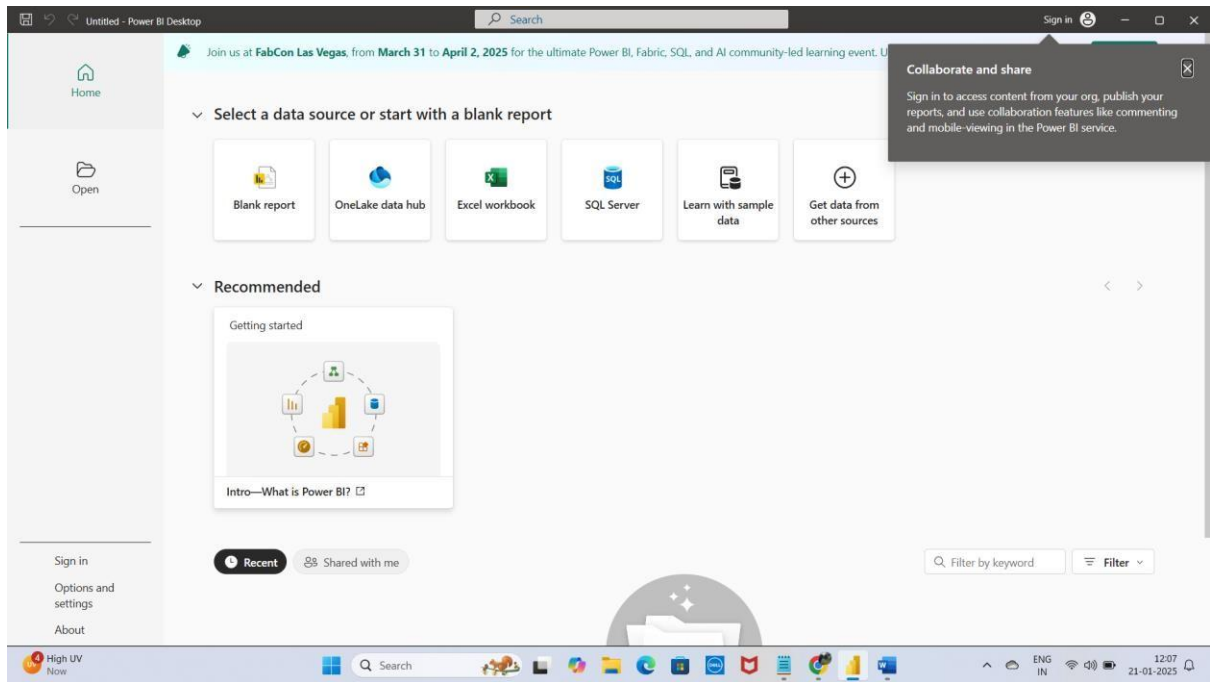


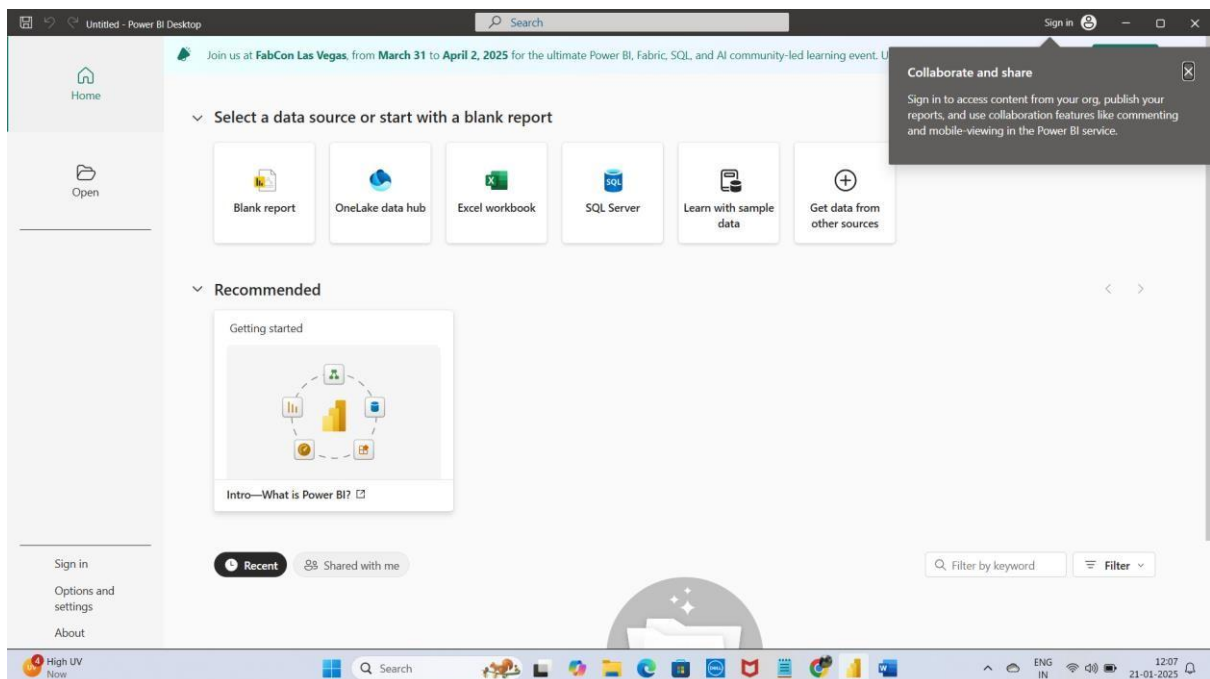
## **EXHAUSTIVE ANALYSIS OF INDIAN AGRICULTURE USING POWER BI**

Introduction: The "Exhaustive Analysis of Indian Agriculture Using Power BI" leverages the tool's capabilities to transform agricultural data into actionable insights. By utilizing Power Query for data extraction and transformation, data modelling to establish relationships, and DAX for custom calculations, Power BI enables in- depth analysis. Its powerful visualizations, predictive analytics, and AI insights help forecast trends like crop yield, weather impact, and market prices. Additionally, the Power BI Service facilitates real-time collaboration, empowering stakeholders to make informed decisions that enhance agricultural productivity and sustainability in India.

