

Lead Conversions Tech Task

1. Context

A new report has been requested by product to help stakeholders analyse Lead Conversions in their gyms. The model will enable end users to gain insights into the effectiveness of different conversion strategies across different conversion types. Below describes some key business definitions:

Lead: A potential member who has shown interest in joining the gym or utilising its services. When a user is created they automatically start as a LEAD until they purchased a membership or credit pack product.

Client: If the lead is satisfied with their experience, they are then converted into a paying member aka CLIENT. This involves signing a membership agreement or purchasing a credit pack.

Client Conversion Event: The event which triggers the conversion from lead to client. examples: MEMBERSHIP, USER_CREDIT.

1.1 Part 1

Using the provided input data create a query that will populate the `fct_client_conversion_events` table (See 1.4.1) with the details of first credit pack purchased and first membership purchased per user. Fields prefixed with

`client_conversion_` should contain the details of either the first credit pack or membership depending on which occurred first.

1.2 Part 2

After further feedback was gathered it turns out that some gyms only consider membership purchases as qualifying events for conversion while others only consider credit pack purchases as a conversion. Report users want a filter on the report to be able to chose what events get considered. To support this update your query so that for each user 3 records are created:

1. One that only considers membership purchases with a column called `client_conversion_event_filter` with value `MEMBERSHIP`
2. One that only considers credit pack purchases with a column called `client_conversion_event_filter` with value `USER_CREDIT`
3. One that considers both memberships and credit pack purchases with a column called `client_conversion_event_filter` with value `ALL`

Once you have the dataset of users and their first conversion event details construct a new model which will enable this client conversion filtering. Results should appropriately adhere to the expected schema (See 1.4.2)

1.3 Input Schema & Definitions

dim_branch (figure 1.3.1)

Holds the branch related data.

Col Name	Type	Description
branch_id	VARCHAR	Identifier for the branch.
name	VARCHAR	Name of the branch.
email	VARCHAR	Email used by the branch.
city	VARCHAR	City where the branch is located.
country	VARCHAR	Country where the branch is located.

Col Name	Type	Description
timezone_id	VARCHAR	Timezone identifier of the branch.
created_at	DATE	Time when the branch was created at (UTC).

dim_user (figure 1.3.2)

Holds the user related data.

Col Name	Type	Description
user_id	VARCHAR	Identifier for the user.
branch_id	VARCHAR	Identifier for the branch.
name	VARCHAR	Name of the user.
email	VARCHAR	Email used by the user.
created_at	DATE	Time when the user was created at (UTC).

fct_credit_pack_purchases (figure 1.3.3)

Holds the data relating to credit pack products purchases.

Col Name	Type	Description
user_id	VARCHAR	Identifier for the user.
branch_id	VARCHAR	Identifier for the branch.
credit_pack_id	VARCHAR	Identifier for the purchased credit pack associated with the user.
credit_pack_purchased_at	DATE	Time when the credit pack was purchased at (UTC).
created_at	DATE	Time when the credit pack was created at (UTC).
credit_pack_purchase_details	JSON	Json object of credit pack purchased details.

credit_pack_purchase_details (figure 1.3.4)

Json object of credit pack purchased details.

JSON Key	Type	Description
name	VARCHAR	Name of the credit pack purchased.
source	VARCHAR	Source of the credit pack purchased.

fct_membership_purchases (figure 1.3.5)

Holds the membership purchased related data.

Col Name	Type	Description
user_id	VARCHAR	Identifier for the user.
branch_id	VARCHAR	Identifier for the branch.
user_membership_id	VARCHAR	Identifier for the purchased membership associated with the user.
credit_membership_purchase_atpack_purchased_at	DATE	Time when the membership was purchased at (UTC).
created_at	DATE	Time when the membership was created at (UTC).
membership_purchase_details	JSON	Json object of membership purchased details.

membership_purchase_details (figure 1.3.6)

Json object of membership purchased details.

JSON Key	Type	Description
name	VARCHAR	Name of the membership purchased.
source	VARCHAR	Source of the membership purchased.

1.4 Out Schemas & Definitions

fct_client_conversion_events (figure 1.4.1)

Dataset capturing users and their client conversion event along with details associated with their first membership or credit pack event.

Col Name	Type	Description
user_id	VARCHAR	Identifier for the user.
branch_id	VARCHAR	Identifier for the branch.
local_user_created_at	DATE	Time when the user was created at (Local Time).
lead_status	VARCHAR	Lead status of the user either LEAD or CLIENT
client_conversion_event_type	VARCHAR	Event type of the conversion either MEMBERSHIP or USER_CREDIT
client_conversion_event_id	VARCHAR	Identifier of the conversion event
client_conversion_event_local_created_at	DATE	Time when the client conversion event was created at (Local Time).
client_conversion_event_name	VARCHAR	Name of the client conversion event
client_conversion_event_source	VARCHAR	Source of the client conversion event
first_user_membership_id	VARCHAR	Identifier of the purchased membership associated with the first event found for a given user.
first_local_membership_purchased_at	DATE	Time when the membership was purchased at (Local Time) associated with the first event found for a given user.

Col Name	Type	Description
first_membership_name	VARCHAR	Membership name associated with the first event found for a given user.
first_membership_source	VARCHAR	Membership source associated with the first event found for a given user.
first_credit_pack_id	VARCHAR	Identifier of purchased credit pack associated with the first event found for a given user.
first_local_credit_pack_purchase_at	DATE	Time when the credit pack was purchased at (Local Time) associated with the first event found for a given user.
first_credit_pack_name	VARCHAR	Credit pack name associated with the first event found for a given user.
first_credit_pack_source	VARCHAR	Credit Pack source associated with the first event found for a given user.

fct_lead_conversions (figure 1.4.2)

Dataset capturing users and their first client conversion event

Col Name	Type	Description
user_id	VARCHAR	Identifier for the user.
branch_id	VARCHAR	Identifier for the branch.
local_user_created_at	DATE	Time when the user was created at (Local Time).
lead_status	VARCHAR	Lead status of the user either LEAD or CLIENT
client_conversion_event_type	VARCHAR	Event type of the conversion either MEMBERSHIP or USER_CREDIT
client_conversion_event_id	VARCHAR	Identifier of the conversion event

Col Name	Type	Description
client_conversion_event_local_created_at	DATE	Time when the client conversion event was created at (Local Time).
client_conversion_event_name	VARCHAR	Name of the client conversion event
client_conversion_event_source	VARCHAR	Source of the client conversion event
client_conversion_event_filter	VARCHAR	Filterable label of the event which triggered the conversion for a user. (MEMBERSHIP, USER_CREDIT, ALL)

1.5 Requirements

Please complete the task using Postgres 16.

All SQL written should be clearly documented throughout.

Please make an effort to complete each step to the best of your ability.