

# PROJECT DEVELOPMENT PHASE

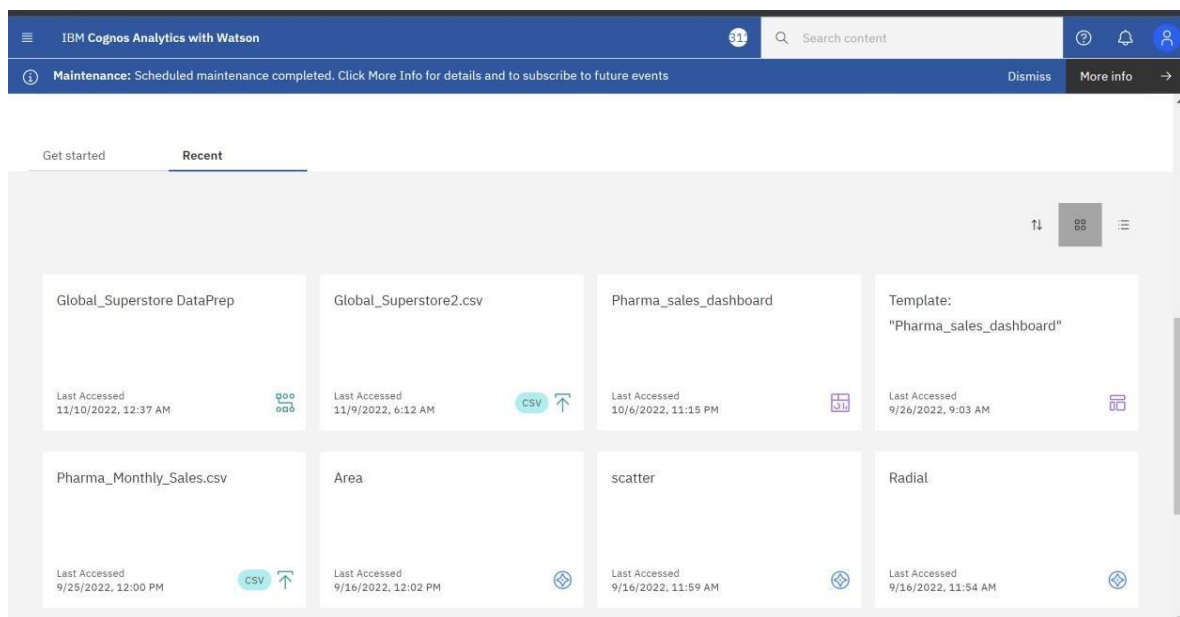
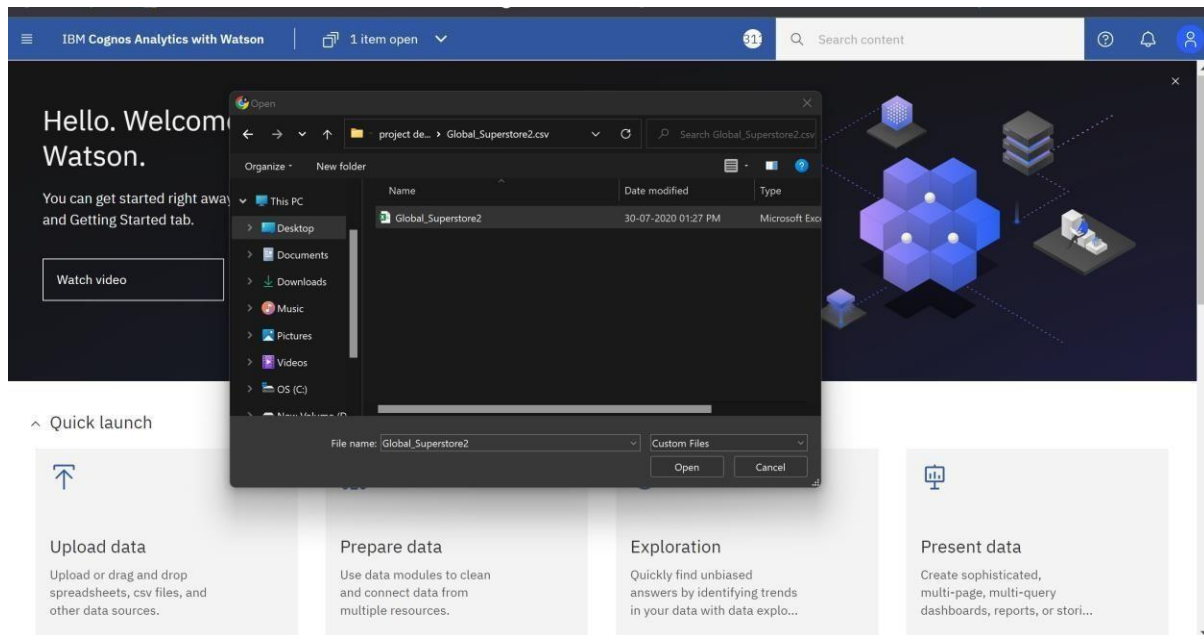
## SPRINT -2

