



# Objectives:

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- What is Power BI
- Key Components
- Power BI Desktop
- Environment of Power BI Desktop
- Connect to Data
- Edit Queries
- Relationship
- Data Visualization (Report)

# What is Power BI ?

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Power BI is business analytic tools to analyze and share insights, provided by Microsoft.

Power BI provided Interactive Visualization .

Originally conceived by Dhers and Amir Netz (Server Reporting Services Team Microsoft)

Originally designed by Ron Goerge in summer 2010 → Project Crescent.

In September 2013 unveiled by Microsoft as Power BI for office 365.

First release on July 24, 2015.

# Key Components

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- **Power BI Desktop**

Windows based application for PCs

- **Power BI Service**

The software as a service based on online service. Publish report securely and setup automatic data refresh.

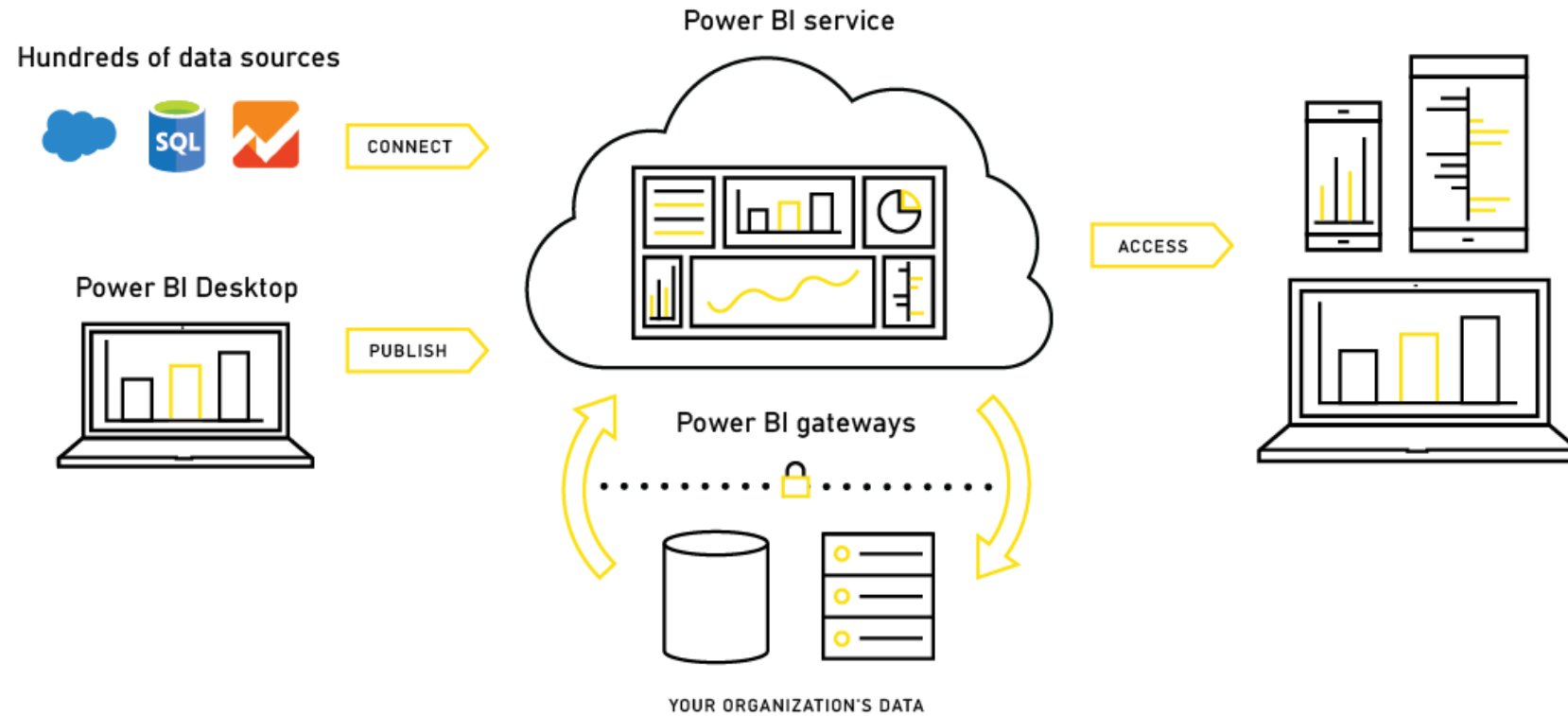
- **Power BI Mobile Apps**

Mobile Apps for Android and iOS devices and Windows phones and tablets.

- **Power BI Gateways**

Connect to SQL databases, Analysis services model, etc.

# Key Components



# Power BI Desktop

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- Minimum requirements:
- Windows 7 / Windows Server 2008 R2, or later
- .NET 4.5
- Internet Explorer 9 or later
- Memory (RAM): at least 1 GB available, 1.5 GB or more recommended.
- CPU: 1 gigahertz or faster.

