

SAP Business Objects

Venkata Sarath Chandra Muktevi (VXM180001)

Objective:

Part 1: To create simple queries using Web Intelligence and to analyze data on the quantity sold in relation to State, City, Sales Revenue, Year and Category.

Part 2: To create a report "Sales Revenue Report" that contains sections, breaks, charts.

USE THE FOLLOWING LINK TO ACCESS BOBJ:

<http://bo7.ucc.uwm.edu:8080/BOE/BI>

Use the Login Information file to find your Username and Password (Initial) for BOBJ. It will prompt you to change your password.

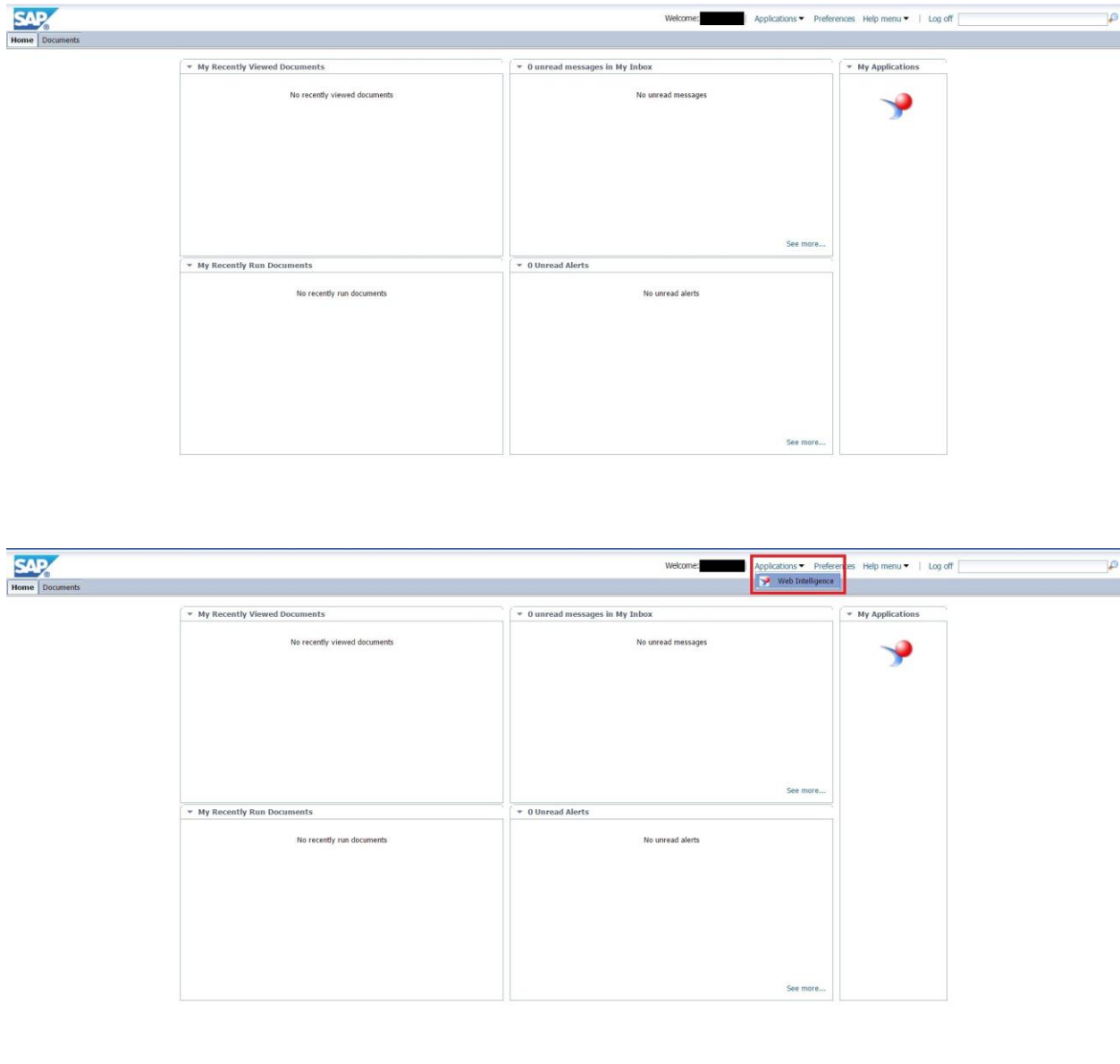
Part 1

1.1

Create a new web Intelligence report showing Quantity Sold by Calendar Year.

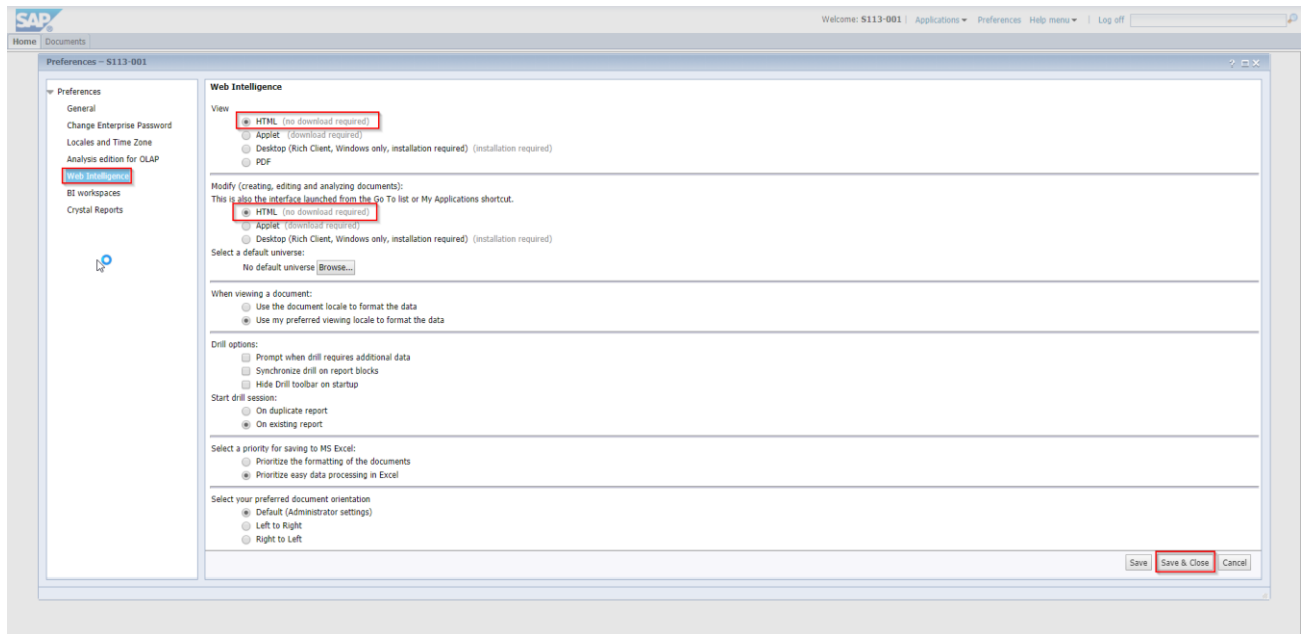
Login with the username and password and go to webIntelligence application under applications.

A screenshot of the SAP BusinessObjects BI launch pad login page. The page has a white background with a yellow header bar. The title 'SAP BusinessObjects' is in bold, followed by 'BI launch pad'. Below this, there is a prompt: 'Enter your user information, and click "Log On". If you are unsure of your account information, contact your system administrator.' There is a form with three input fields: 'System:' with the value 'BOUTD2:6400', 'User Name:', and 'Password:'. Below the form is a 'Log On' button. The SAP logo is in the bottom left corner, and a 'Help' link is in the bottom right corner.

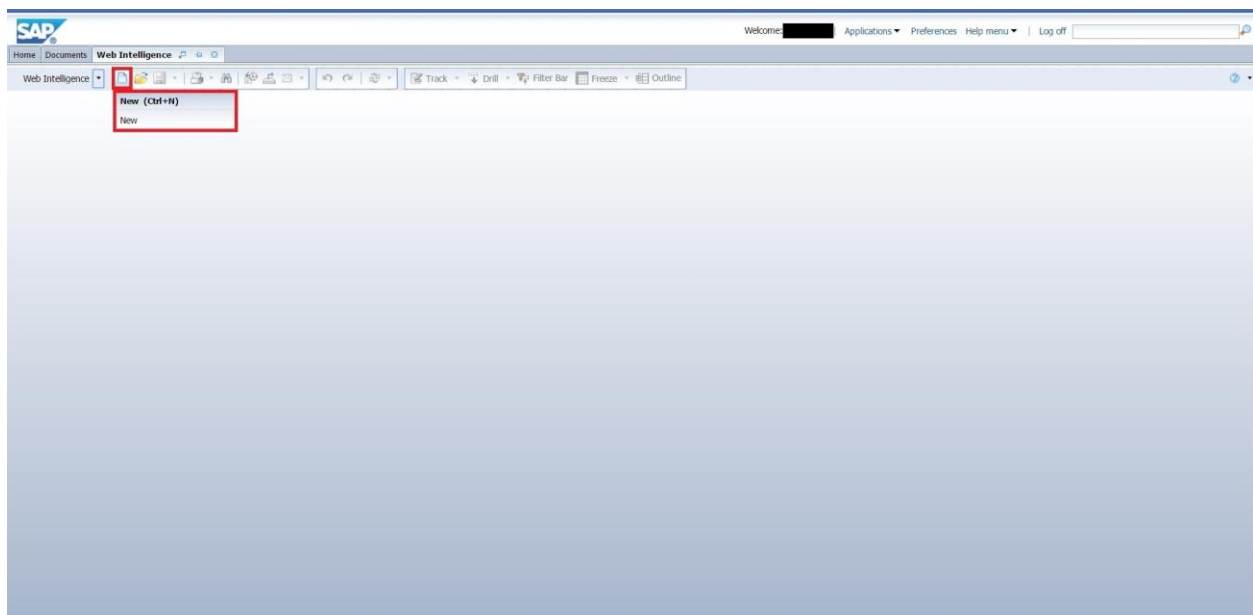


If we get an error message asking you to install Java virtual machine, then do the following:

In the main screen of the BI Portal, click on 'Preferences' on the top right corner of the portal screen. In the 'Preferences' window, select 'Web Intelligence' and choose **HTML** under View and Modify options. Now, click on Save & Close.



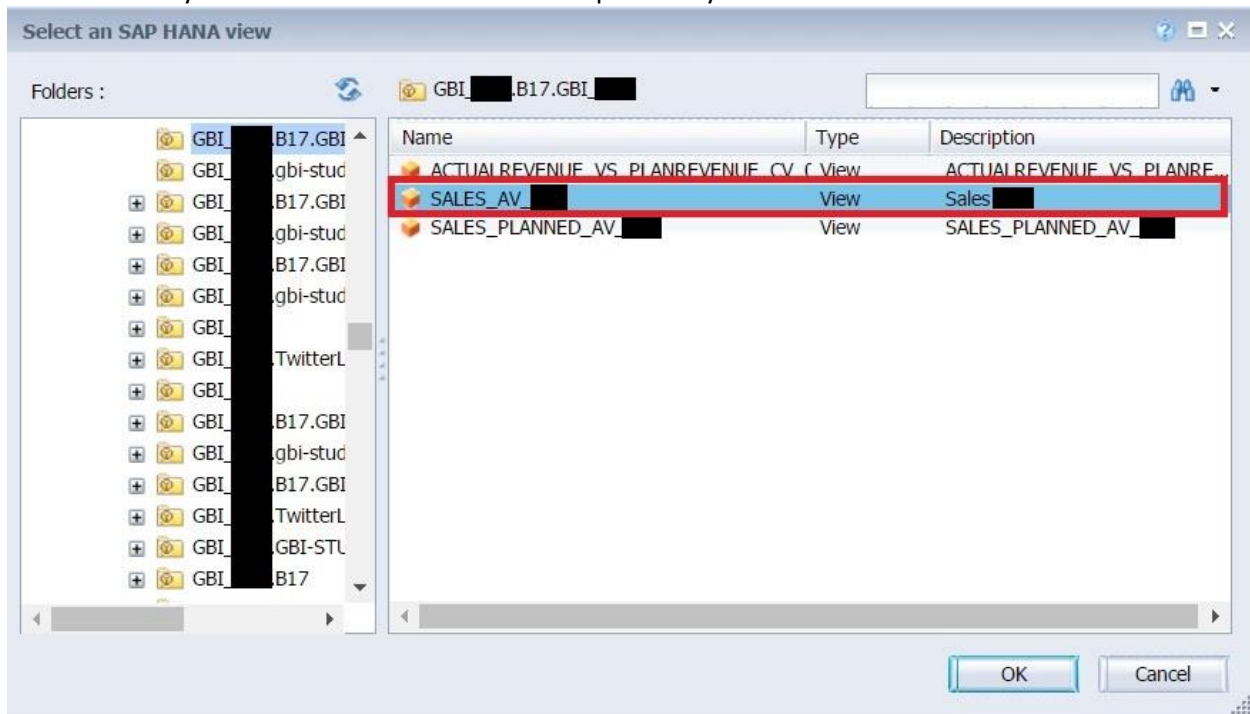
Select the “create new web intelligence report” icon.



