

Sample Super Store Data Analytics Using IBM Cognos Analytics

Category: Data Analytics

Skills Required:

IBM Cloud

Project Description:

Introduction:

The superstore is a large supermarket, often selling furniture, clothing, electronics, and food. Supermarkets usually charge anywhere from 15 to 45 percent less than their smaller counterparts.

As a business manager, try to identify areas in which you could work to make more money. Perform Test Data Analysis.

Project Flow

- Users create multiple analytical graphs/charts/Visualizations.
- Using the Analytical Visualizations, build required Dashboard(s).
- Saving and visualizing the final dashboard in the IBM Cognos Analytics.

To accomplish this, we have to complete all the activities and tasks listed below:

1. IBM Cloud Account
2. Login to Cognos Analytics
3. Working with the Dataset
4. Understanding the Dataset
5. Loading the Dataset

Data Visualization Charts

Build the following visualizations

1. Build a Bar chart Showing the Regional Sales by Year
2. Build a Text Table showing the Regional Sales by Year and Category
3. Build a Line Chart showing the Sales and Profit Forecasts
4. Build the Sales vs Profit Scatter Plot
5. Build a Heat Map showing the Regional, Segment and Sub-Category wise Profits
6. Build a Histogram displaying the Shape of Distribution of Quantity among different Segments
7. Build a Tree Map by Sub-Category of Sales
8. Build a Word Cloud showing the Sales and Profits
9. Build a Geographical Map showing the Sales by States
10. Build a Regional Bump Chart showing the Sub-Category wise Profits

Working with the Dataset:

The Dataset used here is [Sample-Superstore.xls](#) .It consists of three sheets { Orders, People, Returns }

Loading The Dataset:

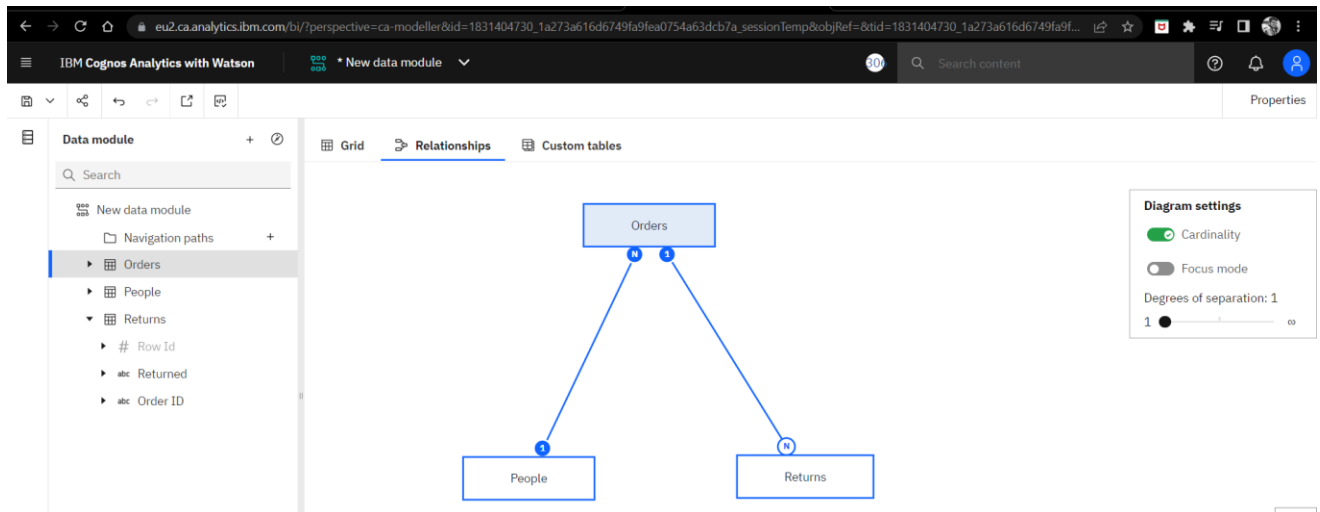
Before you can create and view your data, you must first connect the data to IBM Cognos. Cognos supports connectivity to a variety of data, which is stored in a variety of locations.

Data may be stored on your computer in a spreadsheet or text file, or in a large, related, or cube (multidimensional) database on your business server.

For us, we will be using a spreadsheet or text file to do our analysis. We need to load all three tables - {Orders, People, Returns}

Prepare The Datasets:

Once we load the data, we need to join the tables



Calculations:

a. Prepare Calculations of Year, Month, Day fields for **Order Dates** and **Ship Dates** and the related **Navigation paths**.

b. Create a Navigation Path of Location as:

Location-- Region, Country / Region, State, City, Postal Code

c. Create Navigation path of Product as:

Product-- Category, Sub-Category, Manufacturer, Product Name

d. Create Few more Calculations:

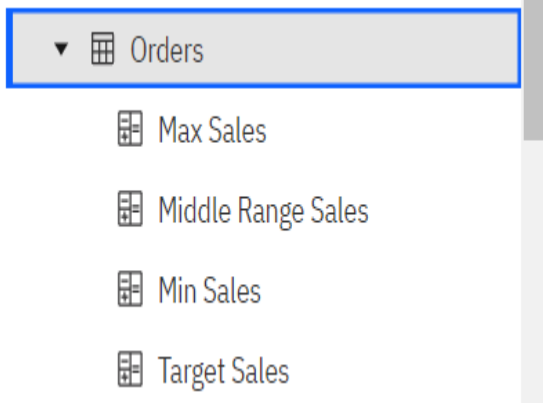
Target Sales = 110 % Sales,

Min Sales = 90 % Sales,

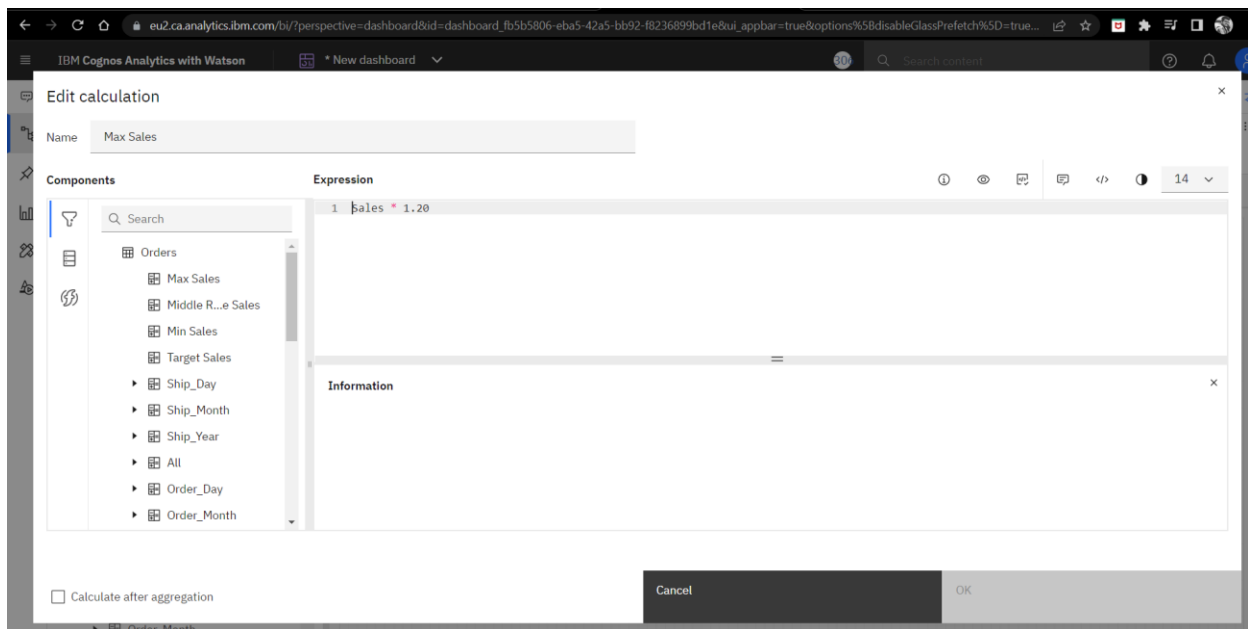
Max Sales = 120% Sales,

Middle Range Sales = 95% Sales.

Calculations for Sales:



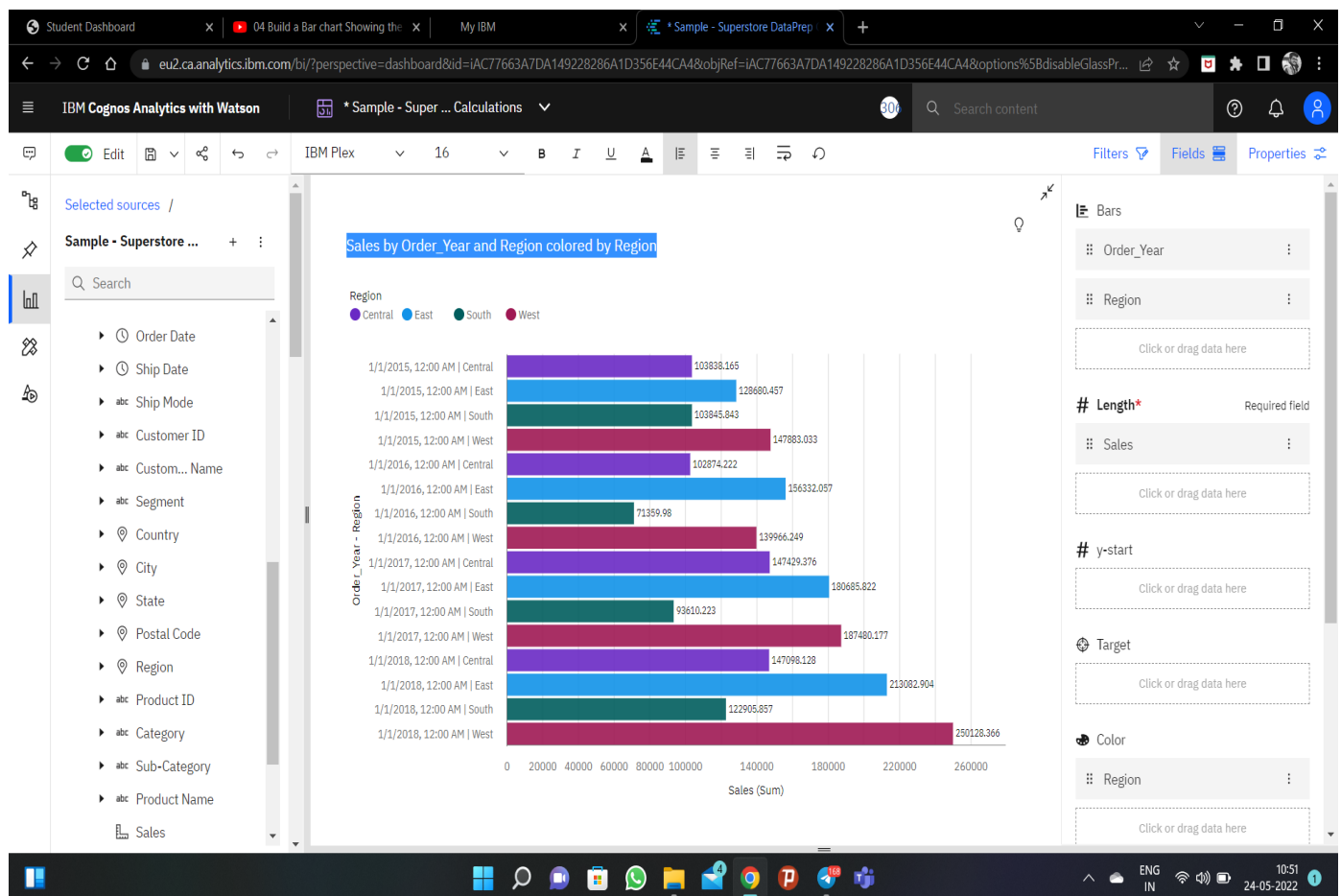
Calculations for Max Sales



Data Visualization Charts

Using the given dataset, we plan to create various graphs and charts to highlight the insights and visualizations.

1) Build A Bar Chart Showing the Regional Sales by Year



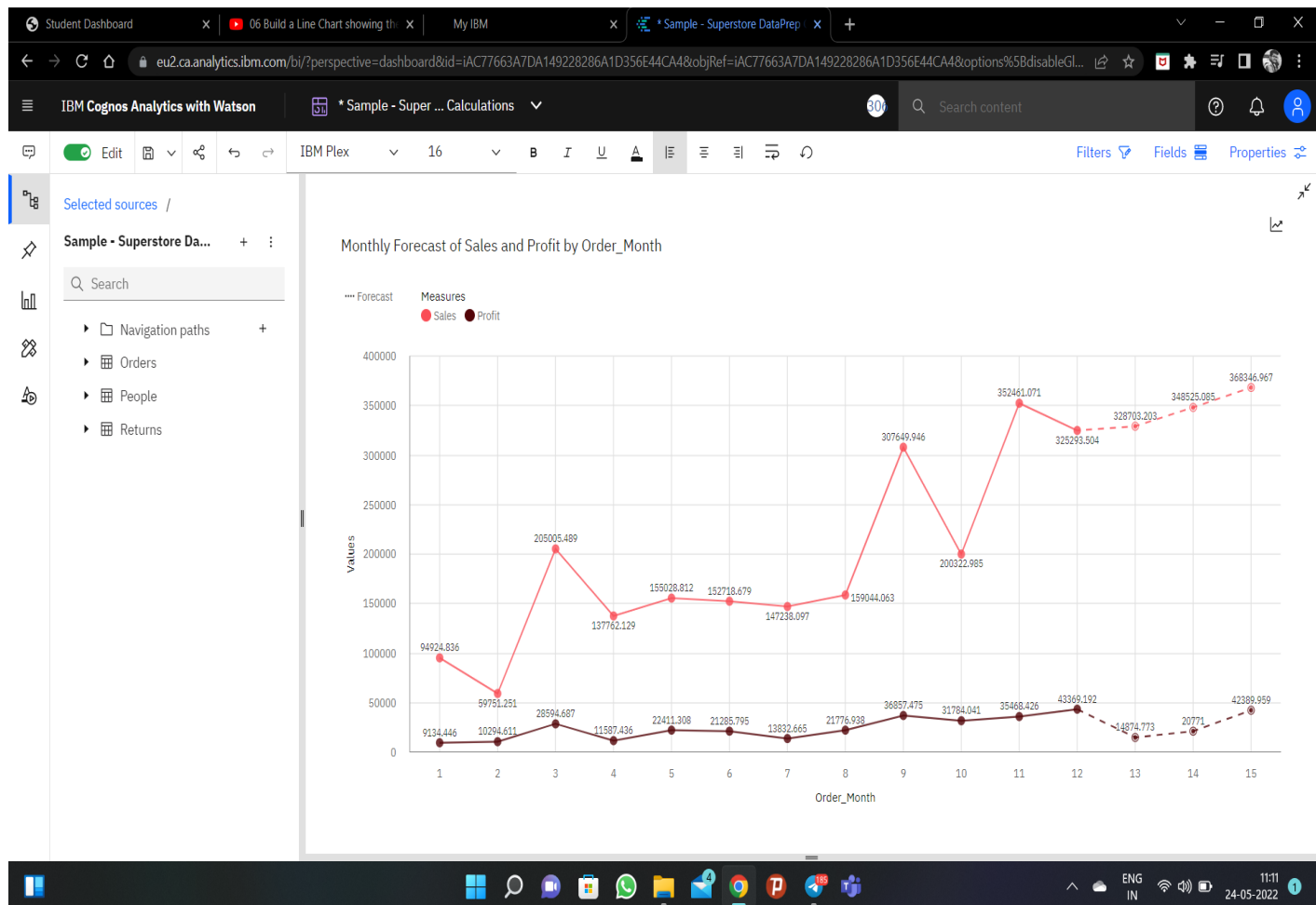
2) Build A Text Table Showing the Regional Sales by Year and Category