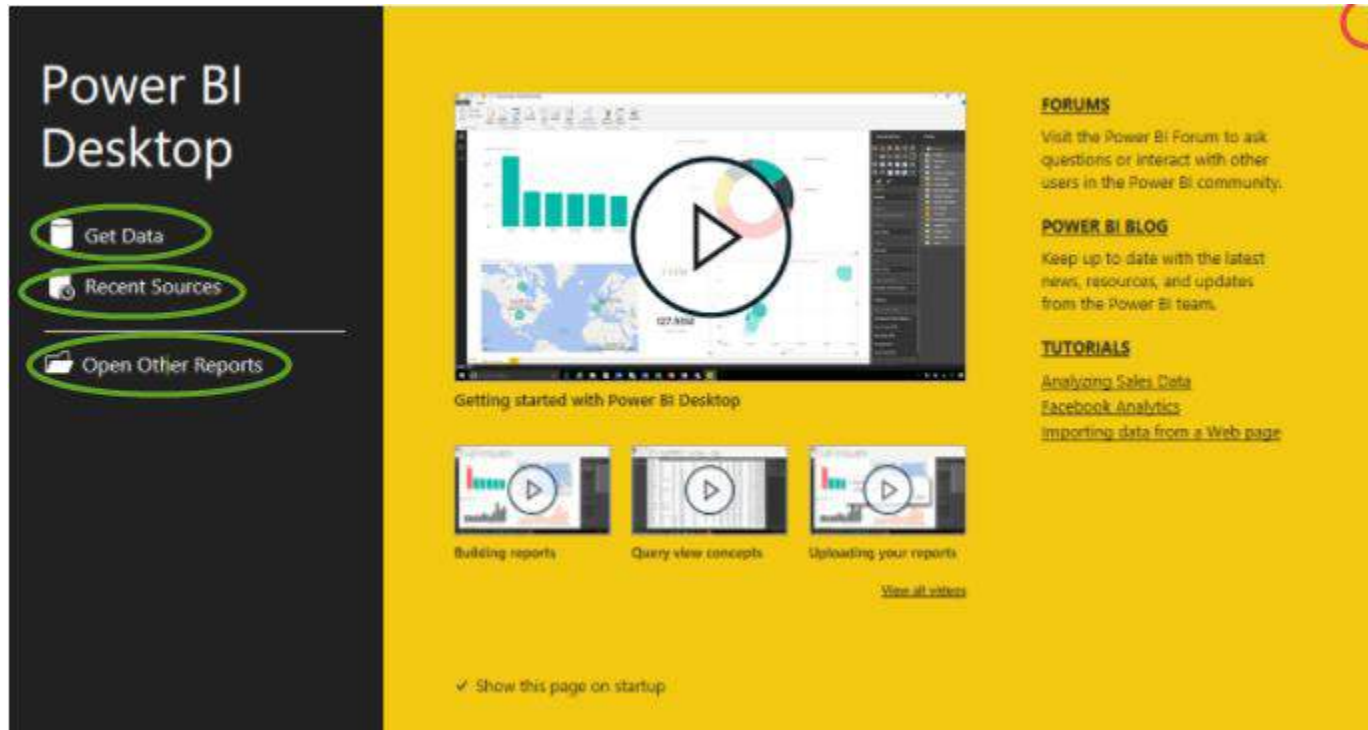
# Power BI Desktop

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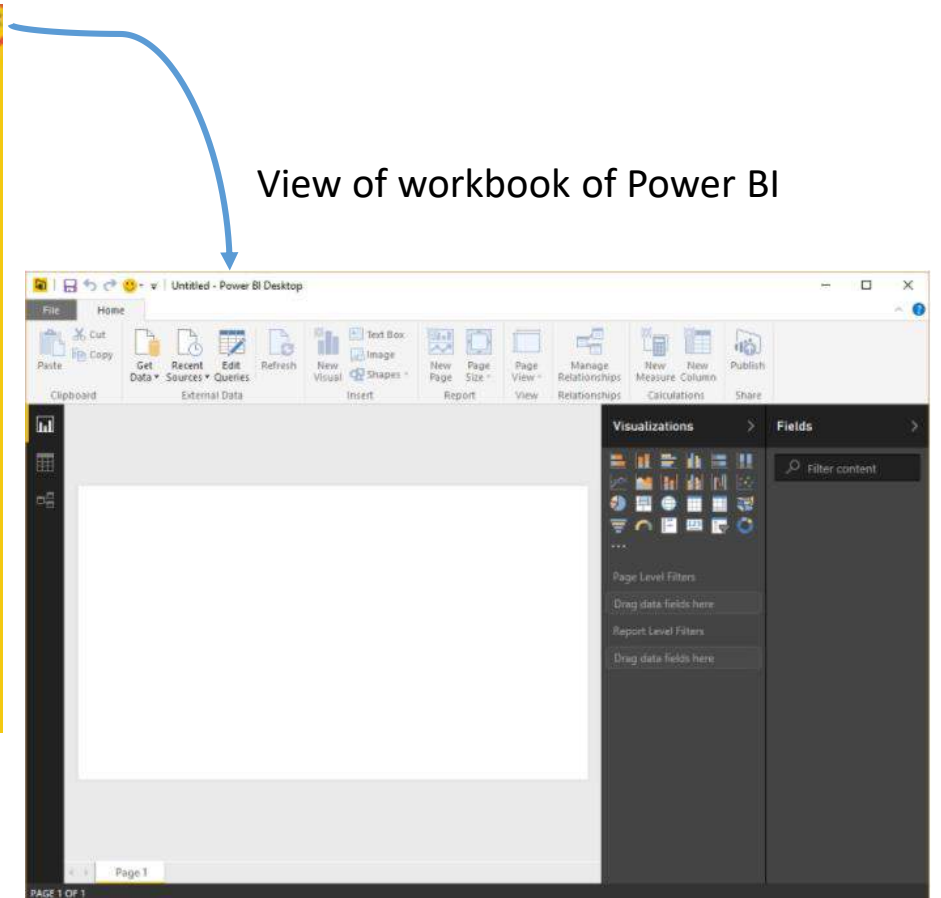
How Power BI Desktop Works?

- Connect with multiples data sources
- Shape that data (query, compelling data, etc)
- Create Report

