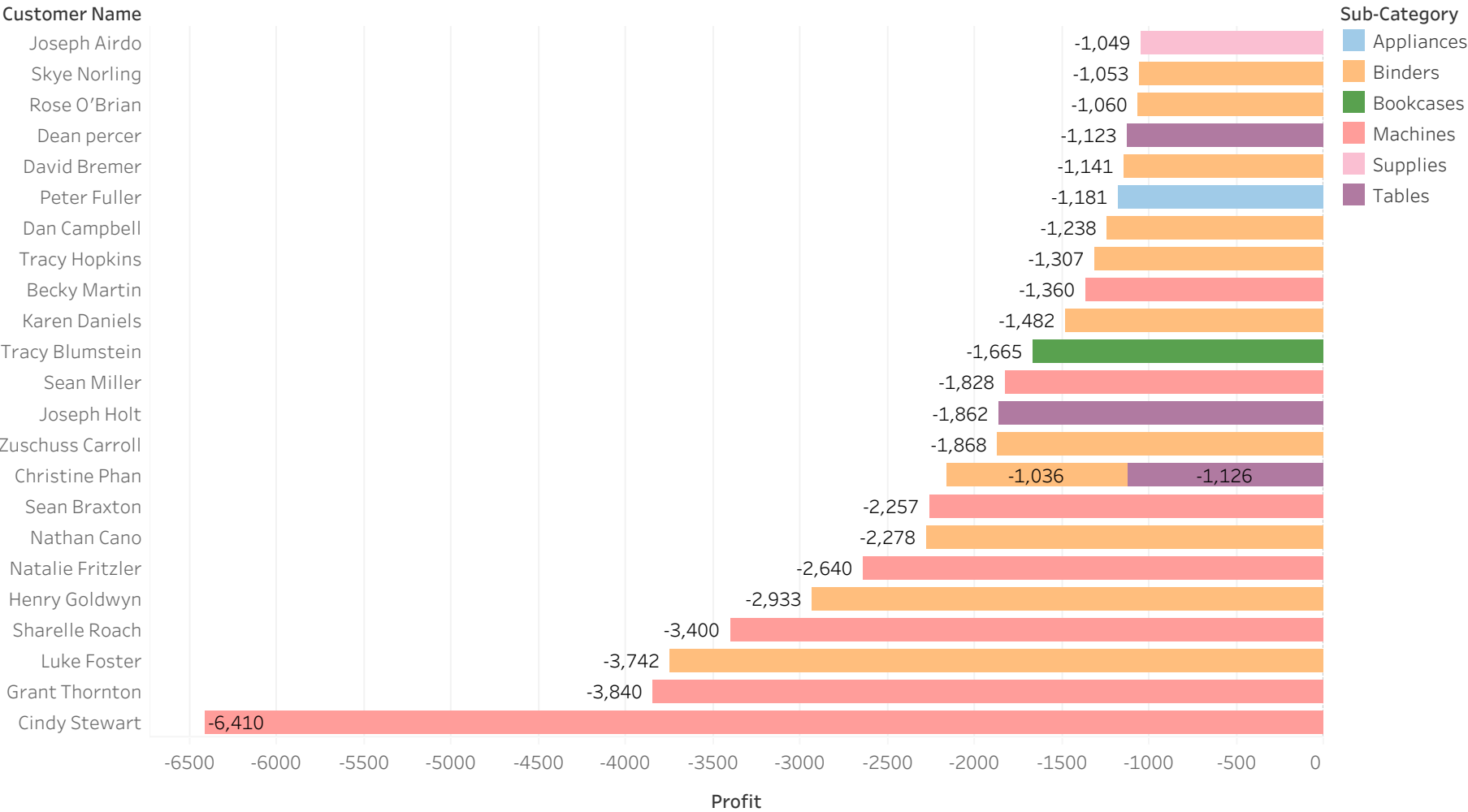
Popular Products x SubCat



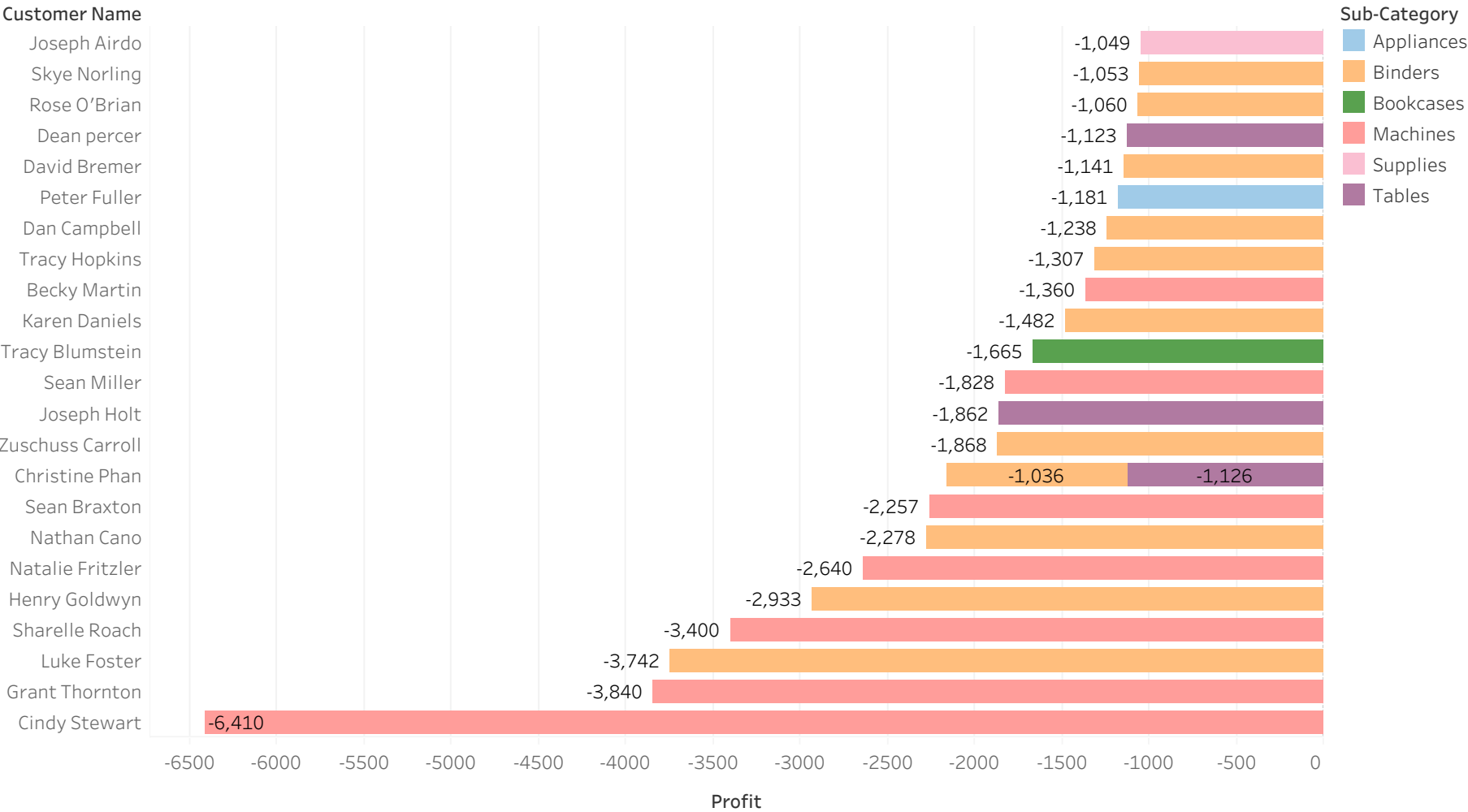
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Insights: NegProfCustxSubCat



Insights: ?

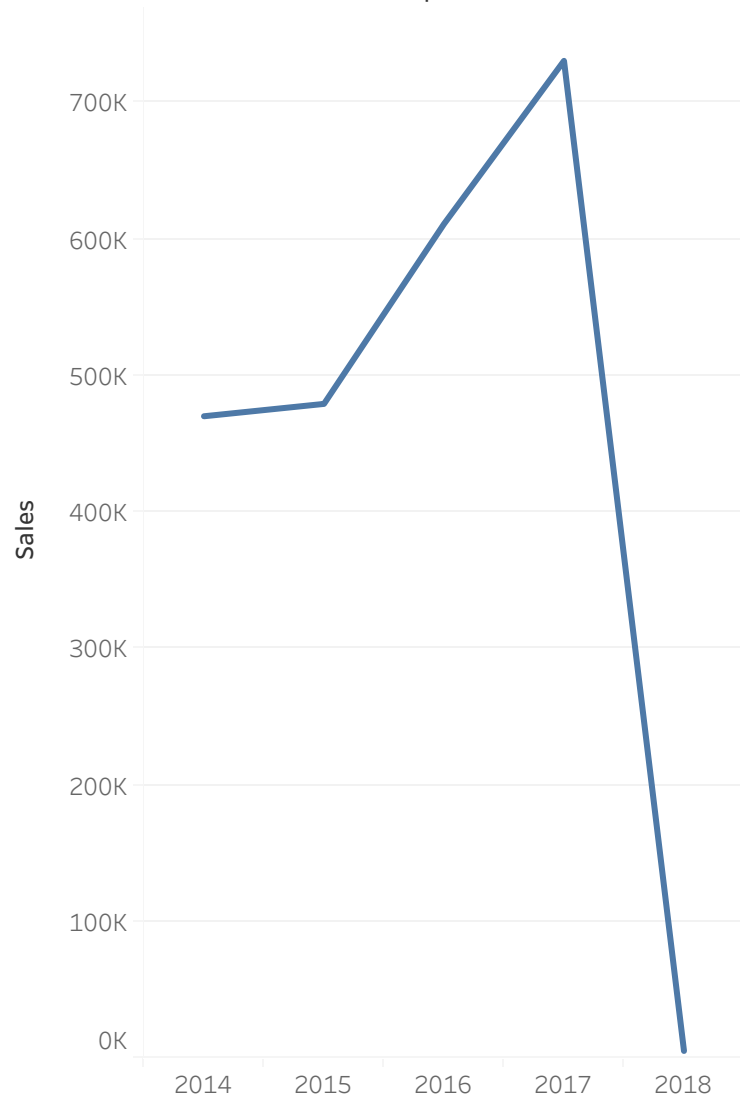


Avg Profit, Sales, Discount, and Quantity by Year



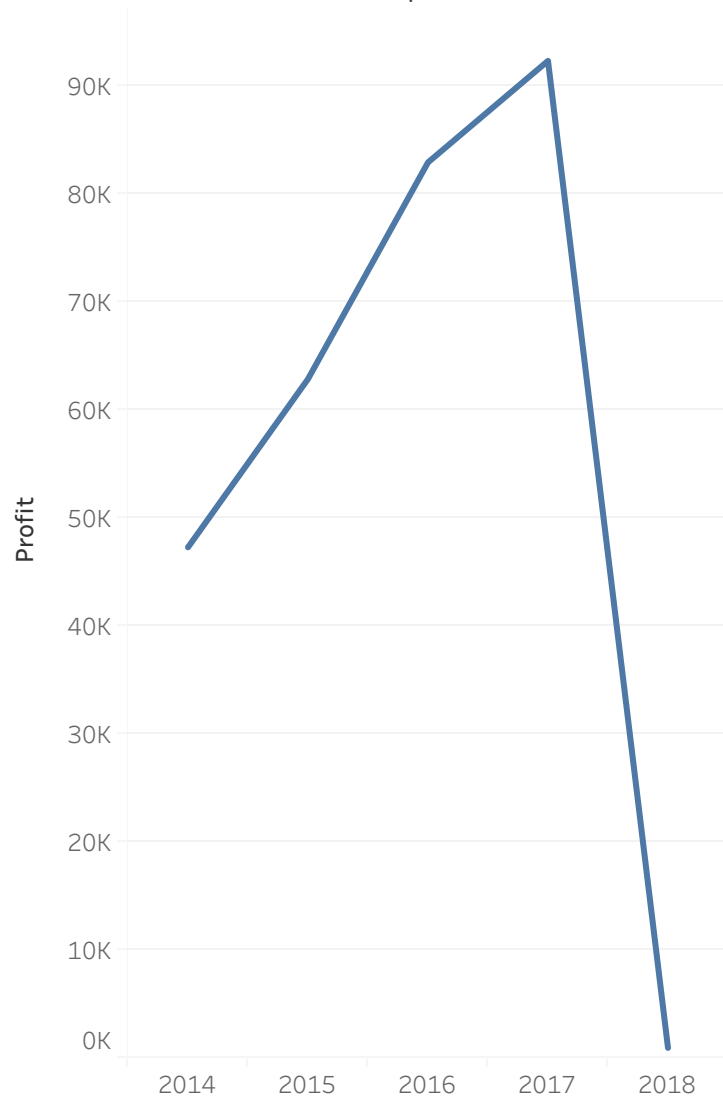
Annual Sales

Ship Date

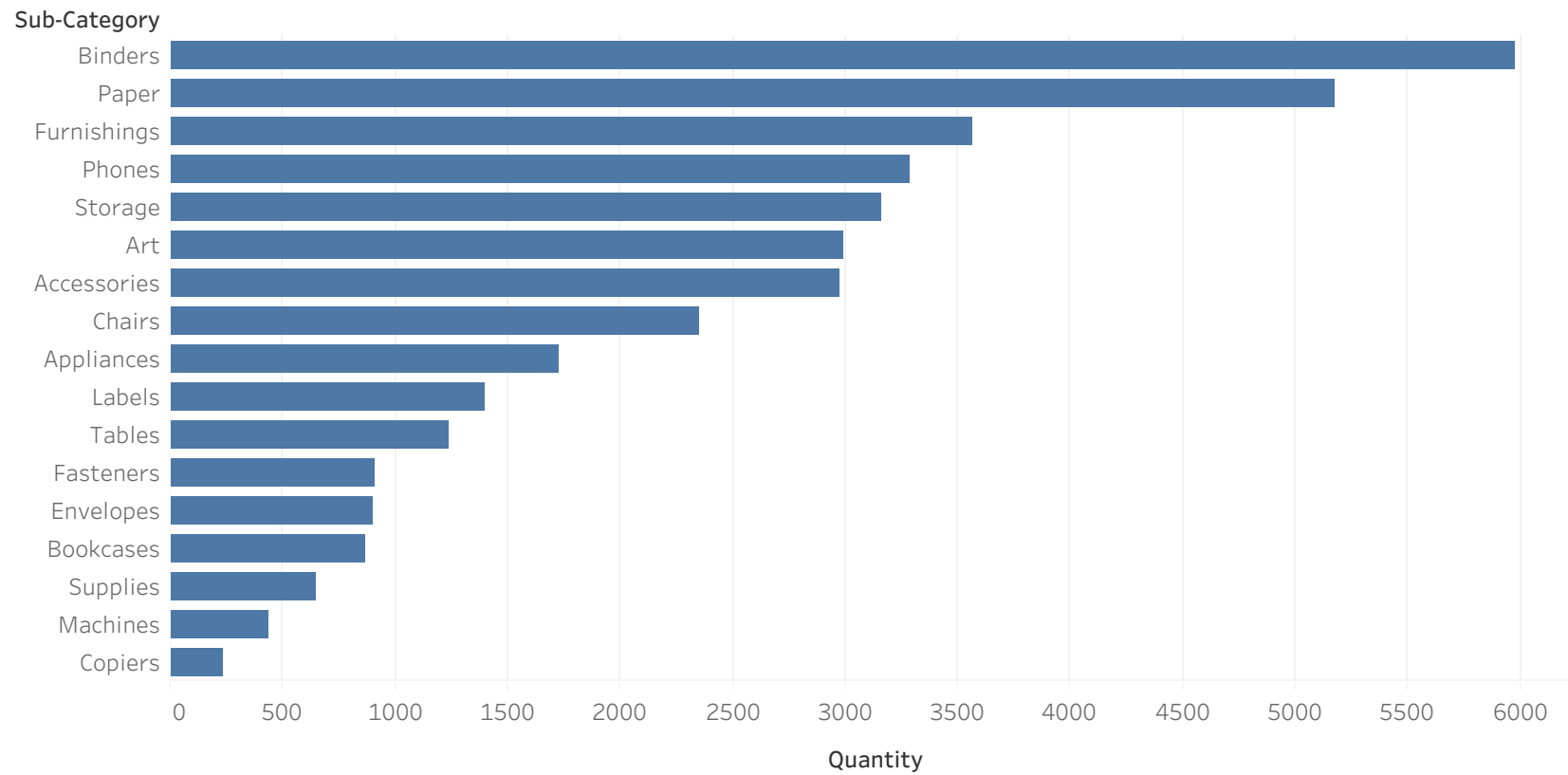


Annual Profit


Ship Date



SubCategories by Sales Quantity




Top 10% Customers by Sales

Customer Name		Profit
Sean Miller	25,043	 -4,109 8,981
Tamara Chand	19,052	
Raymond Buch	15,117	
Tom Ashbrook	14,596	
Adrian Barton	14,474	
Ken Lonsdale	14,175	
Sanjit Chand	14,142	
Hunter Lopez	12,873	
Sanjit Engle	12,209	
Christopher Conant	12,129	
Todd Sumrall	11,892	
Greg Tran	11,820	
Becky Martin	11,790	
Seth Vernon	11,471	
Caroline Jumper	11,165	
Clay Ludtke	10,881	
Maria Etezadi	10,664	
Karen Ferguson	10,604	
Bill Shonely	10,502	
Edward Hooks	10,311	
John Lee	9,800	
Grant Thornton	9,351	
Helen Wasserman	9,300	
Tom Boeckenhauer	9,134	
Peter Fuller	9,063	
Christopher Martinez	8,954	
Justin Deggeller	8,828	
Joe Elijah	8,698	
Laura Armstrong	8,673	
Pete Kriz	8,647	
Daniel Raglin	8,351	