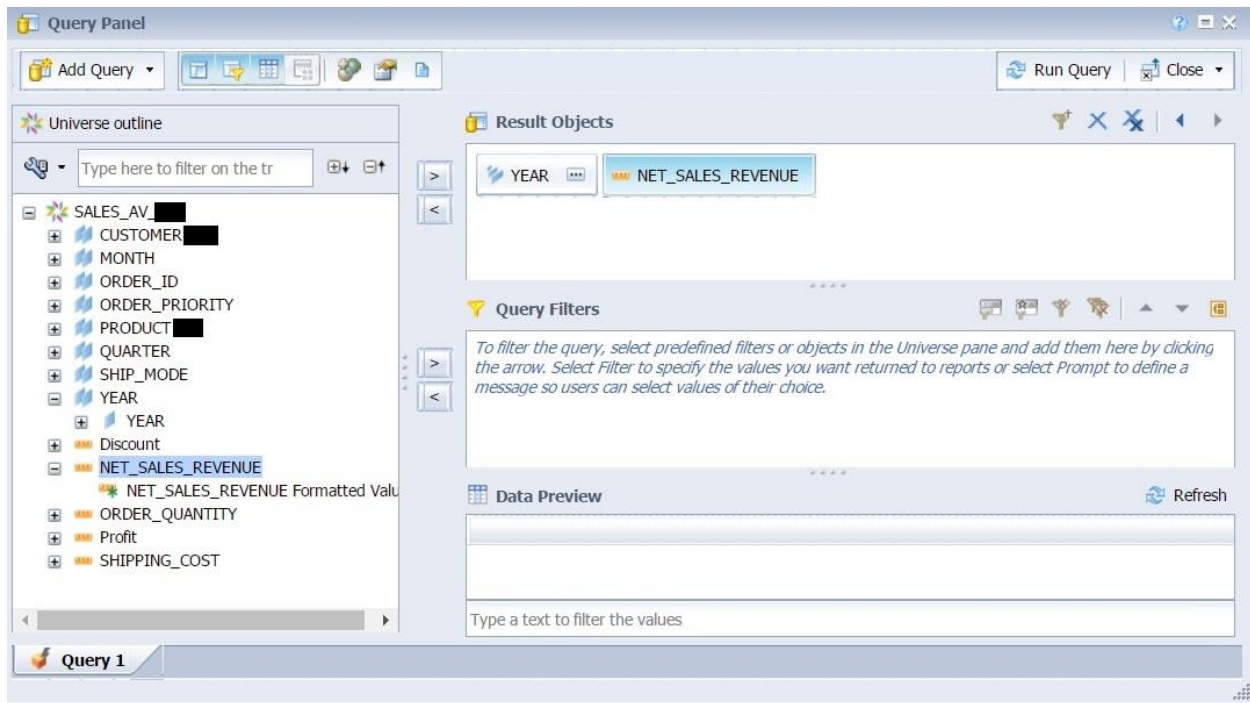
Now select SAP HANA as the data source.



Select the analytical view which we have created previously. Click Ok.



1.2 Now Create a new query by dragging the Year and Net_Sales_Revenue into the Result Objects Pane.



Click on the ... in the Year to select the years in the Output

Run Query

Close

Result Objects

YEAR

NET_SALES_REVENUE

YEAR

Type: String

From: YEAR/YEAR

Query Filters

To filter the query, select predefined filters or objects in the Universe pane and add them here by clicking the arrow. Select Filter to specify the values you want returned to reports or select Prompt to define a message so users can select values of their choice.

Data Preview

Refresh

Type a text to filter the values

Select the years to display in the result.

Member Selector

Members Levels Prompt

☐ (all)

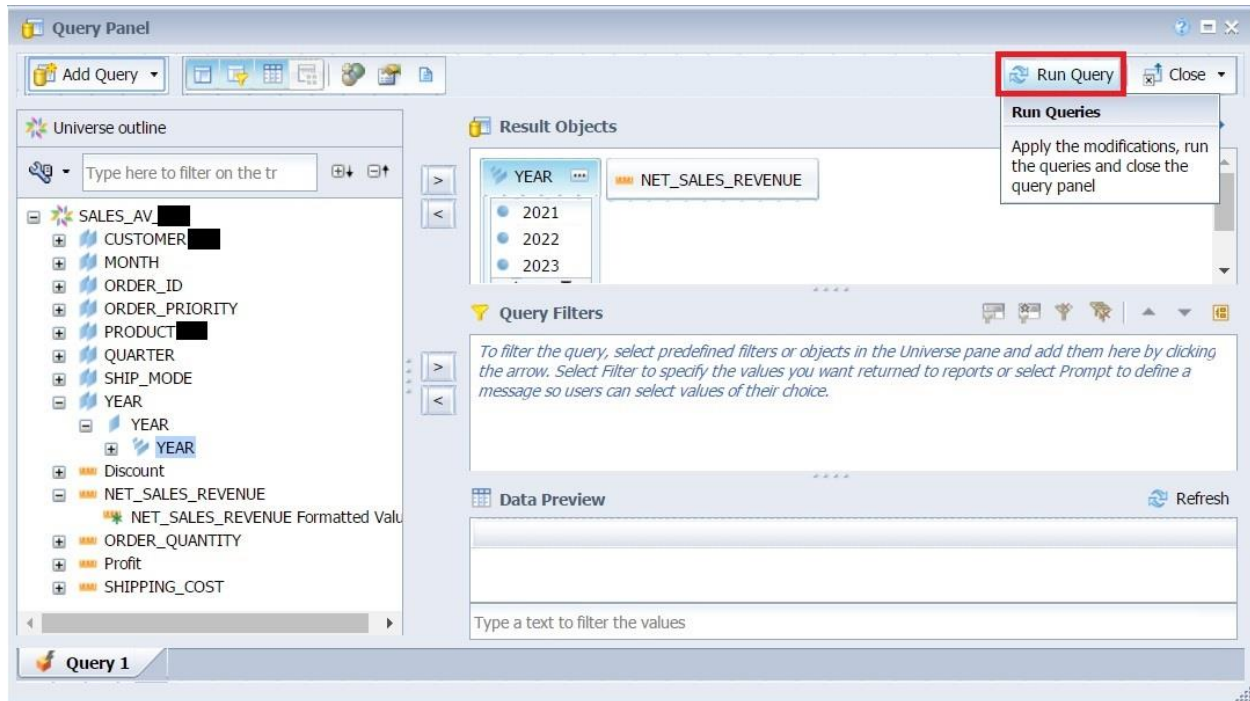
- ☒ 2021
- ☒ 2022
- ☒ 2023
- ☒ 2024
- ☒ 2025
- ☒ 2026

Summary

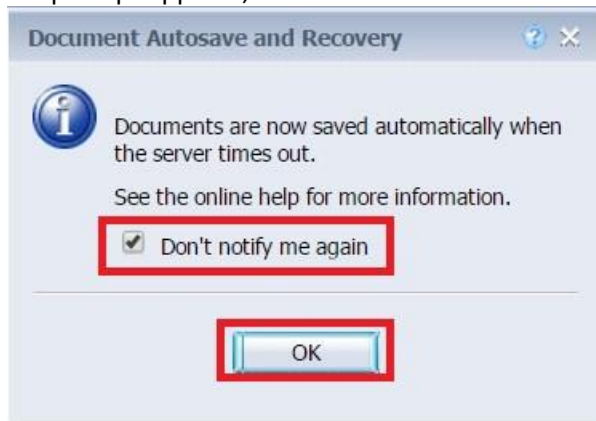
Selection	Exclude	
<input checked="" type="checkbox"/> 2021	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> 2022	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> 2023	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> 2024	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> 2025	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> 2026	<input type="checkbox"/>	<input checked="" type="checkbox"/>

OK Cancel

Now Run the query.



If a prompt appears, check the checkbox and click ok.



If you're not able to see values for Net_Sales_Revenue, it is because of the width of the column and so try to expand the column width.

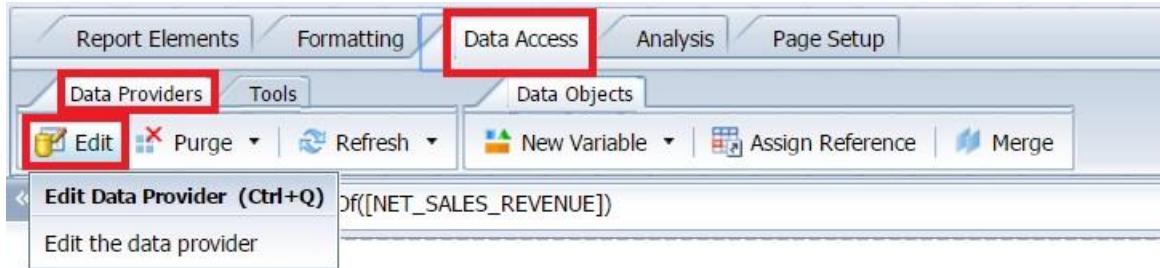
Now Select Net_Sales_Revenue column by clicking on the data of the column and go to Analysis and click on Functions tab. Click on Sum Button .

The screenshot shows the Microsoft Access Report Design View. The ribbon includes 'Report Elements', 'Formatting', 'Data Access', 'Analysis', and 'Page Setup'. The 'Analysis' tab is active, showing 'Filters', 'Data Tracking', 'Display', 'Conditional', 'Interact', and 'Functions' groups. The 'Interact' group has the 'Sum' button selected. The 'Functions' group has the 'Count' button selected. The formula bar shows '=NameOf([NET_SALES_REVENUE])'. The report body contains a table with the following data:

YEAR	NET_SALES_RE
2021	2,727,019.41
2022	12,962,528.55
2023	12,446,246.8
2024	12,828,117.12
2025	5,386,682.58
2026	2,063,226.69

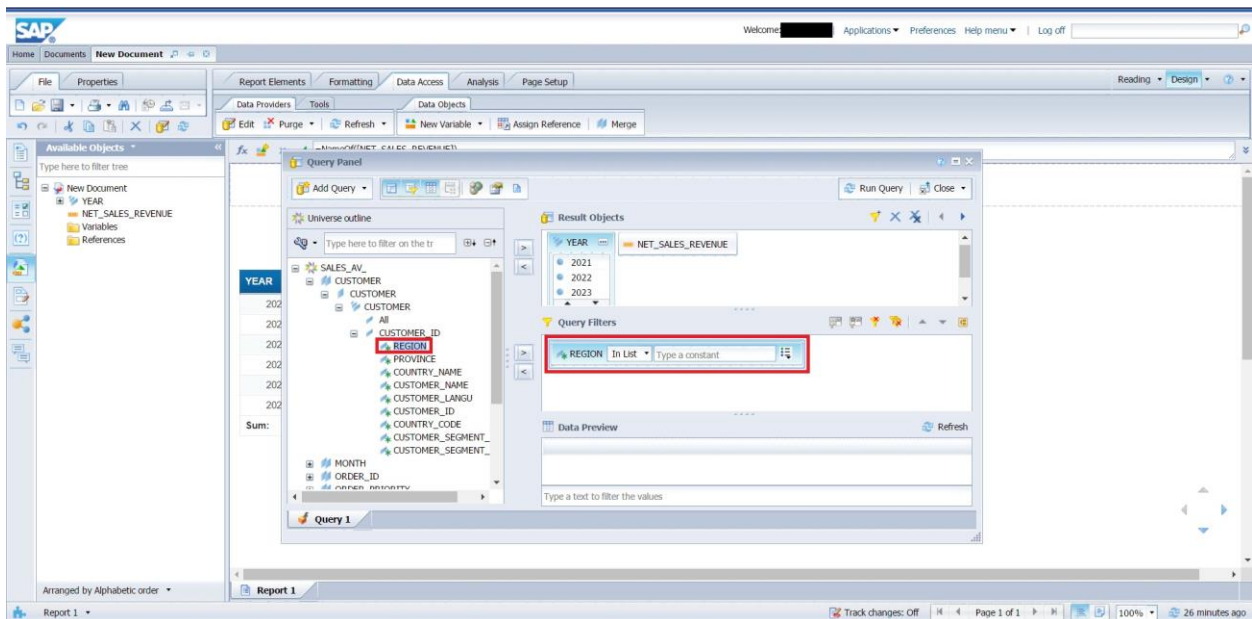
The sum of the Net_Sales_Revenue for all the years is **48,413,821.15**

Now create a filter to show the Net_Sales_Revenue in particular Year by Region.
Now go to Data Acces->Edit and Drag the Region object to the filter pane as shown below.