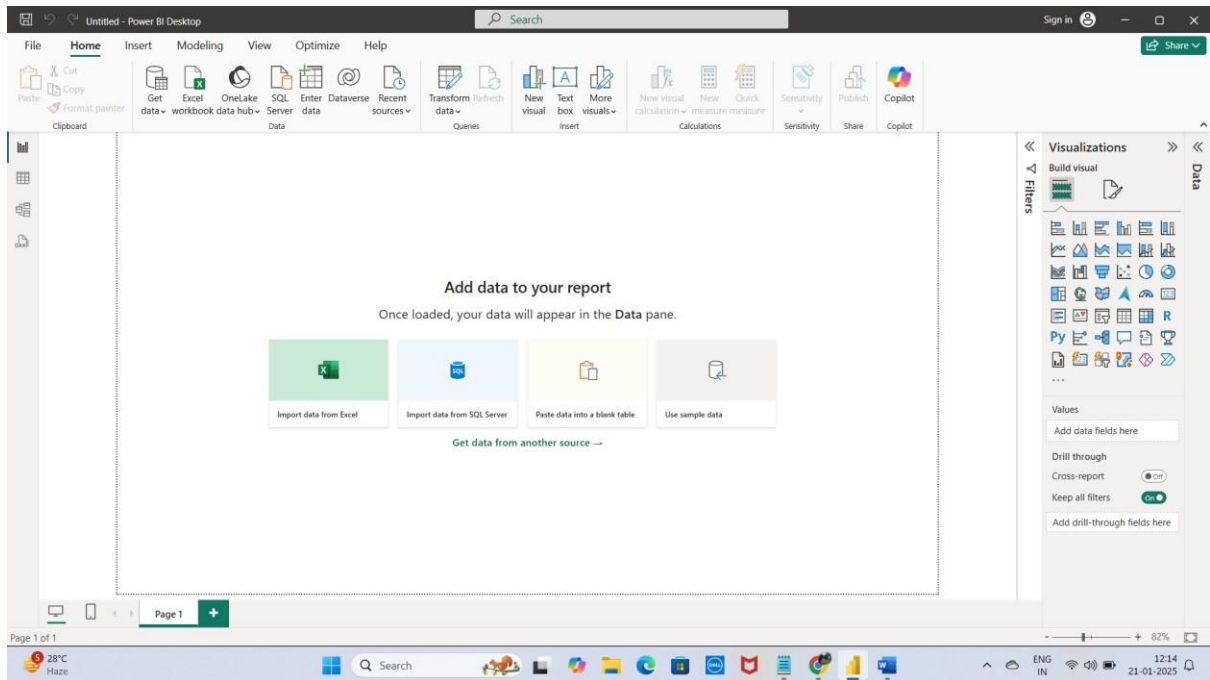


## STEPS TO OPEN THE NEW PROJECT

Click on to the blank project



An untitled power bi window is been opened