Top 10% Customers by Sales

Customer Name		Profit
Natalie Fritzler	8,323	
Karen Daniels	8,282	
Nick Crebassa	8,242	
Harry Marie	8,237	
Keith Dawkins	8,181	
Sean Braxton	8,058	
Zuschuss Carroll	8,026	
Joseph Holt	7,955	
Nora Preis	7,903	
Anna Häberlin	7,888	
Adam Bellavance	7,756	
Jim Epp	7,755	
Jane Waco	7,722	
Lena Creighton	7,663	
John Murray	7,625	
Jonathan Doherty	7,611	
Patrick O'Brill	7,474	
Maribeth Schnelling	7,444	
Rick Wilson	7,397	
Brian Moss	7,294	
Paul Prost	7,253	
Natalie Webber	7,234	
Dean percer	7,199	
Fred Hopkins	6,987	
Rick Huthwaite	6,979	
Penelope Sewall	6,844	
Brenda Bowman	6,766	
Joel Eaton	6,761	
Yana Sorensen	6,720	
Andy Reiter	6,608	
Dan Reichenbach	6,528	


Top 10% Customers
by Sales

Customer Name		Profit
Grace Kelly	6,497	
Joseph Airdo	6,491	
Nathan Mautz	6,459	
Valerie Dominguez	6,442	
Sarah Brown	6,411	
James Galang	6,366	
Darrin Martin	6,345	
Corinna Mitchell	6,340	
Max Jones	6,321	
Brosina Hoffman	6,255	
Rob Lucas	6,235	
William Brown	6,160	
Victoria Wilson	6,134	
Shirley Daniels	6,121	
Quincy Jones	6,108	
Alan Dominguez	6,107	
Cassandra Brandow	6,076	

Top 10% Customers
by Profit

Customer Name		Sales	
Tamara Chand	8,981		
Raymond Buch	6,976		
Sanjit Chand	5,757	3,419	19,052
Hunter Lopez	5,622		
Adrian Barton	5,445		
Tom Ashbrook	4,704		
Christopher Martinez	3,900		
Keith Dawkins	3,039		
Andy Reiter	2,885		
Daniel Raglin	2,869		
Tom Boeckenhauer	2,798		
Nathan Mautz	2,752		
Sanjit Engle	2,651		
Bill Shonely	2,616		
Harry Marie	2,438		
Todd Sumrall	2,372		
Brian Moss	2,199		
Christopher Conant	2,177		
Jane Waco	2,174		
Helen Wasserman	2,164		
Greg Tran	2,163		
Laura Armstrong	2,059		
Adam Bellavance	2,055		
Fred Hopkins	2,050		
Pete Kriz	2,038		
Steven Roelle	1,990		
Shirley Daniels	1,985		
Clay Ludtke	1,934		
Robert Marley	1,903		
Alan Dominguez	1,870		
Maria Etezadi	1,859		

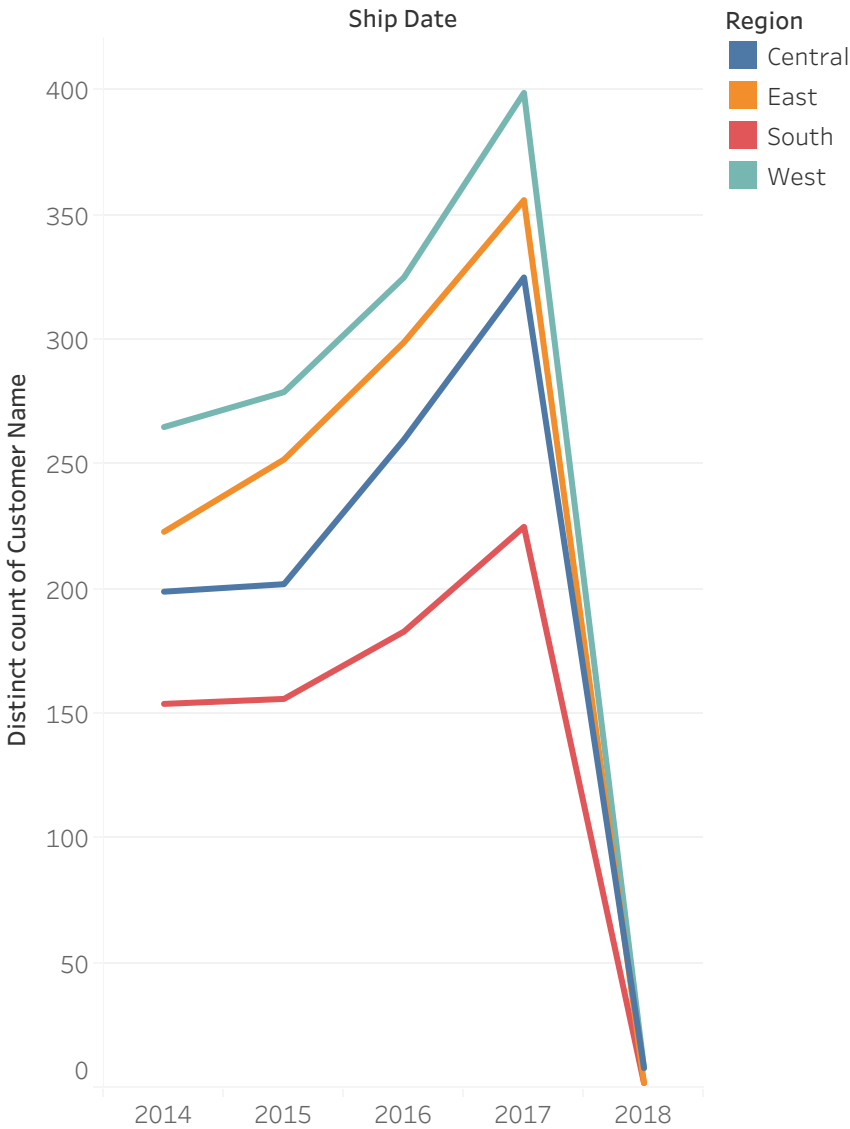
Top 10% Customers
by Profit

Customer Name		Sales	
Mark Cousins	1,802		
Yana Sorensen	1,778		
Katrina Willman	1,756		
Penelope Sewall	1,743		
Darrin Martin	1,677		
Mitch Willingham	1,666		
Karen Ferguson	1,660		
Dan Reichenbach	1,642		
Jim Epp	1,623		
Justin Deggeller	1,620		
Valerie Dominguez	1,618		
Rick Wilson	1,587		
John Murray	1,575		
Corinna Mitchell	1,572		
Dennis Pardue	1,572		
Ben Ferrer	1,538		
Paul Prost	1,495		
Bill Eplett	1,488		
Grace Kelly	1,449		
James Galang	1,416		
Edward Hooks	1,394		
Amy Cox	1,366		
Dianna Wilson	1,349		
Eugene Moren	1,319		
Denise Monton	1,319		
Nick Crebassa	1,315		
Alan Hwang	1,309		
Yoseph Carroll	1,306		
Anna Häberlin	1,298		
Ruben Ausman	1,293		
Pierre Wener	1,290		

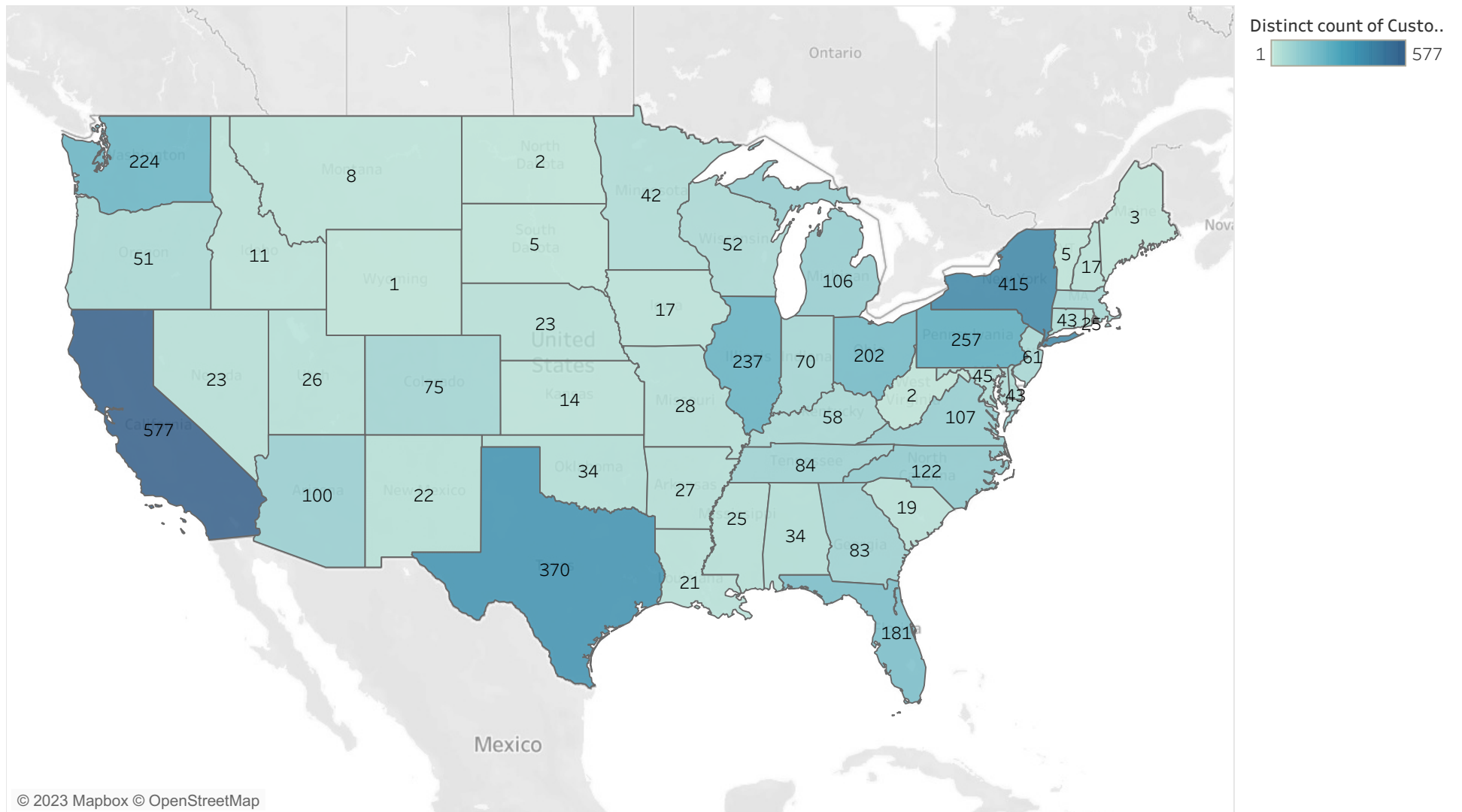
Top 10% Customers
by Profit

Customer Name		Sales	
Rick Huthwaite	1,289	3,419	19,052
Lena Creighton	1,288		
Steven Cartwright	1,277		
Joe Elijah	1,262		
Matt Abelman	1,240		
Mitch Webber	1,238		
Kristen Hastings	1,228		
Jamie Kunitz	1,220		
Frank Carlisle	1,217		
Naresj Patel	1,209		
Roland Schwarz	1,206		
Quincy Jones	1,204		
Seth Vernon	1,199		
Harold Ryan	1,197		
Dave Hallsten	1,194		
Gary Hwang	1,176		
Jim Kriz	1,173		

