19 Perform the data visualization operations using Tableau to get answers to various business

questions on Retail dataset.

a. Find and Plot top 10 products based on total sale

b. Find and Plot product contribution to total sale

c. Find and Plot the month wise sales in year 2010 in descending order

d. Find and Plot most loyal customers based on purchase order

e. Find and Plot yearly sales comparison

f. Find and Plot country wise total sales price and show on Geospatial graph

Prerequisites:

- Tableau Public or Tableau Desktop installed (Community Edition is fine)
- Retail dataset loaded in Excel or CSV format
- Basic understanding of Tableau interface (drag and drop, worksheets, dashboards)

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a. Find and Plot Top 10 Products Based on Total Sale

Objective: Identify the top 10 selling products by revenue.

Steps:

1. Open Tableau and connect to the Retail dataset.
2. Create a calculated field:
    - Name: `TotalSales`
    - Formula: `[Quantity] * [UnitPrice]`
3. Drag `Description` to **Rows**.
4. Drag `TotalSales` to **Columns**. Right-click it and select **Measure > Sum**.
5. Sort by `SUM(TotalSales)` in **Descending order**:
    - Click the **Sort** icon above the column (Z to A).
6. Right-click on `Description` in the Rows shelf → **Filter**.
    - Go to the **Top** tab.
    - Select **By Field** → Top 10 by `SUM(TotalSales)`.
7. Change the chart type to **Horizontal Bar Chart** from the toolbar.
8. Add labels by dragging `SUM(TotalSales)` to **Label** in the Marks card.

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b. Product Contribution to Total Sale

Objective: Show how much each product contributes to total revenue as a percentage.

Steps:

1. Use the same sheet or create a new worksheet.
2. Drag `Description` to **Rows** and `SUM(TotalSales)` to **Columns**.
3. Click on the `SUM(TotalSales)` pill → **Quick Table Calculation** → **Percent of Total**.
4. On the **Marks** card, change the chart type to **Pie**.
5. Drag `Description` to **Color** and **Label** in the Marks card.
6. Optional: Filter top 10 products to make the pie chart more readable.

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c. Month Wise Sales in Year 2010 (Descending Order)

Objective: Visualize sales trend per month in 2010.

Steps:

1. Create a new worksheet.
2. Drag `InvoiceDate` to Columns → right-click and select **Month**.
3. Drag `TotalSales` to **Rows** → select **SUM**.
4. Add filter:
    - Drag `InvoiceDate` to **Filters**.
    - Select only the year **2010**.
5. Sort the bars in descending order by SUM(TotalSales).
6. Use **Bar Chart** as chart type.

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d. Most Loyal Customers Based on Purchase Order

Objective: Identify customers who made the most purchases.

Steps:

1. Create a new worksheet.
2. Drag `CustomerID` (or `CustomerName`) to **Rows**.
3. Drag `InvoiceNo` to **Columns** → set aggregation to **Count (Distinct)**.
4. Sort in descending order.

5. Apply **Top N** filter:
    - Right-click `CustomerID` → Filter → **Top tab** → Top 10 by CountD(InvoiceNo).
6. Use **Bar Chart** and show labels.

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e. Yearly Sales Comparison

Objective: Compare total sales year by year.

Steps:

1. Create a new worksheet.
2. Drag `InvoiceDate` to Columns → right-click and select **Year**.
3. Drag `TotalSales` to Rows → use aggregation **SUM**.
4. Use **Bar Chart** or **Line Chart** as per preference.
5. Add labels for better clarity.

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f. Country-wise Total Sales Price on Geospatial Graph

Objective: Show total sales per country on a map.

Steps:

1. Create a new worksheet.
2. Drag `Country` to **Rows**.
3. Drag `TotalSales` to **Columns**.
4. From the toolbar, change chart type to **Map**.
5. Drag `Country` to **Detail** and `TotalSales` to **Size** and **Color** in Marks card.
6. Ensure country data is recognized (check for globe icon in `Country`).
7. Adjust color gradient and map type as needed.

Tableau Visualization Guide for Retail Dataset (Problem Statement 20)

20 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

f. Find and Plot country wise total sales quantity and show on Geospatial graph

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a. **Find and Plot Country-wise Popular Product**

Objective: Identify the most sold product in each country.