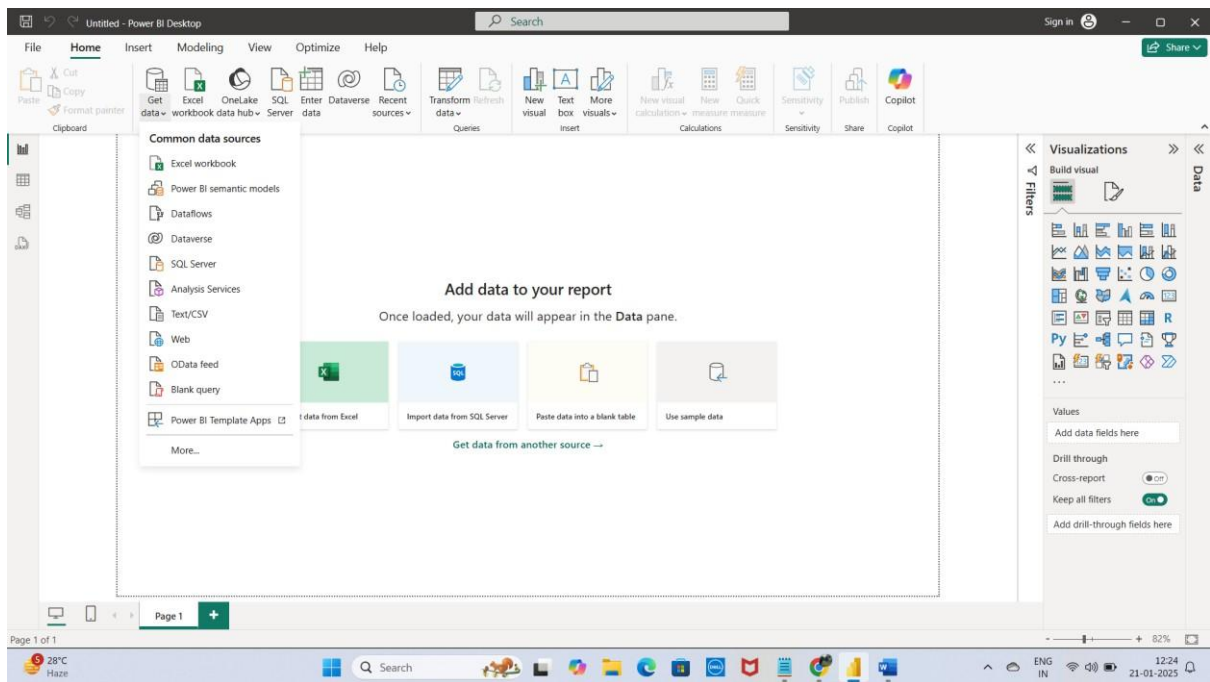
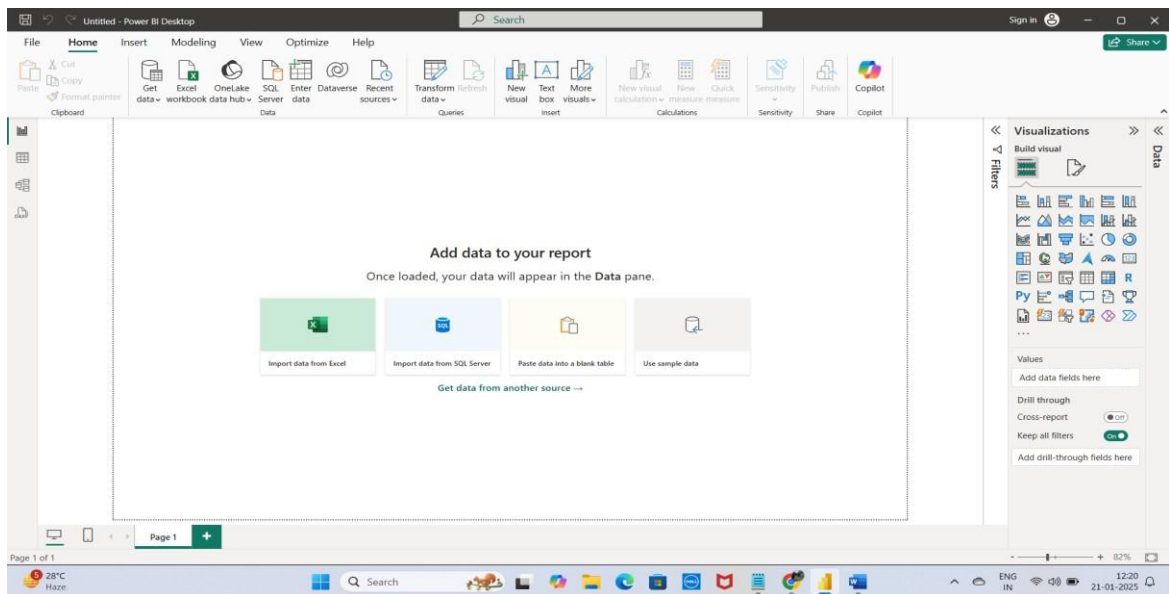
It is also called as canvas or power bi desktop.