# Power BI Desktop



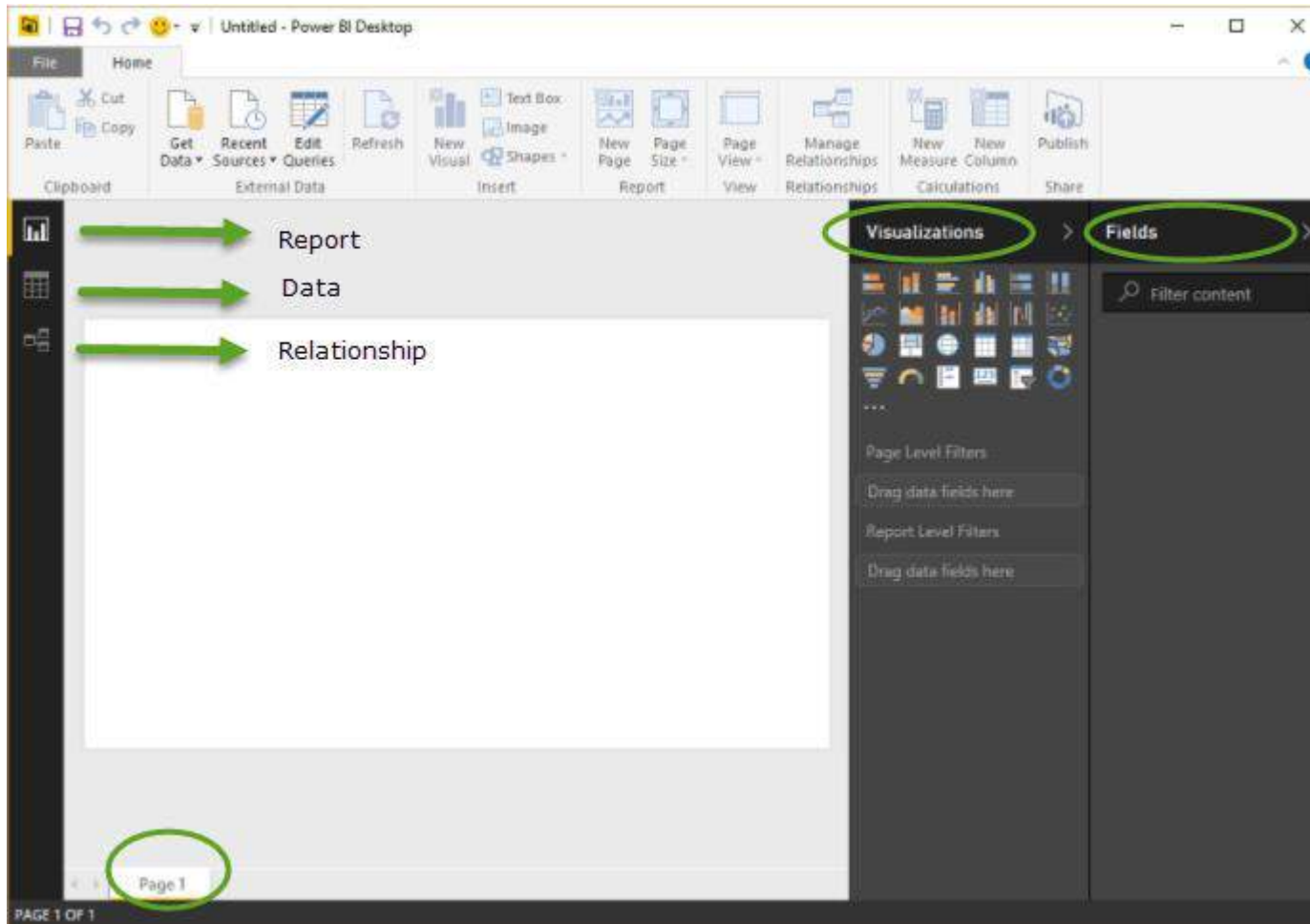
The first view of Power BI



View of workbook of Power BI



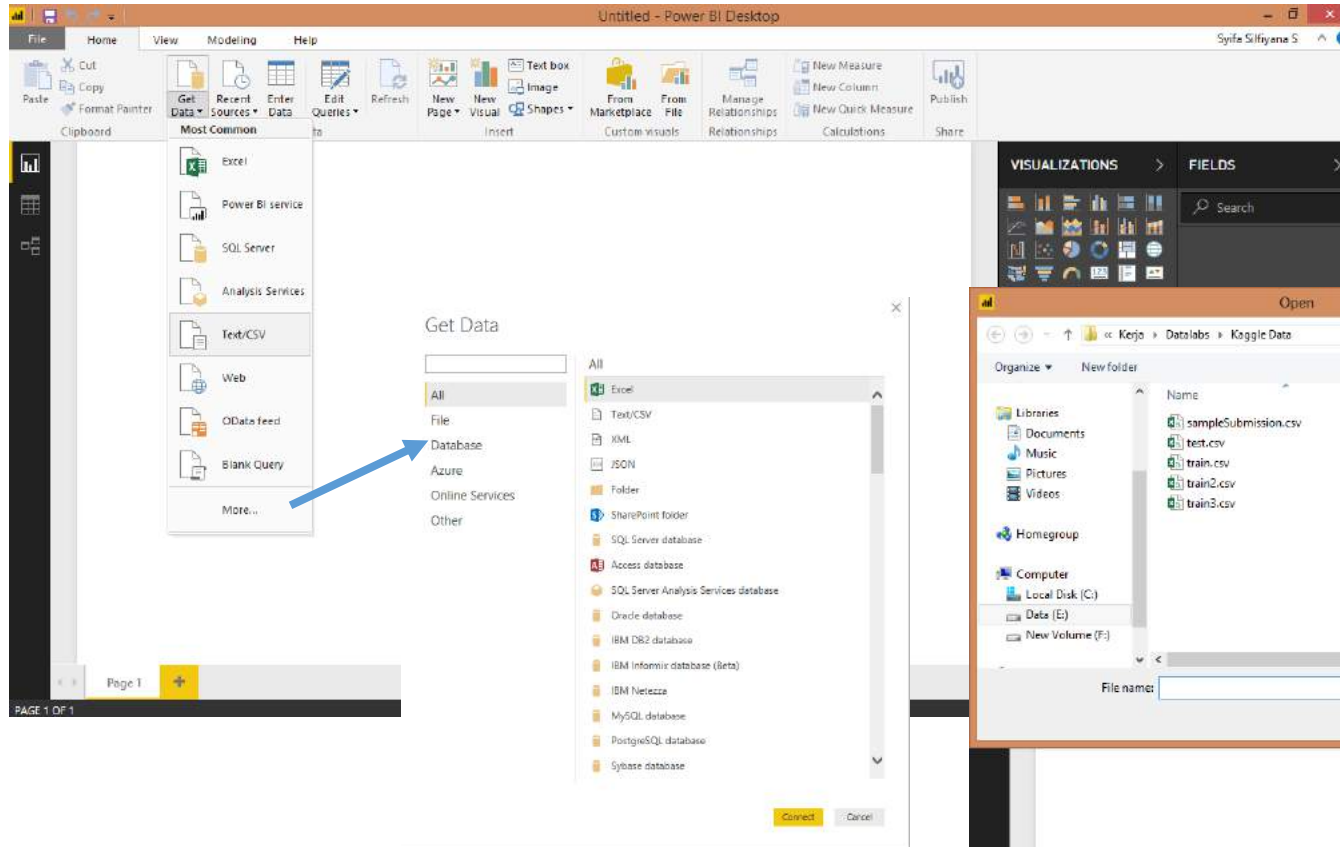
# Environment Power BI Desktop



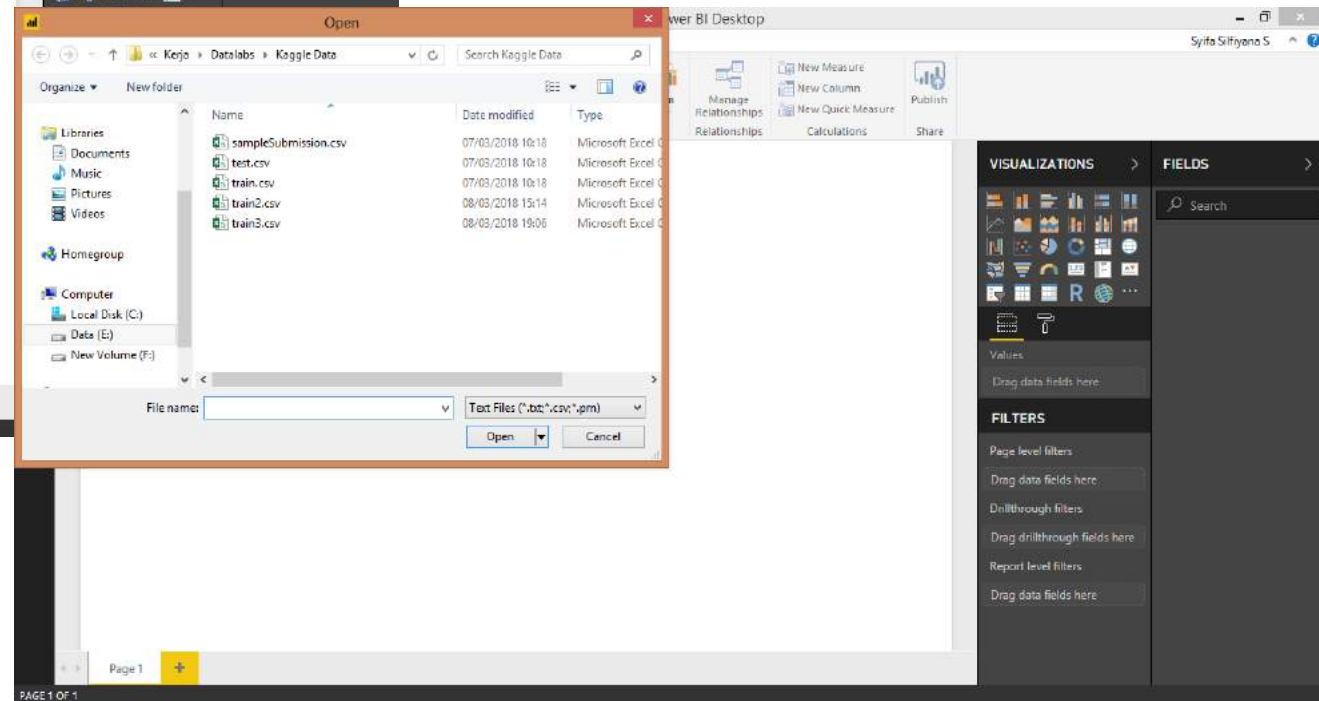
Elements in Power BI Desktop:

1. Report, window when you want create data visualization.
2. Data, Tables of data which is imported to Power BI.
3. Relationship, window to make relationship between tables.
4. Visualization, types of data visualization that you want used.
5. Fields, list of tables that inserted.

# Power BI Desktop: Connect to data



Click **GetData** in the toolbar to import data to Power BI.



