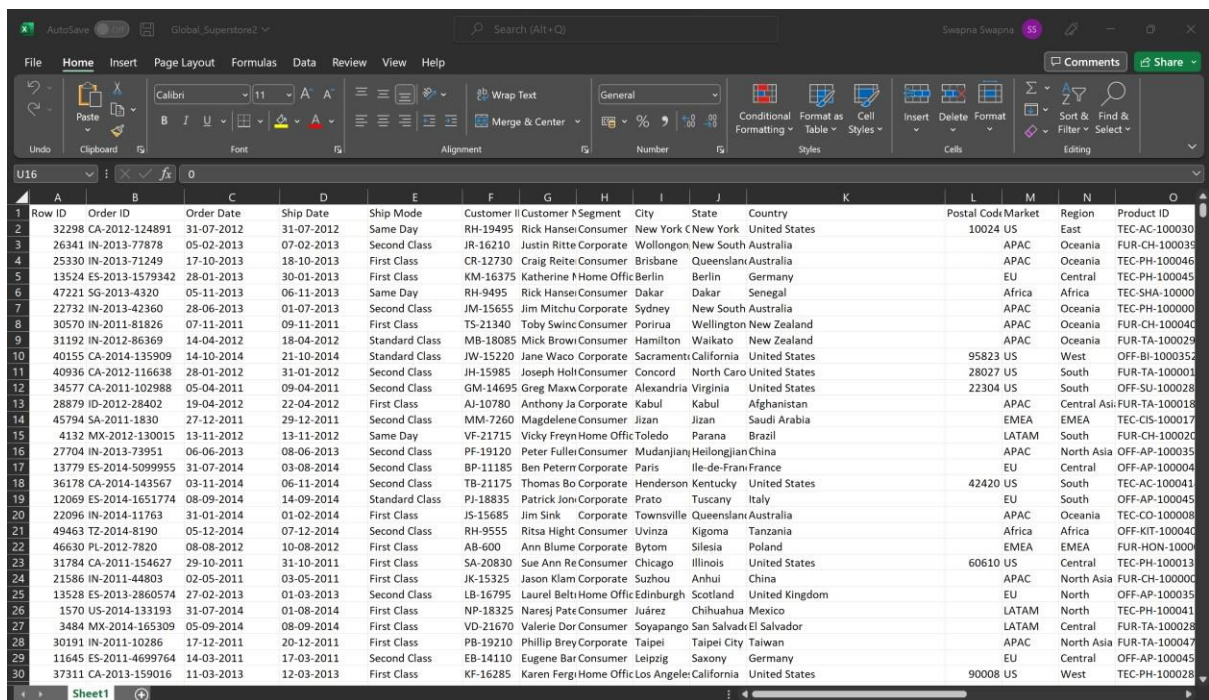


# PROJECT DEVELOPMENT PHASE

## SPRINT -2

Date	05 November 2022
Team ID	PNT2022TMID36312
Project Name	Project - Global Sales Data Analytics

