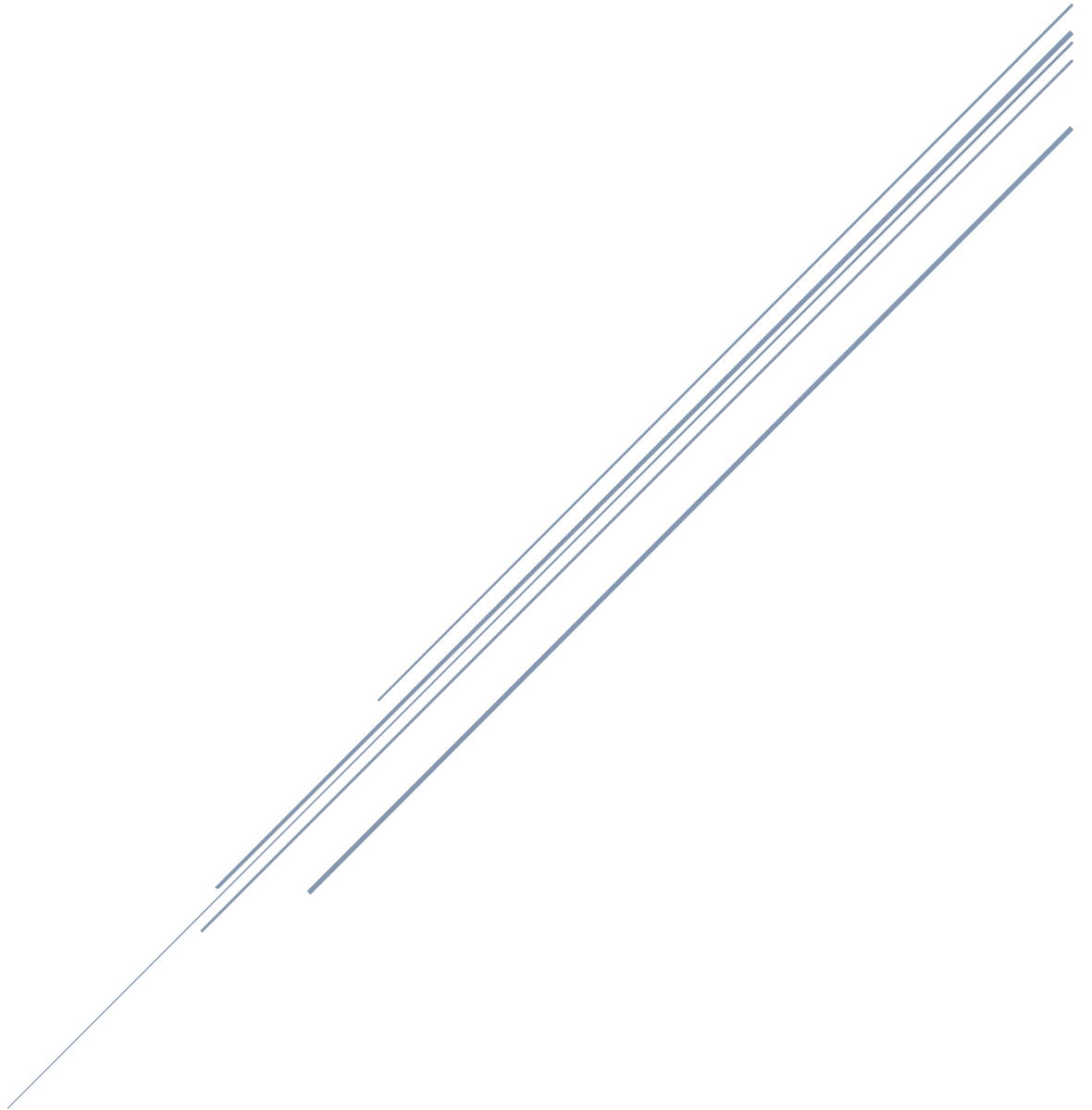


PROJECT 1: SAS VISUAL ANALYTICS REPORT

Datatype: Orders



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Introduction:

Data visualization is the process by which information (data) is retrieved and placed in the following visual context. Visualization of data makes it easier for the human brain to understand large and small data. Visualization also makes it easy to find patterns, trends, and outliers within a group of data. Good data visualization needs to give meaning to complex datasets so that the message is clear and concise. By doing so we can make better business decision and enable different departments to work efficiently on their own.

