Engineering Core

Assignment 2: Business Performance Dashboards

EN6001

Assignment-2

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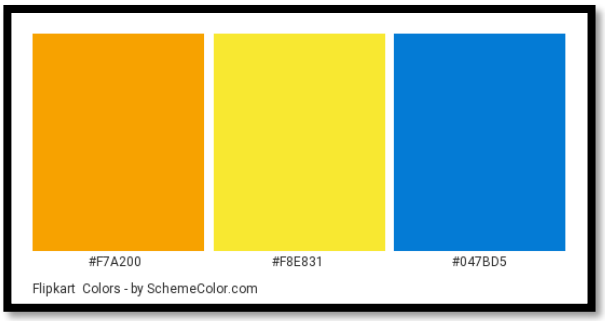
❖ Problem-Statement:

Students will study the data sets given. Based on the data set student will deliver the business requirements in the form of a dashboard with complete navigation. (Students will understand the business requirements). All Viz (visualization) should be filtered on Year of Order Date.

❖ Color-Theme & Typography Chosen:



Arial

Segoe UI Black

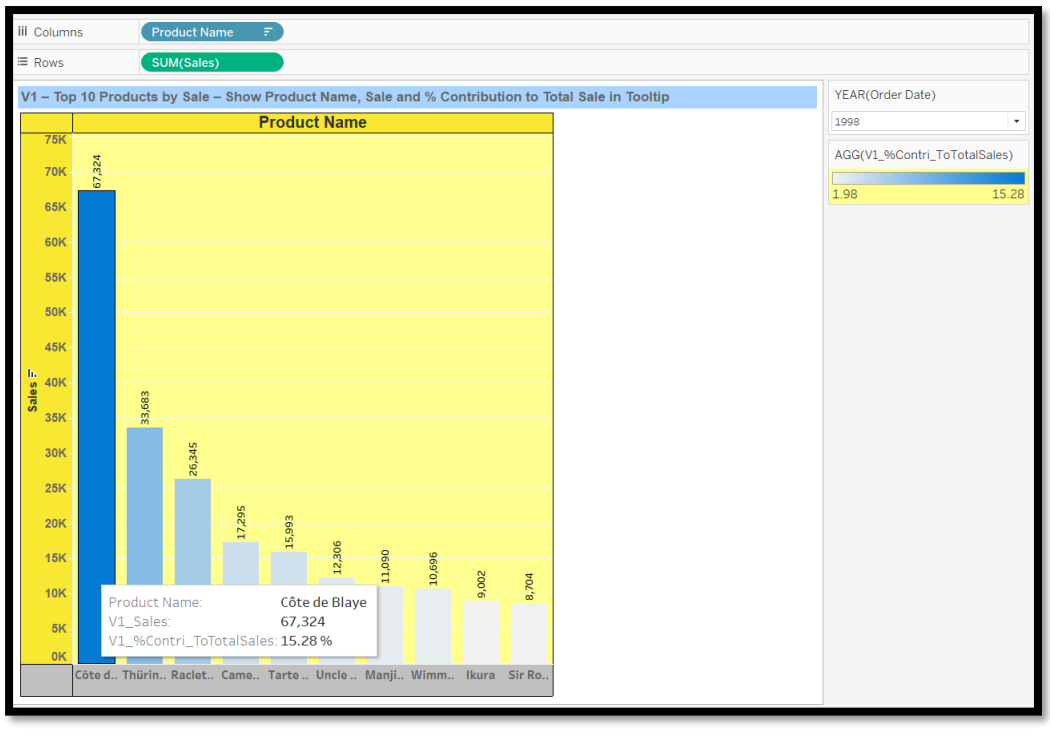
❖ Logo-Chosen:

Flipkart

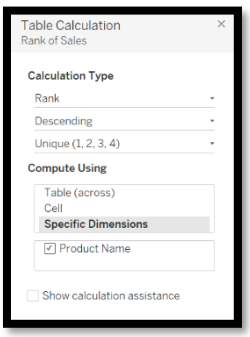
1) Create a Dashboard following Vizs

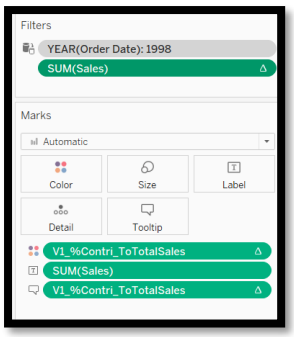
- V1-Top 10 Products by Sale – Show Product Name, Sale and % Contribution to Total Sale in Tooltip.

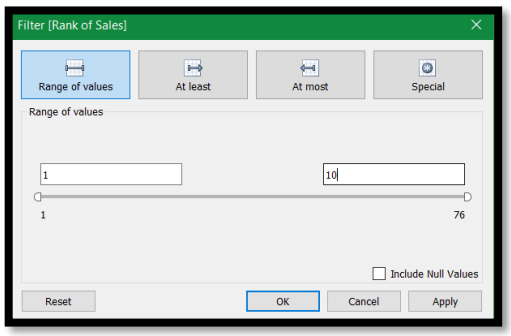
Solution:



Inference: In table calculation of sales, I have defined rank as descending and Unique to get top products, to define a fixed value 10, I put the sum(sales) in filter and filtered for just top 10 values.

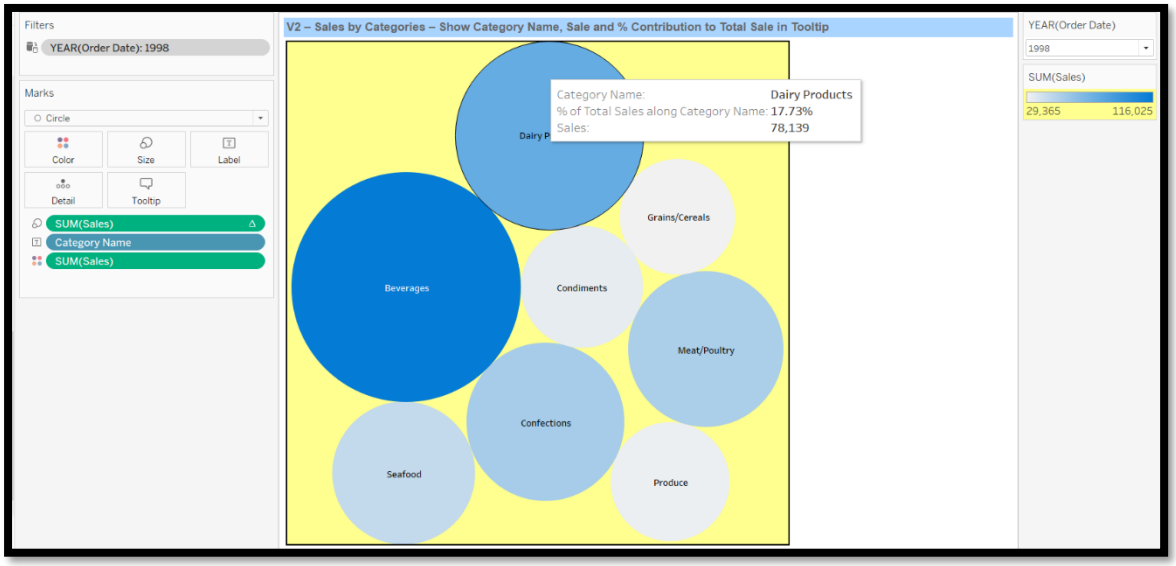






- V2-Sales by Categories – Show Category Name, Sale and % Contribution to Total Sale in Tooltip

Solution:

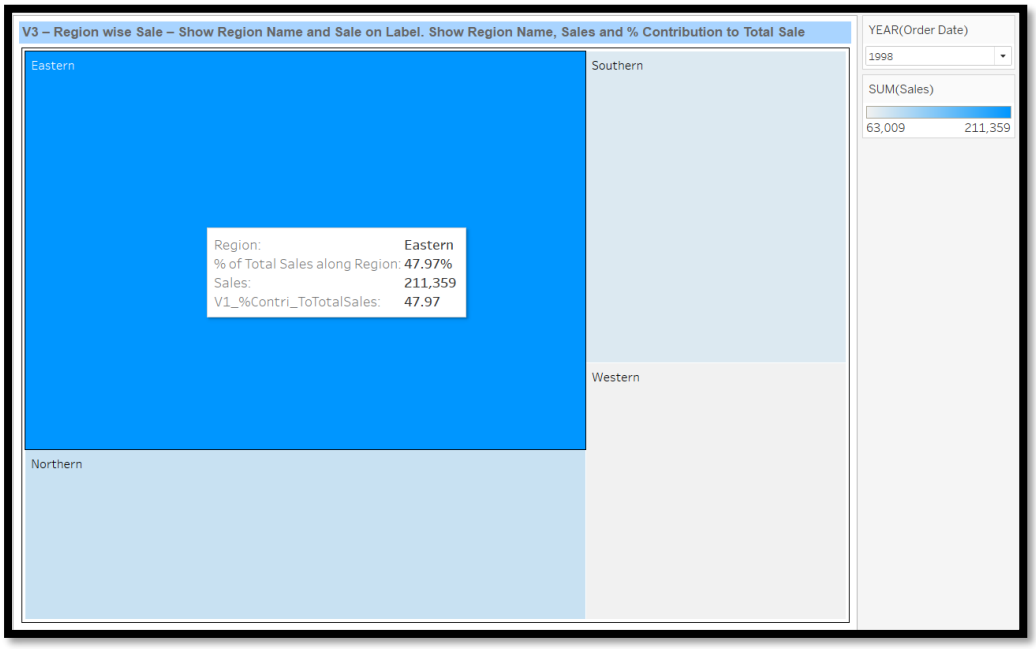


Inference: Here Beverage category has the highest sales and it constitutes around 26.33 % of the total sales. The least sales are of grain/cereal category. For Percentage contribution to total sales, I have made a calculated field and used the formula given below. In percentage calculation to total sales has been done on "Category" in edit table calculation.

```
(SUM([Sales])/TOTAL(SUM([Sales])))*100
```

- V3-Region wise Sale – Show Region Name and Sale on Label. Show Region Name, Sales and % Contribution to Total Sale.

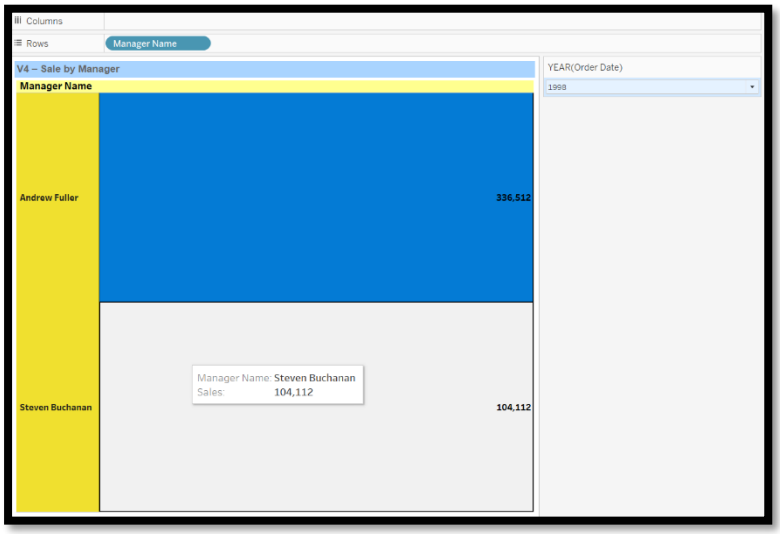
Solution:



Inference: Here the highest sales are from Eastern region in year 1998 and the lowest are in western region. In percentage calculation to total sales has been done on "Region" in edit table calculation.

