Car Rental Management System

Project Report

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Experiment – 1

Advantages of DBMS over File system

- ## Data Redundancy and Inconsistency.

When same data is rewritten in different files unnecessarily, it utilizes some memory space which in turn is wasted. For example, if a car owner has a more than one car (say SUV and sedan) the location and mobile number of that car owner may appear in another files which has information about owners and cars. Storage of these many files will definitely occupy huge memory and also for accessing the data we will require more efforts comparatively. Also, it will lead to data inconsistency as every time you make some changes at one place you will have to correct it everywhere else it will corrupt the data. For example, mobile number of the owner exists in more than one tables and if the mobile number of a particular person has been changed it must be reflected in all other tables and if even a single place the change has not been made it will corrupt the data.

- ## Difficulty in accessing data

Suppose that car owner wants to find out his owned cars in any particular location. Since the creators of the database have not written a program explicitly for such a query the owner would have to explicitly get the code/program to get the list and this would happen each time some different query is to be executed. After some day if a car owner wanted the details of a driver who drove his car a month ago, then there is requirement of another program.

It does emphasize this point that the ordinary file processing system is not at all efficient.

- Data Isolation

Since different data is written in different formats many a times combining them to get the resultant output is difficult since writing a code for that explicitly will be difficult. For example, say that the data related to drivers is written in an excel file and that related to car owners is in a word document in the form of tables. Writing a code which will read both of these and give an efficient required output is far more difficult than using DBMS.

- Integrity Problems

The data values inserted in the tables or database must be according to the constraints which are predefined. The Car rental system maintains balance of customers. We need that the balance of any customers should not be less than zero. We also need that customers can't book it for less than 18 hours. Also, when we add the new constraints, it is difficult to change the programs to ensure that the new constraints are satisfied. The problem becomes more complex when we the files are in different formats and that is why DBMS is used which takes care of these problems.

- Atomicity Problem

There are possibilities that a system may undergo different types of failures and which may lead to corruption of files and the transactions might not get completely executed. In that case it is required that the system gets restored to its original state to avoid inconsistency in the database. For example, suppose that a customer has paid the payment but it has not been transferred to the driver's account, resulting in an inconsistence database state. These transfers need to be atomic which means, either it has to happen completely or it must not happen. Such atomicity is more easy to maintain in DBMS compared to that in FILE SYSTEMS.

- Concurrent-access anomalies

To improvise the performance of our system, we will allow multiple users to book a car at a time, which is possible easily by using Database Management System. If a customer A and customer B tries to book a car for rent at a same time both the customers will get a car that they have booked whereas this type situations will create difficulties. That is the drawback of File system.

- Security Problems

In the file system every user may be able to access all the data. Any customer should not be given access to all the data like transaction detail of company and driver. If a customer given access to all the data it can be a threat for the developer's business or any other person involved.