Date	18 November 2022
Team ID	PNT2022TMID18585
Project Name	Project - Global Sales Data Analytics

### Dataset:

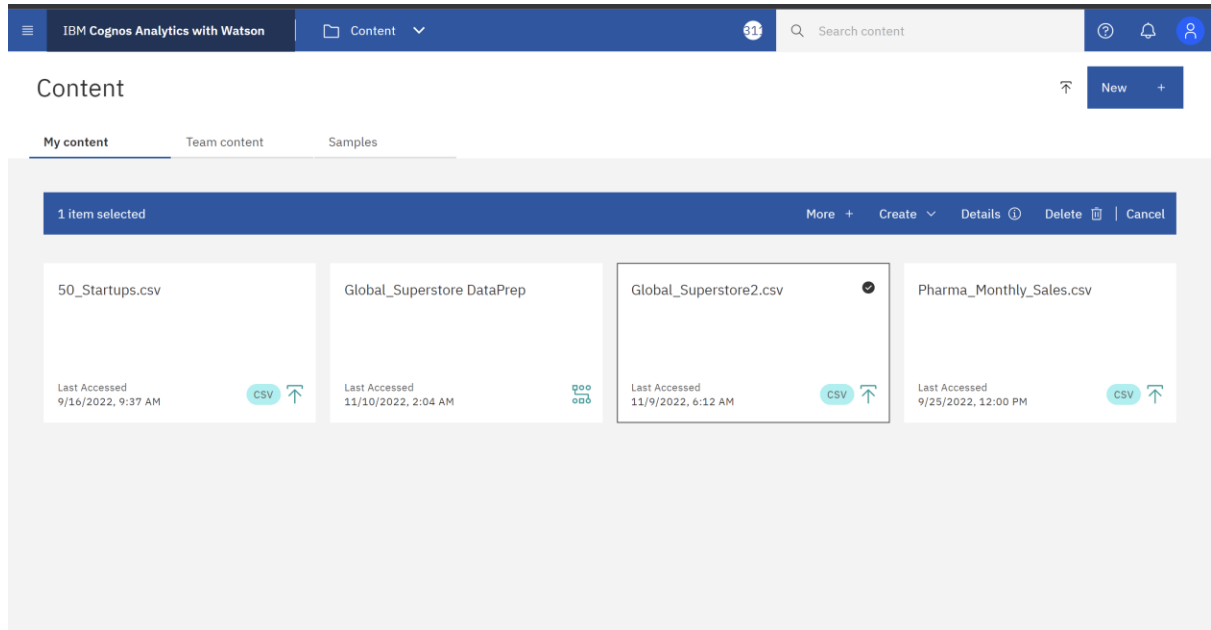
Global_Superstore2															
Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Segment	City	State	Country	Postal Code	Market	Region	Product ID		
1	32298 CA-2012-124891	31-07-2012	31-07-2012	Same Day	RH-19495	Rick Hansen Consumer	New York	New York	United States	10024 US	East	TEC-AC-100030			
2	26341 IN-2013-77878	05-02-2013	07-02-2013	Second Class	JR-16210	Justin Ritte Corporate	Wollongong	New South	Australia		APAC	Oceania	FUR-CH-100039		
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 Home Office	Berlin	Berlin	Germany		EU	Central	TEC-PH-100045		
5	47221 SG-2013-4320	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	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-CH-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-CH-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 Caro	United States	28027 US	South	FUR-TA-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 Asi	FUR-TA-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	27704 IN-2013-73951	06-06-2013	08-06-2013	Second Class	PF-19120	Peter Fuller Consumer	Mudanjiang	Heilongjian	China		APAC	North Asia	OFF-AP-100035		
16	13779 ES-2014-5099955	31-07-2014	03-08-2014	Second Class	BP-11185	Ben Peterm Corporate	Paris	Ile-de-Fran	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-1000		
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	OFF-AP-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	Juarez	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 Salvad	El Salvador		LATAM	Central	FUR-TA-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-TA-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:



## 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 tabs for 'Grid', 'Relationships', and 'Custom tables'. The 'Grid' tab is active, showing a data table with columns: 'Row Id', 'Row ID', 'Order ID', 'Order Date', 'Ship Date', 'Ship Mode', and 'Customer ID'. The table contains 10 rows of data. On the left, a sidebar shows the 'Data module' structure with a search bar and a list of fields: 'Row Id', 'Row ID', 'Order ID', 'Order Date', 'Ship Date', 'Ship Mode', 'Customer ID', 'Customer Name', 'Segment', 'City', 'State', 'Country', and 'Postal Code'. The 'Global\_Su...tore2.csv' file is selected in the sidebar.

Row Id	Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID
1	32298	CA-2012-124891	2012-07-31	2012-07-31	Same Day	RH-19495
2	26341	IN-2013-77878	2013-02-05	2013-02-07	Second Class	JR-16210
3	25330	IN-2013-71249	2013-10-17	2013-10-18	First Class	CR-12730
4	13524	ES-2013-1579342	2013-01-28	2013-01-30	First Class	KM-16375
5	47221	SG-2013-4320	2013-11-05	2013-11-06	Same Day	RH-9495
6	22732	IN-2013-42360	2013-06-28	2013-07-01	Second Class	JM-15655
7	30570	IN-2011-81826	2011-11-07	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-2012-116628	2012-01-28	2012-01-31	Second Class	TH-15885

- 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

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	Second Class	JH-15985
2	26341	IN-2012-116638	2012-01-28	2012-01-31	Second Class	JH-15985
3	25330	IN-2012-116638	2012-01-28	2012-01-31	Second Class	JH-15985
4	13524	ES-2012-116638	2012-01-28	2012-01-31	Second Class	JH-15985
5	47221	SG-2012-116638	2012-01-28	2012-01-31	Second Class	JH-15985
6	22732	IN-2012-116638	2012-01-28	2012-01-31	Second Class	JH-15985
7	30570	IN-2012-116638	2012-01-28	2012-01-31	Second Class	JH-15985
8	31192	IN-2012-116638	2012-01-28	2012-01-31	Second Class	JH-15985
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