## **EXTRACTING THE DATA**

Extract - pull data from the data source :  
excel, csv, text, database file

### **Steps to extract the data**

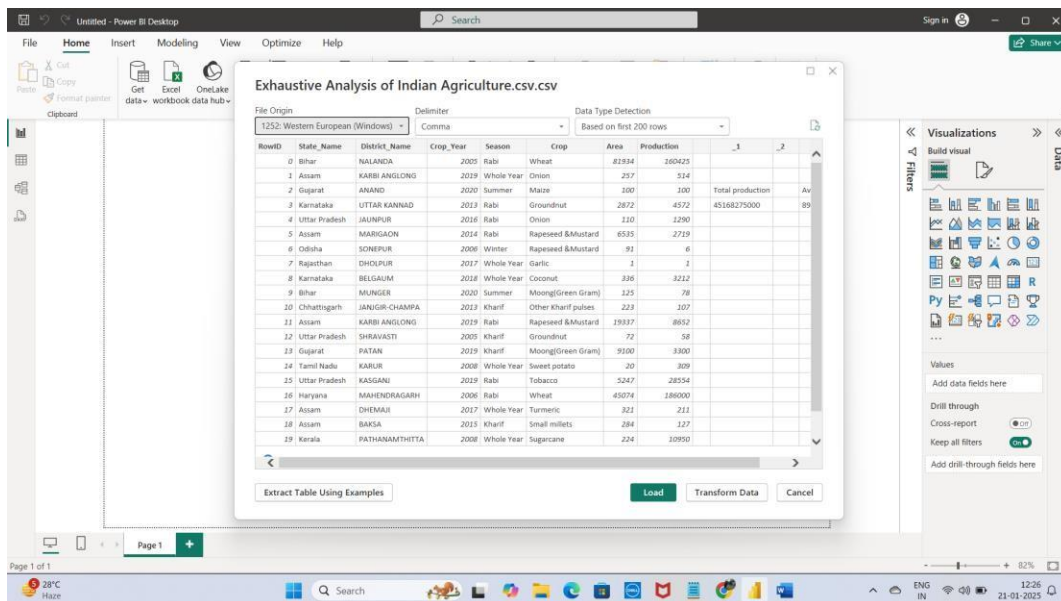
Go to home tab  
Click on the get data tab  
Download the required dataset  
Add the data set to this tab



The below mentioned screen is been displayed

It contains the three types of button at the end

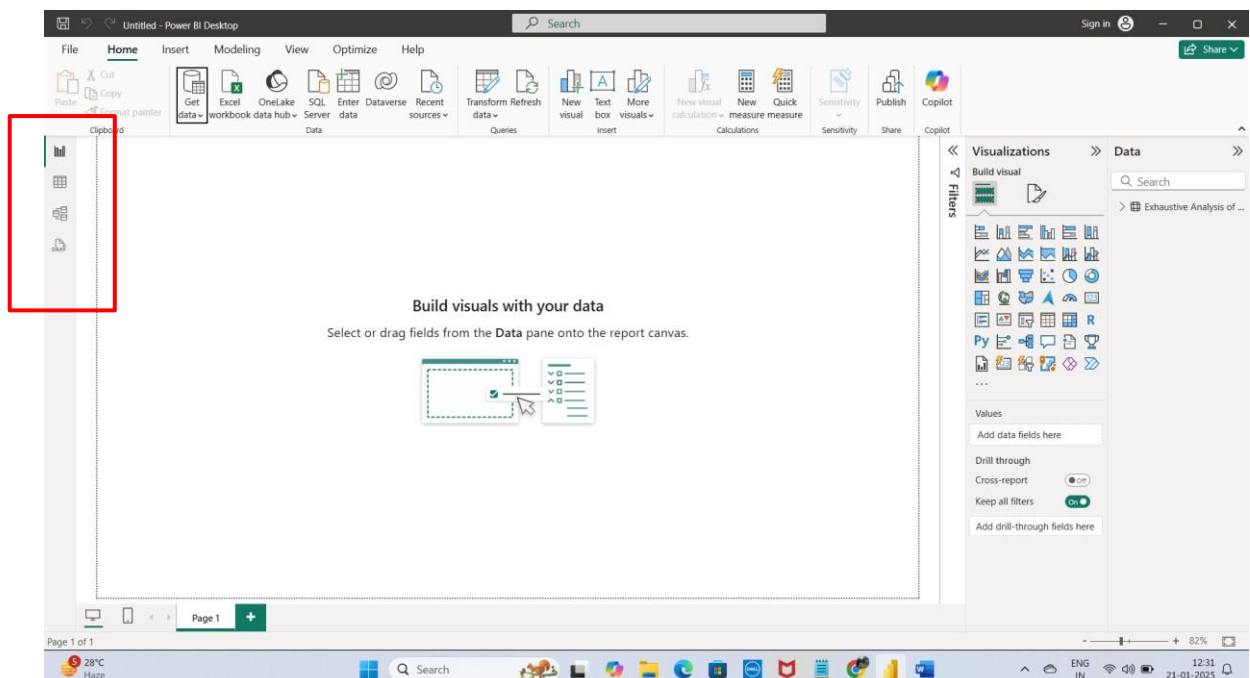
1. Load
2. Transform data
3. Cancel



LOAD - when your is cleaned

TRANSFORM - when you want to process the data

Load the file the below mentioned screen is been displayed



There are four types of view in the left of the screen such as,  
report view - all the visualization is seen  
table view- data is been seen

Model view- two different excel file joining and creating the relationship between them

Transform data :