- V4 – Sale by Manager

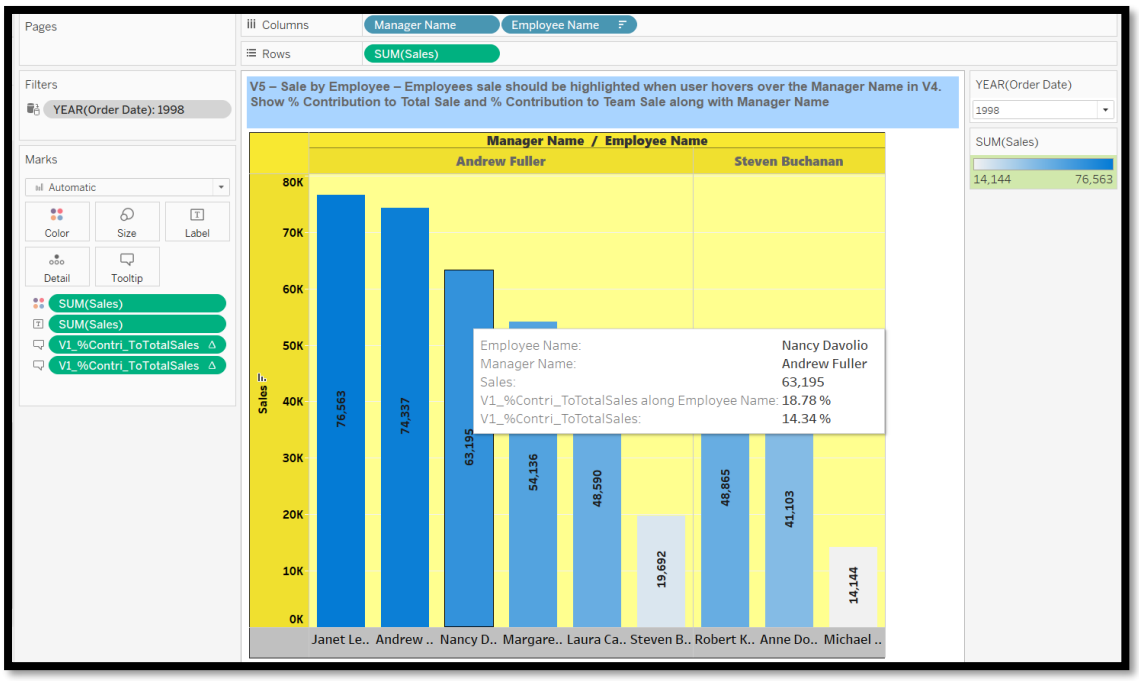
Solution:



Inference: There are only 2 managers and here we have plotted their sales with a filter on year along with the labels too.

- V5 – Sale by Employee – Employee's sale should be highlighted when user hovers over the Manager Name in V4. Show % Contribution to Total Sale and % Contribution to Team Sale along with Manager Name.

Solution:



Inference: Here we have found sales by different employee and put their manager's name is label. To find the contribution to total sales we have used the same formula as used in V2 i.e.

```
(SUM([Sales])/TOTAL(SUM([Sales])))*100
```

But this has been applied "Table Across" and to find the contribution to team sales we need to find it for "Specific dimension. i.e., Employee Name".

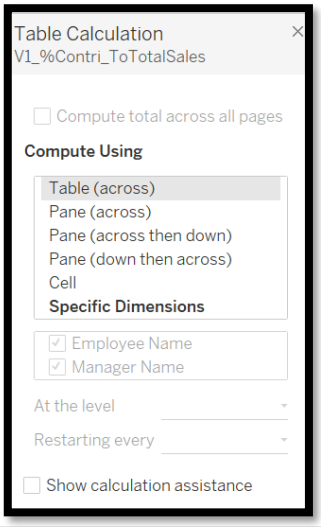


Table Calculation for Total sales

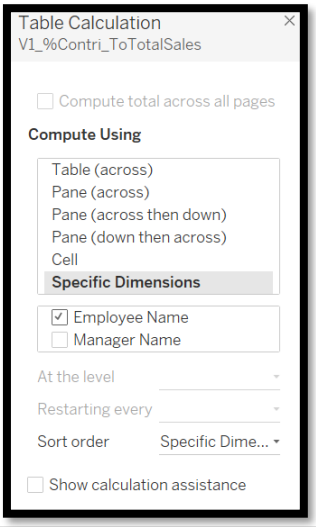
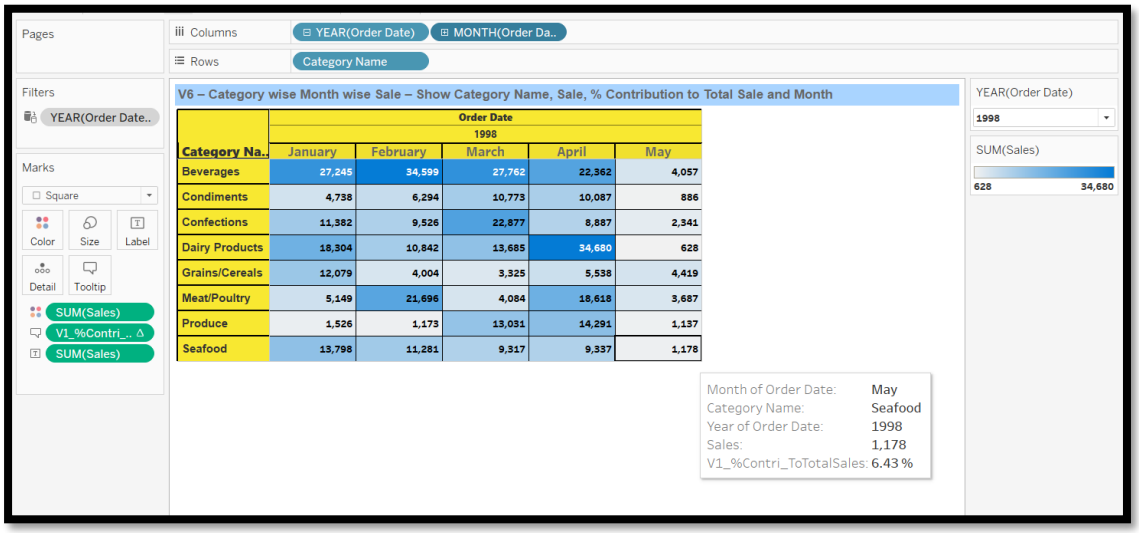


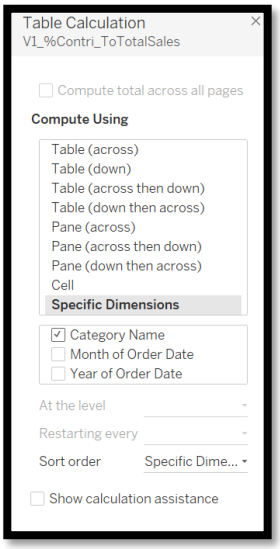
Table Calculation for Team sales

- V6 – Category wise Month wise Sale – Show Category Name, Sale, % Contribution to Total Sale and Month

Solution:

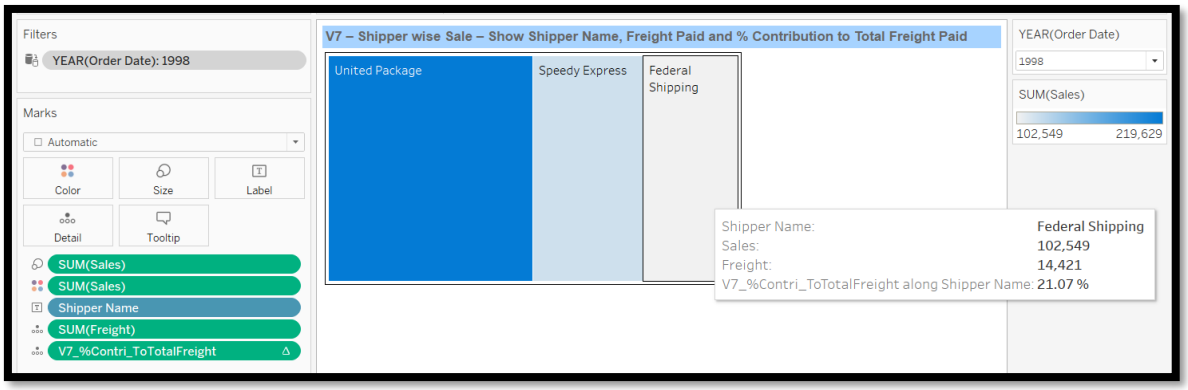


Inference: Here we found the category wise month wise sales based on year filter and to show percentage contribution to total sales we have found it category wise by going in edit table calculations and selecting specific dimension then category.

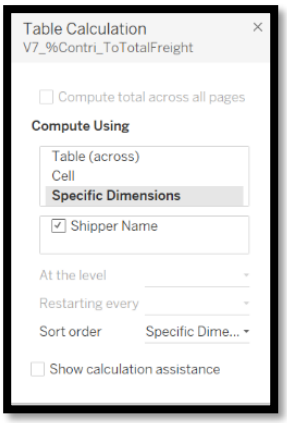


- V7-Shipper wise Sale – Show Shipper Name, Freight Paid and % Contribution to Total Freight Paid

Solution:

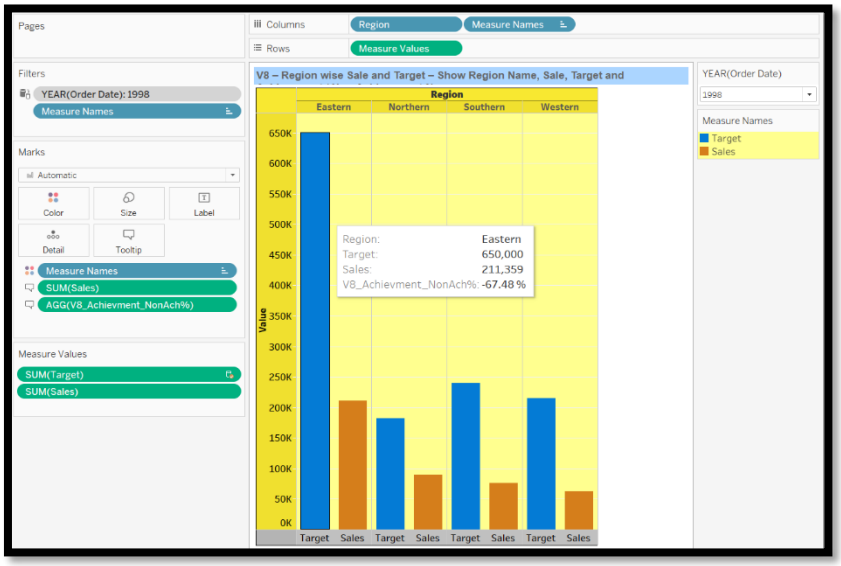


Inference: Here we found the Shipper sales based on year filter and to show percentage contribution to total sales we have found it shipper wise by going in edit table calculations and selecting specific dimension then shipper name. Showed them in label.

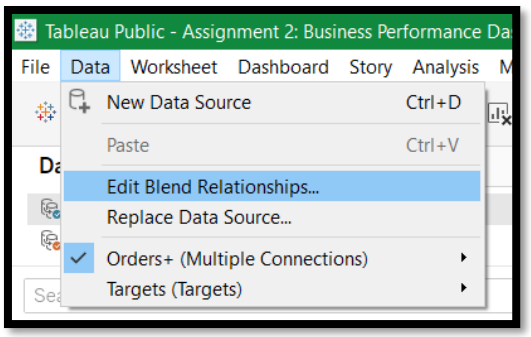


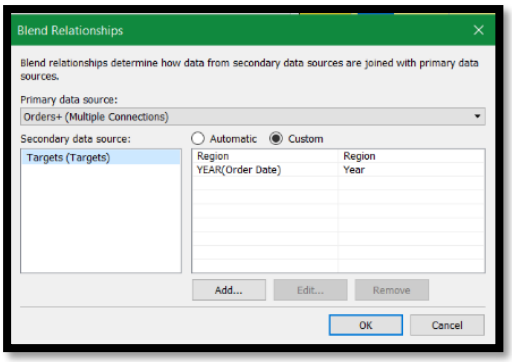
- V8 - Region wise Sale and Target – Show Region Name, Sale, Target and Achievement / Non-Achievement %.

Solution:



Inference: Here we needed target sales values but it was in Target excel sheet which we can't be joined with orders database as it was not having any direct inter-relation with orders sheet but was connected to employee sheet. Even though it shared a common column with employee sheet we can't use joins as not all values were there in common column. So, we have used the concept of data-blending.

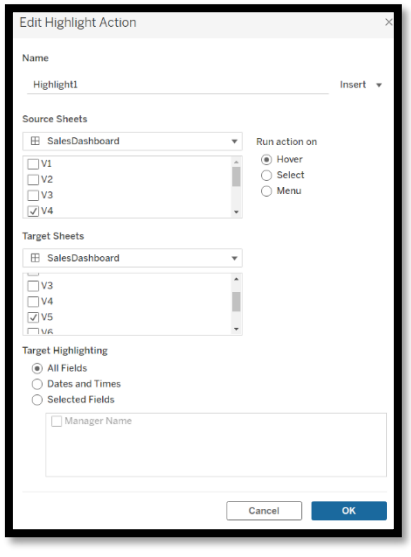




For Finding the achievement and non-achievement percentage I have use the below formula in table calculations.

