**Exhaustive Analysis of Indian Agriculture Using Power BI**

Week-1 Project Submission

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**STEP-1**

<https://www.microsoft.com/en-us/download/details.aspx?id=58494>

**1. Download Power BI Desktop:**

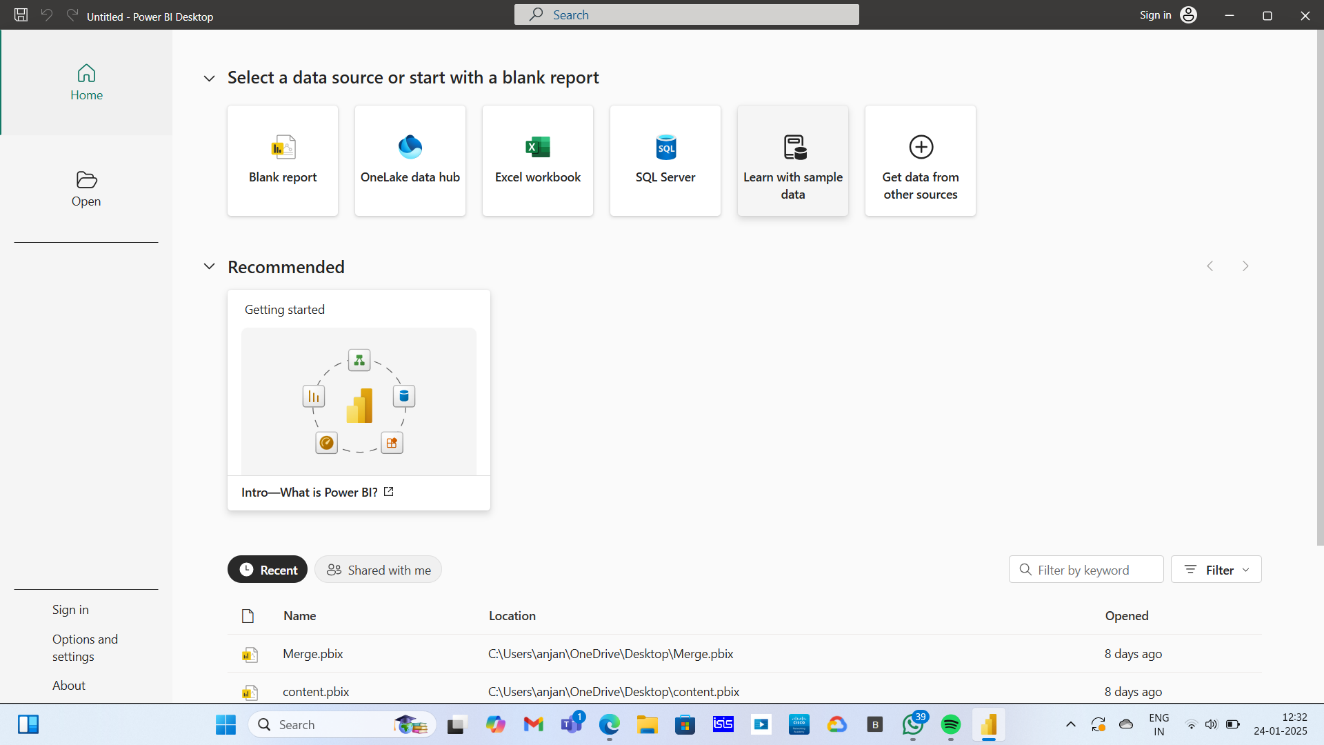
* **From the Microsoft Store:**
  + Open the [Power BI Desktop page on the Microsoft Store](https://www.microsoft.com/en-us/p/power-bi-desktop/9ntxr16hnw1t).
  + Click on the "Get" or "Install" button to download and install the application directly.
* **Direct Download:**
  + Visit the [Power BI Desktop Download Center](https://www.microsoft.com/en-us/download/details.aspx?id=58494).
  + Click on the "Download" button.
  + Choose the appropriate version (32-bit or 64-bit) that matches your Windows operating system.
  + Run the downloaded installer and follow the on-screen instructions to complete the installation.