Click on that tab to process the data

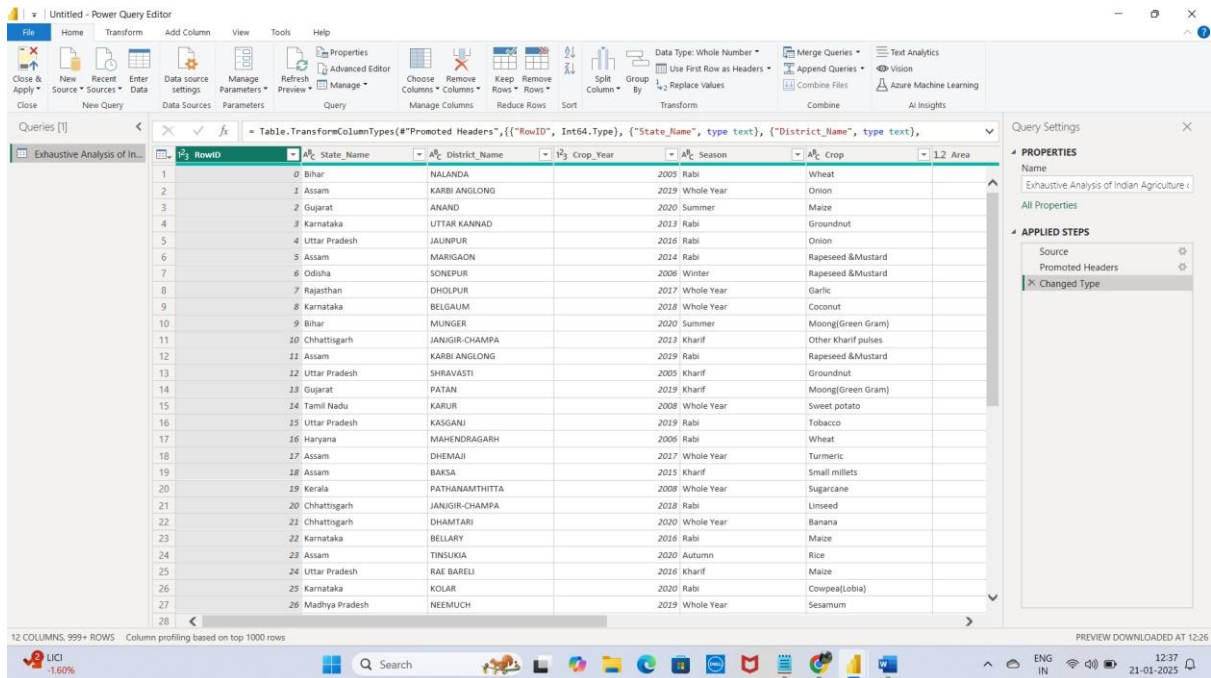


Table.TransformColumnTypes(\*Promoted Headers\*, {"RowID", Int64.Type}, {"State\_Name", type text}, {"District\_Name", type text},

RowID	State_Name	District_Name	Crop_Year	Season	Crop	Area
0	Bihar	NALANDA	2005	Rabi	Wheat	
1	Assam	KARBI ANGLONG	2019	Whole Year	Onion	
2	Gujarat	ANAND	2020	Summer	Maize	
3	Karnataka	UTTAR KANNAD	2013	Rabi	Groundnut	
4	Uttar Pradesh	JALNPUR	2016	Rabi	Onion	
5	Assam	MARIGAOIN	2014	Rabi	Rapeseed & Mustard	
6	Odisha	SONEPUR	2006	Winter	Rapeseed & Mustard	
7	Rajasthan	DHOLPUR	2017	Whole Year	Garlic	
8	Karnataka	BELGAUM	2018	Whole Year	Coconut	
9	Bihar	MUNGER	2020	Summer	Moong(Green Gram)	
10	Chhattisgarh	JANJIGIR-CHAMPA	2013	Kharif	Other Kharif pulses	
11	Assam	KARBI ANGLONG	2019	Rabi	Rapeseed & Mustard	
12	Uttar Pradesh	SHRINASTI	2005	Kharif	Groundnut	
13	Gujarat	PATAN	2019	Kharif	Moong(Green Gram)	
14	Tamil Nadu	KARUR	2008	Whole Year	Sweet potato	
15	Uttar Pradesh	KASGANJ	2019	Rabi	Tobacco	
16	Haryana	MAHENDRAGARH	2006	Rabi	Wheat	
17	Assam	DHEMAJI	2017	Whole Year	Turmeric	
18	Assam	BAKSA	2015	Kharif	Small millets	
19	Kerala	PATHANAMTHITTA	2008	Whole Year	Sugarcane	
20	Chhattisgarh	JANJIGIR-CHAMPA	2018	Rabi	Linseed	
21	Chhattisgarh	DHAMTARI	2020	Whole Year	Banana	
22	Karnataka	BELLARY	2016	Rabi	Maize	
23	Assam	TINSUKIA	2020	Autumn	Rice	
24	Uttar Pradesh	RAE BARELI	2016	Kharif	Maize	
25	Karnataka	KOLAR	2020	Rabi	Cowpea(Lobia)	
26	Madhya Pradesh	NEEMUCH	2019	Whole Year	Sesamum	