❖ V5- Hovering part:

I have used Highlighter option of tableau for this purpose.



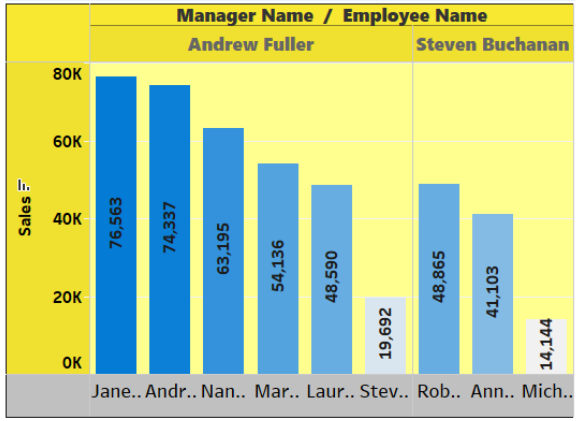
Sales Dashboard

Flipcart Market Analysis (Dashboard-1)

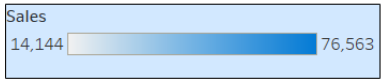
Flipkart

Go to Category Dashboard | Go to Analytical Dashboard | Go to Product Dashboard

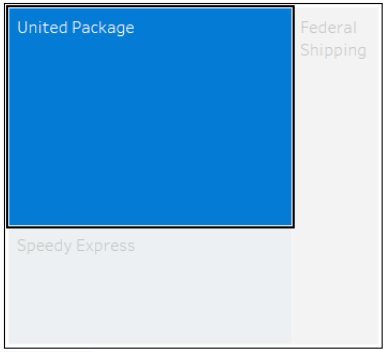
V5 – Sale by Employee – Employees sale should be highlighted when user hovers over the Manager Name in V4. Show % Contribution to Total Sale and % Contribution to Team Sale along with Manager Name



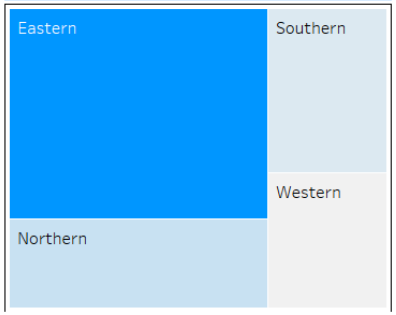
Sales



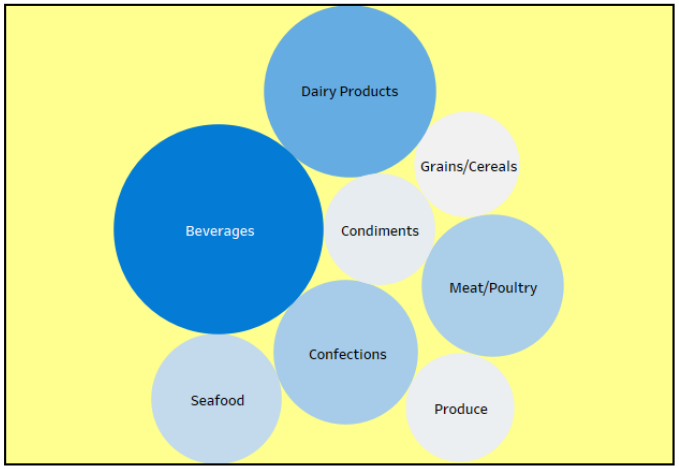
V7 – Shipper wise Sale – Show Shipper Name, Freight Paid and % Contribution to Total Freight Paid



V3 – Region wise Sale – Show Region Name and Sale on Label. Show Region Name, Sales and % Contribution to Total Sale



V2 – Sales by Categories – Show Category Name, Sale and % Contribution to Total Sale in Tooltip



V4 – Sale by Manager

Manager Name	
Andrew Fuller	336,512
Steven Buchanan	104,112

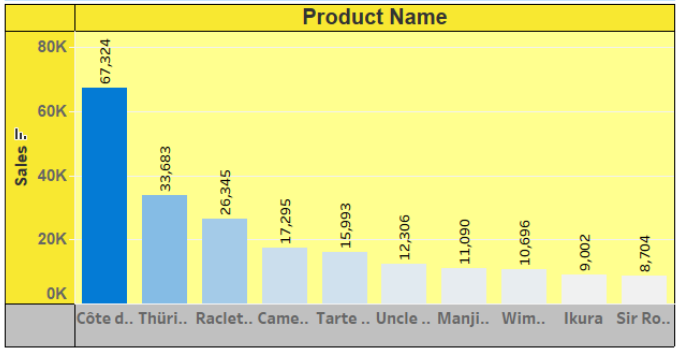
Year of Order Date

1998

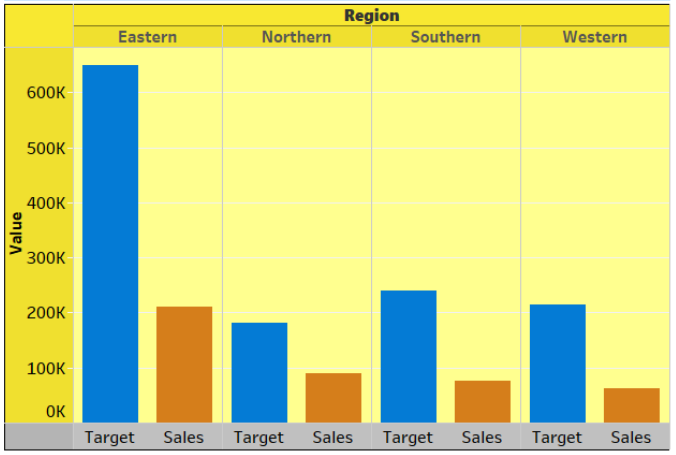
V6 – Category wise Month wise Sale – Show Category Name, Sale, % Contribution to Total Sale and Month

Catego..	Order Date 1998				
	January	February	March	April	May
Beverag..	27,245	34,599	27,762	22,362	4,057
Condime..	4,738	6,294	10,773	10,087	886
Confecti..	11,382	9,526	22,877	8,887	2,341
Dairy Products	18,304	10,842	13,685	34,680	628
Grains/C..	12,079	4,004	3,325	5,538	4,419
Meat/Po..	5,149	21,696	4,084	18,618	3,687
Produce	1,526	1,173	13,031	14,291	1,137
Seafood	13,798	11,281	9,317	9,337	1,178

V1 – Top 10 Products by Sale – Show Product Name, Sale and % Contribution to Total Sale in Tooltip

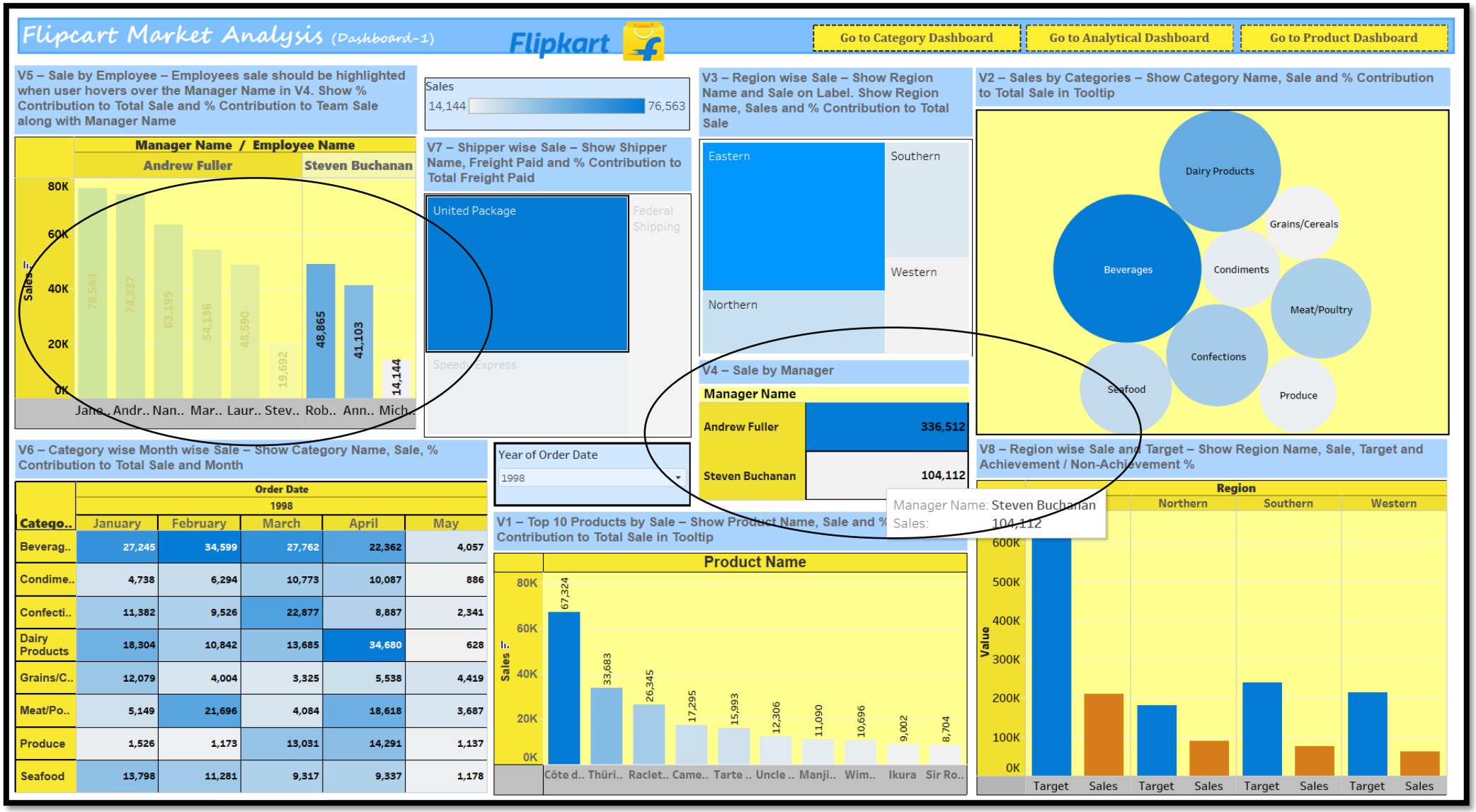


V8 – Region wise Sale and Target – Show Region Name, Sale, Target and Achievement / Non-Achievement %



Sales Dashboard

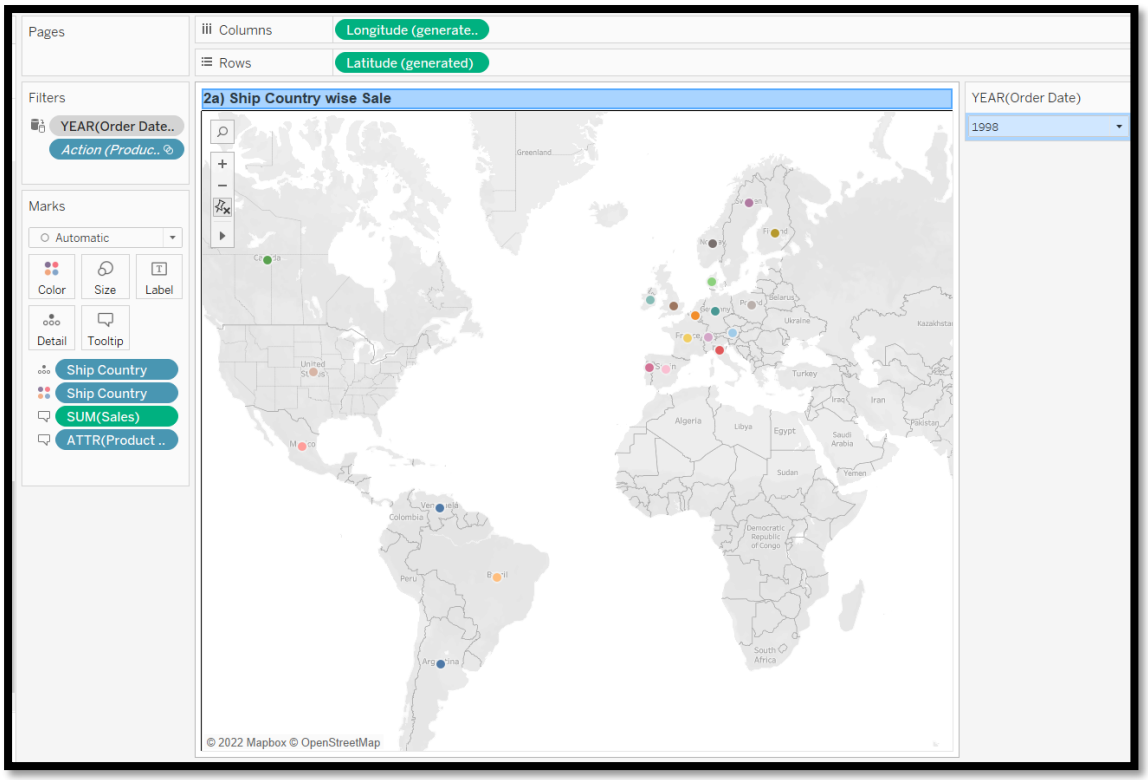
(Part of V5-With Hovering effect on employee when hovered on their Manager's name)



