***SHARED SCOOTER SYSTEM***

**Description& Scope of Organization**

Our electric scooter sharing system will be a service where scooters can be rented out for a short amount of time to various users. Our organization will have several docking stations located around the city and users will rent out and return scooters from these stations. With their account loaded onto the app, users will need to scan the QR code on the scooter that they wish to rent which will then be unlocked for use. At the docking stations all paymentsare done through the app. Service employees will periodically take in scooters for maintenance and service checks.

**Entities**

* SCOOTER
  + The SCOOTER entity records data about each scooter the organization owns and operates in the shared system.
  + *Attributes*

ScooterID, ModelNumber,MakeModelYear,StatusInUse, StationID.

The StatusInUse attribute shows information about whether the scooter is being rented out or is available in a docking station.

* + *Primary Key*

Every scooter is assigned a unique Scooter ID and will be used as a primary key.

* + *Relationships*

The SCOOTER table has 1:M cardinality with the DOCKING STATIONS, RIDESand SERVICE RECORD.

* DOCKING STATIONS
  + The DOCKING STATIONS entity records data of all the docking stations located within the city.
  + *Attributes*

StationID, StationName, DockingCapacity, Address,Coordinates(Latitude, Longitude), StationStatus.

StationStatusattribute shows how many scooters are available at that location.

* + *Primary Key*

Every Docking Station is assigned with a unique StationID and will be used as a primary key.

* + *Relationships*

The DOCKING STATION has 1:M cardinality with SCOOTER.

* USERS
  + USER Entity records the basic information about the user.
  + *Attributes*

UserID, UserName(FirstName,MiddleName,LastName), PhoneNumber, Email.

* + *Primary Key*

UserID is the primary key.

* + *Relationships*

The USER table has 1:1 cardinality with ACCOUNT.

* ACCOUNT
  + The ACCOUNT entity records the Account details of the User.
  + *Attributes*

AccountID,AccountBalance, UserID

* + *Primary Key*

AccountID is the primary key.

* + *Relationships*

The ACCOUNT table has 1:1 cardinality with the USERS table and 1:M cardinality with RIDES and PAYMENT.

* RIDES
  + The RIDES entity records data of all the rides made by users.
  + *Attributes*

RideID,StartStationID,EndStationID,StartTime,EndTime, ScooterID, FareID

* + *Primary Key*

The RideIDis used as the primary key.

* + *Relationships*

The RIDES table has 1:M cardinality with SCOOTERS, ACCOUNTSand FARES.

* PAYMENT
  + The PAYMENT entity records data of the payments made by the user to his/her account.
  + *Attributes*

PaymentID, PaymentOption, AccountID

* + *Primary Key*

PaymentID acts as the primary key.

* + *Relationships*

The PAYMENT entity has 1:M cardinality with ACCOUNT.

* + The PAYMENT entity has two sub-type disjoint entities

1. CARD PAYMENT

It stores the card details of the user. It has additional attributesCardNumber, CardName, CVV, ExpDate.

1. DIGITAL WALLET

It stores digital payment details of the user. It has additional attributesWalletName, WalletDetails

* FARES
  + The FARES Entity records the data of the fares based on the time the user has rented the scooter.
  + *Attributes*

FareID, Time,Amount

* + *Primary Key*

The primary key is the FareID.

* + *Relationships*

The FARES table has 1:M cardinality with RIDES.

* SERVICE
  + The SERVICE entity records information about the type of services the scooter can be subjected to.
  + *Attributes*

ServiceID, ServiceType, LocationID, EmployeeID.

* + *Primary Key*

ServiceID acts as the primary key.

* + *Relationships*

The SERVICE entity has 1:M cardinality withEMPLOYEE and SERVICE RECORD

* SERVICE LOCATION
  + The SERVICE LOCATION entity records data about the service provided to the scooter.
  + *Attributes*

LocationID,LocationName, LocationAddress

* + *Primary Key*

The LocationID acts as a primary key

* + *Relationships*

The SERVICE LOCATION entity has 1:M cardinality with SERVICE RECORD.

* EMPLOYEES
  + The EMPLOYEES entity records the basic information about the employees
  + *Attributes*

EmployeeID,EmployeeName, EmployeeAddress, EmployeeEmail, EmployeeEmail

* + *Primary Key*

The EmployeeID will be used as the primary key.

* + *Relationships*

The EMPLOYEE table has 1:M cardinality with the SERVICE.

* SERVICE RECORD (associative entity)
  + The SERVICE RECORD entity records information about all the services the scooter hasundergone.
  + *Attributes*

ServiceID, ScooterID, LocationID.

* + *Relationships*

It has 1:M cardinality with SCOOTER, SERVICE and SERVICE LOCATION

**Business Rules**

* A user can book a scooter from docking station and must return it to the same or another station.
* A docking station can host 0 or many scooters
* Every ride is associated with a scooter.
* A scooter can have many or no rides.
* Each ride is associated with a certain fare based on the time.
* Every user is associated to a certain account.
* Each account is associated with a single user.
* A user can load money into his account by multiple payments.
* A payment can be either Card payment or Digital wallet
* Each scooter has a service record that stores the type of services the scooter has undergone.
* A service record can have multiple type of services.
* A service record stores the location of service.
* A service location can have multiple service records.
* A service is done by an employee.
* An employee can do multiple services.