The screenshot displays the IBM Cognos Analytics interface. The main workspace shows a text table titled "Sales for Region, Order_Year and Category". The table has columns for Sales, Central, East, South, West, and Summary. The data is organized by Order_Year (1/1/2015, 12:..., 1/1/2016, 12:..., 1/1/2017, 12:..., 1/1/2018, 12:...) and Category (Furniture, Office Supplies, Technology, Summary). The cell containing the value 50082.448 is highlighted with a blue border.

Sales		Central	East	South	West	Summary
1/1/2015, 12:...	Furniture	32909.664	47232.739	26968.003	50082.448	157192.853
	Office Supplies	37001.691	35968.989	25958.878	52846.854	151776.412
	Technology	33926.81	45478.729	50918.963	44953.731	175278.233
	Summary	103838.165	128680.457	103845.843	147883.033	484247.498
1/1/2016, 12:...	Furniture	35592.047	53817.432	24103.814	57004.944	170518.237
	Office Supplies	25461.391	42655.245	31253.295	37863.532	137233.463
	Technology	41820.784	59859.38	16002.871	45097.774	162780.809
	Summary	102874.222	156332.057	71359.98	139966.25	470532.509
1/1/2017, 12:...	Furniture	50773.182	46387.172	27921.441	73819.64	198901.436
	Office Supplies	45792.789	61801.208	28666.628	47679.357	183939.982
	Technology	50863.405	72497.442	37022.154	65981.179	226364.18
	Summary	147429.376	180685.822	93610.223	187480.177	609205.598
1/1/2018, 12:...	Furniture	44522.271	60853.861	38305.425	71705.711	215387.269
	Office Supplies	58770.544	65090.613	39772.512	82463.506	246097.175
	Technology	43805.313	87138.43	44827.92	95959.148	271730.811
	Summary	147098.128	213082.904	122905.857	250128.365	733215.255

The interface includes a left sidebar with "Selected sources" and "Sample - Superstore Da..." and a right sidebar with "Visualization properties" (General, Color, Conditional color, Available data, Chart). The bottom of the screen shows the Windows taskbar with various application icons and the system clock.

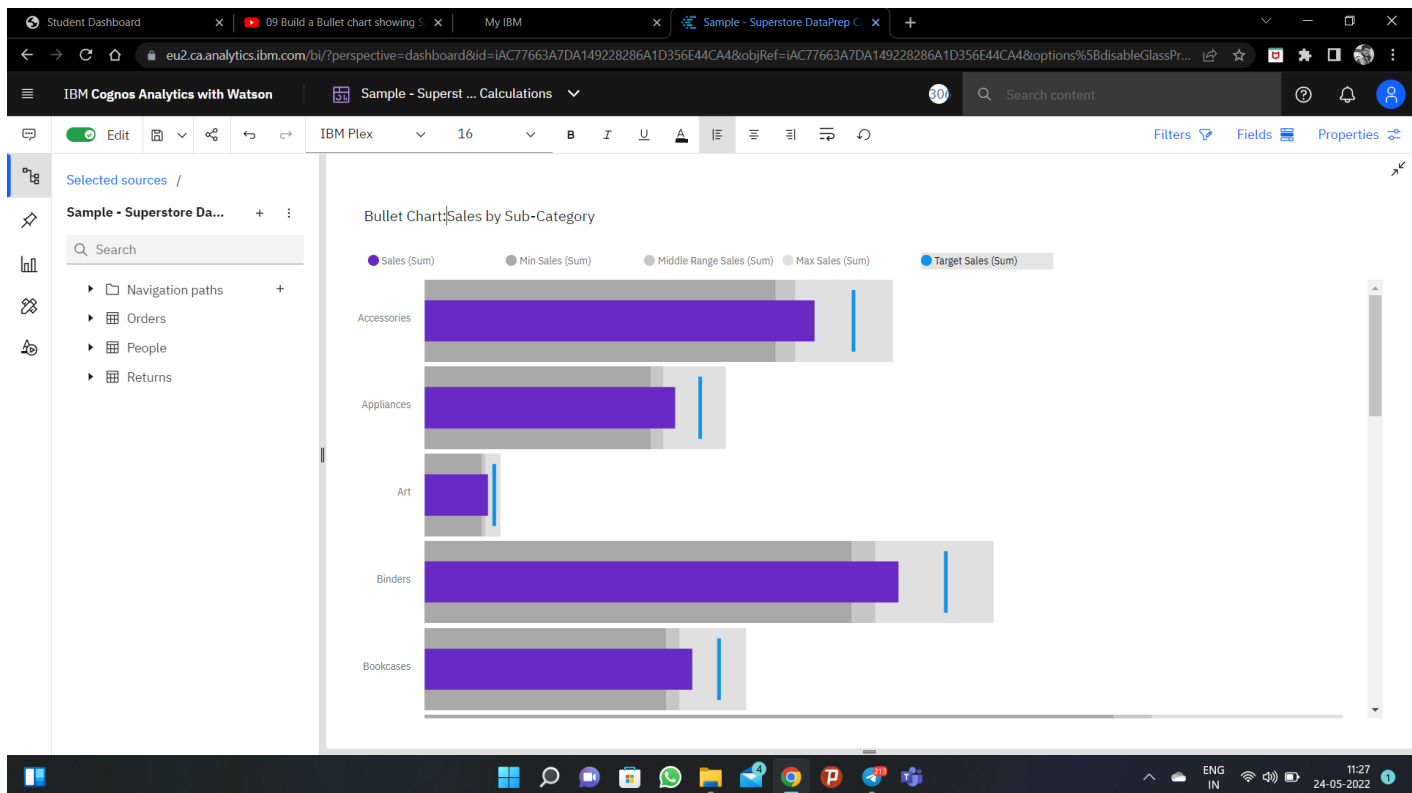
3) Build A Line Chart Showing the Sales and Profit Forecasts