## STEPS TO REMOVE THE BLANK COLUMN

Right click on the blank column

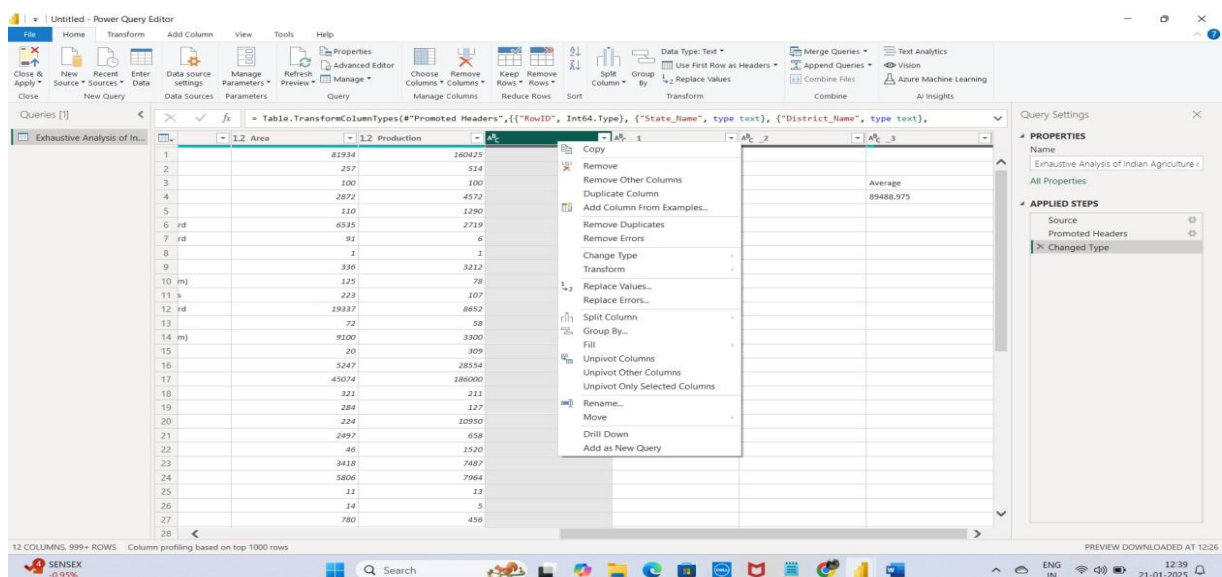
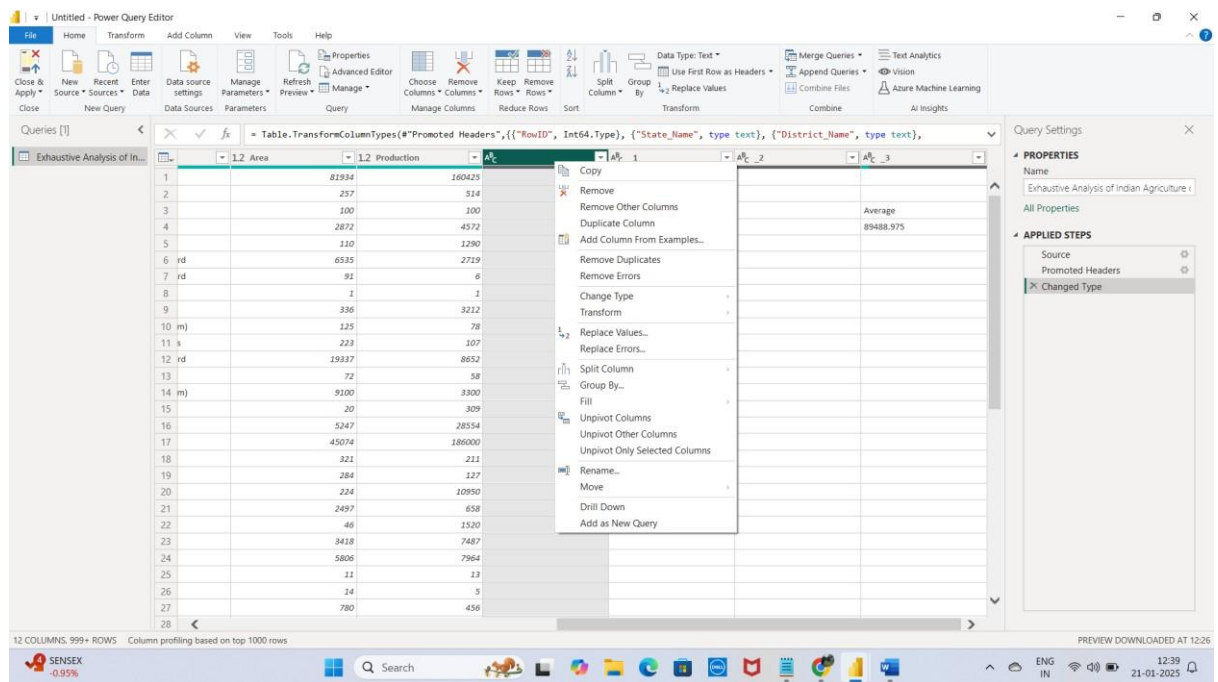


Table.TransformColumnTypes(\*Promoted Headers\*, {"RowID", Int64.Type}, {"State\_Name", type text}, {"District\_Name", type text},

