

# Assignment – Product Analyst Intern

**Kickoff date:** Today

**Deadline:** < 48 hours

**Instructions:**

- Use Only SQL and Excel for this analysis and also attach documentation in Word format to explain all the insights. Write sample queries in SQL with the schema given, and analysis can be made with the data provided on Excel for conclusions.
- You have to complete both Task 1 and Task 2 to be eligible for consideration for the role.

## Task 1

### Case Study: Improving User Retention for the App

#### Background

The app provides a spending account targeted at teens and young adults, enabling them to perform financial transactions such as sending/receiving money and making purchases through UPI and card transactions.

The goal is to increase **user retention** from its current state to a target improvement of **X%**. Retention is defined as users making at least one transaction in all three months of the observation period. To achieve this, we aim to identify the **habit-forming behaviour** of retained users, which can then be reinforced and nudged to the broader user base.

#### Problem Statement

We need to analyse user behaviour to identify patterns or combinations of actions that are strongly correlated with retention.

#### Assumptions

1. Each user has only one account on the platform.
2. The **activation date** for a user is the date when they made their first transaction on the app.

## Schema

### 1. **user\_details** Table

Column Name	Data Type	Description
user_id	INT	User identifier.
activation_date	DATE	Date when the user made their first transaction (activation).
age	INT	Age of the user at the time of activation.
name	VARCHAR	Name of the user.

### 2. **transaction** Table

Column Name	Data Type	Description
user_id	INT	User identifier.
txn_id	INT	Unique identifier for each transaction.
type_of_transaction	VARCHAR	Type of transaction (Credit, Debit to personal account, Debit to merchant account, Card transaction).
date_of_transaction	DATE	Date when the transaction occurred.
status	VARCHAR	Status of the transaction (Completed, Failed).
amount	DECIMAL	Transaction amount.

## Sample dataset

- Transaction\_Table (1).csv
- User\_Details\_Table.csv

## Task

Analyze user behaviour to identify patterns or combinations of actions that are strongly correlated with retention, and identify what is the habit forming action and when the habit is formed.

## Expectations

- SQL queries for all the analysis
- CSV files for all the analysis
- Clear insights on the habit forming patterns
- Nudges or interventions to develop habit forming patterns

## Task 2

### RCA: Recharge Revenue Dip

#### Background

The app allows users to **recharge prepaid mobile numbers** within the app. Recharges are a key **revenue driver** due to margins, operator commissions, and cross-sell opportunities.

The recharge funnel is:

1. **Browse** → User visits Recharge section.
2. **Plan Selected** → User selects a recharge plan.
3. **Payment Initiated** → User proceeds to pay.
4. **Payment Successful** → Transaction goes through successfully.
5. **Recharge Confirmed** → Operator confirms recharge.

#### Problem Statement

In the last **10 days**, Recharge Revenue has dropped by **25%** and successful recharges have dropped by **40%**.

#### Data Available

#### Funnel Numbers (Daily Average – Last 10 Days)

- **Browse**: 60,000

- **Plan Selected:** 35,000
- **Payment Initiated:** 28,000
- **Payment Successful:** 18,000
- **Recharge Confirmed:** 15,000
- **GMV:** ₹42 Lakhs/day
- Revenue: 4% of GMV

#### **Previous Benchmark (10 Days Before)**

- GMV: ₹56 Lakhs/day
- Revenue: 5% of GMV

Eligible funnel conversion rates:

- Browse → Plan Selected: 70% (now 58%)
- Plan Selected → Payment Initiated: 90% (now 80%)
- Payment Initiated → Payment Success: 80% (now 64%)
- Payment Success → Recharge Confirmed: 95% (now 83%)

#### **Additional Information**

- **Infra/Tech:** No app-wide downtime reported.
- **Operators:**
  - Operator X (55% share) → Timeout errors up by **3x**.
  - Operator Y (20% share) → Delayed confirmations, 1–2 hrs.
- **Payments:**
  - UPI payment success rate dipped by **15%** across categories.

- Loading money success rate is stable.
- **User Behaviour:**
  - Support tickets with “payment deducted but recharge not received” doubled.
  - Social media mentions of failed recharges increased.

### **Raw Support Ticket Samples (last 3 days)**

1. “Paid via UPI, money deducted but recharge failed. Please refund.”
2. “Payment successful but Recharge not happening”
3. “Tried 3 times with UPI, keeps failing. Worked only after I used to add money.”
4. “Recharge took 2 hours to show up. Missed my data pack deadline.”

### **Task**

You are the PM for Recharge. Do a **Root Cause Analysis (RCA)** of the Revenue drop.

### **Expectations**

1. **Root Cause Identification** – Funnel breakdown, primary vs secondary causes.
2. **Prioritization** – Which 2–3 issues to fix first?
3. **Short-term Actions** – What quick wins / mitigations can you roll out?
4. **Long-term Strategy** – How to build resilience and competitiveness?
5. **Metrics** – What should you track next 2–4 weeks to validate fixes?