

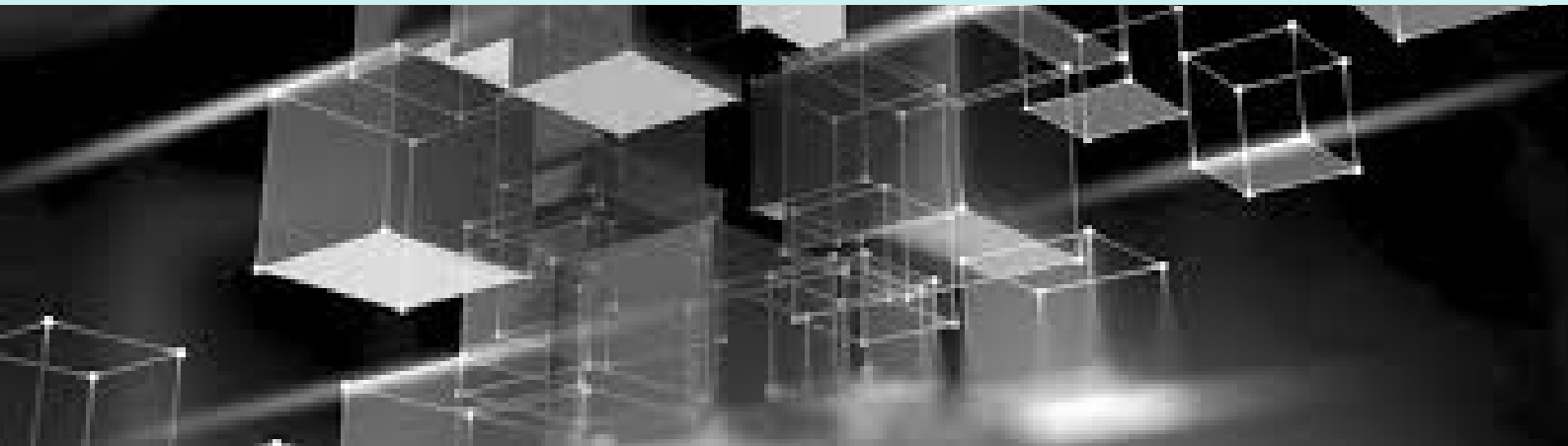
Got Nüds

Database Project Scenario

Presented by:

Team 2

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Project Deliverable Outline

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Business Situation

Our team's organization, Got Nüds, is dedicated to creating and providing customized cosmetic products to each of our unique customers to enhance their natural skin and complexion. Got Nüds is headquartered out of München, Germany following Founder and CEO Meghan Buscher. Our organization's objective is to provide customers with a customizable and beauty-enhancing product that not only embraces who they are but more importantly, the colors that make them beautiful. Individuality is our most valuable asset which ensures our employees and customers are always in the spotlight and we make them feel good about who they are.

Our team has specifically been assigned the task of developing a database for Got Nüds as we expand into a worldwide organization that develops and provides cosmetics that makes our customers all around the world feel the way they should about their complexion. Got Nüds has boomed into markets thanks to the custom-made experience our clients have when shopping with us. Our customers are able to upload an image of their face to our system and our color technology creates a custom primary color combination to provide a foundation, concealer, contour, and blush to perfectly match their skin tone. Once products are used up and empty, we encourage customers to return their containers to be filled up again for future use.

Primarily only supplied with the products to make cosmetics for customers 'on-order, the only inventory held is dedicated to being formulated to each customer. Although this approach has permitted us to grant customers an individual experience, as our organization expands we have been requested to compile all of our organization's features into one database that will allow us to maintain internal and customer success complementary to our global expansion.

Project Scenario

In this business situation, as mentioned above Got Nüds has accomplished remarkable success as a new cosmetics company but with the decision to expand beyond current markets. Hoping to establish a global presence the organization's executive team has requested for our team to develop a database that will serve as the backbone for the organization's global expansion. In the midst of the 2019 Coronavirus pandemic, Got Nüds was forced to implement an extensive business operation in which accounts for not only current products but along with ordering & customer service operations, alongside regular business trajectories.

As Got Nüds has been able to capitalize on success based on the simple fact that in the cosmetics industry, shade variety is limited for consumers and where our organization has been able to create a business process that takes into account the unique ranges of shades and undertones to curate the perfect shade for makeup users. While this model has proven to be successful for our retail/in-person endeavors, with a heavy push from the organization's board, Ms. Buscher has been nominated to oversee the business's transition into an eCommerce-focused model. With Got Nüds color technology being in the early development stages, we have been tasked to provide our software engineering team with a database that will allow them to create an efficient and sustainable eCommerce website or application for our customers.

Project Scenario Cont.

With industry leveraging technology thanks to our color technology which creates a custom primary color combination to provide a number of products that are made to order for our customers, our team's primary focus is on developing a database that not only enhances the way our technology makes our customers satisfied with their skin but more importantly satisfied with Got Nüds as their primary cosmetics supplier.

The organization's eCommerce solution is still fresh in early development, the organization's CEO has pushed for a more data-driven product that will essentially foolproof the internal factors that will play a detrimental role in the international expansion. Accounting for the organization's beliefs of providing enhancing cosmetics while also enhancing the lives of our employees as they enhance the organization as a business. While incorporating different risk factors that have been suggested by the organization's board of directors, our team has focused on developing this database that will serve as an outline for scenario-planning testing which will be used in measuring the viability of the business plans entry into the market.

Whilst the new business plan is still in development, we have been advised to structure our database to one that will allow our organization to further refine any part of the organization's practices no matter the severity or complexity. With a globalized strategy at heart, this database will provide a vision for the entire organization and the way it operates. Focused on the standardization of what Got Nüds has previously established, it will allow our organization to adopt a 'universal' approach that will make our products and operations greatly accessible.

Database Transformations

Most of our data transformation came from the original design of what we envisioned our tables to look like to what our final database was. Most of our tables were created independently of each other. We realized as we began to import our data that we had to make sure that we had a combination of cohesive primary keys and foreign keys between each table. We ended up creating a various number of ideas for warehouses, orders, products and customers for ease of connection between our tables.

Our tables containing customer information were some of our hardest to ensure that it was able to communicate with other information in our database. It wasn't until we were beginning to create data visualizations and our first set of select statements that we realized we had not assigned a unique customer id for each customer within the table. Adding those particular columns greatly helped us to create both foreign keys between tables but also helped make the joining of tables easier in our select statements and visualizations.

Because our data was randomly generated we were able to manipulate the information we had within our dataset. This allowed us to not have to do many data transformations within the data itself. However, we used transformations to generate our total order amount column in our orders table. In order to do so, we multiplied the price per unit of the product line, and multiplied it by the total quantity ordered. We also took our product size column and split it into two separate columns containing the values and labels into their own sections to make calculations easier regarding the sizes of various products.

Database Schema

The tables in this database focus on the end-to-end process of an order for a B2C makeup order. We collect the initial customer information -- customer ID, first name, last name, email address, postal address, city, country code, and postal code -- and since this company is international, it includes an international customer base. The customer information connects to the order information. The order table contains a primary key denoted by order Id, but also specifies the payment amount, shipping status, and order date. For more granularity of the orders, the database connects an order details table of the customer orders. In the order details, the features are order Id, price per unit, order line number, product ID, and the quantity ordered. The order line number specifies the line item on a single order, which in essence itemizes the transactions. In the products table, it is responsible for housing the product ID, color ID, and product type. There are 5 types of products available to order, so under product type, it will either be blush, bronzer, concealer, contour, or foundation; these correlate to the product line ID where a specific identification is given for each type of product (5 unique codes). Product ID is related to the physical item that is sold. For purposes of pricing products, our pricing table includes the determinants used for price setting, in this case, it is the product ID, product size, the unit of measurement for the product, and the price per unit. The product size differs depending on if it is a liquid or powder based product.

Using the payments table, it specifies the order ID, payment amount for each order, and the type of payment used in the online transaction. A returns table is included in the database to identify possible quality control issues of returns made by customers. Included is the return ID, order ID, the quantity returned, return reason, return date, refunded amount, and whether the product is resaleable ("Resale"). The resale feature is based on if the product is damaged or used, then it is no longer able to be resold, but if there is no seal broken (example: it was gifted and was an incorrect shade, or there was an error on our end) then it's examined to determine that it can be resold.

A country table is included for simple storage purposes; each country in the database is matched with a country code as an identifier that will in the long term preserve storage size issues as the database grows. Warehouse Table connects to the employee table through the prescribed warehouse location using the warehouse ID; it also includes product line ID and country code for location bases. Employee data is stored in our employees table where the employee ID, job ID, first name, last name, gender, salaried indicator, hourly Rate, city, country code, and warehouse ID. The warehouse ID specifies which location the employee is based out of for payment purposes as some employees may work remotely.

Positions table hosts data concerning job type information; there is a job ID, job title, and job type, where job type indicates whether an employee's position is classified as temporary, part-time, or full-time. The Benefits Table continues to expand on employee and job details by housing the job titles, job type, 401k/Roth, Health Insurance, Dental Insurance, and Vision Insurance. 401K/Roth is binary in that they will have it or they won't, but the insurances vary from none, partial, or full. The product line table in this database houses the main components needed for the colors of the products. There is color id, tone bucket, undertone, amount of blue, amount of red, amount of yellow, amount of black, and the product line ID. The tone bucket classifies the product for whether the customer's skin tone is considered fair, medium, or deep. Undertone specifies whether the skin's undertone is warm, neutral, or cool. The combination of skin tone and undertone assist in a strong recommendation for the amount of each primary color that is included in the product. The color id provides hex codes for simple integration into online systems assisting product creation.