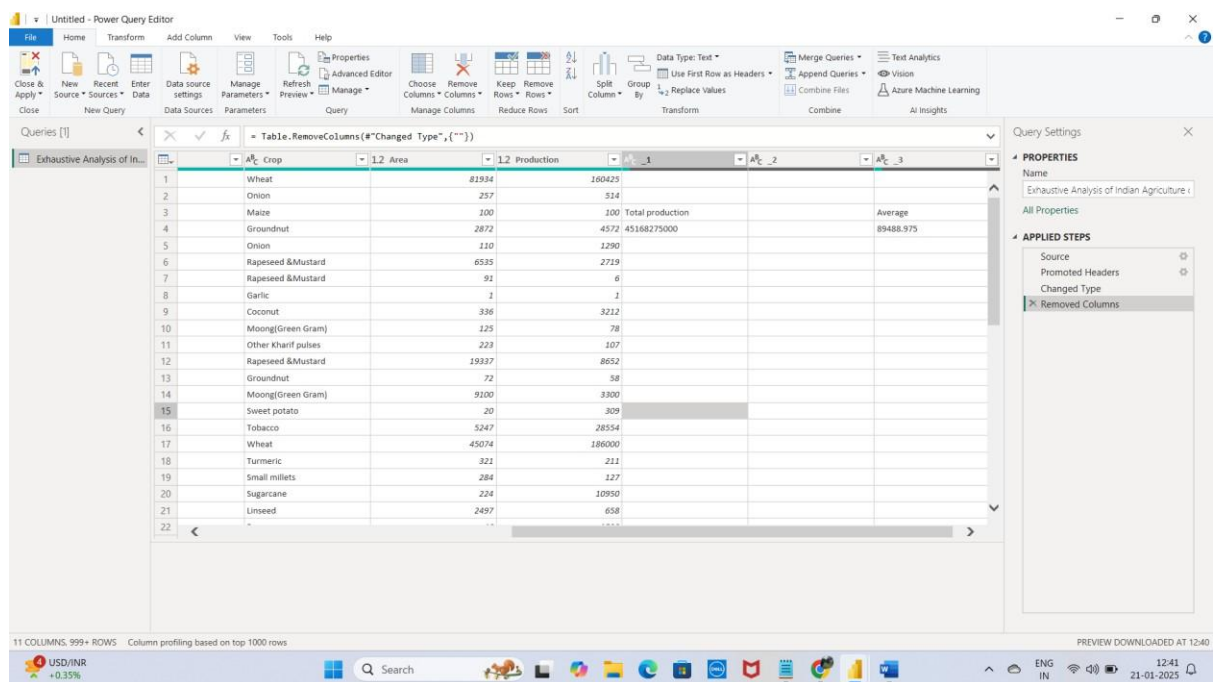
RowID	State_Name	District_Name	Crop_Year	Season	Crop	Area
1						
2						
3						
4						
5						
6						
7						
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9						
10						
11						
12						
13						
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24						
25						
26						
27						
28						



Click on the remove to remove the column



The blank column is been removed



STEPS TO CHECK THE NULL VALUES IN THE DATA OR  
TO CHECK THE QUALITY OF THE DATA

Click on the view tab on the top

Power Query Editor interface showing the View tab selected in the ribbon. The ribbon includes options like 'Advanced Editor', 'Choose Columns', 'Remove Columns', 'Keep Rows', 'Remove Rows', 'Sort', 'Split Column', 'Group By', 'Data Type: Text', 'Use First Row as Headers', 'Replace Values', 'Merge Queries', 'Append Queries', 'Combine Files', 'Test Analytics', 'Vision', and 'Azure Machine Learning'. The main area displays a table with columns: Crop, Area, Production, and Average. The table has 22 rows of data. The right sidebar shows 'Query Settings' with 'Properties' and 'Applied Steps' sections. The 'Applied Steps' section lists 'Source', 'Promoted Headers', 'Changed Type', and 'Removed Columns'.

After that click on to the column quality

Power Query Editor interface showing the Column Quality tab selected in the ribbon. The ribbon includes options like 'Formula Bar', 'Monospaced', 'Column distribution', 'Always allow', 'Go to Column', 'Advanced Editor', 'Query Dependencies', 'Show whitespace', 'Column profile', and 'Column quality'. The main area displays the same table as the previous screenshot. The right sidebar shows 'Query Settings' with 'Properties' and 'Applied Steps' sections. The 'Applied Steps' section lists 'Source', 'Promoted Headers', 'Changed Type', and 'Removed Columns'.

After that the quality analysis of the give data set is been displayed



# Steps to remove duplicates

## STEPS TO SAVE THE DATASET IN POWERBI AND APPLY TO IT

Click on the home tab

Click on to the close and apply tab

The screenshot displays the Power Query Editor window. The top ribbon shows the 'Home' tab selected. In the 'Close & Apply' group, the 'Close & Apply' button is highlighted. The main area shows a data table with the following columns: District\_Name, Crop\_Year, Season, Crop, L2\_Area, and L2\_Production. The table contains 25 rows of data. A tooltip is visible over the 'Season' column, showing a dropdown menu with options: '1000 (100%)', '0 (0%)', and 'Valid'. The right-hand pane shows the 'Query Settings' for 'Exhaustive Analysis of Indian Agriculture', with the 'Applied Steps' list containing 'Source', 'Promoted Headers', 'Changed Type', and 'Removed Columns'.