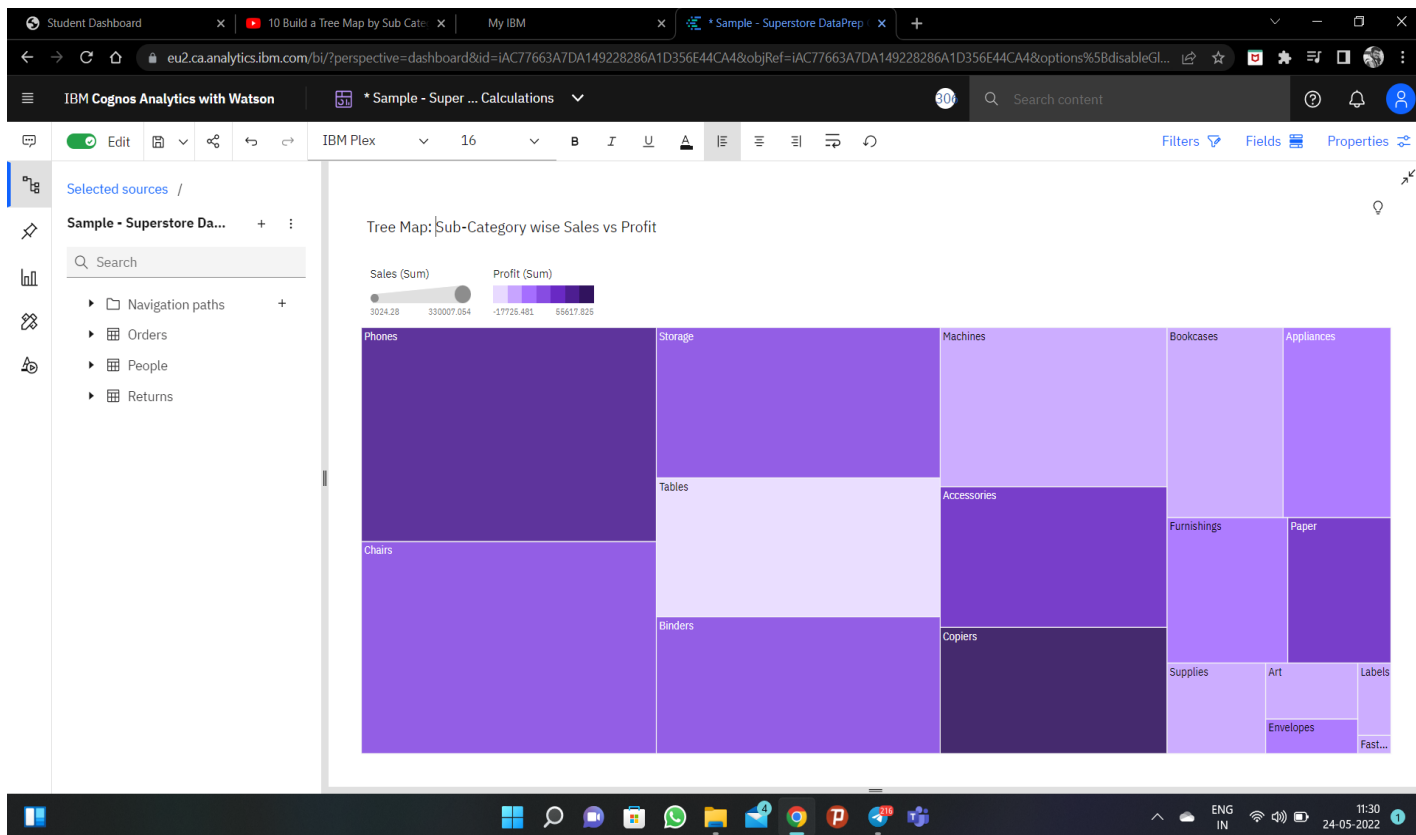
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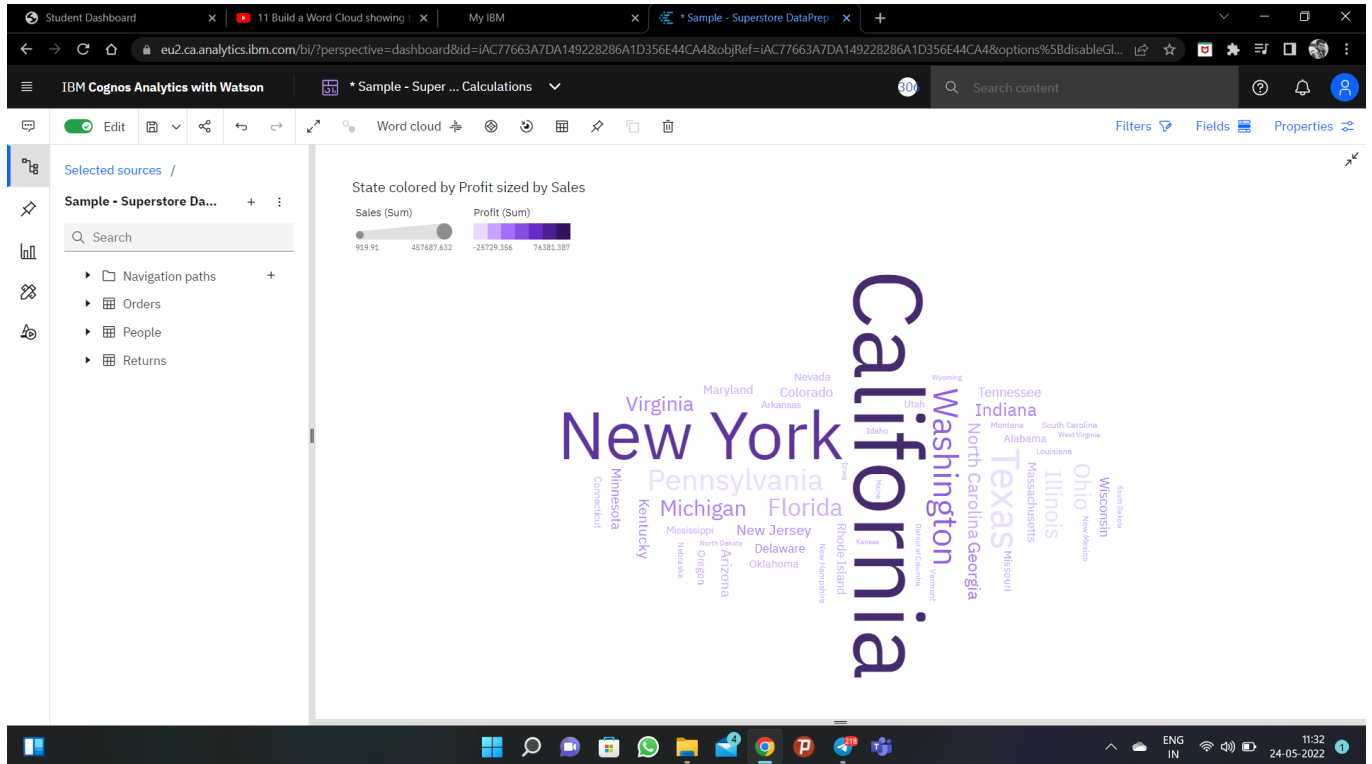
6) Build A Bullet Chart Showing Sales Analytical Values Across Different Sub-Categories