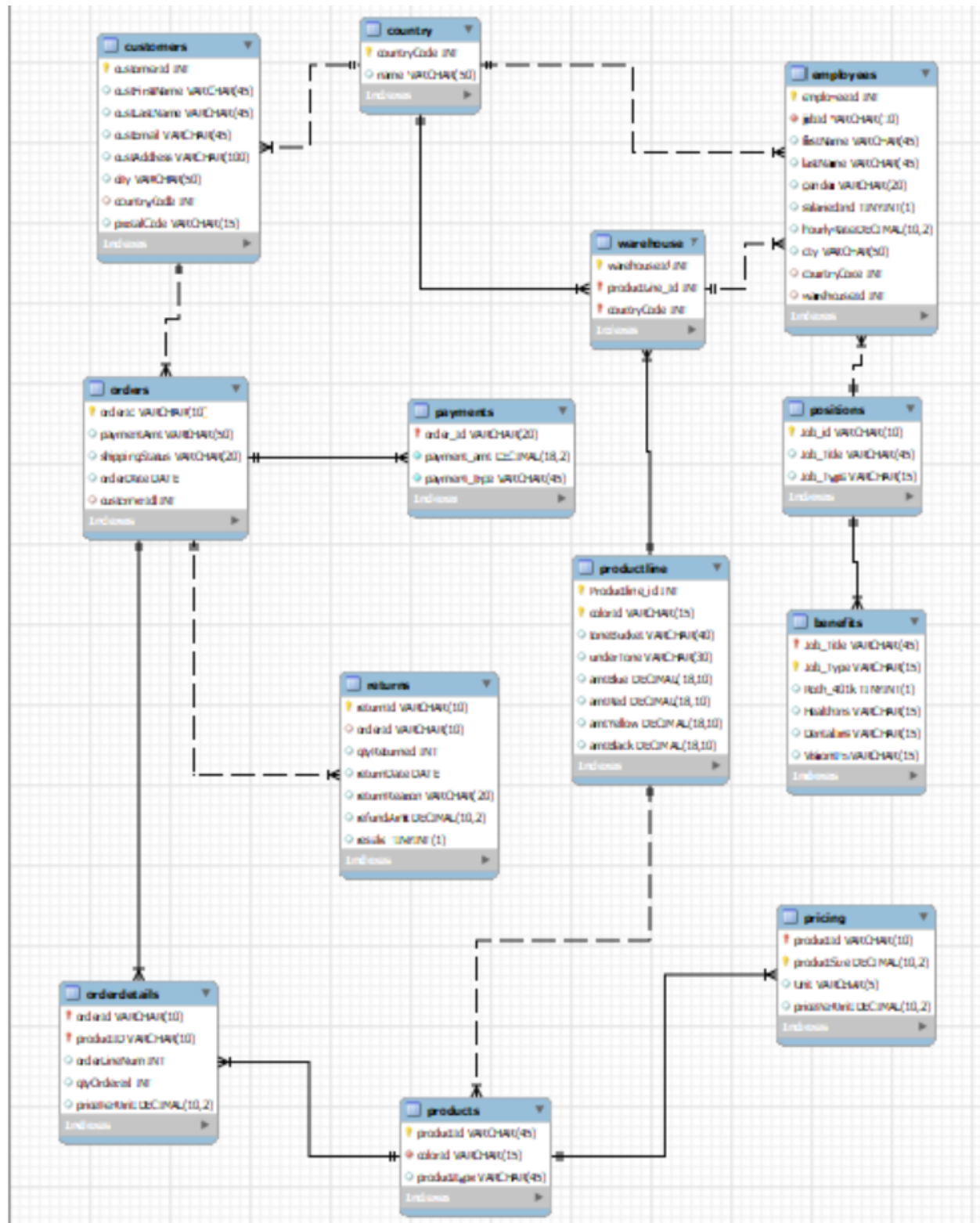
Normalization

We first created two “master” tables housing customer and employee data. These tables contained a slew of information that we could then break down further. Starting with the employee table, we included employee id, job id, job title, name, gender, job status (i.e. Full-time, part-time, or temporary), locations, and information about pay and benefits. It became quickly apparent that benefits would be dependent on the employee’s job title and their status. Therefore, we took this information and moved it to a new “Benefits” table. Furthermore, the job title was unique for each combination of job title and status, so this data was also moved to a new “Positions” table. Lastly, the employee table provided location information with both the city and country for the employee. Since we know that we also have location data in the customers data, we created a unique code for each country from both tables and moved the country names to a new table with their respective codes.

In this employee table there was also information on the pay for the employee. We had the columns “salary”, “salariedInd”, and “hourlyRate”. While the hourly rate and the salaried indicator are independent and only rely on the primary key “employeeId”, the salary is dependent and a calculated column. It is created using the values populated in “salariedInd” and “hourlyRate”. Thus, to normalize the table, this column was removed. If needed, it can be easily calculated within a select statement.

The customer table began with information regarding each order for each customer which resulted in many duplicates and repetitive information. To achieve 1st normal form, we had to separate the tables to avoid repeating entries. Customer information is stored in a table separate for orders so that repeating customers can be traced back to a single customer ID. From there, we did a similar derivation for the orders, payments, and products table. 2nd normal form is achieved by ensuring there were no partial dependencies on our primary keys. In order to complete this step in normalization, we separate the data farther with the product lines and the order details table. An attribute such as quantity order is dependent on the product line key and the order number key, and thus was separated into a different table where these keys made a composite primary key.

ER Model



25 Select Statements. Labels match what is in the SQL file.

1. How many distinct product Ids are there for each product type?

- a. Can help us to identify if there is one product type that could use more or less options if there is a rise/dip in sales

	producttype	count(productId)
►	Blush	92
	Bronzer	104
	Foundation	93
	Concealer	101
	Contour	94

2. How many customers spent more than \$100 on an order?

- a. Can help to understand which customers we have that are more willing to spend more that could be worth targeting for future ads/sales.

	customerId	Total Spent
	258	86.55
	223	87.15
	71	88.31
	380	93.45
	217	97.05
	210	99.03
	401	110.9
	418	116.19
	180	119.73

3. What customer emails have placed the most orders

- a. An additional way to help track top purchasers and can send additional sales and promotions to

	custEmail	number of orders
►	csleith1l@theglobeandmail.com	4
	jaskwith25@unicef.org	4
	amartinat3a@jigsy.com	4
	bmolnar52@nbcnews.com	4
	edyson5t@china.com.cn	4
	mdomeneybp@tuttocitta.it	4
	sduchamcd@ovh.net	4
	pspring19@sun.com	3
	mooning1a@house.gov	3

4. What was the average price per unit where productType = Blush?

- a. Can help us to identify if our prices are unreasonably high or low compared to competitors

	producttype	Average Price
►	Blush	20.633684
	Bronzer	21.857850
	Foundation	21.898065
	Concealer	19.056019
	Contour	21.576146

5. 1 query utilizing a subquery, window function, CTE, or self-join.
 - a. Can help us to identify if there are any particular locations that shipped orders and delayed and can help identify places to improve there.

Total Delayed	shippingStatus	city
3	Delayed	Xilian
2	Delayed	El Jem
2	Delayed	Donggaocun
2	Delayed	Pinahan
2	Delayed	Jiefang
2	Delayed	Hukou
2	Delayed	Dili
2	Delayed	Tutup
2	Delayed	Douma

6. What is the total revenue for orders placed in January?
 - a. This can help identify the success of a specific marketing campaign or product drop and help identify future changes.

	month	sum(paymentamt)
►	1	18838.19

7. What was the total amount paid by payment type?

- a. Can help the fees incurred from each payment type and see what is more frequently used for future deals.

	payment_type	total
▶	americanexpress	48762.38
	visa	44864.85
	mastercard	42108.46
	bankcard	41762.84

8. What country had the most orders that weren't canceled over \$200?
- a. Can help identify what country we're doing the best in with the most successful orders? We can focus our efforts on these reasons given they enjoy our products.

	tot_count	countryCode
▶	7	26
	9	10
	8	31
	7	27
	5	21
	7	8
	7	22
	3	2
	6	3
	10	20
	7	6
	10	35

9. What is the most frequently ordered product size out of all of the products ordered in July?

- a. Can help identify what sizes are most popular for inventory and marketing reasons? If a certain size is particularly popular among customers when we have another size available, it might be a good idea to consider price changes

	productsize	total
►	0.16	95
	0.28	109
	1.08	103
	3.50	111
	0.25	99

10. Out of the customers from country code 20, how many refunded their order?

- a. We suspect that products were not safely delivered to a certain country because of the selected courier. We would need to analyze the orders that we delivered to see we are correct.

	customerid	orderid
►	142	L2-63-h1
	199	C2-93-g1
	383	H2-63-b1
	296	K2-03-y1
	172	V2-13-c1
	170	J2-43-n1
	333	M2-93-k1
	68	U2-03-l1
	242	D2-23-e1
	77	B2-03-i1
	406	M2-93-u1
	408	T2-33-w1

11. What sized product container was used the most?

- a. This will be able to help get insights on packaging operations, always optimizing the amount that is inventoried and accounting for any shortages assuring customer satisfaction.

	productSize	TotalAmt	
▶	3.50	105	
	0.28	104	
	1.08	97	
	0.25	96	
	0.16	92	

12. How many roles with health insurance don't have dental or vision insurance?

- a. This will be able to help us keep transparent statistics internally with our customers assuring the employees are fairly compensated.

	Job_Title	HealthIns	DentalIns	VisionIns	
▶	Accountant	Full	Full	Full	
	Customer service representative	Full	Full	Full	
	Department manager	Full	Full	Full	
	Inventory manager	Full	Full	Full	
	Product Manager	Full	Full	Full	
	Promotions coordinator	Full	Full	Full	
	Regional manager	Full	Full	Full	
	Retail marketing specialist	Full	Full	Full	
	Sales associate	Full	Full	Full	
	Store manager	Full	Full	Full	
	Team leader	Full	Full	Full	

13. Which country has the most costly employees?

- a. With this insight, the organization can better understand what the region/country specifically is causing the high cost and allocate it accordingly to profits.

	Name	AverageLaborRate	
▶	Netherlands	25.390000	
	Belarus	25.360000	
	Yemen	25.220000	
	Bolivia	25.180000	
	Switzerland	25.100000	
	Peru	24.680000	
	Madagascar	23.630000	
	Lithuania	23.410000	
	Czech Republic	23.003333	
	Egypt	22.350000	
	Japan	22.110000	
	Brazil	21.845000	
	Canada	21.770000	
	Nigeria	21.430000	

14. How many Part-time employees making less than \$20.00 per hour have FULL benefits?

- a. Here we can identify where the organization can organize existing and future employees, assuring that we can allocate labor costs while assuring the wellness of those who make up our organization.

compensationTest
▶ 50

15. Which country had the most customers who use warm undertones?

- a. We should be able to assure that customer satisfaction is a top priority by providing consumers with the materials they need for their products to be made. We should also need to use this insight to also analyze where other shortages can occur.

WarmCount	name
▶ 4	Thailand
3	Mongolia
3	Portugal
3	Serbia
2	China
2	El Salvador
2	United States
2	Madagascar
2	France
1	Philippines
1	Colombia
1	Finland
1	Liberia
1	Russia
1	Pakistan
1	Czech Repu...
1	Japan
1	Egypt
1	Nigeria
1	Mauritania

16. How many employees are not in country code 2-12?

- a. We wanted to be able to exclude employees from country code 2-12 as they were impacted heavily by external forces.