# Power BI Desktop: Connect to data (continue)

The screenshot shows the Power BI Desktop interface with the 'Bike Sharing' dataset loaded. The ribbon includes 'Get Data', 'Recent Sources', 'Enter Data', and 'Edit Queries'. The main view shows a table with columns: datetime, season, holiday, workingday, weather, temp, atemp, humidity, windspeed, casual, registered, count. The right sidebar shows the 'FIELDS' pane with 'train' selected under 'Table name' and its columns listed under 'Column names'.

datetime	season	holiday	workingday	weather	temp	atemp	humidity	windspeed	casual	registered	count
1/1/2011 4:00:00 AM	1	0	0	0	1	9.84	14.395	75	0	0	1
1/2/2011 10:00:00 PM	1	0	0	1	1	9.84	10.605	44	19.9995	0	9
1/2/2011 11:00:00 PM	1	0	0	1	1	9.02	11.365	47	11.0014	0	8
1/3/2011 12:00:00 AM	1	0	1	1	1	9.02	9.85	44	23.9994	0	5
1/3/2011 1:00:00 AM	1	0	1	1	1	8.2	8.335	44	27.9993	0	2
1/3/2011 4:00:00 AM	1	0	1	1	1	6.56	6.82	47	26.0027	0	1
1/3/2011 5:00:00 AM	1	0	1	1	1	6.56	6.82	47	19.0012	0	3
1/3/2011 6:00:00 AM	1	0	1	1	1	5.74	5.305	50	26.0027	0	30
1/3/2011 10:00:00 PM	1	0	1	1	1	5.74	7.575	69	8.9981	0	20
1/4/2011 12:00:00 AM	1	0	1	1	1	6.56	9.09	55	7.0015	0	5
1/4/2011 1:00:00 AM	1	0	1	1	1	6.56	9.09	59	7.0015	0	2
1/4/2011 2:00:00 AM	1	0	1	1	1	5.74	7.575	63	8.9981	0	1
1/4/2011 4:00:00 AM	1	0	1	1	1	5.74	9.09	63	6.0032	0	2
1/4/2011 5:00:00 AM	1	0	1	1	1	4.92	7.575	68	7.0015	0	4
1/4/2011 6:00:00 AM	1	0	1	1	1	4.92	7.575	74	7.0015	0	36
1/4/2011 9:00:00 PM	1	0	1	1	1	9.02	13.635	64	0	0	48
1/5/2011 12:00:00 AM	1	0	1	1	1	8.2	12.88	64	0	0	6
1/5/2011 1:00:00 AM	1	0	1	1	1	6.56	9.85	74	6.0032	0	6
1/5/2011 2:00:00 AM	1	0	1	1	1	6.56	9.85	74	6.0032	0	2
1/5/2011 4:00:00 AM	1	0	1	1	1	9.84	11.365	48	15.0013	0	2
1/5/2011 5:00:00 AM	1	0	1	1	1	9.02	11.365	47	11.0014	0	3
1/5/2011 6:00:00 AM	1	0	1	1	1	8.2	9.85	47	15.0013	0	33
1/6/2011 12:00:00 AM	1	0	1	1	1	7.38	12.12	55	0	0	11
1/6/2011 1:00:00 AM	1	0	1	1	1	6.56	11.365	64	0	0	4

TABLE: train (10,886 rows)

When data successful load to Power BI and to see your data click menu **Data**.

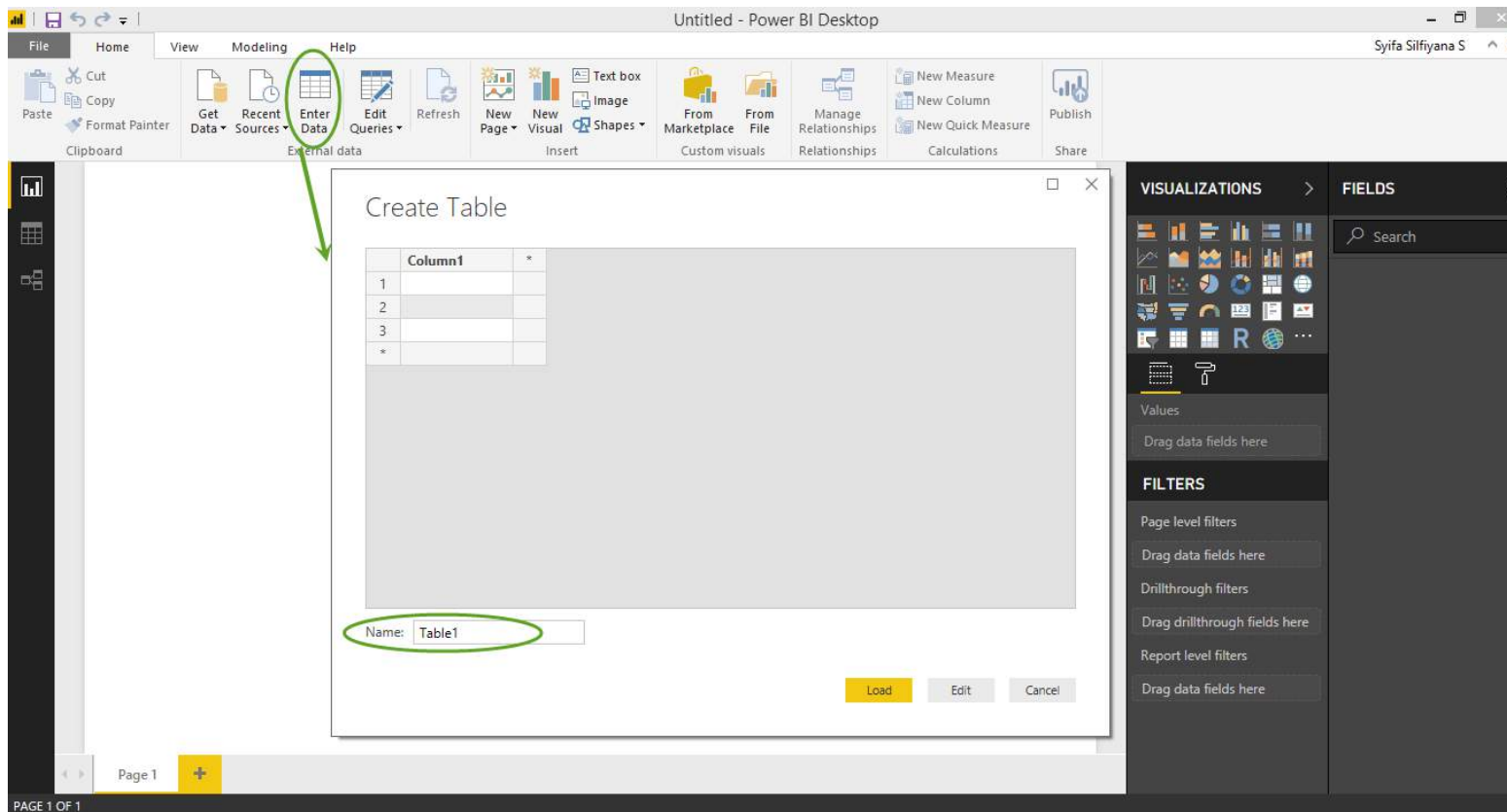
# Power BI Desktop: Connect to data (continue)

The screenshot shows the Power BI Desktop interface with a table named 'train' containing 10,886 rows. A context menu is open over the table, listing various actions. The table has columns: datetime, season, holiday, workingday, weather, temp, atemp, humidity, windspeed, casual, registered, and count. The context menu options are: New measure, New column, New quick measure, Refresh data, Edit Query, Copy Table, Rename, Delete, Hide in Report View, Mark as date table, and Unhide all.