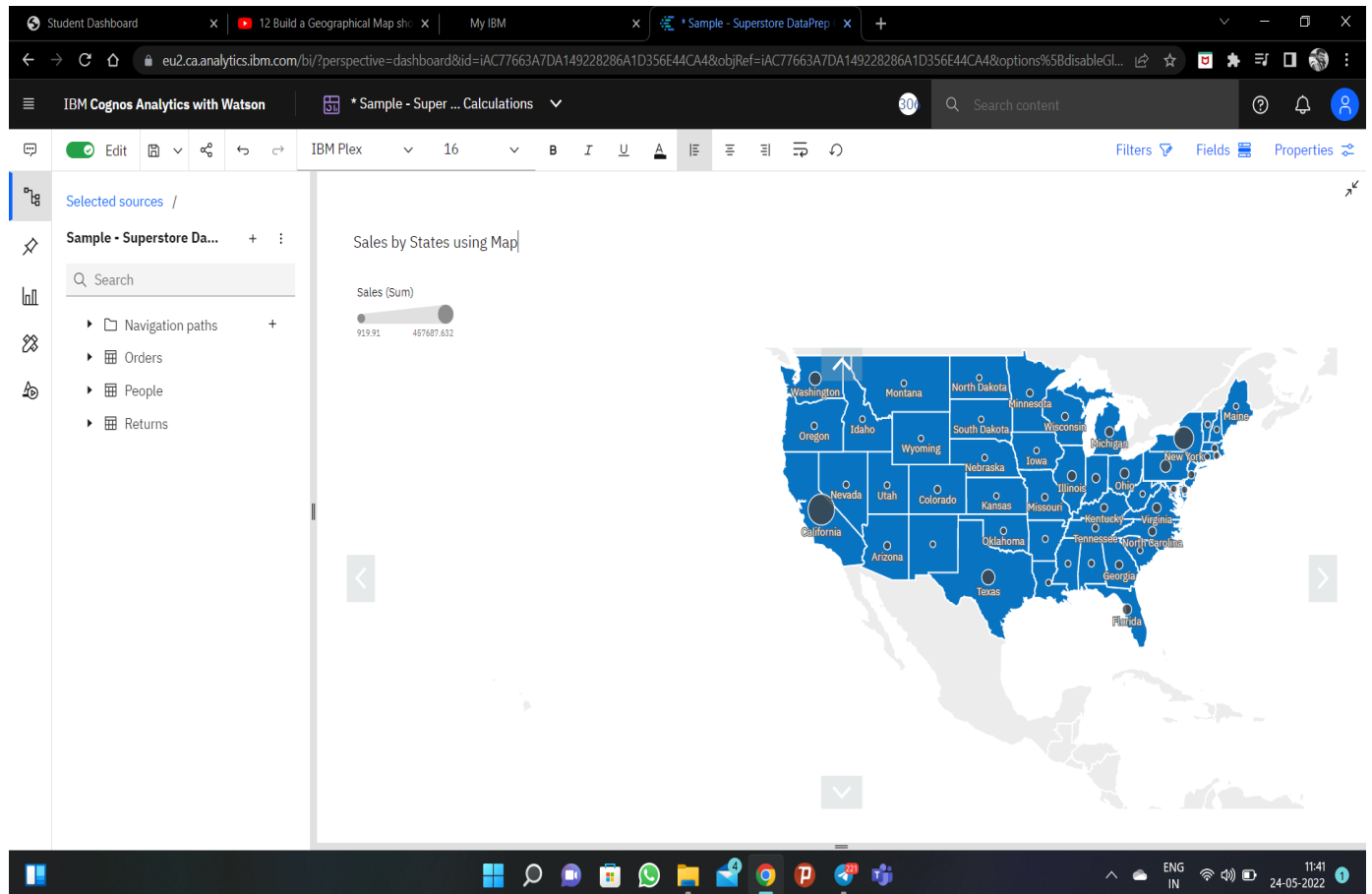
7) Build A Tree Map by Sub-Category of Sales