District_Name	Crop_Year	Season	Crop	L2_Area	L2_Production
NALANDA	1000	Valid	Rapeseed & Mustard	81994	160425
KARBI ANGLONG	1000	Valid	Garlic	257	514
ANAND	1000	Valid	Coconut	100	100
UTTAR KANNAD	1000	Valid	Coconut	2872	4572
JAINPUR	1000	Valid	Coconut	110	1290
MARIGAON	1000	Valid	Rapeseed & Mustard	6535	2719
SONEPUR	2006	Winter	Rapeseed & Mustard	91	6
DHOLPUR	2017	Whole Year	Garlic	1	1
BELGAUM	2018	Whole Year	Coconut	336	3212
MUNGER	2020	Summer	Moong(Green Gram)	125	78
JANIGIR-CHAMPA	2013	Kharif	Other Kharif pulses	223	107
KARBI ANGLONG	2019	Rabi	Rapeseed & Mustard	19337	8652
SHRAVASTI	2005	Kharif	Groundnut	72	58
PATAN	2019	Kharif	Moong(Green Gram)	9100	3300
KARUR	2008	Whole Year	Sweet potato	20	309
KASGANJ	2019	Rabi	Tobacco	5247	28554
MAHENDRAGARH	2006	Rabi	Wheat	45074	186000
DHEMAJI	2017	Whole Year	Turmeric	321	211
BAKSA	2015	Kharif	Small millets	284	127
PATHANAMTHITTA	2008	Whole Year	Sugarcane	224	10950
JANIGIR-CHAMPA	2018	Rabi	Linseed	2497	658
DHAMTARI	2020	Whole Year	Banana	46	1520
BELLARY	2016	Rabi	Maize	3418	7487
TINSUKIA	2020	Autumn	Rice	5806	7964

Go to the table view changes is been applied in the power bi dashboard

The screenshot displays the Microsoft Power BI Desktop interface. The main window shows a table view of data from a file named 'Exhaustive Analysis of Indian Agriculture.csv'. The table contains 73,827 rows and 7 columns: State\_Name, District\_Name, Crop\_Year, Season, Crop, Area, and Production. The data is filtered to show only records from Uttar Pradesh. The table is sorted by State\_Name. The interface includes a ribbon with 'Table tools' and 'Table tools' tabs, and a 'Data' pane on the right. The Windows taskbar at the bottom shows the system clock as 12:34 on 21-01-2023.

State_Name	District_Name	Crop_Year	Season	Crop	Area	Production
Uttar Pradesh	PILIBHIT	2009	Kharif	Moong(Green Gram)	1	0.1
Uttar Pradesh	AMBEDKAR NAGAR	2012	Kharif	Small millets	1	0
Uttar Pradesh	MUZAFFARNAGAR	2012	Kharif	Sannhamp	1	0
Uttar Pradesh	VARANASI	2018	Kharif	Groundnut	1	1
Uttar Pradesh	GORAKHPUR	2020	Kharif	Dry chillies	1	1
Uttar Pradesh	BALRAMPUR	2010	Kharif	Moong(Green Gram)	1	0
Uttar Pradesh	AGRA	2010	Kharif	Sunflower	1	1
Uttar Pradesh	AURAIYA	2018	Kharif	Sannhamp	1	0
Uttar Pradesh	ETAH	2012	Kharif	Soyabean	1	1
Uttar Pradesh	SIDDHARTH NAGAR	2006	Kharif	Moong(Green Gram)	1	0
Uttar Pradesh	HATHRAS	2012	Kharif	Groundnut	1	1
Uttar Pradesh	MUZAFFARNAGAR	2022	Kharif	Sannhamp	1	1
Uttar Pradesh	MATHURA	2010	Kharif	Small millets	1	1
Uttar Pradesh	KAUSHAMBI	2011	Kharif	Sunflower	1	2
Uttar Pradesh	HAMIRPUR	2014	Kharif	Cotton(lint)	1	0
Uttar Pradesh	KANNAUJ	2009	Kharif	Moth	1	0.1
Uttar Pradesh	MAHARAJGANJ	2016	Kharif	Small millets	1	1
Uttar Pradesh	BALRAMPUR	2008	Kharif	Moong(Green Gram)	1	1
Uttar Pradesh	CHANDAULI	2014	Kharif	Small millets	1	1
Uttar Pradesh	GONDA	2015	Kharif	Sannhamp	1	0
Uttar Pradesh	CHANDAULI	2012	Kharif	Small millets	1	0
Uttar Pradesh	BAREILLY	2022	Kharif	Moong(Green Gram)	1	0
Uttar Pradesh	PRATAPGARH	2008	Kharif	Groundnut	1	1
Uttar Pradesh	JALAIN	2010	Kharif	Sunflower	1	1
Uttar Pradesh	MEERUT	2008	Kharif	Groundnut	1	1
Uttar Pradesh	SAHARANPUR	2019	Kharif	Arhar/Tur	1	1
Uttar Pradesh	AGRA	2011	Kharif	Groundnut	1	1