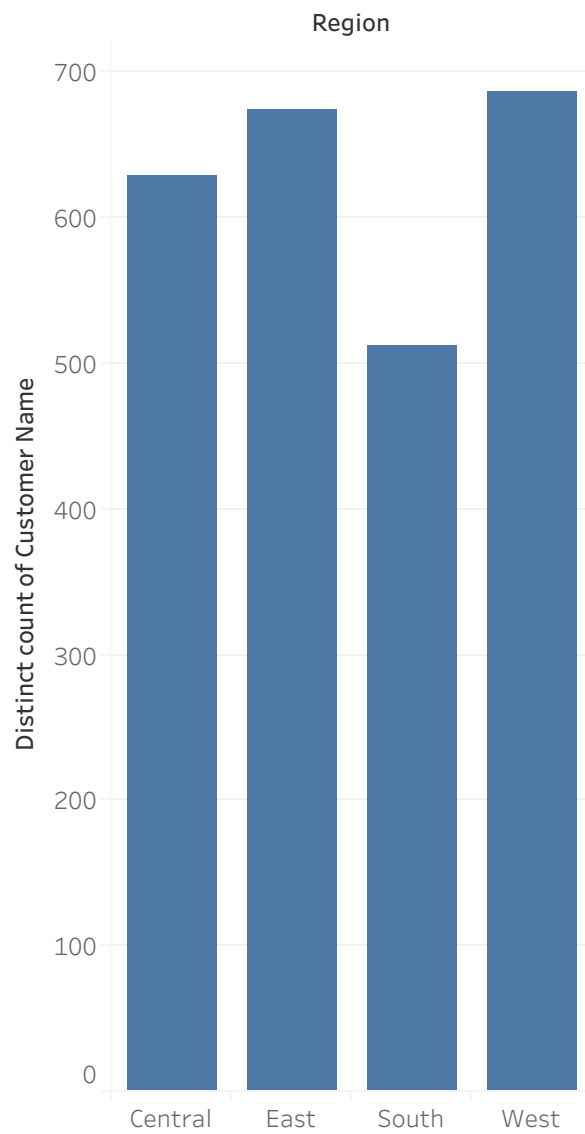
Count Distinct Customers Over Time



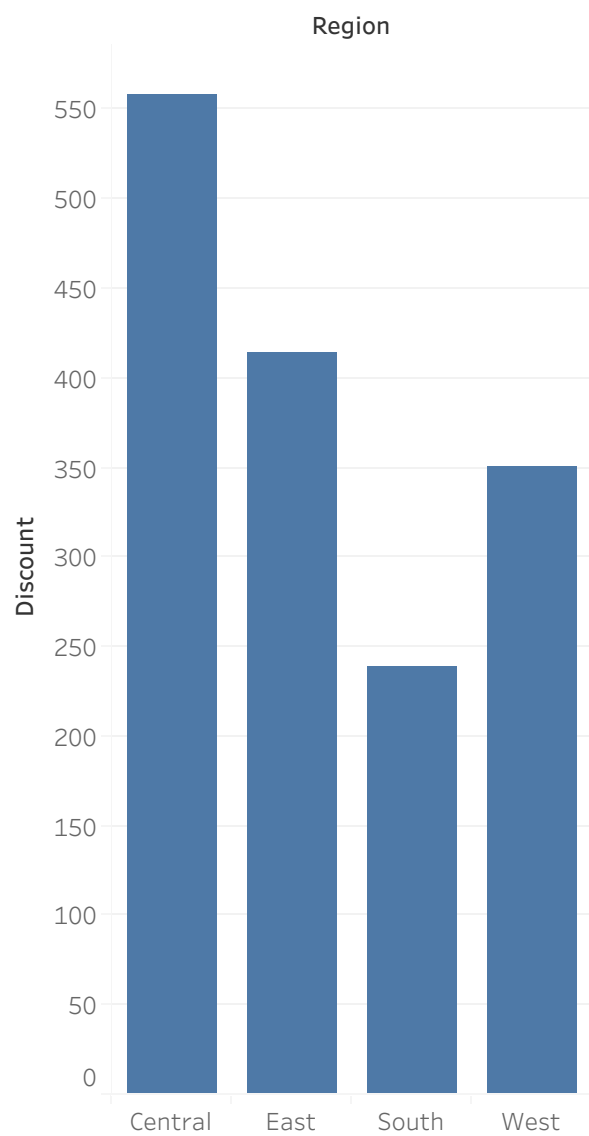
Distinct Customers by Location



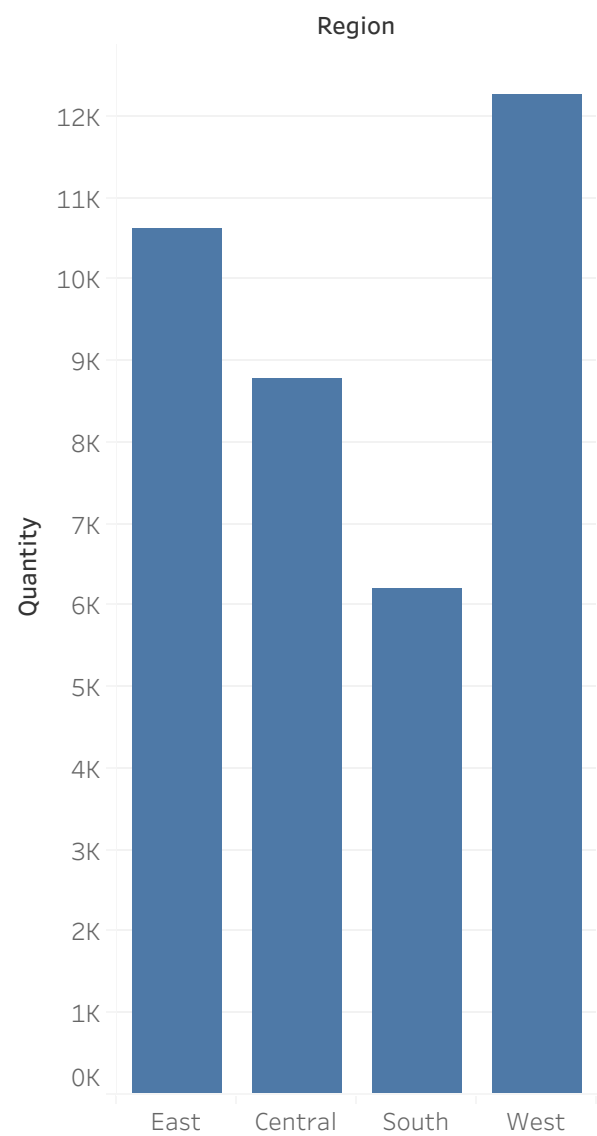
Distinct Customers by Region



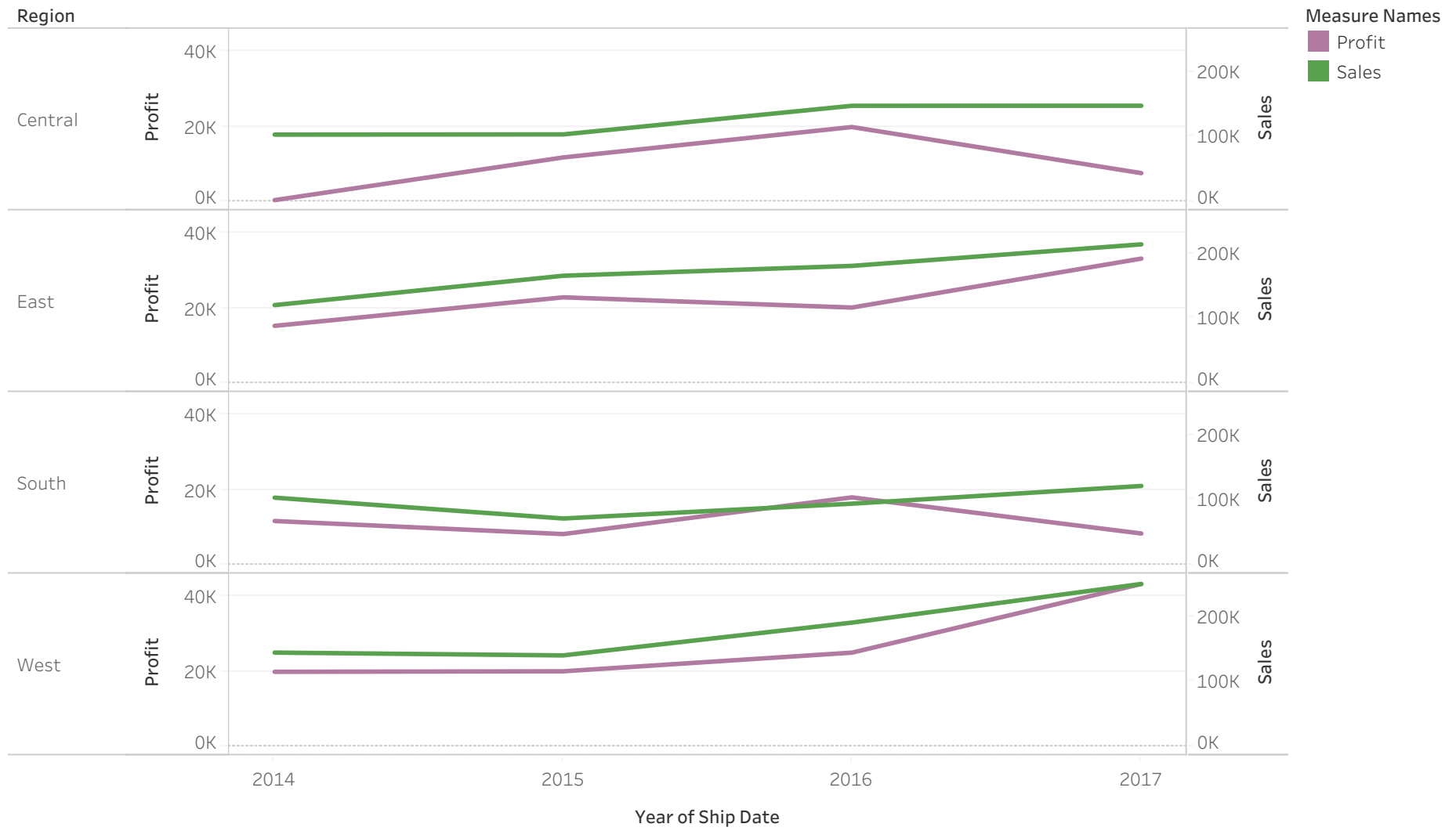
Discounts by Region



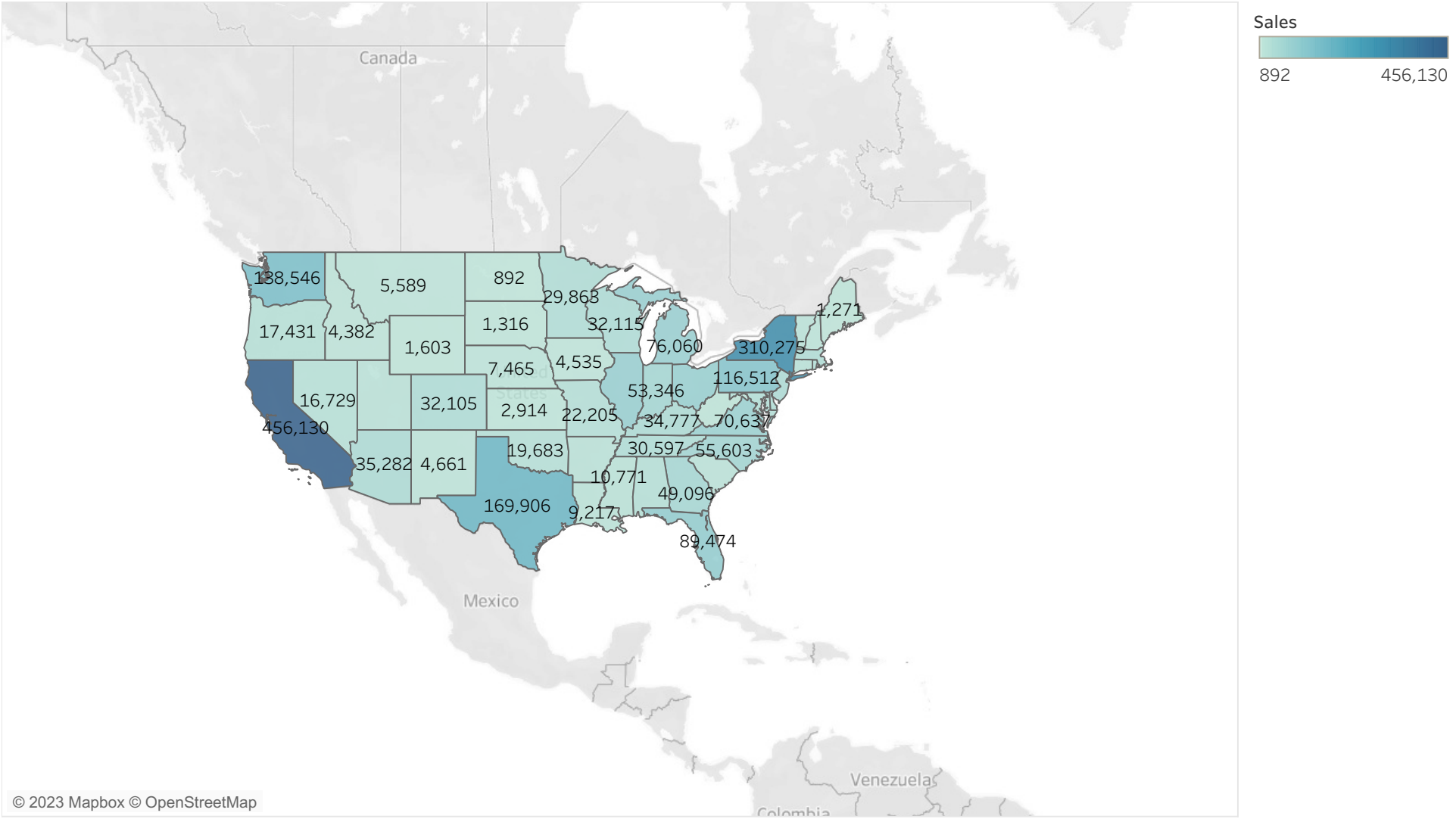
Regional: QxReg



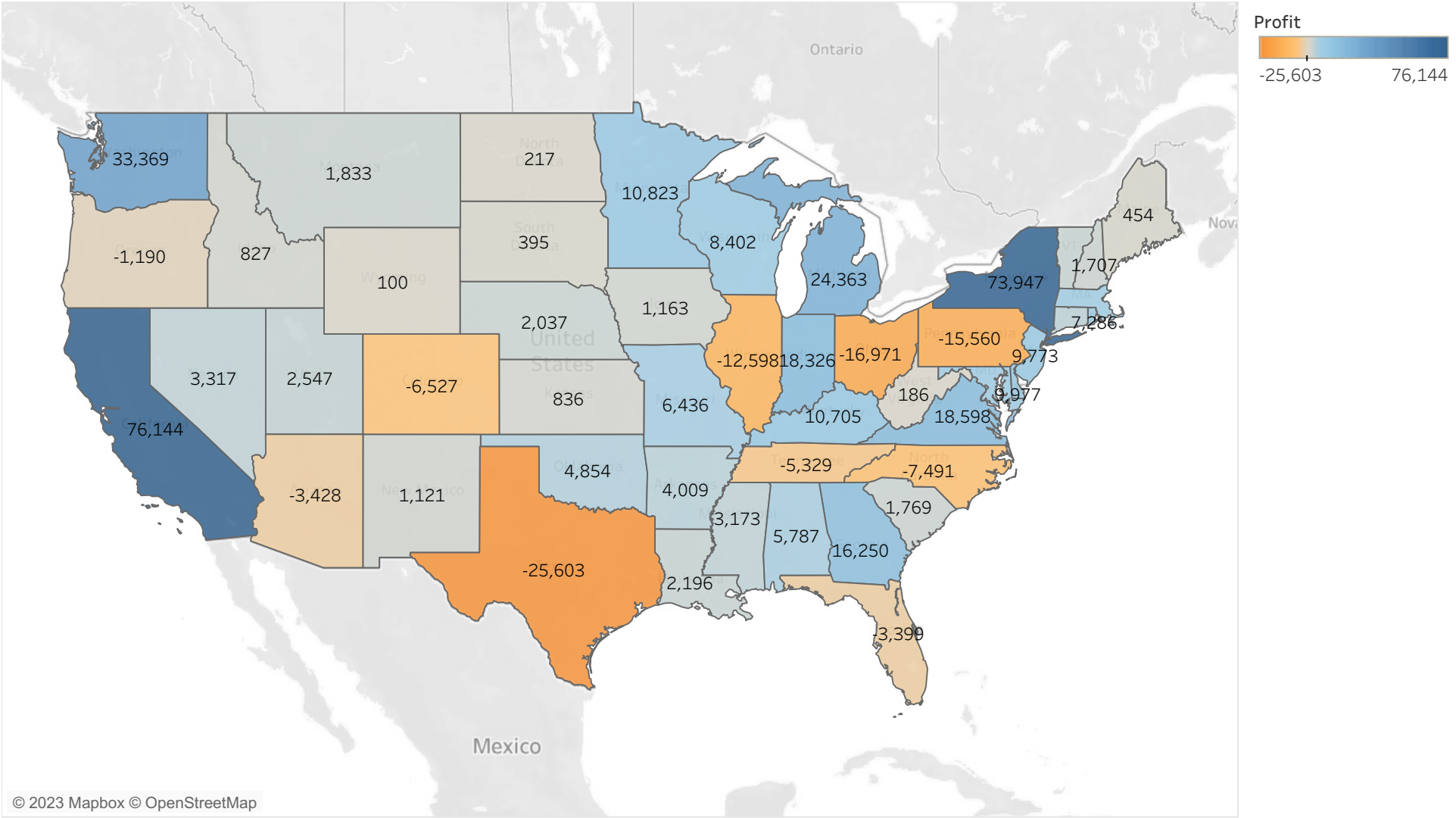
Profit and Sales by Region



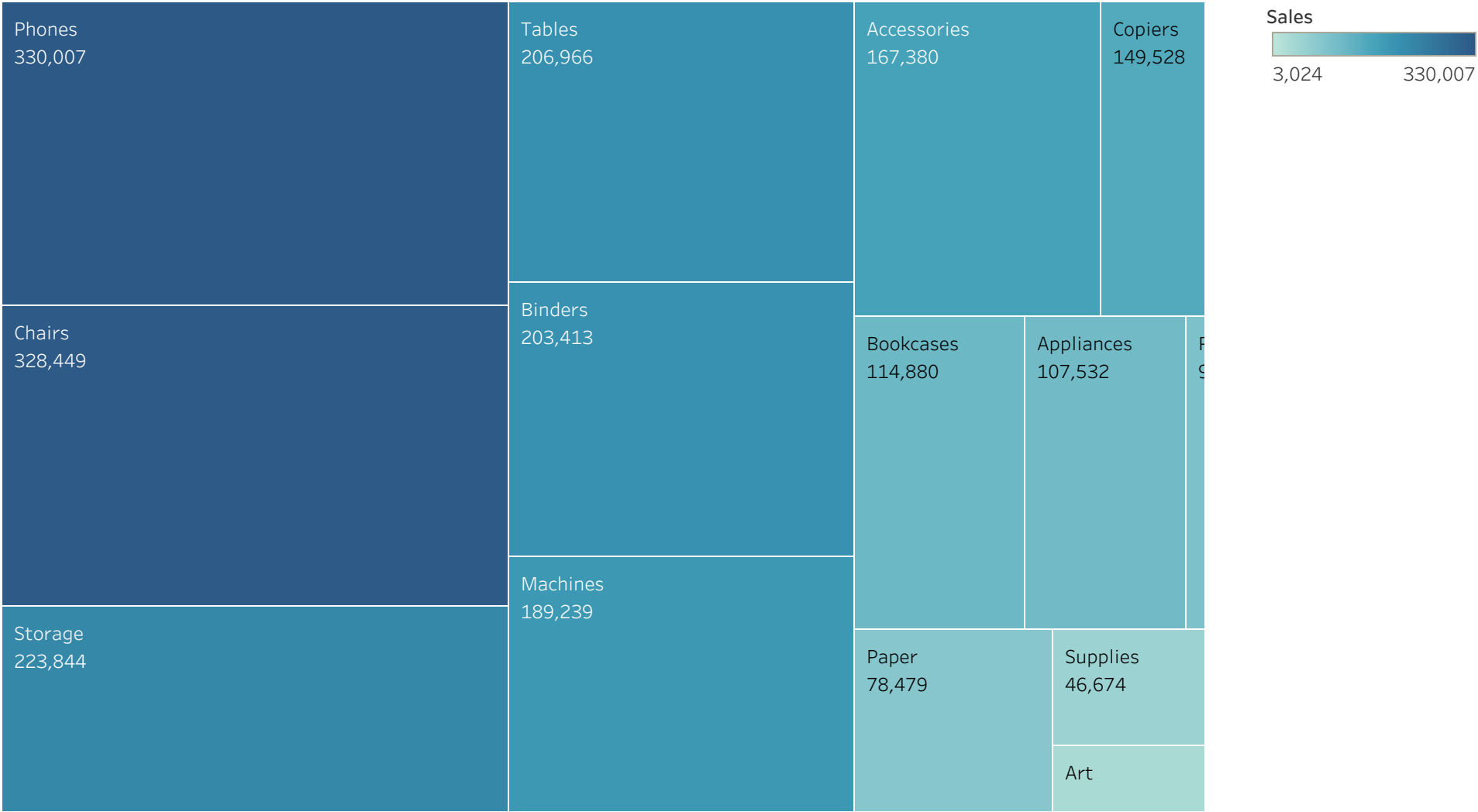
Sales By State



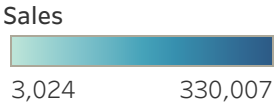
Profit by State



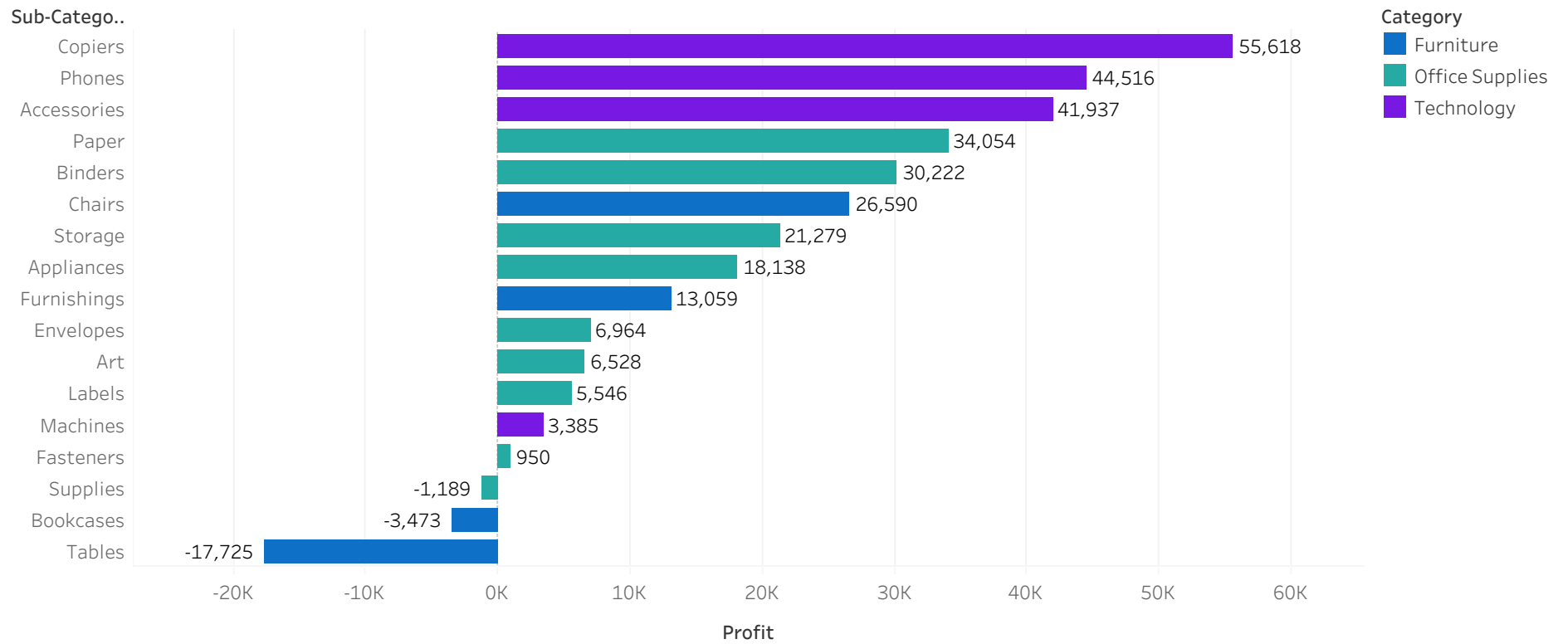
Sales by SubCategory



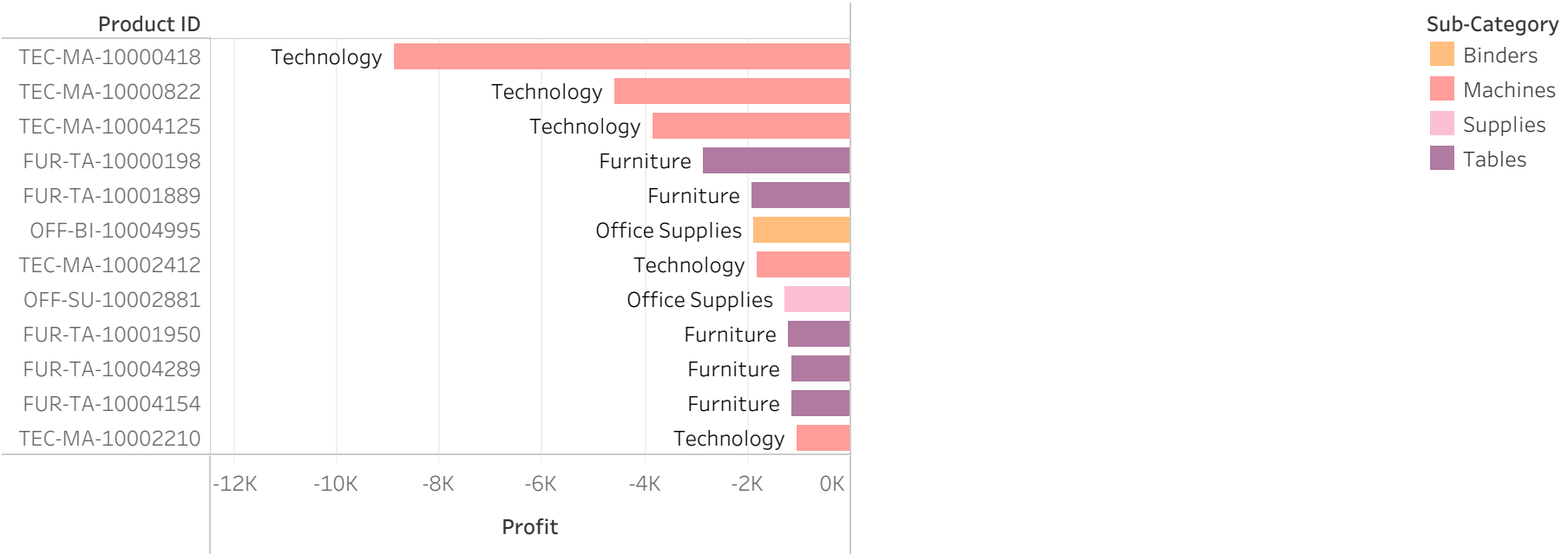
Sales by SubCategory



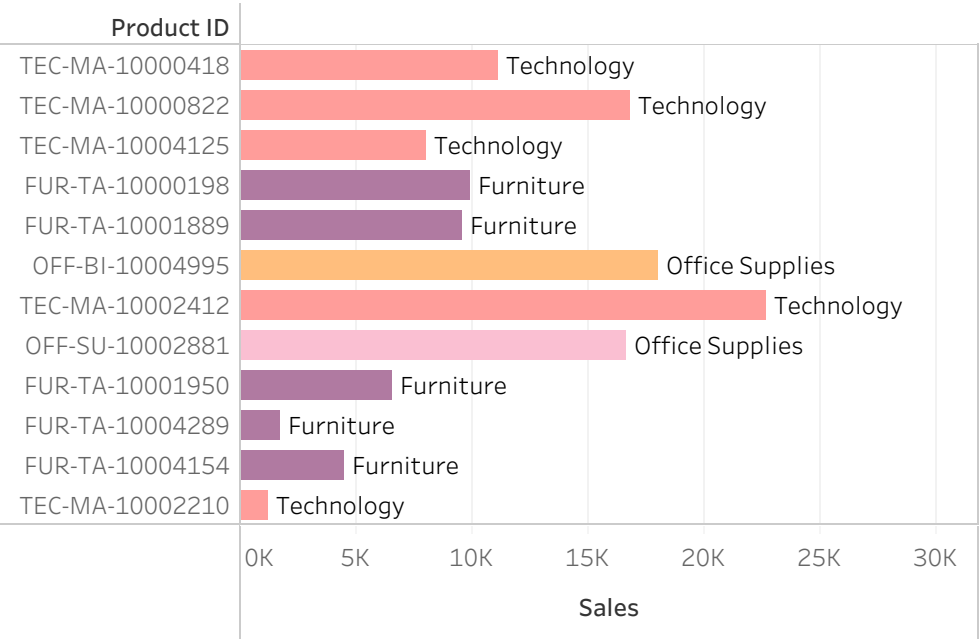
Profit by SubCategory



Profit and Sales by Product

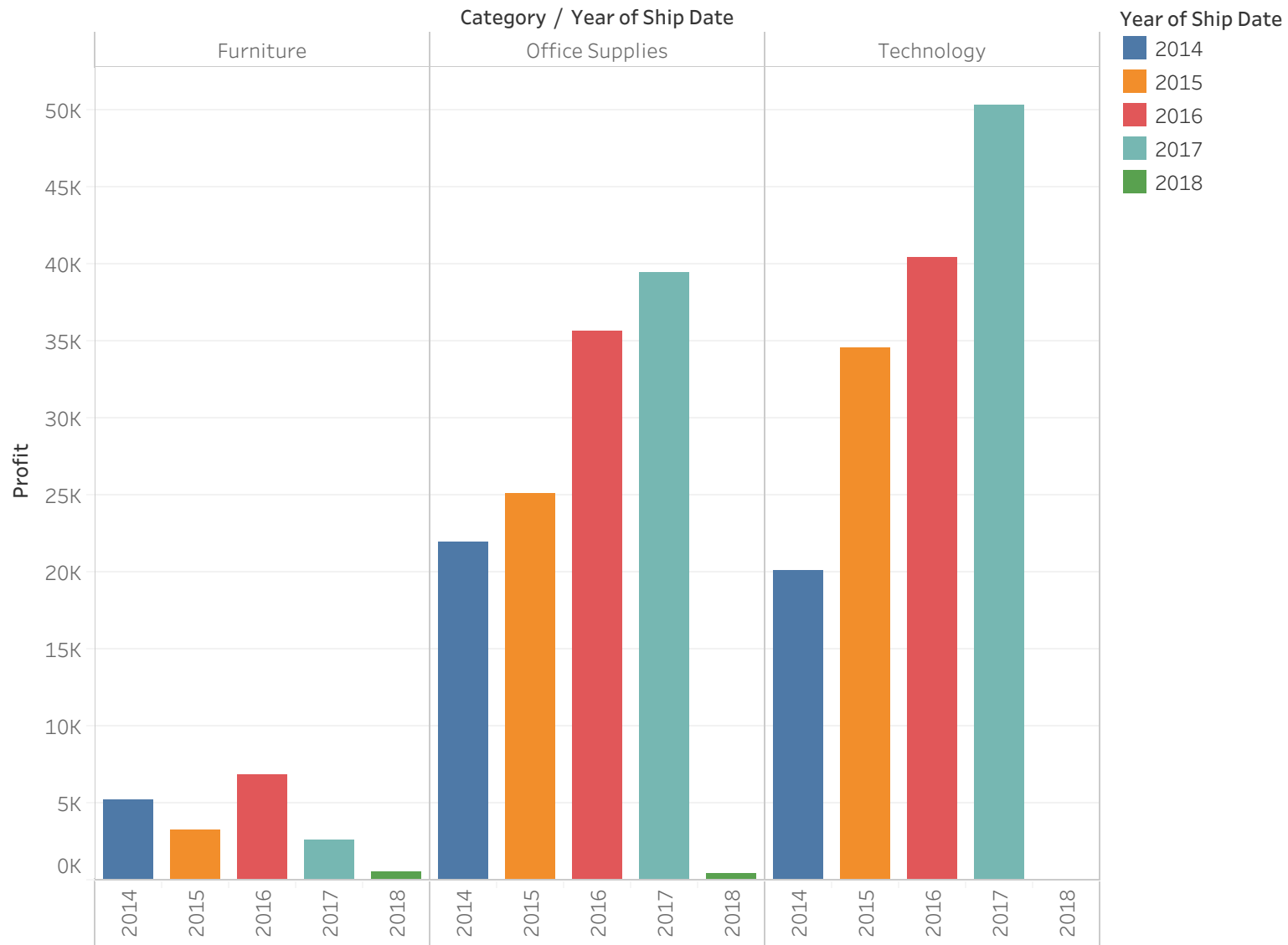


Profit and Sales by Product

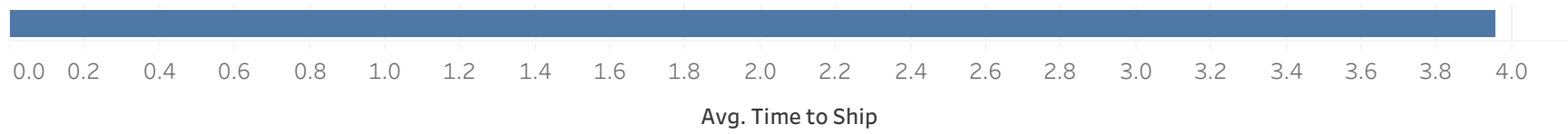


- Sub-Category
- Binders
 - Machines
 - Supplies
 - Tables

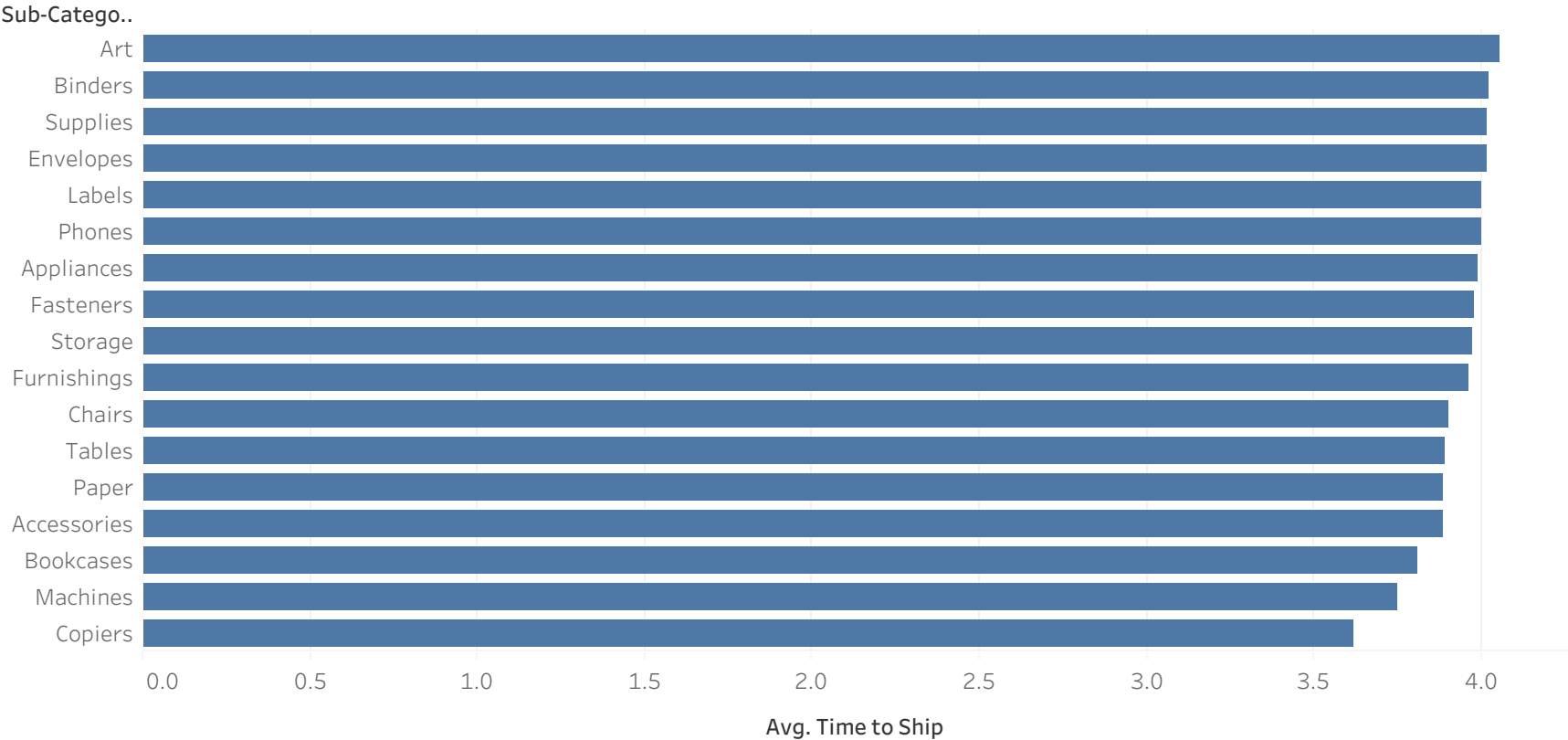
Profit by Category



Days From Order to Ship: Company Average



Avg Days From Order to Ship by SubCategory



Sample Sales Data Set

Erin Howland

Steps, Goals, and Choices

General Steps

- * Determine available data
- * What visualizations and analysis might be available and logical
- * Create visuals
- * What questions arise and do we have enough data to answer those questions?
- * Create questions/insight statements to guide client where they might want to look a little deeper and/or provide additional data for more complete analysis

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Without a specific target audience it is difficult to put together a sample of what I would produce for a client. Executives will want to know different things and be presented to differently than would a regional manager or a department head, for example. For this reason, I will try to include a variety of visuals and filtering options that get into four primary categories: supply chain management, operational standards, customers, and growth as a company.

Choices

Profit and Sales

