Project Requirements

Case Guide: This case focuses on the role of a Senior Growth Business Analyst. Your task is to analyze and visualize media campaign performance data. You will be creating an interactive Tableau dashboard, conducting strategic data analysis, and writing SQL queries to extract and analyze growth data. If any instructions are unclear, make a reasonable assumption and document it clearly within your response. You are welcome to seek clarification on any point.

Task 1: Holistic Media Performance Dashboard & Deep Dive

Goal: Develop an interactive Tableau dashboard that provides a comprehensive, high-level overview of media campaign performance, enabling stakeholders to quickly grasp overall health and drill down into specific areas of interest.

Requirements:

1. Key Performance Indicators (KPIs) Visual:

○ Display overall performance metrics prominently for user selected breakdown:

- ■ Total Spend
- ■ Total Clicks
- ■ Total Installs
- ■Total Conversions
- ■ Cost Per Acquisition (CPA):
- ■ Cost Per Install (CPI): InstallsSpend
- ■ Conversion Rate (CVR): InstallsConversions
- ■ Return on Ad Spend (ROAS): By utilizing provided LTV Averages Total SpendTotal Conversion Value.

Use a type of visualization that enables quick glance on the overall performance benchmark for these metrics.

2. Performance Breakdown Visuals:

○ Trend Analysis: Create charts showing the monthly progression of Spend, Conversions, CPA, CVR, and ROAS over the entire period. Allow the metrics to be

selected by dropdown parameter.

○ Geographical Performance: Visualize CPA and CVR by Region and Country using a visual of your choice. Optional: Implement conditional formatting to highlight areas with high CPA or low CVR (e.g., shades of red for poor performance, green for good).

○ Channel Effectiveness: Use charts to compare Spend, Conversions, CPA, CVR, and ROAS across different Channels.

3. Interactivity & Filters:

○ Implement filters for Date Range, Region, Country, Channel, Sub Channel.

Task 2: Strategic Media Investment & Trend Analysis

Goal: Explore created dashboard and derive insights into following areas. Present your key findings in a short presentation deck.

Requirements:

1. Temporal Performance Deep Dive:

○ Seasonal & Trend Analysis: Analyze the weekly/monthly trends for Spend, Conversions, CPA, CVR, and ROAS. Identify any recurring patterns, significant shifts, or anomalies. Annotate key events if the data implies any (e.g., start of a major campaign, external market shift).

2. Dimension-Specific Performance Evolution:

○ Channel Performance Over Time: Perform a simple analysis to show the trend of CPA and CVR for each Channel over the reporting period. Identify which channels are improving, declining, or remaining consistent.

○ Regional Investment vs. Performance: Analyze Spend distribution across Regions and compare it against their respective ROAS or CVR. Identify regions that might be over- or under-invested given their performance.

3. Efficiency & Opportunity Mapping:

○ Efficiency Quadrant: Identify channel/country combinations with Spend on one axis and ROAS (or CVR) on the other. Segment into quadrants (e.g., High Spend/High ROAS, High Spend/Low ROAS, Low Spend/High ROAS, Low Spend/Low ROAS). This visualization should directly inform budget reallocation discussions..

○ Contribution Analysis: Analyze and interpret contribution of each Channel to

overall Conversions and Spend over time. This helps understand the evolving media mix.

TASK 3: SQL

Objective: Write SQL queries to analyze growth data using joins, CTEs, filtering, and basic aggregations.

Source Tables

1. Campaign Performance (campaign_performance)

Column Name	Data Type	Description
date	DATE	Date of the campaign activity
region	STRING	Region where the campaign was run
country	STRING	Country where the campaign was run
campaign_id	INT	Unique identifier for the campaign
clicks	INT	Number of clicks for the campaign
installs	INT	Number of installs driven by the campaign
spend	DECIMAL(10,2)	Total spend on the campaign

2. Conversions (conversions)

Each row represents a single conversion (order) and its campaign ID. Final conversions are derived by aggregation.

Column Name	Data Type	Description
user_id	INT	Unique identifier of user making an order
campaign_id	INT	Campaign linked to the conversion
date	DATE	Date of the conversion

3. Campaign Metadata (campaign_metadata)

Column Name	Data Type	Description
campaign_id	INT	Unique identifier for the campaign
campaign_name	STRING	Name of the campaign
channel	STRING	Marketing channel (e.g., social, email)

4. LTV Lookup (ltv_projections)

Column Name	Data Type	Description
month	INT (*Represents the month number (1-12)*	Month of projection
country	STRING	Country of projection
channel	STRING	Marketing channel (e.g., social, email)
average_ltv_per_customer	DECIMAL(10,2)	The average Lifetime Value associated with a new customer from a specific month

Tasks: Join Input Tables to generate following table:

Column Name	Data Type	Description
month	STRING	Month of the campaign activity in yyyy-mm format
region	STRING	Region where the campaign was run
country	STRING	Country where the campaign was run
channel	STRING	Marketing channel (e.g., social, email)tied to acquisition (first order)
spend	DECIMAL(10,2)	Total spend on the campaign
clicks	INT	Number of clicks for the campaign
installs	INT	Number of installs driven by the campaign
conversions	INT	Total conversions (first orders) of campaign
cac	INT	Total cost of acquiring a single customer
average_ltv_per_customer	DECIMAL(10,2)	The average Lifetime Value associated with a new customer from a specific month
ltv_cac	DECIMAL(10,2)	Ratio between CAC and average LTV
m+1_retention	INT	Amount of acquired users (users with first order) who also made order in following month