Experiment – 2

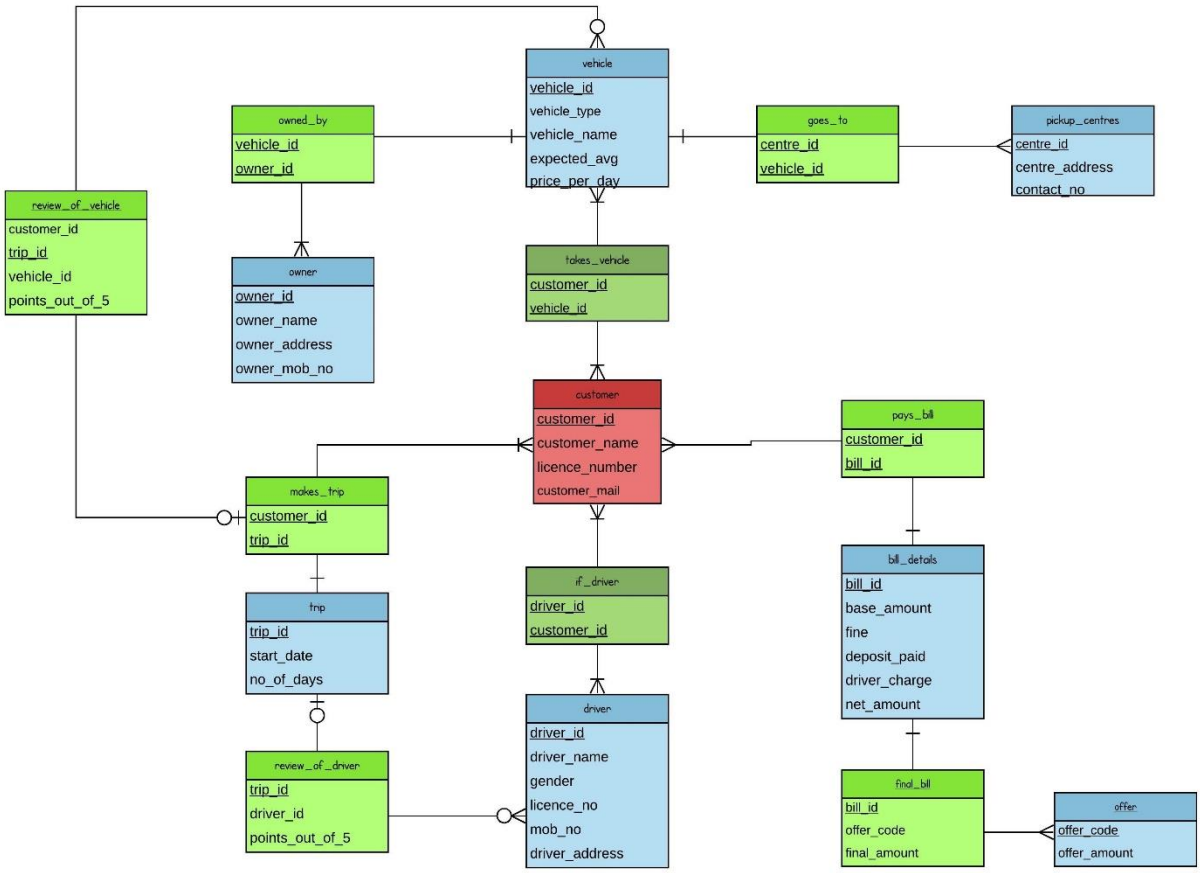
LIST OF TABLES

- Customer(customer_id, customer_name, license_number,customer_mail)
- Review_of_vehicle(trip_id,vehical_id,points_out_of_5,customer_id)
- Review_of_driver(trip_id,driver_id,points_out_of_5,customer_id)
- Offer(offer_code,offer_amount)
- Pays_bill(customer_id,bill_id)
- If_driver(driver_id,customer_id)
- Makes_trip(customer_id,trip_id)
- Trip(trip_id,start_date,no_of_days)
- Takes_vehicle(customer_id, vehical_id)
- Bil_details(bill_id,base_amount,fine,discount,deposite_paid,driver_charge, final_amount)
- vehicle(vehicle_id,vehicle_name,vehicle_type'expected_avg,price_per_day)
- Owned_by(vehicle_id,owner_id)
- Owner(owner_id,owner_name,owner_address,owner_mob_no)
- Pickup_centres(centre_id,center_address,contact_no)
- Goes_to(centre_id,vehicle_id)
- Final_bill(bill_id,offer_code,final_amount)
- Driver(driver_id,driver_name,gender,licence_no,mob_no,driver_address)

RELATIONAL MODEL

Table Name	Candidate Key	Super Key	Primary Key	Foreign Key
Customer	customer_id, licence_number		customer_id	
Vehicle	vehicle_id		vehicle_id	
Driver	driver_id, licence_no		driver_id	
makes_trip	trip_id and customer_id	customer_id, trip_id	trip_id and customer_id	customer_id , trip_id
Trip	trip_id	trip_id	trip_id	
review_of_driver	trip_id, trip_id and driver_id	trip_id, driver_id	trip_id	trip_id, driver_id
bill_details	bill_id	bill_id	bill_id	
offer	offer_code	offer_code	offer_code	
final_bill	bill_id	bill_id, offer_code	bill_id	bill_id, offer_code
pays_bill	customer_id and bill_id	customer_id, bill_id	customer_id and bill_id	customer_id, bill_id
if_driver	driver_id and customer_id	driver_id , customer_id	driver_id and customer_id	driver_id , customer_id