**2. Install Power BI Desktop:**

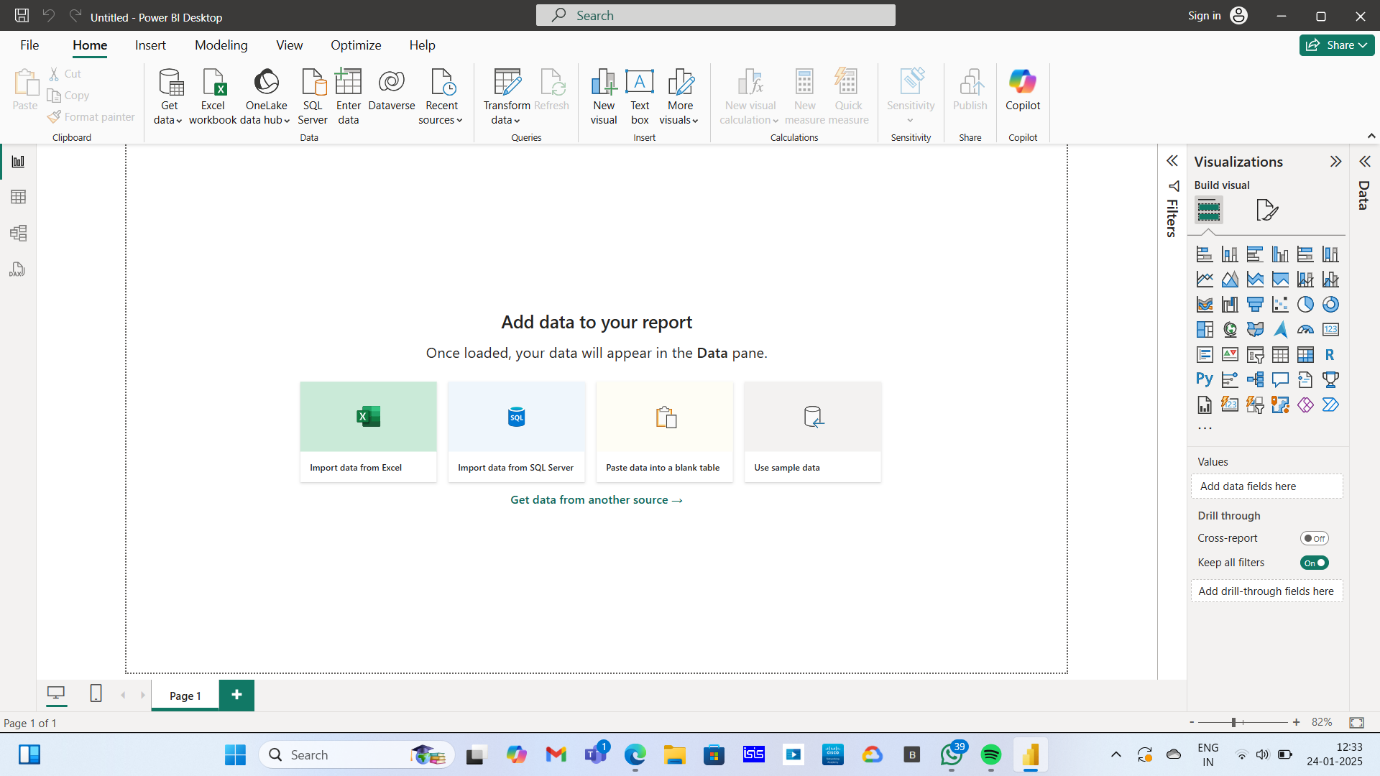
* After downloading, locate the installer file (usually in your "Downloads" folder).
* Double-click the installer to run it.
* Follow the installation prompts to complete the setup.

**STEP-2**

* Click on Power BI Desktop to open it.
* The application will start loading and display the Power BI splash screen.



* Now click on Blank Report



* + Once it’s open, you’ll see the **Power BI interface**, with options to load data, create reports, or start with templates.