No. of Employees
▶ 61

17. What is the most commonly occurring undertone?

- a. If an undertone is more common, it can potentially cut down on production costs by producing economies of scale with pre-prepared products.

undertone	Count
▶ Neutral	343
Cool	332
Warm	325

18. What is the email address of the customer with the highest order amount?

- a. Customers that order more are better suited for rewards, so we want to see what the biggest purchase was to see if there would be any potential loss by offering reward programs.

customerId	custEmail	TotOrderAmt
81	amartinat3a@jigsy.com	2227.55
38	cmcpeeters23@hibu.com	2120.85
40	jaskwith25@unicef.org	2016.53
23	dsedgeman1o@accuweather.com	1790.17
20	csleith1l@theglobeandmail.com	1778.44
326	grabsona3@ring.com	1683.13
27	faddington1s@netvibes.com	1677.85
159	khelian5g@yale.edu	1667.88
408	sduchamcd@ovh.net	1655.7
332	elavallina9@csmonitor.com	1647.48
384	mdomeneybp@tuttocitta.it	1637.62

19. How many returns were made in February with an orderDate in January?

- a. In the upcoming year, we need to be able to gauge potential holiday returns at the start of our Fiscal Year.

Month	Returns
1	5

20. What are the highest and lowest salaries we pay for each jobId? If they are the same, you can put the same amount for highest and lowest.

- a. Knowing the salary range for a position assists when we are looking to find new talent. We will be able to set a range for new positions based on the work of current employees.

Ranking	jobId	SalaryAmt	Ranking	jobId	SalaryAmt
1	A1-01	48484.80	1	P2-05	36441.60
2	A1-01	39083.20	1	P2-06	41329.60
1	A2-01	51792.00	1	P2-07	46280.00
1	A3-01	31616.00	2	P2-07	41808.00
1	C1-02	45926.40	3	P2-07	34569.60
1	C2-02	41870.40	1	P3-06	40081.60
1	C3-02	46425.60	2	P3-06	38646.40
2	C3-02	45801.60	1	P3-07	49212.80
3	C3-02	38750.40	1	R1-08	40560.00
1	D1-03	51334.40	1	R1-09	52748.80
2	D1-03	50814.40	2	R1-09	36129.60
3	D1-03	48692.80	1	R2-09	49067.20
4	D1-03	34528.00	2	R2-09	48672.00
1	D2-03	53788.80	1	R3-08	31865.60
2	D2-03	53164.80	1	R3-09	52436.80
3	D2-03	46238.40	2	R3-09	31200.00
4	D2-03	40934.40	1	S1-10	44553.60
1	D3-03	46675.20	2	S1-10	37377.60
1	I1-04	42307.20	1	S1-11	45073.60
1	P1-06	44470.40	1	S2-10	52811.20
1	P1-07	46259.20	2	S2-10	39499.20
			1	S2-11	34756.80
			1	S3-10	39956.80
			1	S3-11	37918.40
			1	T1-12	42494.40
			1	T2-12	42348.80
			2	T2-12	40331.20
			1	T3-12	33779.20

21. Is there a product that is most frequently returned? If so, which one?

- a. If one product is frequently returned, that would be an indicator of a faulty production or poor quality. We want to address that issue to maintain the current customer base and entice future sales.

	producttype	No. of Orders
►	Bronzer	13
	Concealer	13
	Blush	12
	Foundation	12
	Contour	11

22. Which month sees the most sales? Which sees the least?

- a. We would ideally like to have high sales volume throughout the entire year. Identifying our peak and lull months will help to flatten the curves through off-peak sales and discounts.

	orderMonth	No. of Orders
►	3	48
	1	46
	5	46
	7	44
	8	44
	6	41
	9	40
	4	34
	2	33
	10	32
	11	26
	12	19

23. How many orders are showing a shipping status of “Delayed”? Which warehouse has the highest volume of these orders?

- a. We need to identify these orders and the location they frequently occur at to remedy the problem--delayed orders could easily lose us, customers.

	warehouseId	No. of Orders
►	4	33
	3	32
	1	31
	2	21

24. What is the proportion of each country's total orders of the whole order total?

- a. Knowing the geographical makeup of the order totals helps us to improve our targeted marketing.

	Country	No. of Orders	Proportion of Orders
►	Belarus	12	0.0265
	Bolivia	7	0.0155
	Brazil	9	0.0199
	Cameroon	5	0.0110
	Canada	12	0.0265
	China	9	0.0199
	Colombia	10	0.0221
	Czech Republic	13	0.0287
	Egypt	10	0.0221
	El Salvador	17	0.0375
	Finland	10	0.0221
	France	15	0.0331
	Indonesia	10	0.0221
	Japan	4	0.0088
	Liberia	14	0.0309

25. What is the company's current revenue?

- a. Going into the new year, it will be beneficial to know the company's current revenue to get investors.

	Total Revenue
►	178244.90000000008

Stored Procedures and Functions

26. Stored procedure

27. Stored function CustomerCoupon, evaluate the payment total for each order and assigns a coupon value for each customer. Customers can redeem their coupons and are encouraged to spend more to get coupons of higher value.

	customerid	customercoupon(o.paymentamt)
►	135	\$30 off
	195	\$30 off
	435	\$10 off
	121	\$30 off
	212	\$30 off
	248	\$30 off
	81	\$30 off
	339	\$30 off
	23	\$30 off
	335	\$30 off
	164	\$30 off
	338	\$30 off

28. Stored Function. Writing a function that concat mailing information. First name, last name, address, city, country, and zip code.

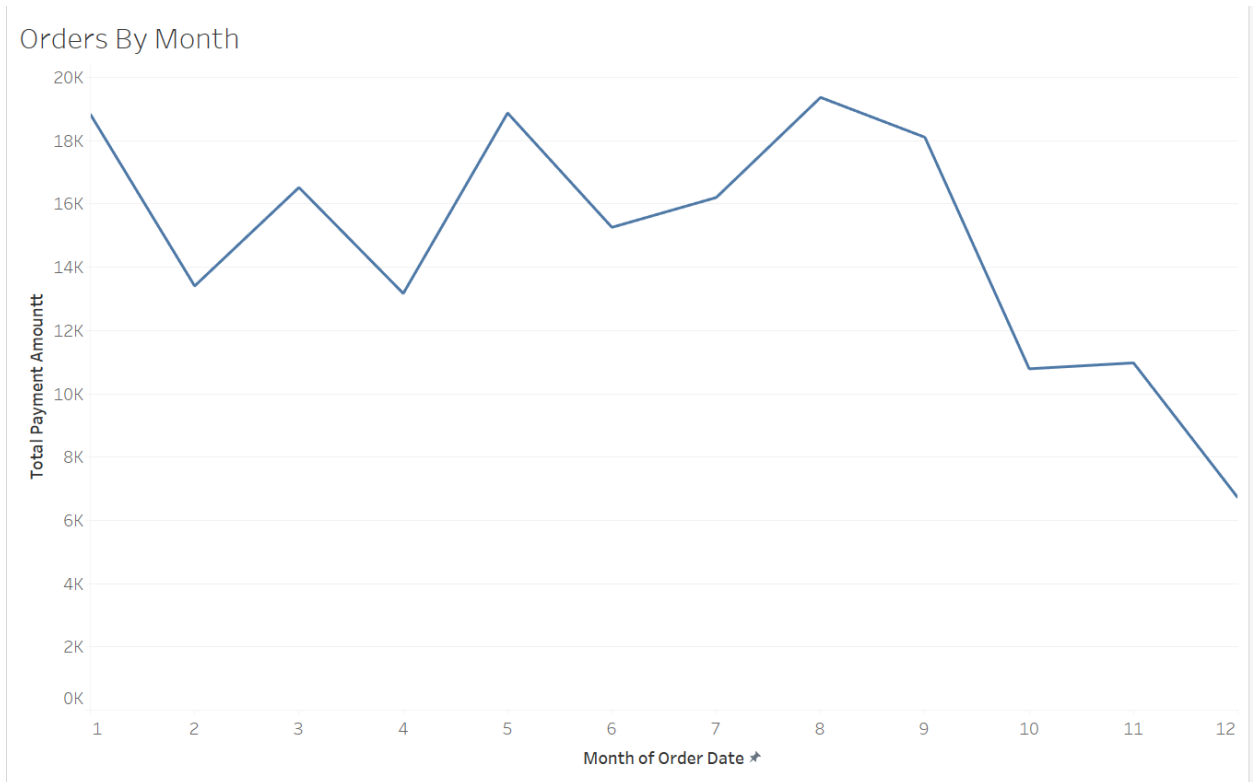
	mail_info(c.custFirstname,c.custLastName,c.custA
▶	Charleen McPeeters 32383 Saint Paul Center Ji...
	Benjie Bulpitt 32 Delaware Place Banjar Laing, B...
	Luce Glasard 89988 Magdeline Way Xujiahe, Bel...
	Roddie Pellew 69 Corry Crossing Nicola Town, B...
	Ruby Dyer 0152 Main Avenue Wattegama, Bela...
	Loretta Shirtliff 90 Burning Wood Terrace Viang...
	Rhea Razoux 49 Cambridge Place Jiangna, Bela...
	Mattias Lowing 13 Kings Drive Phatthalung, Bela...
	Clementine Mabbot 26491 Dawn Point Pinas, Be...
	Pepi Sherbrooke 0692 Hoard Center Guaira, Bel...
	Imogen Tyrwhitt 93852 Sage Trail Harstad, Bela...
	Sula Mulcahy 493 Dayton Crossing Nimes, Belar...

Trigger

29. This trigger records the changes made to the employee table. If an update is made we will record which employee is updated and when so if we need to refer back to this change it is easier to reference.