Owner	owner_id	owner_id	owner_id	
takes_vehicle	customer_id and vehicle_id	customer_id , vehicle_id	customer_id and vehicle_id	customer_id , vehicle_id
owned_by	vehicle_id and owner_id	vehicle_id , owner_id	vehicle_id and owner_id	vehicle_id , owner_id
pickup_centres	centre_id	centre_id	centre_id	
review_of_vehicle	trip_id , trip_id and vehicle_id, trip_id and customer_id	trip_id , trip_id and vehicle_id, trip_id and customer_id	trip_id	trip_id, vehicle_id, customer_id
goes_to	vehicle_id and centre_id	vehicle_id, centre_id	vehicle_id and centre_id	vehicle_id, centre_id


vehicle
vehicle_id
vehicle_type
vehicle_name
expected_avg
price_per_day
owned_by
vehicle_id
owner_id
goes_to
centre_id
vehicle_id
pickup_centres
centre_id
centre_address
contact_no
review_of_vehicle
customer_id
trip_id
vehicle_id
points_out_of_5
owner
owner_id
owner_name
owner_address
owner_mob_no
takes_vehicle
customer_id
vehicle_id
customer
customer_id
customer_name
licence_number
customer_mail
pays_bill
customer_id
bill_id
makes_trip
customer_id
trip_id
trip
trip_id
start_date
no_of_days
if_driver
driver_id
customer_id
bill_details
bill_id
base_amount
fine
deposit_paid
driver_charge
net_amount
driver
driver_id
driver_name
gender
licence_no
mob_no
driver_address
review_of_driver
trip_id
driver_id
points_out_of_5
final_bill
bill_id
offer_code
final_amount
offer
offer_code
offer_amount

Experiment – 3

Relational Algebra

1.Selection:

It selects some/all of the rows/tuples from a given table that will satisfy the given condition. This operator is denoted by sigma(σ).

2.Projection:

It projects some/all of the columns from a given table as per the condition specified. In other words, it projects the attributes asked by the user instead of showing the whole table.

It is denoted by the symbol π(PI).

3.Cartesian Product:

It is used to merge two tables, or subsets of two tables. More often it used such that it is followed by other operations in a more specific way such as inner join, natural join, etc.

It is denoted by ×.

4.Union:

It is used to include all the tuples/rows from two tables into a single table such that all the duplicate rows are eliminated.

It is denoted by U.

Certain conditions must hold true for union operation to be valid

- Both the tables must have same number of attributes.
- Attribute domains must be compatible.

5.Set difference:

The set difference of two tables, A and B results another table that will include all the rows/tuples which are in A but not in B.

It is denoted by '-'.

Conditions that must hold true for set difference to be a valid operation are:

- The attribute names of both the tables must match with each other.
- The two tables should be either compatible or union compatible.

6.Natural Join:

It can be performed only when the two operand tables have one of the attributes common. Attribute name and types must be same in both the tables.

Example:

1. Selection:

```
σ customer_name = "Raju" (customer)
σ driver_name = "Madan" (driver)
σ owner_name = "Raman" (owner)
σ customer_name = "Raj" (customer)
σ owner_name = "Ram" (owner)
```

2. Projection:

```
Π Customer_id, customer_name (Customer)
Π driver_id, gender (driver)
Π owner_id, owner_name (owner)
Π Customer_id (Customer)
Π driver_id, driver_name (driver)
```

3. Cartesian product:

```
σ Customer_id = ‘c011’ (customer X if_driver)
σ Customer_id = ‘c011’ (driver X if_driver)
σ vehicle_id = ‘v007’ (owner X owned_by)
σ Customer_id = ‘c001’ (customer X if_driver)
σ vehicle_id = ‘v008’ (owner X owned_by)
```

4. Union:

```
Customer U if_driver
Driver U if_driver
Owner U owned_by
Customer U pays_bill
Bill_details U pays_bill
```

