

Power BI Basics

Question 1: What is Power BI and why is it used in businesses?

Power BI is a business analytics service by Microsoft that provides interactive visualizations and business intelligence capabilities.

- **Business Use:** It is used to connect to unrelated sources of data (like Excel, SQL, or cloud services) and turn them into coherent, visually immersive, and interactive insights. It helps businesses make **data-driven decisions** by identifying trends and patterns in real-time.

Question 2: Name and explain the three main components of Power BI.

The three primary components that work together to create and share insights are:

1. **Power BI Desktop:** A free Windows application used to connect to, transform, and model your data. This is where reports are created.
2. **Power BI Service (SaaS):** An online cloud service used to publish reports, create dashboards, and share insights with others.
3. **Power BI Mobile Apps:** Applications for iOS, Android, and Windows devices used to view reports and dashboards on the go.

Question 3: Explain the Power BI workflow.

A standard workflow follows these steps:

- **Step 1:** Bring data into **Power BI Desktop** and clean it in Power Query.
- **Step 2:** Create a data model and design the report with various visuals.
- **Step 3:** **Publish** the report from Desktop to the Power BI Service.
- **Step 4:** Share the report or dashboard with others so they can view it on the web or mobile devices.

Question 4: List any four data cleaning tasks that can be performed in Power Query.

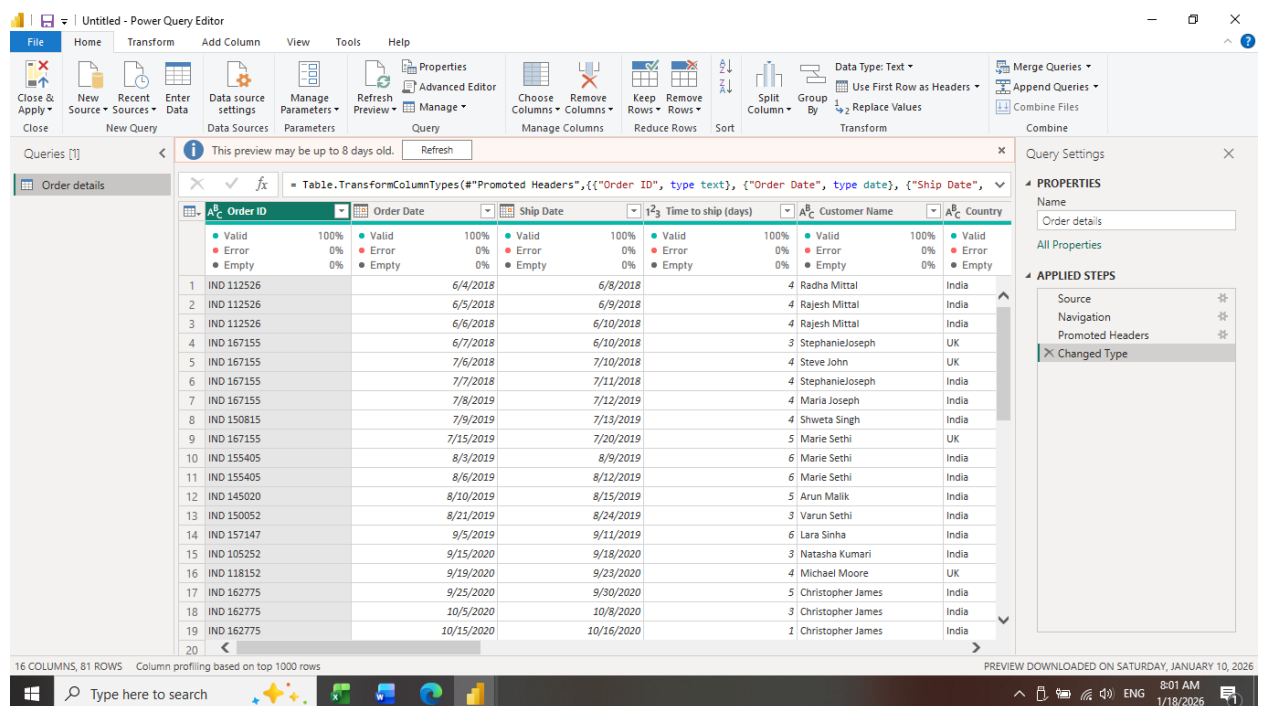
Power Query is the "engine room" for data preparation. Four common tasks include:

1. **Removing Duplicates:** Ensuring each row of data is unique.
2. **Changing Data Types:** Converting text columns to "Date" or "Decimal Number."
3. **Splitting Columns:** Breaking one column into two (like splitting "First Last" name).
4. **Filtering Rows:** Removing unnecessary data (e.g., removing rows with "Null" values).