Steps:

1. Open Tableau and connect to the Retail dataset (usually Excel or CSV format).
2. Drag `Country` to Rows.
3. Drag `Description` to Columns.
4. Drag `Quantity` to Text on Marks card.
5. Click the drop-down on `Quantity` pill → Set to SUM.
6. Click on the drop-down for `Description` → Filter → Top tab → By Field → Top 1 by SUM(Quantity).
7. Adjust chart type if needed (e.g., Text Table or Bar Chart).

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b. **Find and Plot Bottom 10 Products Based on Total Sale**

Objective: Identify the least performing products based on sales revenue.

Steps:

1. Create a calculated field: `TotalSales = Quantity * UnitPrice`.
2. Drag `Description` to Rows.
3. Drag `TotalSales` to Columns → Set aggregation to SUM.

4. Sort in ascending order (click the sort icon or manually sort).
5. Apply Filter:
    - Right-click on `Description` → Filter → Top tab → Select By Field: Bottom 10 by SUM(TotalSales).
6. Use Horizontal Bar Chart for better clarity.

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c. **Find and Plot Top 5 Purchase Orders**

Objective: Find the top 5 invoices based on total sales value.

Steps:

1. Drag `InvoiceNo` to Rows.
2. Drag `TotalSales` to Columns → Set to SUM.
3. Sort in descending order by SUM(TotalSales).
4. Filter `InvoiceNo` → Top tab → By Field: Top 5 by SUM(TotalSales).
5. Use Horizontal Bar Chart or Text Table as preferred.

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d. **Find and Plot Most Popular Products Based on Sales**

Objective: Find products with the highest number of orders.

Steps:

1. Drag `Description` to Rows.
2. Drag `Quantity` to Columns → Set to SUM.
3. Sort in descending order.
4. Filter top 10 or top N as required using `Top` tab in Filter.
5. Use Bar Chart.

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e. **Find and Plot Half-Yearly Sales for the Year 2011**

Objective: Compare sales for H1 (Jan–Jun) and H2 (Jul–Dec) in 2011.

Steps:

1. Create a calculated field: `TotalSales = Quantity * UnitPrice`.
2. Drag `InvoiceDate` to Columns.
3. Right-click `InvoiceDate` → Select `Month` → Right-click again → Select `Year`.

4. Drag `TotalSales` to Rows → Set to SUM.
5. Filter `Year(InvoiceDate)` to 2011 only.
6. Create calculated field: `Half = IF MONTH([InvoiceDate]) <= 6 THEN 'H1' ELSE 'H2' END`.
7. Replace `InvoiceDate` with `Half` in Columns.
8. Use Bar Chart or Line Chart.

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f. **Find and Plot Country-wise Total Sales Quantity on Geospatial Graph**

Objective: Visualize the quantity sold by each country on a map.

Steps:

1. Drag `Country` to the view.
2. Drag `Quantity` to Size.
3. Drag `Quantity` to Color.
4. Change the view to Map (select from the Show Me panel).
5. Adjust color and size legends for clarity.

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23 Perform the data visualization operations using Tableau to get answers to various questions on the census bureau databset(Adult data sets).
a. Find and Plot Income class of People whose education is master's and doctorate. b. Find and Plot Income class of people who have private
Jobs.
c. Find and Plot yearly sales comparison
d. Find and Plot country wise statistics on
Geospatial graph
e. Plot agewise- education vs salary statistics.
f. Plot Countrywise male female
ratio.
g. Plot Income class based on workclass(Government and other)

a. Find and Plot Income class of People whose education is Master's and Doctorate

Steps:
1. Drag Education to Rows→ Select only Masters and Doctorate.
2. Drag Income to Columns.
3. Cnt adult.csv to rows so that you can see bars showing how many adults are having income <50K and >50K**b. Find and Plot Income class of people who have private jobs**

Steps:
1. Drag Workclass to Filters → Select Private.
2. Drag Income to Columns.
3. Drag Cnt adult.csv to Rows.

Chart Type: Bar Chart
C. Find and Plot yearly sales comparison
D. Country-wise Total Sales on a Geospatial Graph
🎯 Objective: Use a map visualization to display how much each country contributes to total
sales.
🔹 Step 1: Ensure Country is Recognized as a Geographic Field
3. In the **Data Pane**, find the Country field.
4. It should have a **globe icon** 🌍 next to it.
○ ✅ If it does → great!
○ ❌ If not:
■ Right-click Country → **Geographic Role** → **Country/Region**
🔹 Step 2: Create the Map View
2. **Double-click on Country**○ Tableau will automatically generate a **map**.
○ You'll see country dots on a world map.
🔹 Step 3: Add TotalSales to Marks

