

# Telecom Support System - Logical Data Model

## CUSTOMERS

Stores customer identity details.

- customer\_id (PK)
- name
- phone\_number
- email
- address
- city
- pincode
- account\_status
- join\_date
- kyc\_status

Relationships:

1–N with subscriptions, invoices, transactions, tickets, chat\_history, customer\_usage.

## PLANS

Telecom plans with data, validity, and pricing.

- plan\_id (PK)
- plan\_name
- price
- validity\_days
- data\_limit
- voice
- sms

Relationships:

1–N with subscriptions, transactions, customer\_usage.

## SUBSCRIPTIONS

Tracks a customer's active plan.

- subscription\_id (PK)
- customer\_id (FK)
- plan\_id (FK)
- start\_date
- end\_date
- auto\_renew
- status

Relationships:

N–1 with customers, N–1 with plans.

## INVOICES

Billing information for postpaid/broadband users.

- invoice\_id (PK)
- customer\_id (FK)
- amount
- due\_date
- paid\_status
- billing\_period

Relationships:

N–1 with customers.

## TRANSACTIONS

Recharge and payment details.

- txn\_id (PK)
- customer\_id (FK)
- plan\_id (FK)
- amount
- txn\_date
- mode
- transaction\_status

Relationships:

N–1 with customers, N–1 with plans.

## ISSUE\_TYPES

List of all complaint categories.

- issue\_type\_id (PK)
- name
- description

Relationships:

1–N with tickets.

## TICKETS

Customer complaint records.

- ticket\_id (PK)
- customer\_id (FK)
- issue\_type\_id (FK)
- description
- status
- priority
- created\_at
- closed\_at
- assigned\_agent\_id (FK)

Relationships:

N–1 with customers, N–1 with issue\_types, N–1 with agents.

## **AGENTS**

Support executives handling customer issues.

- agent\_id (PK)
- name
- department
- shift\_timing
- rating

Relationships:

1–N with tickets.

## **CHAT\_HISTORY**

Chatbot conversation logs.

- chat\_id (PK)
- customer\_id (FK)
- message
- bot\_response
- intent
- sentiment
- timestamp

Relationships:

N–1 with customers.

## **OUTAGE\_AREAS**

Outage zones mapped by pincode.

- outage\_id (PK)
- city
- pincode
- issue\_description
- start\_time
- expected\_resolution

Relationships:

Linked to customers via pincode.

## **CUSTOMER\_USAGE**

Usage metrics for mobile & broadband.

- usage\_id (PK)

- customer\_id (FK)
- date
- mobile\_data\_used\_gb
- mobile\_voice\_minutes
- mobile\_sms\_count
- broadband\_data\_used\_gb
- plan\_id (FK)
- cycle\_start
- cycle\_end
- reported\_at

Relationships:

N-1 with customers, N-1 with plans.