The data visualization branches into all the fields where the data is available. Using visualizations to convey points can be productive and useful. Visualizing and understanding the data can be easy by using all these media, including dashboards, charts, infographics, maps, charts, videos, and slides. The purpose of data visualization is very clear. It's about understanding the data and using it for the benefit of an organization. However, the data is complex and visualized to add value. The challenge is to quickly communicate data results and recognize patterns to gain insight and interact seamlessly with the data without visualization.

To understand data visualization and to present the knowledge I have acquire, I will be creating 5 visuals and explain each of them. The dataset I have used is from SAS open Datasource, is Orders. The dataset contains 20 columns and 951.7k rows, which are useful to provide information about the purchased orders, explain the usage of purchase based on country, region, continent and provide information about the order date and delivery date. With the help of this dataset retailers can explain the trends of their customer and what the customer is really interested in purchasing. These data sets also help with forecasting trends and making strategic decisions based on market analysis.

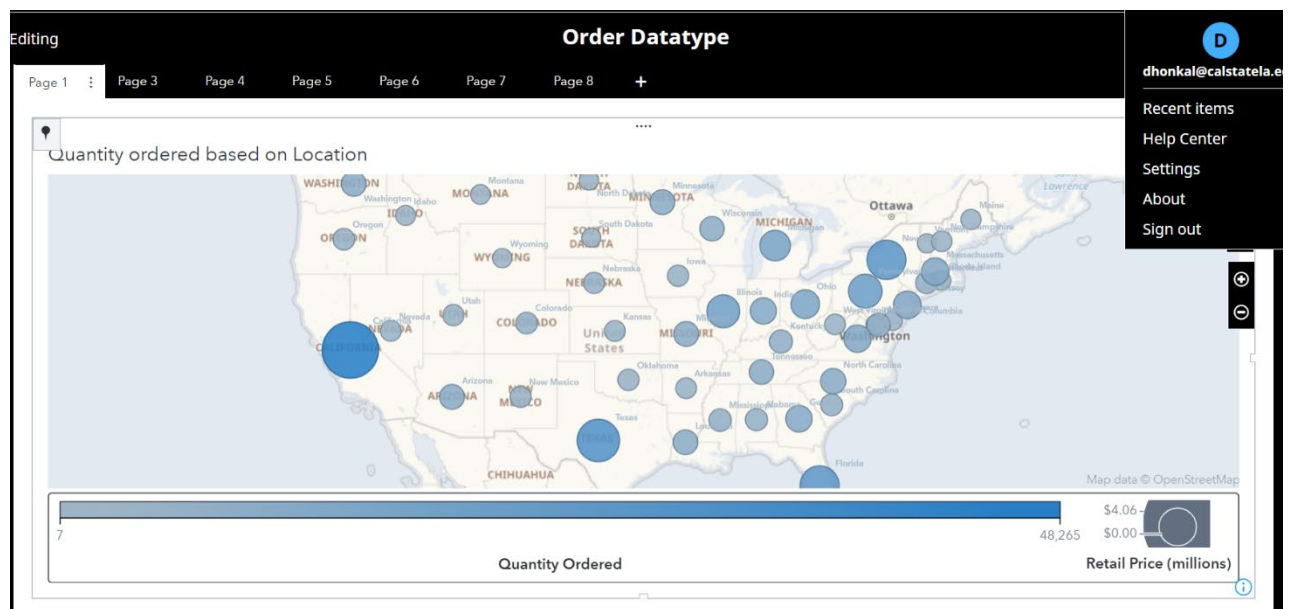
Field Name	Data Description	Data Type - 1	Data Type - 2
Order Date	Displays the date at which the order was purchased		Date
Delivery Date	Displays the date at which the order was delivery		Date
Quantity	Represents number of quantities ordered		Double
Retail Price	Displays the cost at which customer will purchase the order		Double
Cost	Displays cost of the product		Double
Discount	Displays the amount of discount applied to the product		Double
Order Type Label	Displays the category of the sale		String

Customer ID	Displays customers ID number	Discrete/ Qualitative	Integer
Product ID	Displays product's ID number	Discrete/ Qualitative	Integer
Continent	Displays the name of the continent	Discrete/ Qualitative	Char
State Code	Represents the states code number	Discrete/ Qualitative	Integer
State Name	Displays the name of the different state	Discrete/ Qualitative	Char
Region	Displays the name of different region	Discrete/ Qualitative	Char
City	Shows the names of cities	Discrete/ Qualitative	Char
Postal Code	Displays the number of postal codes of each area	Continuous/ Qualitative	Integer
Country Label	Displays the name of different countries name	Discrete/ Qualitative	Char
Year	Exhibits the number of years of each purchase	Continuous/ Quantitative	Integer

