Case Wellhub - Partner Intelligence Manager

1. BI Insights Generation

Objective:

The goal of this case is to evaluate your ability, as a Partner Data Manager, to use the provided datasets to generate business intelligence insights that support decision-making in Partner Operations. Your task is to design a solution using the available data to answer key business questions and create actionable insights.

You will be working with the following three tables:

- Visits Data (Table 1): Contains details about each visit for each partner, including the visit cost, CAP, and transaction types.
  - Key Columns: core_partner_id, partner_trade_name, product_id, session_date, transaction_cost, transaction_type, product_cap.
- Partner Details (Table 2): Contains information about the partners, including their name, contact information, and location.
  - Key Columns: core_partner_id, partner_trade_name, address, contact_number, segment_type, country.
- Product Details (Table 3): Contains information about the partner's products, including cost per usage, CAP, and the product's segment type.
  - Key Columns: product_id, product_cost_per_usage, product_cap_value, segment_type.

Context:

A CAP (Maximum Payment Limit) refers to the maximum amount that can be paid to a partner for each visit, even if the calculated amount based on the visit cost exceeds this limit. For example, if the visit cost is $10 but the CAP is $20, and the partner receives multiple visits from the same user, the total amount paid will still be capped at $20, regardless of the number of visits.

This limit is crucial for controlling payment consistency, ensuring that even when partners receive more visits than expected, the total payment does not exceed the predefined CAP. The challenge lies in calculating the total amount paid to partners correctly while respecting this CAP constraint.

*Information and scenarios here described are fictional to be used in a hiring process, not necessarily reflecting a real scenario at the company.

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Tasks

Task 1: Key Business Insights

Your task is to generate actionable business insights based on the provided data, answering key questions that support the Partner Operations team in their decision-making. The insights should focus on summarizing and analyzing visit data, payments to partners, and performance by segment.

Task 2: Query Design

You will need to design SQL queries that can efficiently extract, calculate, and aggregate the data from the tables to provide the required insights.

Task 3: Reporting

Once the queries are in place, the results should be structured for easy reporting. The final report will summarize the performance of partners based on visit data, segment, and payment calculations.

Deliverables:

- SQL Queries: Provide the queries you would use to generate the insights.
- BI Dashboard/Google Sheet Report: Show how the results from the queries would be visualized and how the data would be structured.
- Documentation: Explain how you would approach this task and how the insights you generated could help improve the performance of the Partner Operations team.

2. Mid-Month Price Change Automation for Partner Operations

Context:

Partner Operations (Partner Ops) is currently facing significant challenges in handling price changes for multiple Gym IDs simultaneously. The existing system allows price corrections for only one Gym ID or Network ID at a time, which makes the process time-consuming and prone to errors, especially when there are large-scale requests that require corrections for many Gym IDs. These inefficiencies are impacting the workflow, and there is an urgent need for an automated solution to streamline this process.

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We need a candidate who can demonstrate expertise in Business Intelligence (BI) and SQL to develop a tool that will automate the recalculation of prices for multiple Gym IDs and ensure accurate payment processing, while reducing manual work and the chance of errors.

Automation Objective:

In this scenario, Partner Operations receives a high volume of requests for price changes mid-month, impacting multiple Gym IDs and products. As a result, an automated solution is required to handle these mass changes efficiently and without errors. The solution should allow the team to quickly recalibrate partner payments when there is a change in the visit cost or CAP (maximum payment) for any product. It should be able to:

- Track changes: Detect when there has been a price update (either for the visit cost or CAP) for a partner's product.
- Recalculate payments: Automatically compute the new amounts to be paid to the partners, considering all impacted data for that month and ensuring the correct CAP is applied.
- Handle multiple requests: Process multiple price changes for many Gym IDs and partners at once, reducing manual intervention and minimizing errors.

What Needs to be Automated:

- Identify Changes in Price or CAP:
  - When a partner's product price or CAP is updated (e.g., mid-month price change), we need a way to identify which partner and product were impacted.
  - We need a process that queries historical data to track changes, ensuring that the recalculations are applied to all relevant transactions within the timeframe of the change (e.g., all visits occurring after the price change).
- Recalculate Payments for Updated Data:
  - Once the price or CAP is updated, the system should be able to quickly recalculate how much needs to be paid to the partner, considering the number of visits and the applicable product details (product cost, CAP value, etc.).
  - The CAP should be applied in such a way that, even if a partner exceeds the visit maximum, they will only be paid up to the CAP limit.
- Automate Mass Queries:
  - The solution should be capable of processing and recalculating prices for numerous Gym IDs and partners in a single batch. This requires the ability to query data efficiently across large datasets.
- Flexibility in Recalculation:

- ○ The system must allow for easy adjustments when new requests are received, allowing the recalculation process to be triggered automatically whenever data changes.
  - ○ Flexibility should also be maintained to support recalculations for both past and future dates.
- Performance Optimization:
  - ○ As the process needs to handle large datasets, propose optimizations to improve the performance of the SQL queries, ensuring that the system scales well and remains efficient even with extensive data.

Deliverables:

- SQL Queries:
  - ○ Provide the SQL queries used to integrate the data, calculate payments, and apply the CAP logic.
- Automation Framework:
  - ○ A demonstration of how the price change process can be automated, including output in a format such as Google Sheets or an automated BI tool.
- Performance Recommendations:
  - ○ Suggestions for optimizing the performance of your SQL queries, ensuring that the solution works efficiently at scale.

Evaluation Criteria:

- SQL Proficiency: Ability to write clean, efficient SQL queries to perform complex data manipulations and aggregations.
- Automation Knowledge: Understanding how to automate processes and integrate systems to reduce manual work.
- Data Integration: Ability to integrate data from multiple tables and generate meaningful insights from them.
- Problem-Solving: Creativity in approaching the automation of the price change process and handling large datasets.