2) **When clicked on Product Name in V1, user should go to a 'Product Dashboard' consisting of :**

2A) Ship Country wise Sale

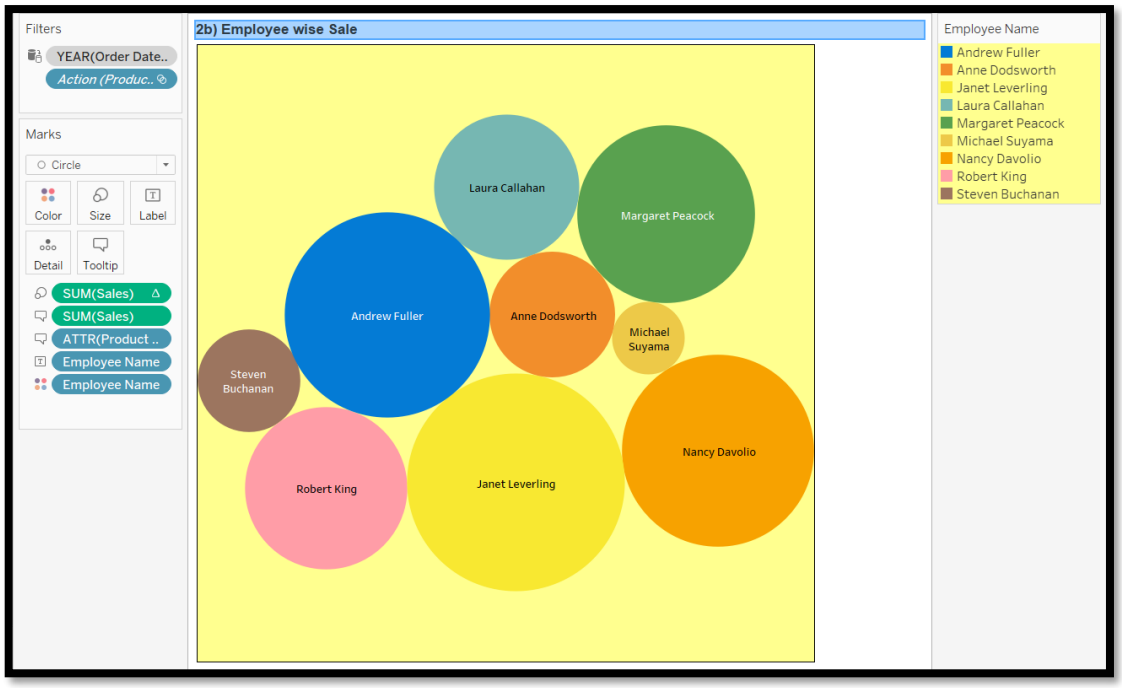
Solution:



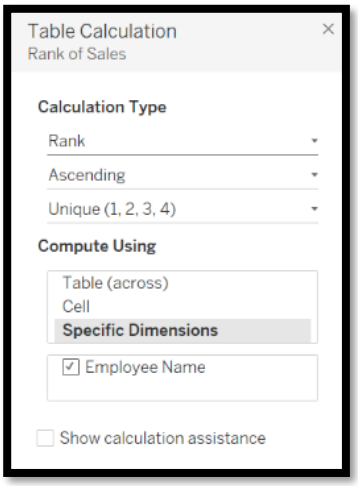
Inference: Here we need to find ship-country wise sales for that I have used this map visualisation as the nos of countries were less in all the years in filter plus it gave a direct understanding to the user that which country is having how much sales for a particular product.

2B) Employee wise Sale

Solution:

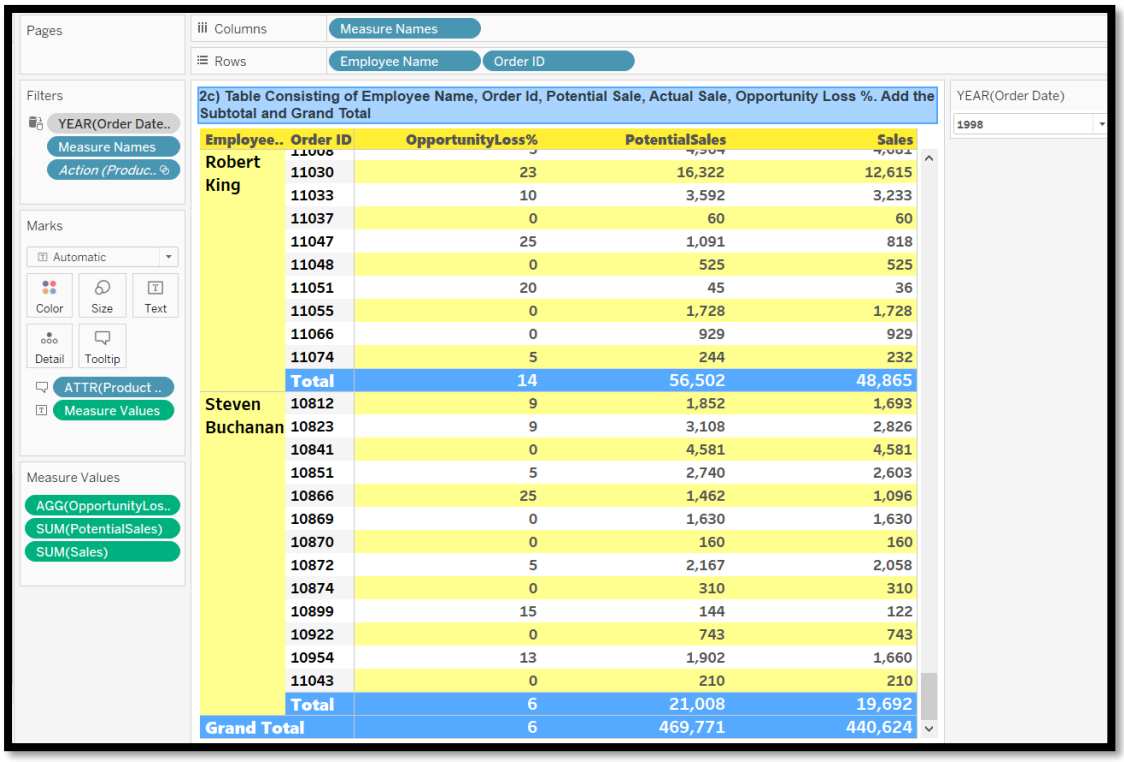


Inference: Here we need to find employee wise sales for that I have used this bubble-chart visualisation as the nos of employees were less in all the years in filter plus it gave a direct understanding to the user that which employee is having how much sales for a particular product in descending order just by looking at bubble size. Table calculations are done along employee name.



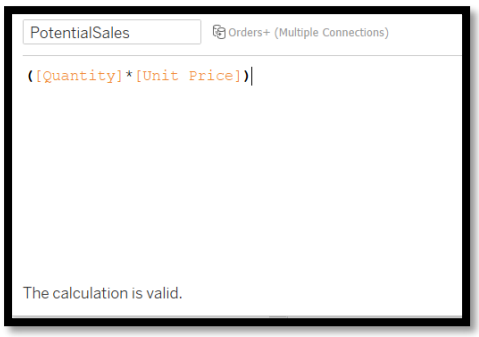
2C) Table Consisting of Employee Name, Order Id, Potential Sale, Actual Sale, Opportunity Loss %. Add the Subtotal and Grand Total

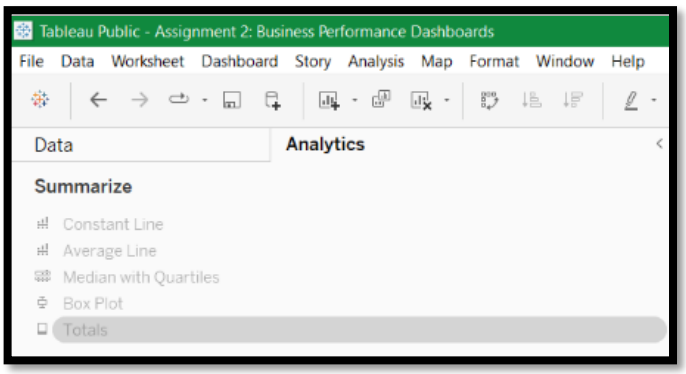
Solution:



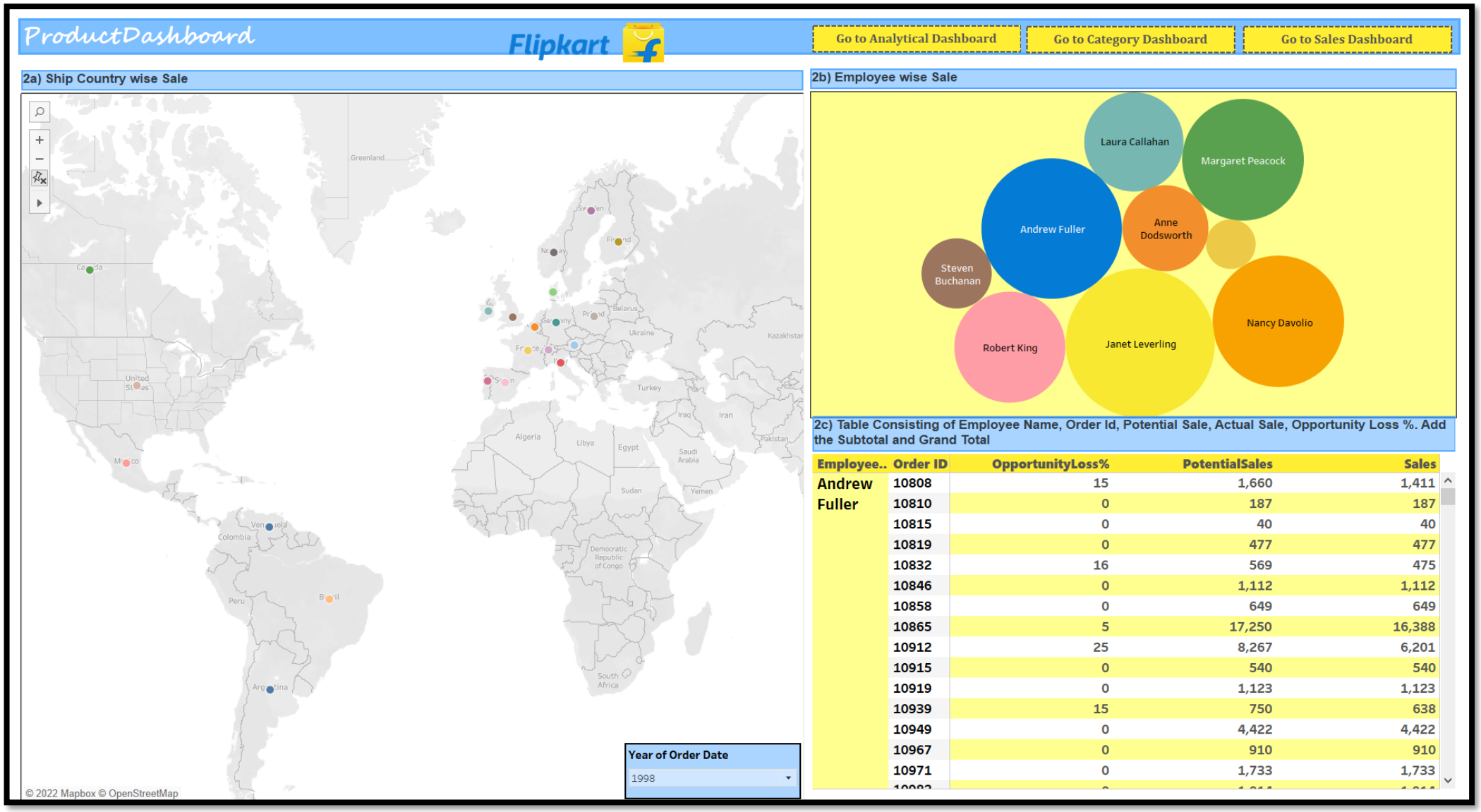
Employee..	Order ID	OpportunityLoss%	PotentialSales	Sales
Robert King	11030	23	16,322	12,615
	11033	10	3,592	3,233
	11037	0	60	60
	11047	25	1,091	818
	11048	0	525	525
	11051	20	45	36
	11055	0	1,728	1,728
	11066	0	929	929
	11074	5	244	232
	Total	14	56,502	48,865
Steven Buchanan	10812	9	1,852	1,693
	10823	9	3,108	2,826
	10841	0	4,581	4,581
	10851	5	2,740	2,603
	10866	25	1,462	1,096
	10869	0	1,630	1,630
	10870	0	160	160
	10872	5	2,167	2,058
	10874	0	310	310
	10899	15	144	122
	10922	0	743	743
	10954	13	1,902	1,660
	11043	0	210	210
	Total	6	21,008	19,692
Grand Total		6	469,771	440,624