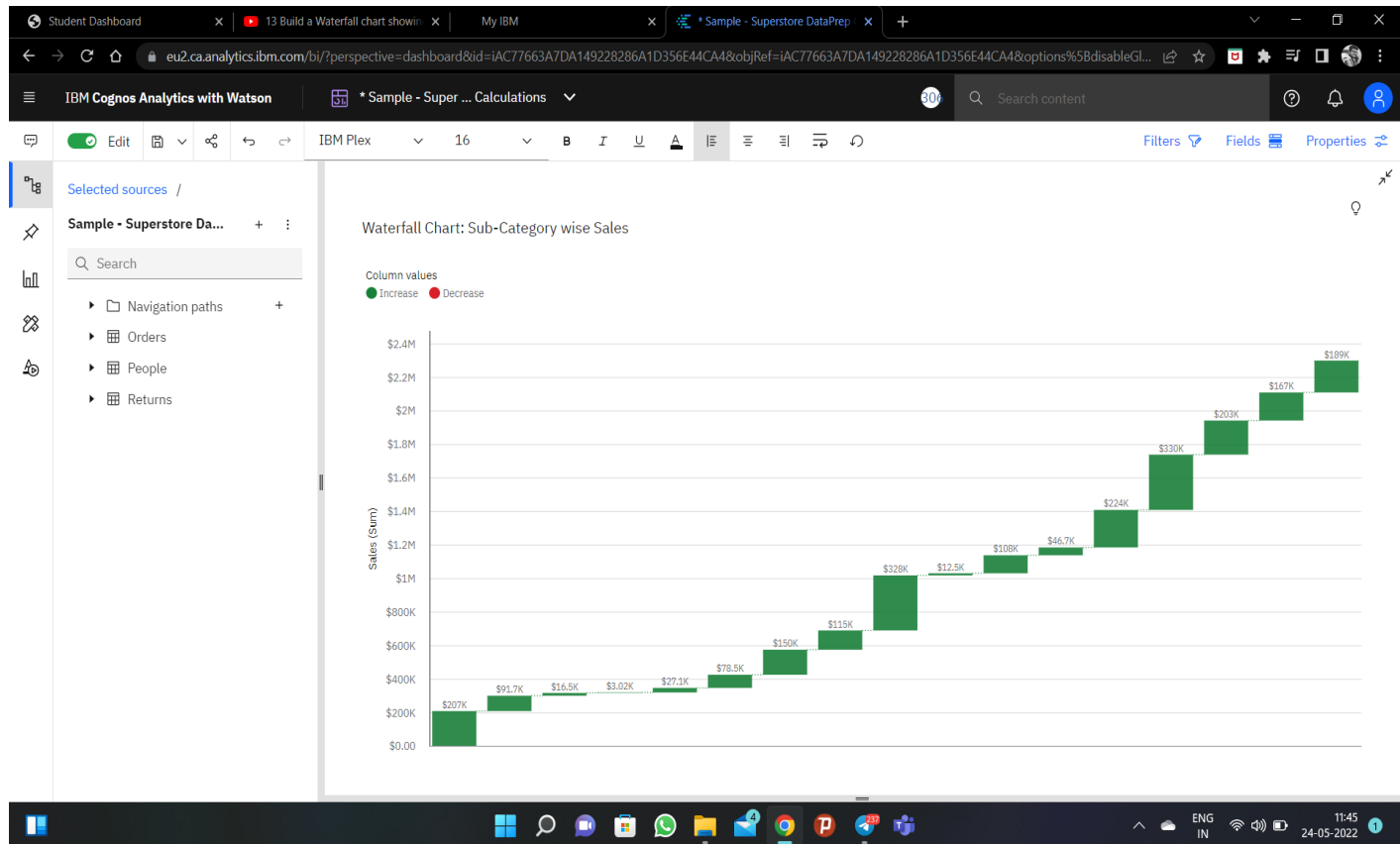
8) Build A Word Cloud Showing the Sales and Profits