**STEP-3**

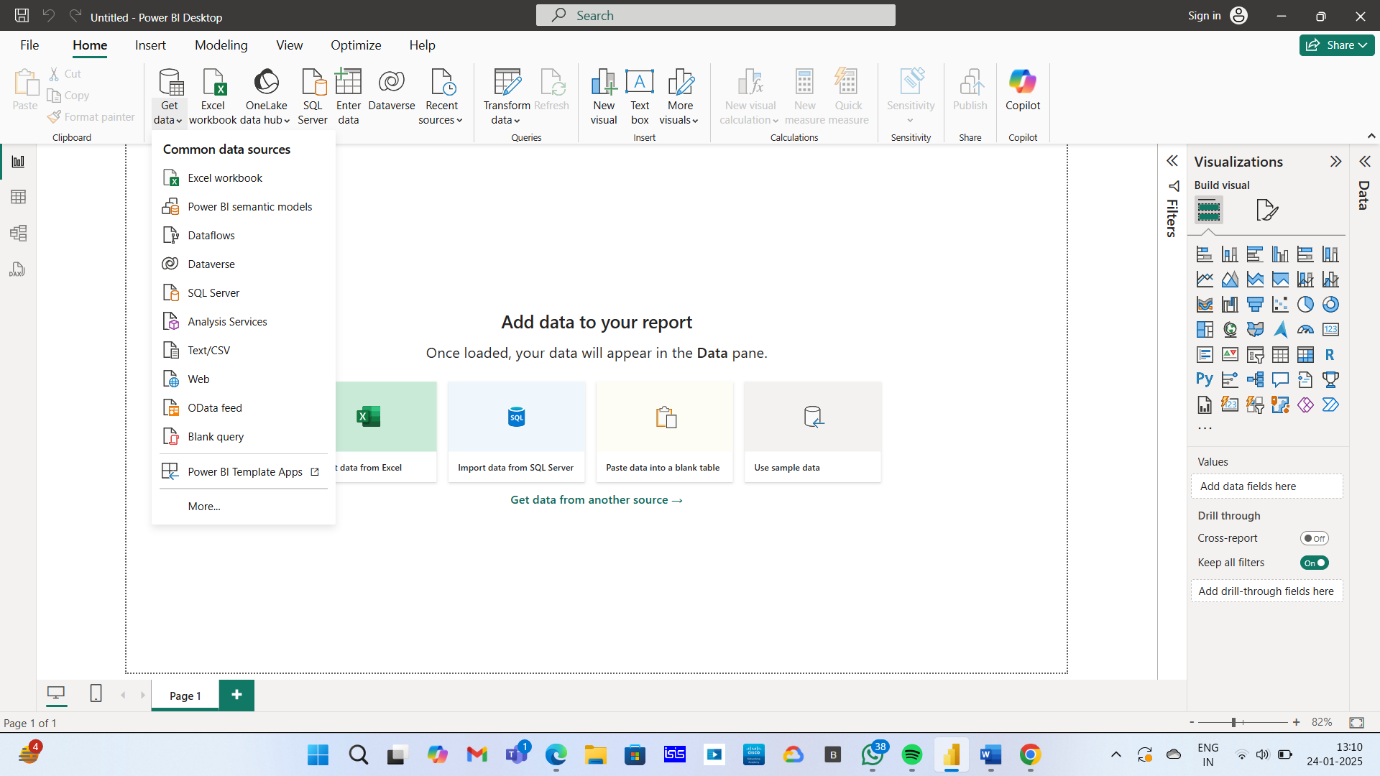


**Download the CSV File**

* Save the file in an easily accessible location on your computer (e.g., Desktop or Downloads folder).

