**Team Members:**

**Title:** ConnectHub: Prepaid Network Services Database

**Description:**

This database is designed to manage the operations of a mobile network provider that offers prepaid plans to its customers. It's structured to accommodate the storage and retrieval of user information, plan details, payment transactions, and usage records.

Users Table: Contains basic user information.

User Plans Table: Links users to their prepaid plans and tracks the status of each plan.

Plans Table: Lists the different prepaid plans that the provider offers.

Payments Table: Records the payments made by users to purchase or recharge their plans.

Usage Table: Tracks the usage of each user.

**Entities and attributes:**

**1. Users**:

User ID (Primary Key)

Full Name

Email

Phone Number

Address

2.**User Plans :**

User Plan ID (Primary Key)

User ID (Foreign Key)

Plan ID (Foreign Key)

Activation Date

Expiration Date

Plan Status (Active/Expired)

3.**Plans :**

Plan ID (Primary Key)

Plan Name

Data Cap (MB or GB)

Call Minutes Cap (Minutes)

Text Messages Cap (Messages)

Validity Period (days)

Cost

4.**Payments :**

Payment ID (Primary Key)

User ID (Foreign Key)

Amount

Payment Date

Payment Method

5.**Usage :**

Usage ID (Primary Key)

User Plan ID (Foreign Key)

Data Used (MB or GB)

Call Minutes Used

Text Messages Sent

Usage Date

**Relationships:**

**User-User Plans Relationship (One-to-Many)**

* A user can have many user plans.
* A user plan is associated with one user.

**Plan-User Plans Relationship (One-to-Many)**

* A plan can be associated with many user plans.
* A user plan is associated with one plan.

**User Payments Relationship (One-to-Many)**

* A user can make many payments.
* A payment is made by one user.

**User Plans-Usage Relationship (One-to-Many)**

* A user plan can have many usage records.
* A usage record is associated with one user plan.

-- Create Users Table

CREATE TABLE Users (

UserID INT IDENTITY PRIMARY KEY,

FullName NVARCHAR(255) NOT NULL,

Email NVARCHAR(255) NOT NULL,

PhoneNumber NVARCHAR(20) NOT NULL,

Address NVARCHAR(255) NOT NULL

);

-- Create Plans Table

CREATE TABLE Plans (

PlanID INT IDENTITY PRIMARY KEY,

PlanName NVARCHAR(255) NOT NULL,

DataCapGB DECIMAL(5, 2) NOT NULL,

CallMinutesCap INT NOT NULL,

TextMessagesCap INT NOT NULL,

ValidityPeriod INT NOT NULL, -- Number of days the plan is valid

Cost DECIMAL(10, 2) NOT NULL

);

-- Create User Plans Table

CREATE TABLE UserPlans (

UserPlanID INT IDENTITY PRIMARY KEY,

UserID INT NOT NULL FOREIGN KEY REFERENCES Users(UserID),

PlanID INT NOT NULL FOREIGN KEY REFERENCES Plans(PlanID),

ActivationDate DATE NOT NULL,

ExpirationDate DATE NOT NULL,

PlanStatus BIT NOT NULL -- 1 for active, 0 for expired

);

-- Create Payments Table

CREATE TABLE Payments (

PaymentID INT IDENTITY PRIMARY KEY,

UserID INT NOT NULL FOREIGN KEY REFERENCES Users(UserID),

Amount DECIMAL(10, 2) NOT NULL,

PaymentDate DATE NOT NULL,

Method NVARCHAR(50) NOT NULL CHECK (Method IN ('Credit Card', 'PayPal', 'Debit Card', 'Bank Transfer', 'Cash'))

);

-- Create Usage Table

CREATE TABLE Usage (

UsageID INT IDENTITY PRIMARY KEY,

UserPlanID INT NOT NULL FOREIGN KEY REFERENCES UserPlans(UserPlanID),

DataUsedGB DECIMAL(5, 2) NOT NULL,

CallMinutesUsed INT NOT NULL,

TextMessagesSent INT NOT NULL,

UsageDate DATE NOT NULL

);