Question 5: Write step-by-step instructions to load the Real_Estate Dataset.

To load your dataset into Power BI:

1. Open **Power BI Desktop**.
2. On the **Home** tab, click **Get Data**.
3. Select the file type (likely **Excel Workbook** or **Text/CSV** for a real estate dataset).
4. Browse and select your Real_Estate Dataset file and click **Open**.
5. In the **Navigators** window, check the box next to the table/sheet name.
6. Click **Transform Data** to clean it in Power Query before loading it into the model.
- 7.



8.

Question 6: Define Data View, Report View, and Model View.

These three views on the left-side rail serve different purposes:

- **Report View:** The canvas where you build your charts, maps, and interactive visuals.
- **Data View:** A tabular view that lets you inspect, explore, and understand the data in your tables after it has been loaded.
- **Model View:** A diagram view that shows the relationships between your different tables (the "Star Schema").

Question 7: Discuss the different data sources that Power BI supports.

Power BI supports hundreds of sources, categorized as:

- **Files:** Excel, CSV, XML, JSON, and PDF.
- **Databases:** SQL Server, Oracle, IBM, MySQL, and PostgreSQL.
- **Online Services:** SharePoint, Salesforce, Google Analytics, and Dynamics 365.
- **Other:** Web pages (scraping data from a URL), R scripts, and Python scripts.

Question 8: Split Owner Name to create two new columns as First Name and Last Name.

In Power Query:

1. Select the **Owner Name** column.
2. Right-click the column header or go to the **Transform** tab .
3. Select **Split Column > By Delimiter**.
4. Choose **Space** as the delimiter.
5. Click **OK**. You will now have two columns. Double-click the headers to rename them to **First Name** and **Last Name**.
- 6.

The screenshot displays the Power Query Editor interface. The 'Transform' tab is active, and the 'Split Column' option is selected under the 'Text' column group. The formula bar shows the M code: `Table.RenameColumns(#'Changed Type1',{{"Customer Name.1", "FirstName"}, {"Customer Name.2", "LastName"}})`. The data table below shows columns for Date, Ship Date, Time to ship (days), FirstName, LastName, and Country. The 'Applied Steps' pane on the right shows the sequence: Source, Navigation, Promoted Headers, Changed Type, Split Column by Delimiter, Changed Type1, and Renamed Columns.

	Date	Ship Date	Time to ship (days)	FirstName	LastName	Country
1	6/4/2018	6/8/2018	4	Radha	Mittal	India
2	6/5/2018	6/9/2018	4	Rajesh	Mittal	India
3	6/6/2018	6/10/2018	4	Rajesh	Mittal	India
4	6/7/2018	6/10/2018	3	StephanieJoseph		UK
5	7/6/2018	7/10/2018	4	Steve	John	UK
6	7/7/2018	7/11/2018	4	StephanieJoseph		India
7	7/8/2019	7/12/2019	4	Maria	Joseph	India
8	7/9/2019	7/13/2019	4	Shweta	Singh	India
9	7/15/2019	7/20/2019	5	Marie	Sethi	UK
10	8/3/2019	8/9/2019	6	Marie	Sethi	India
11	8/6/2019	8/12/2019	6	Marie	Sethi	India
12	8/10/2019	8/15/2019	5	Arun	Malik	India
13	8/21/2019	8/24/2019	3	Varun	Sethi	India
14	9/5/2019	9/11/2019	6	Lara	Sinha	India
15	9/15/2020	9/18/2020	3	Natasha	Kumari	India
16	9/19/2020	9/23/2020	4	Michael	Moore	UK
17	9/25/2020	9/30/2020	5	Christopher	James	India
18	10/5/2020	10/8/2020	3	Christopher	James	India
19	10/15/2020	10/16/2020	1	Christopher	James	India
20	10/13/2020	10/16/2020	3	Munna	Michael	India
21						