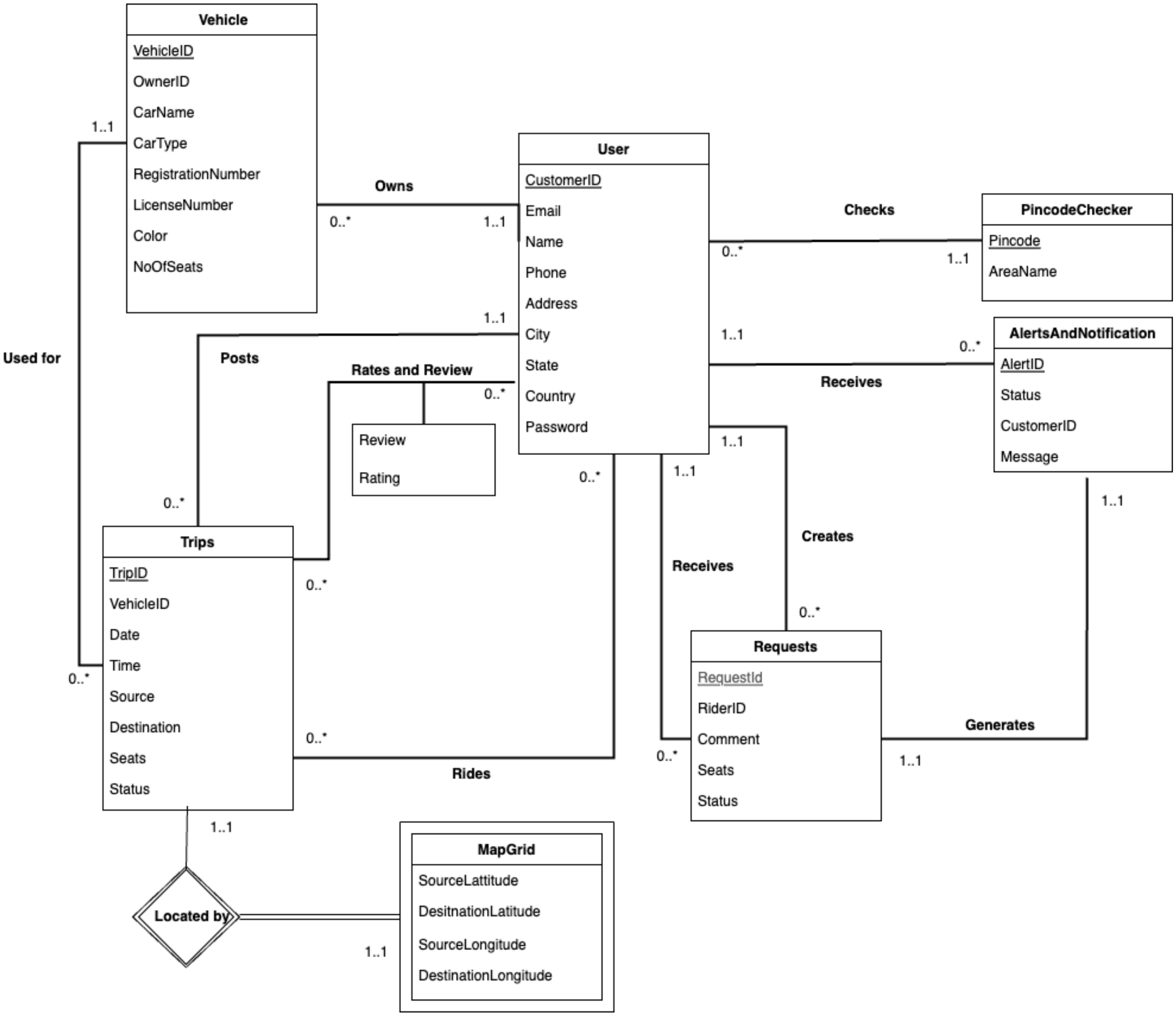
## UML diagram:

Link to the UML Diagram:
https://drive.google.com/file/d/1F5Uav-XEozP2_whl4q2vtgFPG5KNaZN5/view?usp=sharing



**Assumptions for each entity and relationship:**

Note: Users (in the User table) can be an **owner** (own car) or a **seeker** (seeks ride).