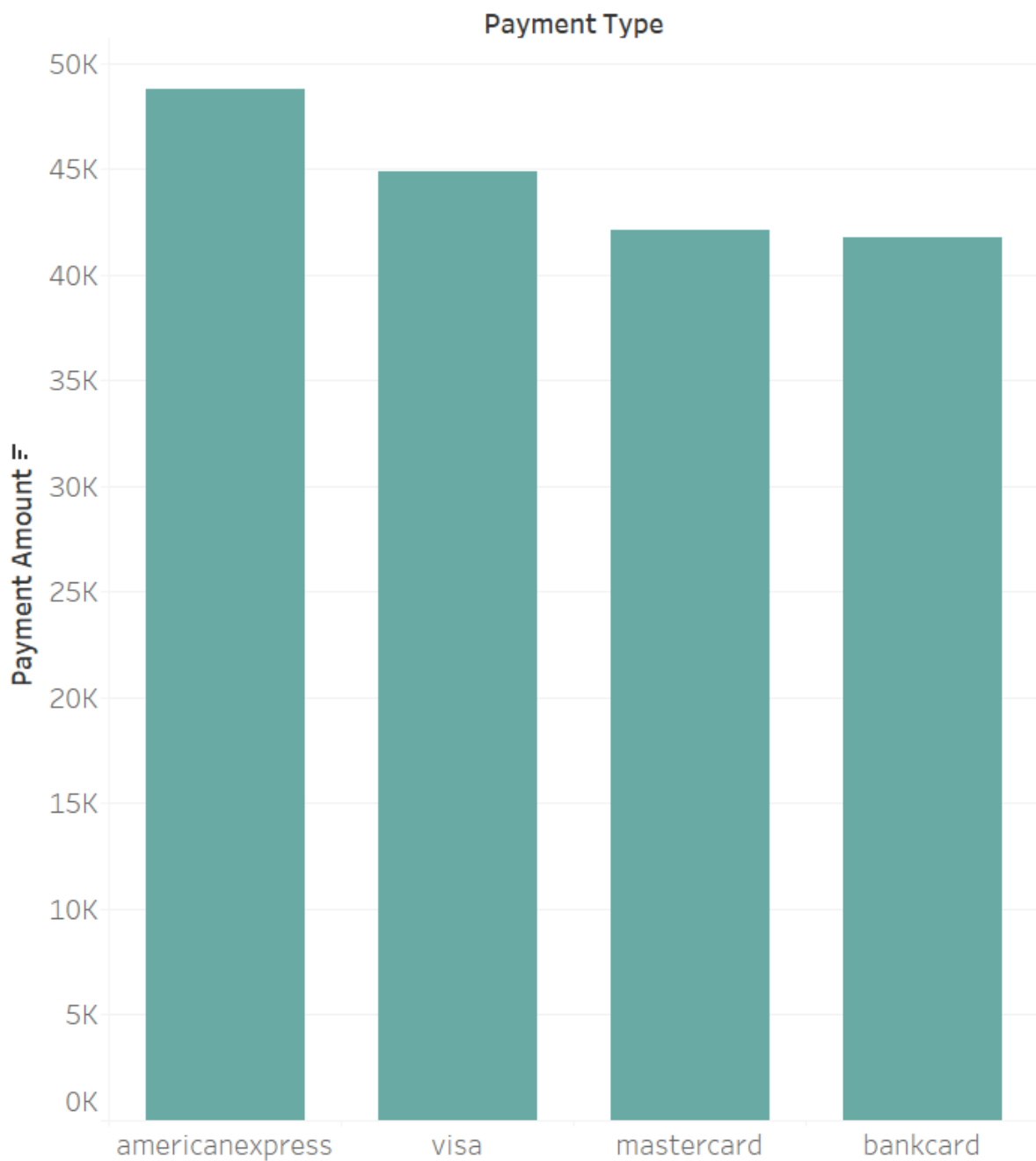
Data Visualizations

This would be helpful in analyzing the orders by month. Having all of the months together, it would be easy to see what month we didn't do particularly well. This line graph clearly shows the totals per month.



Can help the fees incurred from each payment type and see what is more frequently used for future deals. Seeing what payment types are being used will help us understand the customers more. The bar chart shows the total amount per payment type.

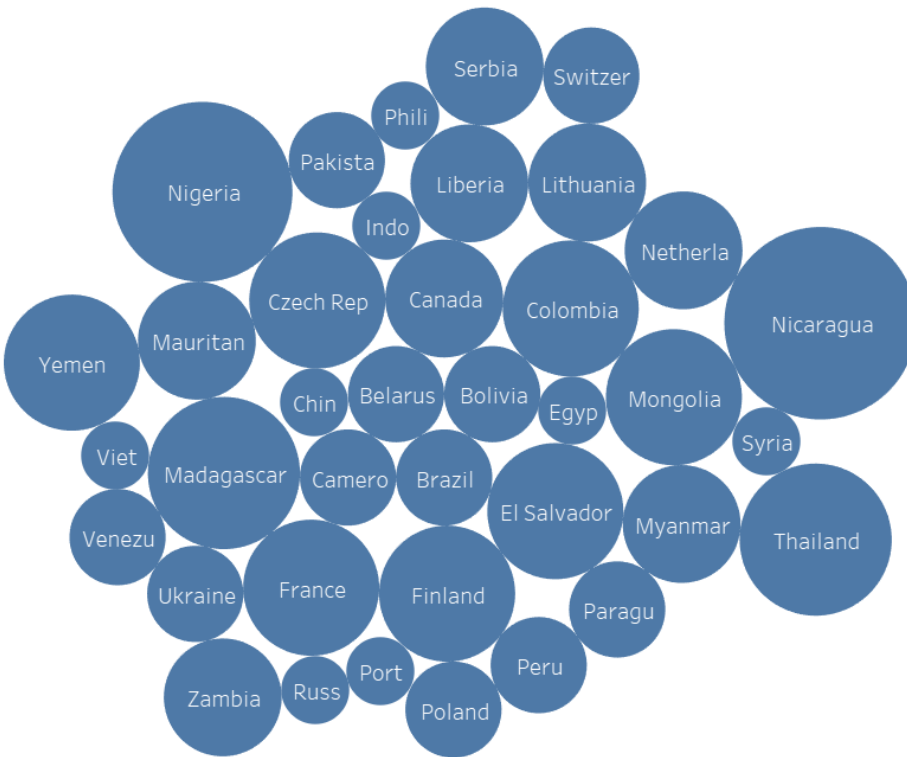
Total Payment by Card Type



If there is a current issue with our courier or there would be issues getting deliveries to countries, it would be helpful to know what orders are currently in progress to know what might

be affected. Using the packed bubbles chart let us compare the sizes of the values for each country.

In Progress Orders by Country



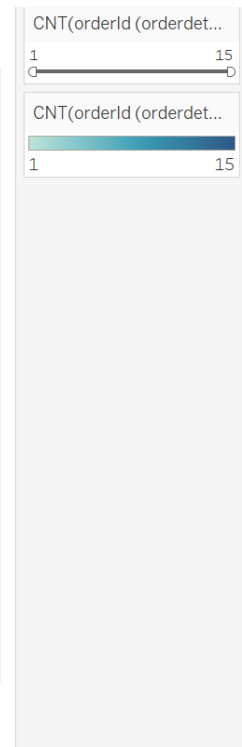
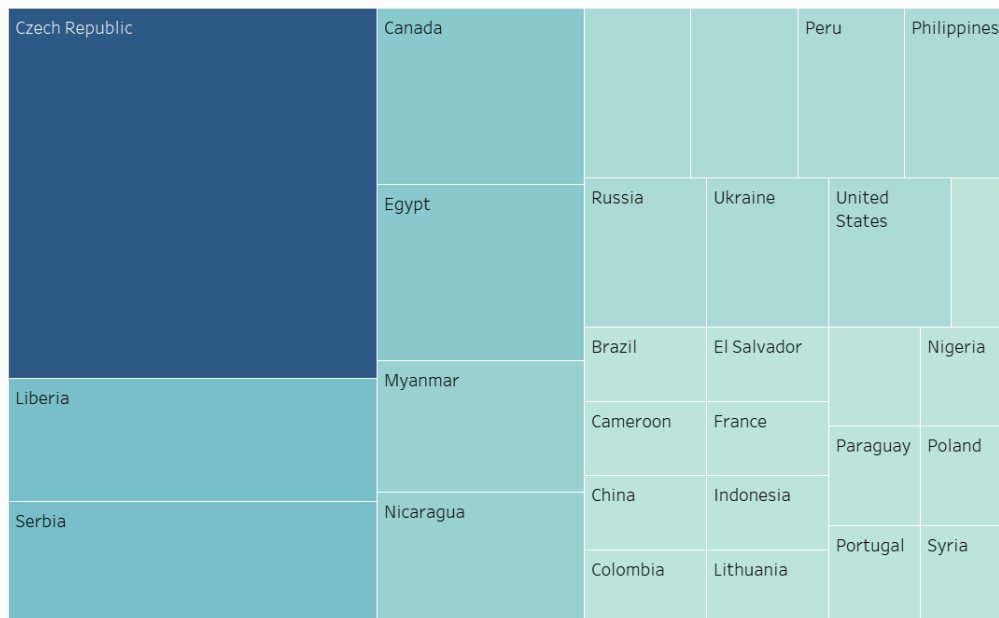
Looking at product sizes would allow us to see what sizes are more frequently ordered. Since the bigger sizes are more frequently ordered, we could consider offering a deal for specific sizes. Using a chart allows us to see the totals easily. To create this table we joined the pricing table which holds the product sizes to the order details to see what was actually ordered.

Total Orders by Product Size

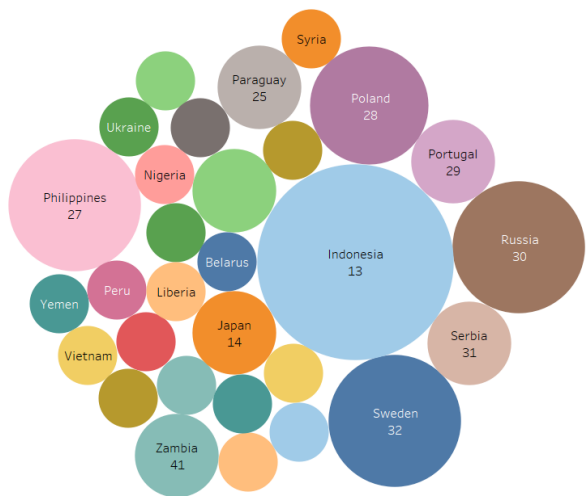
Product Size	
0.16	95
0.25	99
0.28	109
1.08	103
3.5	111

Successful orders were not returned and we successfully delivered. These orders show where we are doing well and where we might want to consider giving more attention to. The treemap joined the customers table to the order table.

Successful Orders by Country



Question 1: How many people are in each country excluding country codes 2-12?



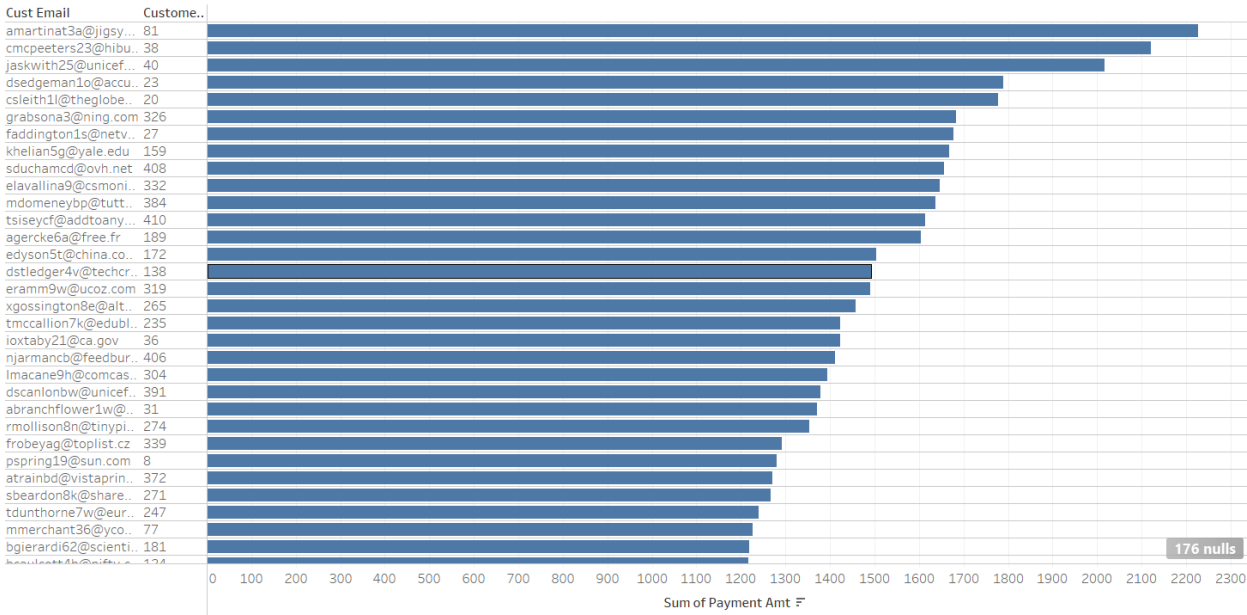
We have more people in Indonesia AKA country code 13 than any other country code. Some of the bigger populations of our employees are also in the Philippines, Sweden, Russia, and Poland, which assists us in identifying where the majority of employees may need more employee resources.