In most cases, I have chosen to put sales and profit data side-by-side. Profit cannot occur without sales so these two are, by nature, inextricably linked. I have also chosen to do this so that a client can see which products might be a higher priority to optimize in order to get a higher profit margin. Depending on who this data is presented to, however, I may have made different choices in how segregated the sales and profit data is. If I was asked to give a presentation that was specifically geared toward sales managers, then marrying sales and profit together as I've chosen to do here would not necessarily be the most useful choice, though executives and operations managers would be more likely to find my chosen presentation more useful.

Time Slices: Order Date vs Ship Date

When thinking about time slices, I have used a mix of order date and ship date. I have tried to use ship date when it comes to presenting data that shows in financials since generally speaking, revenue, and therefore profits, are not realized until a good/service is turned over to the customer. Without detail on specific policy regarding whether the company uses Free on Board (FOB) shipping point or FOB destination and because we are lacking let shipping destination date data, I am making the assumption that the client is using FOB shipping policy, which means the customer takes possession at time of shipment rather than time of receipt.

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The Data

* Data has been provided and is current as of Q1 2018

* The sales data has three tables: **Orders** (fact table), **People** (dimension table), and **Returns** (dimension table)

* I created relationships between the tables for analysis

* I did the initial data exploration by both looking at the data itself in its original format and through visualization to determine things like whether there was missing data, what outliers might exist, and general things to think about as I move forward. Some of visuals I used are shown on the next story point.

Orders

The **Orders** table is a fact table, so most of the useful data is here (customer, order details, sales, and profit). When thinking about what most executives and managers would be interested in, this is the table that will be a primary focus because of its direct tie to the financial well-being of the company.

People

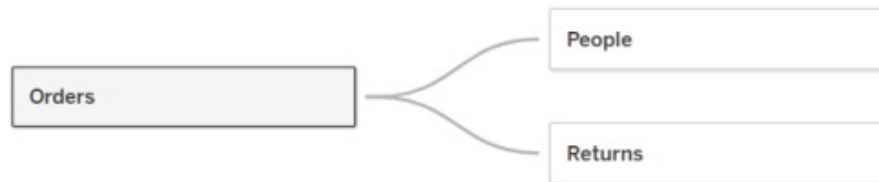