### Dataset:



Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Segment	City	State	Country	Postal Code	Market	Region	Product ID
1	32298 CA-2012-124891	31-07-2012	31-07-2012	Same Day	RH-19495	Rick Hansen Consumer	New York	New York	United States	10024	US	East	TEC-AC-100030
2	26341 IN-2013-77878	05-02-2013	07-02-2013	Second Class	JR-16210	Justin Ritte Corporate	Wollongong	New South Wales	Australia		APAC	Oceania	FUR-CH-100035
3	25330 IN-2013-71249	17-10-2013	18-10-2013	First Class	CR-12730	Craig Reite Consumer	Brisbane	Queensland	Australia		APAC	Oceania	TEC-PH-100046
4	13524 ES-2013-1579342	28-01-2013	30-01-2013	First Class	KM-16375	Katherine H Home Office	Berlin	Berlin	Germany		EU	Central	TEC-PH-100045
5	47221 SG-2013-42320	05-11-2013	06-11-2013	Same Day	RH-9495	Rick Hansen Consumer	Dakar	Dakar	Senegal		Africa	Africa	TEC-SHA-100000
6	22732 IN-2013-42360	28-06-2013	01-07-2013	Second Class	JM-15655	Jim Mitchu Corporate	Sydney	New South Wales	Australia		APAC	Oceania	TEC-PH-100000
7	30570 IN-2011-81826	07-11-2011	09-11-2011	First Class	TS-21340	Toby Swinc Consumer	Porirua	Wellington	New Zealand		APAC	Oceania	FUR-TH-100040
8	31192 IN-2012-86369	14-04-2012	18-04-2012	Standard Class	MB-18085	Mick Brown Consumer	Hamilton	Waikato	New Zealand		APAC	Oceania	FUR-TH-100029
9	40155 CA-2014-135909	14-10-2014	21-10-2014	Standard Class	JW-15220	Jane Waco Corporate	Sacramento	California	United States	95823	US	West	OFF-BI-1000352
10	40936 CA-2012-116638	28-01-2012	31-01-2012	Second Class	JH-15985	Joseph Holt Consumer	Concord	North Carolina	United States	28027	US	South	FUR-TH-100001
11	34577 CA-2011-102988	05-04-2011	09-04-2011	Second Class	GM-14695	Greg Maxx Corporate	Alexandria	Virginia	United States	22304	US	South	OFF-SU-100028
12	28879 ID-2012-28402	19-04-2012	22-04-2012	First Class	AJ-10780	Anthony Ja Corporate	Kabul	Kabul	Afghanistan		APAC	Central Asia	FUR-TH-100018
13	45794 SA-2011-1830	27-12-2011	29-12-2011	Second Class	MM-7260	Magdelene Consumer	Jizan	Jizan	Saudi Arabia		EMEA	EMEA	TEC-CIS-100017
14	4132 MX-2012-130015	13-11-2012	13-11-2012	Same Day	VF-21715	Vicky Freyn Home Office	Toledo	Parana	Brazil		LATAM	South	FUR-CH-100020
15	22096 IN-2014-11763	31-01-2014	01-02-2014	First Class	PF-19120	Peter Fuller Consumer	Mudanjiang	Heilongjiang	China		APAC	North Asia	OFF-AP-100035
16	13779 ES-2014-509955	31-07-2014	03-08-2014	Second Class	BP-11185	Ben Petern Corporate	Paris	Ile-de-France	France		EU	Central	OFF-AP-100004
17	36178 CA-2014-143567	03-11-2014	06-11-2014	Second Class	TB-21175	Thomas Bo Corporate	Henderson	Kentucky	United States	42420	US	South	TEC-AC-100041
18	12069 ES-2014-1651774	08-09-2014	14-09-2014	Standard Class	PI-18835	Patrick Jon Corporate	Prato	Tuscany	Italy		EU	South	OFF-AP-100045
19	22096 IN-2014-11763	31-01-2014	01-02-2014	First Class	JS-15685	Jim Sink Corporate	Townsville	Queensland	Australia		APAC	Oceania	TEC-CO-100008
20	49463 TZ-2014-8190	05-12-2014	07-12-2014	Second Class	RH-9555	Ritsa Hight Consumer	Uvinza	Kigoma	Tanzania		Africa	Africa	OFF-KIT-100040
21	46630 PL-2012-7820	08-08-2012	10-08-2012	First Class	AB-600	Ann Blume Corporate	Bytom	Silesia	Poland		EMEA	EMEA	FUR-HON-10000
22	31784 CA-2011-154627	29-10-2011	31-10-2011	First Class	SA-20830	Sue Ann Re Consumer	Chicago	Illinois	United States	60610	US	Central	TEC-PH-100013
23	21586 IN-2011-44803	02-05-2011	03-05-2011	First Class	JK-15325	Jason Klam Corporate	Suzhou	Anhui	China		APAC	North Asia	FUR-CH-100000
24	13528 ES-2013-2860574	27-02-2013	01-03-2013	Second Class	LB-16795	Laurel Belt Home Office	Edinburgh	Scotland	United Kingdom		EU	North	OFF-AP-100035
25	1570 US-2014-133193	31-07-2014	01-08-2014	First Class	NP-18325	Naresj Pate Consumer	Juárez	Chihuahua	Mexico		LATAM	North	TEC-PH-100041
26	3484 MX-2014-165309	05-09-2014	08-09-2014	First Class	VD-21670	Valerie Dor Consumer	Soyapango	San Salvador	El Salvador		LATAM	Central	FUR-TH-100028
27	30191 IN-2011-10286	17-12-2011	20-12-2011	First Class	PB-19210	Phillip Brey Corporate	Taipei	Taipei City	Taiwan		APAC	North Asia	FUR-TH-100047
28	11645 ES-2011-4699764	14-03-2011	17-03-2011	Second Class	EB-14110	Eugene Bar Consumer	Leipzig	Saxony	Germany		EU	Central	OFF-AP-100045
29	37311 CA-2013-159016	11-03-2013	12-03-2013	First Class	KF-16285	Karen Fergi Home Office	Los Angeles	California	United States	90008	US	West	TEC-PH-100028

## Uploading the dataset:

The screenshot displays the IBM Cognos Analytics with Watson interface. The top navigation bar includes the logo, a search bar, and user profile icons. The main content area features a welcome message and a 'Watch video' button. A file explorer window is open, showing the 'Global\_Superstore2.csv' file being selected for upload. Below the welcome message, there are four steps: 'Upload data', 'Prepare data', 'Exploration', and 'Present data'. The 'Upload data' step is highlighted, indicating the current stage of the process.

**IBM Cognos Analytics with Watson**

1 item open

Search content

Hello. Welcome to Watson.

You can get started right away with the Getting Started tab.

Watch video

Quick launch

Upload data

Upload or drag and drop spreadsheets, csv files, and other data sources.

Prepare data

Use data modules to clean and connect data from multiple resources.

Exploration

Quickly find unbiased answers by identifying trends in your data with data exploration.

Present data

Create sophisticated, multi-page, multi-query dashboards, reports, or stories.

