

## Project Development Phase Sprint - I

Team ID	PNT2022TMID21488
Project Name	Retail Store Stock Inventory Analytics

### Dataset:

Link: <https://drive.google.com/drive/folders/1kiL-5CHJmQvbk9VyFsuUs-myAupBZGNy>

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	data	venda	estoque	preco																	
2	01-01-2014	0	4972	1.29																	
3	02-01-2014	70	4902	1.29																	
4	03-01-2014	59	4843	1.29																	
5	04-01-2014	93	4750	1.29																	
6	05-01-2014	96	4654	1.29																	
7	06-01-2014	145	4509	1.29																	
8	07-01-2014	179	4329	1.29																	
9	08-01-2014	321	4104	1.29																	
10	09-01-2014	125	4459	1.09																	
11	10-01-2014	88	5043	1.09																	
12	11-01-2014	188	5239	1.09																	
13	12-01-2014	121	5118	1.09																	
14	13-01-2014	134	4984	1.09																	
15	14-01-2014	80	4904	1.09																	
16	15-01-2014	82	4822	1.09																	
17	16-01-2014	94	4728	1.19																	
18	18-01-2014	159	4464	1.19																	
19	19-01-2014	199	4265	1.19																	
20	20-01-2014	104	4161	1.19																	
21	21-01-2014	70	4091	1.19																	
22	22-01-2014	127	3964	1.09																	
23	23-01-2014	96	3868	1.09																	
24	24-01-2014	75	3793	1.09																	
25	25-01-2014	198	3595	1.09																	
26	26-01-2014	168	3427	1.09																	
27	27-01-2014	125	3302	1.09																	

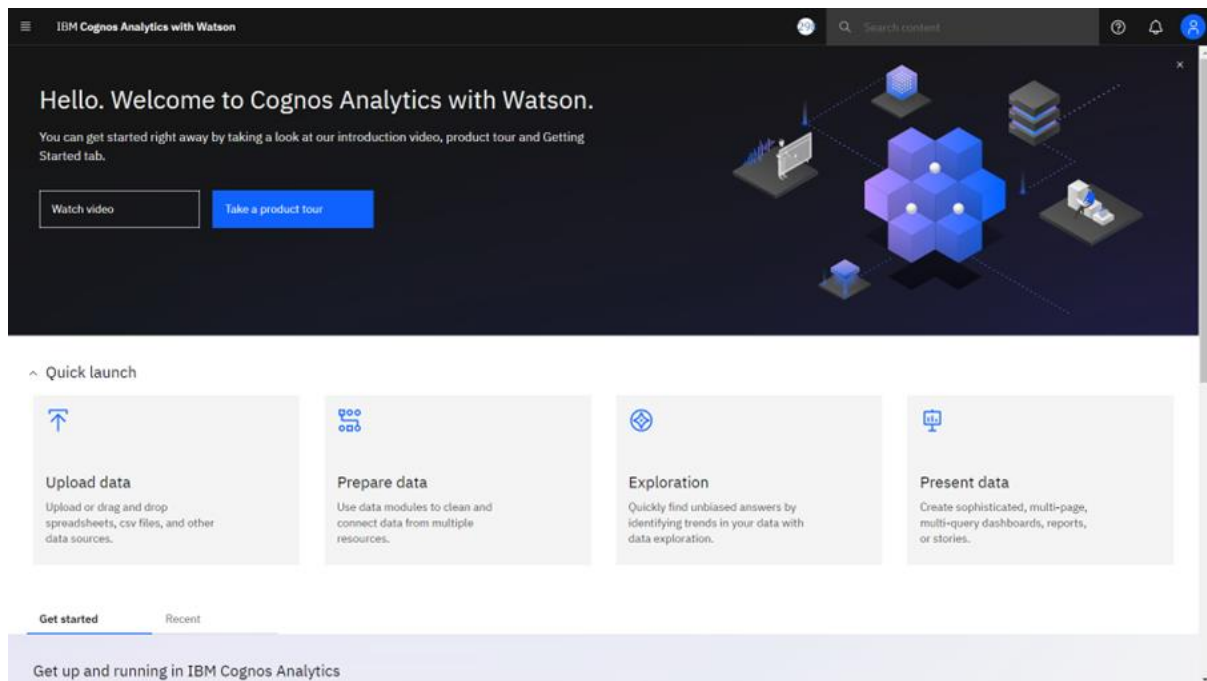
This dataset contains a lot of historical sales data of a Brazilian top retailer. Basic Questions of every retailer: How much inventory should I carry? Too much inventory means working capital costs, operational costs and a complex operation whereas lack of inventory leads to lost sales, unhappy customers and a damaged brand. This is why short-term forecasting is so important in the retail and consumer goods industry.