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

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

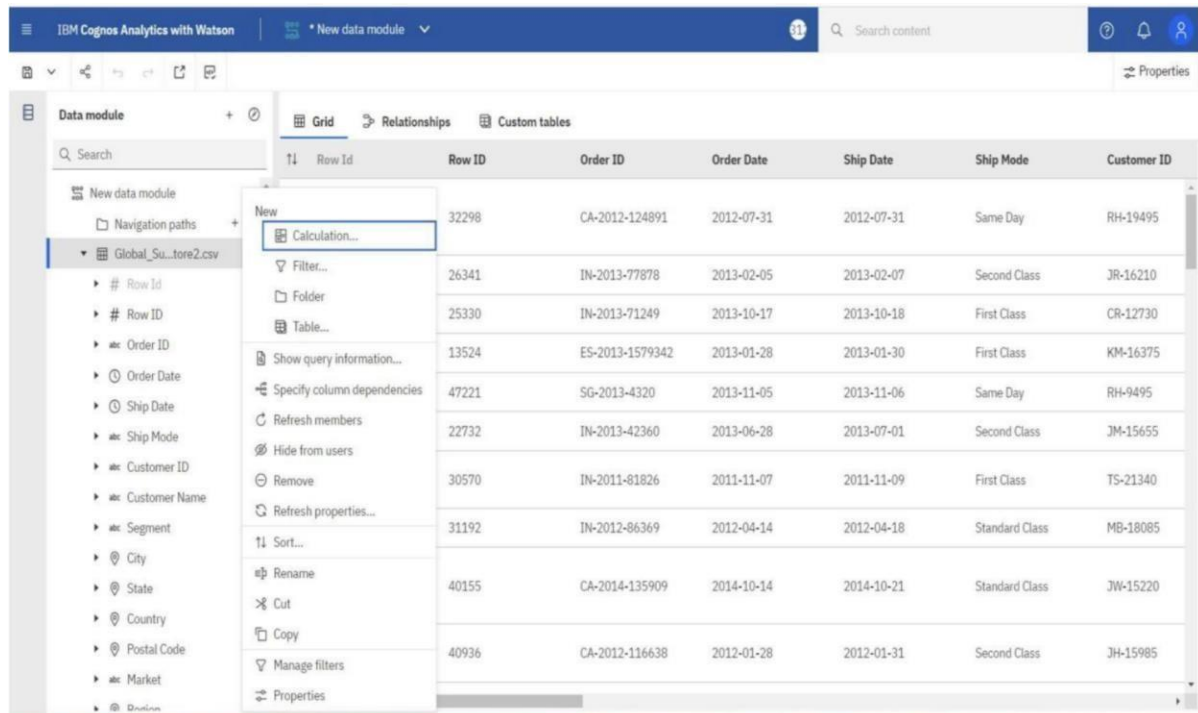
OK

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

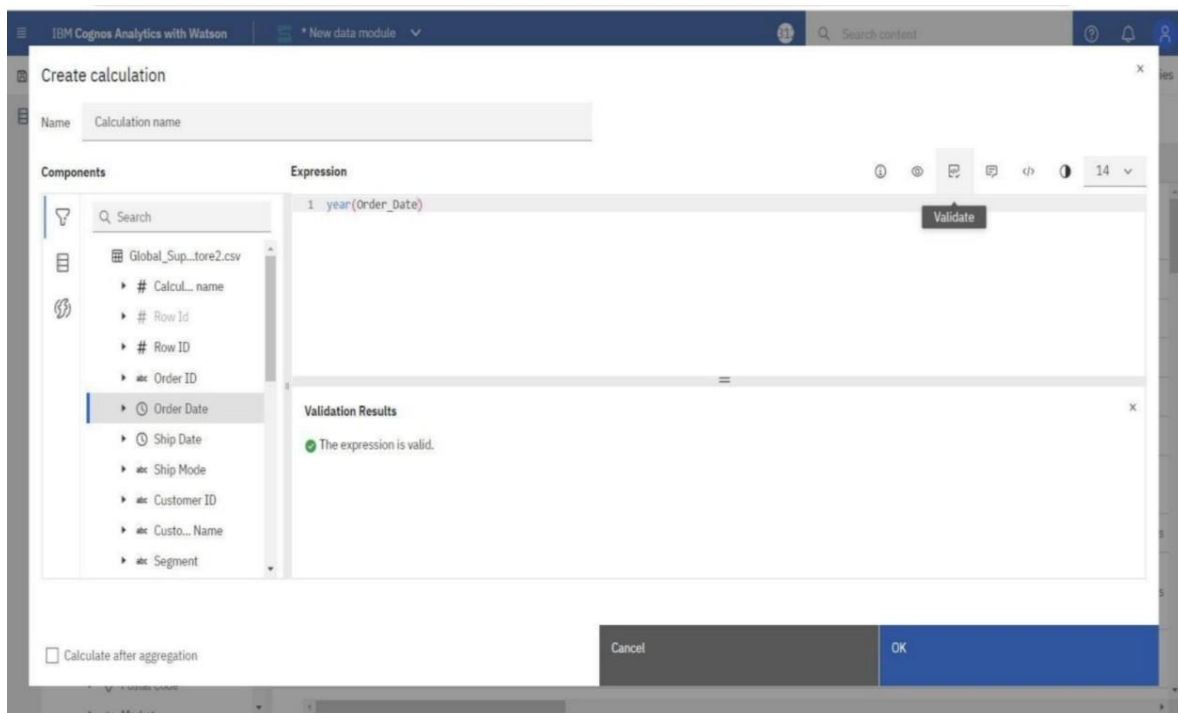
- Once cleaned save the data.

