Cababa: A Cab Booking System

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1.1 Data Manipulation

1. Adding a column for driver email in vehicles
2. Deleting an entry from a driver based on email
3. Inserting a tuple in the users
4. Updating user status to ONGOING when in a ride
5. Updating user status to IDLE when a ride finishes
6. Alter the table to set the default value of ongoing to 0
7. Update the users' table to change user details
8. Update the rides' table to start the current trip
9. Insert into the drivers' table while adding a new driver
10. Update the drivers' table to add driver rating, update total trip count, rated trip count, final rating, and calculate the fare

These queries are involved in manipulating the data in the database. They include adding new columns or entries, deleting existing entries, updating the status of users or rides, and inserting new rides.

1.2 Data Access

1. Selecting the tuple from the driver based on email
2. Showing one-to-one mapping between drivers and vehicles
3. Showing the ride history of a user from latest to oldest
4. Selecting 10 user emails from the user table
5. Displaying the relationship between vehicles and vehicles_type
6. Displaying the most recent ride of a user
7. Displaying all ongoing rides

These queries involve accessing data from the database. They include selecting tuples or rows based on certain criteria, displaying the relationship between different tables, and showing users' ride history or ongoing rides.

1.3 Relational Algebraic Operations

1. Displaying the count of vehicles of each type. This query involves performing a relational algebraic operation (COUNT) on the database.

2. Calculate the drivers' final rating based on the net-rated trips and net ratings.

1.4 Constraint Demonstration

1. Adding foreign key constraint on the driver email in rides
2. Gives an error when the email or phone number is same
3. Gives an error when the phone number is less than 10 digits
4. Adding constraints in the rides' table to ensure unique entries during ongoing trips
5. Gives an error when a user tries to book another ride during an ongoing ride, as the same user cannot have another ongoing ride
6. Added a constraint to demonstrate that pickup time should be before the drop-off time
7. Added a constraint to check that rated trips should be less than or equal to the total trips

These queries involve applying constraints to the database. They include adding foreign key constraints, checking for unique entries, and demonstrating how constraints prevent certain actions from being performed in the database.