The **People** dimension table appears to show regional or district managers. This would be helpful if/when we find insights about a specific state/region so the client knows where to direct further questions. We would need more context as to the role of these people before we can dig further for analysis - for example:

- * Are they directly responsible for being able to offer discounts?
- * Are they running a warehouse and creating budgets and therefore have direct control over operational expenses (OpEx)?

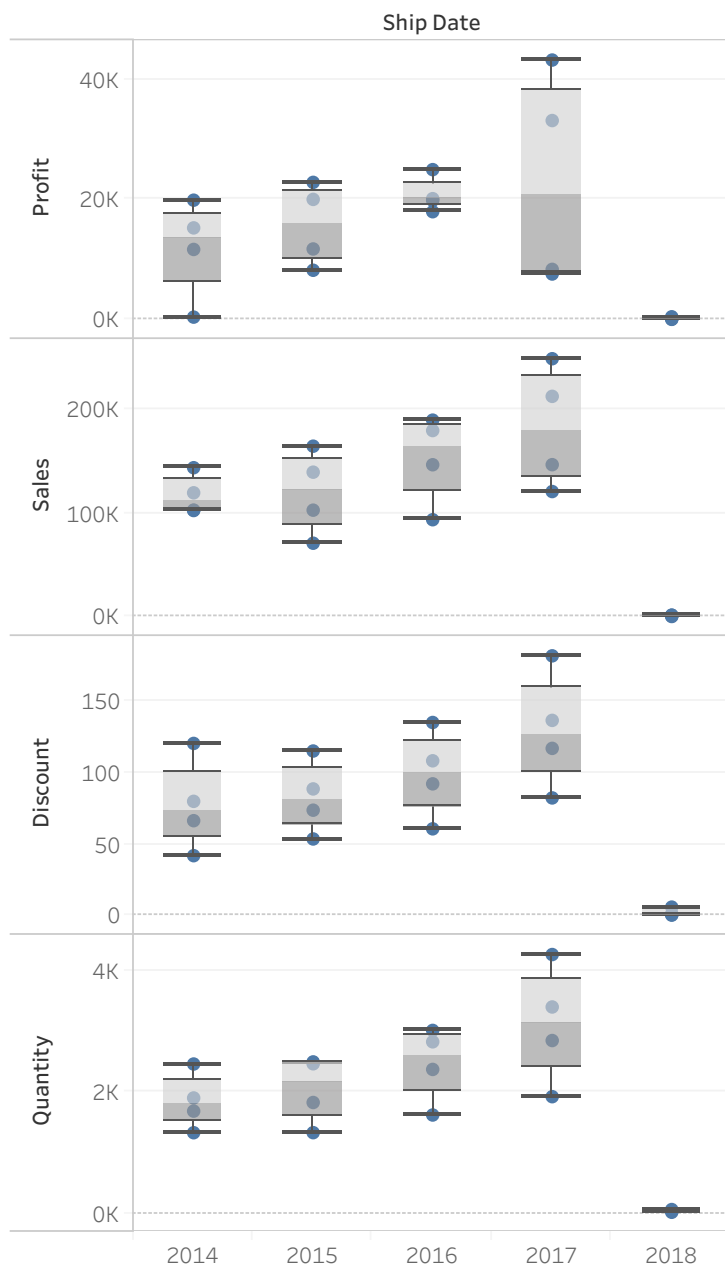
Returns

The **Returns** dimension table contains *Order ID* and a *Return Status*. The granularity for this table is at the *Order ID* level, so it's impossible to tell whether the entire order was returned or if a subset of the items orders was returned. Because of this, we cannot reliably assign any dollar value to the return despite being able to match to the **Orders** table on *Order ID*. We can, however, use this to find customer patterns regarding returns (e.g. serial returners or segments with higher than normal return rates). Because of the mismatch of granularity between the **Orders** and **Returns** tables, I did not factor for returns in *Sales* and *Profit* analysis. Were this to be a real-life situation, I would work with data engineering to see if I could get the required granularity to conduct and more thorough analysis.

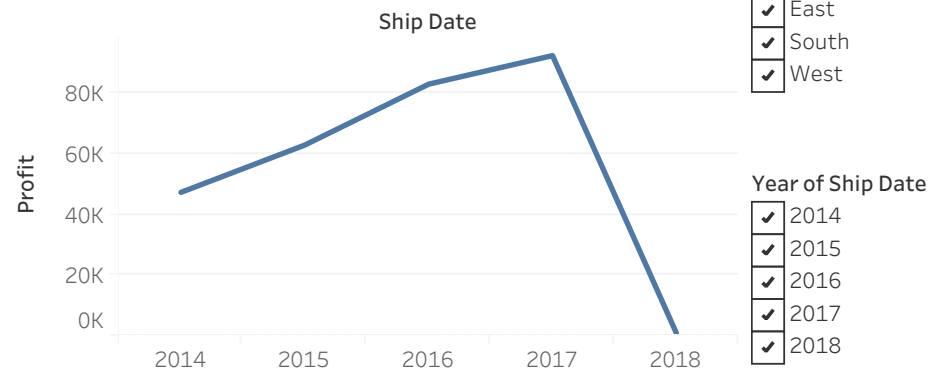
Orders+ (Sample_Data_Set)



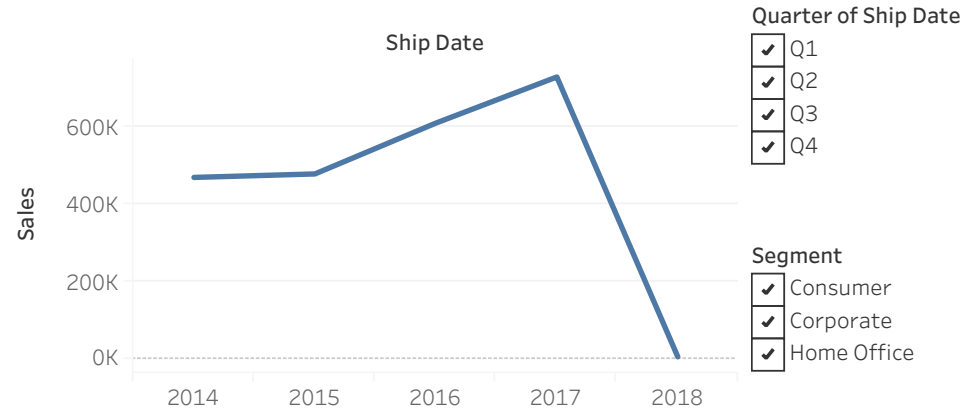
Avg Profit, Sales, Discount, and Quantity by Year



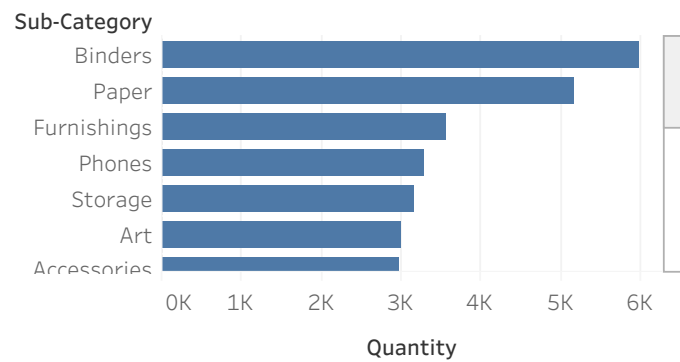
Annual Profit



Annual Sales



SubCategories by Sales Quantity



Supply Chain Management: Shipping

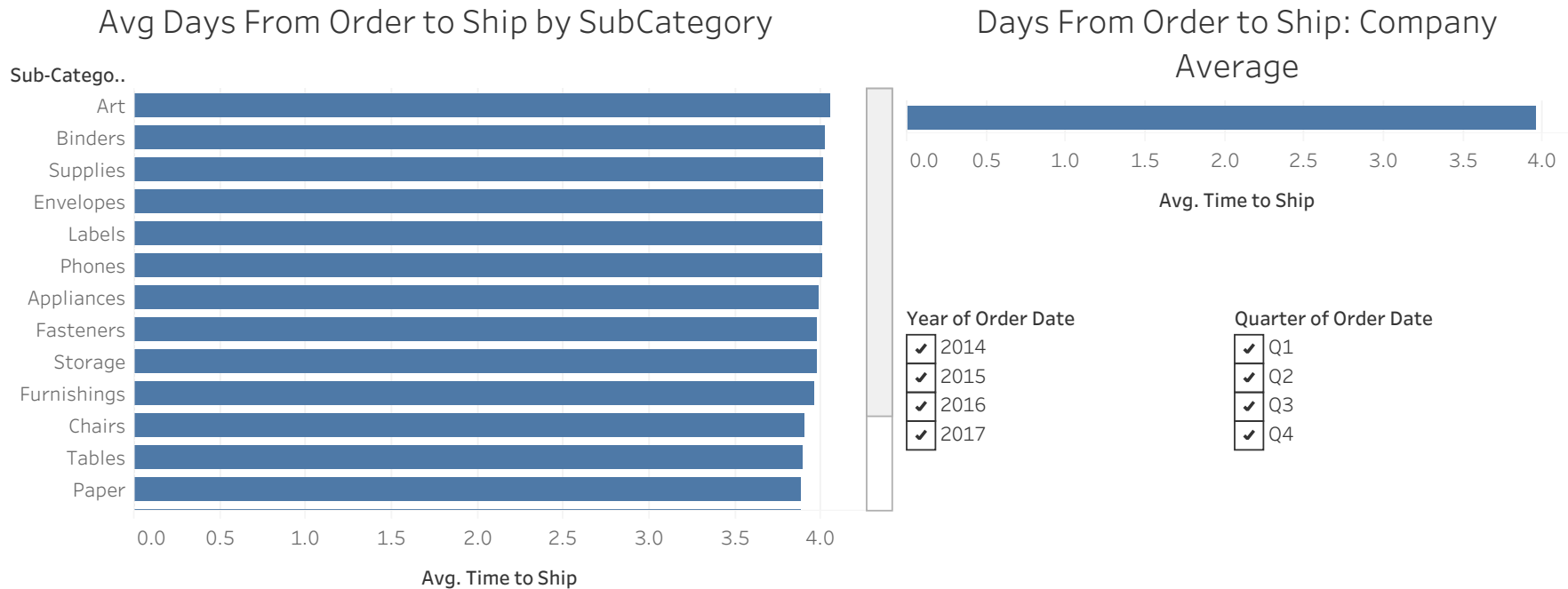
Turnaround from order date to shipping date is a way to evaluate supply chain management by showing whether there are issues with:

- * System - is the order system is working appropriately, both for upstream and downstream orders?
- * Staffing - is there is proper staffing to handle order volume in a time frame the company has determined appropriate?
- * Supply - are there known or potential issues upstream that would cause downstream problems they may need to alert customers to in order to manage expectations?

