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.

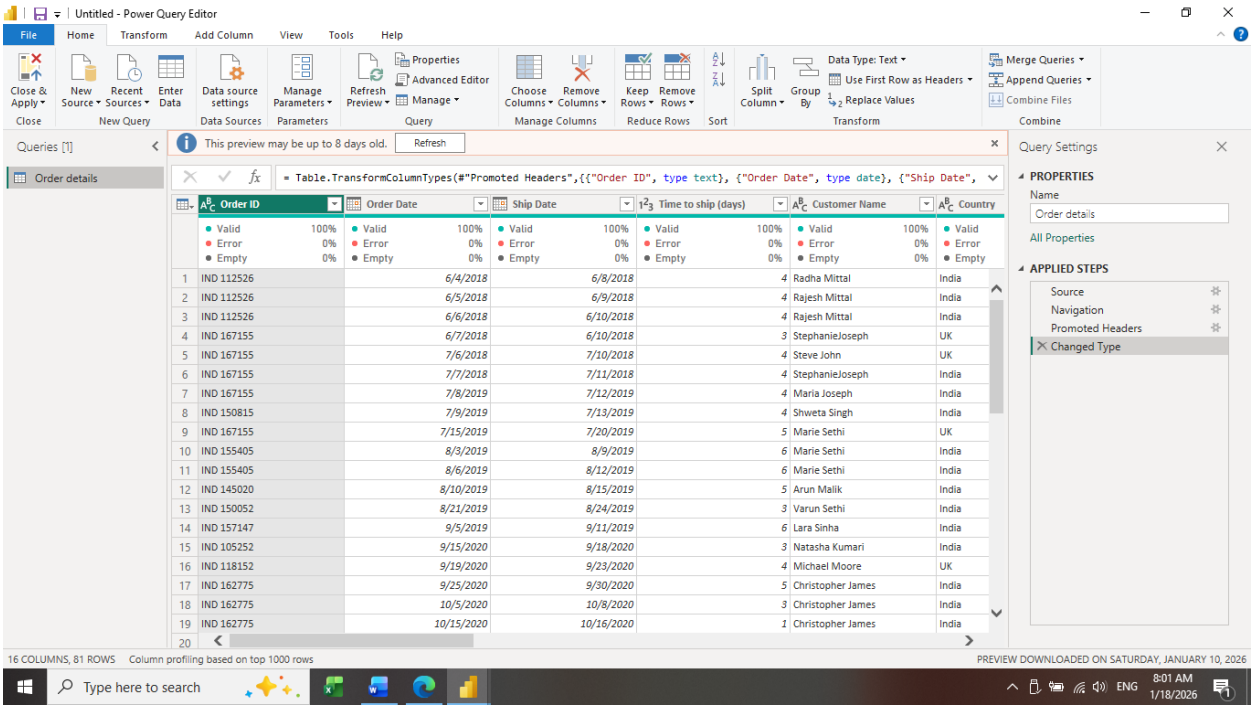
Question 4: List any four data cleaning tasks that can be performed in Power Query.

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 **Navigator** 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.