The dataset is in Portuguese language. Here, data means **date**, venda means **sales**, estoque means **stock** and preco means **price**. The dataset contains 938 rows. The dataset consists of historical sales data ranging from 01-01-2014 to 31-07-2016.

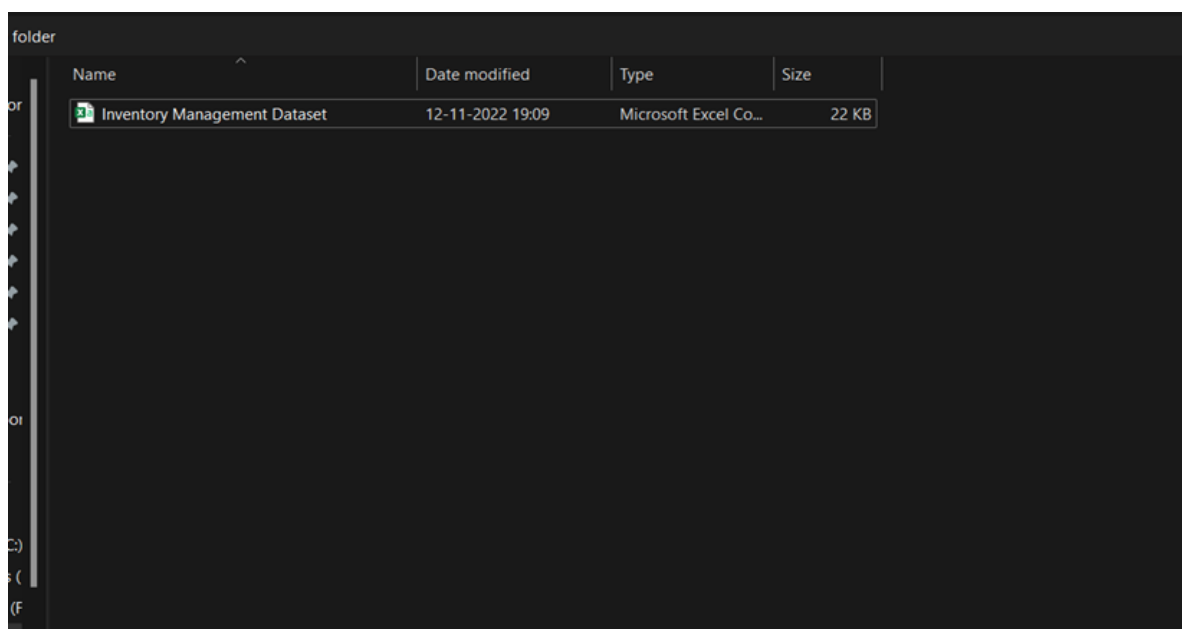
## **Loading the Dataset:**

The dataset is downloaded from the given link and uploaded to IBM Cognos Analytics by using the Upload Data option. The file is selected from the File Explorer and it gets uploaded to IBM Cognos Analytics successfully. Now, the dataset can be used for Preparation, Exploration and Presentation purposes.

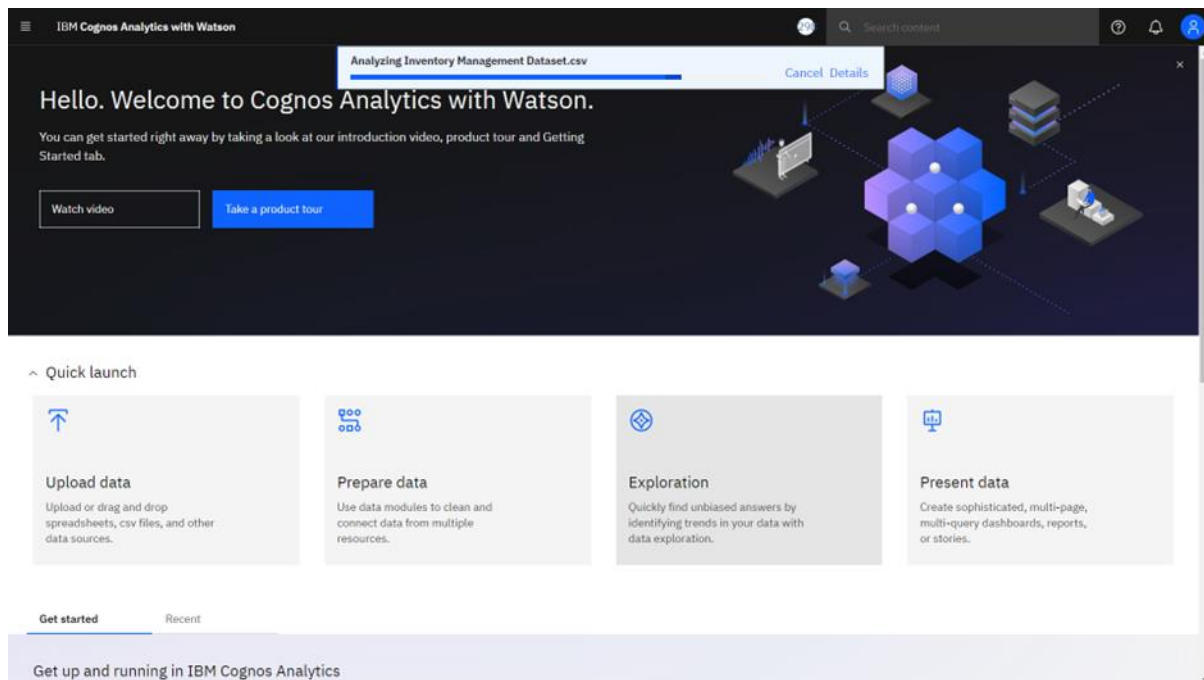
**Step 1:** Click on Upload Data option.