Which undertone occurs the most in our productline combinations

Und..	≡
Neutral	343
Cool	332
Warm	325

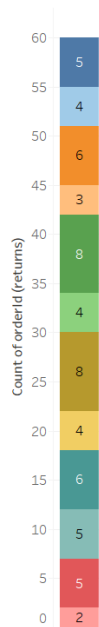
The above shows that Neutral is the most common undertone, but they are all fairly even in distribution. Warm appears less often in our product lines color combinations which assists us in the production process.

What is the email and customer ID of the largest payment for orders?



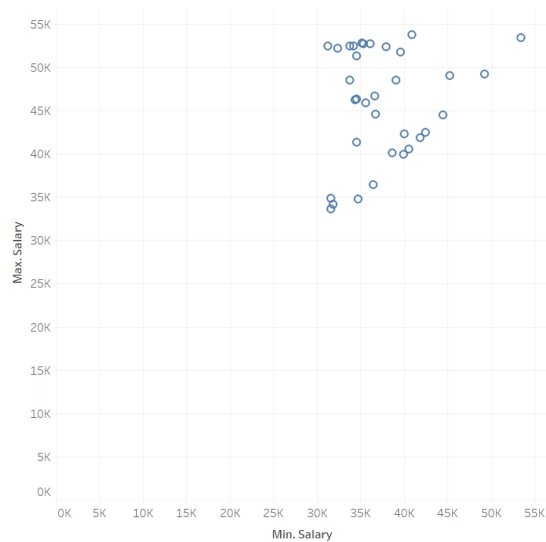
Customer ID 81 has the largest amount of cumulative orders, which shows us the maximum benchmark we can set for future customers when it comes to offering promotion deals and how it will affect our financials.

How many returns were made with an order date in January



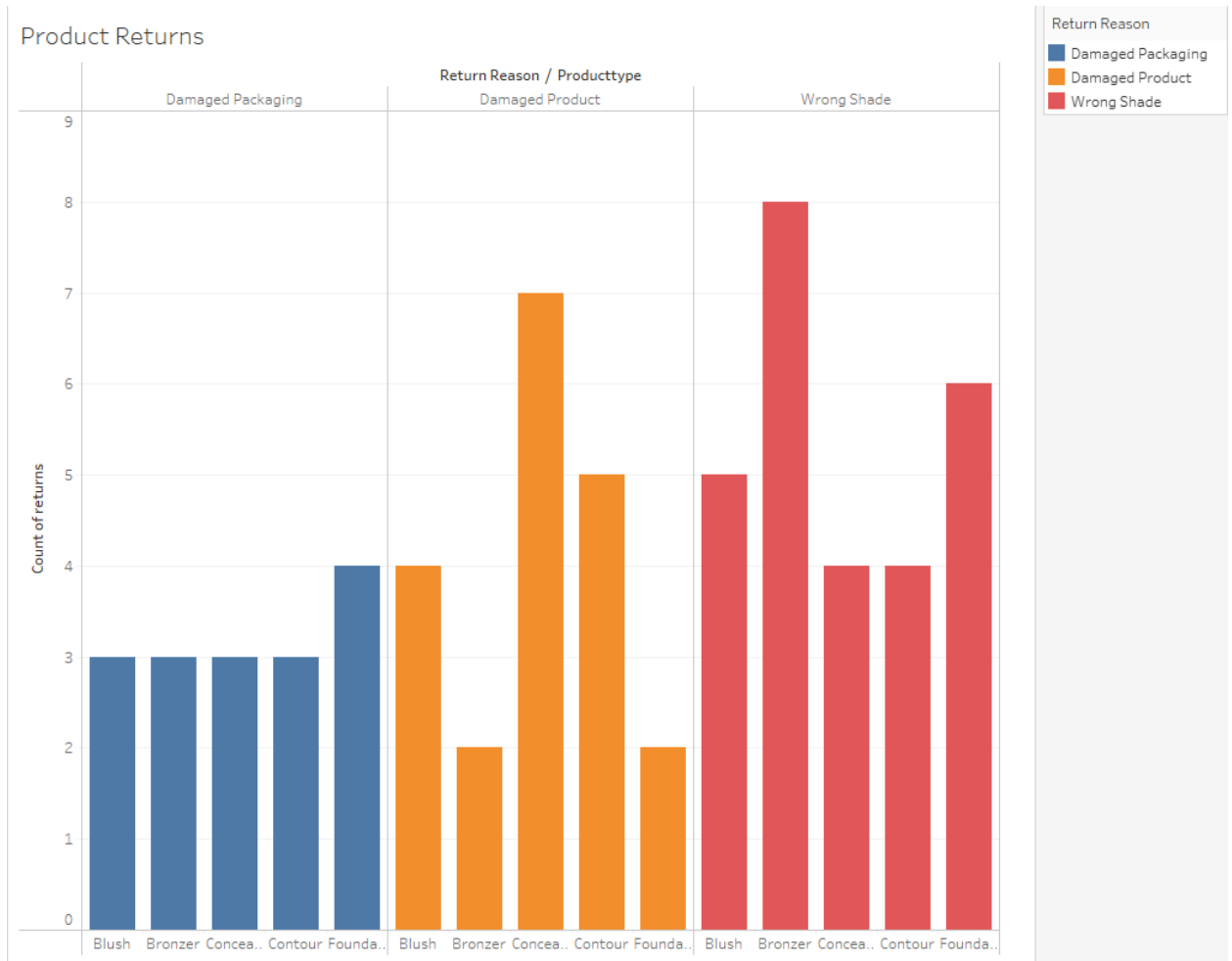
The above graphic indicates the amount of orders in returned and which month they were originally ordered in to give us insight into if we can gauge future trends on the likelihood that an order in a specific month will be returned later on.

What is the minimum and maximum salary for each job type?

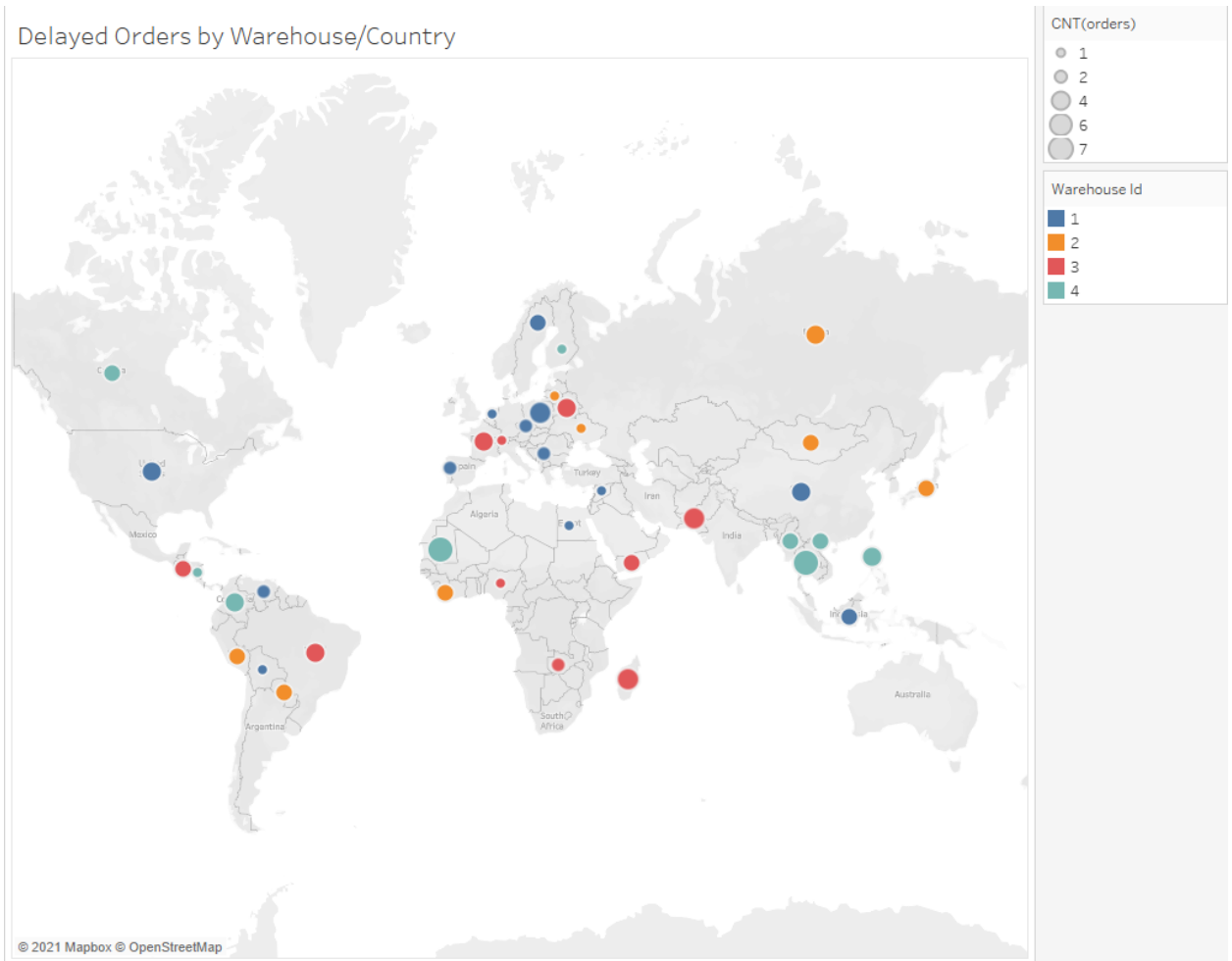


Salary ranges can be set based on the position type, while indicating which job is paid more overall.