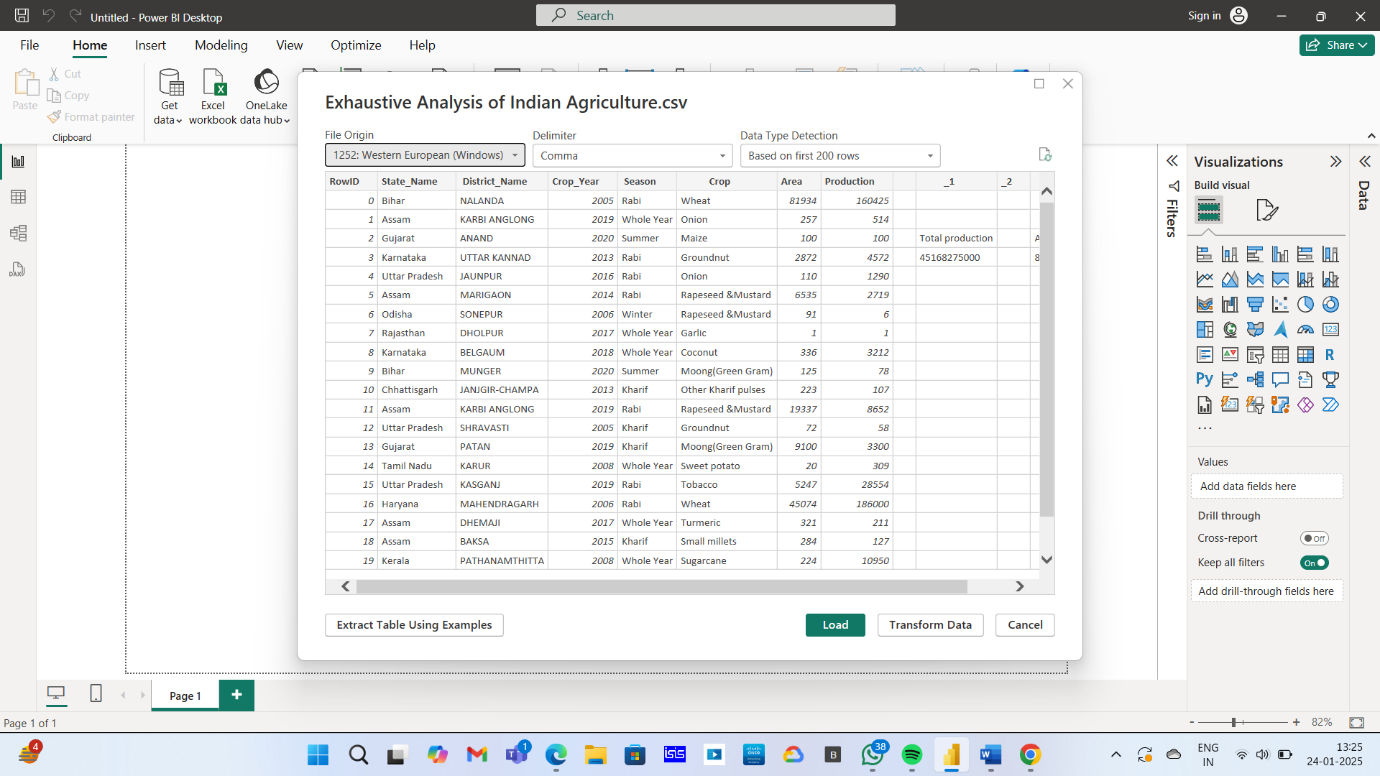
**STEP-4**

* On the Home tab of the Power BI ribbon, click "Get Data".
* Select "Text/CSV" from the list of data sources.