Quarter	Displays the quarter purchase of the product	Continuous/ Quantitative	Integer
Month	Displays number of months	Continuous/ Quantitative	Integer
Month Name	Displays the name of the month	Discrete/ Qualitative	Char

Visualizations:

1. What is the geographical representation of geo maps based on orders?



The above geographical map shows the quantity ordered based on the different location in the United States. In the above visual I have used the hierarchy datatype which includes all the data items of state names and the postal code of the United States. Here

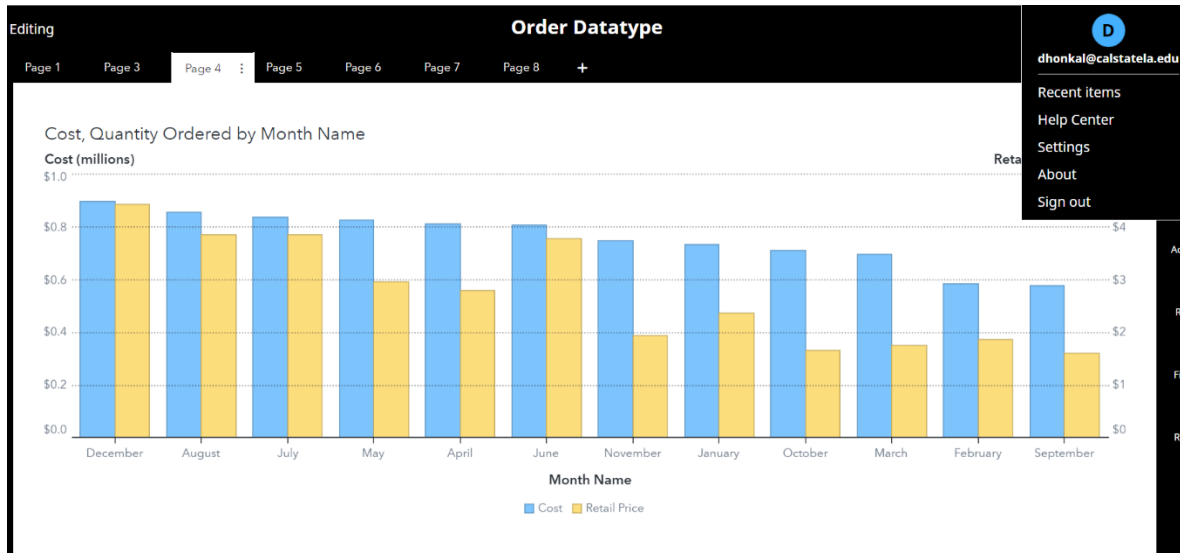
we learn that the states with darker shade have the highest quantity ordered as compared to the lighter shade. We can also infer that states like California, Texas, New York, and Florida have the highest quantity order. Also, the retail price changes based on the states, so the states with higher quantity order have higher retail price and vice versa. With the use of geographical map, it becomes easier to visualize the quantity order of different states.