**Step 2:** Select the file from File Explorer.



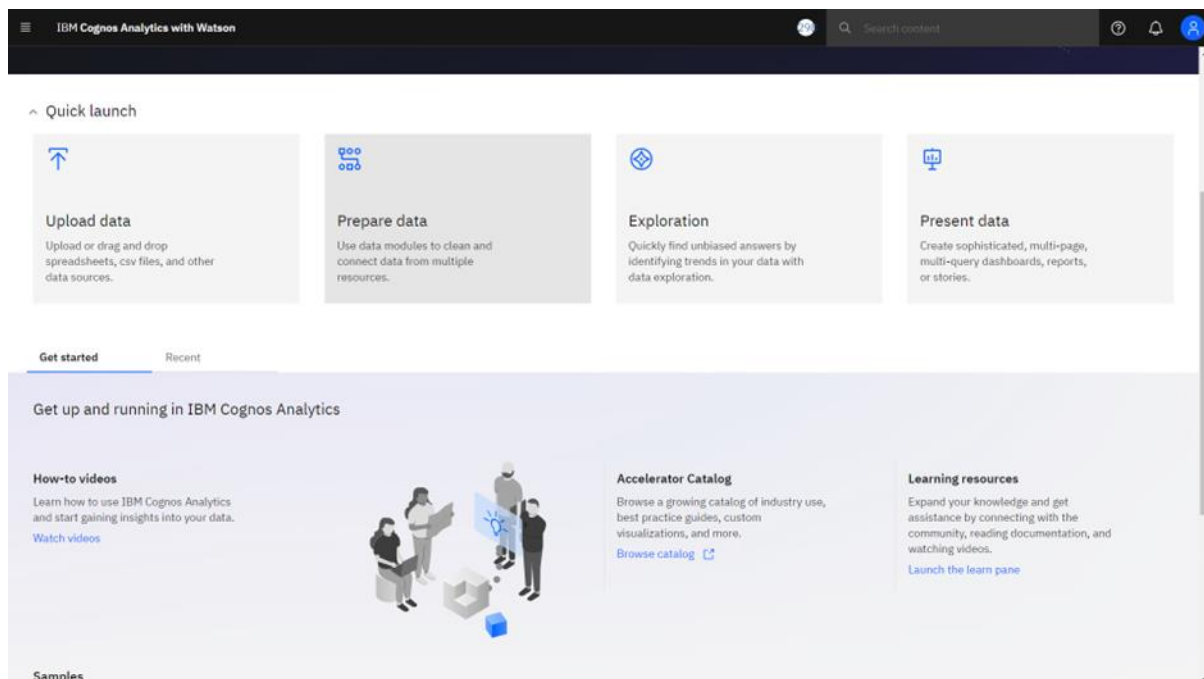
### Step 3: Upload it to IBM Cognos Analytics.