## Data calculations and navigation paths:

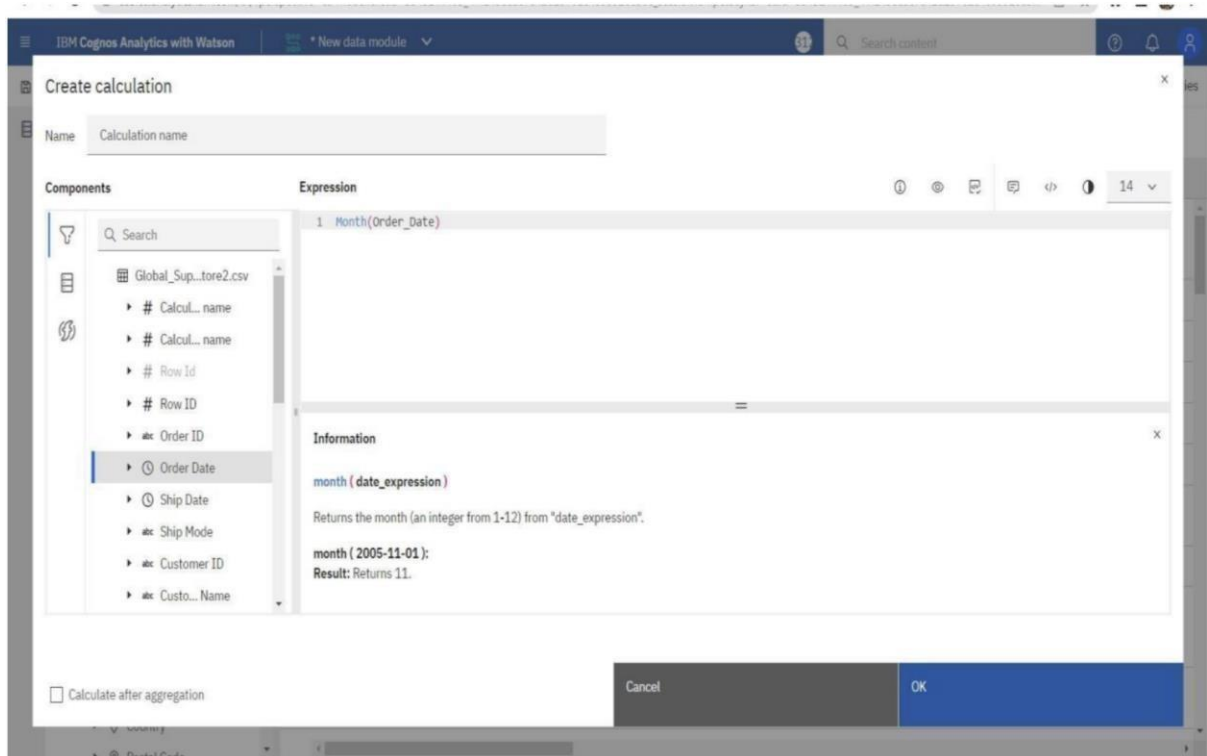
- Once you load the data, we need to prepare the data.
- Prepare calculations of year, month, day fields and also related navigation paths.
- Create a few more calculations – Target sales, Min sales, Max sales, Middle Range sales.