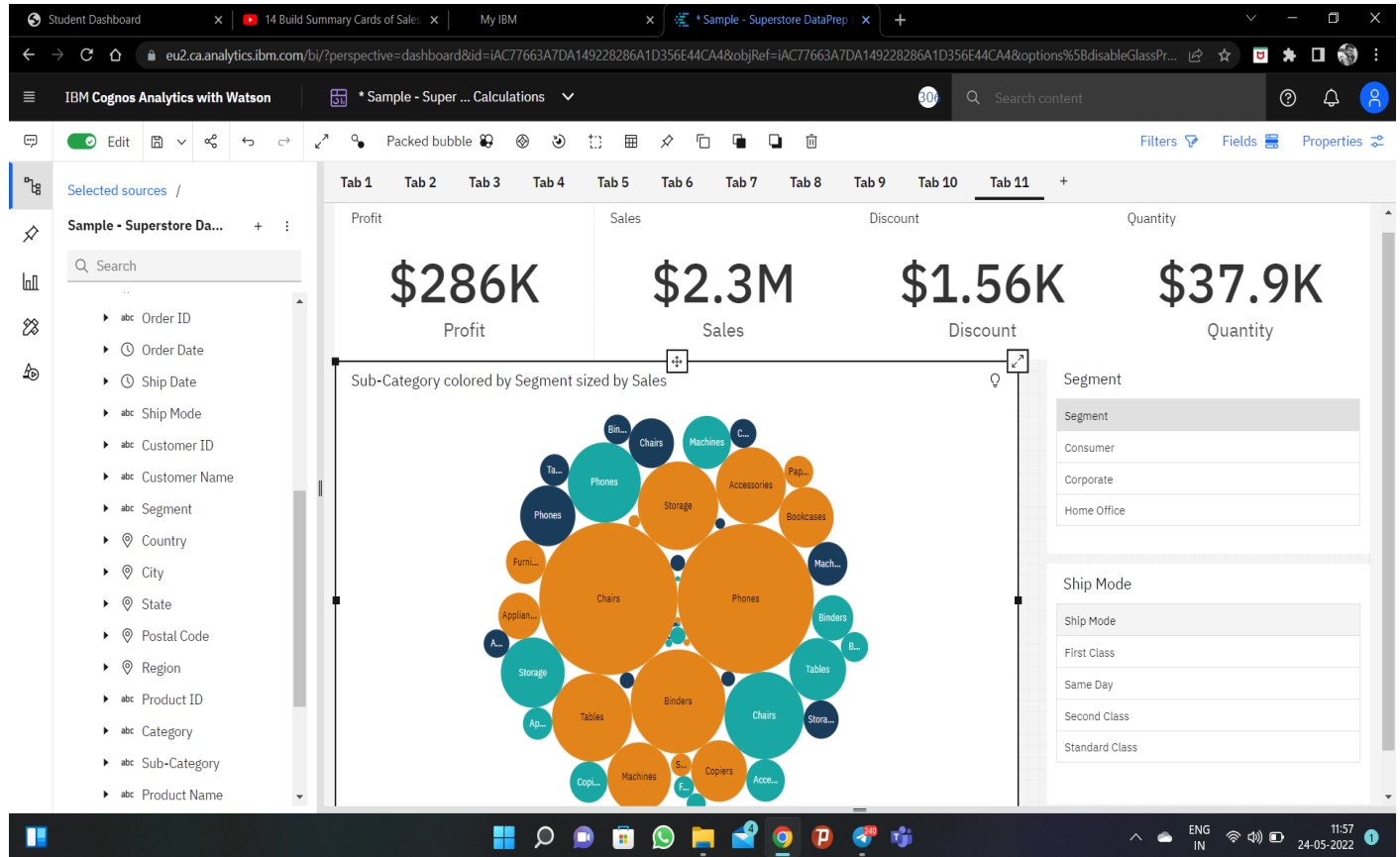
9) Build A Geographical Map Showing the Sales by States



10) Build A Waterfall Chart Showing the Sub-Category Wise Sales



11) Build Summary Cards of Sales, Profit, Quantity and Discounts



12) Build A Hierarchical Bubble Chart to Show Case Category-Wise Regional Sale