Data Visualizations:

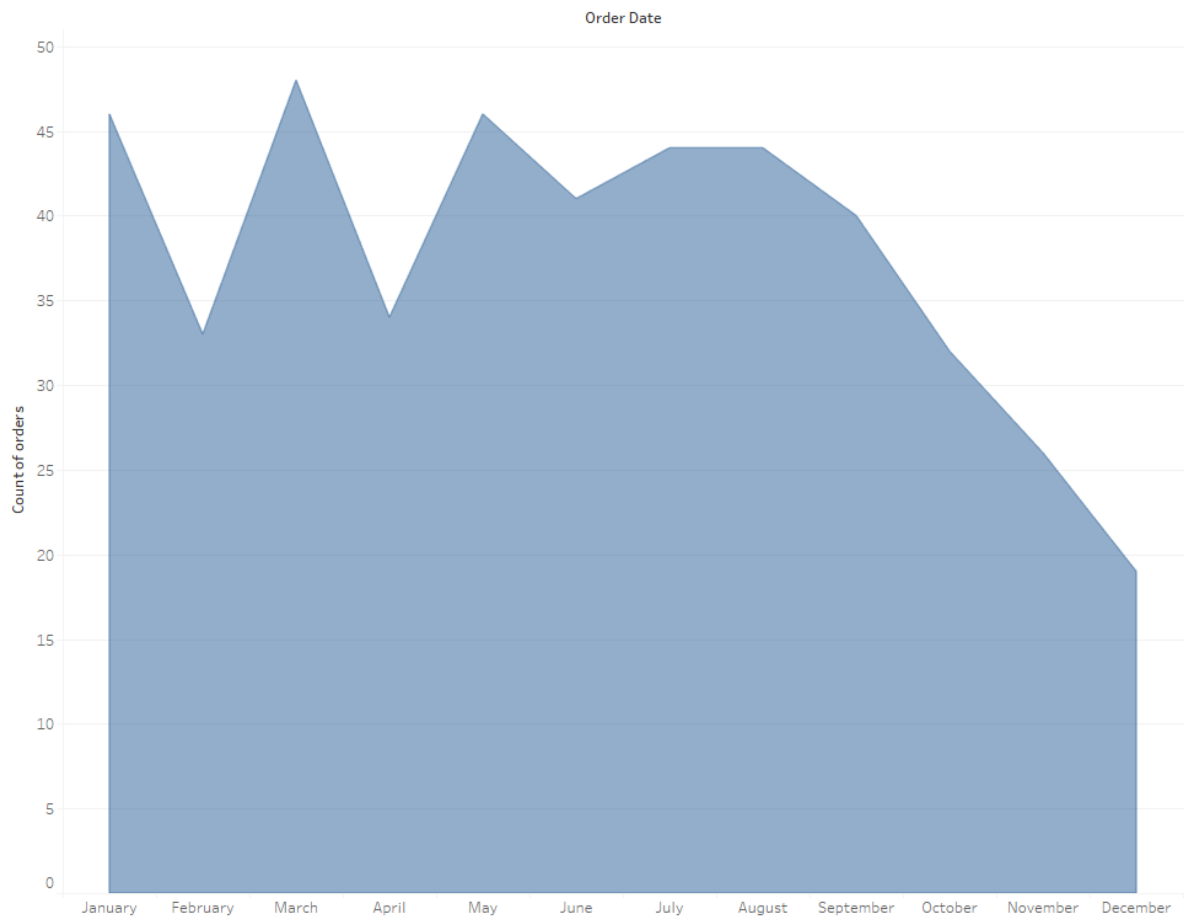


This bar graph is looking at the number of orders for each return reason. This is useful for identifying production mishaps or poor product quality. We want to maintain customer satisfaction. We needed the products and returns tables, and to join them, we had to use the orders and orderdetails tables. The return reason and product type are the dimensions and the measure is the count of returns.



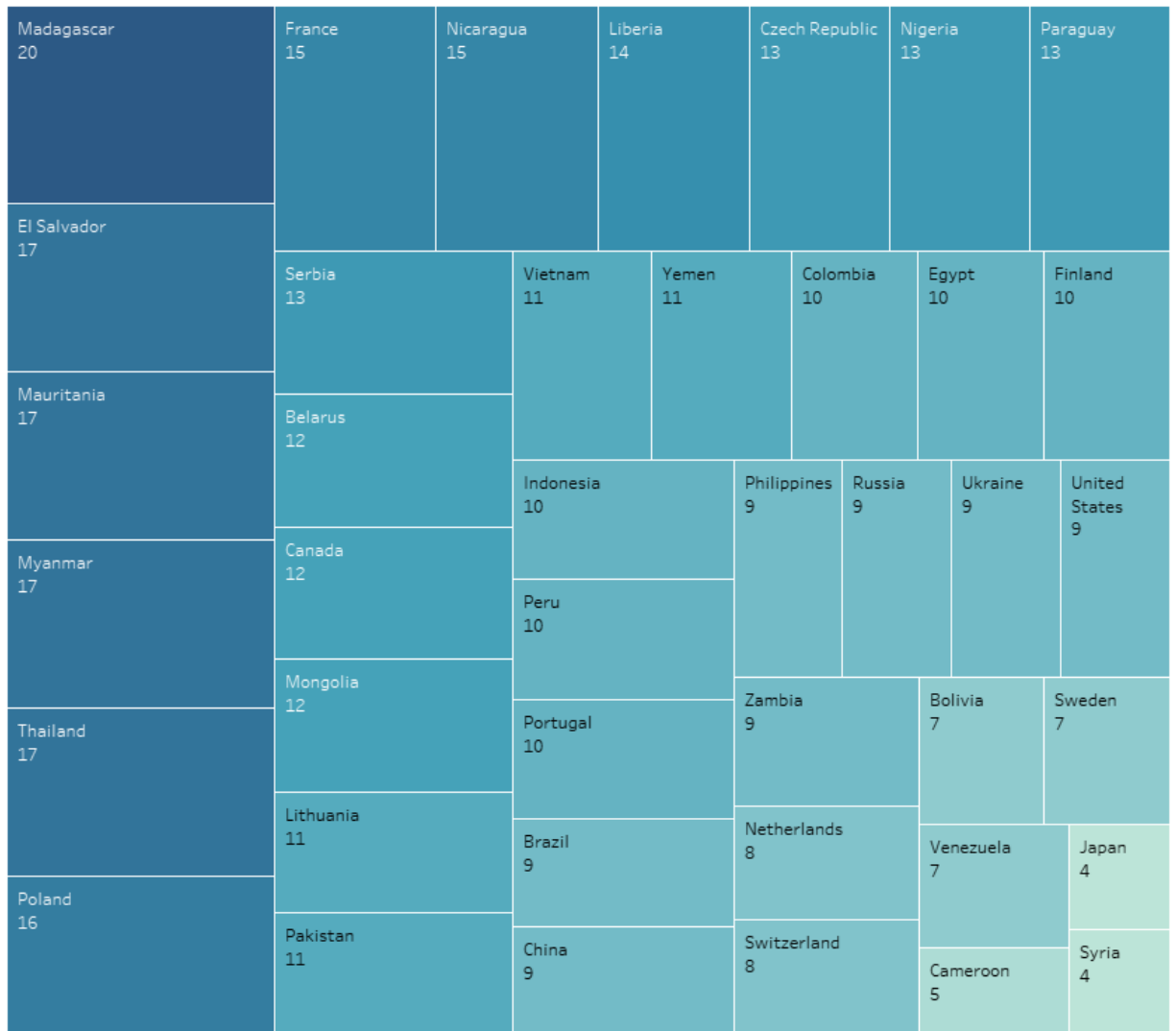
We have four types of warehouses located in various countries. This map shows the number of delayed orders by country and warehouse. Delayed orders really hinders our sales and satisfaction, so we want to identify where these delays may most frequently occur. This way we can address the issue more directly. For this visualization, we needed to join the orders and warehouse and country tables via the customers table and filtered on shipping status of 'Delayed'. The count of the orders is the measure used.

Orders by Month



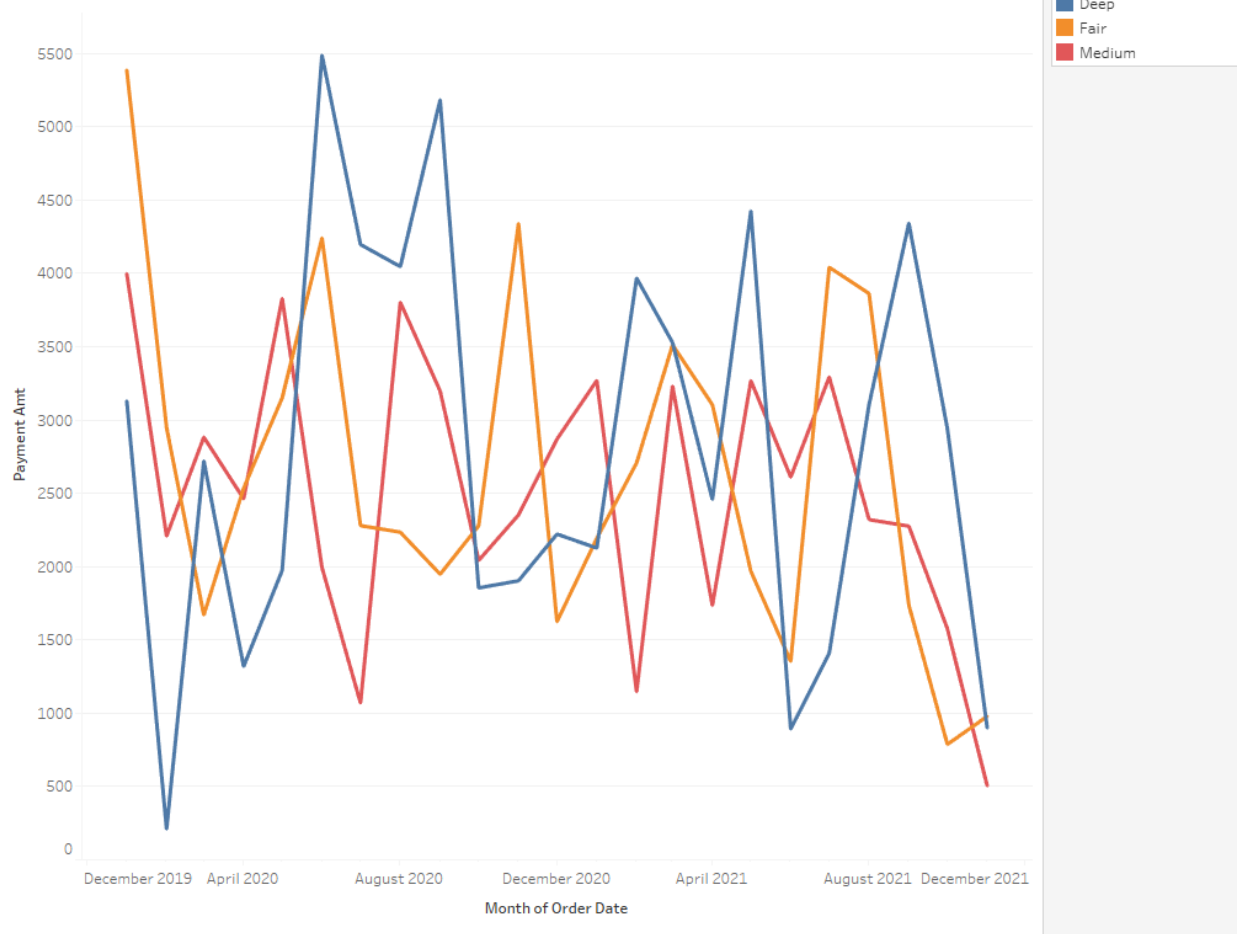
This area chart looks at the number of orders by the month of the order date (regardless of the year). This allows us to identify the peaks and troughs of our sales. We want to increase the low periods to have consistent sales. This only relied on our orders table so no joins were needed, but we did end up using the discrete version of the order date.