datetime	season	holiday	workingday	weather	temp	atemp	humidity	windspeed	casual	registered	count
1/1/2011 4:00:00 AM	1	0	0	0	1	9.84	14.395	75	0	0	1
1/2/2011 10:00:00 PM	1	0	0	0	1	9.84	10.605	44	19.9995	0	9
1/2/2011 11:00:00 PM	1	0	0	1	1	9.02	11.365	47	11.0014	0	8
1/3/2011 12:00:00 AM	1	0	1	1	1	9.02	9.85	44	23.9994	0	5
1/3/2011 1:00:00 AM	1	0	1	1	1	8.2	8.335	44	27.9993	0	2
1/3/2011 4:00:00 AM	1	0	1	1	1	6.56	6.82	47	26.0027	0	1
1/3/2011 5:00:00 AM	1	0	1	1	1	6.56	6.82	47	19.0012	0	3
1/3/2011 6:00:00 AM	1	0	1	1	1	5.74	5.305	50	26.0027	0	30
1/3/2011 10:00:00 PM	1	0	1	1	1	5.74	7.575	69	8.9981	0	20
1/4/2011 12:00:00 AM	1	0	1	1	1	6.56	9.09	55	7.0015	0	5
1/4/2011 1:00:00 AM	1	0	1	1	1	6.56	9.09	59	7.0015	0	2
1/4/2011 2:00:00 AM	1	0	1	1	1	5.74	7.575	63	8.9981	0	1
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1/4/2011 5:00:00 AM	1	0	1	1	1	4.92	7.575	68	7.0015	0	4
1/4/2011 6:00:00 AM	1	0	1	1	1	4.92	7.575	74	7.0015	0	36
1/4/2011 9:00:00 PM	1	0	1	1	1	9.02	13.635	64	0	0	48
1/5/2011 12:00:00 AM	1	0	1	1	1	8.2	12.88	64	0	0	6
1/5/2011 1:00:00 AM	1	0	1	1	1	6.56	9.85	74	6.0032	0	6
1/5/2011 2:00:00 AM	1	0	1	1	1	6.56	9.85	74	6.0032	0	2
1/5/2011 4:00:00 AM	1	0	1	1	1	9.84	11.365	48	15.0013	0	2
1/5/2011 5:00:00 AM	1	0	1	1	1	9.02	11.365	47	11.0014	0	3
1/5/2011 6:00:00 AM	1	0	1	1	1	8.2	9.85	47	15.0013	0	33
1/6/2011 12:00:00 AM	1	0	1	1	1	7.38	12.12	55	0	0	11
1/6/2011 1:00:00 AM	1	0	1	1	1	6.56	11.365	64	0	0	4

To edit your table right click name of tables in Fields area.

# Power BI Desktop: Connect to data (continue)



We can also create table in Power BI. To Create table click **Enter Data** on the toolbar.

# Power BI Desktop: Edit Queries

The screenshot displays the Power BI Desktop Query Editor interface. The top ribbon includes tabs for File, Home, Transform, Add Column, View, and Help. The 'Close & Apply' button is highlighted in the top-left corner. A context menu is open over the 'datetime' column, showing options like 'Copy', 'Remove', 'Duplicate Column', etc. The 'QUERY SETTINGS' pane on the right shows the 'APPLIED STEPS' list, which includes 'Changed Type2' at the bottom, highlighted with a green box.

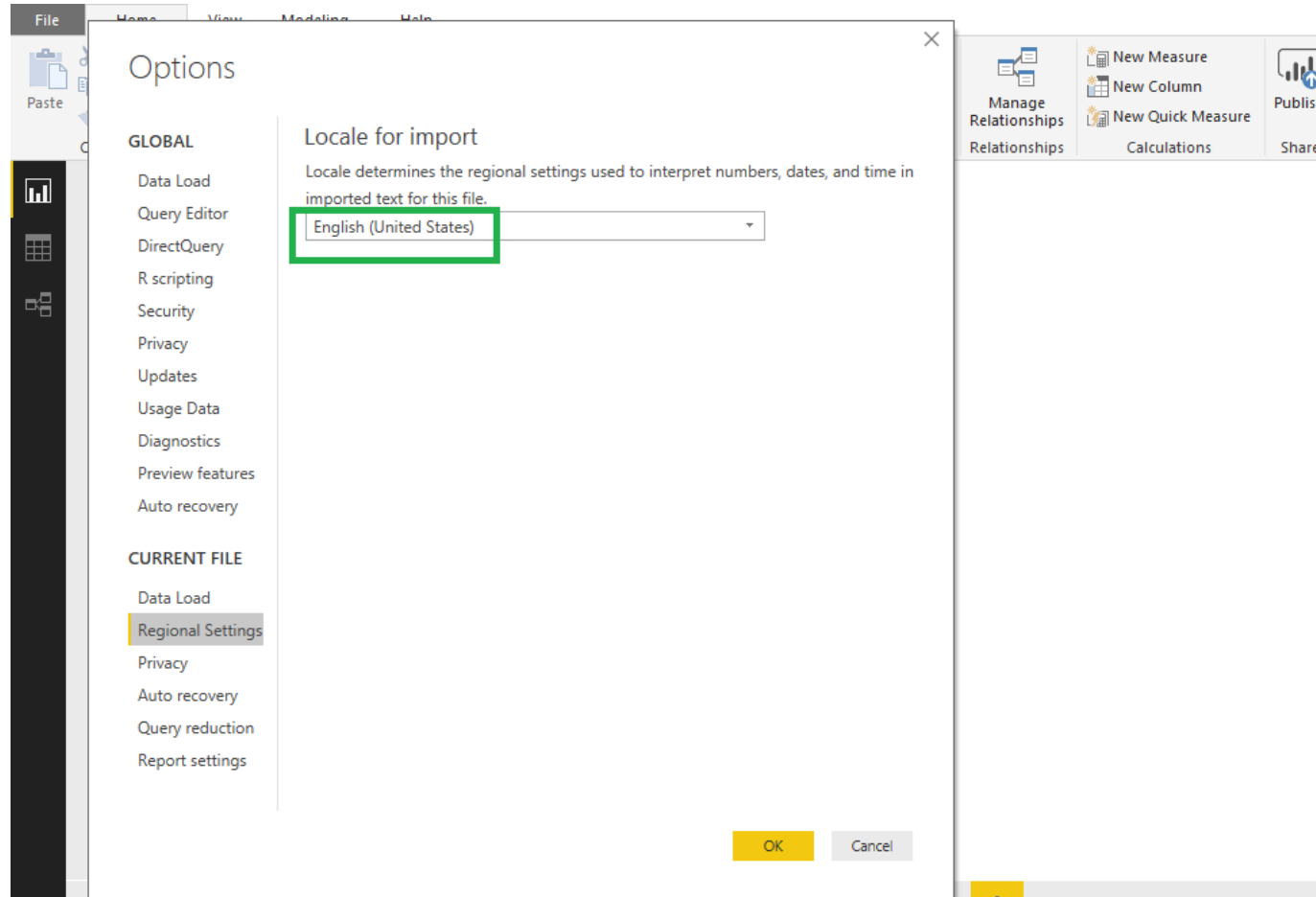
	datetime	season	holiday	workingday	weather	temp	atemp	humidity
1	01/01/2011 0:00:00	1				9.84	14.395	8
2	01/01/2011 1:00:00	1				9.02	13.635	8
3	01/01/2011 2:00:00	1				9.02	13.635	8
4	01/01/2011 3:00:00	1				9.84	14.395	7
5	01/01/2011 4:00:00	1				9.84	14.395	7
6	01/01/2011 5:00:00	1				9.84	12.88	7
7	01/01/2011 6:00:00	1				9.02	13.635	8
8	01/01/2011 7:00:00	1				8.2	12.88	8
9	01/01/2011 8:00:00	1				9.84	14.395	7
10	01/01/2011 9:00:00	1				13.12	17.425	7
11	01/01/2011 10:00:00	1				15.58	19.695	7
12	01/01/2011 11:00:00	1				14.76	16.665	8
13	01/01/2011 12:00:00	1				17.22	21.21	7
14	01/01/2011 13:00:00	1				18.86	22.725	7
15	01/01/2011 14:00:00	1				18.86	22.725	7
16	01/01/2011 15:00:00	1				18.04	21.97	7
17	01/01/2011 16:00:00	1				17.22	21.21	8
18	01/01/2011 17:00:00	1				18.04	21.97	8
19	01/01/2011 18:00:00	1				17.22	21.21	8
20	01/01/2011 19:00:00	1				17.22	21.21	8
21	01/01/2011 20:00:00	1				16.4	20.455	8
22	01/01/2011 21:00:00	1				16.4	20.455	8
23	01/01/2011 22:00:00	1				16.4	20.455	8
24	01/01/2011 23:00:00	1				18.86	22.725	8
25	01/01/2011 0:00:00	1				18.86	22.725	8

