# P03 Student Instructions – Data Cleaning & Excel Dashboard

**Objectives:** - Understand the need for data cleaning - Remove duplicates and handle missing values - Convert a data range into an Excel Table - Create a simple dashboard to summarise sales

**Prerequisites:** Familiarity with spreadsheet operations **Estimated Time:** 3 hours **Learning Outcomes:** - Identify and remove duplicate records - Handle missing values appropriately - Format data as an Excel Table and apply sorting & filtering - Summarise sales data using tables and charts

**Dataset Description:** | Column | Type | Description | |——-|——|————-| | Date | datetime64[ns] | Synthetic column | | Product | object | Synthetic column | | Region | object | Synthetic column | | Sales | float64 | Synthetic column | | Quantity | float64 | Synthetic column |

**Tasks and Steps:** 1. Load the synthetic sales dataset 2. Identify duplicate rows and remove them 3. Detect and handle missing values (impute or drop as appropriate) 4. Convert the clean range into an Excel Table with proper formatting 5. Create summary metrics: total sales and average quantity by region 6. Design a basic dashboard showing sales by region and product

**Formulas / Methods:** - Total Sales: (Sales) - Average Quantity: (rac{Quantity}{})

**Submission Checklist:** - List of removed duplicates and handling of missing values - Formatted Excel Table screenshot or description - Dashboard with sales summaries and charts

**मराठी सारांश (Marathi Summary):** या प्रात्यक्षिकात आपण विक्री डेटावरील प्रतिलिपी काढून टाकणे, रिक्त मूल्ये हाताळणे, डेटाला टेबलमध्ये रूपांतरित करणे आणि प्रदेशानुसार विक्रीचे सारांश तयार करणे शिकणार आहोत.