Maintenance: Scheduled maintenance completed. Click More Info for details and to subscribe to future events

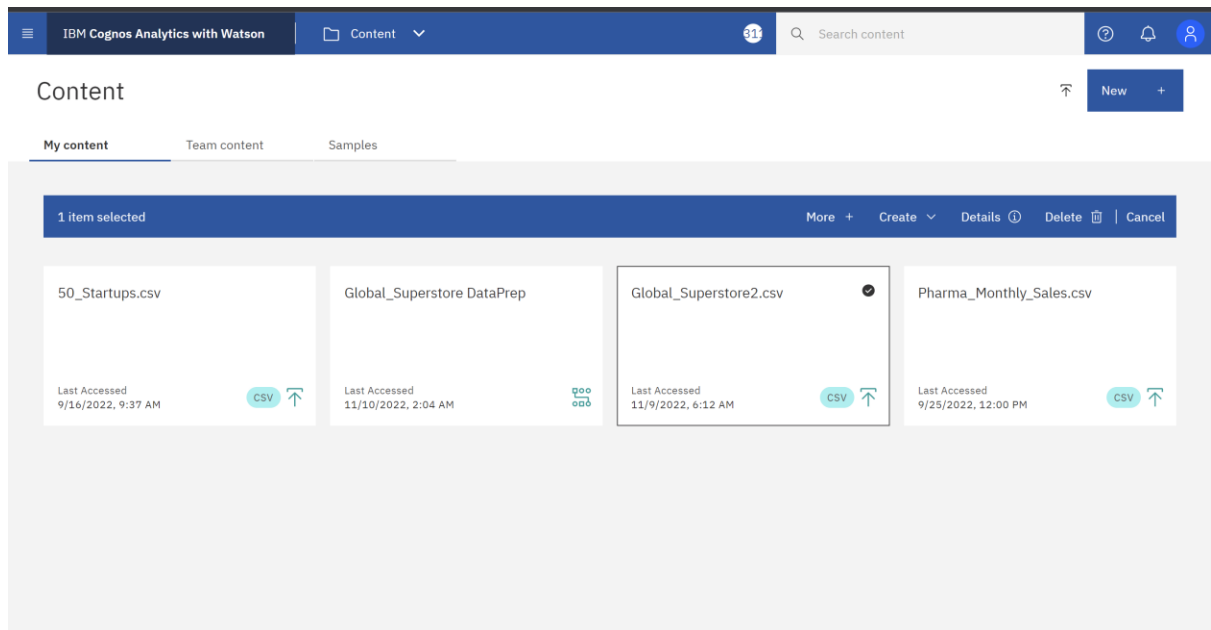
Dismiss More info

Get started Recent

Item Name	Last Accessed	Icon
Global_Superstore DataPrep	11/10/2022, 12:37 AM	Google Sheets icon
Global_Superstore2.csv	11/9/2022, 6:12 AM	CSV icon with upload arrow
Pharma_sales_dashboard	10/6/2022, 11:15 PM	Dashboard icon
Template: "Pharma_sales_dashboard"	9/26/2022, 9:03 AM	Template icon
Pharma_Monthly_Sales.csv	9/25/2022, 12:00 PM	CSV icon with upload arrow
Area	9/16/2022, 12:02 PM	Area chart icon
scatter	9/16/2022, 11:59 AM	Scatter plot icon
Radial	9/16/2022, 11:54 AM	Radial chart icon

## Data Preparation:

- First understand and load the dataset.



- Since there is only one single file, there need not be any relationships or custom tables for the data.

The screenshot shows the 'Data module' in IBM Cognos Analytics. The top navigation bar includes 'IBM Cognos Analytics with Watson', a 'New data module' dropdown, a search bar, and user icons. Below the navigation bar, a maintenance message is displayed. The 'Data module' section has a left sidebar with a search bar and a list of fields: 'Row ID', 'Order ID', 'Order Date', 'Ship Date', 'Ship Mode', 'Customer ID', 'Customer Name', 'Segment', 'City', 'State', 'Country', and 'Postal Code'. The main area displays a data grid with the following columns: 'Row ID', 'Order ID', 'Order Date', 'Ship Date', 'Ship Mode', and 'Customer ID'. The grid contains 10 rows of data.

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID
1	CA-2012-124891	2012-07-31	2012-07-31	Same Day	RH-19495
2	IN-2013-77878	2013-02-05	2013-02-07	Second Class	JR-16210
3	IN-2013-71249	2013-10-17	2013-10-18	First Class	CR-12730
4	ES-2013-1579342	2013-01-28	2013-01-30	First Class	KM-16375
5	SG-2013-4320	2013-11-05	2013-11-06	Same Day	RH-9495
6	IN-2013-42360	2013-06-28	2013-07-01	Second Class	JM-15655
7	IN-2011-81826	2011-11-07	2011-11-09	First Class	TS-21340
8	IN-2012-86369	2012-04-14	2012-04-18	Standard Class	MB-18085
9	CA-2014-135909	2014-10-14	2014-10-21	Standard Class	JW-15220
10	CA-2012-116628	2012-01-28	2012-01-31	Second Class	JH-15085

- To prepare the data , we need to verify it is clean. There must be no null values. If there are null values, there will be empty data.