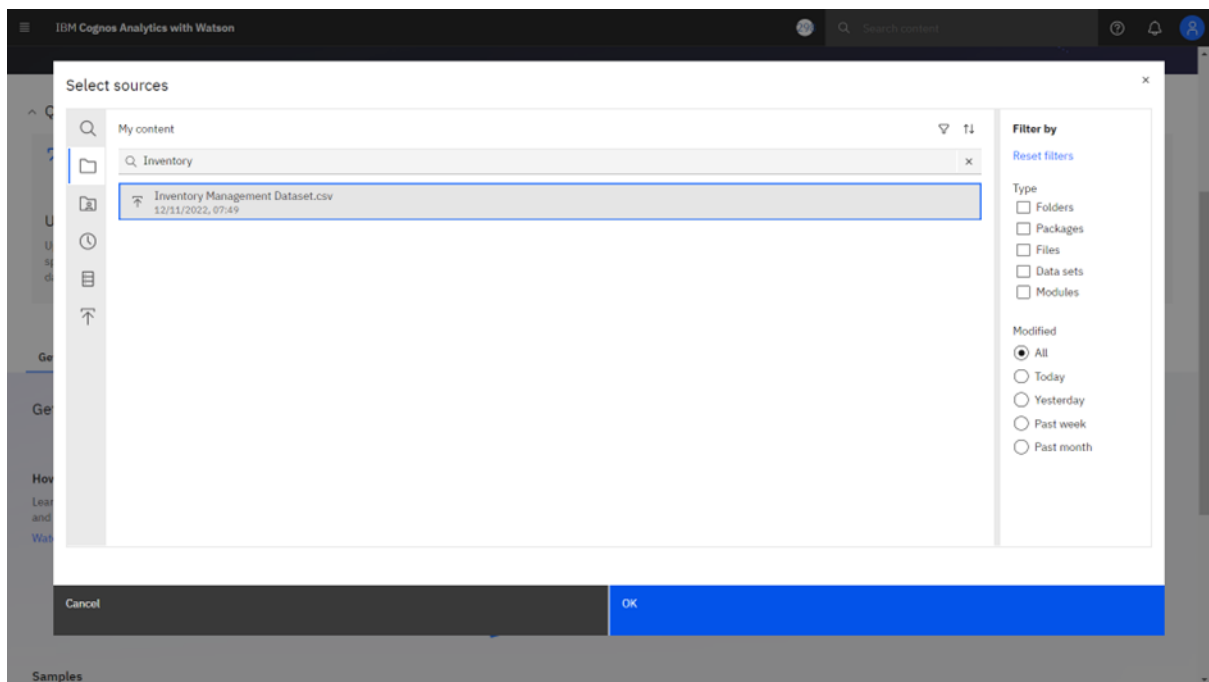
### Preparing the Data:

Before the dataset is used for visualization, it must be cleaned, formatted and processed. This step is called preparing the dataset.

#### 1) Click on the **Prepare data** option.



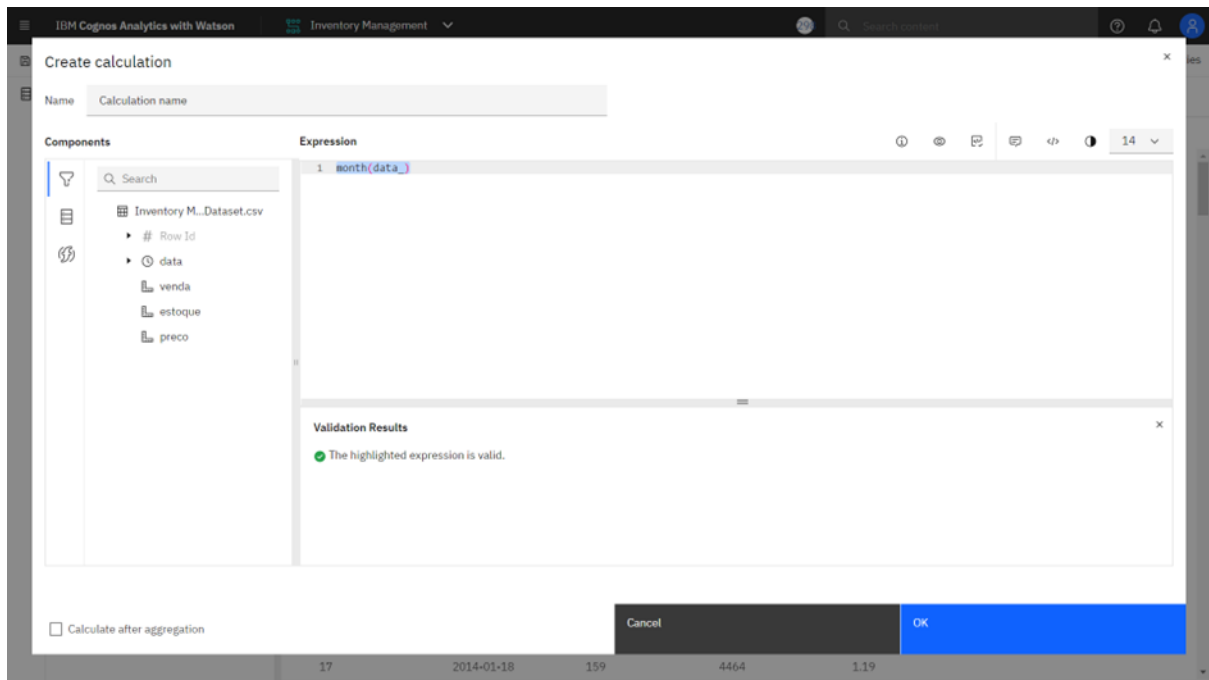
## 2) Select the Dataset from the Sources.



