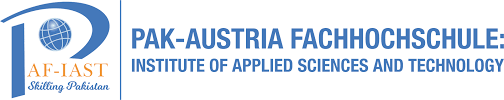
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| **Lab Number:** Lab # 06 |
| **Registration No:**  B24F0050AI099 |

**LAB TASK #6**

Task: **Employee Performance & Sales Forecasting Analysis for Q1 2024**

*Scenario:*

You are working as a data analyst for a company that wants to evaluate employee performance based on sales metrics and forecast sales for the next quarter (Q2 2024). This task will help the company identify top-performing employees,

analyze trends and set realistic targets.

***Dataset Requirements****:*

## Columns:

* 1. **Date**: Date of each sale (e.g., 1/15/2024)
  2. **Employee Name**: Name of the salesperson (e.g., Alice, Bob, Charlie)
  3. **Product**: The product sold (e.g., Product A, Product B, Product C)
  4. **Region**: Sales region (e.g., North, South, East, West)
  5. **Units Sold**: Number of units sold per transaction.
  6. **Revenue**: Total revenue generated from the sale

## Sample Data:

* 1. Generate data for 3 months (January, February, March 2024), with at least 200 rows to represent real sales transactions.
  2. Include a mix of dates, employee names, products, regions, units sold, and revenue values.

Instructions:

*Step 1:* ***Calculate Monthly and Quarterly Totals***

## Monthly Totals:

* + I created a summary table that shows total units sold and total revenue by each month.

## Quarterly Totals:

* + I added a row to calculate total units sold and total revenue for Q1 2024.

*Step 2:* ***Analyze Employee Performance***

* I created a **Pivot Table** to summarize each employee’s performance:
  + I placed **Employee Name** in the **Rows** area.
  + I Placed **Units Sold** and **Revenue** in the **Values** area to get total units sold and revenue per employee.
* **I Calculated the Revenue per Unit** for each employee in the Pivot Table by adding a calculated field.

*Step 3:* ***Identify and Highlight Top Performers***

* I Used **Conditional Formatting** to highlight the top five employees based on total revenue.
* I Applied data bars to visually compare employee sales performance.

*Step 4:* ***Sales by Product and Region***

* I Created a **Pivot Table** to analyze sales performance by **Product** and **Region**:
  + I Placed **Product** in the **Rows** area and **Region** in the **Columns** area.
  + I added Revenueto the **Values** area to see total revenue generated by each product in each region.
* Then I Used **Conditional Formatting** to highlight regions with high revenue.

*Step 5:* ***Create Sales Forecast for Q2***

* I used the **FORECAST.LINEAR** function to forecast total revenue for each month in Q2 2024, based on Q1 trends.
* I Placed these forecasts in a new table for April, May, and June 2024.

*Step 6:* ***Create Dynamic Visualizations***

* **Monthly Revenue Trend**: I Created a **line chart** showing revenue trends for each month in Q1 and projected for Q2.
* **Top Products Performance**: I used a **bar chart** to visualize the top three products based on revenue.
* **Regional Sales Breakdown**: I Created a **stacked bar chart** to show revenue by region for each product.

*Step 7:* ***Advanced Analysis***

* I Calculated the **Year-over-Year (YoY) Growth Rate** for Q1 by comparing with Q1 2023 (assume 10% increase from each previous month as estimated data).
* Then I Calculated the **Contribution Margin** for each employee if variable costs are 60% of revenue.
* Then I Used **Goal Seek** to determine how units each employee needs to sell to reach a revenue target of 10% above their Q1 tot