IBM Cognos Analytics with Watson | \* New data module

Maintenance: Scheduled maintenance completed. Click More Info for details and to subscribe to future events

Search content

Dismiss More info

Properties

Data module

Grid Relationships Custom tables

Search

Order ID

Order Date

Ship Date

Ship Mode

Customer ID

Customer Name

Segment

City

State

Country

Postal Code

Market

Region

Product ID

Category

Sub-Category

Row ID	Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID
1	32298	CA-2012-116638	2012-01-28	2012-01-31	Same Day	RH-19495
2	26341	IN-2013-116638	2013-02-07	2013-02-07	Second Class	JR-16210
3	25330	IN-2013-116638	2013-10-18	2013-10-18	First Class	CR-12730
4	13524	ES-2013-116638	2013-01-30	2013-01-30	First Class	KM-16375
5	47221	SG-2013-116638	2013-11-06	2013-11-06	Same Day	RH-9495
6	22732	IN-2013-116638	2013-07-01	2013-07-01	Second Class	JM-15655
7	30570	IN-2013-116638	2011-11-09	2011-11-09	First Class	TS-21340
8	31192	IN-2012-86369	2012-04-14	2012-04-18	Standard Class	MB-18085
9	40155	CA-2014-135909	2014-10-14	2014-10-21	Standard Class	JW-15220
10	40936	CA-2012-116638	2012-01-28	2012-01-31	Second Class	JH-15985

Filter...

Create data group...

Create navigation path...

Split...

Hide from users

Remove

Format data...

Clean...

Sort descending

Sort ascending

Properties

IBM Cognos Analytics with Watson | \* New data module

Search content

Properties

Data module

Search

Order ID

Order Date

Ship Date

Ship Mode

Customer ID

Customer Name

Segment

City

State

Country

Postal Code

Market

Region

Product ID

Category

Sub-Category

Product Name

Filter - Order ID

Add a filter condition +

Search

AE-2011-9160

AE-2013-1130

AE-2013-1530

AE-2014-2840

AE-2014-3830

AE-2014-4120

AG-2011-1070

AG-2011-1390

Clear all

Invert

Cancel

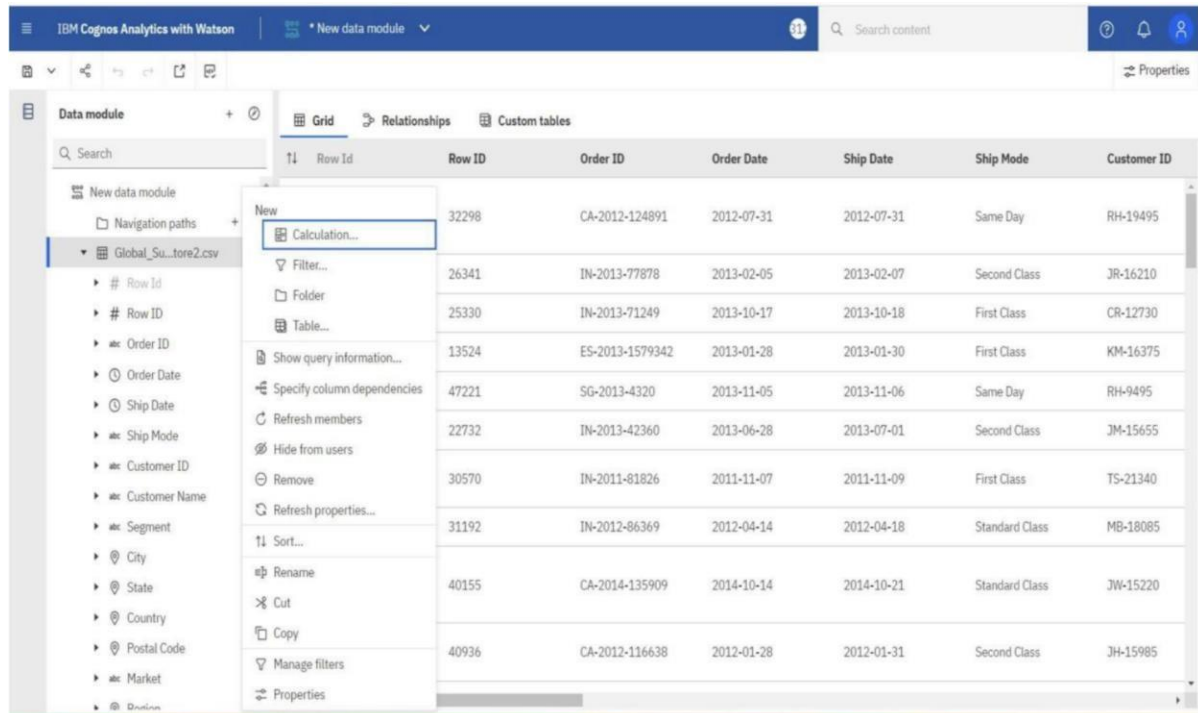
OK

Ship Mode	Customer ID
Same Day	RH-19495
Second Class	JR-16210
First Class	CR-12730
First Class	KM-16375
Same Day	RH-9495
Second Class	JM-15655
First Class	TS-21340
Standard Class	MB-18085
Standard Class	JW-15220
Second Class	JH-15985