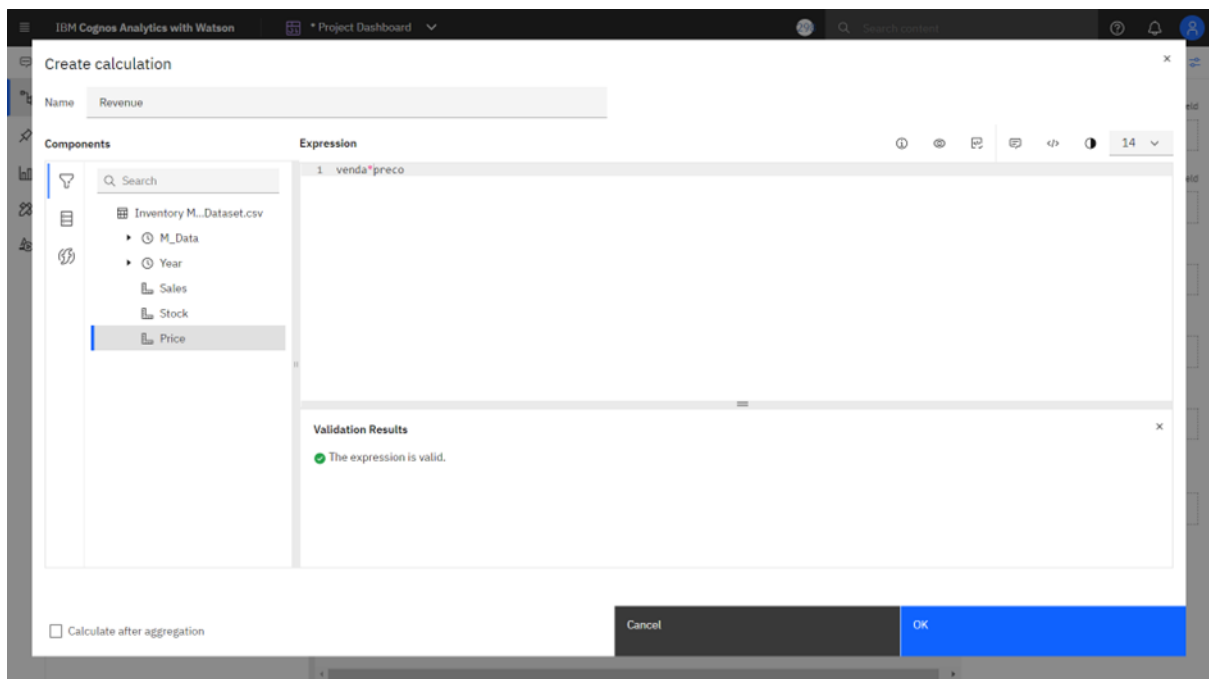
The screenshot shows the IBM Cognos Analytics interface with the 'Inventory Management' dataset loaded. The table view displays the following data:

Row Id	data	venda	estoque	preco
1	2014-01-01	0	4972	1.29
2	2014-01-02	70	4902	1.29
3	2014-01-03	59	4843	1.29
4	2014-01-04	93	4750	1.29
5	2014-01-05	96	4654	1.29
6	2014-01-06	145	4509	1.29
7	2014-01-07	179	4329	1.29
8	2014-01-08	321	4104	1.29
9	2014-01-09	125	4459	1.09
10	2014-01-10	88	5043	1.09
11	2014-01-11	188	5239	1.09
12	2014-01-12	121	5118	1.09
13	2014-01-13	134	4984	1.09
14	2014-01-14	80	4904	1.09
15	2014-01-15	82	4822	1.09
16	2014-01-16	94	4728	1.19
17	2014-01-18	159	4464	1.19

3) Create calculation **M\_Data = month(data\_)** and validate the expression before creating the calculation.



4) Calculate **Revenue = venda\*preco** and validate the expression before clicking on OK.



5) For M\_Data and data(date), set Usage to Attribute and Aggregate to Count Distinct.

The screenshot shows the IBM Cognos Analytics interface. The 'Data module' pane on the left lists the 'Inventory Management' data source, with 'M\_Data' selected. The 'Grid' view displays a table with columns: M\_Data, Row Id, data, venda, and estoque. The 'Properties' panel on the right shows the configuration for the selected table:

Property	Value
Label	M_Data
Hide from users	<input type="checkbox"/>
Expression	<a href="#">View or edit</a>
Usage	Attribute
Aggregate	Count Distinct
Data type	Integer
Represents	
Time	
Month	
Description	
Comments	

The screenshot shows the IBM Cognos Analytics interface. The 'Data module' pane on the left lists the 'Inventory Management' data source, with 'data' selected. The 'Grid' view displays a table with columns: M\_Data, Row Id, data, venda, and estoque. The 'Properties' panel on the right shows the configuration for the selected column:

Property	Value
Label	data
Hide from users	<input type="checkbox"/>
Expression	<a href="#">View or edit</a>
Usage	Attribute
Aggregate	Count Distinct
Data type	Date
Represents	
Time	
Year	
Lookup reference	None
Description	
Comments	

6) For venda, estoque and preco, set Usage to Measure and Aggregate to Total.