Orders by Country



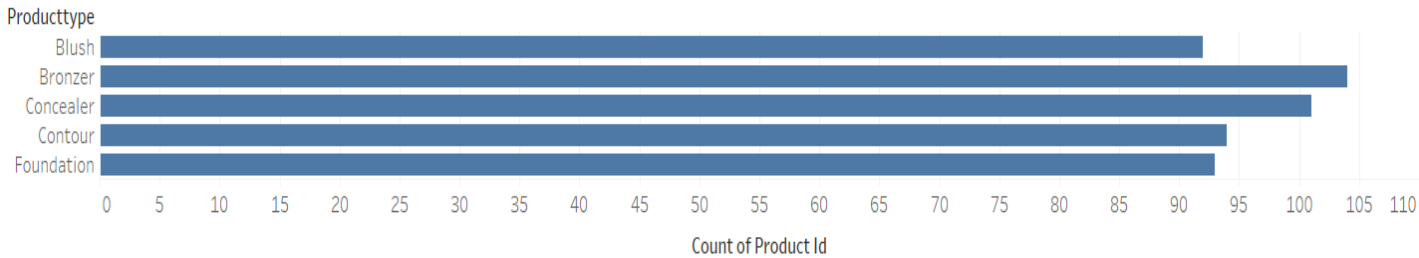
For this visualization, we used a treemap to show the breakout of the total orders by the various countries. We can use this visual to identify the location of the highest volume of sales to help with our marketing. This visual needs data from the orders table and the country table via the customers table. The country is the dimension and the measure is the count of orders.

Total Revenue by Month



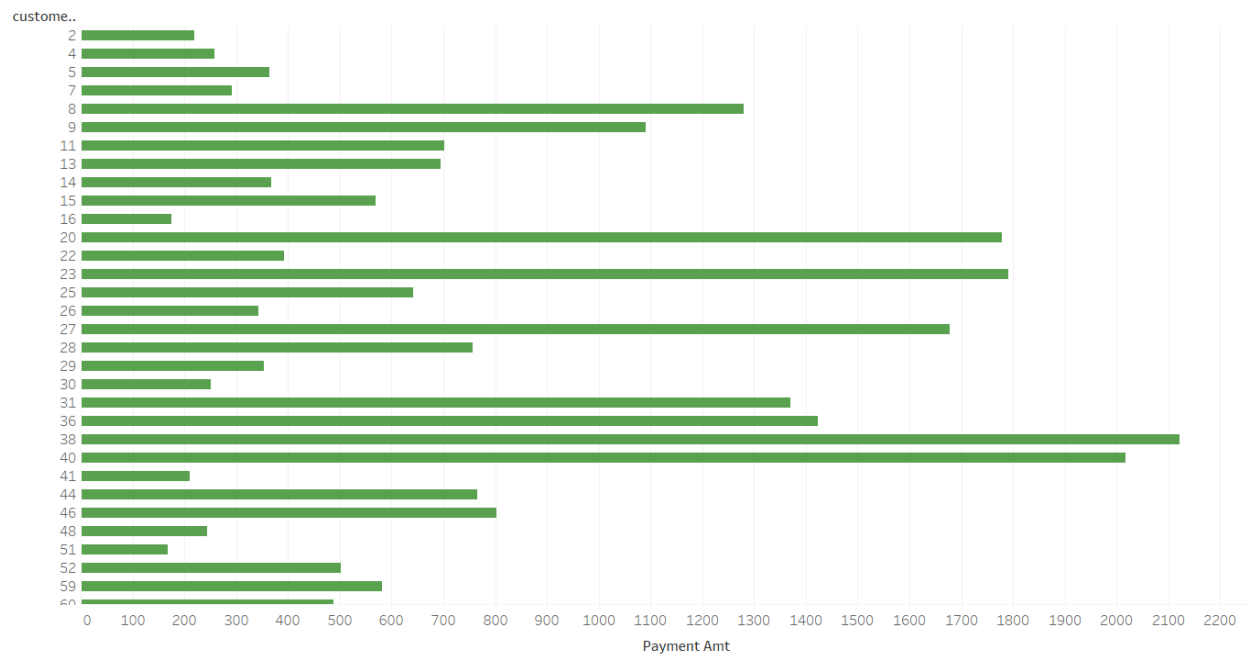
This line chart shows the total revenue by order date to show the overall trend of the company. In addition, it color codes by the tone bucket of the product. It is good for us to get a sense of how our company is doing. The tone bucket comes from the product line table whereas the revenue comes from the payment amount from the orders table. The two are joined via the order details table. The dimensions are the order date (continuous) and the tone bucket (discrete) and the measure is the sum of the payment amount.

How Many Items for each Product Type



Bar chart helping to see how many of each product type we have. The product type and number of count of product ids was pulled from the products table.

Sum of Payments Amounts per Customer



Additional bar chart helping to compare the various amounts that customers are willing to pay per order for various orders. Can help us to identify the spread of our customers willingness to pay and we can identify future prospects.