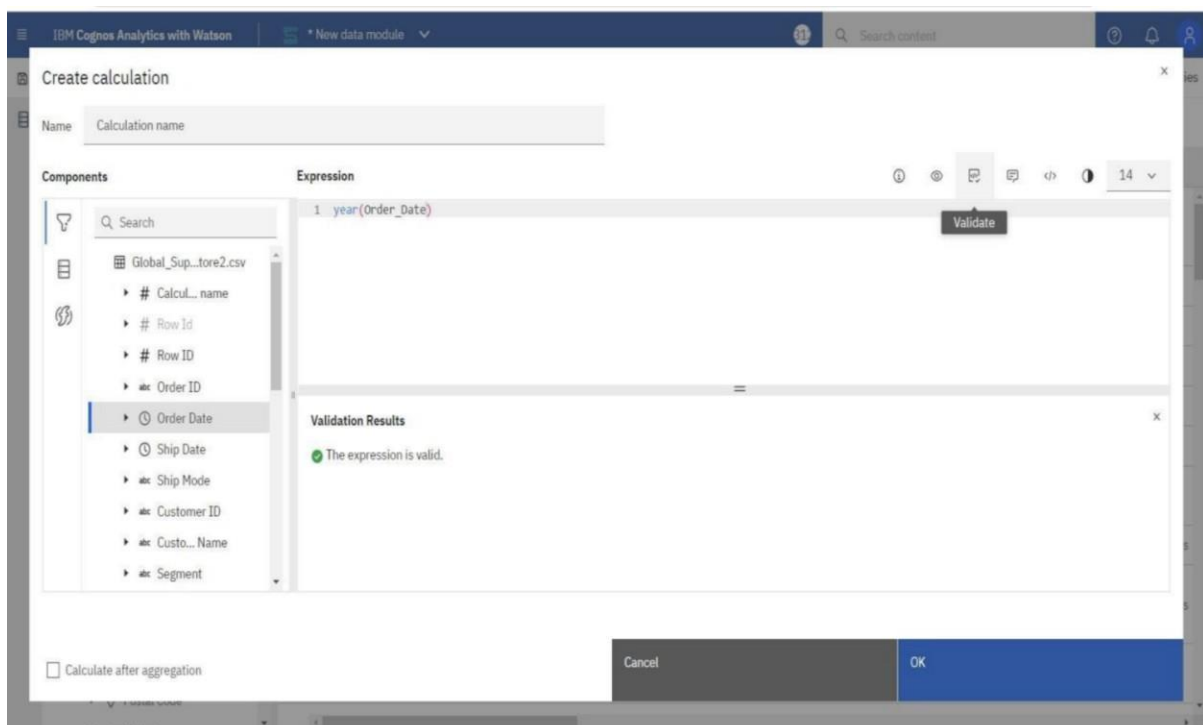
- Once cleaned save the data.

## Data calculations and navigation paths:

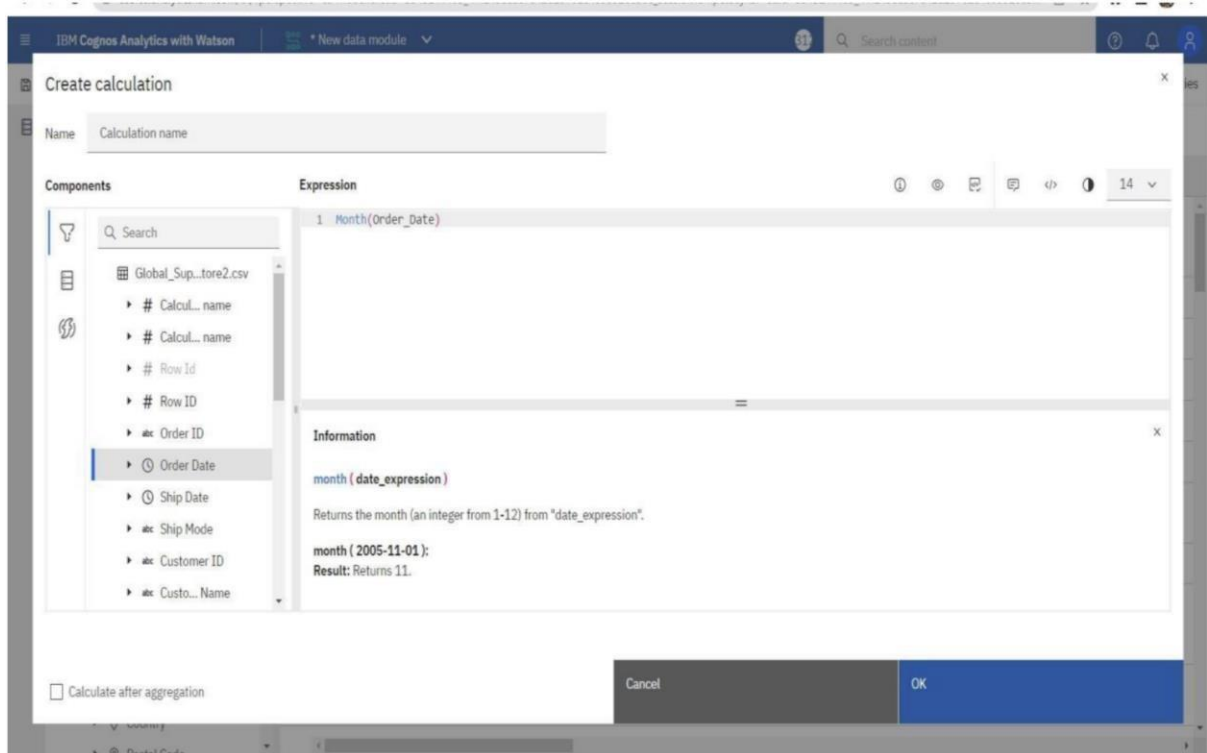
- Once you load the data, we need to prepare the data.
- Prepare calculations of year, month, day fields and also related navigation paths.
- Create a few more calculations – Target sales, Min sales, Max sales, Middle Range sales.



