Perform the data visualization operations using Tableau to get answers to various business questions on Retail dataset. a. Find and Plot country wise popular product b. Find and Plot bottom 10 products based on total sale c. Find and Plot top 5 purchase order d. Find and Plot most popular products based on sales e. Find and Plot half yearly sales for the year 2011

To perform the data visualization operations in Tableau based on the Retail dataset (assuming it contains columns like InvoiceNo, StockCode, Description, Quantity, InvoiceDate, UnitPrice, CustomerID, Country), here are the detailed steps for each business question you need to answer.

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1. a. Country-wise Popular Product

1. **Load Data:**

   o **Open Tableau and connect to your Retail dataset.**

2. **Calculate Total Sales (if not already done):**

   o **Go to the Data pane → Right-click on the dataset → Create Calculated Field.**

   o **Name the field TotalSales and input the formula:**

plaintext

Copy code

[Quantity] * [UnitPrice]

   o **Click OK.**

3. **Plot the Popular Product by Country:**

   o **Drag Country to Rows.**

   o **Drag TotalSales to Columns.**

   o **Drag Description (or StockCode) to Color or Label to indicate which product is being sold.**

   o **Sort by descending TotalSales to get the popular products for each country.**

   o **Optionally, add filters for specific products or countries.**

4. **Display as a Bar Chart:**

- o **Choose a Bar Chart in the Show Me panel for better clarity.**

5. **Add Titles and Adjust Format:**

   - o **Right-click on the sheet name and rename it "Country-wise Popular Product".**

   - o **Add a title: "Popular Products by Country".**

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1. b. Bottom 10 Products Based on Total Sale

1. **Plot Bottom Products:**

   - o **Drag Description (or StockCode) to Rows.**

   - o **Drag TotalSales to Columns.**

   - o **Sort the data in ascending order (click on the TotalSales axis to sort).**

2. **Filter Bottom 10 Products:**

   - o **Drag Description to the Filter shelf.**

   - o **In the Filter dialog, go to the Top tab → choose Bottom 10 by TotalSales.**

   - o **Alternatively, create a calculated field for bottom N if needed.**

3. **Choose Chart Type:**

   - o **Use a Bar Chart to make it easier to visualize the bottom 10 products.**

4. **Rename the Sheet:**

   - o **Right-click on Sheet 1 → Rename it to "Bottom 10 Products by Sales".**

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1. c. Top 5 Purchase Orders

1. **Create Purchase Order Count:**

   - o **Drag InvoiceNo to Rows.**

   - o **Drag TotalSales (calculated field) to Columns.**

   - o **Right-click on InvoiceNo → Measure → Count (Distinct) to count unique orders.**

2. **Sort Orders by Total Sales:**

   - o **Click on the TotalSales axis to sort in descending order.**

3. **Filter Top 5 Orders:**

   o **Drag InvoiceNo to the Filter shelf.**

   o **In the Filter dialog, choose the Top tab → Top 5 by Sum of TotalSales.**

4. **Choose Chart Type:**

   o **Use a Bar Chart for clearer visualization.**

5. **Rename the Sheet:**

   o **Rename it to "Top 5 Purchase Orders".**

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1. d. Most Popular Products Based on Sales

1. **Plot Popular Products:**

   o **Drag Description (or StockCode) to Rows.**

   o **Drag TotalSales to Columns.**

   o **Sort the data in descending order (click on the TotalSales axis to sort).**

2. **Choose the Right Chart Type:**

   o **Bar Chart works best for this visualization.**

   o **Optionally, drag Description to Color for better distinction between products.**

3. **Rename the Sheet:**

   o **Rename the sheet to "Most Popular Products by Sales".**

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1. e. Half-Yearly Sales for the Year 2011

1. **Extract Half-Yearly Sales Data:**

   o **Drag InvoiceDate to Columns.**

   o **Right-click on InvoiceDate → Month → Year (or use a custom calculated field if necessary to extract half-year data).**

2. **Create Year Filter:**

   o **Drag InvoiceDate to the Filter shelf.**

- o   **Filter for Year = 2011.**

3. **Separate Sales by Half-Year:**

    - o   **Use the Month or create a Calculated Field for half-year grouping.**

        - ▪   **Right-click on InvoiceDate → Create Calculated Field.**

        - ▪   **Name it HalfYear and use the formula:**

plaintext

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IF MONTH([InvoiceDate]) <= 6 THEN "H1" ELSE "H2" END

    - o   **Drag the newly created HalfYear field to Columns (it will create two columns for each half of the year).**

4. **Add Sales to Rows:**

    - o   **Drag TotalSales to Rows.**

5. **Plot Half-Yearly Sales:**

    - o   **Choose Bar Chart or Line Chart to compare sales between H1 and H2.**

6. **Rename the Sheet:**

    - o   **Rename the sheet to "Half-Yearly Sales for 2011".**

Final Touches

1. **Create a Dashboard:**

    - o   **After creating all the individual sheets, click on the New Dashboard button at the bottom.**

    - o   **Drag and drop each sheet into the dashboard.**

    - o   **Resize and format them for better alignment.**

2. **Add Titles and Filters:**

    - o   **Add titles to each chart if necessary.**

    - o   **You can add Filters for interactivity (e.g., filter by country or year).**

3. **Save or Publish:**

- o **Save the Tableau workbook as .twbx (Tableau Packaged Workbook) or publish it to Tableau Public for sharing.**

Conclusion:

Following these steps will give you clear visualizations for each of your business questions:

- **a. Country-wise Popular Product**

- **b. Bottom 10 Products Based on Total Sale**

- **c. Top 5 Purchase Orders**

- **d. Most Popular Products Based on Sales**

- **e. Half-Yearly Sales for 2011**