

## 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),  
    amount_converted  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 `amount_converted`

### 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