Inference: Here we need to make a table consisting of employee name, order id, Potential sale, Actual sale and opportunity loss. We also need to find total and Grand total of each employee section. For finding totals and subtotals I have used inbuild functionality of tableau in "Analytics section" & For calculating the potential sale and opportunity loss %, I have made calculated fields with the following formulas:





Product Dashboard

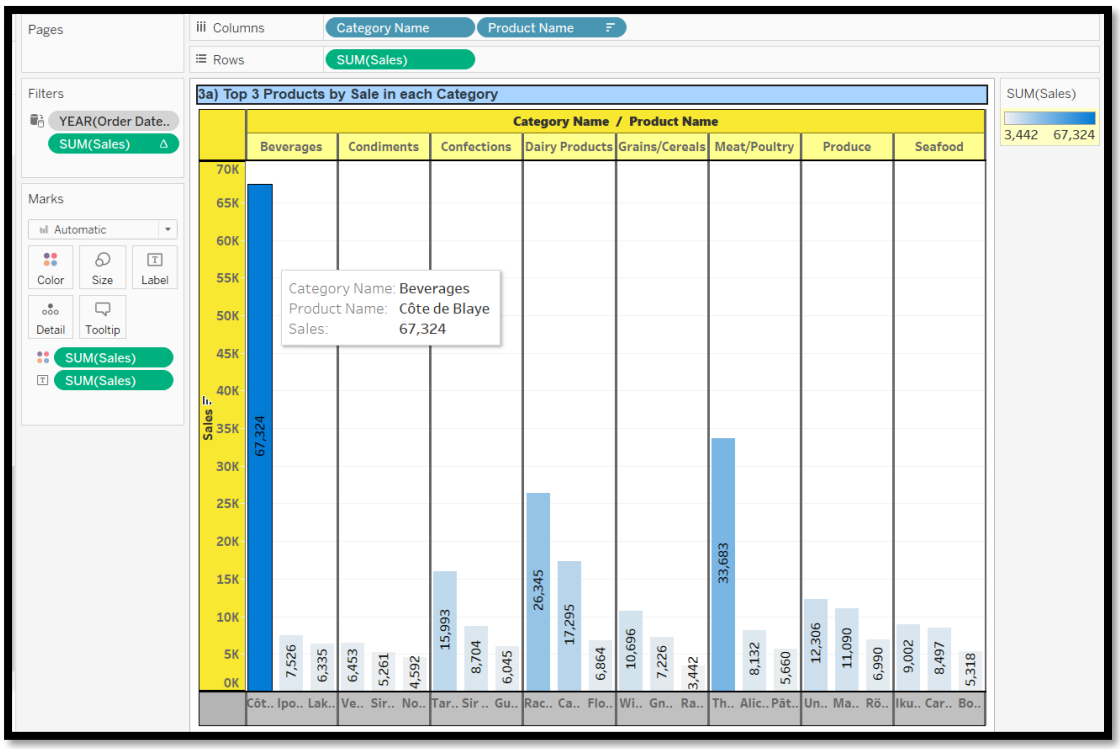


Employee..	Order ID	OpportunityLoss%	PotentialSales	Sales
Andrew Fuller	10808	15	1,660	1,411
	10810	0	187	187
	10815	0	40	40
	10819	0	477	477
	10832	16	569	475
	10846	0	1,112	1,112
	10858	0	649	649
	10865	5	17,250	16,388
	10912	25	8,267	6,201
	10915	0	540	540
	10919	0	1,123	1,123
	10939	15	750	638
	10949	0	4,422	4,422
	10967	0	910	910
	10971	0	1,733	1,733

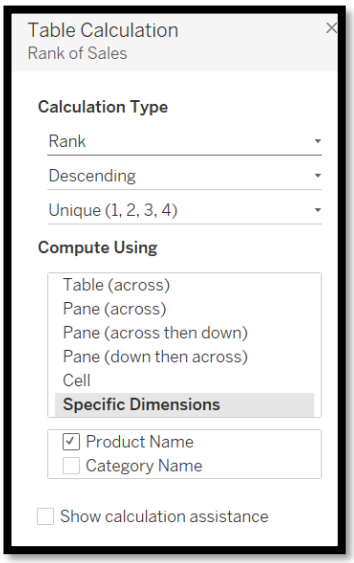
3) **When clicked on Category Name in V2, user should just go 'Category Dashboard' consisting of –**

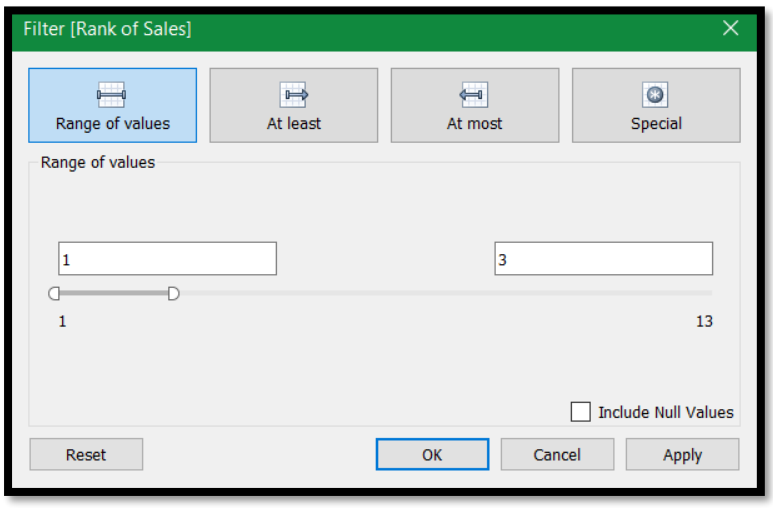
3A) Top 3 Products by Sale in each Category

Solution:



Inference: Here we need to find top 3 products by sales in each category for that I first found all the sales in all the categories then I used table calculations to rank sales based on product name in each category descending wise with unique values and filtered the sales with only 3 values.

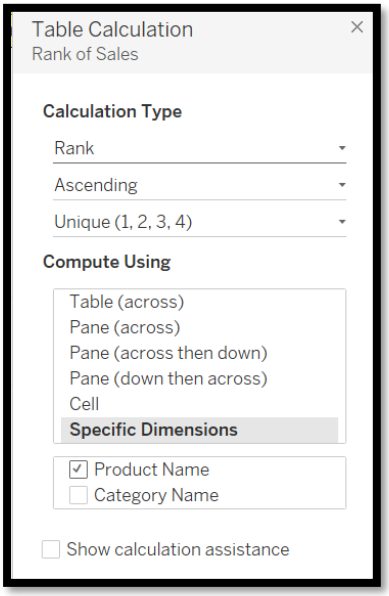


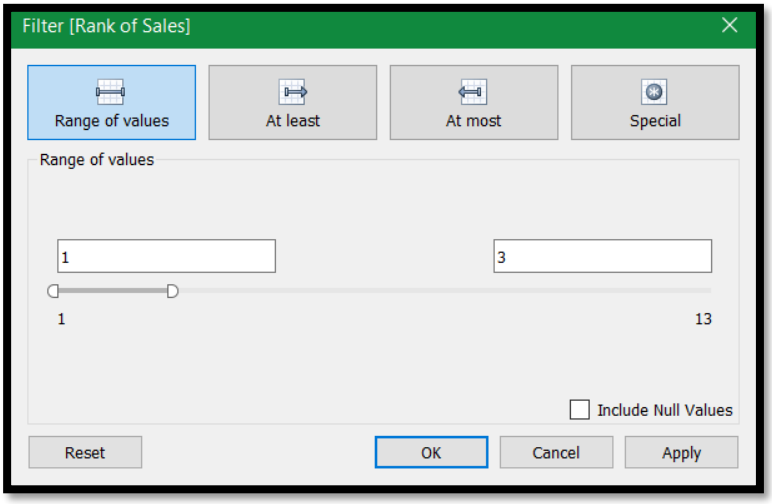


3B) Bottom 3 Products by Sale in each Category

Solution:

Inference: Here we need to find bottom 3 products by sales in each category for that I first found all the sales in all the categories then I used table calculations to rank sales based on product name in each category ascending wise with unique values and filtered the sales with only 3 values.

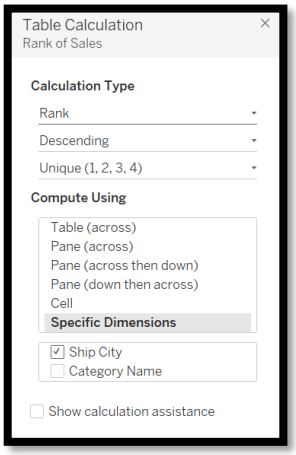


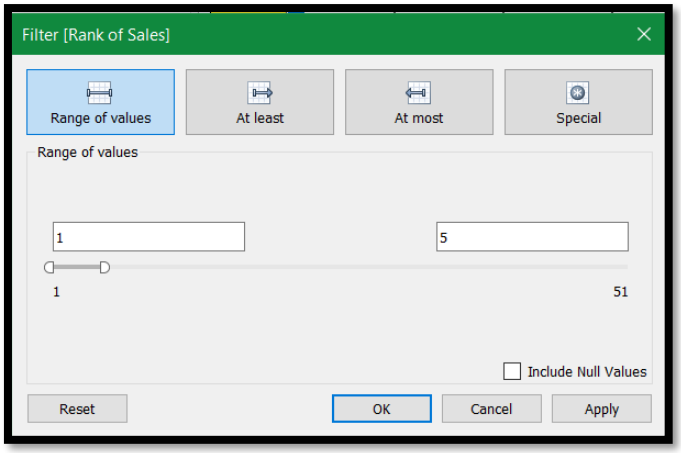


3C) Top 5 Cities by Sale in each Category

Solution:

Inference: Here we need to find top 5 cities by sales in each category for that I first found all the sales in all the categories then I used table calculations to rank sales based on ship city in each category ascending wise with unique values and filtered the sales with only 5 values.

