

Task Name: Customer Transaction Staging & FX Enrichment Pipeline

Create a PostgreSQL stored procedure named

`sp_load_customer_transaction_stage`

that populates a staging table containing customer transaction records converted to USD.

Staging Table Structure

The procedure should load data into the following staging table:

```
stg_customer_transaction_summary (
    customer_id      INT,
    customer_name    TEXT,
    email            TEXT,
    account_id       INT,
    transaction_id   INT,
    tran_date        DATE,
    tran_type        VARCHAR(2),
    amount_ngn       NUMERIC(18,2),
    amountConverted  NUMERIC(18,2),
    running_balance  NUMERIC(18,2),
    customer_rank    INT,
    dateloaded       DATE
);
```

Stored Procedure Requirements

The stored procedure must perform all transformation and loading logic internally, such that each execution produces a fresh, accurate snapshot of customer transactions.

① Data Cleansing

- Normalize all customer email addresses by converting them to lowercase before loading into the staging table.

② Staging Table Refresh

- The staging table must be truncated at the beginning of the procedure.
- New records must be inserted after truncation to prevent duplicate or stale data.

3 Currency Conversion

- Transaction amounts stored in NGN must be converted to USD using the applicable FX rate.
- Store:
 - Original transaction amount as `amount_ngn`
 - Converted amount as `amountConverted`

4 Running Balance Calculation

- Calculate the running account balance for each customer using transaction history:
 - Credits increase the balance
 - Debits decrease the balance
- Running balance must be calculated in transaction date order for each customer or account.

5 Customer Ranking

- Rank customers based on their total transaction value.
- Customers with higher transaction volumes should have a higher rank.

6 Audit Column

- Populate the `dateLoaded` column with the current system date at the time the procedure is executed.

Execution Expectation

- All logic (cleansing, truncation, transformation, ranking, and loading) must reside inside the stored procedure.
- When executed:

```
CALL sp_load_customer_transaction_stage;
```

- The staging table must:
 - Contain only current records
 - Have correctly calculated balances and rankings
 - Be safe to re-run multiple times without data duplication