**PS - 19: Tableau Guide for Retail Dataset Analysis**

**Introduction**

This guide provides step-by-step instructions for performing data visualization operations on the "Online Retail.xlsx" dataset using Tableau. It is designed for complete beginners and covers connecting to the dataset, creating visualizations, and answering six business questions. The operations are:

a. Top 10 products based on total sales  
b. Product contribution to total sales  
c. Month-wise sales in 2010 in descending order  
d. Most loyal customers based on purchase orders  
e. Yearly sales comparison  
f. Country-wise total sales on a geospatial graph

**Prerequisites**

* **Tableau Software**: Install Tableau Desktop (free trial) or Tableau Public (free, web-based).
* **Dataset**: Save "Online Retail.xlsx" on your computer.
* **Basic Skills**: Familiarity with clicking, dragging, and navigating software.

**Step 1: Connecting to the Dataset**

1. **Open Tableau Desktop**:
   * Launch Tableau to see the start screen with a "Connect" pane.
2. **Connect to Excel**:
   * Click "Microsoft Excel" under "Connect."
   * Browse to "Online Retail.xlsx," select it, and click "Open."
   * Verify columns (e.g., InvoiceDate as date, Quantity and UnitPrice as numbers).
3. **Clean Data**:
   * Correct data types if needed (right-click column, select "Change Data Type").
   * Check for missing values or negative quantities (assumed valid for now).
4. **Start Visualizing**:
   * Click "Sheet 1" to enter a worksheet.

**Step 2: Visualizations**

**a. Top 10 Products Based on Total Sales**

**Objective**: Create a bar chart of the 10 products with the highest total sales.

1. **Create Total Sales**:
   * Data pane > Create Calculated Field > Name: "Total Sales" > Formula: [Quantity] \* [UnitPrice] > OK.
2. **Build Bar Chart**:
   * Drag "Description" to Rows.
   * Drag "Total Sales" to Columns.
3. **Sort and Filter**:
   * Click "Sort Descending" or sort "Description" by "Total Sales" (Descending).
   * Drag "Description" to Filters > Top > By Field > Top 10 by Total Sales Sum.
4. **Format**:
   * Format "Total Sales" as Currency (Standard).
   * Show labels (Marks card > Label > Show mark labels).
   * Rename sheet to "Top 10 Products."

**b. Product Contribution to Total Sales**

**Objective**: Show product sales as a percentage of total sales in a treemap.

1. **New Worksheet**:
   * Create new worksheet, name it "Product Contribution."
2. **Build Treemap**:
   * Drag "Total Sales" to Size (Marks card).
   * Drag "Description" to Color and Label.
   * Set mark type to Square.
3. **Show Percentages**:
   * Right-click "Total Sales" (Size) > Quick Table Calculation > Percent of Total.
   * Drag "Total Sales" to Label, ensure Percent of Total.
4. **Filter (Optional)**:
   * Drag "Description" to Filters > Top > Top 20 by Total Sales Sum.
5. **Format**:
   * Choose vibrant color palette (Color > Edit Colors).
   * Adjust label font size if needed.

**c. Month-Wise Sales in 2010**

**Objective**: Bar chart of 2010 monthly sales in descending order.

1. **New Worksheet**:
   * Name it "2010 Monthly Sales."
2. **Filter 2010**:
   * Drag "InvoiceDate" to Filters > Years > Select 2010.
3. **Build Chart**:
   * Drag "InvoiceDate" to Columns, select Month.
   * Drag "Total Sales" to Rows.
4. **Sort**:
   * Click "Sort Descending" or sort "Total Sales" (Descending).
5. **Format**:
   * Format "Total Sales" as Currency.
   * Show labels.

**d. Most Loyal Customers**

**Objective**: Bar chart of top 10 customers by number of orders.

1. **New Worksheet**:
   * Name it "Loyal Customers."
2. **Count Orders**:
   * Drag "CustomerID" to Rows.
   * Drag "InvoiceNo" to Columns, set to Count (Distinct).
3. **Sort and Filter**:
   * Sort "CustomerID" by CNTD(InvoiceNo) (Descending).
   * Filter "CustomerID" to Top 10 by InvoiceNo Count (Distinct).
4. **Format**:
   * Rename axis to "Number of Orders."
   * Show labels.

**e. Yearly Sales Comparison**

**Objective**: Bar chart comparing sales by year.

1. **New Worksheet**:
   * Name it "Yearly Sales."
2. **Build Chart**:
   * Drag "InvoiceDate" to Columns, select Year.
   * Drag "Total Sales" to Rows.
3. **Format**:
   * Format "Total Sales" as Currency.
   * Show labels.

**f. Country-Wise Sales on Geospatial Graph**

**Objective**: Map showing sales by country.

1. **New Worksheet**:
   * Name it "Country Sales Map."
2. **Build Map**:
   * Drag "Country" to Detail (Marks card).
   * Drag "Total Sales" to Size.
3. **Enhance Map**:
   * Drag "Total Sales" to Color for gradient.
   * Drag "Country" and "Total Sales" to Label.
   * Format "Total Sales" as Currency.
4. **Adjust Map**:
   * Map > Map Options > Choose style (e.g., Normal).
   * Zoom as needed.

**Step 3: Creating a Dashboard (Optional)**

1. Click "New Dashboard."
2. Drag all worksheets onto the canvas.
3. Arrange and resize charts.
4. Add title: Objects > Text > "Retail Sales Analysis Dashboard."

**Step 4: Saving and Sharing**

1. **Save**:
   * File > Save As > Name: "Retail\_Analysis.twb."
2. **Export**:
   * File > Export As > PDF or Image.
   * For Tableau Public: File > Publish to Tableau Public.

**Conclusion**

This guide enables you to visualize the retail dataset in Tableau to answer key business questions. Practice each step, and explore Tableau’s features to enhance your visualizations further.