Report 1

YEAR	NET_SALES_RE
2021	2,727,019.41
2022	12,962,528.55
2023	12,446,246.8
2024	12,828,117.12
2025	5,386,682.58
2026	2,063,226.69
Sum:	



Now Region has “In List” as the selection criterion. Click on icon in the next field and select values from list and then select only Chicago, Mexico City and British Columbia region as shown below.

The image displays two screenshots of a data tool interface, likely Microsoft Power BI, showing the configuration of a query filter for the 'REGION' field.

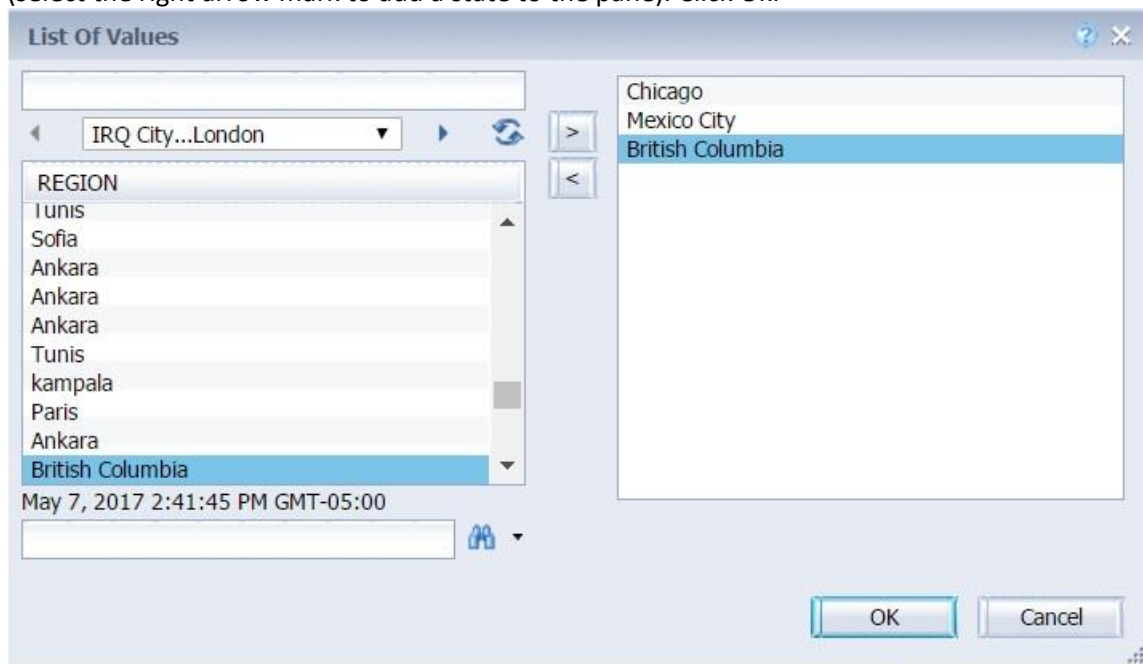
Top Screenshot:

- Result Objects:** Shows a list of fields including 'YEAR' (with values 2021, 2022, 2023) and 'NET_SALES_REVENUE'.
- Query Filters:** The 'REGION' field is selected with the filter type 'In List'. A red box highlights the filter type dropdown icon (three horizontal lines with a downward arrow).
- Data Preview:** A section with a 'Refresh' button and a text input field labeled 'Type a text to filter the values'.

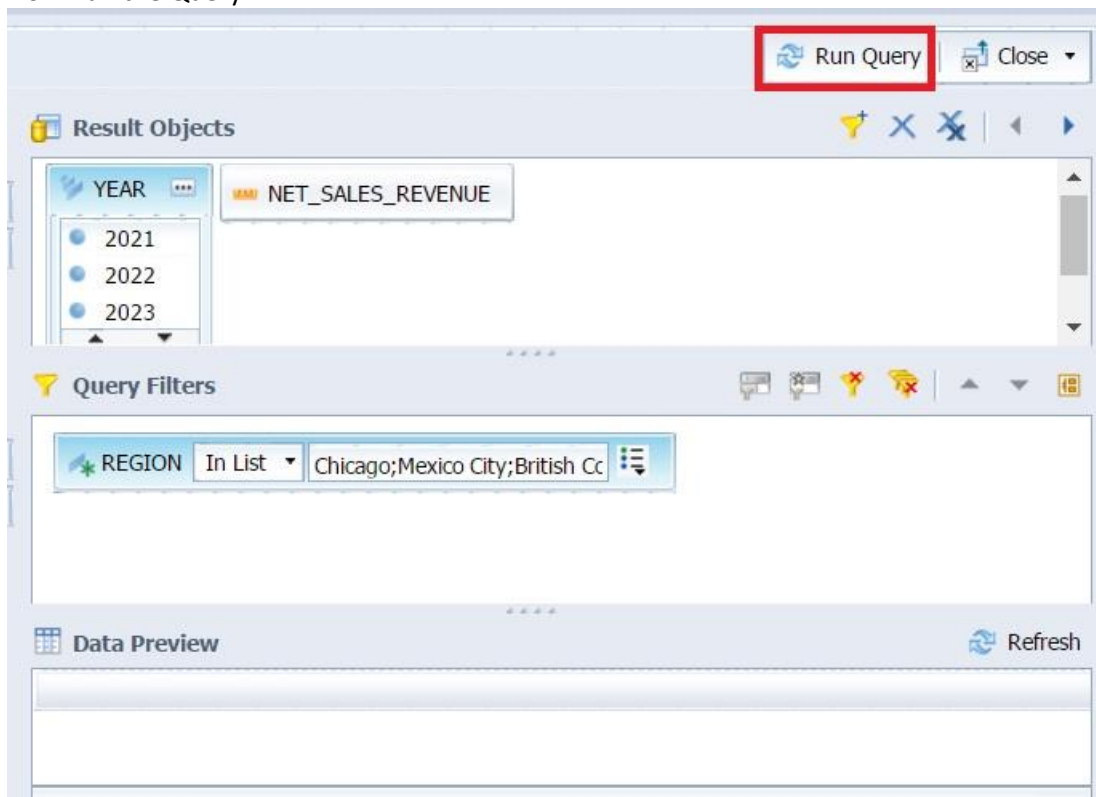
Bottom Screenshot:

- Result Objects:** Same as the top screenshot.
- Query Filters:** The 'REGION' field is selected with the filter type 'In List'. A red box highlights the filter type dropdown icon. A dropdown menu is open, showing the following options: 'Constant' (checked), 'Value(s) from list' (highlighted with a red box), 'Prompt', 'Object from this query', and 'Result from another query'.
- Data Preview:** Same as the top screenshot.

(select the right arrow mark to add a state to the pane). Click Ok.



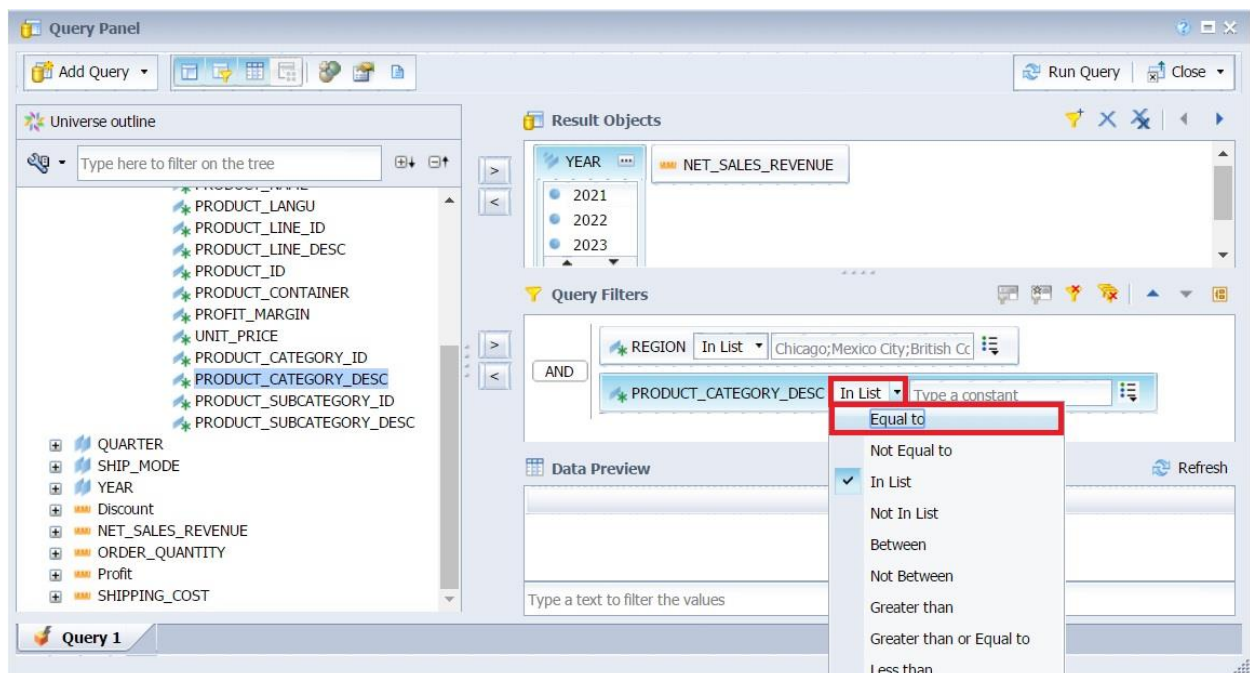
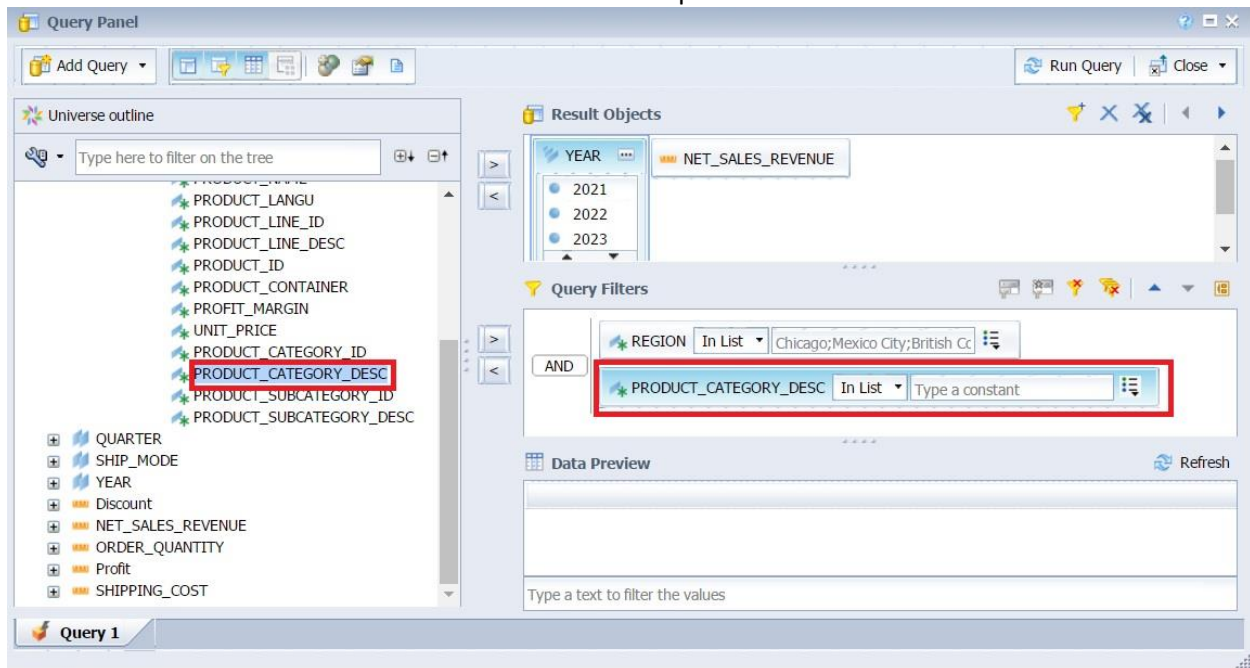
Now Run the Query.