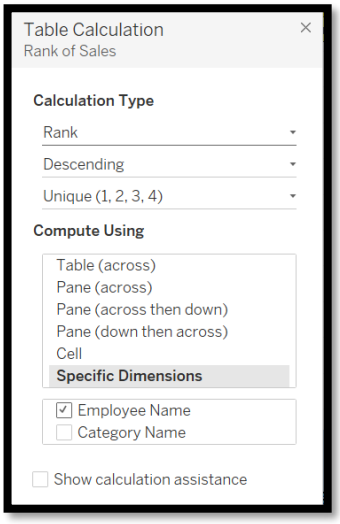


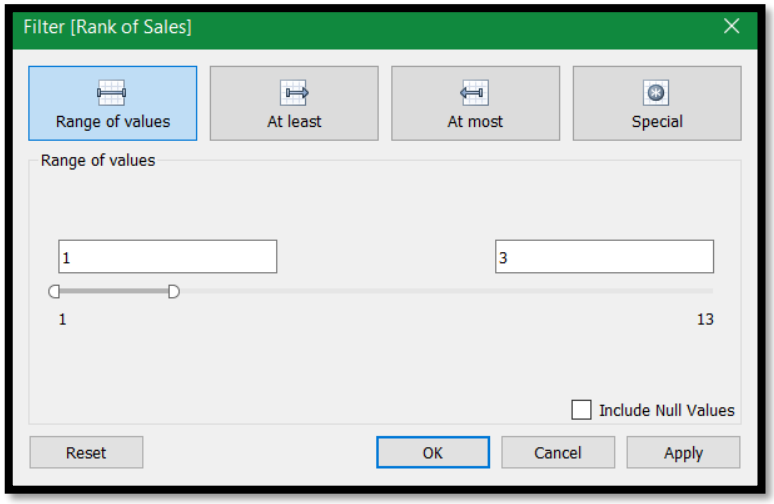


3D) Top 3 Employees by Sale in each Category

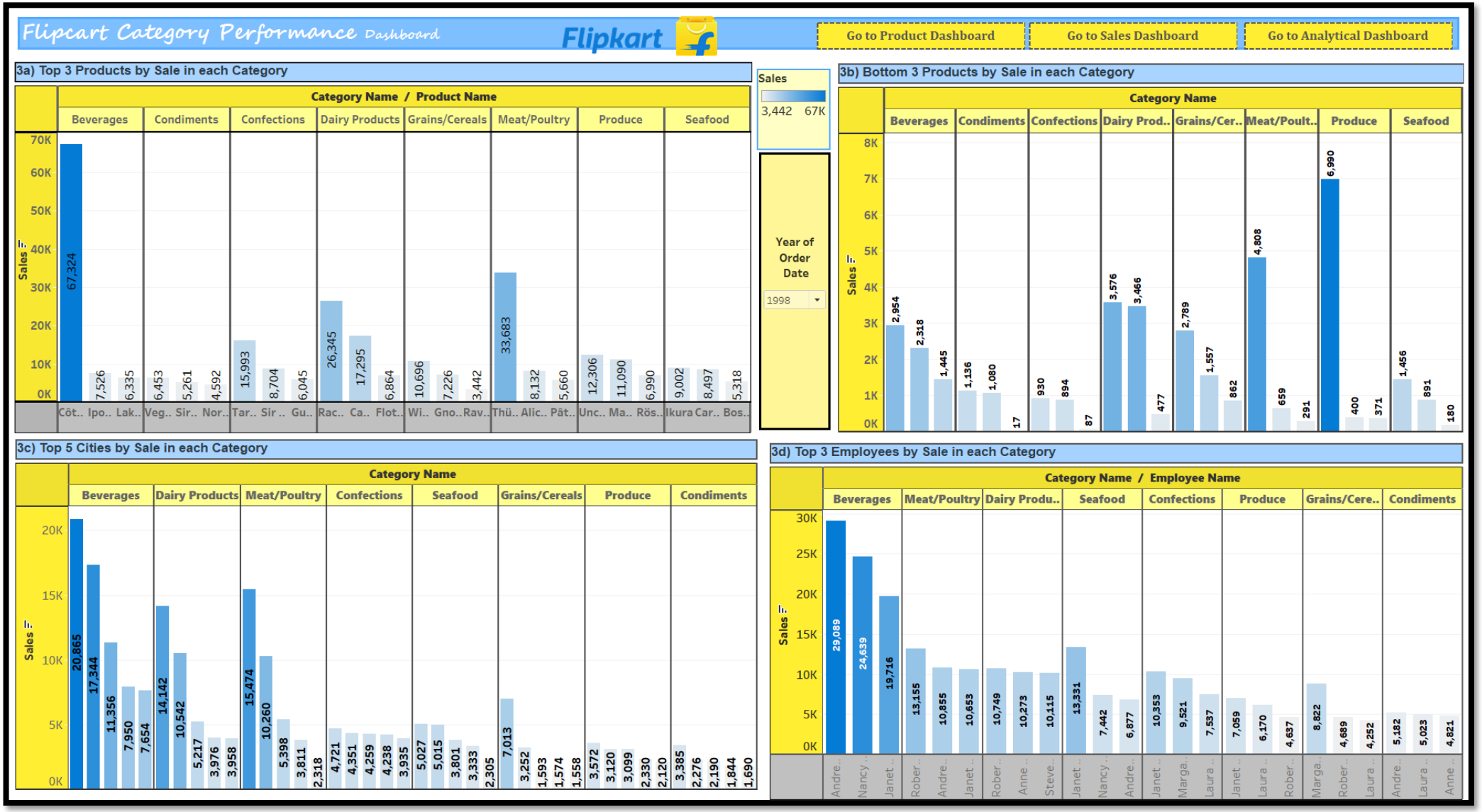
Solution:

Inference: Here we need to find top 3 employees by sales in each category for that I first found all the sales in all the categories then I used table calculations to rank sales based on employees in each category descending wise with unique values and filtered the sales with only 3 values.



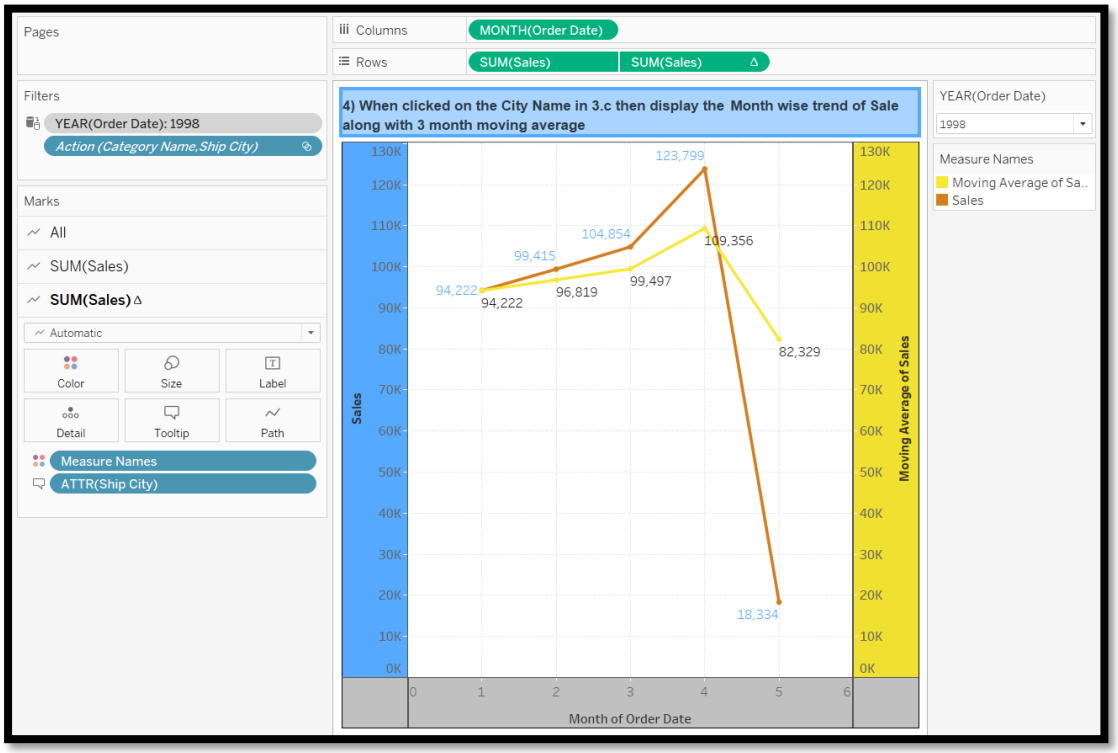


Category Dashboard

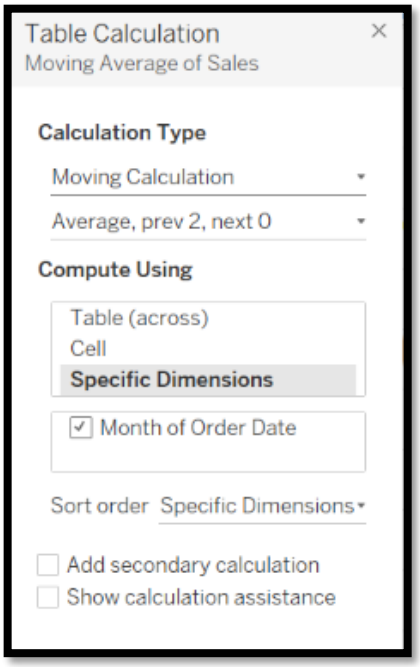


4) **When clicked on the City Name in 3.c then display the Month wise trend of Sale along with 3 month moving average.**

Solution:

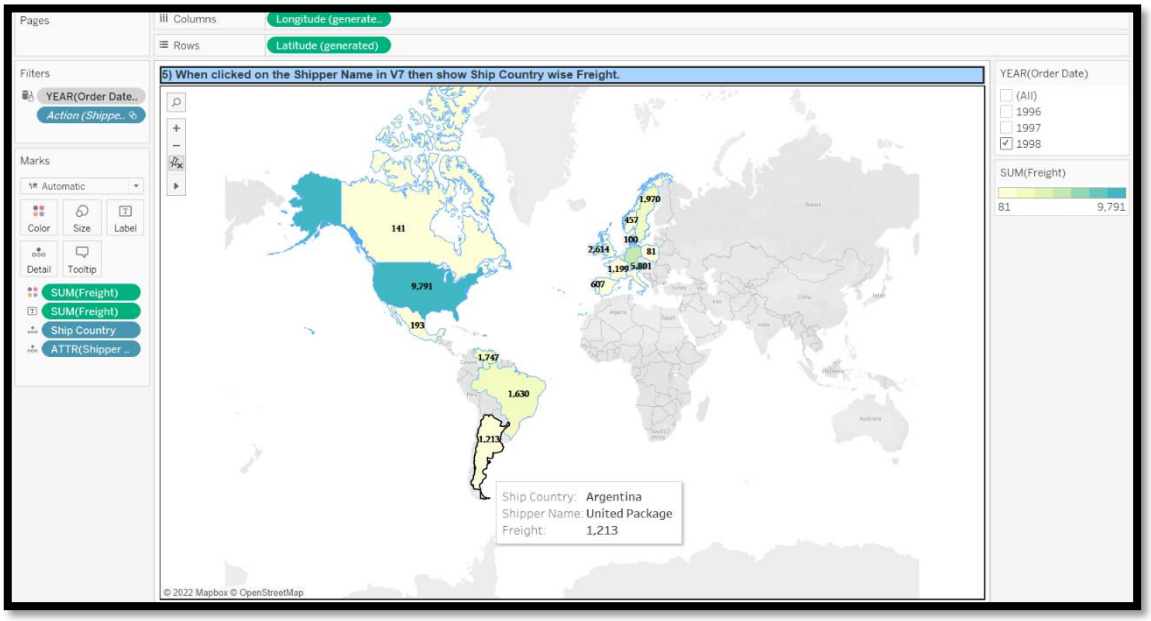


Inference: Here we need to find Month wise trend of sale and 3 month moving average for a clicked city. In order to find month wise moving average, I took another sum(sales) field and in its table calculation dd the following:



5) **When clicked on the Shipper Name in V7 then show Ship Country wise Freight.**

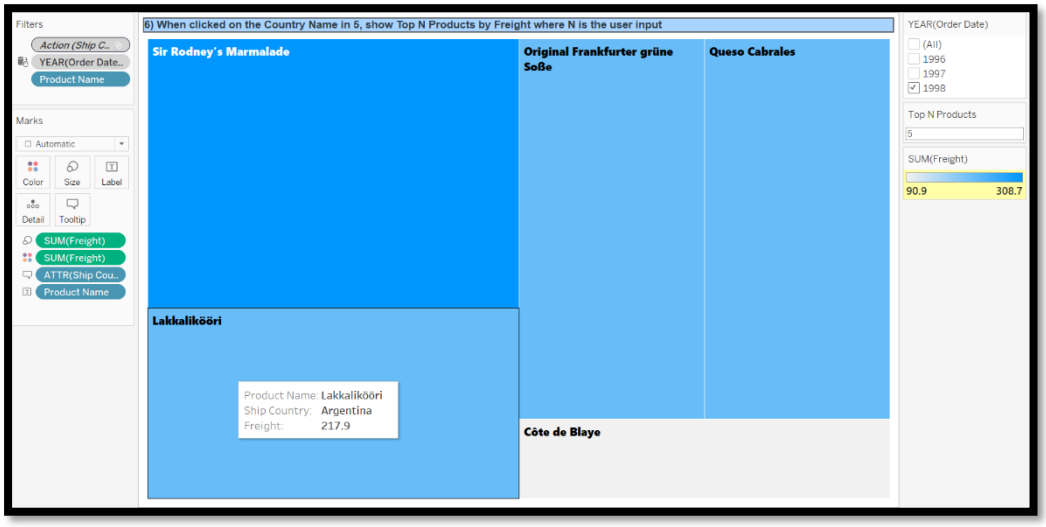
Solution:



Inference: Here we need to find Ship Country wise freight for this I have used Map visualisation as the user gets direct sense of the country and freight to that country at first glance.