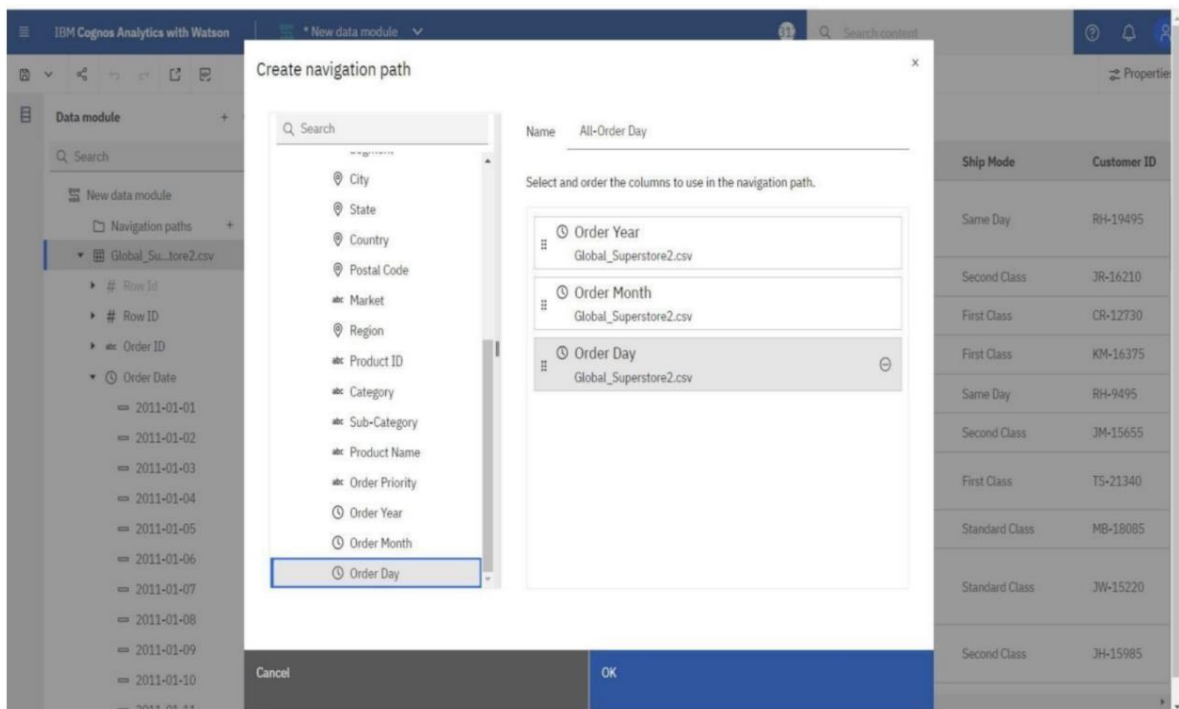
- Right click -> calculation -> type expression -> validate -> set new name as Order Year.



