Sheets included

1. **XML_Sales_Data** – XML inside Excel column
2. **JSON_Customer_Data** – Flat JSON objects
3. **Nested_JSON_Orders** – Nested JSON arrays (advanced)

CASE STUDY 1: XML Data Transformation (Sales Orders)

Business Problem

Sales team receives **order data in XML format** inside Excel.
They want **region-wise sales & profit analysis** in Power BI.

Source Sheet

XML_Sales_Data

OrderID	OrderXML
1	<order><customer>Ali</customer>...

Power Query Transformation Steps

1. **Load Excel → Transform Data**
2. Select OrderXML column
3. **Transform → Parse → XML**
4. Click **Expand (↔)** icon
5. Expand:
    - customer
    - region
    - amount
    - profit
6. Change data types:
    - amount → Decimal
    - profit → Decimal
7. Rename columns properly

Final Output Table

OrderID	Customer	Region	Amount	Profit

Suggested Power BI Visuals

- Card → Total Sales
- Column Chart → Sales by Region
- Table → Order details

CASE STUDY 2: JSON Data Transformation (Customer Profile)

Business Problem

Customer master data is stored as **JSON strings** in Excel.
Need **customer segmentation & demographics analysis**.

Source Sheet

JSON_Customer_Data

{"Name":"Ali","Age":28,"Gender":"Male","Region":"East","TotalSpend":3500}

Power Query Transformation Steps

1. Load sheet → Transform Data
2. Select CustomerJSON
3. **Transform → Parse → JSON**
4. Expand Record
5. Rename columns
6. Set data types

Final Output

| CustomerID | Name | Age | Gender | Region | TotalSpend |

Suggested Visuals

- Bar Chart → Total Spend by Region
- Pie Chart → Gender distribution
- Table → Customer details
- Slicer → Region

CASE STUDY 3: Nested JSON Transformation (Orders & Items)

Business Problem

Each invoice contains **multiple products inside JSON arrays**.
Management wants **product-level sales analysis**.

Source Sheet

Nested_JSON_Orders

{
 "Customer":"Ali",
 "Items":[
  {"Product":"Laptop","Qty":1,"Price":1200},
  {"Product":"Mouse","Qty":2,"Price":50}
 ]
}

Power Query Transformation Steps

1. Load → Transform Data
2. Parse OrderDetailsJSON as JSON
3. Expand **Customer**
4. Expand **Items (List)**
5. Expand records inside Items
6. Create **Calculated Column**:

TotalAmount = Qty * Price

Final Output

| InvoiceID | Customer | Product | Qty | Price | TotalAmount |

Suggested Visuals

- Matrix → Customer vs Product Sales
- Column Chart → Product-wise Revenue
- Card → Total Revenue

CASE STUDY 4: XML vs JSON Comparison

Problem

Explain difference in transformation approach.

XML	**JSON**
Hierarchical	Lightweight
Parse → XML	Parse → JSON
Expand Nodes	Expand Records & Lists
Common in legacy systems	Common in APIs

CASE STUDY 5: Real-Time API Simulation (Advanced)

Scenario

REST API returns **JSON response**, saved daily into Excel.

Required Steps

- Parse JSON
- Handle missing fields
- Expand arrays
- Refresh automatically

Key Power BI Concepts

- List.Transform
- Record.HasFields
- Error handling