Supply chain issues could also ultimately have an effect on profitability of an order if, for example, steep discounts were given to offset longer than normal wait time.

Insights

Nothing in particular stands out here. Average days between order date and ship date are fairly consistent. I don't think there's anything I would point out to this client here unless I learned of something that would be of value for them to address unless they provided more information that would give context to these figures. For example, is their average shipping over industry standard or do they want to implement a new policy to decrease the turnaround to 2 days but they're also considering layoffs in that department?



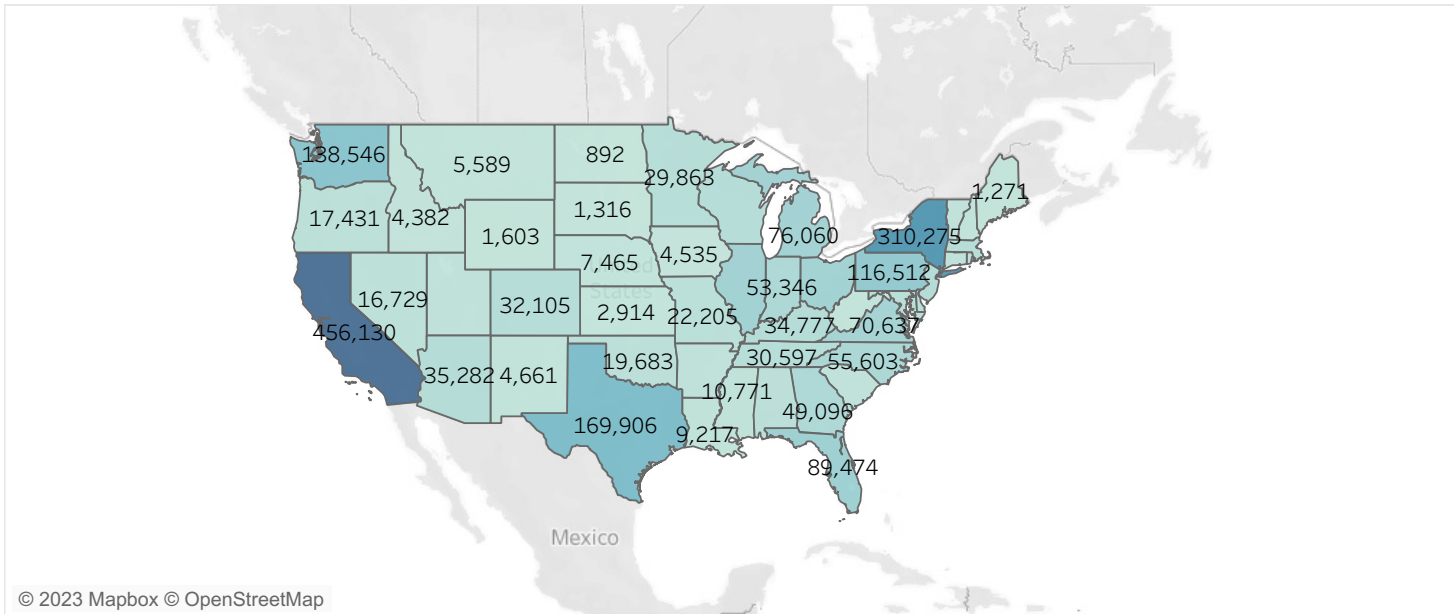
Geography

The purpose of this is to see at a high level where things are happening - this focuses solely on state and regional information regarding profit and sales.

Insights

We can see that the company is operating within the contiguous US. Domestically, Alaska, Hawaii, and US territories are open for growth as are Canada and Mexico if the client is open to nearby international expansion. We might want to consider why this client isn't operating in those areas yet. Some potential topics we may want to raise on this issue include competitors, cost (of shipping, legal fees tied to new markets, operations), capacity, and goals (e.g. is the goal to better penetrate areas that are easier to ship to before expanding to routes that may be more logistically complex?).

Sales By State



Region

- ☒ Central
- ☒ East
- ☒ South
- ☒ West

Profit

-25,729.3563 to 76,381...

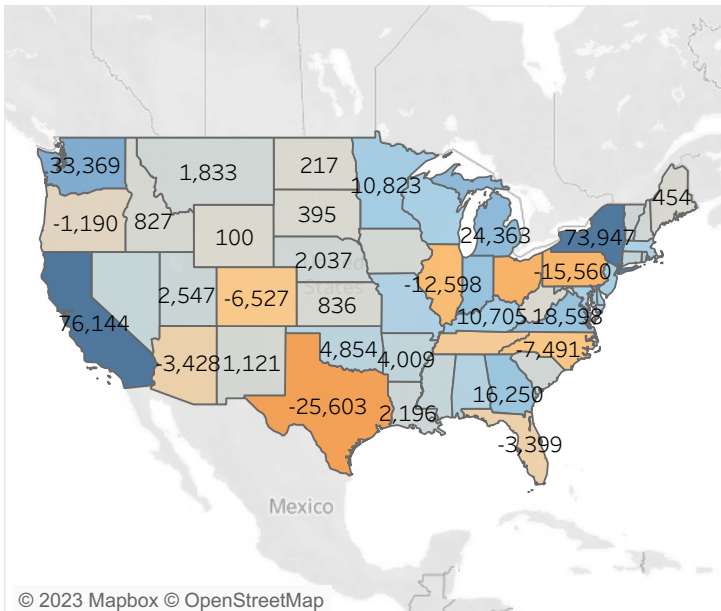
Year of Ship Date

- | | |
|-------------------------------------|------|
| <input checked="" type="checkbox"/> | 2014 |
| <input checked="" type="checkbox"/> | 2015 |
| <input checked="" type="checkbox"/> | 2016 |
| <input checked="" type="checkbox"/> | 2017 |
| <input type="checkbox"/> | 2018 |

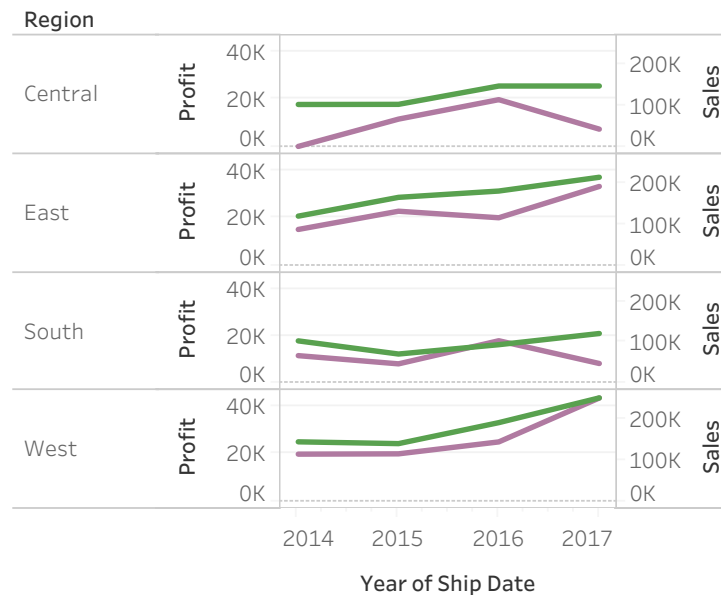
Quarter of Ship Date

- | | |
|---|----|
| ✓ | Q1 |
| ✓ | Q2 |
| ✓ | Q3 |
| ✓ | Q4 |

Profit by State



Profit and Sales by Region



Segment

- ✓ Consumer
- ✓ Corporate
- ✓ Home Office

Sales



Profit

Measure Names

- Profit
- Sales

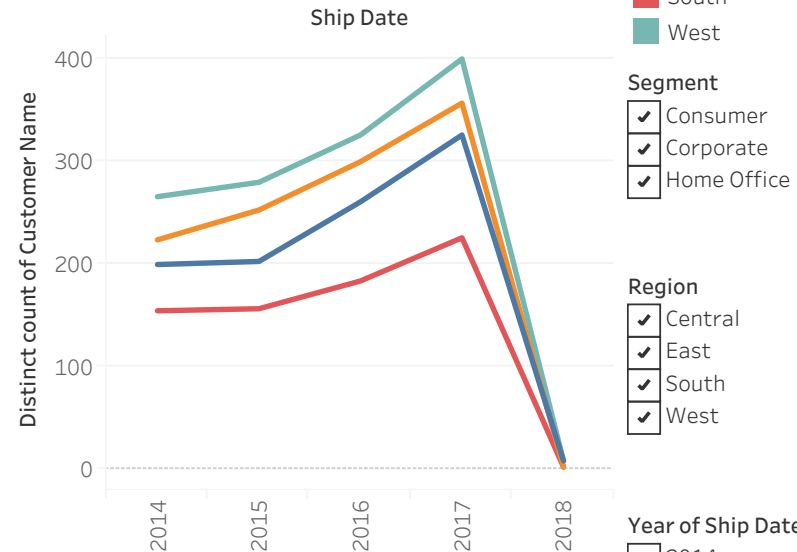
Top 10% Customers by Profit

Customer Name	Profit
Tamara Chand	8,981
Raymond Buch	6,976
Sanjit Chand	5,757
Hunter Lopez	5,622
Adrian Barton	5,445
Tom Ashbrook	4,704
Christopher Martinez	3,900
Keith Dawkins	3,039
Andy Reiter	2,885
Daniel Raglin	2,869
Tom Boeckenhauer	2,798
Nathan Mautz	2,752
Sanjit Engle	2,651
Bill Shonely	2,616
Harry Marie	2,438
Todd Sumrall	2,372
Brian Moss	2,199
Christopher Conant	2,177
Jane Waco	2,174
Helen Wasserman	2,164
Greg Tran	2,163
Laura Armstrong	2,059
Adam Bellavance	2,055
Fred Hopkins	2,050
Pete Kriz	2,038
Steven Roelle	1,990
Shirley Daniels	1,985
Clay Ludtke	1,934
Robert Marley	1,903

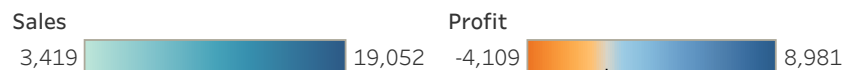
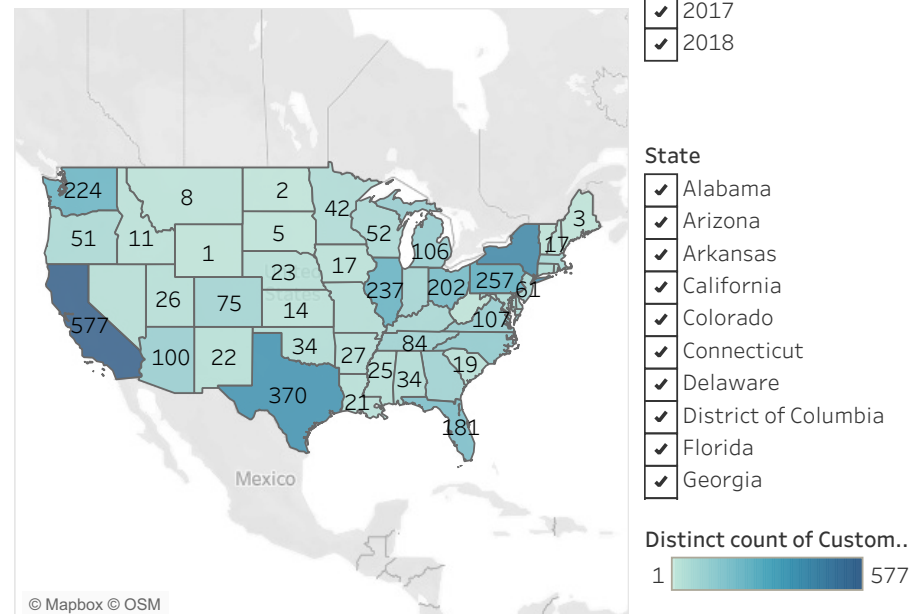
Top 10% Customers by Sales

Customer Name	Sales
Sean Miller	25,043
Tamara Chand	19,052
Raymond Buch	15,117
Tom Ashbrook	14,596
Adrian Barton	14,474
Ken Lonsdale	14,175
Sanjit Chand	14,142
Hunter Lopez	12,873
Sanjit Engle	12,209
Christopher Conant	12,129
Todd Sumrall	11,892
Greg Tran	11,820
Becky Martin	11,790
Seth Vernon	11,471
Caroline Jumper	11,165
Clay Ludtke	10,881
Maria Etezadi	10,664
Karen Ferguson	10,604
Bill Shonely	10,502
Edward Hooks	10,311
John Lee	9,800
Grant Thornton	9,351
Helen Wasserman	9,300
Tom Boeckenhauer	9,134
Peter Fuller	9,063
Christopher Martinez	8,954
Justin Deggeller	8,828
Joe Elijah	8,698
Laura Armstrong	8,673

Count Distinct Customers Over Time



Distinct Customers by Location



Customers

An important aspect of any organization is to understand its customers. Some of the most basic questions that we can start with regardless of organization type include:

- * WHO are the customers (names, demographics, client type, etc.)?
- * WHAT do they want/need?
- * WHEN do they want/need those products/services (e.g. is it constant, cyclical, dependent on disposable income, etc.) and WHEN do they engage with us?
- * WHERE are they located?
- * WHY are they selecting us?
- * HOW do they engage with us (e.g. social media, mailers, text, phone, etc.) and HOW are they evolving over time?

I have included the top 10% of customers by both *Profit* and *Sales*. Because *Profit* and *Sales* do not always align in a predictable fashion, I have added color coding to the top customers by *Sales* visual to also point out the associated *Profit*, and vice versa for the *Profit* visual. This may be of use should a client choose to investigate why a particular customer may be less profitable than expected given their sales data.

One thing I would point out to this client is that the total number of distinct customers they have in the top right line graph does not match the total number of distinct customers in the map. This is because of the way the distinct count is done. The line graph shows the true number of distinct customers the client has. The map shows distinct customers by state, and many customers are associated with multiple states. Whether this is because they have moved or because they might be ordering for a multi-state company we don't know, but this is something to be aware of when looking at the data and it should be clearly disclosed to the client.

To reduce the number of visuals shown in the story - there is a balance between level of detail presented for decision-making and succinct presentations - I have included customer segments as a filter rather than as a study in and of itself.