The screenshot shows the IBM Cognos Analytics interface with the 'Inventory Management' data module selected. The 'venda' measure is highlighted in the left-hand navigation pane. The main grid displays a table with columns: T1, M\_Data, Row Id, data, venda, and estoque. The 'venda' column is selected, and the 'Properties' pane on the right shows the configuration for this measure.

T1	M_Data	Row Id	data	venda	estoque
1	1	1	2014-01-01	0	4972
1	1	2	2014-01-02	70	4902
1	1	3	2014-01-03	59	4843
1	1	4	2014-01-04	93	4750
1	1	5	2014-01-05	96	4654
1	1	6	2014-01-06	145	4509
1	1	7	2014-01-07	179	4329
1	1	8	2014-01-08	321	4104
1	1	9	2014-01-09	125	4459
1	1	10	2014-01-10	88	5043
1	1	11	2014-01-11	188	5239
1	1	12	2014-01-12	121	5118
1	1	13	2014-01-13	134	4984
1	1	14	2014-01-14	80	4904
1	1	15	2014-01-15	82	4822
1	1	16	2014-01-16	94	4728

**Properties - General**

- Label: venda
- Hide from users: ☐
- Expression: [View or edit >](#)
- Usage: Measure
- Aggregate: Total
- Data type: Integer
- Represents:
- Default:
- Lookup reference: None
- Description:
- Comments:

The screenshot shows the IBM Cognos Analytics interface with the 'Inventory Management' data module selected. The 'estoque' measure is highlighted in the left-hand navigation pane. The main grid displays a table with columns: T1, Row Id, data, venda, and estoque. The 'estoque' column is selected, and the 'Properties' pane on the right shows the configuration for this measure.

T1	Row Id	data	venda	estoque
1	1	2014-01-01	0	4972
	2	2014-01-02	70	4902
	3	2014-01-03	59	4843
	4	2014-01-04	93	4750
	5	2014-01-05	96	4654
	6	2014-01-06	145	4509
	7	2014-01-07	179	4329
	8	2014-01-08	321	4104
	9	2014-01-09	125	4459
	10	2014-01-10	88	5043
	11	2014-01-11	188	5239
	12	2014-01-12	121	5118
	13	2014-01-13	134	4984
	14	2014-01-14	80	4904
	15	2014-01-15	82	4822
	16	2014-01-16	94	4728

**Properties - General**

- Label: estoque
- Hide from users: ☐
- Expression: [View or edit >](#)
- Usage: Measure
- Aggregate: Total
- Data type: Integer
- Represents:
- Default:
- Lookup reference: None
- Description:
- Comments:

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Search content

Properties

Data module

Search

Inventory Management

- Navigation paths
- Inventory M...ataset.csv
  - M\_Data
  - Row Id
  - data
  - venda
  - estoque
  - preco

Grid

	data	venda	estoque	preco
2014-01-01		0	4972	1.29
2014-01-02		70	4902	1.29
2014-01-03		59	4843	1.29
2014-01-04		93	4750	1.29
2014-01-05		96	4654	1.29
2014-01-06		145	4509	1.29
2014-01-07		179	4329	1.29
2014-01-08		321	4104	1.29
2014-01-09		125	4459	1.09
2014-01-10		88	5043	1.09
2014-01-11		188	5239	1.09
2014-01-12		121	5118	1.09
2014-01-13		134	4984	1.09
2014-01-14		80	4904	1.09
2014-01-15		82	4822	1.09
2014-01-16		94	4728	1.19

Properties

General

Label: preco

Hide from users: ☐

Expression: [View or edit](#)

Usage: Measure

Aggregate: Total

Data type: Decimal

Represents: Default

Lookup reference: None

Description:

Comments:

7) Rename and format all the attributes. Rename data to Year, venda to Sales, estoque to Stock and preco to Price.

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Search content

Properties

Data module

Search

Inventory Management

- Navigation paths
- Inventory M...ataset.csv
  - M\_Data
  - Row Id
  - Year
  - Sales
  - Stock
  - Price

Grid

	Year	Sales	Stock	Price
2014-01-01		0	4972	1.29
2014-01-02		70	4902	1.29
2014-01-03		59	4843	1.29
2014-01-04		93	4750	1.29
2014-01-05		96	4654	1.29
2014-01-06		145	4509	1.29
2014-01-07		179	4329	1.29
2014-01-08		321	4104	1.29
2014-01-09		125	4459	1.09
2014-01-10		88	5043	1.09
2014-01-11		188	5239	1.09
2014-01-12		121	5118	1.09
2014-01-13		134	4984	1.09
2014-01-14		80	4904	1.09
2014-01-15		82	4822	1.09
2014-01-16		94	4728	1.19