Average Price per Product Type

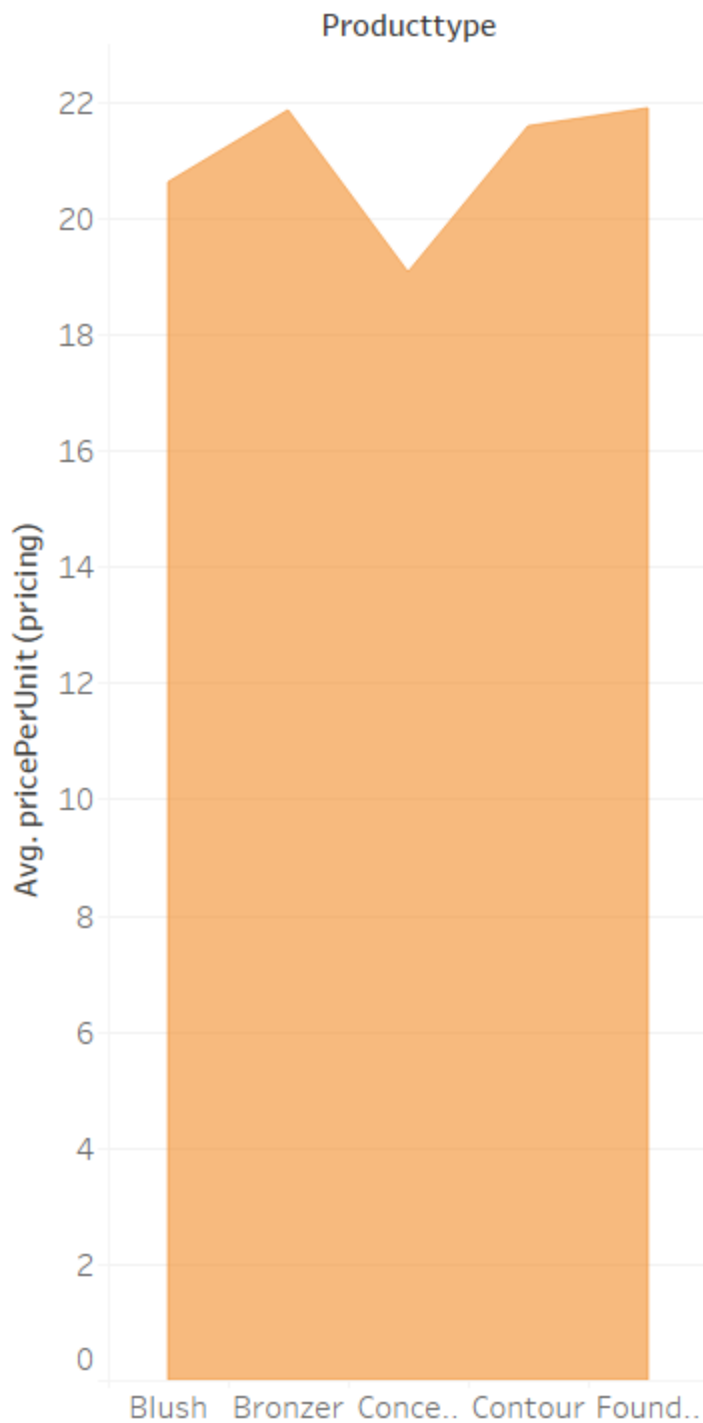
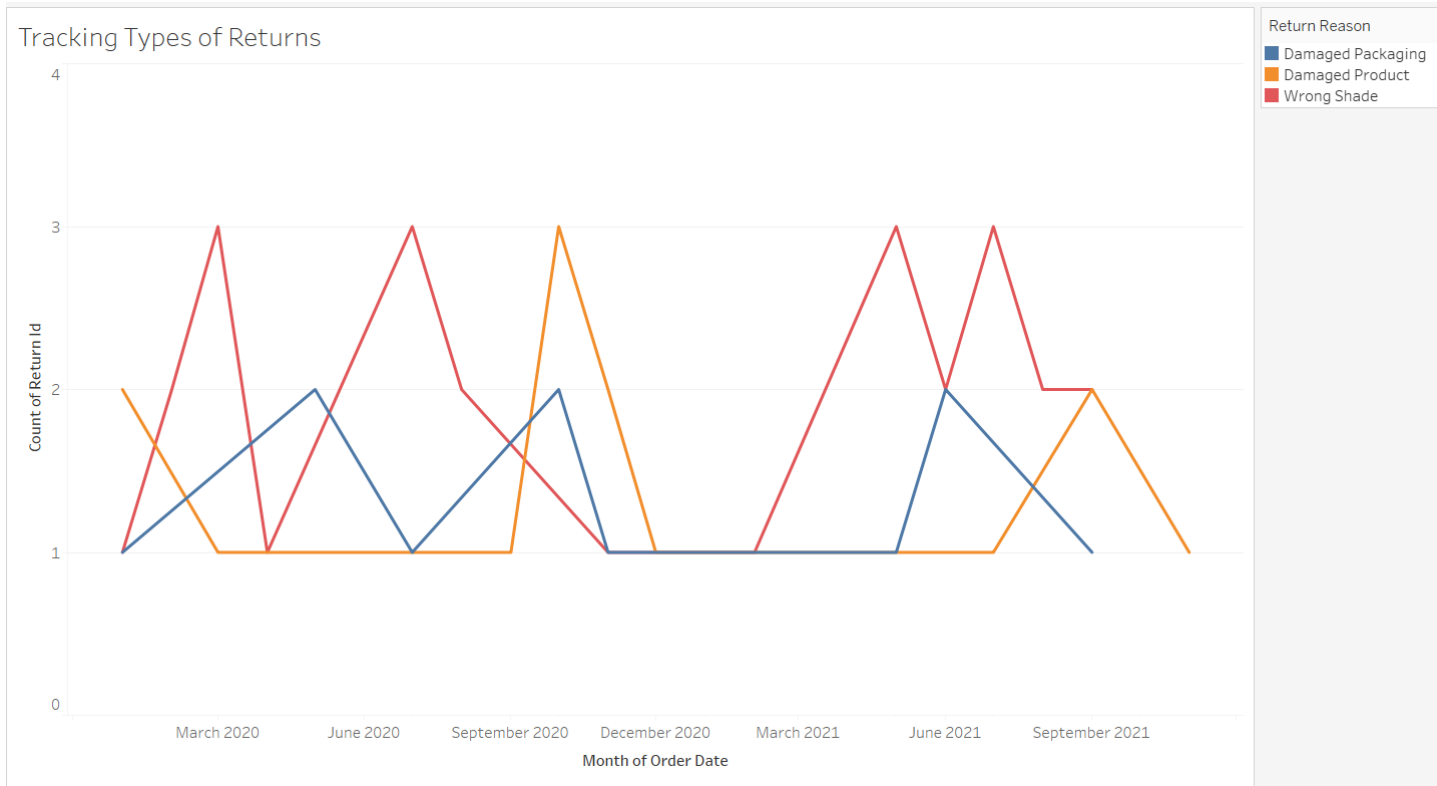
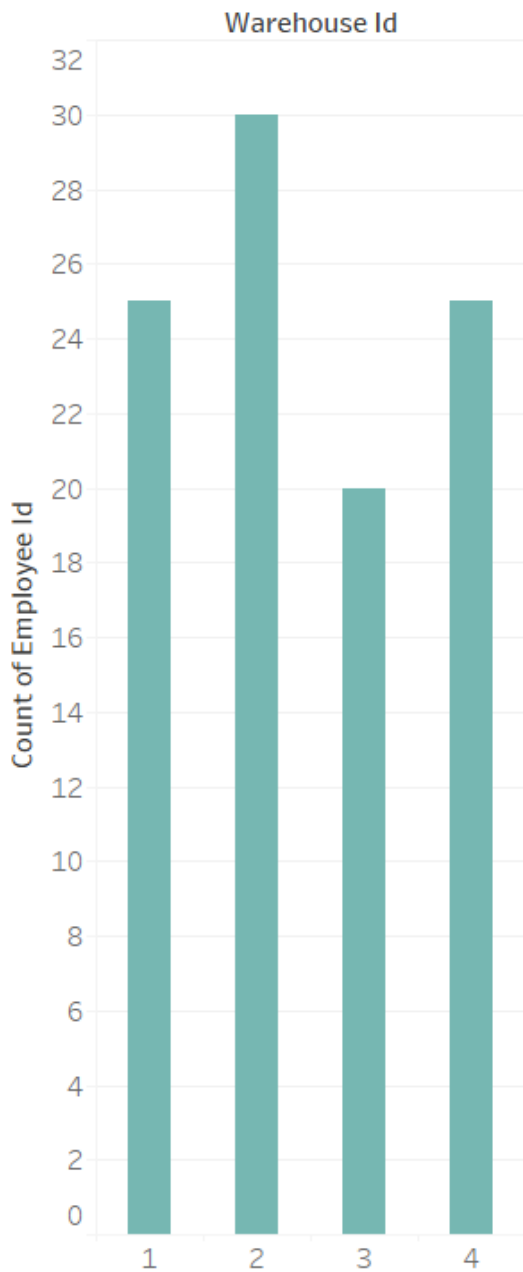


Chart pulling product types from the product table and averaging the price from the pricing table. Will help to identify how the average prices of our products look compared to the competitor and can let us know how much of an edge the company has or if there is room for improvement.



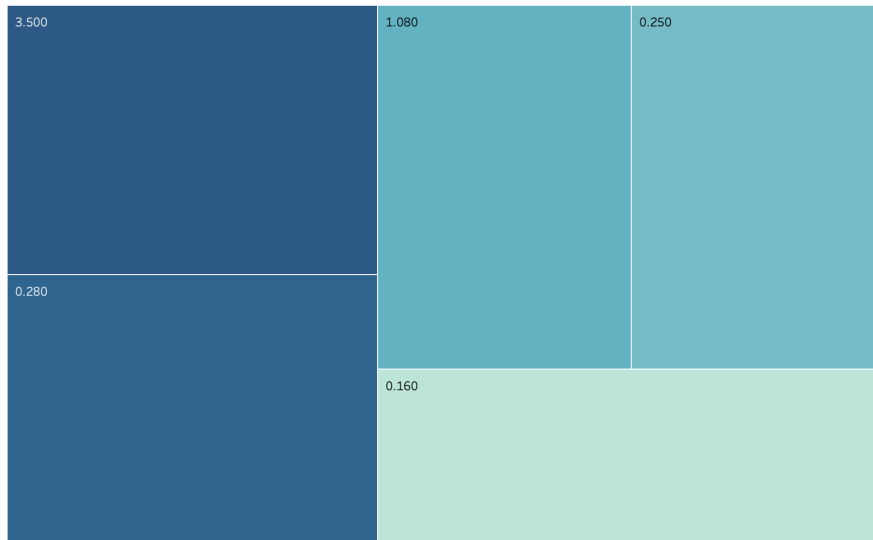
Tracking the types of returns over the course of orders. Will allow us to see if there are certain trends or dates when shipments are arriving in the condition we don't want them to. Looking at the return id and reason from the returns table and order date from the orders table.

Number of Employees in Each Warehouse



Total number of employees in each warehouse. Pulled warehouse id from the warehouse table and the employee id from the employees table. We can use this table to compare the output and demand at each warehouse to help make sure that we are able to meet demands and shipping times.

ContainerSize Usage



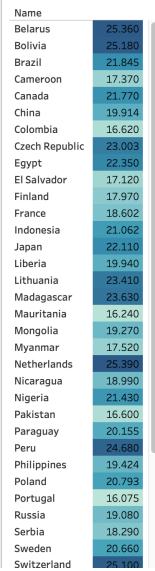
- To assure that operations can accurately account for all of the packaging used for our products, the team can use this chart to visualize just how many products actually use the different sizes of the containers they come in.

Roles with Full Insurance Coverage

Job Title (benefits)	Dental Ins / Health Ins / Vision Ins Full Full	Full
Accountant		Abc
Customer service represe..		Abc
Department manager		Abc
Inventory manager		Abc
Product Manager		Abc
Promotions coordinator		Abc
Regional manager		Abc
Retail marketing specialist		Abc
Sales associate		Abc
Store manager		Abc
Team leader		Abc

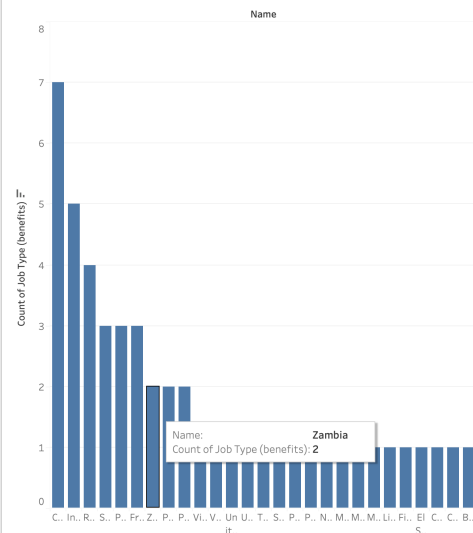
- With this visualization, the company can internally promote the career opportunities that are in the organization. By showing internal employees which roles are fully insured we can hold a standard of transparency across the organization that will motivate employees to reach different position roles that will allow them to meet their satisfaction.

Most costly country (Labor)

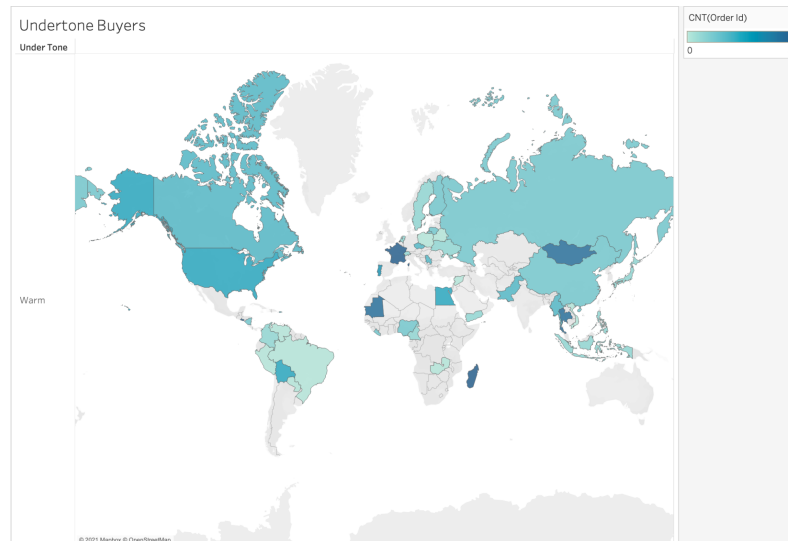


Accounting for where different countries stand with labor costs, we can monitor where our organization is accounting for the cost of labor. With this we can keep trace of any lobbying/ workforce legislation changes that may come across our Human Resources team, assuring that we account for this cost but more importantly equally compensate our employees.

Compensation Testing



- Using this visualization we can hold our compensation personnel to assure that all stakeholders across the organization are properly accounted for. With this model we can see where the organization can further improve the way we compensate our employees beyond wages.



Using a visualization map, our operations team can account for where our company can properly account for where different materials should be inventoried. Assuring that materials are properly inventoried will allow us to assure customer satisfaction.