2. Understanding the orders based on cost and retail price?



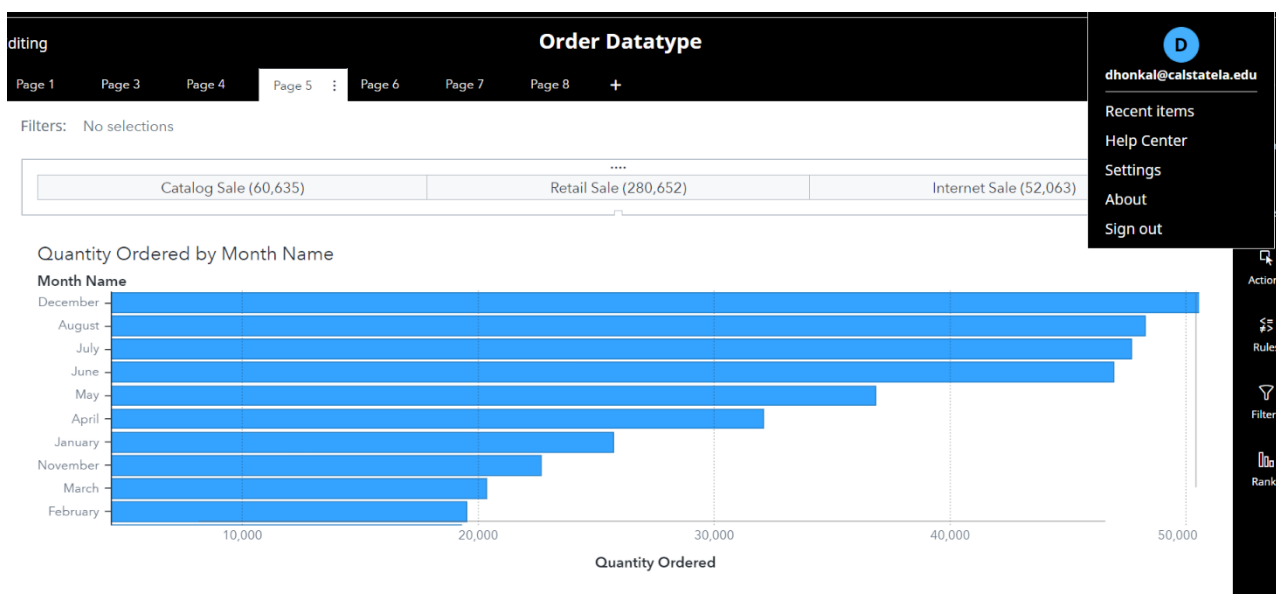
This chart is based on heat map principles. It gives the cluster of the orders on the basis of the retail price and cost moreover it gives the overview look on the orders which are not profitable and orders which are highly profitable beside it segregate the complete chart with distinguishing line for a clear understanding of the orders and even gives the ability for quick analysis of the quantitative orders.

3. What will the trend for cost and retail on monthly basis?



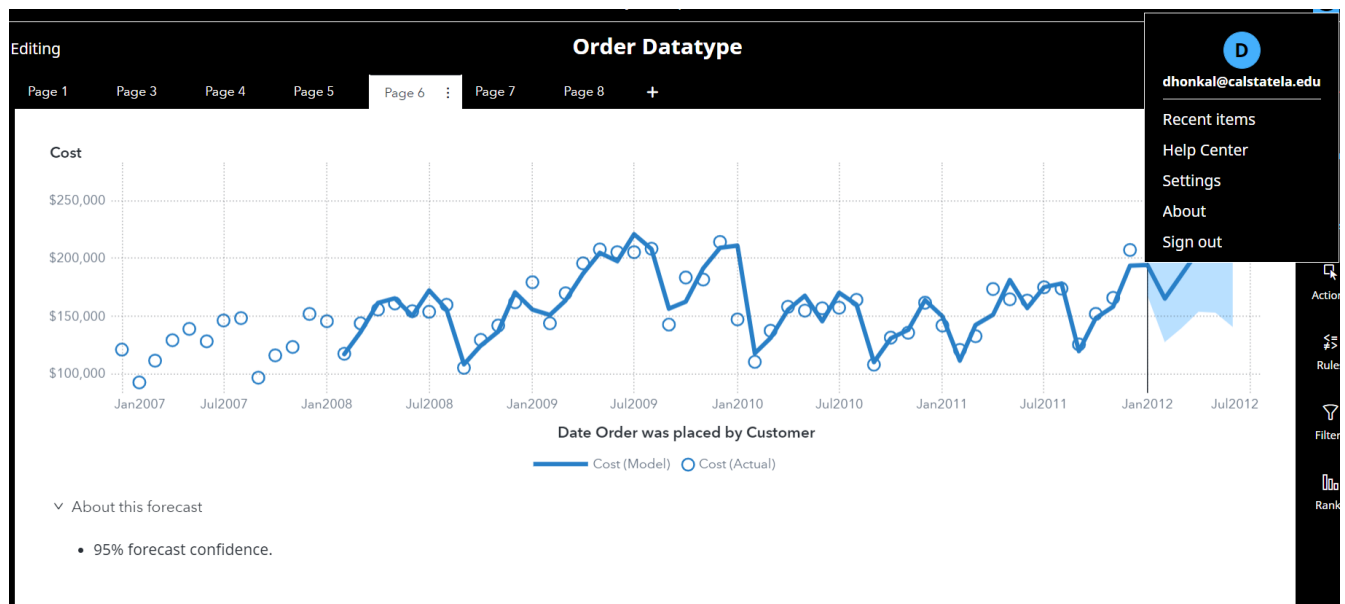
This following bar chart shows of overall trend of last 10 to 12 months it has an aggregation of three main values of the system cost, order, and the retail price of the order. Moreover, this chart is a major insight on relation of cost and retail pricing and it even helps to understand the profitability of the department. It helps to analyze the overall expense turn on cost of the product and the revenue which is coming back in terms of sales.