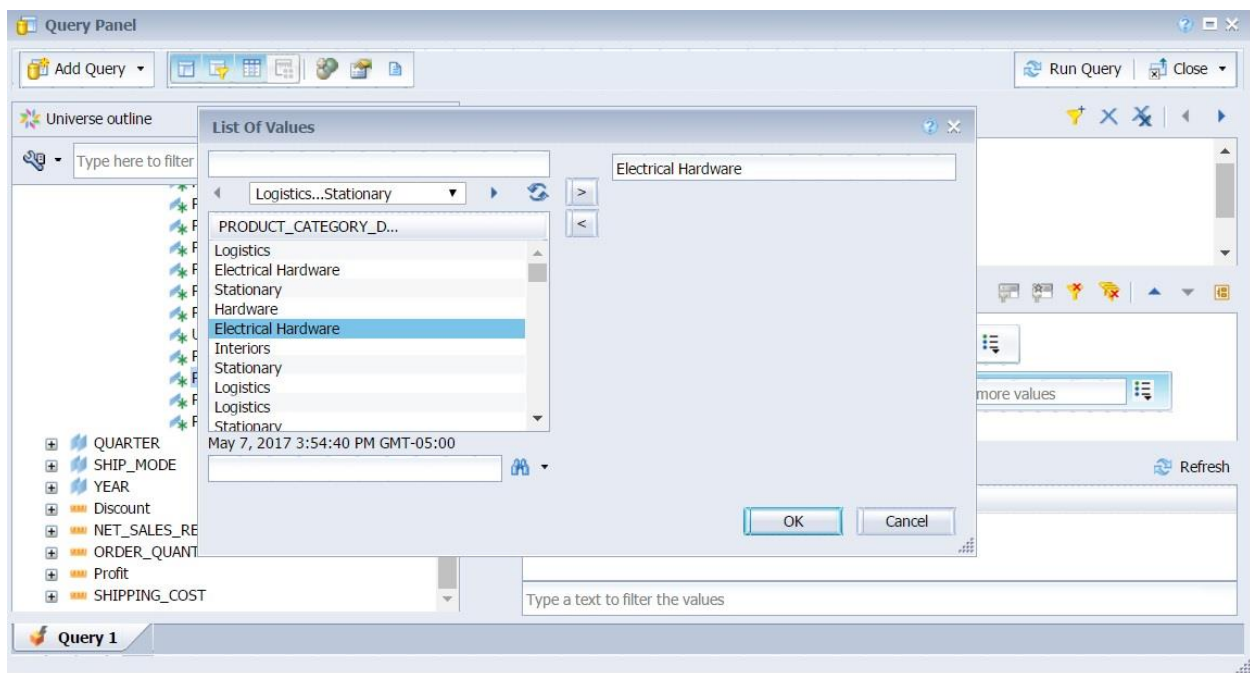
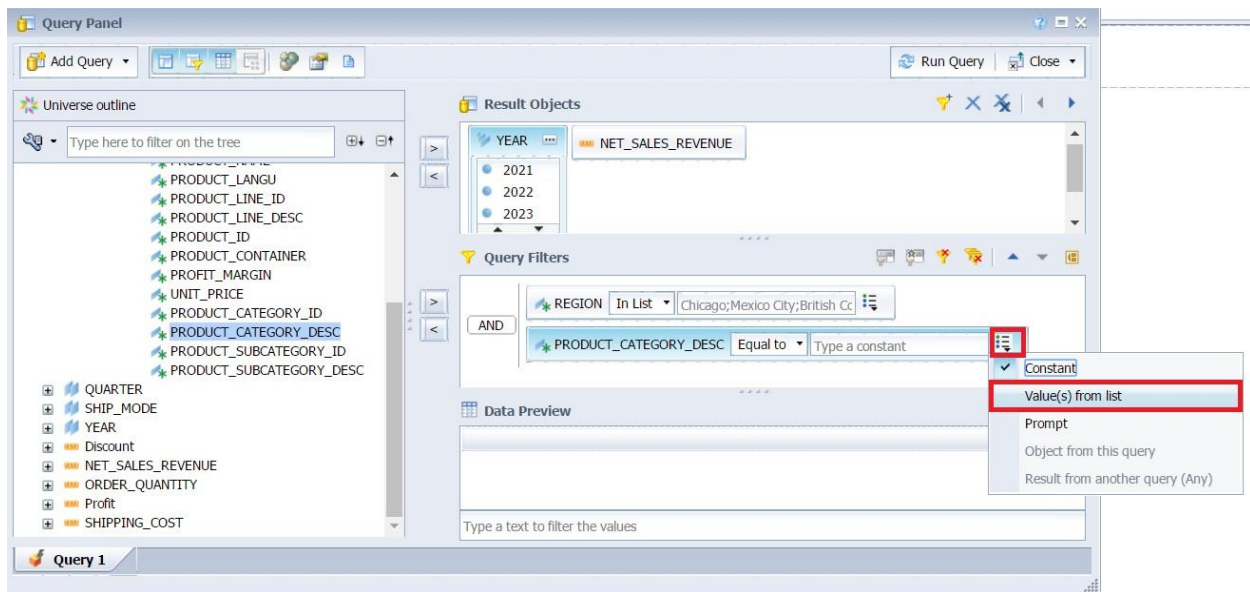


The total Net_Sales_Revenue in Chicago, Mexico City and British Columbia is **1,846,671.19**

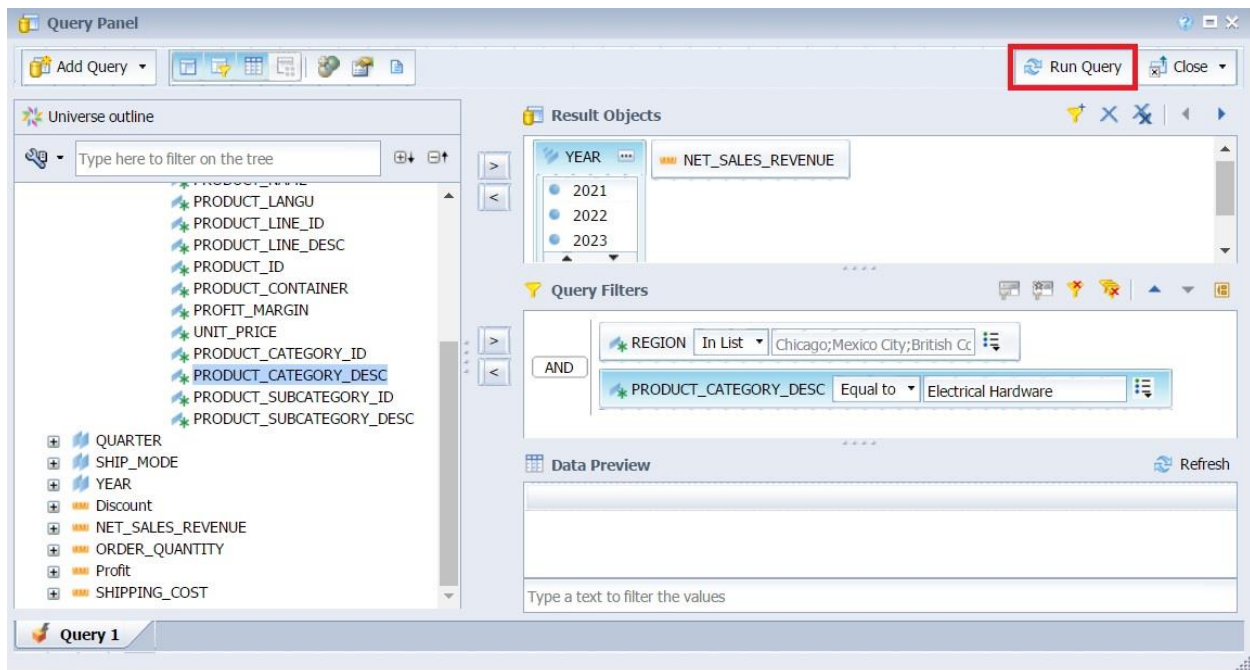
1.3 Further restrict the query by creating another filter to show Net_Sales_Revenue by year in those states for only Electrical Hardware Category.

Go to Edit and then drag Product Category Desc from Product Attribute view to the query filters pane. Specify „Equal to“ as the selection criterion for Product Category and then in the next field, select values from list and then add Electrical Hardware to the pane. Click Ok.





Now Run the Query.



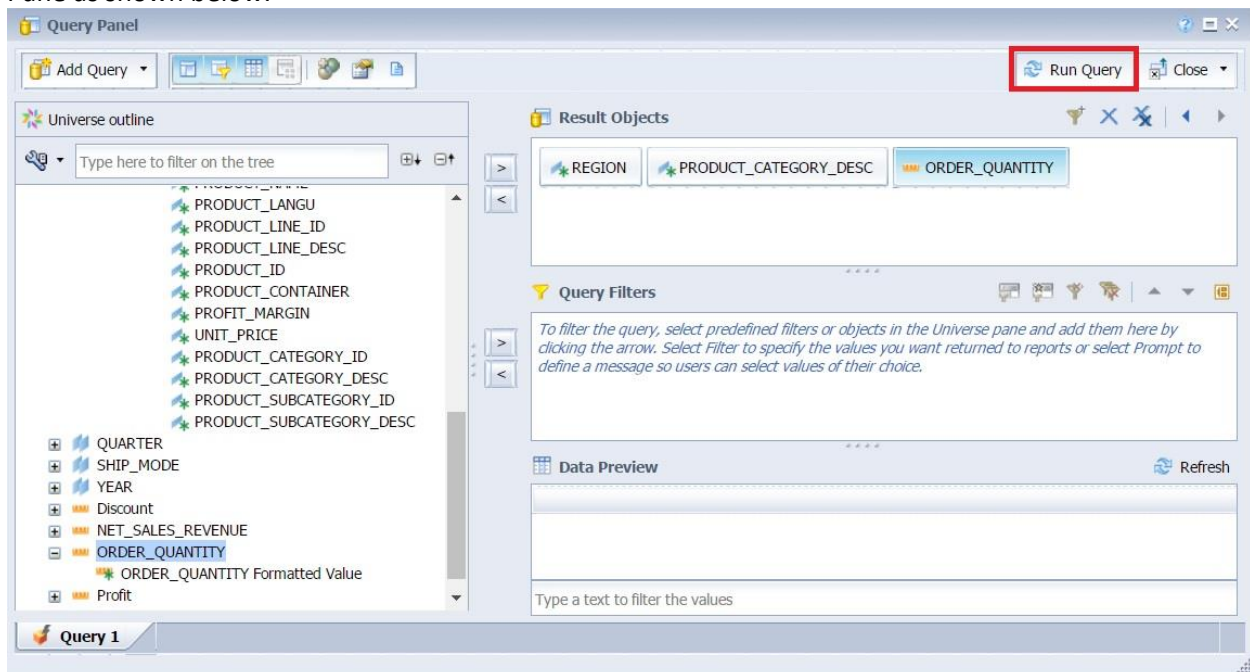
The total Net_Sales_Revenue for Electrical Hardware in Chicago, Mexico City and British Columbia is **111,347.72**

1.4 Now create a new query to display the Order Quantity by Region and Product Category Desc of the product.

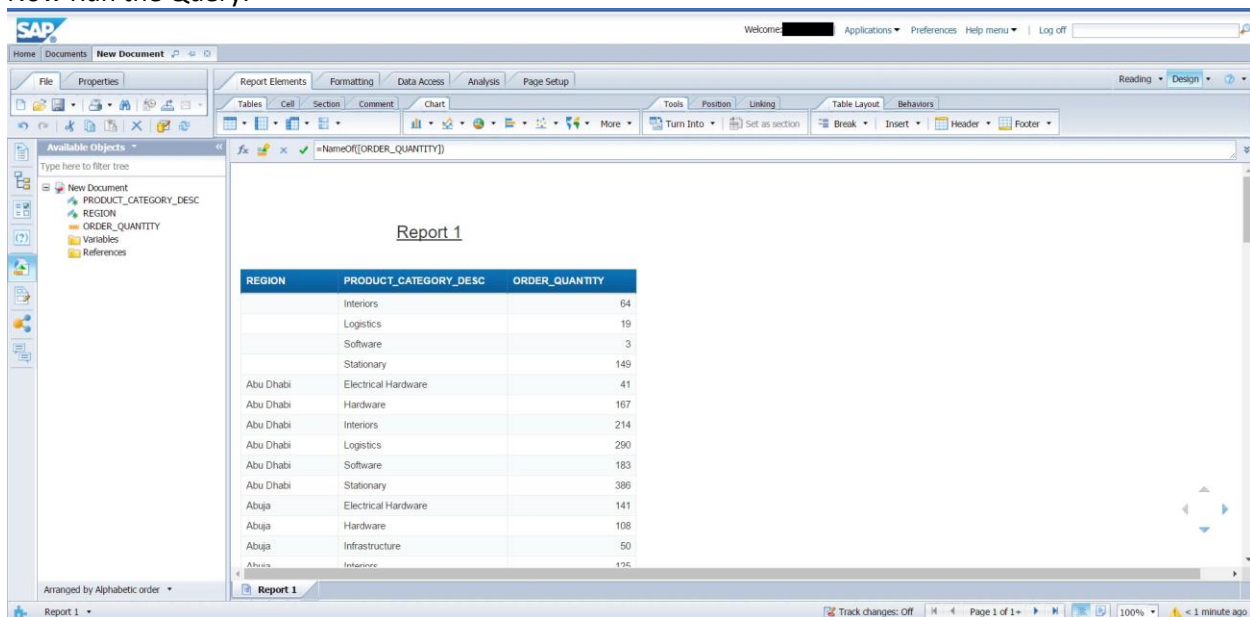
Close the current report and do not save the changes.

Create a new web intelligence report and select the SAP HANA.(refer to the steps mentioned above).