* Browse to the location of your CSV file and select it. Click "Open".

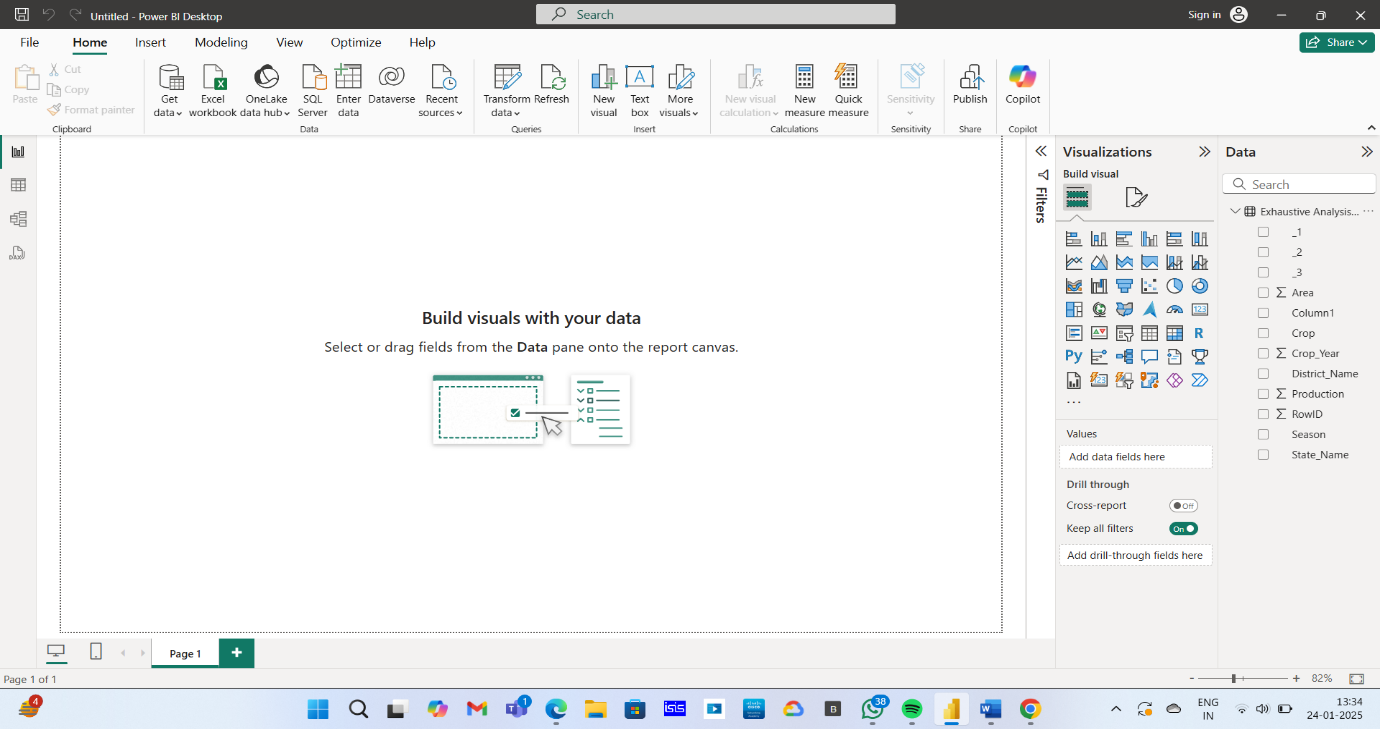
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**STEP-5**