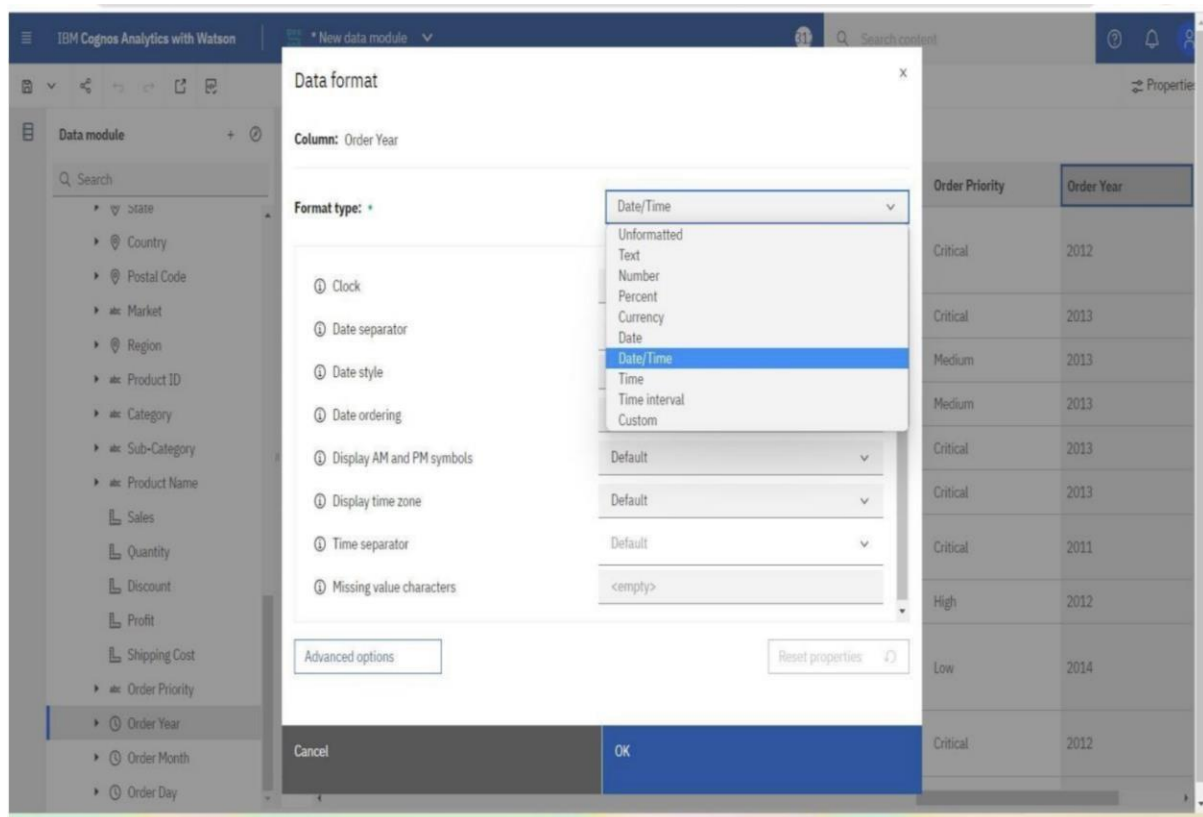
- Similarly, 'Order Month', 'Order Day' and 'All'.



- Right click on create navigation path.



- Data format -> date/Time



- Properties -> usage -> Attribute
- Aggregate -> Count Distinct
- Data Type -> Integer
- Represents -> Time, (Year, Month , Day respectively)
- Display options -> show members
- This way it becomes a Numerical Data Type

The screenshot displays the IBM Cognos Analytics with Watson interface. The top navigation bar includes the logo, 'IBM Cognos Analytics with Watson', a 'New data module' dropdown, a search bar, and user icons. The main workspace is divided into three panes: 'Data module', 'Grid', and 'Properties'.

The 'Data module' pane on the left shows a tree view of data sources. The 'Grid' pane in the center displays a table with the following data:

Profit	Shipping Cost	Order Priority	Order Year	Ord
762.1845	933.57	Critical	2012	7
-288.765	923.63	Critical	2013	2
919.971	915.49	Medium	2013	1
-96.54	910.16	Medium	2013	1
311.52	903.04	Critical	2013	1
763.275	897.35	Critical	2013	6
564.84	894.77	Critical	2011	1
996.48	878.38	High	2012	4
1906.485	867.69	Low	2014	1
-1862.3124	865.74	Critical	2012	1

The 'Properties' pane on the right shows the 'General' tab for the 'Order Year' attribute. It includes a 'Label' dropdown set to 'Order Year', a 'Hide from users' toggle, an 'Expression' field with a 'View or edit' link, and a 'Usage' dropdown menu. The 'Usage' menu is open, showing options: Date, Year (selected), Quarter, Season, Month, Week, Day, Hour, Minute, and Second. Below the menu is a 'Description' field and a 'Comments' field.

- Hence calculations for day , month and year are completed.
- Similarly calculations for Target sales, Min sales, Max sales And Middle range sales are done.