16 COLUMNS, 999+ ROWS

PREVIEW DOWNLOADED AT 11:59

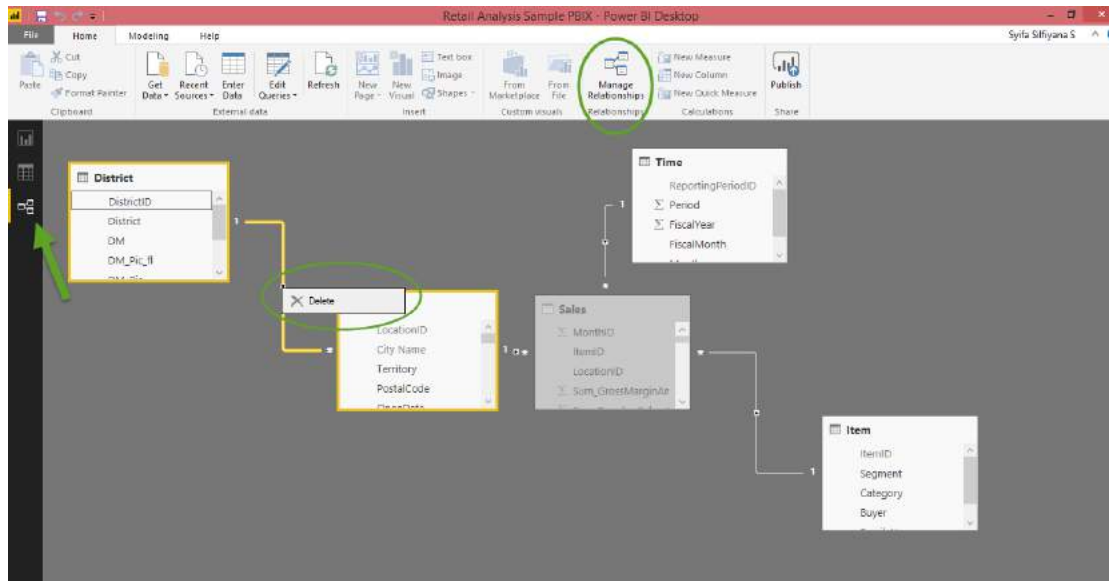
To edit data loaded click **Edit Queries** on the toolbar then Query Editor window will appear. To save or apply click menu **Apply** on the top left toolbar.

# Power BI Desktop: Decimal setting



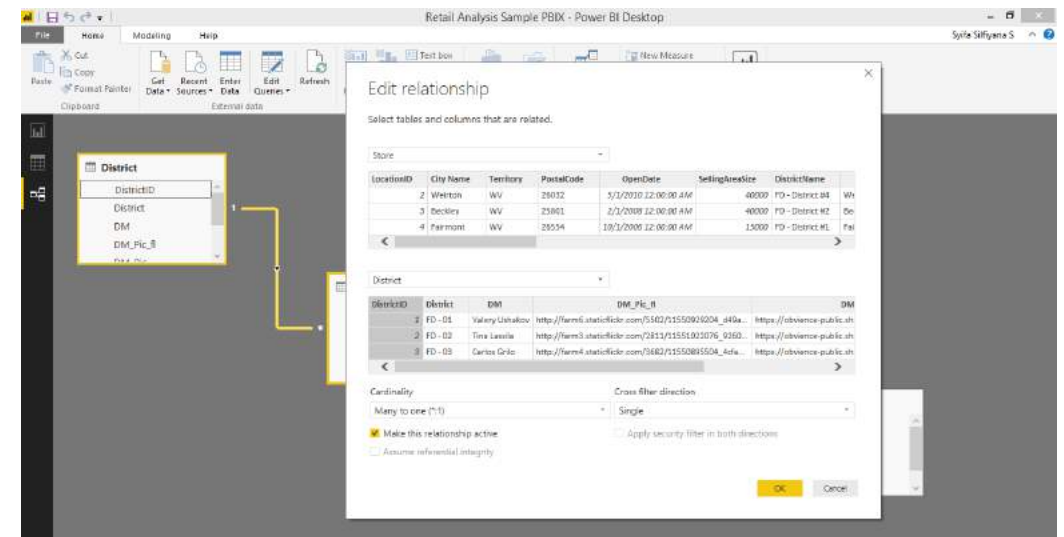
If your decimal not appear in Power BI, try to change regional setting in Power BI.  
Go to **File** → **Options & Settings** → **Options** → **Region Settings** → chose **English (US)**

# Power BI Desktop: Relationship



To make relationship between tables, click **Relationship** on the left side. Click **Manage Relationship** menu on the toolbar to start make new relationship. Or you can delete the relationship by right click the line.

To edit relationship double click the line and **Edit relationship** window will appear.