6) **When clicked on the Country Name in 5, show Top N Products by Freight where N is the user input.**

Solution:

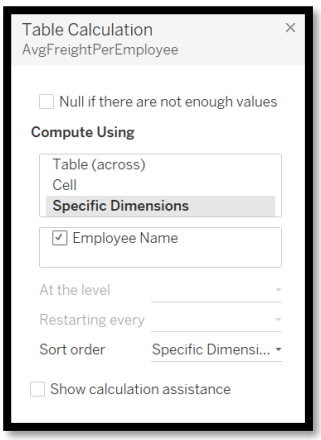


Inference: In order to show top n products by freight I created a parameter and for this parameter to work I added Action(ShipCountry) in “Add to Context”

7) **When clicked on the Shipper Name in V7 then show Employee wise Freight. Display the Average Freight per Employee. colour code the Employees as Red if their Freight is above the average per employee else colour code them Green.**

Solution:

Inference: Here we need to find employee wise freight and average freight per employee. For this first I have changed table calculations for finding freight per employee then I have created a calculated field and used window average formula on freight.



8) Create a Button in 'Sales Dashboard' to navigate to the Analytical Dashboard.

Solution:

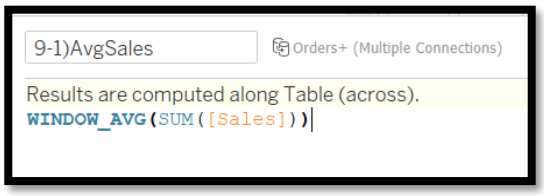
Inference: I have used inbuild functionality of tableau for this purpose i.e. "Navigation" field.

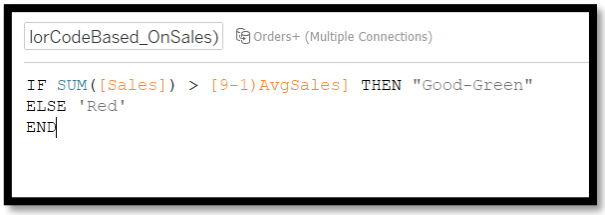
9) Create 'Analytical Dashboard' comprising of –

9.1) Category wise Sale – Draw average line and color code the category names as red or green depending on whether their sale is less or greater than the plotted average line.

Solution:

Inference: Here we need to find category wise sales and average sales and based on average sales we need to colour code the graph. I have created calculate fields for finding average and colour coding and used the following formulas: -

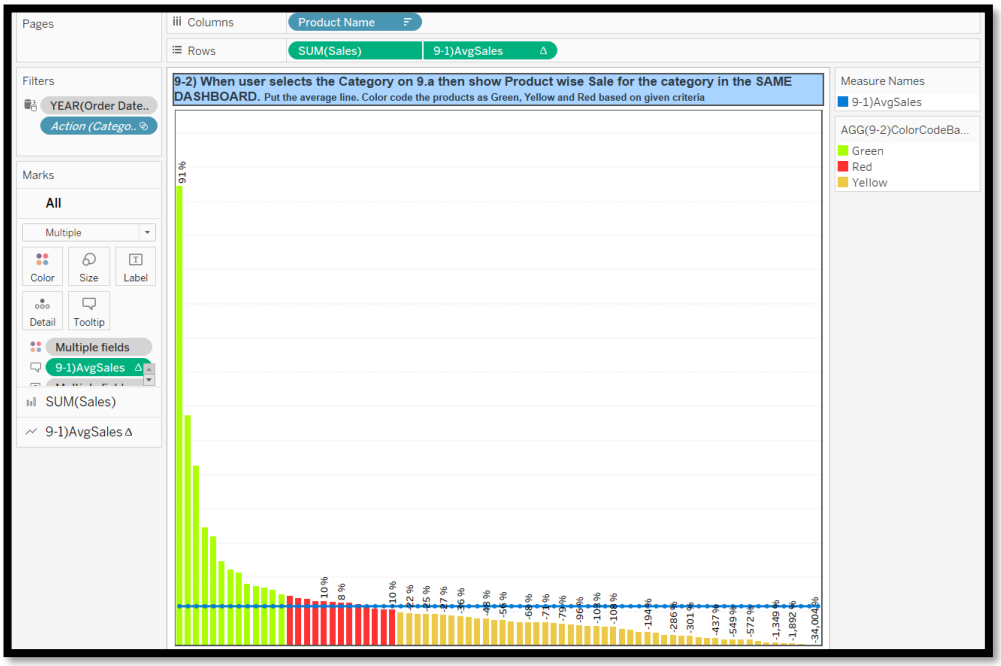




9-2) When user selects the Category on 9.a then show Product wise Sale for the category in the SAME DASHBOARD. Put the average line. Color code the products as Green, Yellow and Red based on following criteria –

- If the Sale is 25% above the average value, then Green
- IF the Sale is 10% below the average value, then Red
- All other columns Yellow
- On the label show the difference between the Product's Sale and Average Sale per product in % terms.

Solution:

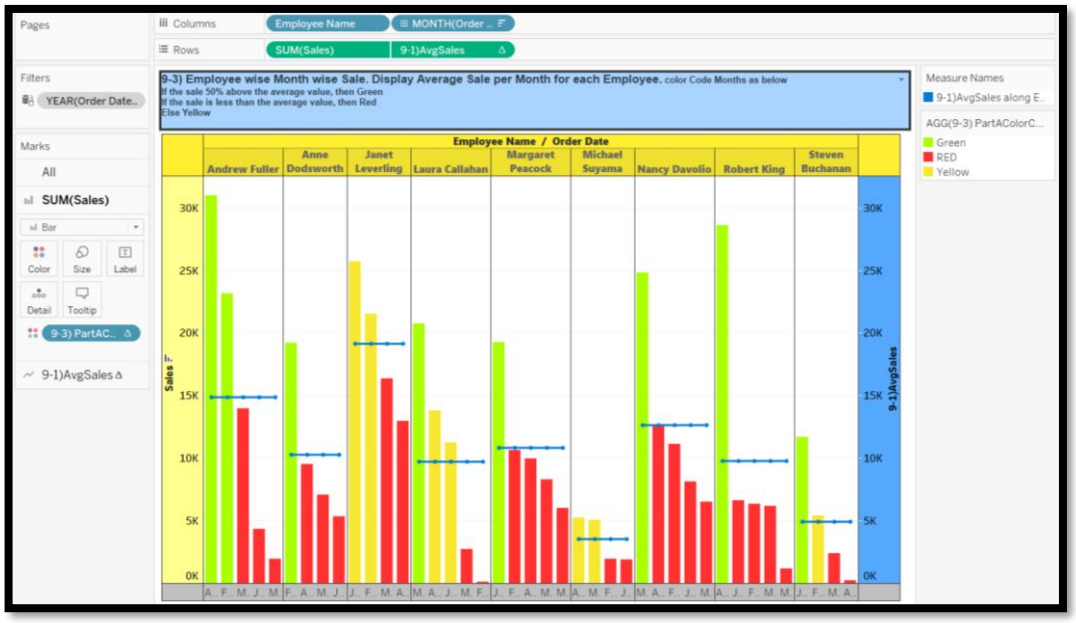


Inference: Here we need to find product-wise sales for a selected category and put the average line. For average line I used the same average calculated field used in 9-1 and for colour code and percentage difference of Product sale and average sale I created another calculated fields with the following code: -

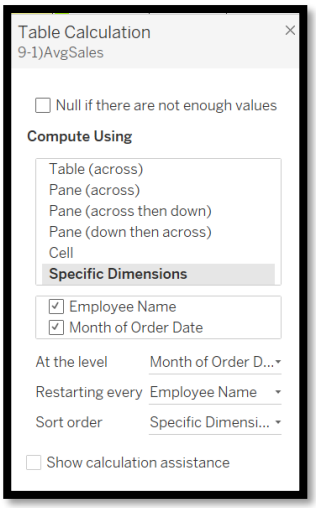
9-3) Employee wise Month wise Sale. Display Average Sale per Month for each Employee. colour Code Months as below

- **If the sale 50% above the average value, then Green.**
- **If the sale is less than the average value, then Red**
- **Else Yellow**

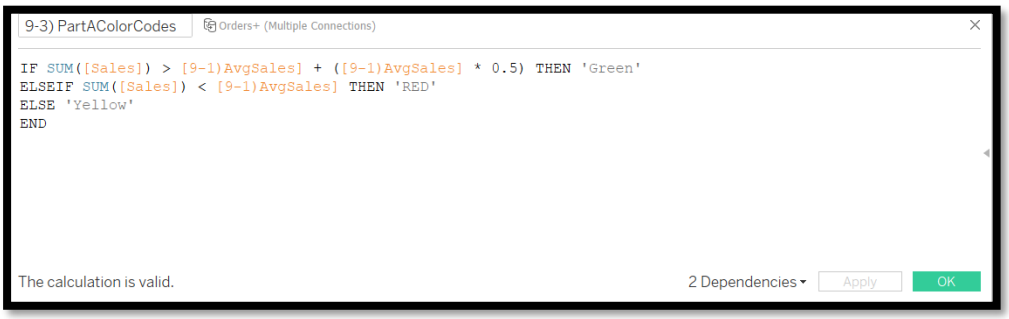
Solution:



Inference: Here we need to find employee wise sales and Average sales per month for each employee so I used same average calculated field created in 9-1 but here in its table calculation I defined month wise for each employee.

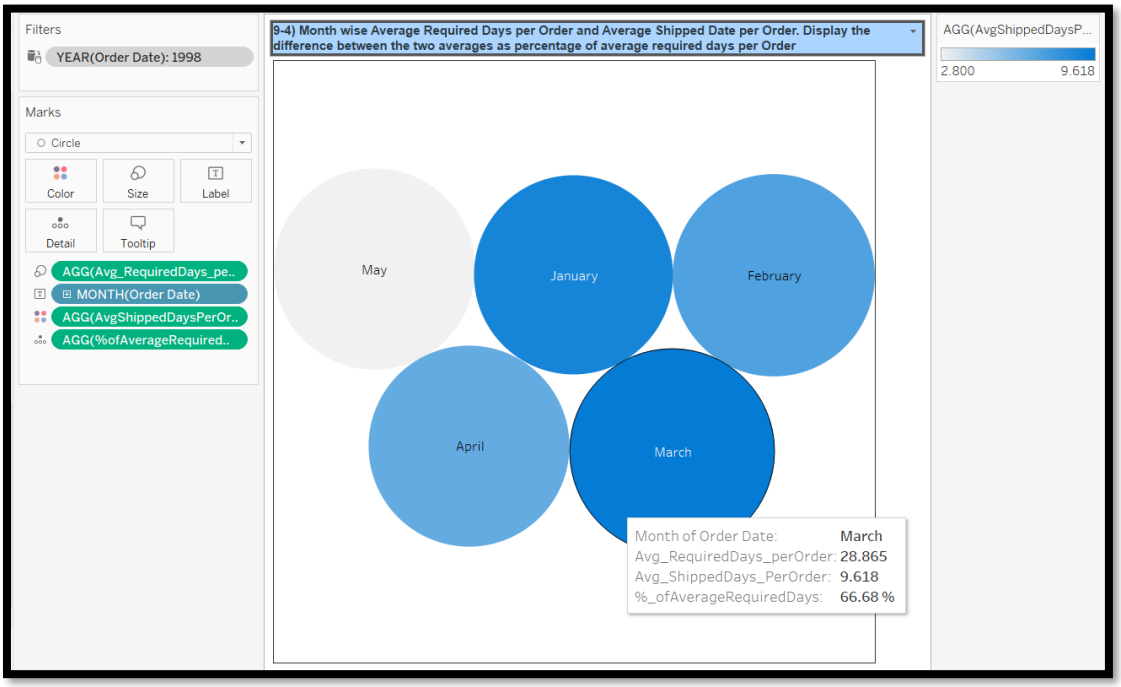


For colour code I have created a separate calculated field with the following code: -



9-4) Month wise Average Required Days per Order and Average Shipped Date per Order. Display the difference between the two averages as percentage of average required days per Order.