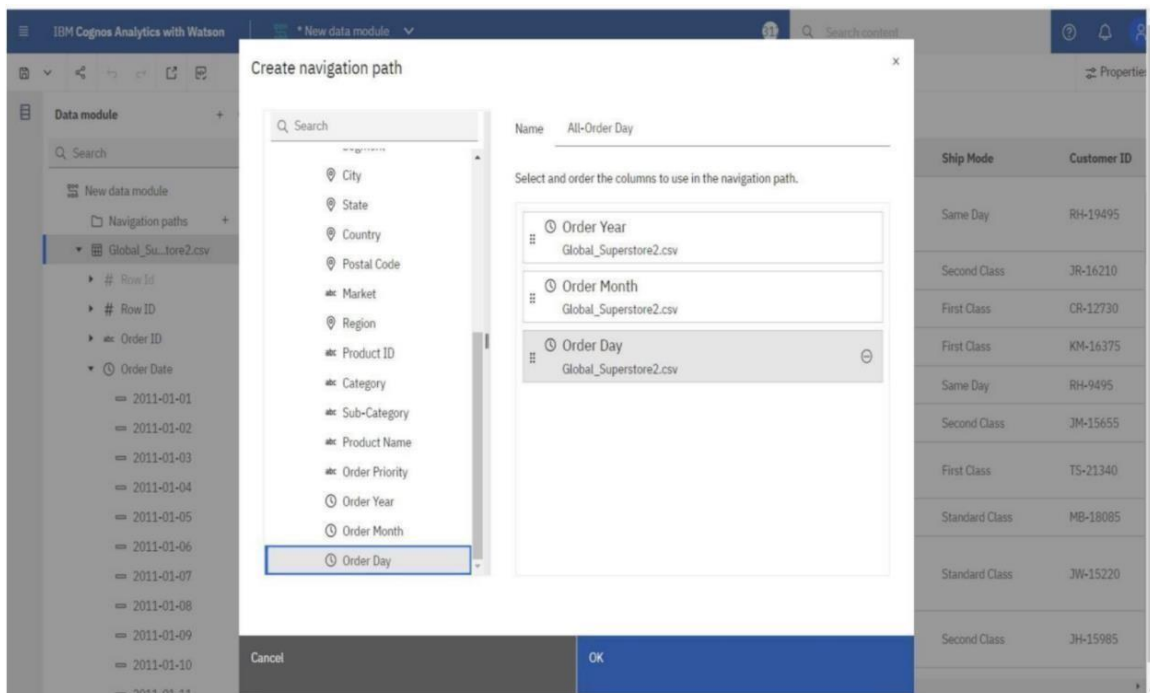
- Right click -> calculation -> type expression -> validate -> set new name as Order Year.