Insights

Positive

- * Customers are increasing over time. This may be a result of marketing efforts or it could just be continued presence and therefore brand awareness or anything in between. We'd want to have a decent idea of cause to determine how to move forward; if we had more data, we'd be able to provide this analysis.
- * There are customers in every state, though the customers are fairly concentrated by zip code (chart not shown in presentation). There may be room for increased market penetration but we would want to conduct this study in relation to population density, income, and other demographic data (e.g. census data). For example, we could look at sales by post code in relation to population density to look for cold spots.

Negative

There are several customers who have high sales but represent a disproportionate loss in terms of profit. Why is this occurring and how can we stop it from happening? Without doing a full root cause analysis, it's likely that this may have something to do with discounts and/or products. Discounts reduce profits and if a product has a narrow margin, a discount could make that particular product unprofitable.

Products

Categories

There are three categories of goods this client provides: furniture, office supplies, and technology.

SubCategories

I had wanted to show profit and sales by subcategory using the same kind of visual for continuity, but I noticed that when I did that, three subcategories were missing from the visual: bookcases, tables, and supplies. These three subcategories are not profitable (supplies was in 2014 and 2015 but by 2016 it was no longer profitable) and therefore do not show on the visual I had initially selected. While the visual I had originally selected is great for showing the profitable subcategories, I thought it was important to also draw attention to the ones that were not profitable so a client could look into those and figure out why they aren't profitable (we are unable to provide potential answers for them with the given data) and/or evaluate whether those categories are ones they might want to drop.

Products

There are too many products to examine them all. A better approach is to look at them through their subcategories and categories except if we notice specific things related to specific products that may want to address.

Insights

Positive

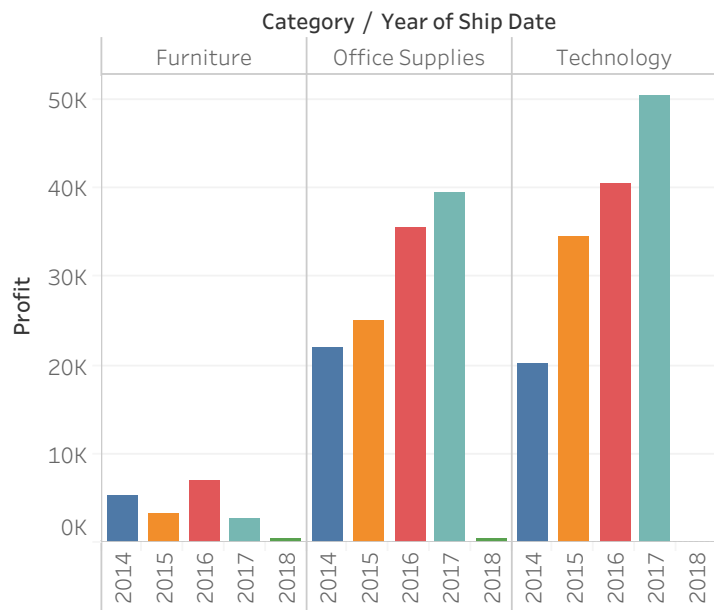
Overall, the company is in the black for profits.

Negative

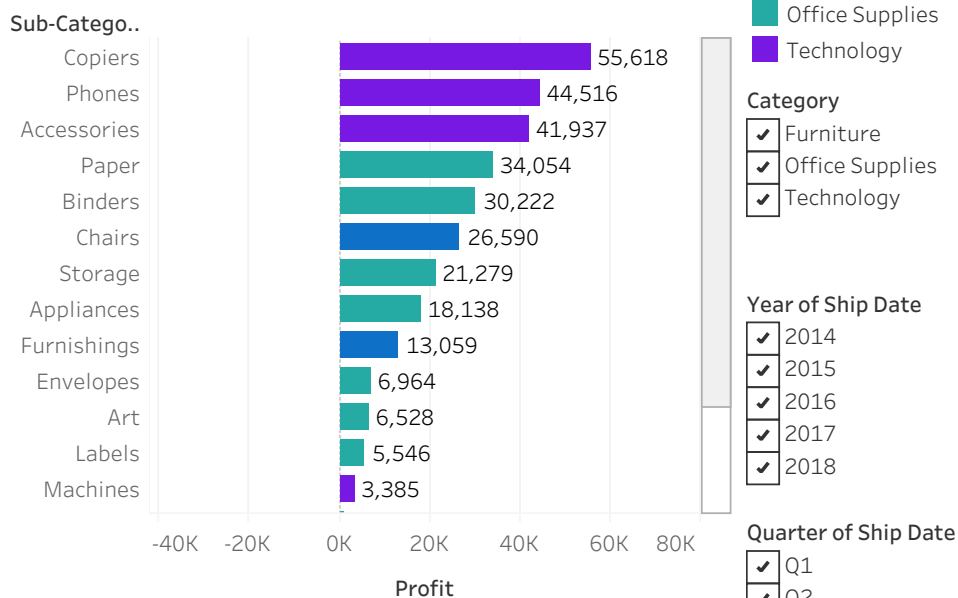
There are three subcategories that are, cumulatively, not profitable: supplies, bookcases, and tables. When we look at individual years, notice that tables have always been unprofitable while bookcases and supplies has been inconsistent. New for 2017 was the addition of machines to the list of unprofitable subcategories. There are a few things to think about here from a business perspective:

1. How do these (sub)categories relate to sales?
2. Are there specific products within these (sub)categories that are causing them to be unprofitable?
3. What is the associated OpEx involved that might be making these subcategories (or individual products, as it may be) unprofitable and is there a way forward to ultimately have all granularities of products in the black?

Profit by Category



Profit by SubCategory



Category

- ☒ Furniture
- ☒ Office Supplies
- ☒ Technology

Category

- ☒ Furniture
- ☒ Office Supplies
- ☒ Technology

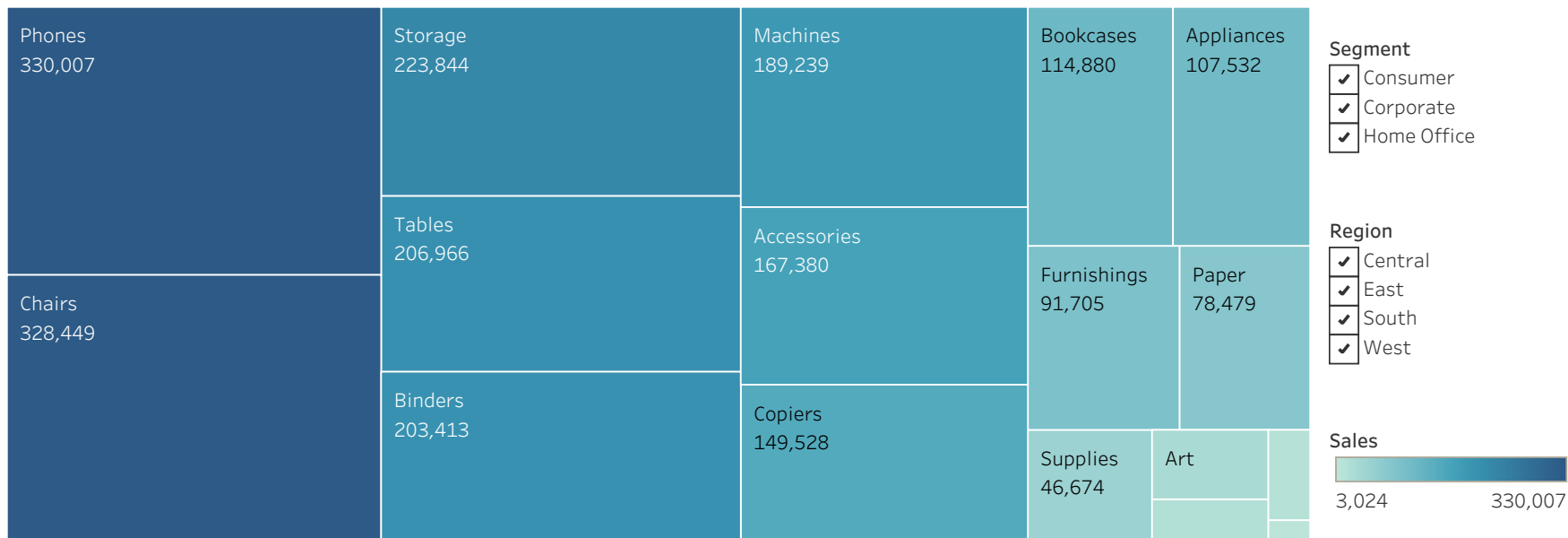
Year of Ship Date

- ☒ 2014
- ☒ 2015
- ☒ 2016
- ☒ 2017
- ☒ 2018

Quarter of Ship Date

- ☒ Q1
- ☒ Q2
- ☒ Q3
- ☒ Q4

Sales by SubCategory



Story 1

Title	Goals, Steps, Choices	Available Data	Data Exploration	Geographical: Explanation	Geographical	Supply Chain Management
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Sample Sales Data Set

Erin Howland

Story 1

Title	Goals, Steps, Choices	Available Data	Data Exploration	Geographical: Explanation	Geographical	Supply Chain Management
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Story 1

Title	Goals, Steps, Choices	Available Data	Data Exploration	Geographical: Explanation	Geographical	Supply Chain Management
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- * Are they running a warehouse and creating budgets and therefore have direct control over operational expenses (OpEx)?

Returns

The **Returns** dimension table contains *Order ID* and a *Return Status*. The granularity for this table is at the *Order ID* level, so it's impossible to tell whether the entire order was returned or if a subset of the items orders was returned. Because of this, we cannot reliably assign any dollar value to the return despite being able to match to the **Orders** table on *Order ID*. We can, however, use this to find customer patterns regarding returns (e.g. serial returners or segments with higher than normal return rates). Because of the mismatch of granularity between the **Orders** and **Returns** tables, I did not factor for returns in *Sales* and *Profit* analysis. Were this to be a real-life situation, I would work with data engineering to see if I could get the required granularity to conduct and more thorough analysis.

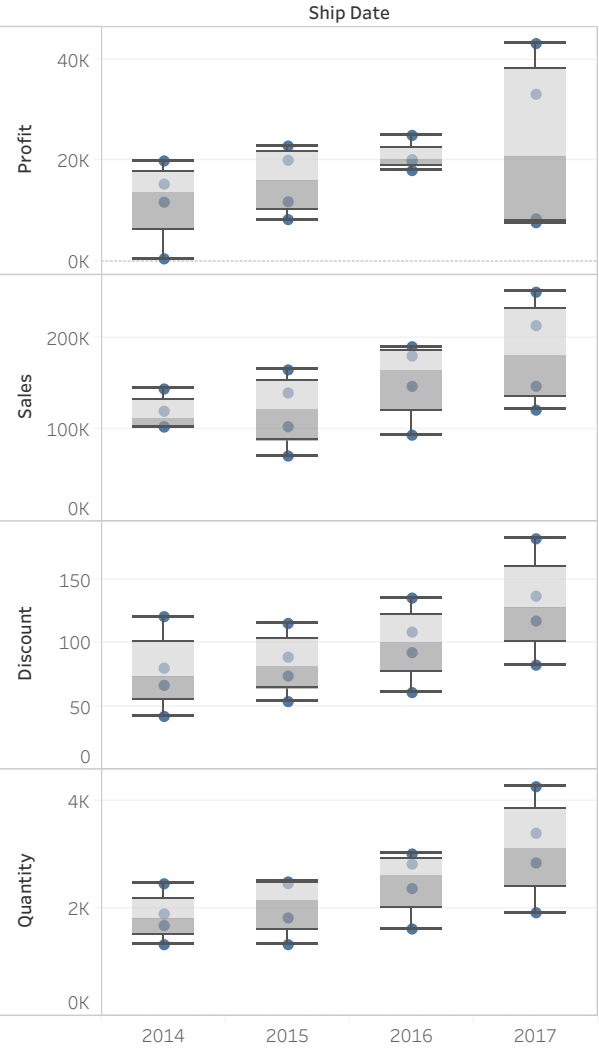
Orders+ (Sample_Data_Set)



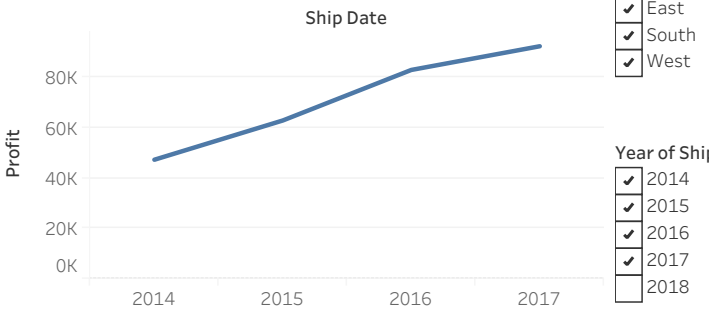
Story 1

Title	Goals, Steps, Choices	Available Data	Data Exploration	Geographical: Explanation	Geographical	Supply Chain Management
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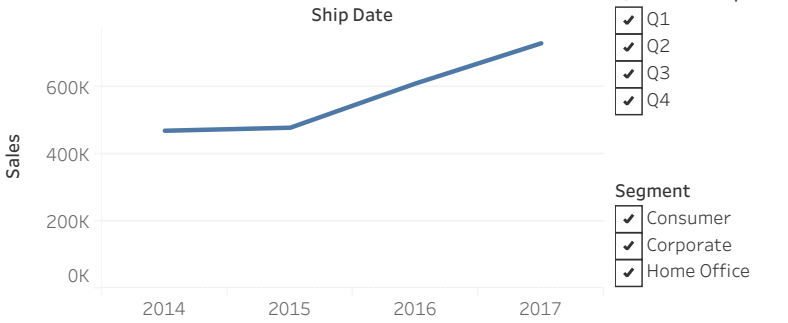
Avg Profit, Sales, Discount, and Quantity by Year



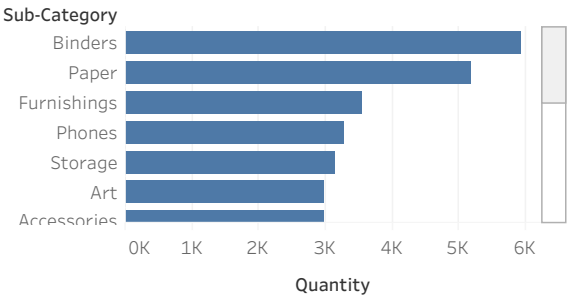
Annual Profit



Annual Sales



SubCategories by Sales Quantity



Story 1

Goals, Steps, Choices	Available Data	Data Exploration	Geographical: Explanation	Geographical	Supply Chain Management	Customers: Explanation
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Geography

The purpose of this is to see at a high level where things are happening - this focuses solely on state and regional information regarding profit and sales.

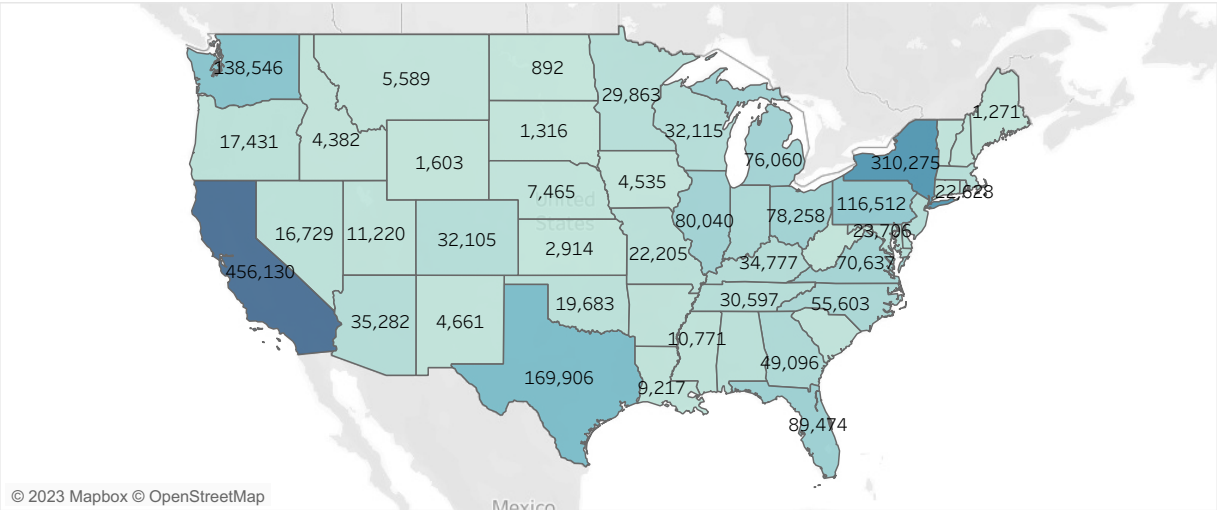
Insights

We can see that the company is operating within the contiguous US. Domestically, Alaska, Hawaii, and US territories are open for growth as are Canada and Mexico if the client is open to nearby international expansion. We might want to consider why this client isn't operating in those areas yet. Some potential topics we may want to raise on this issue include competitors, cost (of shipping, legal fees tied to new markets, operations), capacity, and goals (e.g. is the goal to better penetrate areas that are easier to ship to before expanding to routes that may be more logistically complex?).