1) Each User, i.e., the owner (Table – User), can have multiple vehicles (Table – Vehicle), and each vehicle is owned by one user, i.e., the owner.
2) Each User, i.e., the owner (Table – User), will post multiple trips (Table – Trips), and each Trip ID is associated with one user, i.e., the owner.
3) Each User, i.e., the seeker (User), creates multiple ride requests(different rides), and each request ID is created/associated with a single user, i.e., the seeker.
4) Each User, i.e., the owner (User), receives multiple ride requests, and each request ID is associated with a single user, i.e., the owner.
5) Each User, i.e., the seeker (Table – User), can have multiple rides (Table – Rides), and each Trip is associated with multiple users, i.e., the seekers.
6) Each User, i.e., the seeker (Table – User), can give ratings for multiple trips (Table – Rating and Reviews), and each trip can have multiple ratings.
7) Each Trip will have one source and destination (Table – MapGrid), and each record Source-Destination detail is associated with one trip.
8) Each request will generate one alert message, and each alert message (Table – AlertsAndNotification) is associated with one request.
9) Each User will have multiple alerts, and each alert will be associated with one user.
10) Each User will have one Pincode, and each Pincode (Table – PinCodeChecker) will be associated with multiple users.
11) **MapGrid is a weak entity as it doesn't have a primary key on its own, and it uses the primary key from Trip Table.**

**Relational Schema**

**User**(CustomerID: INT [PK] auto_increment, Email: VARCHAR(255) UNIQUE not null, Name: VARCHAR(50) not null, Phone: VARCHAR(15) UNIQUE not null, Address: VARCHAR(250) not null, City: VARCHAR(50) not null, State: VARCHAR(50) not null, Country: VARCHAR(50) not null, Password: VARCHAR(255) not null)

**Vehicle**(VehicleID: INT[PK] auto_increment, OwnerID: INT [FK to User.CustomerID], CarName: VARCHAR(30) not null, CarType: VARCHAR(30), RegistrationNumber: VARCHAR(40) UNIQUE not null, LicenseNumber: VARCHAR(30) unique not null, Color: VARCHAR(20) not null, NoOfSeats: INT not null)

**Trips**(TripID: INT[PK] auto_increment, VehicleID: INT[FK to Vehicle.VehicleID], Date: DATE not null, Time: TIMESTAMP not null, Source: VARCHAR(255) not null, Destination: VARCHAR(255) not null, Seats: INT not null, Status: VARCHAR(10) not null))

**Rides**(RiderID: INT, TripID: INT, [PK]:(RiderID,TripID), RiderID: [FK to User.CustomerID], TripID: [FK to Trips.TripID])

**RatesAndReviews**(CustomerID: INT, TripID: INT, Review: VARCHAR(255) not null, Rating: REAL not null, [PK]:(CustomerID, TripID), CustomerID: [FK to User.CustomerID], TripID: [FK to Trips.TripID])

**MapGrid**(TripID: INT[PK], SourceLatitude: REAL not null, DestinationLatitude: REAL not null, SourceLongtitude: REAL not null, DestinationLongitude: REAL not null, TripID:[FK to Trips.TripID])

**PincodeChecker**(Pincode: INT[PK], AreaName: VARCHAR(100) not null)

**AlertsAndNotification**(AlertID: INT[PK] auto_increment, CustomerID: INT[FK to User.CustomerID], Message: VARCHAR(255) not null, Status: VARCHAR(15) not null)

**Requests**(RequestID: INT[PK] auto_increment, RiderID: INT[FK to User.CustomerID], Comment: VARCHAR(255) not null, Seats: INT not null, Status: VARCHAR(50) not null)

**Description of Relations:**

| **Entity 1** | **Entity 2** | **Relation Name** | **Cardinality** | **Description** |
|---|---|---|---|---|
| User | vehicle | owns | One to Many | User owns vehicle |
| User | Trips | Post | One to Many | Owner posts trips |
| User | PincodeChecker | Checks | Many to One | Check if the Pincode is valid |
| User | Requests | Creates | One to Many | User creates requests to tag in |
| User | Trips | Rating | Many to Many | Each user(rider) can give a rating to multiple trips. |
| Trips | Vehicle | Used For | Many to One | Vehicle used for the trips |
| Trips | MapGrid | LocatedBy | One to One | Each SD pair has 1 location coordinates |
| Request | User | Receives | Many to One | Each User Get Multiple Request |
| User | AlertAndNotification | Receives | One to Many | Each user receives multiple alerts |
| Request | AlertAndNotification | Generates | One to One | Each request generates one alert |
| User | Trips | Rides | Many to Many | A user can have many trips and a trip can have many |

|  |  |  |  |  |
|---|---|---|---|---|
|  |  |  |  | user |