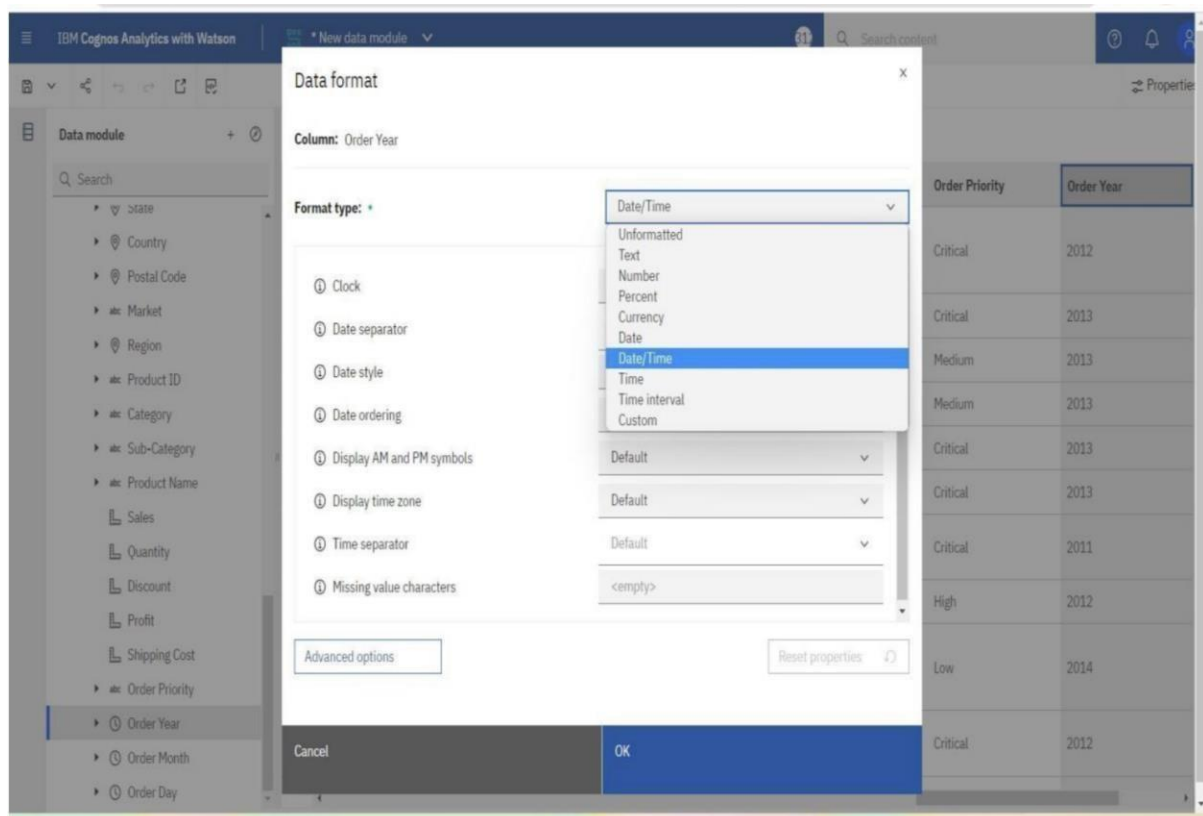
- Similarly, 'Order Month', 'Order Day' and 'All'.



- 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 shows the IBM Cognos Analytics with Watson interface. The top bar includes the logo, a search bar, and a user profile icon. The main workspace is divided into three sections: a left sidebar for the 'Data module', a central 'Grid' view, and a right 'Properties' panel.

**Data module sidebar:** Contains a search bar and a list of data sources including State, Country, Postal Code, Market, Region, Product ID, Category, Sub-Category, Product Name, Sales, Quantity, Discount, Profit, Shipping Cost, Order Priority, Order Year, Order Month, and Order Day.

**Grid view:** Displays a table with columns: Profit, Shipping Cost, Order Priority, Order Year, and Ord. The data rows are as follows:

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

**Properties panel:** The 'General' tab is active, showing the 'Order Year' attribute. The 'Label' is 'Order Year', 'Hide from users' is disabled, and the 'Usage' is set to 'Date'. A dropdown menu is open, showing options: Year, Quarter, Season, Month, Week, Day, Hour, Minute, and Second. The 'Year' option is selected.