Story 1

Available Data	Data Exploration	Geographical: Explanation	Geographical	Supply Chain Management	Customers: Explanation	Customers
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Sales By State



Region

- ☒ Central
- ☒ East
- ☒ South
- ☒ West

Profit

-25,729.3563 to 76,381...

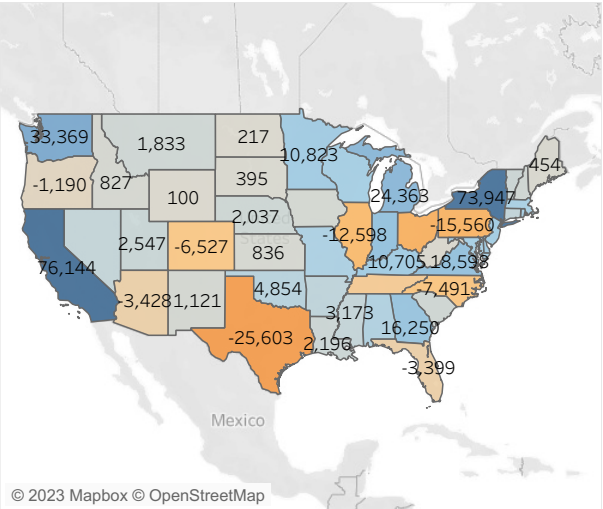
Year of Ship Date

- ☒ 2014
- ☒ 2015
- ☒ 2016
- ☒ 2017
- ☐ 2018

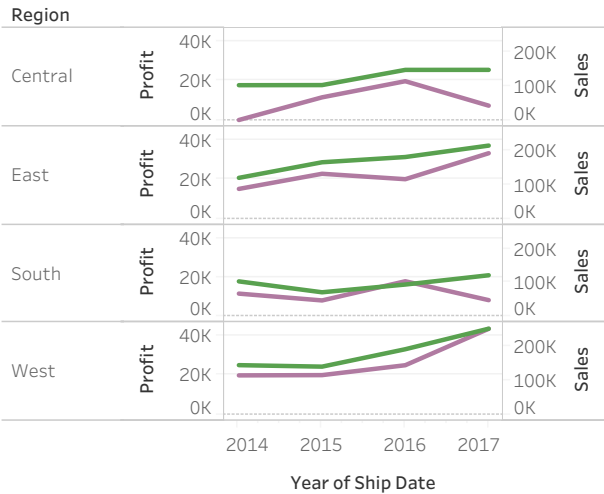
Quarter of Ship Date

- ☒ Q1
- ☒ Q2
- ☒ Q3
- ☒ Q4

Profit by State



Profit and Sales by Region



Segment

- ☒ Consumer
- ☒ Corporate
- ☒ Home Office

Sales

892 456,130

Profit

-25,603 76,144

Measure Names

- ☒ Profit
- ☒ Sales

Story 1

Data Exploration	Geographical: Explanation	Geographical	Supply Chain Management	Customers: Explanation	Customers	Products: Explanation
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Supply Chain Management: Shipping

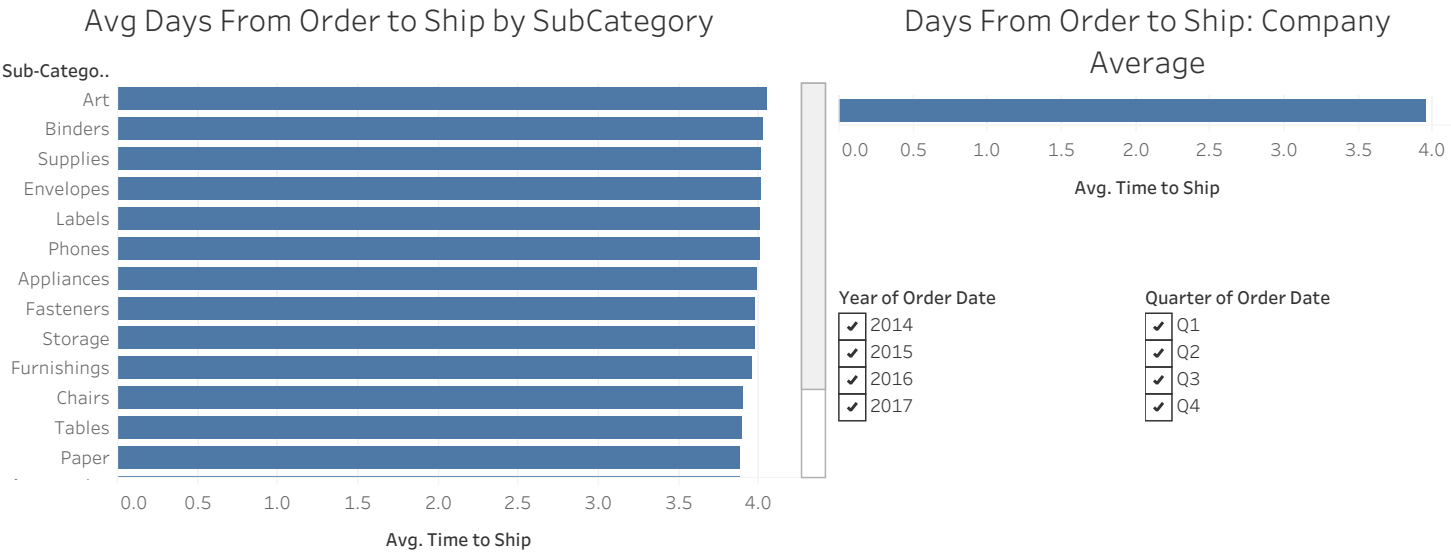
Turnaround from order date to shipping date is a way to evaluate supply chain management by showing whether there are issues with:

- * System - is the order system is working appropriately, both for upstream and downstream orders?
- * Staffing - is there is proper staffing to handle order volume in a time frame the company has determined appropriate?
- * Supply - are there known or potential issues upstream that would cause downstream problems they may need to alert customers to in order to manage expectations?

Supply chain issues could also ultimately have an effect on profitability of an order if, for example, steep discounts were given to offset longer than normal wait time.

Insights

Nothing in particular stands out here. Average days between order date and ship date are fairly consistent. I don't think there's anything I would point out to this client here unless I learned of something that would be of value for them to address unless they provided more information that would give context to these figures. For example, is their average shipping over industry standard or do they want to implement a new policy to decrease the turnaround to 2 days but they're also considering layoffs in that department?



Story 1

Geographical: Explanation	Geographical	Supply Chain Management	Customers: Explanation	Customers	Products: Explanation	Products
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Customers

An important aspect of any organization is to understand its customers. Some of the most basic questions that we can start with regardless of organization type include:

- * WHO are the customers (names, demographics, client type, etc.)?
- * WHAT do they want/need?
- * WHEN do they want/need those products/services (e.g. is it constant, cyclical, dependent on disposable income, etc.) and WHEN do they engage with us?
- * WHERE are they located?
- * WHY are they selecting us?
- * HOW do they engage with us (e.g. social media, mailers, text, phone, etc.) and HOW are they evolving over time?

I have included the top 10% of customers by both *Profit* and *Sales*. Because *Profit* and *Sales* do not always align in a predictable fashion, I have added color coding to the top customers by *Sales* visual to also point out the associated *Profit*, and vice versa for the *Profit* visual. This may be of use should a client choose to investigate why a particular customer may be less profitable than expected given their sales data.

One thing I would point out to this client is that the total number of distinct customers they have in the top right line graph does not match the total number of distinct customers in the map. This is because of the way the distinct count is done. The line graph shows the true number of distinct customers the client has. The map shows distinct customers by state, and many customers are associated with multiple states. Whether this is because they have moved or because they might be ordering for a multi-state company we don't know, but this is something to be aware of when looking at the data and it should be clearly disclosed to the client.

To reduce the number of visuals shown in the story - there is a balance between level of detail presented for decision-making and succinct presentations - I have included customer segments as a filter rather than as a study in and of itself.

Insights

Positive

- * Customers are increasing over time. This may be a result of marketing efforts or it could just be continued presence and therefore brand awareness or anything in between. We'd want to have a decent idea of cause to determine how to move forward; if we had more data, we'd be able to provide this analysis.
- * There are customers in every state, though the customers are fairly concentrated by zip code (chart not shown in presentation). There may be room for increased market penetration but we would want to conduct this study in relation to population density, income, and other demographic data (e.g. census data). For example, we could look at sales by post code in relation to population density to look for cold spots.

Negative

There are several customers who have high sales but represent a disproportionate loss in terms of profit. Why is this occurring and how can we stop it from happening? Without doing a full root cause analysis, it's likely that this may have something to do with discounts and/or products. Discounts reduce profits and if a product has a narrow margin, a discount could make that particular product unprofitable.

Story 1

Geographical: Explanation	Geographical	Supply Chain Management	Customers: Explanation	Customers	Products: Explanation	Products
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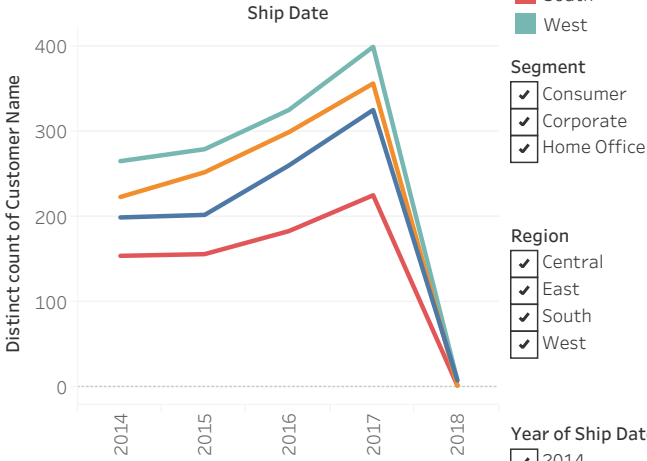
Top 10% Customers
by Profit

Customer Name	
Tamara Chand	8,981
Raymond Buch	6,976
Sanjit Chand	5,757
Hunter Lopez	5,622
Adrian Barton	5,445
Tom Ashbrook	4,704
Christopher Martinez	3,900
Keith Dawkins	3,039
Andy Reiter	2,885
Daniel Raglin	2,869
Tom Boeckenhauer	2,798
Nathan Mautz	2,752
Sanjit Engle	2,651
Bill Shonely	2,616
Harry Marie	2,438
Todd Sumrall	2,372
Brian Moss	2,199
Christopher Conant	2,177
Jane Waco	2,174
Helen Wasserman	2,164
Greg Tran	2,163
Laura Armstrong	2,059
Adam Bellavance	2,055
Fred Hopkins	2,050
Pete Kriz	2,038
Steven Roelle	1,990
Shirley Daniels	1,985
Clay Ludtke	1,934
Robert Marley	1,903

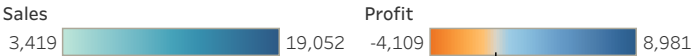
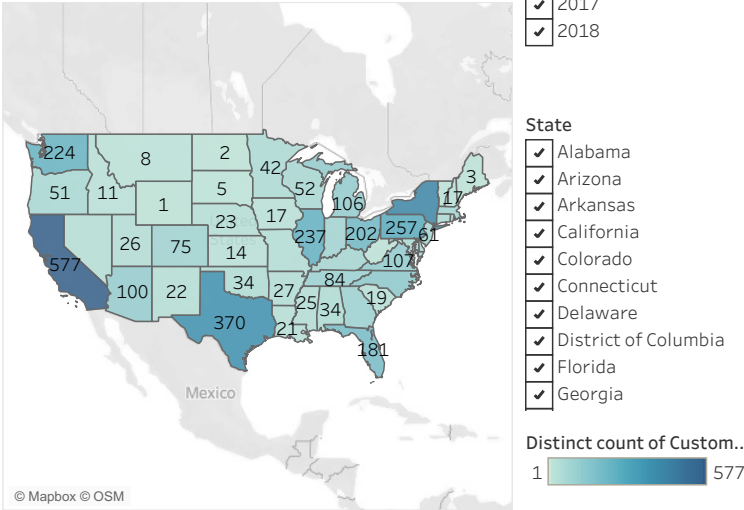
Top 10% Customers
by Sales

Customer Name	
Sean Miller	25,043
Tamara Chand	19,052
Raymond Buch	15,117
Tom Ashbrook	14,596
Adrian Barton	14,474
Ken Lonsdale	14,175
Sanjit Chand	14,142
Hunter Lopez	12,873
Sanjit Engle	12,209
Christopher Conant	12,129
Todd Sumrall	11,892
Greg Tran	11,820
Becky Martin	11,790
Seth Vernon	11,471
Caroline Jumper	11,165
Clay Ludtke	10,881
Maria Etezadi	10,664
Karen Ferguson	10,604
Bill Shonely	10,502
Edward Hooks	10,311
John Lee	9,800
Grant Thornton	9,351
Helen Wasserman	9,300
Tom Boeckenhauer	9,134
Peter Fuller	9,063
Christopher Martinez	8,954
Justin Deggeller	8,828
Joe Elijah	8,698
Laura Armstrong	8,673

Count Distinct Customers Over
Time



Distinct Customers by Location



Story 1

Geographical: Explanation	Geographical	Supply Chain Management	Customers: Explanation	Customers	Products: Explanation	Products
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Products

Categories

There are three categories of goods this client provides: furniture, office supplies, and technology.

SubCategories

I had wanted to show profit and sales by subcategory using the same kind of visual for continuity, but I noticed that when I did that, three subcategories were missing from the visual: bookcases, tables, and supplies. These three subcategories are not profitable (supplies was in 2014 and 2015 but by 2016 it was no longer profitable) and therefore do not show on the visual I had initially selected. While the visual I had originally selected is great for showing the profitable subcategories, I thought it was important to also draw attention to the ones that were not profitable so a client could look into those and figure out why they aren't profitable (we are unable to provide potential answers for them with the given data) and/or evaluate whether those categories are ones they might want to drop.

Products

There are too many products to examine them all. A better approach is to look at them through their subcategories and categories except if we notice specific things related to specific products that may want to address.

Insights

Positive

Overall, the company is in the black for profits.

Negative

There are three subcategories that are, cumulatively, not profitable: supplies, bookcases, and tables. When we look at individual years, notice that tables have always been unprofitable while bookcases and supplies has been inconsistent. New for 2017 was the addition of machines to the list of unprofitable subcategories. There are a few things to think about here from a business perspective:

1. How do these (sub)categories relate to sales?
2. Are there specific products within these (sub)categories that are causing them to be unprofitable?
3. What is the associated OpEx involved that might be making these subcategories (or individual products, as it may be) unprofitable and is there a way forward to ultimately have all granularities of products in the black?

Story 1

Geographical: Explanation	Geographical	Supply Chain Management	Customers: Explanation	Customers	Products: Explanation	Products
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