

# Transaction Management System

## Overview

This document contains the Transaction Management database schema, including transaction history, payment methods, and merchant information.

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### Table: Transaction\_History

**Purpose:** Stores information about all customer transactions, including amounts and modes of payment.

Column Name	Data Type	Description	Constraints
Transaction_ID	INTEGER	Unique identifier for each transaction	PRIMARY KEY, AUTO_INCREMENT
Customer_ID	INTEGER	Reference ID linking to Customer_Info table	FOREIGN KEY, NOT NULL
Transaction_Date	DATE	Date of transaction	NOT NULL
Transaction_Time	TIME	Time of transaction	NOT NULL
Transaction_Amount	DECIMAL(12,2)	Amount involved in the transaction	NOT NULL, CHECK (Transaction_Amount > 0)
Payment_Method	VARCHAR(50)	Mode of payment (Credit Card/Debit Card/UPI/Cash/Net Banking)	NOT NULL
Merchant	VARCHAR(255)	Merchant or vendor associated with the transaction	NOT NULL
Merchant_Category	VARCHAR(100)	Category of merchant (Retail/Grocery/Fuel/Entertainment/Utilities)	NOT NULL
Transaction_Status	VARCHAR(20)	Status of transaction (Success/Failed/Pending/Reversed)	DEFAULT 'Success'
Reference_Number	VARCHAR(50)	Reference number for the transaction	UNIQUE
Description	VARCHAR(500)	Description or notes about the transaction	
Currency	VARCHAR(10)	Currency of transaction	DEFAULT 'INR'

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## Table: Payment\_Methods

**Purpose:** Stores details about customer payment methods and card information.

Column Name	Data Type	Description	Constraints
Payment_Method_ID	INTEGER	Unique identifier for payment method	PRIMARY KEY, AUTO_INCREMENT
Customer_ID	INTEGER	Reference to Customer_Info table	FOREIGN KEY, NOT NULL
Payment_Type	VARCHAR(50)	Type of payment (Credit Card/Debit Card/UPI/Bank Account)	NOT NULL
Card_Number	VARCHAR(20)	Last 4 digits of card (masked)	
Card_Holder_Name	VARCHAR(255)	Name on the card	
Expiry_Date	DATE	Card expiry date	
Bank_Name	VARCHAR(100)	Name of the bank	
Account_Number	VARCHAR(20)	Last 4 digits of account (masked)	
Is_Primary	BOOLEAN	Whether this is the primary payment method	DEFAULT FALSE
Is_Active	BOOLEAN	Whether payment method is active	DEFAULT TRUE
Added_Date	DATE	Date when payment method was added	NOT NULL
Last_Used_Date	DATE	Last date when payment method was used	

## Relationships

- **Foreign Key:** Customer\_ID references Customer\_Info.Customer\_ID

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## Table: Merchant\_Master

**Purpose:** Stores merchant information and details.

Column Name	Data Type	Description	Constraints
Merchant_ID	INTEGER	Unique identifier for merchant	PRIMARY KEY, AUTO_INCREMENT

Merchant_Name	VARCHAR(255)	Name of the merchant	NOT NULL, UNIQUE
Merchant_Category	VARCHAR(100)	Category of merchant	NOT NULL
Merchant_City	VARCHAR(100)	City where merchant operates	NOT NULL
Merchant_State	VARCHAR(100)	State where merchant operates	NOT NULL
Contact_Number	VARCHAR(20)	Contact number of merchant	
Email	VARCHAR(255)	Email of merchant	
Registration_Date	DATE	Date of merchant registration	NOT NULL
Total_Transactions	INTEGER	Total number of transactions	DEFAULT 0
Total_Transaction_Amount	DECIMAL(15,2)	Total transaction amount	DEFAULT 0.00
Merchant_Status	VARCHAR(20)	Status (Active/Inactive/Suspended)	DEFAULT 'Active'

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## Relationships Summary

- One customer can have multiple transactions
- One customer can have multiple payment methods
- One merchant can have multiple transactions
- All relationships are maintained through foreign keys