3. **Drag CapitalGain** to the **Size** shelf on the **Marks card**
○ Now the dots on the map will grow bigger with higher sales
4. **Drag CapitalGain** to again to the **Color** shelf on the **Marks card**
○ Now each dot will also have a color intensity based on sales
Do that label thing and then go to table calculation in the dropdown of sum capital convert to percent of total
✅ Now the map shows total sales per country using both **size** and **color**

e. Plot age-wise education vs salary statistics

Steps:
1. Drag Age to Columns.
2. Drag Education to Color or Shape.
3. Drag Income to Rows or Tooltip.

f. Plot Country-wise Male/Female ratio

Steps:
1. Drag Native-country to Rows.2. Drag Sex to Columns.
3. Drag Number of Records to Text . and then go to quick table calculation and then percent to total
4. Optional: Use Sex on Color.
Chart Type: Side-by-side Bar Chart or Stacked Bar Chart

g. Plot Income class based on workclass (Government and others)

Steps:
1. Drag Workclass to Rows.
2. Drag Workclass to Filters → Select Government and relevant others (e.g., Private, Self-emp).
3. Drag Income to Columns.
4. Drag Number of Records to Text.
5. then go to quick table calculation and then percent to total
6. Now change the chart
Chart Type: Clustered Bar Chart

a. Income Class of People with Master's and Doctorate Education

Objective: Analyze how income varies among individuals with Master's and Doctorate degrees.

Steps:

1. Drag `Education` to the Filters shelf.
2. In the filter dialog, select only `Masters` and `Doctorate`.
3. Drag `Education` to Rows.
4. Drag `Income` to Columns.
5. Drag `Number of Records` or `cnt` to Rows.
6. Choose Bar Chart as the visualization.
7. Optional: Add `Income` to Color to distinguish income classes.

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b. Income Class of People with Private Jobs

Objective: Visualize the income class distribution among individuals in private employment.

Steps:

1. Drag `Workclass` to Filters and select `Private`.
2. Drag `Income` to Columns.
3. Drag `Number of Records` to Rows.
4. Choose Bar Chart for visualization.
5. Optional: Add `Income` to Color for better clarity.

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c. Yearly Sales Comparison

Objective: Compare total income (or related measure) across different years.

Steps:

1. Ensure the dataset contains a `Year` field (derived or present).
2. Drag `Year` to Columns.
3. Drag `CapitalGain` or another suitable numeric measure to Rows.
4. Use Bar or Line Chart to show yearly comparison.
5. Optional: Add `Income` class or `Workclass` to Color.

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d. Country-wise Total Sales on Geospatial Graph

Objective: Show total capital gain by country using a world map.

Steps:

1. In the Data Pane, ensure `Native-Country` has a globe icon:
    - If not, right-click `Native-Country` > Geographic Role > Country/Region.
2. Double-click on `Native-Country` to create a map.
3. Drag `CapitalGain` to the Size shelf on the Marks card.
4. Drag `CapitalGain` again to the Color shelf.
5. Add `CapitalGain` to Label for clarity.
6. Click the dropdown on `SUM(CapitalGain)` > Quick Table Calculation > Percent of Total.

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e. Age-wise Education vs. Salary Statistics

Objective: Understand how education and income relate across different ages.

Steps:

1. Drag `Age` to Columns.
2. Drag `Income` to Rows.
3. Drag `Education` to Color or Shape.
4. Optional: Add `Income` to Tooltip.
5. Use Line Chart or Scatter Plot to depict relationships.

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f. Country-wise Male/Female Ratio

Objective: Compare gender distribution per country.

Steps:

1. Drag `Native-Country` to Rows.
2. Drag `Sex` to Columns.
3. Drag `Number of Records` to Text.
4. Click the dropdown on `SUM(Number of Records)` > Quick Table Calculation > Percent of Total.
5. Optional: Drag `Sex` to Color.

6. Use Side-by-Side Bar Chart or Stacked Bar Chart.

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g. Income Class Based on Workclass (Government vs. Others)

Objective: Compare income class distribution across different workclass types.

Steps:

1. Drag `Workclass` to Filters and select `Government`, `Private`, `Self-emp`, etc.
2. Drag `Workclass` to Rows.
3. Drag `Income` to Columns.
4. Drag `Number of Records` to Text.
5. Click dropdown on `SUM(Number of Records)` > Quick Table Calculation > Percent of Total.
6. Choose Clustered Bar Chart for final visualization.