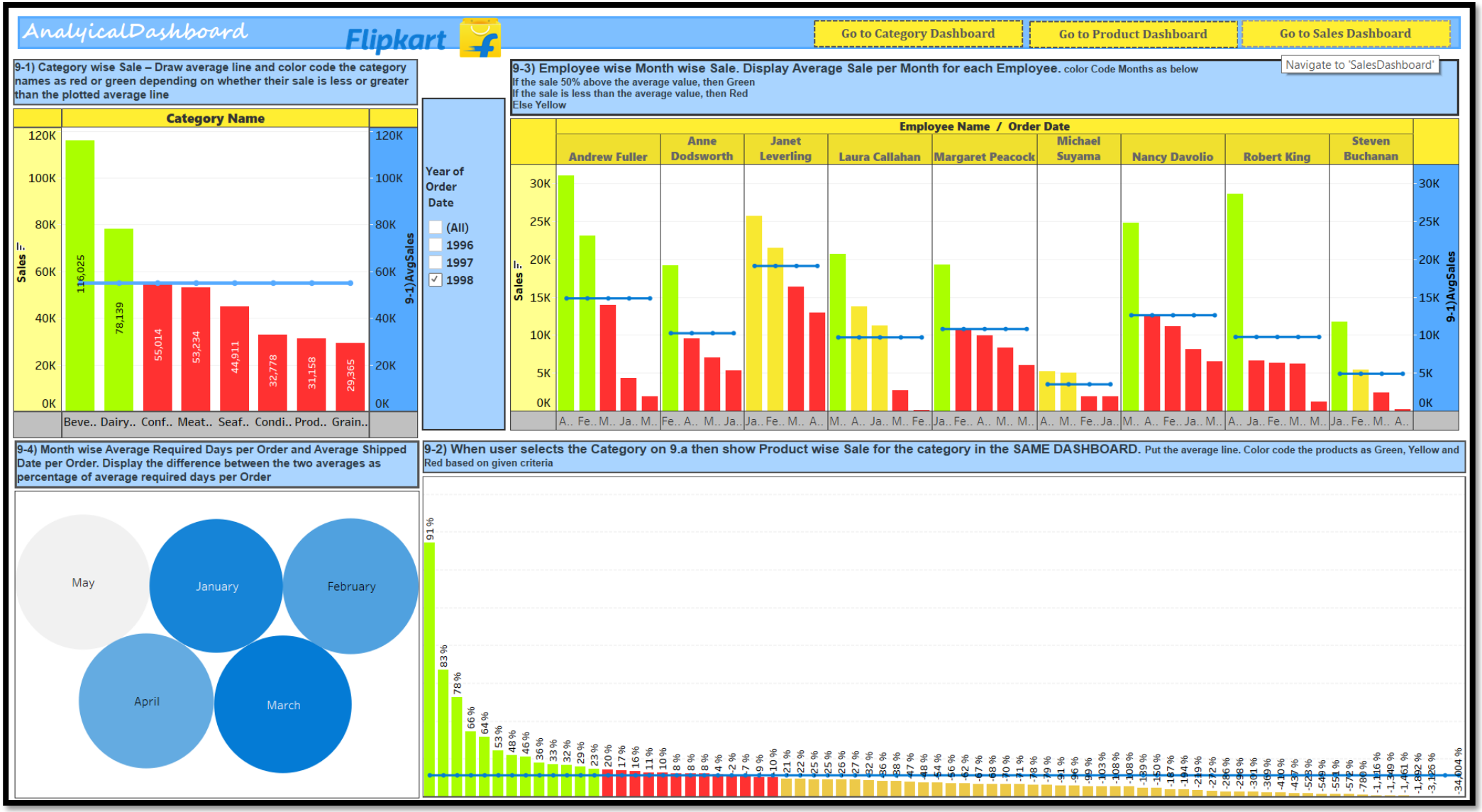
Solution:



Inference: Here we need to find Month wise average required days per order and average shipped days per order, for calculating averages we first need to extract required days per order from required date and shipped days per order from shipped date, so I created two calculated fields with the following code:-

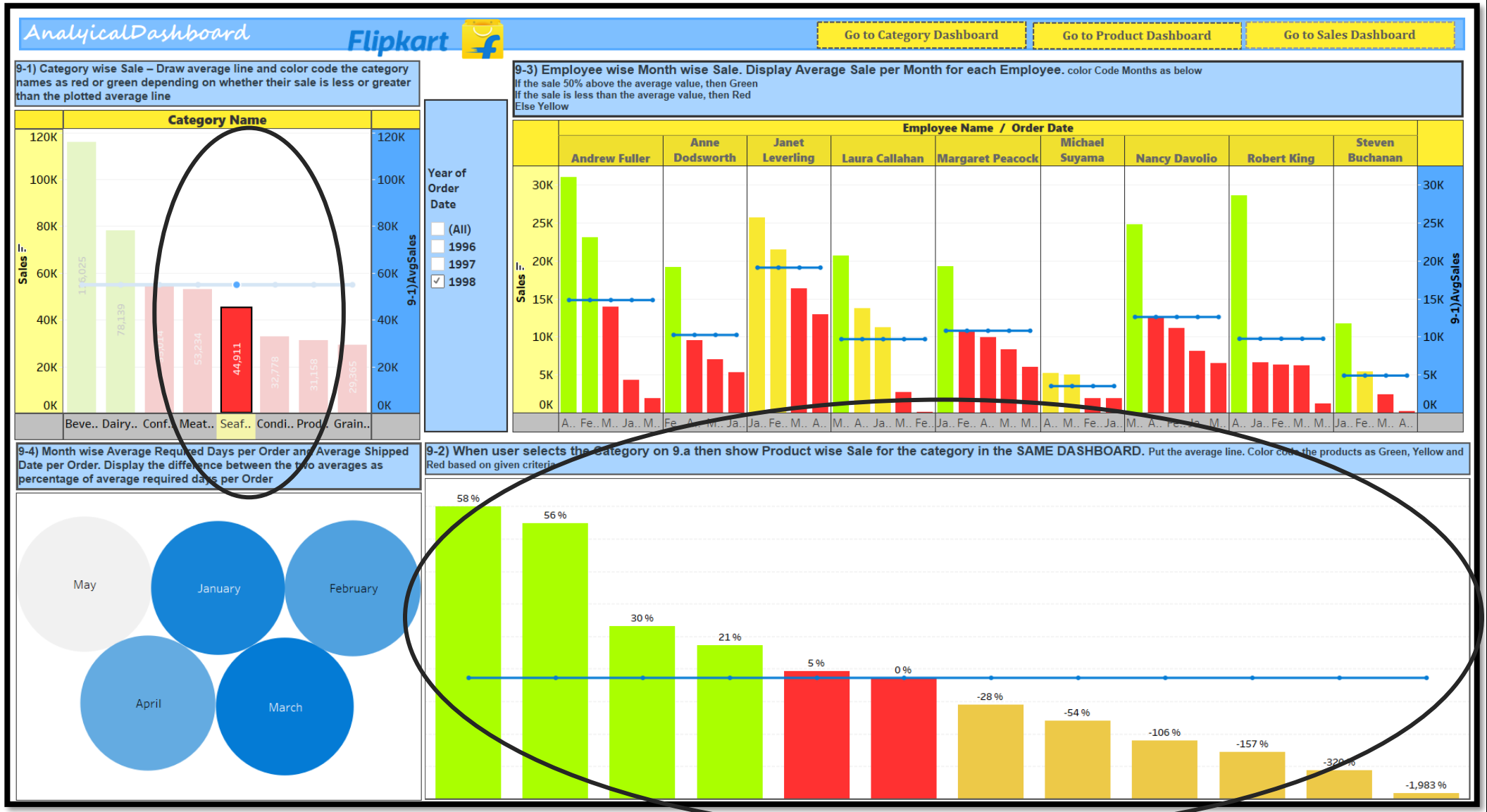
Now for calculating the averages of the required days and shipped days I made another 2 calculated fields with the following code: -

Analytical Dashboard

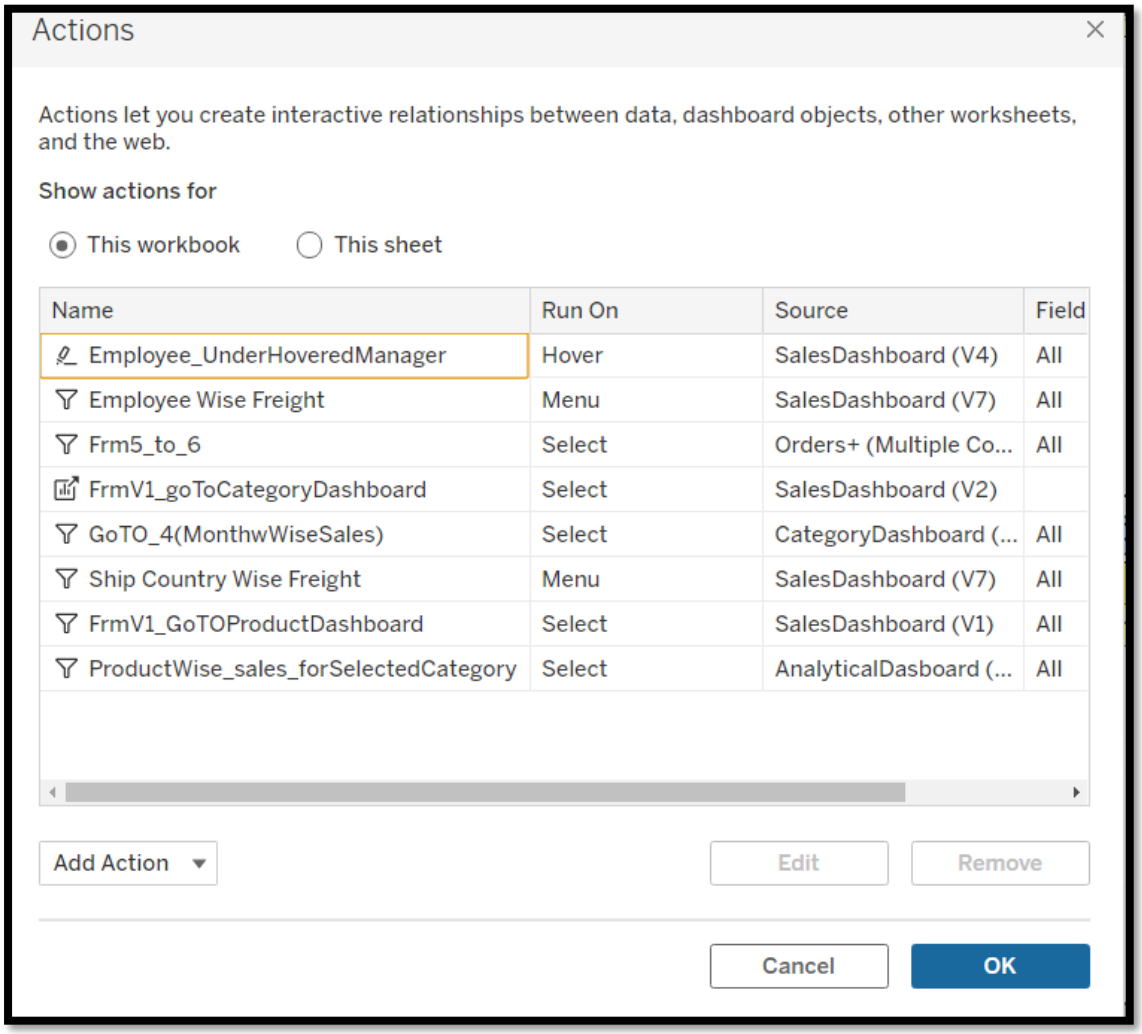


Analytical Dashboard

(When user selects the Category on 9.a then show Product wise Sale for the category in the SAME DASHBOARD)



❖ Actions added on worksheets and Dashboards:



❖ Conclusion:

1) Tableau performs actions on your view in a very specific order; this is called the Order of Operations. Filters are executed in the following order:

   a. Extract filters.

   b. Data source filters.

   c. Context filters.

   d. Filters on dimensions (whether on the Filters shelf or in filter cards in the view)

   e. Filters on measures (whether on the Filters shelf or in filter cards in the view).

2) Filtering is an essential part of analysing data.