Lab Task: Import Web Data and Summarize Using Pivot Table in Excel

Course: Application of ICT

1. Objective

In this lab, students will learn how to:

1. Import live data from a web API into Excel.
2. Transform and clean data using Power Query.
3. Create a Pivot Table to summarize key insights.

2. Scenario

You are working as a **data analyst** for an e-commerce company. Your task is to fetch live product data from an online API, clean it, and summarize it using a Pivot Table to report **average price and rating by product category**.

3. Procedure

3.1. Step 1: Import Data from Web

1. Open **Microsoft Excel**.
2. Go to **Data → Get Data → From Web**.
3. Enter the following API URL:

   ```
   https://dummyjson.com/products
   ```

4. Click **OK** and wait for Power Query to load.

3.2. Step 2: Transform and Clean Data

1. In the **Power Query Editor**, click on "Record → List → Convert to Table".
2. Click **Expand Columns** (icon) to show all fields.
3. Select the following columns:
   - title

- category
- price
- rating
- brand

4. Click **Close & Load → Load to → Table**.

3.3. Step 3: Create a Pivot Table

1. Select any cell in the data table.
2. Go to **Insert → PivotTable**.
3. Choose "From Table/Range" and click **OK**.
4. In the Pivot Table Fields pane:
   - Drag **category** to Rows.
   - Drag **price** to Values → Set to "Average".
   - Drag **rating** to Values → Set to "Average".
5. Optionally, add **brand** to Columns for deeper analysis.

3.4. Step 4: Format the Pivot Table

- Rename the pivot table title to **"Average Price and Rating by Category."**
- Format numbers with 2 decimal places.
- Apply a light or medium Pivot Table Style.

3.5. Step 5: Bonus - Refresh Data

- Right-click on your Pivot Table → **Refresh**.
- Observe if data updates (API may change values).

4. Expected Output

Category	Average Price	Average Rating
Smartphones	549.90	4.5
Laptops	799.00	4.4
Fragrances	35.60	4.2
Skincare	25.40	4.3

5. Submission Requirements

1. Submit an Excel file named: `Lab3_YourName.xlsx`
2. The file must contain:
    - Imported data sheet.
    - Pivot Table sheet.
    - Summary title and formatted output.

6. Learning Outcomes

After completing this lab, students will be able to:

- Connect Excel to live web APIs.
- Use Power Query to transform JSON data.
- Create Pivot Tables for numerical summarization.
- Apply refreshable connections for dynamic dashboards.