* Power BI will display a preview of your CSV file.
* Review the data to ensure it is correctly loaded.
* Click "Load" to import the data into Power BI.

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* Once you click "Load", Power BI will process the file and import the data.
* You will see the dataset listed under the "Fields" pane on the right side of the Power BI window.

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After importing data, Power BI provides three main views for working with your dataset:

**1.Report View (Default View)**

* **What It Is**: The Report View is the main area where you create visualizations (charts, graphs, tables, etc.).
* **How to Use It**:
  + Located in the left sidebar, represented by a 📊 **chart icon**.
  + Drag and drop fields from the **Fields pane** into the **Canvas** to create visualizations.
  + Use the **Visualizations pane** to customize charts, apply filters, and format data.
* **Purpose**: Helps in designing dashboards and interactive reports.

**2.Data (Table) View**

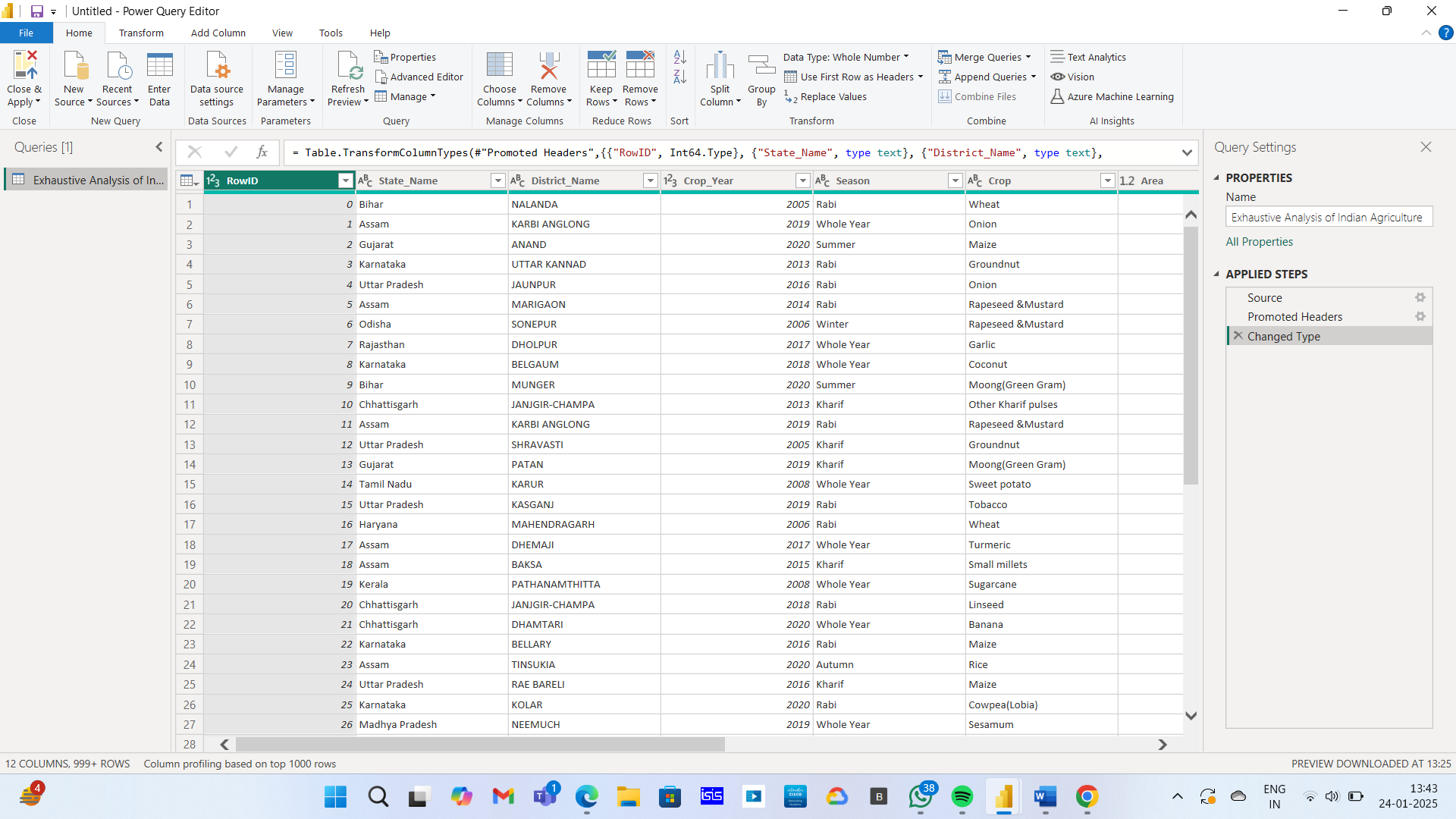
* **What It Is**: This view allows you to see the raw imported data in a table format.
* **How to Use It**:
  + Click on the 📋 **table icon** in the left sidebar.
  + View all rows and columns from your CSV file in tabular form.
  + You can check data types, rename columns, or verify data accuracy.
* **Purpose**: Used to inspect raw data before creating reports.

**3.Model View**

* **What It Is**: The Model View shows the relationships between different tables in your dataset.
* **How to Use It**:
  + Click on the 🔗 **relationship icon** in the left sidebar.
  + If you have multiple datasets, Power BI will try to detect relationships automatically.
  + You can manually create relationships by dragging fields between tables.
* **Purpose**: Helps in setting up **data relationships** for complex reports.

**STEP-6**

* Click on **"Transform Data"** in the **Home** tab of Power BI.
* This opens the **Power Query Editor**, where you can modify your data before using it in reports.



**1.Remove Unnecessary Columns**

* Select the columns you don’t need.
* Click **"Remove Columns"** in the **Home** tab.

**2.Rename Columns for Better Readability**

* Double-click a column header to rename it.
* Alternatively, select the column and click **"Rename"** in the ribbon.

**3. Change Data Types**

* Ensure columns have the correct data type (e.g., Date, Text, Number).
* Select a column and choose the correct data type from the **Data Type dropdown** in the toolbar.

**4. Handle Missing or Null Values**

* Click on a column, then select **"Replace Values"** to fill missing values.
* Alternatively, use **"Remove Rows"** to delete incomplete data.

**5. Split or Merge Columns**

* Use **"Split Column"** (under the Transform tab) to separate values based on a delimiter (e.g., a comma in names).
* Use **"Merge Columns"** to combine multiple columns into one.

