**Learner Instructions**

| **Directions** |
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1. **Download the Dataset**

Open **EXCEL-08 - Excel Lab - 2 - Learner Dataset** with partially completed data: the Product List and Sales Transactions datasets. Download both files to your computer and open them with Excel.

1. **Complete the following tasks given in the next section.**

* Follow the instructions in the Task Details section to complete the lab. Use the following Excel functions to simplify calculations:
  + Lookup Functions: VLOOKUP, INDEX, MATCH
  + Conditional Functions: IF, AND, OR
  + Data Cleaning Tools: TRIM, CLEAN, SUBSTITUTE, Remove Duplicates
  + Pivot Tools: Pivot Tables, Pivot Charts

1. **Take notes** on any challenges or questions for instructor support.
2. **Use formatting** (e.g., bold headers, currency formatting) to ensure your work is clear and visually organised.
3. **Save your completed file as:** Firstname\_Lastname\_Excel\_Lab\_2.xlsx

| **Task Details** |
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| **Section 1: Data Cleaning** |
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1. **Remove Duplicates:**
   * Eliminate duplicate rows from the dataset.
   * *Hint: Use the "Remove Duplicates" tool under the "Data" tab to quickly find and delete repeated entries.*
2. **Correct Inconsistent Formats:**
   * Standardise the "Region" column (e.g., capitalise all entries).
     + *Hint: Use Excel's "Find and Replace" feature to quickly replace inconsistencies like "north" with "NORTH" or use a helper column and the UPPER function.*
   * Use the TRIM function to clean extra spaces in the "Salesperson" column.
     + *Hint: Insert a helper column to apply the TRIM function, then copy and paste the cleaned values back using* ***Paste Values.*** *Don’t forget to delete the helper column once you’ve copied the values.*
3. **Fill Missing Values:**
   * Fill in missing values in the "Price per Unit" column using the average price of the products.

| **Section 2: Lookup Functions** |
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1. **Combine Product and Sales Data:**
   * Use VLOOKUP or INDEX-MATCH to pull product names from the Product List into the Sales Transactions table.
     + *Hint: Ensure the "Product ID" column in both datasets is formatted consistently to avoid errors*
   * Add the product name under a new column, "Product Name" to the left of the Product ID column.
     + *If you get a N/A error, recheck the parameters of the VLOOKUP function. Check that you’ve selected the correct columns for search and listed the right index.*
2. **Calculate Total Sales:**
   * Add a column named "Total Sales".
   * Calculate: **Units Sold × Price per Unit.**

| **Section 3: Conditional Functions** |
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1. **Calculate Commissions:**
   * Add a column named "Commission".
   * Use a nested IF statement to calculate commissions:
     + If Total Sales > £3,000: 10% commission.
     + If Total Sales is between £1,500 and £3,000: 5% commission.
     + Otherwise: No commission.
   * *Hint: Structure the formula step-by-step, testing each condition as you go.*
2. **Conditional Formatting:** 
   * Add a column named "Sales Category".
   * Categorise based on Total Sales:
     + "High" for > £3,000.
     + "Medium" for £1,500 to £3,000.
     + "Low" for < £1,500.
   * *Hint: Reuse your logic from the commission calculation.*
   * Apply Conditional formatting to the new column as given below:
     + Cells with the value “High” - format them to have a green background.
     + Cells with the value “Medium” - format them to have a yellow background.
     + Cells with the value “Low” - format them to have a red background.

| **Section 4: Pivot Tables and Charts** |
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1. **Create a Pivot Table:**
   * Summarise total sales by "Region" and “Product Name”.
   * Display the results in a new worksheet named "Pivot Summary".
2. **Create a Pivot Chart:**
   * Generate a chart to visualise average sales by product name. You can choose the most appropriate chart type.
   * Add slicers to filter data by region.
     + *Hint: Use the "Insert Slicer" option in the Pivot Table settings to create interactive filters.*
3. **Customise the Chart:**
   * Format the chart for clarity and professional appearance.

| **Section 5: Analysis Summary** |
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1. **Create a Summary Table:**
   * On a new worksheet named "Summary", calculate:
     + Total Units Sold by "Salesperson".
     + *Hint: Use the SUMIF function.*
2. **Complete the Table:**
   * Add columns for "Sales Person", "Total Units Sold"
   * Populate the table with calculated totals.