5. Set difference:

```
customer-if_driver
Driver-if_driver
Owner-owned_by
Customer - pays_bill
Bill_details - pays_bill
```

6. Natural join:

```
customer ⋈ if_driver
driver ⋈ if_driver
owner ⋈ owned_by
Bill_details ⋈ pays_bill
Customer ⋈ pays_bill
```

7. Composition of any two from (1-6) operators:

```
σ driver_name = "Raju" (customer ⋈ if_driver)
σ customer_name = "Madan" (customer ⋈ if_driver)
σ owner_name = "Rajesh" (owner ⋈ owned_by)
σ driver_name = "Rajm" (customer ⋈ if_driver ⋈ driver)
σ owner_id = "o011" (owner ⋈ owned_by)
```

8. Composition of any three of above (1-6) operators:

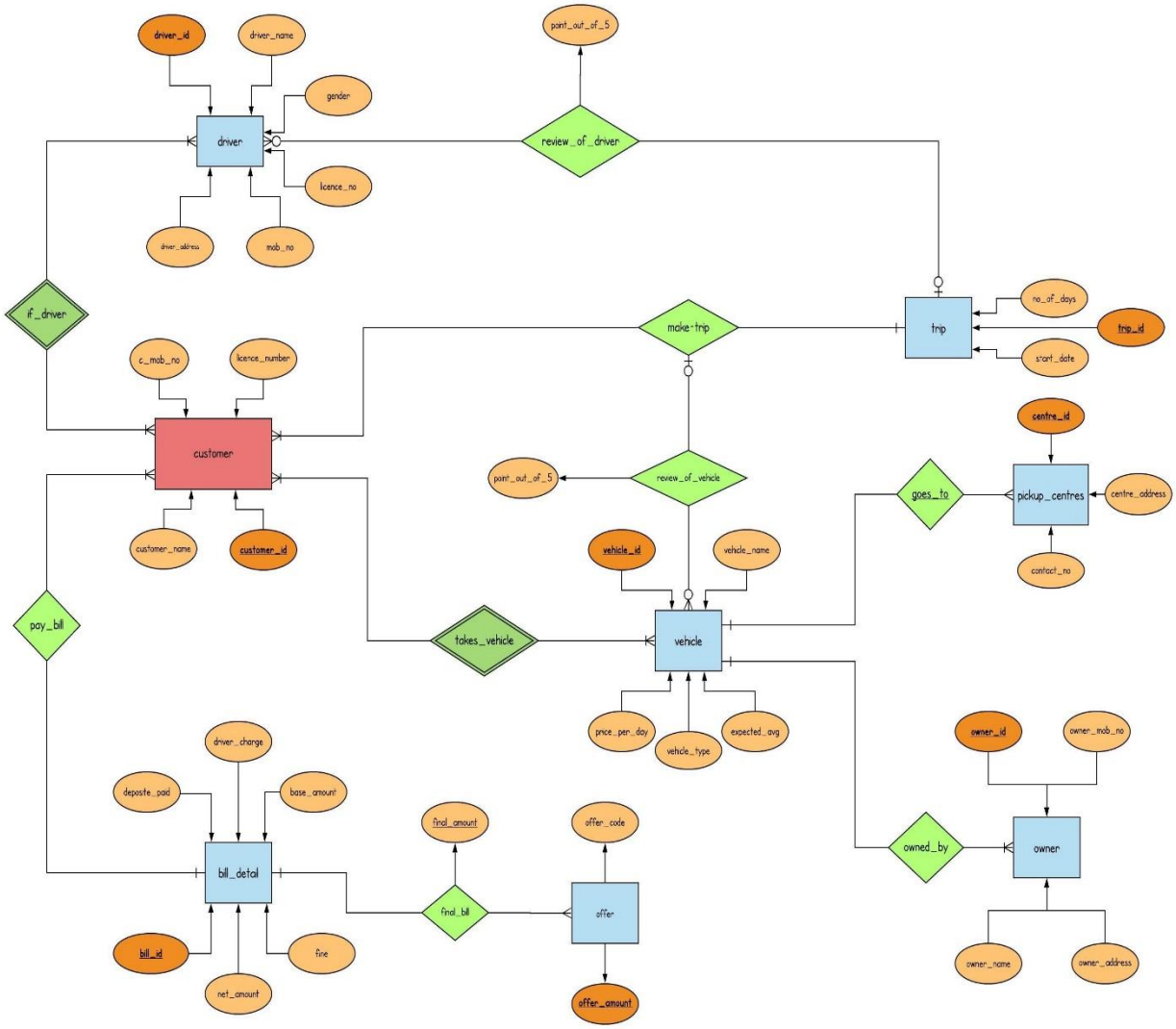
```
Π Customer_id, customer_name (σ driver_id = "d004" (customer ⋈ if_driver))
Π driver_id, driver_name (σ customer_id = "c044" (driver ⋈ if_driver))
Π vehicle_id, owner_name (σ owner_id = "o0088" (owner ⋈ owned_by))
Π Customer_id, customer_name (σ driver_name = "nishant" (customer ⋈ if_driver
⋈ driver))
Π vehicle_id, owner_name (σ owner_id = "o008" (owner ⋈ owned_by))
```