**6.Filter Rows (Keep or Remove Data)**

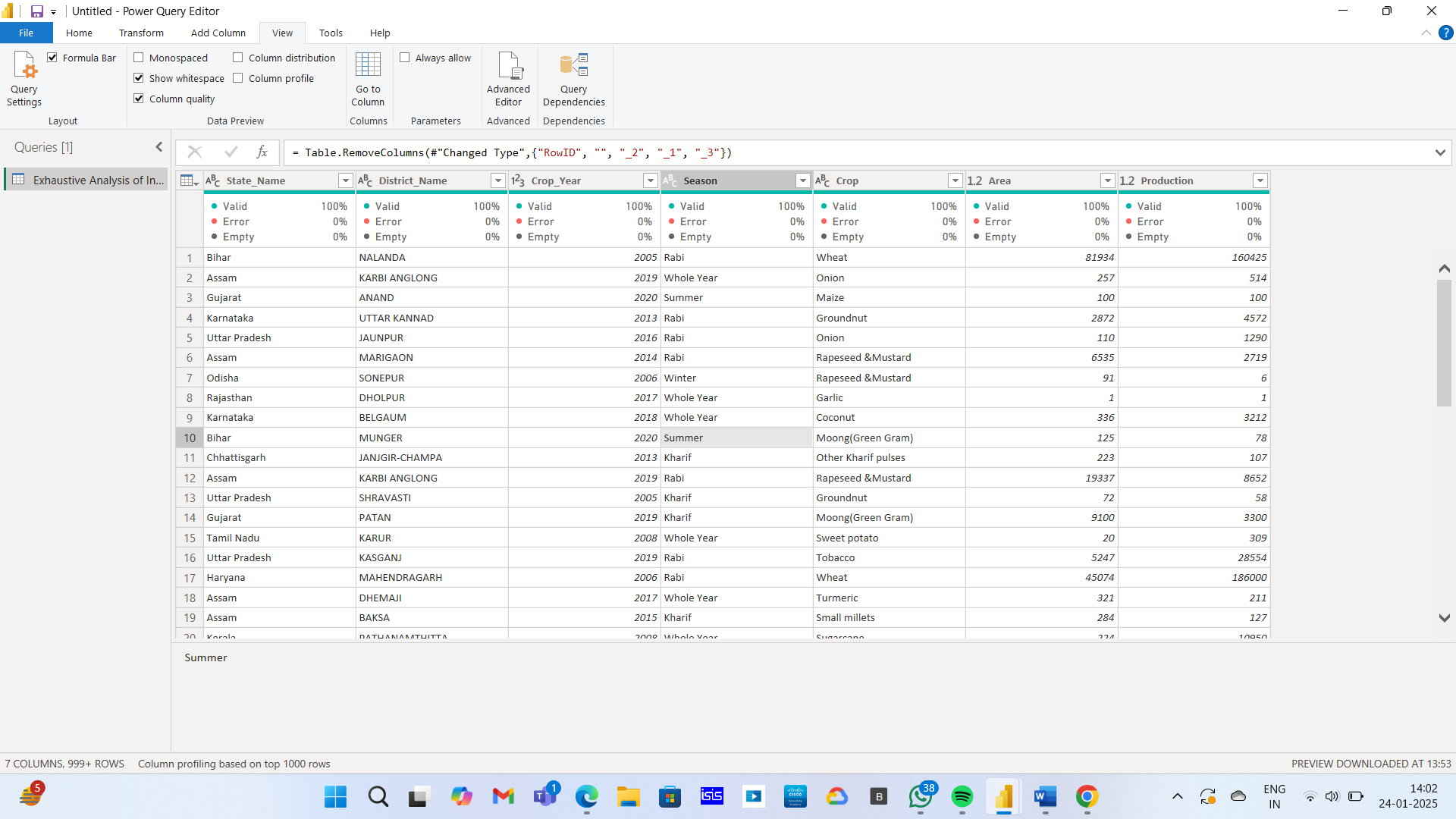
* Click on the **dropdown arrow** in a column header to apply filters (e.g., remove empty rows, filter by a specific value).

**7.Remove Duplicates**

* Select a column and click **"Remove Duplicates"** to eliminate repeated entries.

**STEP-7**

* Go to the "View" tab in the Power Query Editor.
* Click on "Column Quality" to enable it.



Once enabled, Power BI will show three quality indicators below each column:

* **Valid (% in Green)** → Percentage of values that are correctly formatted.
* **Error (% in Red)** → Percentage of values with errors (e.g., incorrect formats, missing data).
* **Empty (% in Gray)** → Percentage of blank or null values.

**Fix Data Quality Issues**

* **For Errors**: Click on the error percentage and replace or remove faulty data.
* **For Empty Values**: Fill in missing data using **"Replace Values"** or remove them.
* **For Incorrect Data Types**: Change column data types to ensure accuracy.

**STEP-8**

**Apply and Save Changes**

* After reviewing and fixing data quality issues, click "Close & Apply" to return to Power BI Desktop.