4. What will be the segregation of orders on sales channel basis?



The above horizontal bar graph shows the quantity ordered by month name. The last month has the highest quantity ordered from all the months. The quantity ordered changes based on the sales type. The above filter explains the 3 categories of the sales: Catalog sale, Retail sale and Internet sale. The horizontal bar shows the trends of orders placed during the whole year and it even helps to understand the trend of the seasons which is been followed by the customers. This can be a breakthrough for managing the inventory and analyzing the fashion season throughout the year.

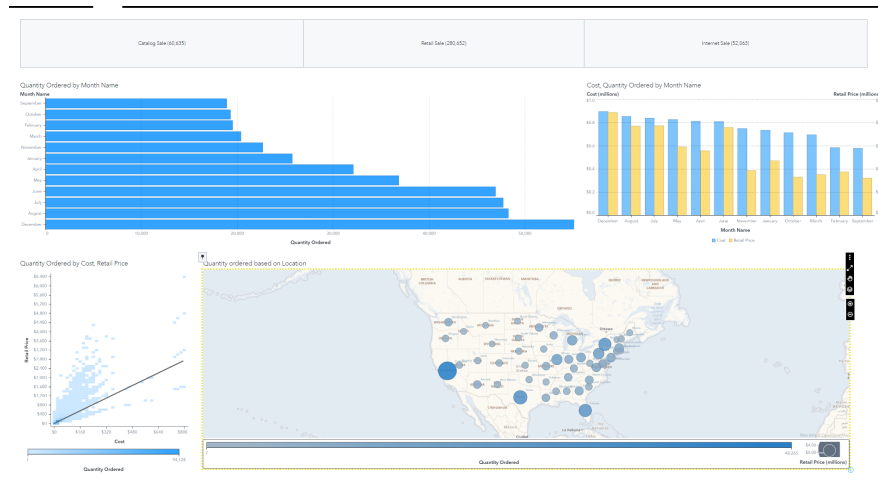
5. What will be the prediction of the order pattern for upcoming 6 months?



This graph is based on the hyper bola of predictive analysis moreover, it takes the data of the year 2007 to 2012 as the train data set and gives a production of next six months with an exponential accuracy of more than 95 percentage. This even gives us the annotations of actual cost with the line of complete five years to give us the accuracy of the production all the points are been marked as data tips to give us accurate value of the cost and even provide distinguishing

point of actual data in the predictive data for a better understanding of route to algorithm to build up the conference of the analyst.

Dashboard:



The above dashboard is a clear visualization of the important key performance indicators that can be utilized to explain us the key factors of our datatype. The four visualizes that I have utilized in my dashboard are given as follows:

- Quantity ordered based on location.
- Quantity ordered by cost and retail price.
- Cost, quantity ordered by month name.
- Quantity ordered by month name.

From the above visuals we can understand that these data help us in the overall increase of the revenue and help retail companies to indulge in, at the profit on the provided trends. All the changes mentioned in the diagram give a detailed overview of the computer system capable of running and monitoring the business. It even segregates the sales into multiple funnels with a detailed overview of the channel of sales, which even helps to improve and monitor the pattern

of sales where all the customers. Besides, it even gives the customer ID as a field which helps to analyze the most favorable channels of purchase of the customer on individual basis and the field such as product ID can even be set as a major point of observation which can result in at the time of managing inventory and at the time of purchasing new products and refilling the inventory. The order date and delivery date factors can help the administrator monitor the logistics time and give up. It has the most profitable logistic route to have an overall boost in revenue. The Geomap will be a breakthrough to have a single view for the most favorable and profitable customers and locations at a single point of duration. It can help build up all the major budgeting and strategy for marketing and sales. The overall heat map of retail and cost price can you give us a detailed explanation for all the orders. It gives a quick inside for the orders which are being the most profitable and orders which are getting least revenue into the company. It will gradually increase as the data is increased it can be used to train multiple data sets such as order patterns, which can help prepare the logistics team and have a sufficient inventory at the time of peak and dull season.

Reference:

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