Experiment – 4

ENTITY RELATIONAL MODEL

Table Name	Candidate Key	Super Key	Primary Key	Foreign Key
Customer	customer_id, licence_number		customer_id	
Vehicle	vehicle_id		vehicle_id	
Driver	driver_id, licence_no		driver_id	
makes_trip	trip_id and customer_id	customer_id, trip_id	trip_id and customer_id	customer_id , trip_id
Trip	trip_id	trip_id	trip_id	
review_of_driver	trip_id, trip_id and driver_id	trip_id, driver_id	trip_id	trip_id, driver_id
bill_details	bill_id	bill_id	bill_id	
offer	offer_code	offer_code	offer_code	
final_bill	bill_id	bill_id, offer_code	bill_id	bill_id, offer_code
pays_bill	customer_id and bill_id	customer_id, bill_id	customer_id and bill_id	customer_id, bill_id

if_driver	driver_id and customer_id	driver_id , customer_id	driver_id and customer_id	driver_id , customer_id
Owner	owner_id	owner_id	owner_id	
takes_vehicle	customer_id and vehicle_id	customer_id , vehicle_id	customer_id and vehicle_id	customer_id , vehicle_id
owned_by	vehicle_id and owner_id	vehicle_id , owner_id	vehicle_id and owner_id	vehicle_id , owner_id
pickup_centres	centre_id	centre_id	centre_id	
review_of_vehicle	trip_id , trip_id and vehicle_id, trip_id and customer_id	trip_id , trip_id and vehicle_id, trip_id and customer_id	trip_id	trip_id, vehicle_id, customer_id
goes_to	vehicle_id and centre_id	vehicle_id, centre_id	vehicle_id and centre_id	vehicle_id, centre_id


driver_id
driver_name
gender
driver
licence_no
driver_address
mob_no
point_out_of_5
review_of_driver
if_driver
make_trip
trip
no_of_days
trip_id
start_date
c_mob_no
licence_number
customer
customer_name
customer_id
point_out_of_5
review_of_vehicle
goes_to
centre_id
pickup_centres
centre_address
contact_no
vehicle_id
vehicle_name
pay_bill
takes_vehicle
vehicle
price_per_day
vehicle_type
expected_avg
owner_id
owner_mob_no
driver_charge
deposite_paid
base_amount
bill_detail
final_amount
offer_code
owned_by
owner
bill_id
fine
net_amount
final_bill
offer
offer_amount
owner_name
owner_address