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

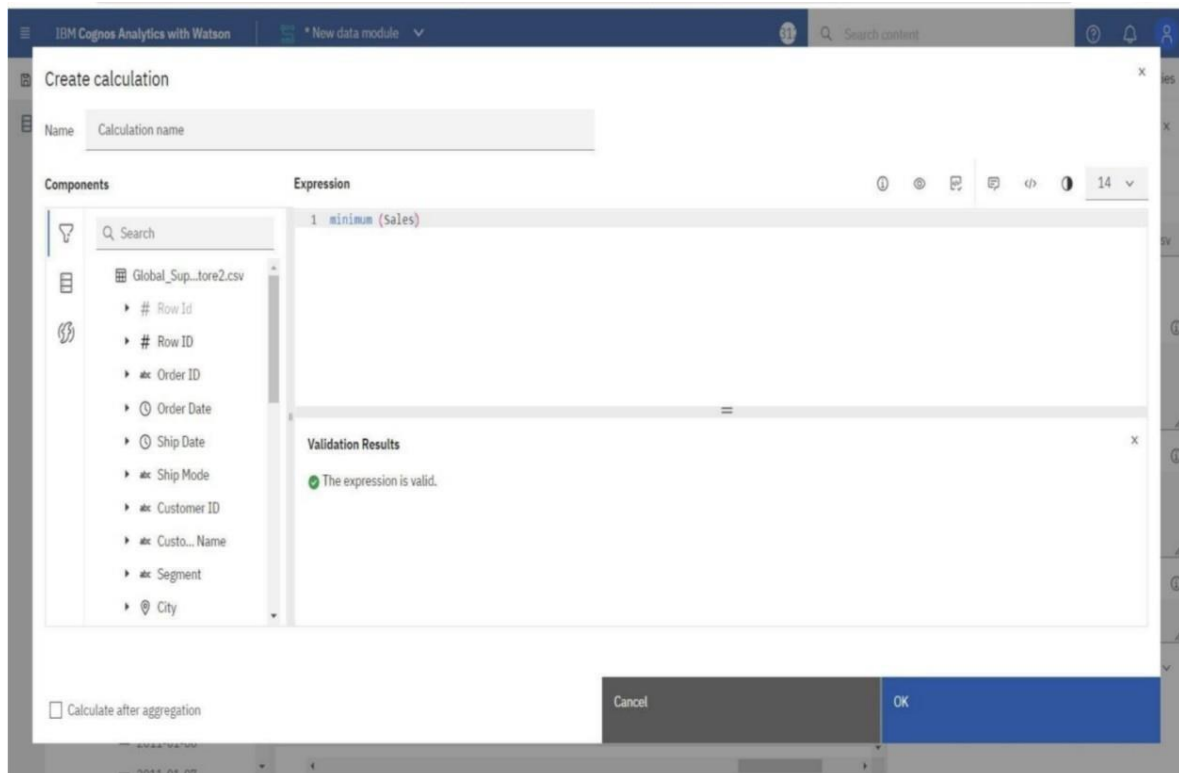
Min sales -> Minimum(sales)

Max sales, Target sales -> Maximum(sales)

Middle range sales -> Average (sales)



## Minumum(sales)



## Maximum(sales)

The screenshot shows the 'Create calculation' dialog in IBM Cognos Analytics. The 'Name' field is labeled 'Calculation name'. The 'Components' pane on the left lists fields from the 'Global\_Sup...tore2.csv' dataset, including Row Id, Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, and City. The 'Expression' field contains the formula '1 maximum(Sales)'. A 'Validate' button is located to the right of the expression field. Below the expression field, a 'Validation Results' section displays a green checkmark and the text 'The expression is valid.' At the bottom of the dialog, 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
  - abc Order ID
  - Order Date
  - Ship Date
  - abc Ship Mode
  - abc Customer ID
  - Custo... Name
  - abc Segment
  - City

Expression

1 maximum(Sales)

Validate

Validation Results

The expression is valid.

☐ Calculate after aggregation

Cancel OK

## Middle Range(sales)