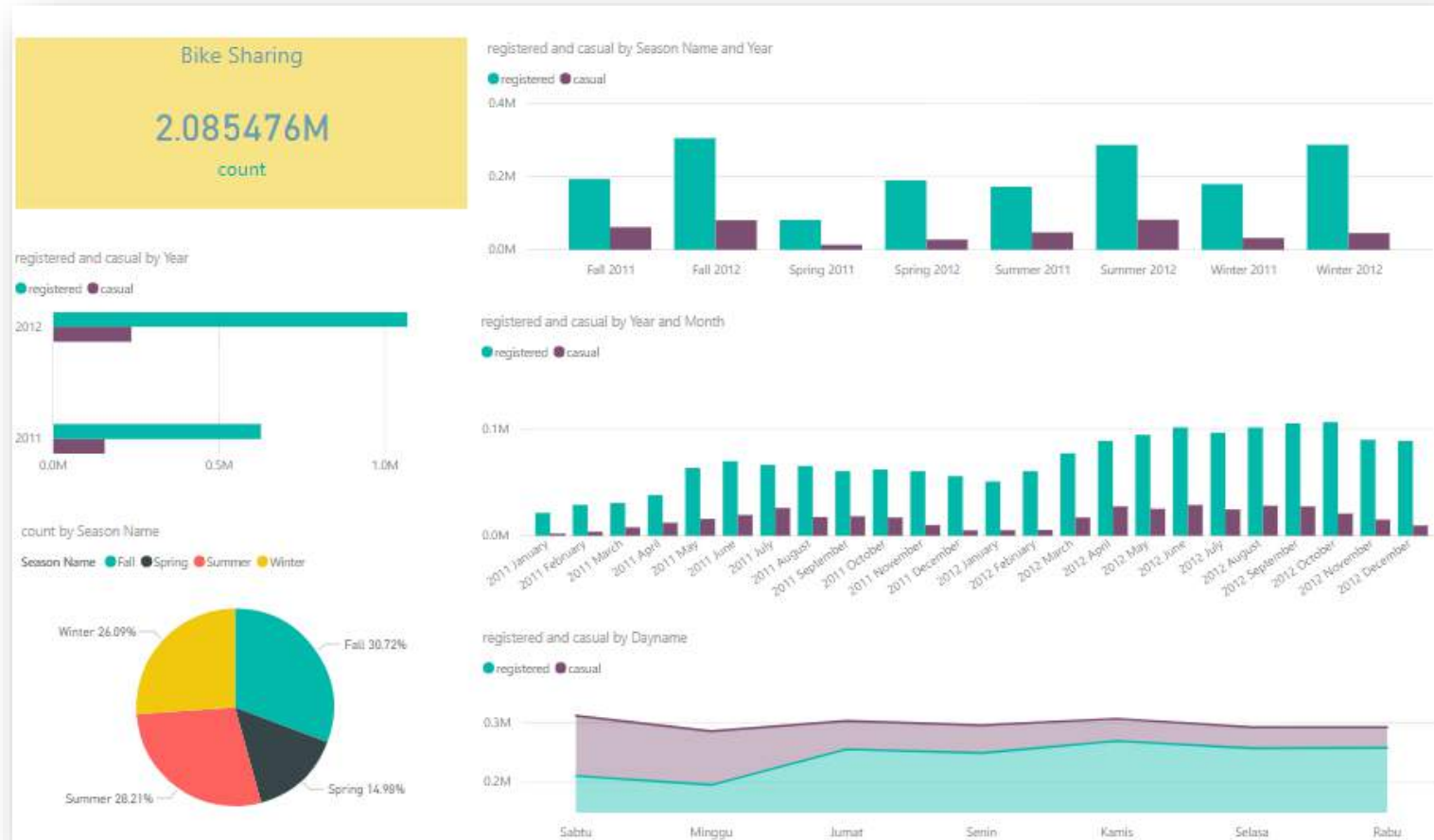
# Power BI Desktop: Data Visualization (Report)

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## 5 Tips To Make Your Report User Friendly:

1. Simplicity
2. Interrelation between elements
3. Make use a filter
4. High or low perspective – hierarchies
5. Meaningfulness

# Power BI Desktop: Data Visualization (Report)

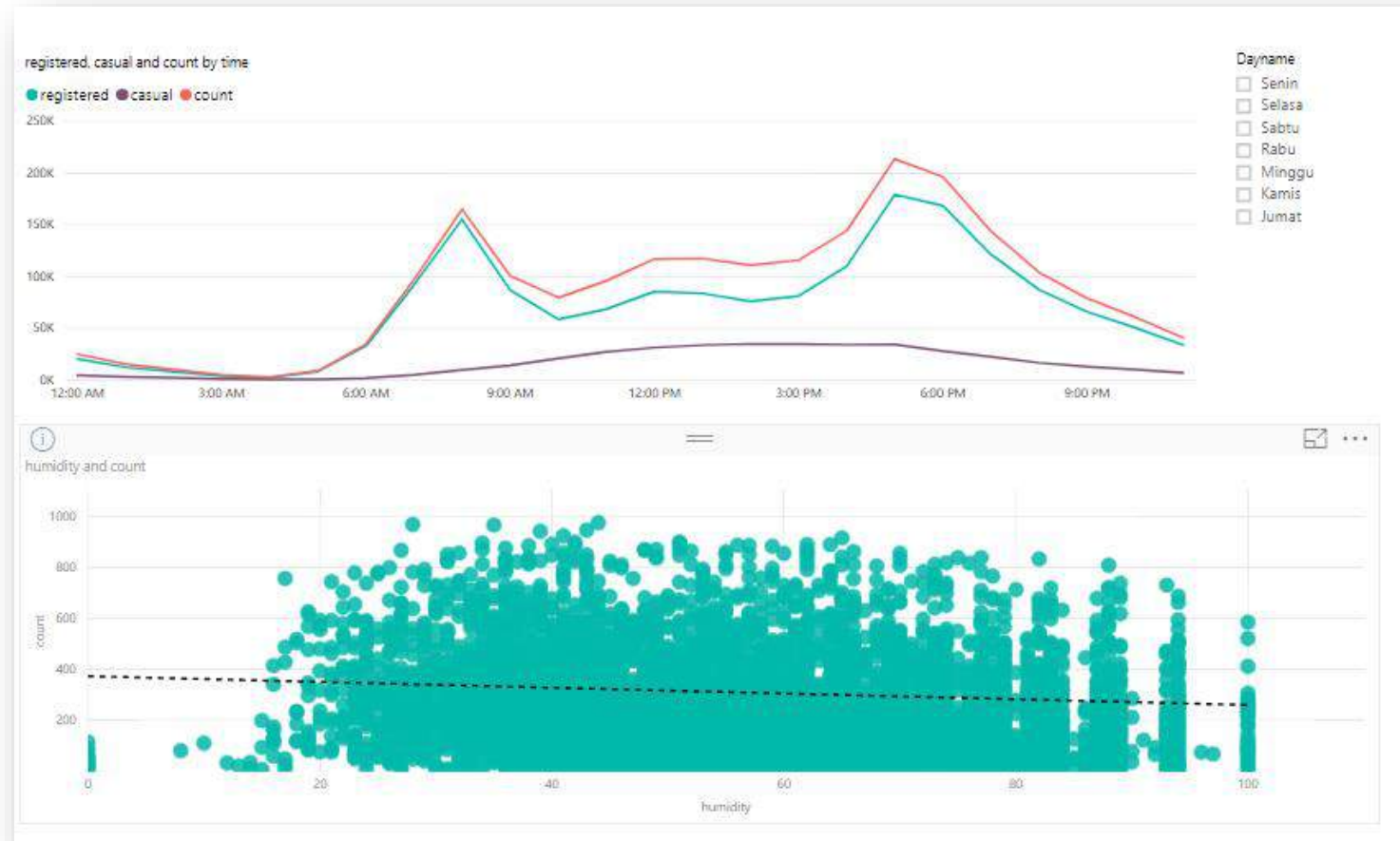


Dashboard from  
data loaded (bike  
sharing\_train)



