# PROJECT SUMMARY

The objective is to address the following key business questions posed by the client:

• Which products generate the highest revenue and profit, and what are their associated costs?

• What are the trends in financial metrics such as revenue, cost, and profit over time?

• How do order statuses (completed, pending, returned) evolve, and what patterns can we identify?

The project delivers a fully automated, dynamic Excel dashboard that integrates data collection, cleaning, analysis, and visualization. It is designed as a self-sufficient tool, requiring no further intervention from data professionals. Clients can immediately begin using the dashboard to make informed, data-driven decisions effortlessly.

# DATA CLEANING

1. Standardizing Formats: Ensure uniform date, time, and numeric formats for consistency.

2. Validating Data: Apply checks for errors, such as valid emails and proper spelling.

3. Removing Duplicates: Eliminate duplicate entries to maintain data integrity.

4. Handling Missing Values: Fill gaps using imputation, interpolation, or appropriate removal.

5. Correcting Inconsistencies: Fix variations in spelling, capitalization, or data entry errors.

# DATA PROCESSING

1. Merging Tables: Combine datasets using keys to create a unified view of the data.

2. Creating Calculated Columns: Add new columns derived from formulas and logical operations.

3. Applying VLOOKUP: Link related data across tables to enrich the dataset with relevant information.

4. Filtering and Sorting: Organize data to focus on relevant subsets and insights.

# DATA ANALYSIS

1. Descriptive Statistics:  
✓ Perform a comprehensive statistical summary to uncover key patterns and trends in the dataset.  
✓ Identify outliers and distributional properties to ensure data consistency and reliability before further analysis.

2. Hypothesis Testing Using t-Test: Conduct a two-sample t-test to evaluate the statistical significance of differences between two groups or conditions based on the client’s business question.

# DATA COLLECTION

1. Design Form: Create the input form, lock non-input areas, and designate writable fields.

2. Set Up VBA: Write a VBA macro to handle form submission and move data to the database.

3. Auto-Populate & Store Data: Automatically calculate fields and store data in the database.

4. Confirm & Reset: Show a confirmation pop-up and reset the form for new data entry.

# DASHBOARD

1. Create KPI in Pivot Table: Design the pivot table to calculate key performance indicators (KPIs).

2. Design Framework: Plan the layout and structure of the dashboard on paper, then replicate it in Excel.

3. Create Charts: Add the necessary charts to visualize the KPIs and data insights.

4. Add Slicers: Insert slicers for interactive filtering of data within the dashboard.

5. Final Check: Review the dashboard for accuracy and functionality.