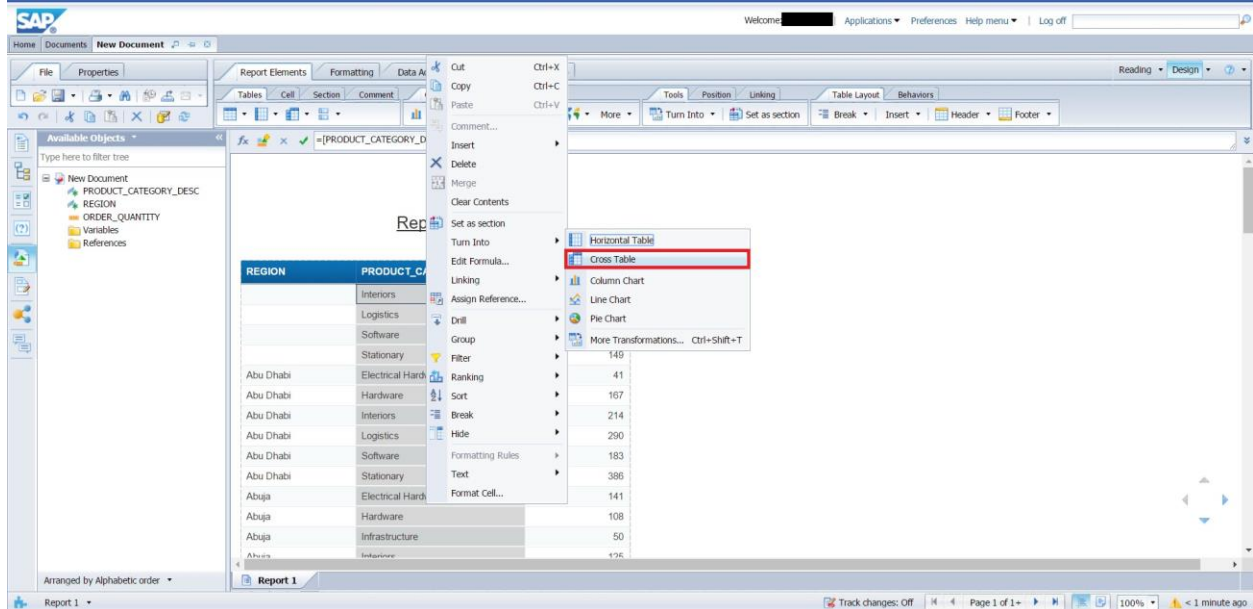
Create the new query by dragging Order Quantity, Region and Product Category Desc into the Results Pane as shown below.



Now Run the Query.



1.5 Now select the Product Category Desc column by clicking on it and then right click and select turn-into and then a crosstable.



Report 1

	Abu Dhabi	Abuja	Addis Ababa	Algiers	Amman	Amsterdam	Ankara
Electrical Hardware			141	1	121	83	288
Hardware		108	108	257	238	68	204
Infrastructure			50	230		19	154
Interiors	64	214	125	170	132	44	440
Logistics	19	200	145	198	153	131	679
Software	3	183	214	82	134		90
Stationary	140	388	802	1,177	657	237	2,325

1.6 Now select the data inside the crosstable by clicking on it and then go to Analysis->Functions and then click on sum button. If a pop-up windows comes, select both rows and columns, click Ok.

	Abu Dhabi	Abuja	Addis Ababa	Algiers	Amman	Amsterdam	Ankara
Electrical Hardware			141	1	121	81	268
Hardware			108	257	238	88	204
Infrastructure			30	230		78	154
Interiors	64	214	125	116	110	10	440
Logistics	18	250	145	168			679
Software	3	183	214	82			90
Stationery	140	285	802	1,177	857	237	2,325

Insert a Sum

You can insert the calculation on columns, rows or both. Where do you want to insert it?

☐ Columns
☐ Rows
☒ Columns and Rows

OK Cancel

18 Electrical Hardware were sold in Abu Dhabi

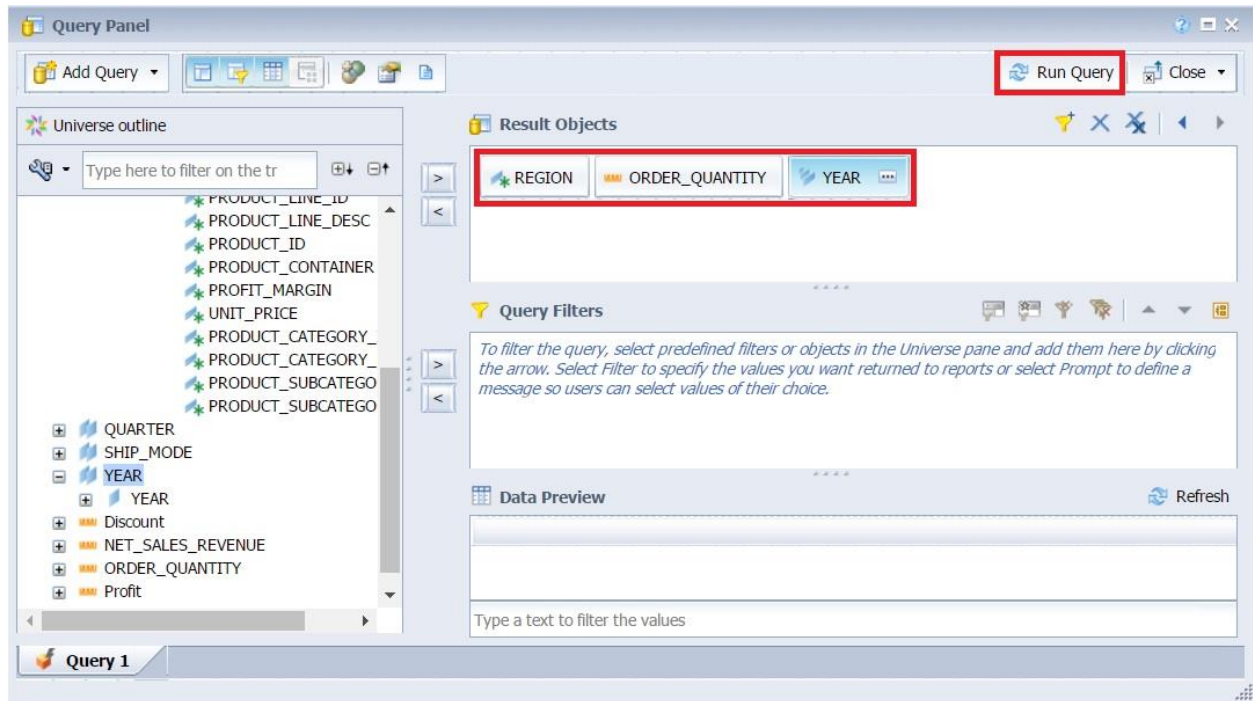
The number of Software sold from Amman is **NULL**.

1.7 Now change the query by removing Category dimension object and adding Year dimension object.

Drag the Year dimension object and drop it onto the column of the cross tab. What does the analysis show now?

Go back to edit query window. Drag Product Category Desc out of the results objects and Drag Year into the pane. Run the query. (See below)

Now Drag the year object onto the Column heading as shown below



Report 1

	Abu Dhabi	Abuja	Addis Ababa	Adelaid	Algiers	Amman	Am
Sum:	576	1,477	2,357	2,407	1,709	1,779	625

The analysis now shows the sales quantity by State and Year.

Part 2

2.1 Create a new web Intelligence report showing the Year, Month, Net Sales Revenue, Region, Product Category Desc.

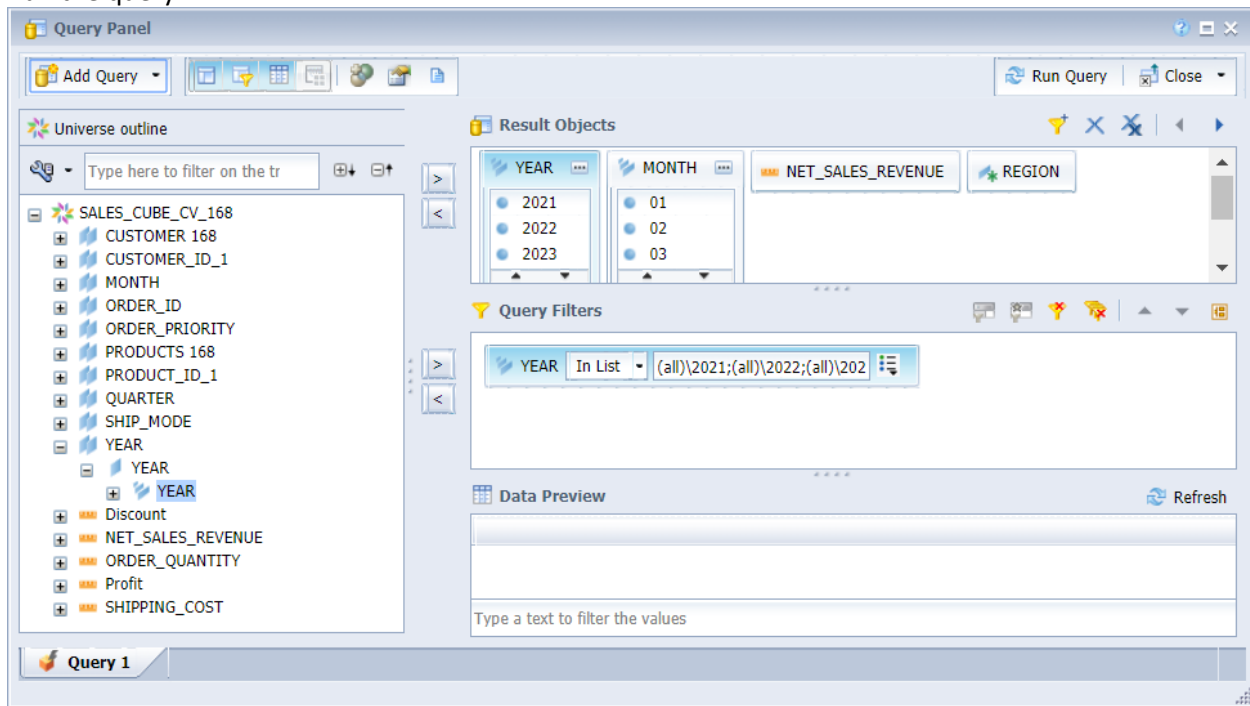
Close any open reports

Select the SAP HANA as mentioned in the previous steps.

Create a new query by dragging Year, Month (*you have to select all the 12 months as you did before for the years – refer to the initial steps to see how all the years were added*), Net Sales Revenue, Region and Product Category Desc objects on to the Result Objects pane (as shown below).

Also, add Year dimension to the Query Filters and use the “In List” to filter out only 2021, 2022, 2023.

Run the query.



2.2 Create another section using the Product Category Desc object.

Select the data in the Product Category Desc column by clicking it on the data cell and then right click & choose “Set as Section” as shown below.

Report Elements Formatting Data Access Analysis Page Setup

Tables Cell Section Comment Chart Tools Po

fx x ✓ =[PRODUCT_CATEGORY_DESC]

Report 1

YEAR	MONTH	NET_SALES_REVENUE	REGION	PRODUCT_CATEGORY_D
2021	01	18.16	Abu Dhabi	Interiors
		16.45	Abu Dhabi	Stationary
		17.62	Abuja	Infrastructure
		3.84	Abuja	Stationary
		7.03	Addis Ababa	Stationary
		15.65	Adelaid	Infrastructure
		11.49	Adelaid	Interiors
		8.74	Algiers	Hardware
		14.47	Algiers	Logistics
		15.25	Amsterdam	Interiors

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Comment...

Insert

Delete

Merge

Clear Contents

Set as section

Turn Into

Edit Formula...

Linking

Assign Reference...

Drill

Group

Filter

Ranking

Sort

Break

Hide

Formatting Rules

Text

Format Cell...

Report 1

Electrical Hardware

YEAR	MONTH	NET_SALES_REVENUE	REGION
2021	01	15.07	Ankara
		17.9	Brasilia
		18.19	Brussels
		12.44	Kiev
		9.53	Minsk
		8.29	Novosibirsk
		8.52	Seoul
		12.24	Sofia
		7.2	Stockholm
		5.05	Tokyo
		11.36	Warsaw

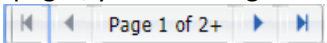
2.3 Create a **break** on the Month column.

Select the Month column by clicking on it on the data cell and then click on Break in the tool bar.

The screenshot shows a web intelligence report interface. The top navigation bar includes tabs for 'Report Elements', 'Formatting', 'Data Access', 'Analysis' (highlighted with a red box), and 'Page Setup'. Below this, the 'Display' tab is also highlighted with a red box, and a dropdown menu is open showing the 'Break' option. The main content area displays 'Report 1' and a section titled 'Electrical Hardware'. Below this is a table with the following data:

YEAR	MONTH	NET_SALES_REVENUE	REGION
2021	01	15.07	Ankara
		17.9	Brasilia
		18.19	Brussels
		12.44	Kiev
		9.53	Minsk
		8.29	Novosibirsk
		8.52	Seoul
		12.24	Sofia

Now Select Revenue column by clicking on the data cell and Insert Sum using the techniques we have used before.