Properties

General

Label: Year

Hide from users: ☐

Expression: [View or edit](#)

Usage: Attribute

Aggregate: Count Distinct

Data type: Date

Represents: Time

Year: Year

Lookup reference: None

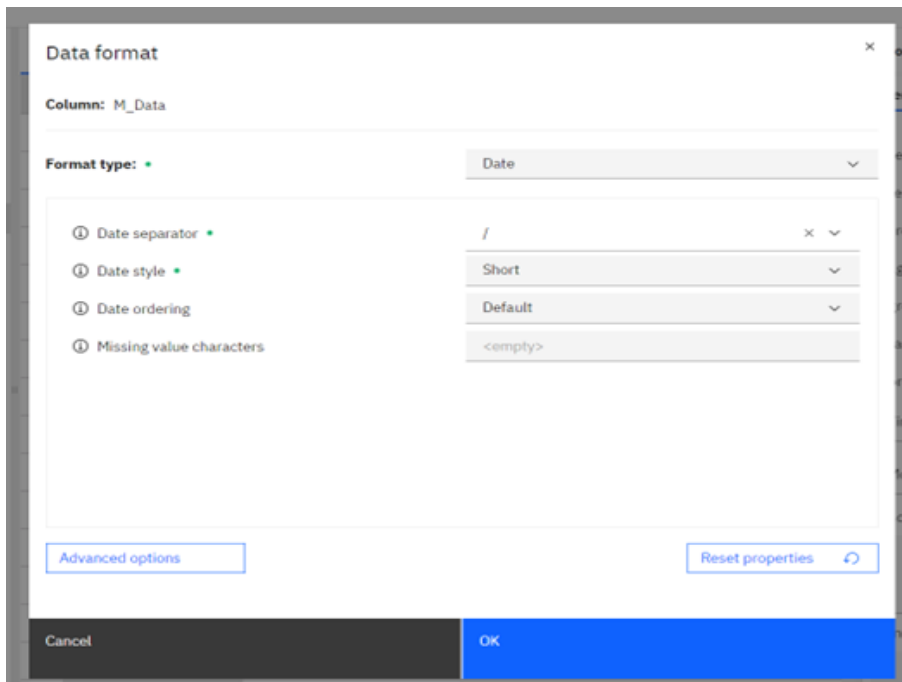
Description:

Comments:



## Formatting of Data:

### a) M\_Data

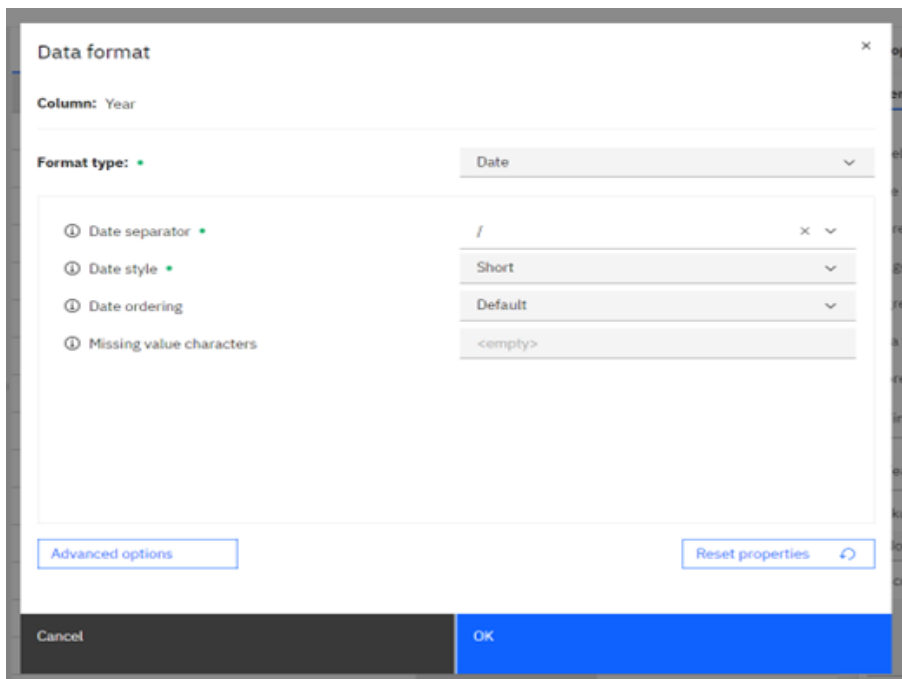


The 'Data format' dialog box for the 'M\_Data' column shows the 'Date' format type selected. The settings are as follows:

Property	Value
Format type	Date
Date separator	/
Date style	Short
Date ordering	Default
Missing value characters	<empty>

Buttons: Advanced options, Reset properties, Cancel, OK.