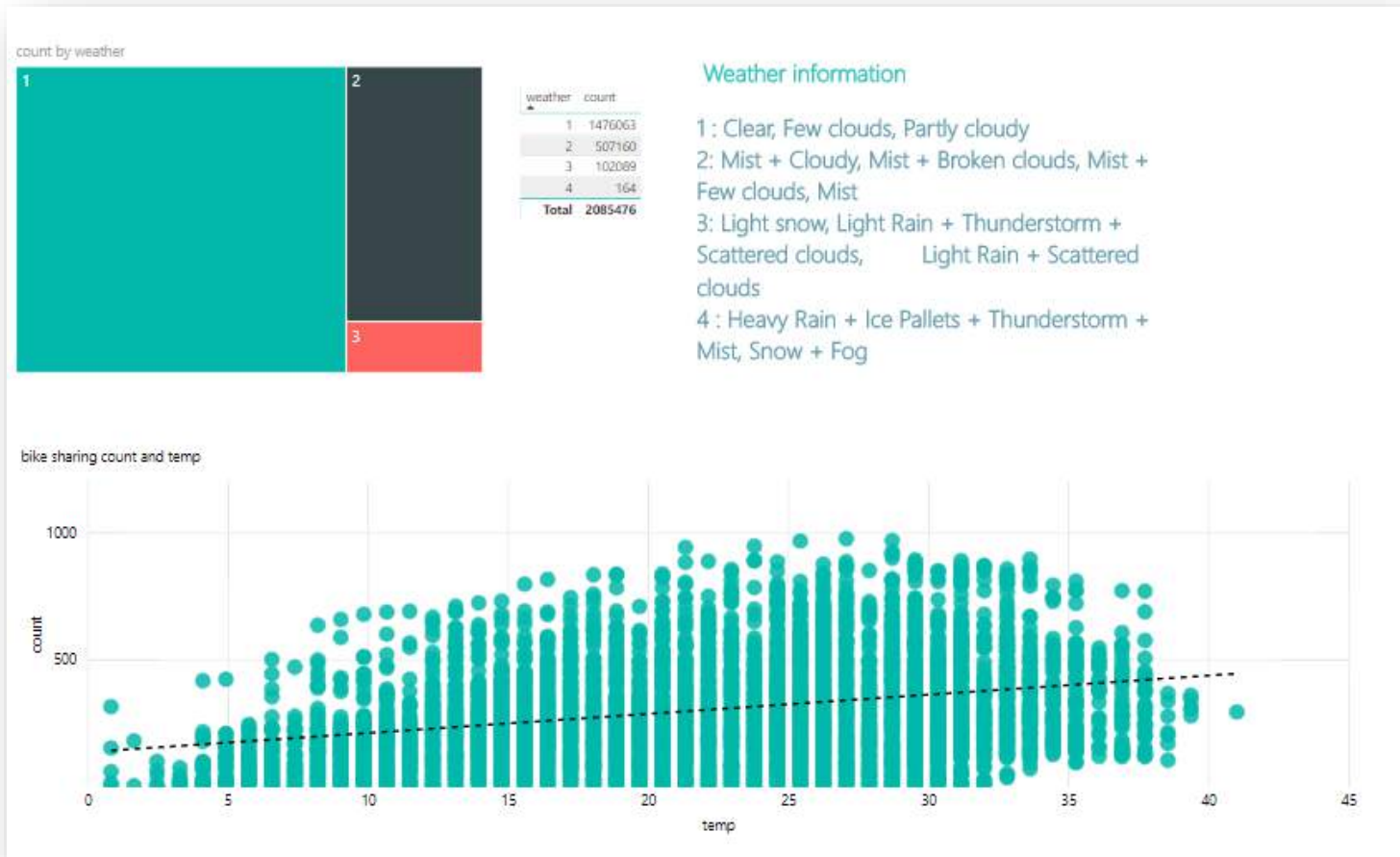
Microsoft Excel  
ma Separated Valu

# Power BI Desktop: Data Visualization (Report)



Dashboard from  
data loaded (bike  
sharing\_train)

# Power BI Desktop: Data Visualization (Report)



Dashboard from  
data loaded (bike  
sharing\_train)

# Bike Sharing

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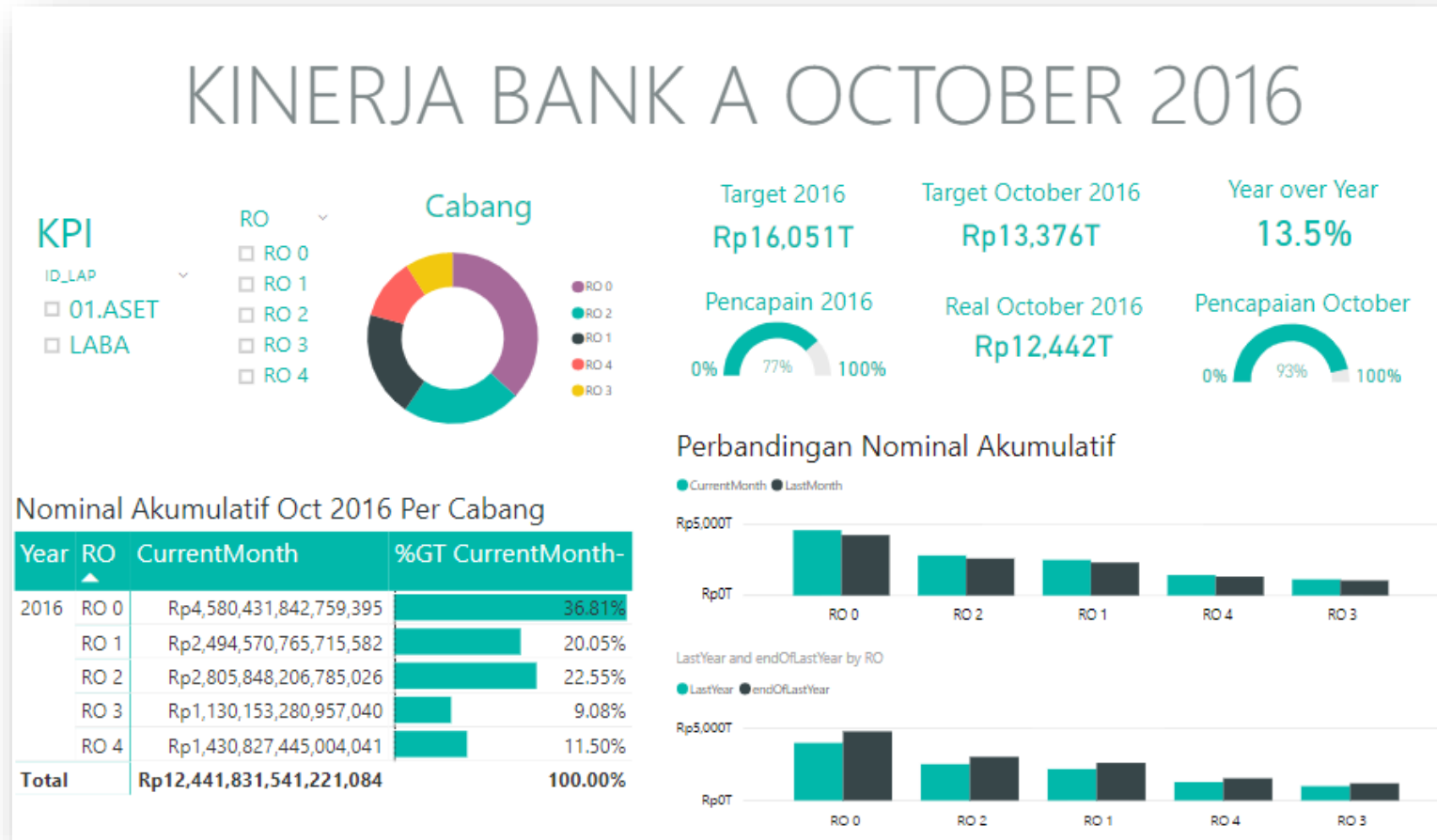
## Summary

- Amount of registered more than amount of casual.
- Fall season has highest percentage compare to other season in 2011 and 2012.
- Amount of casual on June - August tend higher than other month.
- Amount of casual at Saturday higher than other day.
- Humidity not correlated with count of bike sharing.
- Temp has a tendency to be positively correlated.
- Demand of bike sharing increase where weather is clear, few cloud or partly cloudy.
- But decrease when weather heavy rain.
- Peak Hour weekday around 5 PM to 6 PM.
- Peak Hour weekend around 12 PM to 3 PM.

## What We can Do?

1. Attract casual customers to registered customers.
2. Increase price at peak hour.
3. Improve marketing strategy in Fall season.
4. Do maintenance regularly.

# Other Dashboard



This dashboard just as example,  
data that used was dummy data

# Sources

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- <https://docs.microsoft.com/en-us/power-bi/>
- <https://predica.pl/blog/powerbi-data-analytics-report-tips/>
- <https://www.kaggle.com/c/bike-sharing-demand>

# Thank you



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