Please note that, this web intelligence report that you have created multiple pages and if you want to switch through various pages, you need to go to setting in the right bottom of the screen and use the Page browser buttons .

Display the sum of revenue for Electrical Hardware in 2021 for 3rd and 4th month in the same screenshot. (Scroll enough and set it such that we could see the sum cells of 2021 March and 2021 April)

The screenshot displaying the sum of revenue for Electrical Hardware in 2021 for 3rd and 4th month:

REGION	YEAR	MONTH	NET_SALES_REVENUE
Antares	2021	01	15.07
Warsaw			11.35
		01	26.43
Amsterdam	2021	02	34.78
Berlin			20.45
Bogota			20.60
Brussels			19.04
Frankfurt			43.41
Madrid			62.35
Oslo			20.45
Prague			31.1
Rabat			23.27
Stockholm			22.51
		02	299.21
Antares	2021	03	126.29
Brussels			119.74
Madrid			235.96
Rabat			120.28
		03	610.27
Kansas City	2021	04	250.35
		04	250.35

2.4 Display the Sum of Net Sales Revenue for all Year under Product Category Desc Section header.

Select the Net Sales Revenue Column field header cell, now drag and drop the header cell as shown below. Ensure you drop within the section and not on to the report header are.

If you don't see the total but just the header title being moved into a single cell, then click the cell that is moved outside that only has the text NET_SALES_REVENUE. Go to the formula field, delete all the content in there and replace with **=Sum([NET_SALES_REVENUE])** - Now you'll find the total for a particular section member.

Report 1

Electrical Hardware

YEAR	MONTH	NET_SALES_REVENUE	REGION	
2021	03	119.25	Amsterdam	
		128.83	Ankara	
		360.76	Astana	
		249.92	Beijing	
		119.74	Brussels	
		124.77	Copenhagen	
		129.88	Conkoba	
		124.08	Dresden	
		129.19	Kiev	
		235.28	Ljubljana	

Report 1

Electrical Hardware

YEAR	MONTH	REGION
2021	03	Ankara
		Brasilia
		Brussels
		Kiev
		Minsk
		Novosibirsk
		Seoul
		Sofia
		Stockholm
		Tokyo
		Warsaw
		Wellinton

Expand the highlighted portion and get the total Net Sales Revenue (numeric value).

The total Net Sales Revenue for Electrical Hardware is **548,831.47**

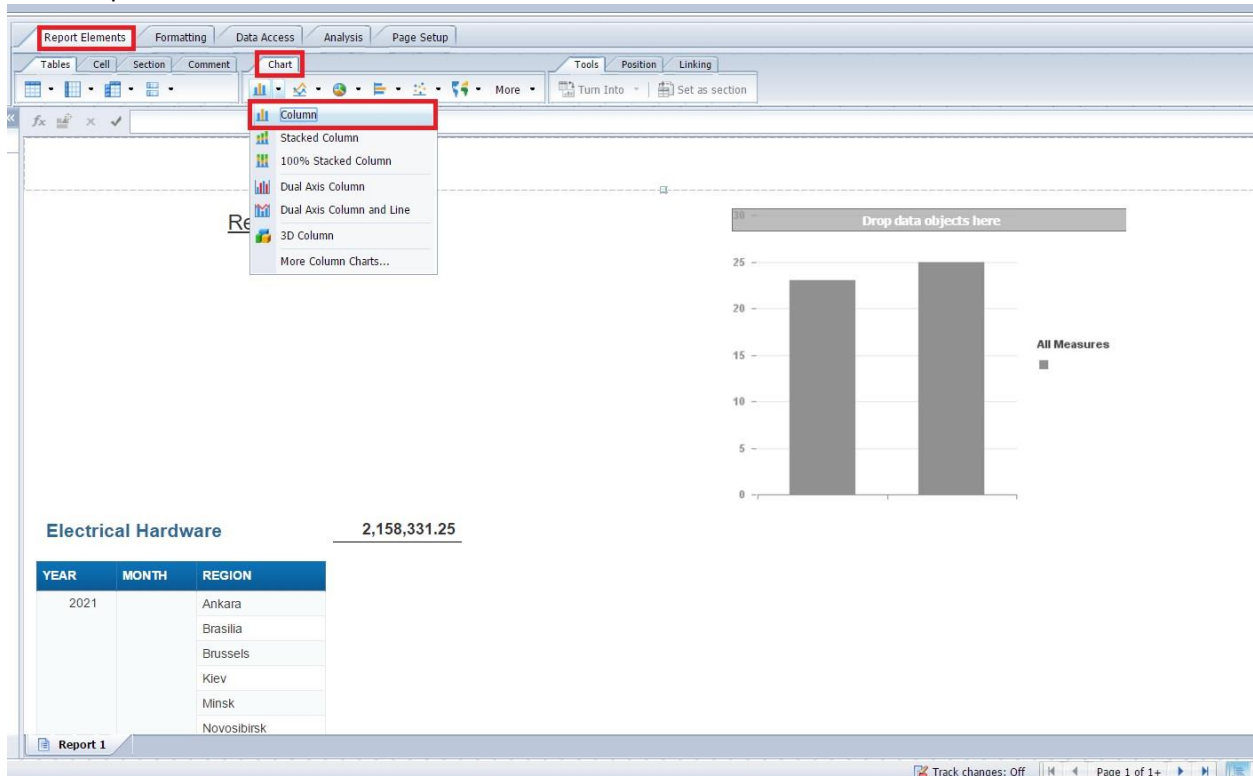
2.5 Create a Column Chart to display the Net Sales Revenue (Y-axis) by Year (X-axis) and Product Category Desc(Z-axis). Position this chart outside the Section.

Ensure the Legend is visible.

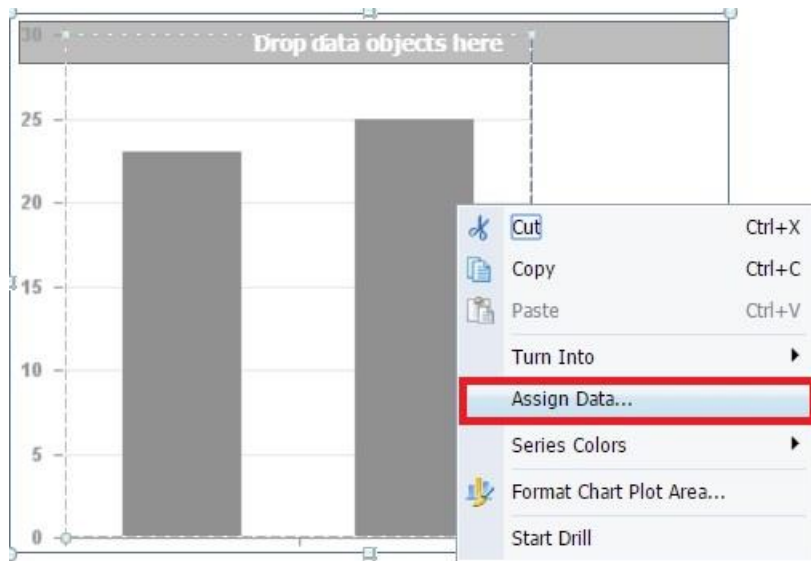
Reposition the Graph so that it is between the report header and the section header.

You could lower the top margin of the Product Category Section using the borders (hover over the area above the section header to see the page wide horizontal dotted border – click the centre point and move it down to create some space for the charts in-between the report header and the section area)

Go to Report elements tab and then click on chart. Select the column chart.



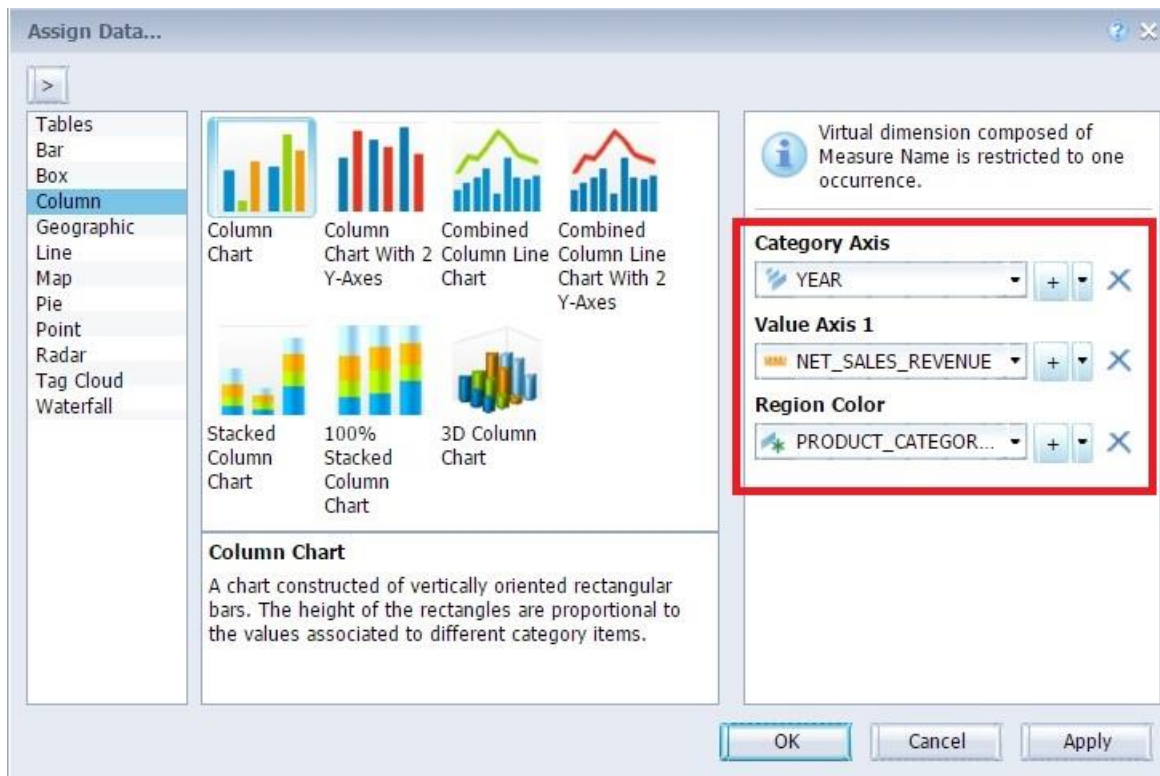
Right click on chart and click on Assign Data



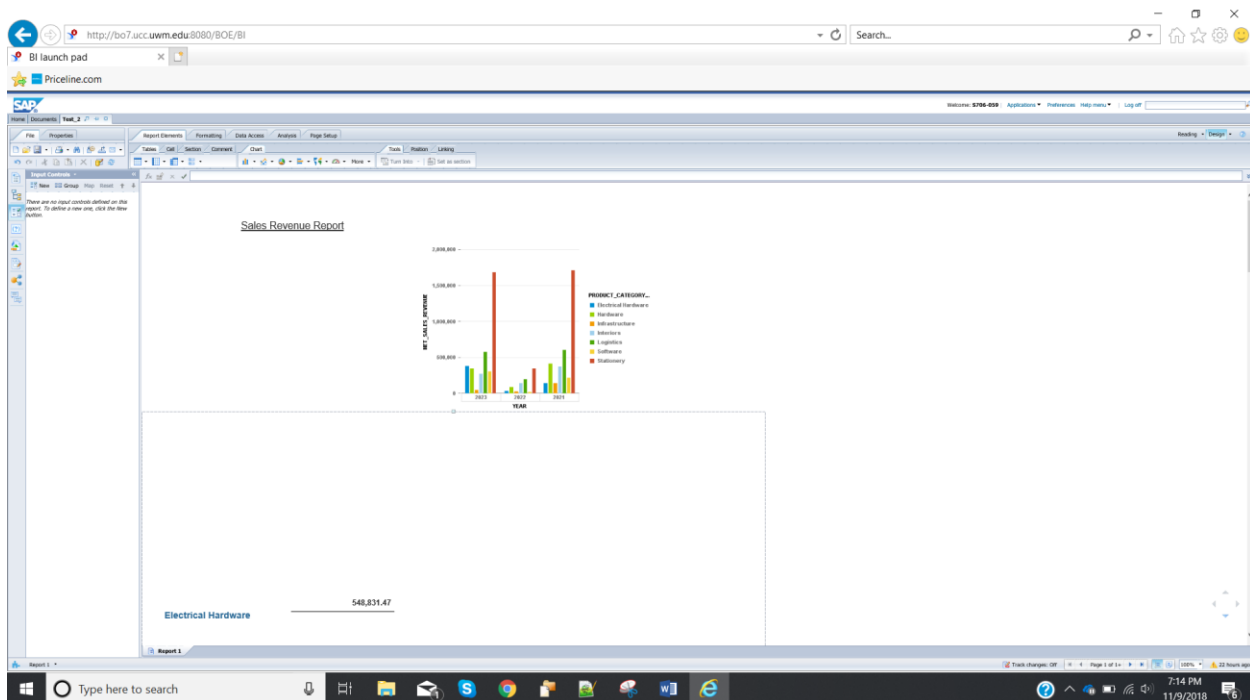
The below screen will come. Click on little arrow.