### b) Year



The 'Data format' dialog box for the 'Year' column shows the 'Date' format type selected. The settings are as follows:

Property	Value
Format type	Date
Date separator	/
Date style	Short
Date ordering	Default
Missing value characters	<empty>

Buttons: Advanced options, Reset properties, Cancel, OK.

### c) Sales

**Data format** [X]

Column: Sales

Format type: • Number [v]

① Number of decimal places •	0	x [v]
① Negative sign symbol	Default	[v]
① Use thousands separator •	No	[v]
① Negative sign position	Default	[v]
① Missing value characters	<empty>	

Advanced options [v]      Reset properties [v]

Cancel      OK

### d) Stock

**Data format** [X]

Column: Stock

Format type: • Number [v]

① Number of decimal places •	0	x [v]
① Negative sign symbol	Default	[v]
① Use thousands separator •	No	[v]
① Negative sign position	Default	[v]
① Missing value characters	<empty>	

Advanced options [v]      Reset properties [v]

Cancel      OK

### e) Price

**Data format** [X]

Column: Price

Format type: Number [v]

① Number of decimal places •	2	[x] [v]
① Negative sign symbol	Default	[v]
① Use thousands separator •	No	[v]
① Negative sign position	Default	[v]
① Missing value characters	<empty>	

[Advanced options](#) [Reset properties](#) [↺]

Cancel OK

### f) Revenue

**Data format** [X]

Column: Revenue

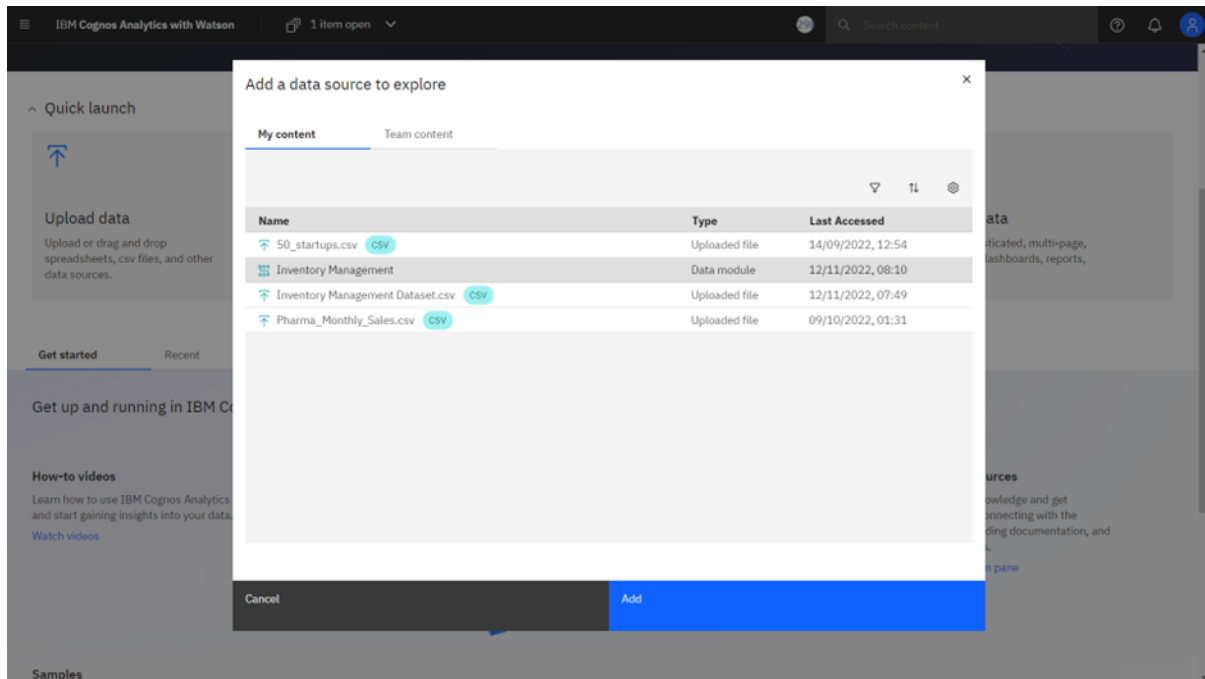
Format type: Number [v]

① Number of decimal places •	0	[x] [v]
① Negative sign symbol	Default	[v]
① Use thousands separator •	Yes	[v]
① Negative sign position	Default	[v]
① Missing value characters	<empty>	

[Advanced options](#) [Reset properties](#) [↺]

Cancel OK

8) Save it as a Data Module so it can be imported for Visualization.



## **Conclusion:**

Thus, in Sprint 1, the dataset has been downloaded, understood, pre-processed and saved as a Data Module in IBM Cognos Analytics.