# Ride Management System

When we first arrived in Arlington, USA as international students, we discovered that there were not many options for public transportation. Available options such as Uber and Lyft were somewhat expensive for students. At that point, we came across 'via' which offered reasonably priced rides compared to others. Consequently, we were intrigued to design a ride management system exclusively for students, providing a fresh, affordable, and effective transportation choice for them.

Without a doubt, creating a database for a transport company might be difficult, which is why we have added some limitations/constraints.

**Constraints:**

- We have restricted our scope to 10 cities. {Arlington, Irving, Lewisville, Frisco, Grapevine, Cedar Hill, Richardson, Grand Prairie, Richardson, Coppell}
- Every driver has a legal driving license and has a legal vehicle. A driver must drive at least one vehicle. The vehicle is driven by only the owner (driver).
- for the ride to be scheduled atleast a booking should be done and at most one.
- Every driver must accept a minimum of one booking and a maximum of 4 (according to seats available) at a time. Every booking must be accepted by atleast 1 driver at a time. Given a booking, only 1 driver can accept it.
- Our customers' domain only includes the passengers who booked the ride. Passengers can make multiple bookings a day.
- Payment mode while booking is restricted to payment by card. All card details are authentic.



**Data Requirements:**

**Driver:**

- Each driver has a unique Driver's License.
- Name of the driver (First Name and Last Name)
- Date of Birth of the driver
- Gender of the driver
- Contact number(s) of the driver
- Email Id of the driver

**Vehicle:**

- Vehicle ID (Vehicle registration-plate information)
- Brand of the vehicle
- Model of the vehicle
- Colour

**Passenger:**

- Each passenger will have a unique Passenger ID
- Name of the passenger (First Name and Last Name)
- Date of Birth of the passenger
- Gender of the passenger
- Contact number(s) of the passenger
- Email Id of the passenger

**Payment:**

- Each card will have a unique ID
- Card Detail (Card number, Expiration Date)

**Booking:**

- Each booking will have a unique Booking ID
- Pickup address (City and Pincode)
- Dropoff address (City and Pincode)
- Fare amount



For every booking, the timestamp (date and time) of the booking is captured and the booking must have a track of the number of passengers. Given a valid booking, a passenger makes the payment and the payment confirms at least and at most one booking, and a driver accepts the booking.

**Ride Schedule:**

- A unique Ride ID
- Ride start time
- Ride end time
- Ride duration

  It can internally fetch the Booking details for every ride scheduled.

**Business Goals:**

- Top 5% of passengers who booked the maximum number of rides for a month so as to reward them and encourage them to take more rides hence increasing our sales.
- Top 5% of passengers who booked the minimum number of rides in a month so as to provide a discount to them and encourage them to take more rides hence increasing our sales.
- Top 5% of passengers who spent the maximum amount on the fare in a month.
- Top 50% of cities where maximum ride bookings are made.
- Top 50% of cities where minimum ride bookings are made.
- Which month of the year experiences maximum ride bookings.
- Which day of the week experiences maximum ride bookings.
- Which hours of the day experience maximum ride bookings.

**Group 12 Member Details:**

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