Experiment – 5 to 10

Exp – 6 Create tables

```
create table customer(
    customer_id     varchar(6),
    customer_name   varchar(20),
    licence_number  varchar(27),
    primary key(customer_id)
);

create table vehicle(
    vehicle_id      varchar(6),
    vehicle_type    varchar(8),
    vehicle_nam     varchar(8),
    expected_avg    numeric(2,2),
    price_per_day   numeric(4,0),
    primary key(vehicle_id)
);

create table takes_vehicle(
    vehicle_id      varchar(6),
    customer_id     varchar(6),
    foreign key(vehicle_id) references vehicle,
    foreign key(customer_id) references customer
```

```
);
create table owner(
        owner_id            varchar(6),
        owner_name          varchar(20),
        owner_address       varchar(100),
        owner_mob_no        numeric(10,0),
        primary key(owner_id)
);

create table driver(
    driver_id       varchar(6),
    driver_name     varchar(20),
    gender          varchar(6),
    licenece_no     varchar(28),
    mob_no          numeric(10,0),
    driver_address  varchar(100),
    primary key(driver_id)
    );

create table if_driver(
    driver_id       varchar(6),
    customer_id     varchar(6),
    foreign key(customer_id) references customer,
    foreign key(driver_id) references driver
    );
```

```
create table trip(
    trip_id       varchar(6),
    start_date    varchar(10),
    no_of_days    numeric(2,0),
    primary key(trip_id)
    );

create table makes_trip(
    trip_id       varchar(6),
    customer_id   varchar(6),
    foreign key(trip_id) references trip,
    foreign key(customer_id) references customer
    );

create table bill_details(
    bill_id       varchar(6),
    base_amount   numeric(5,1),
    fine          numeric(6,0),
    deposite_paid numeric(4,0),
    driver_charge numeric(4,1),
    net_amount    numeric(7,1),
    primary key(bill_id)
    );
```

```
create table pays_bill(
    bill_id        varchar(6),
    customer_id    varchar(6),
    foreign key(customer_id) references customer,
    foreign key(bill_id) references bill_details
    );

create table offer(
    offer_code    varchar(6),
    offer_amount    numeric(3,0),
    primary key(offer_id)
    );

create table final_bill(
    bill_id        varchar(6),
    offer_code     varchar(6),
    final_amount   numeric(7,1),
    foreign key(bill_id) references bill_details,
    foreign key(offer_code) references offer
    );

create table owned_by(
        vehicle_id varchar(6),
        owner_id varchar(6),
        foreign key(vehicle_id) references vehicle,
        foreign key(owner_id) references owner
```

```
);

create table goes_to(
        centre_id varchar(6),
        vehicle_id varchar(6),
        foreign key (centre_id) references pickup_centres,
        foreign key (vehicle_id) references vehicle
         );
create table review_of_driver(
        customer_id varchar(6),
        trip_id varchar(6),
        driver_id varchar(6),
        points_out_of_5 int(1),
        foreign key (customer_id) references customer,
        foreign key (trip_id) references trip,
        foreign key (driver_id) references driver
 );
create table review_of_vehicle(
         customer_id varchar(6),
         trip_id varchar(6),
         vehicle_id varchar(6),
         points_out_of_5 int(1),
         foreign key (customer_id) references customer,
         foreign key (trip_id) references trip,
         foreign key (vehicle_id) references driver
 );
```

Inserted Data (Sample Code)

Customer:-

```
insert into customer values('c01','yash','GJ56842','yash@mail.com');
insert into customer values('c02','raj','GJ45142','raj@mail.com');
insert into customer values('c03','parth','GJ12456','parth@mail.com');
insert into customer values('c04','pratik','GJ98562','pratik@mail.com');
insert into customer values('c05','vivek','GJ01245','vivek@mail.com');
```

vehicle:-

```
insert into  vehicle values('v01','two','passion pro',60,300);
insert into  vehicle values('v02','four','swift',18,800);
insert into  vehicle values('v03','four','verna',14,1200);
insert into  vehicle values('v04','four','innova',10,1800);
insert into  vehicle values('v05','two','hornet',40,500);
```

takes_vehicle:-

```
insert into takes_vehicle values('c01','v03');
insert into takes_vehicle values('c02','v05');
insert into takes_vehicle values('c03','v01');
insert into takes_vehicle values('c04','v04');
```

owner:-

```
insert into owner values('ow1','mohan','ahmedabad',9856231245);
insert into owner values('ow2','kiran','vadodara',9791234523);
insert into owner values('ow3','ramesh','surat',7856478523);
insert into owner values('ow4','mahesh','rajkot',8596475236);
insert into owner values('ow5','suresh','ahmedabad',8541236589);
```