A screenshot of the "Assign Data..." dialog box. At the top left, there is a red rectangle highlighting a small left-pointing arrow icon. Below this is an information icon and a message: "Virtual dimension composed of Measure Name is restricted to one occurrence." The dialog has three main sections: "Category Axis" with a "Pick..." dropdown, "Value Axis 1" with a "Pick..." dropdown, and "Region Color" with an "(optional)" dropdown. Each dropdown has a "+" button to its right and an "X" button to its left. At the bottom of the dialog are three buttons: "OK", "Cancel", and "Apply".

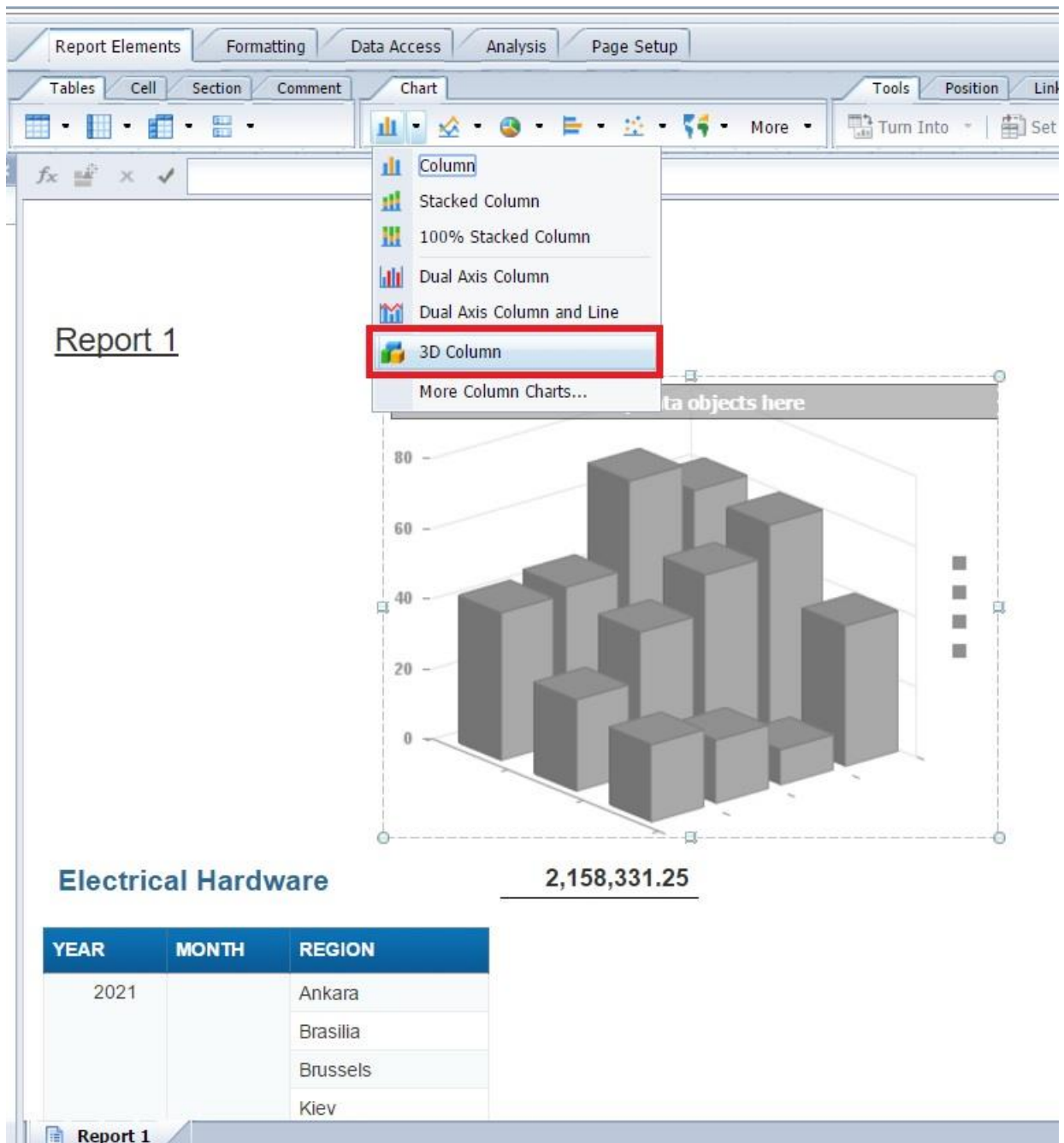
Now select Sales Revenue for Y-axis, Category for Z-axis and Year for X-axis as shown below.

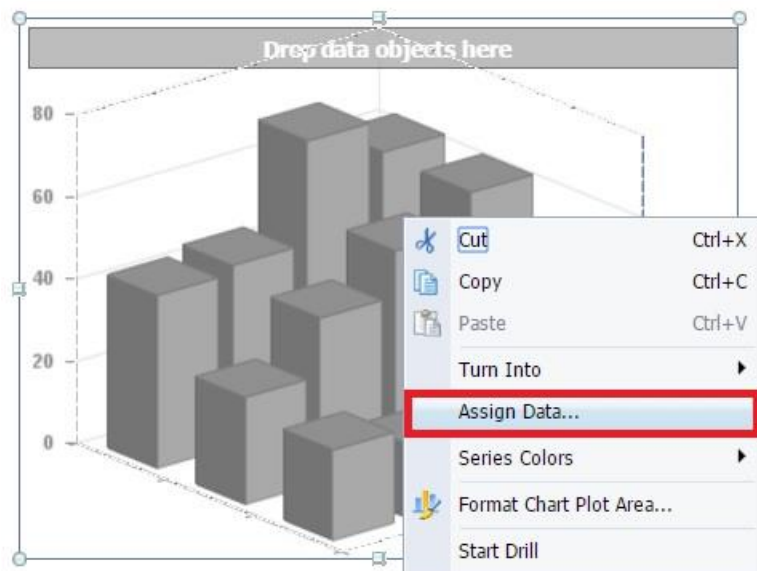


Reposition the chart so that it is below the State heading.



2.6 Create a 3D chart to display the Net Sales Revenue on Y-axis, Year on X-axis and Month on Z-axis. Position this chart left to the chart created in the previous step. Reposition the graph if necessary. See below.





Assign Data...

>

Tables
Bar
Box
Column
Geographic
Line
Map
Pie
Point
Radar
Tag Cloud
Waterfall

Column Chart
Column Chart With 2 Y-Axes
Combined Column Line Chart
Combined Column Line Chart With 2 Y-Axes
Stacked Column Chart
100% Stacked Column Chart
3D Column Chart

3D Column Chart
An XYZ column chart. The secondary category axis represents an additional analysis category item.

Virtual dimension composed of Measure Name is restricted to one occurrence.

Category Axis
YEAR + - X

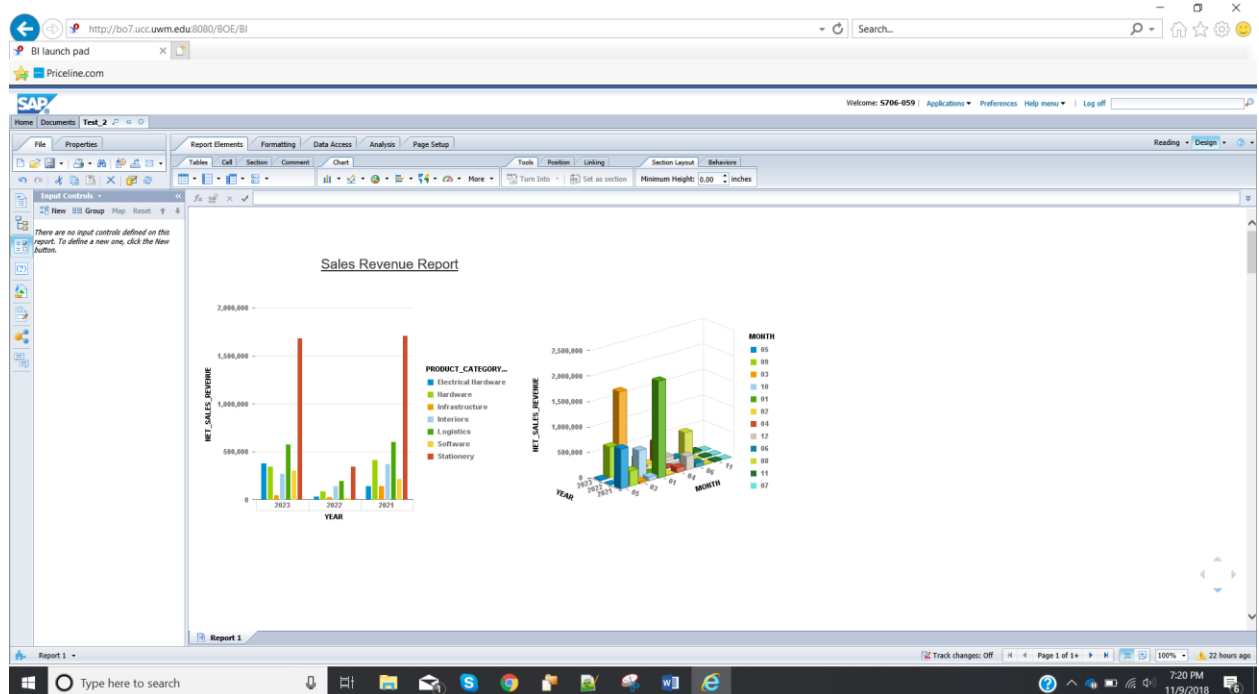
Value Axis 1
NET_SALES_REVENUE + - X

Region Color
MONTH + - X

OK Cancel Apply

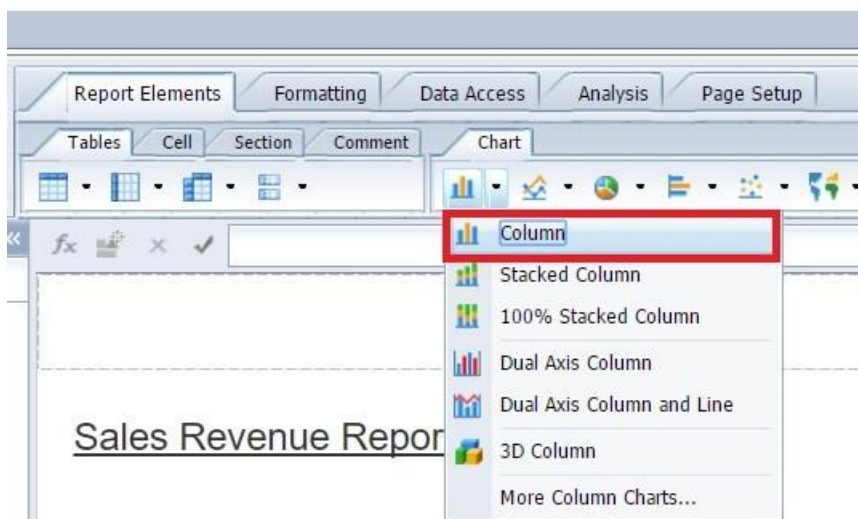
Resize the chart if necessary.

2.7 Now change the report title to “Sales Revenue Report” and select the report title box. Enter the text “Sales Revenue Report” and click Enter. Please ensure that the 3D chart is include in your screenshot.

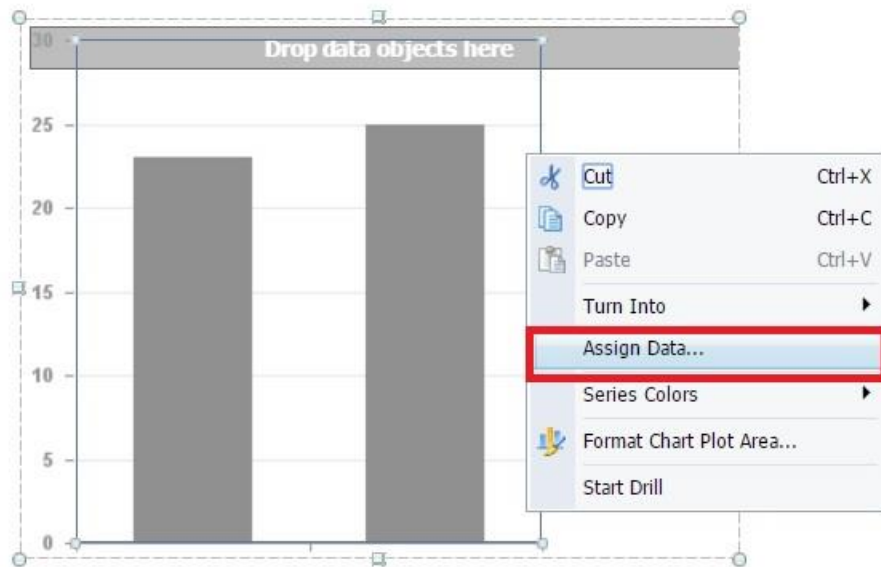


2.8 In the above given graphs, different bars are representing different Product Categories. Grouping divided the Product Category Description in different sub groups. We apply grouping if we want to compare a particular Product Category with respect to all other categories. We will now apply the grouping on Product Category Description.