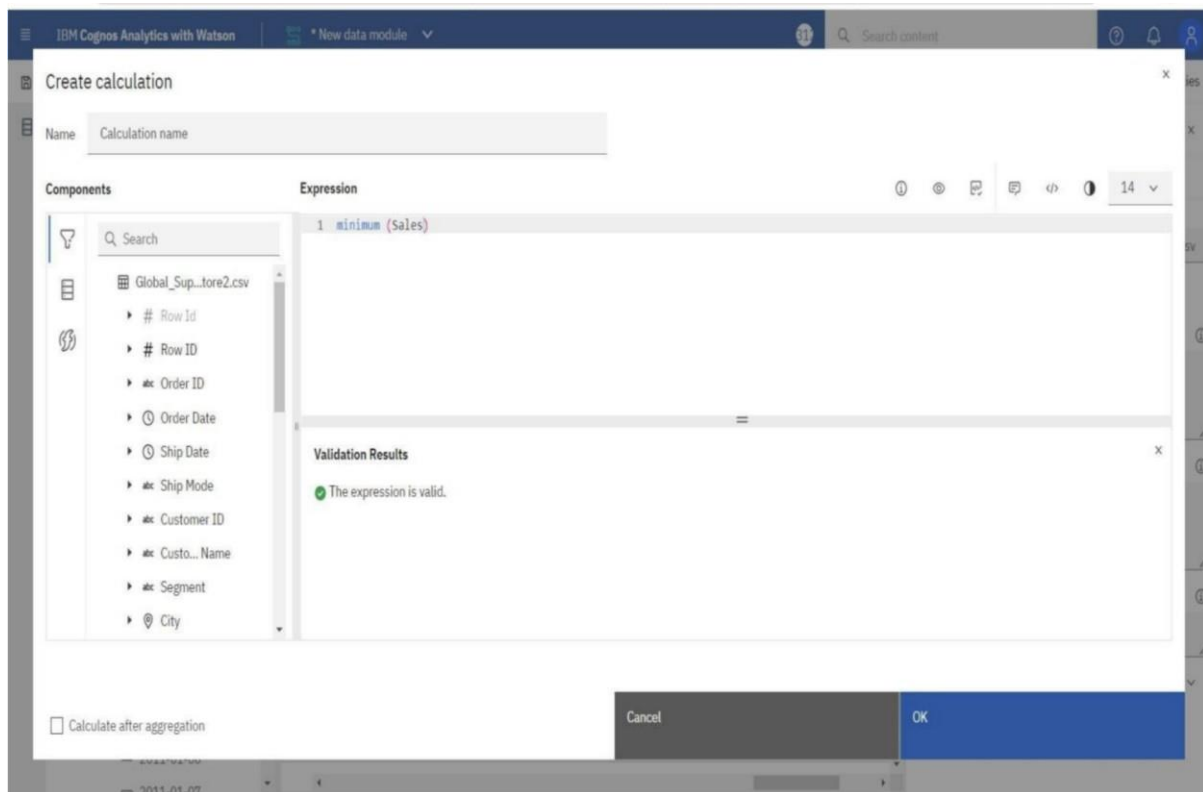
Min sales -> Minimum(sales)

Max sales, Target sales -> Maximum(sales)

Middle range sales -> Average (sales)



## Mininum(sales)



## Maximum(sales)

The screenshot shows the 'Create calculation' dialog box in IBM Cognos Analytics. The dialog has a title bar with 'IBM Cognos Analytics with Watson' and a search bar. Below the title bar, there's a 'Name' field with the placeholder text 'Calculation name'. The main area is divided into two panes: 'Components' on the left and 'Expression' on the right. The 'Components' pane shows a list of fields from the 'Global\_Sup...tore2.csv' dataset, including 'Row Id', 'Order ID', 'Order Date', 'Ship Date', 'Ship Mode', 'Customer ID', 'Custo... Name', 'Segment', and 'City'. The 'Expression' pane shows the expression '1 maximum (Sales)' with a 'Validate' button. Below the expression pane, there's a 'Validation Results' section that says 'The expression is valid.' At the bottom of the dialog, there's a checkbox labeled 'Calculate after aggregation' and two buttons: 'Cancel' and 'OK'.

IBM Cognos Analytics with Watson

\* New data module

Search content

Create calculation

Name: Calculation name

Components

Global\_Sup...tore2.csv

- # Row Id
- # Row ID
- Order ID
- Order Date
- Ship Date
- Ship Mode
- Customer ID
- Custo... Name
- Segment
- City

Expression

1 maximum (Sales)

Validate

Validation Results

The expression is valid.

☐ Calculate after aggregation

Cancel OK

## Middle Range(sales)

The screenshot shows the 'Create calculation' dialog box in IBM Cognos Analytics. The 'Name' field is set to 'Calculation name'. The 'Expression' field contains the formula `1 average ([Sales])`. A 'Validate' button is located to the right of the expression field. Below the expression field, a 'Validation Results' panel displays a green checkmark and the message 'The expression is valid.' The 'Components' panel on the left lists available fields from the 'Global\_Sup...tore2.csv' data source, including Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, and City. At the bottom, there is a checkbox for 'Calculate after aggregation' and 'Cancel' and 'OK' buttons.

IBM Cognos Analytics with Watson

\* New data module

Search content

### Create calculation

Name: Calculation name

Components

- Global\_Sup...tore2.csv
  - # Row Id
  - # Row ID
  - # Order ID
  - # Order Date
  - # Ship Date
  - # Ship Mode
  - # Customer ID
  - # Custo... Name
  - # Segment
  - # City

Expression: 1 average ([Sales])

Validate

Validation Results

- The expression is valid.

☐ Calculate after aggregation

Cancel OK