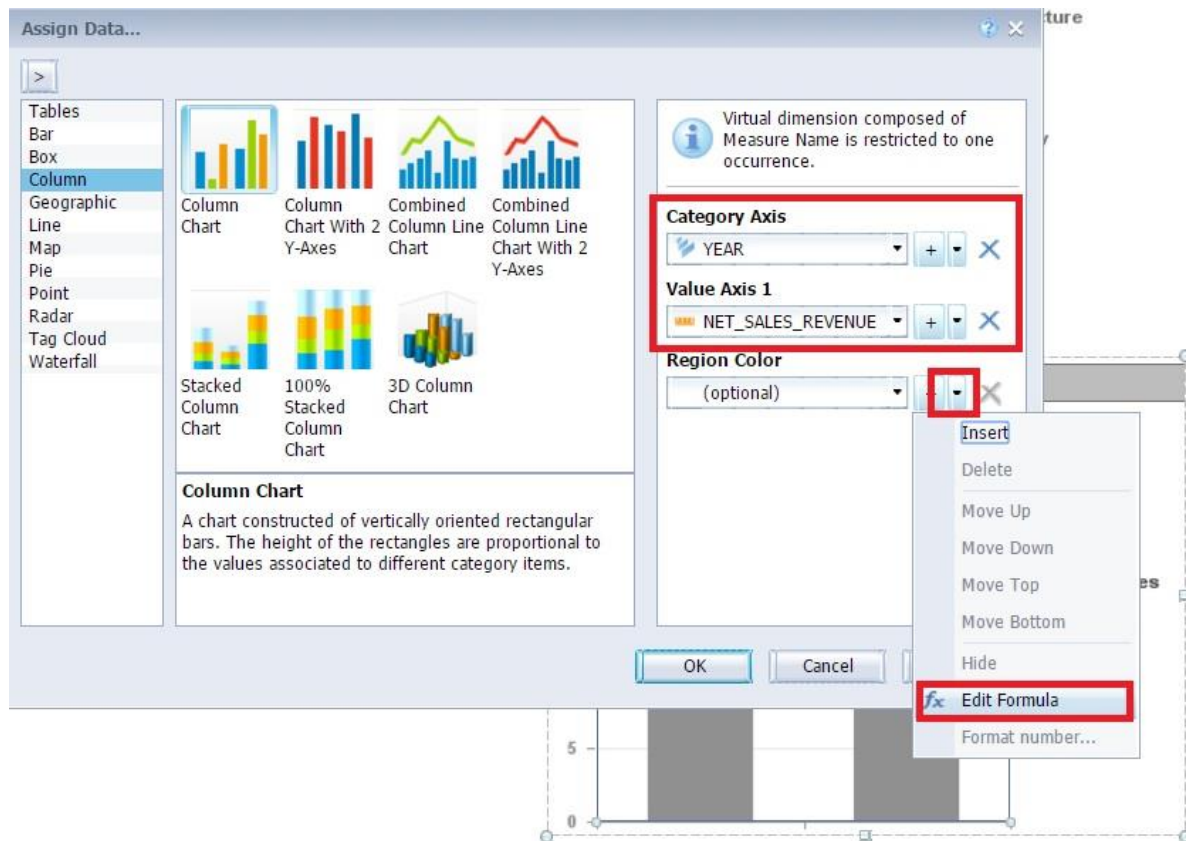
Drag the column chart on the canvas – to the right of normal column chart which shows the revenue by product category.



Right click on the graph. Click on Assign Data



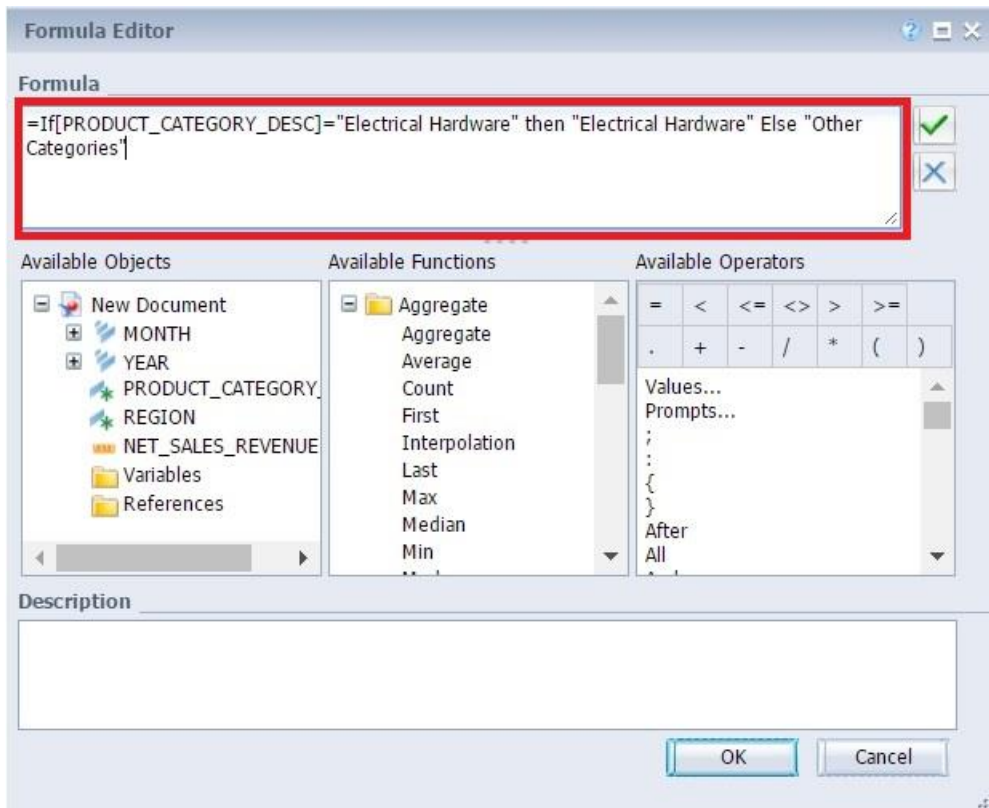
Choose Year for X axis, Net Sales Revenue for Y axis. For Z axis, click on small drop down button and choose Edit Formula.



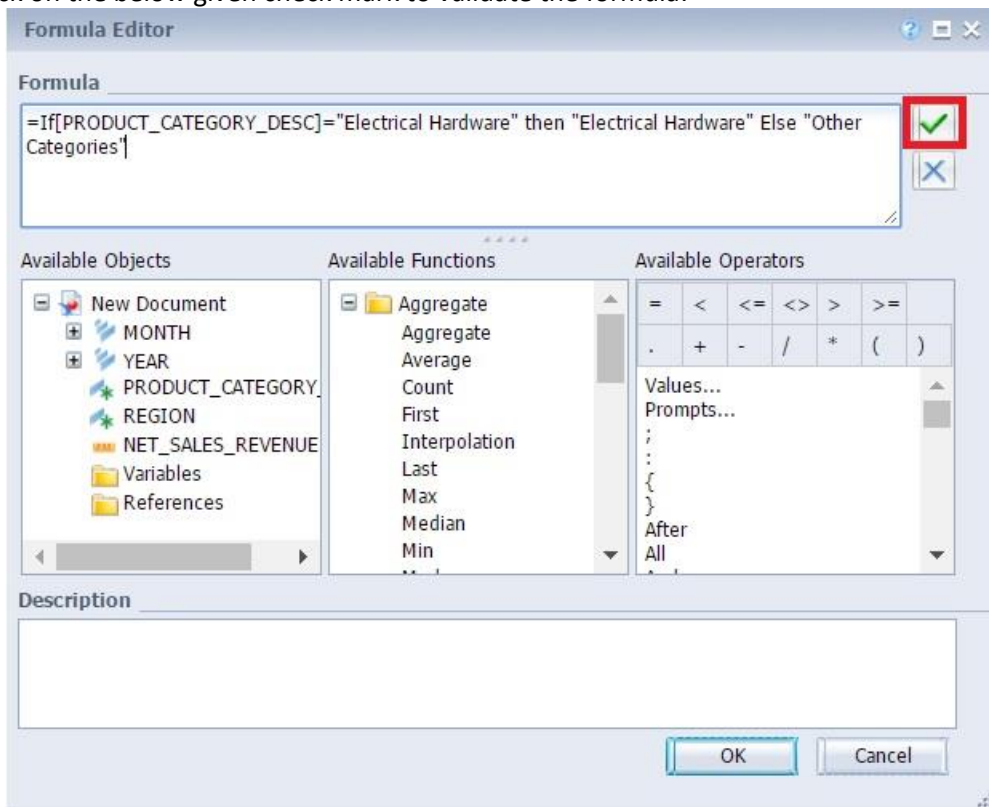
Put the below given formula in Formula pane:

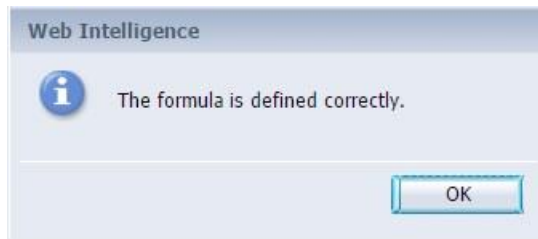
=If[PRODUCT_CATEGORY_DESC]="Electrical Hardware" then "Electrical Hardware" Else "Other Categories"

Please do check your data if you have “Electrical Hardware” as mentioned in the above formula. If not, adjust the formula according to your data. (For example, some of you might have created data with a member named “Electric Hardware”)

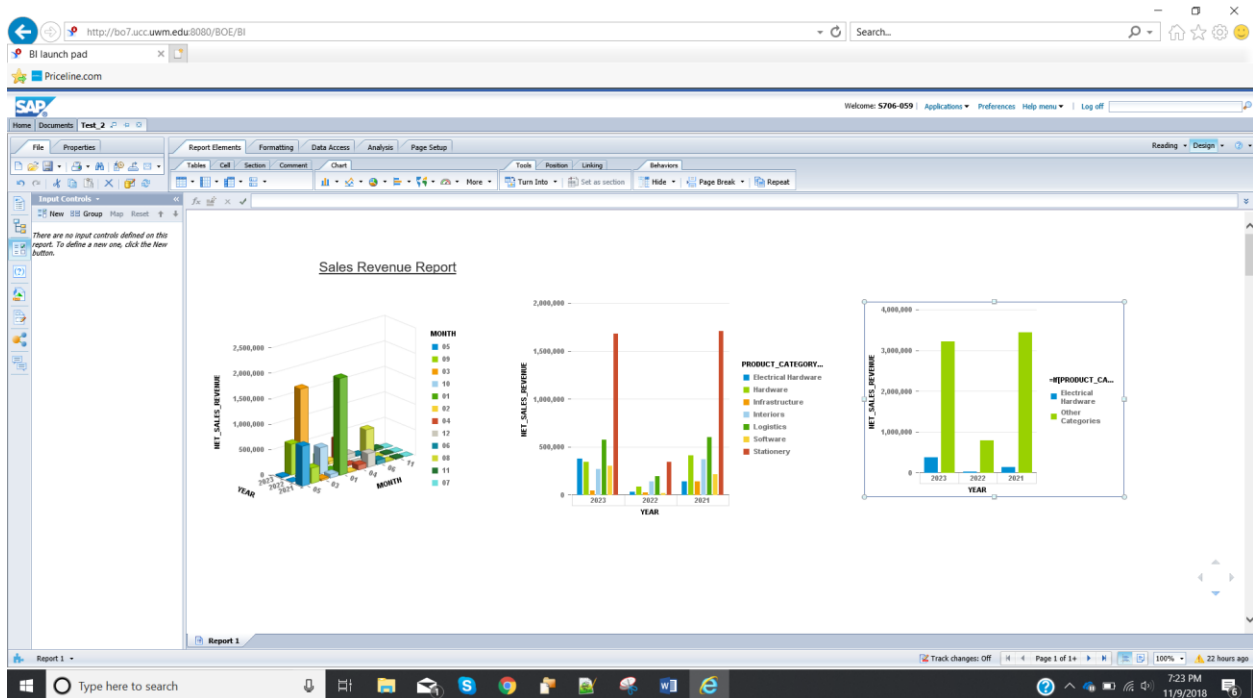


Now click on the below given check mark to validate the formula:





Click on OK and then again click on OK on formula editor. After that click on Apply and OK.



If we place the 3D Column chart within the section area instead of positioning it between section and report title, then the column chart will only represent the data related to only Electrical Hardware.