driver:-

```
insert into driver values('d01','dhaval','male','GJ45612',7895647123,'surat');
insert into driver values('d02','meet','male','GJ85479',8945236153,'nadiad');
insert into driver values('d03','ruchit','male','GJ12547',9325687452,'ahmedabad');
insert into driver values('d01','riya','female','GJ4452 2',8859961230,'rajkot');
insert into driver values('d01','tiya','female','GJ25694',7884576236,'navsari');
```

if_driver:-

```
insert into if_driver values('d01','c02');
insert into if_driver values('d02','c01');
insert into if_driver values('d03','c05');
```

trip:-

```
insert into trip values('t01','2-jan-2019',2);
insert into trip values('t02','25-oct-2019',5);
insert into trip values('t03','17-aug-2019',1);
```

makes_trip:-

```
insert into makes_trip values('t01','c02');
insert into makes_trip values('t02','c01');
insert into makes_trip values('t03','c03');
```

bill_details:-

```
insert into bill_details values('b01',2000,0,4000,800,2800);
insert into bill_details values('b02',1000,200,2000,0,1200);
insert into bill_details values('b03',5000,0,4000,1500,6500);
```

pays_bill:-

insert into pays_bill values('b01','c02');

insert into pays_bill values('b02','c01');

insert into pays_bill values('b03','c04');

offer:-

insert into offer values('offer1',500);

insert into offer values('offer2',1000);

insert into offer values('offer3',1200);

final_bill:-

insert into final_bill values('b01','offer1',2300);

insert into final_bill values('b02','offer2',200);

insert into final_bill values('b03','offer3',5300);

owned_by:-

insert into owned_by values('v04','ow1');

insert into owned_by values('v05','ow2');

goes_to:-

insert into goes_to values('c01','v01');

insert into goes_to values('c02','v02');

insert into goes_to values('c03','v03');

insert into goes_to values('c04','v05');

review_of_driver:-

insert into review_of_driver values('c01','t01','d01',4);

insert into review_of_driver values('c02','t02','d02',3);

insert into review_of_driver values('c03','t03','d03',4);

review_of_vehicle:-

insert into review_of_vehicle values('c01','t01','v01',5);

insert into review_of_vehicle values('c02','t02','v02',4);

insert into review_of_vehicle values('c03','t03','v03',3);

Exp – 7 to 10

- **Select max**(base_amount) **as** max_base_amount
  From bill_details

- **Select** customer_name
  From if_driver union customer
  Where driver_id='d003'

- **Select** customer_name
  From customer
  Where customer_id in (**select** customer_id
  From if_driver
  Where driver_id = 'd001');

- **Select** customer_name
  From customer
  Order by customer_name;

- **select** owner_name, ID, **avg** (age)
  from owner
  group by owner_name;

- **select** bill_id, **avg** (base_amount)
  from bill_details
  group by final_amount
  having avg (base_amount) > 6900

Functional Dependencies & Normalization:

Sr. No	Table Name	Functional Dependencies	Candidate key	1 NF	2 NF	3 NF	BCNF
1	Customer (customer_id, customer_name, c_mob_no, customer_mail, license_number)	customer_id -> R licence_no -> R c_mob_no -> R	customer_id licence_no c_mob_no	YES	YES	YES	YES
2	lf_driver (driver_id, customer_id)	R->R	driver_id, customer_id	YES	YES	YES	YES
3	Driver (driver_id, driver_name, gender, licence_no, mob_no, driver_addres)	driver_id -> R licence_no -> R mob_no -> R	driver_id licence_no mob_no	YES	YES	YES	YES
4	bill_details (bill_id, base_amount, fine,discount, deposite_paid, driver_charge, final_amount)	bill_id -> R	bill_id	YES	YES	YES	YES
5	Owner (owner_id, owner_mob_no, owner_address, owner_name)	owner_id -> R owner_mob_no -> R	owner_id owner_mob_no	YES	YES	YES	YES
6	owned_by (vehicle_id, owner_id)	R -> R	vehicle_id, owner_id	YES	YES	YES	YES

7	pickup_centre (centre_id, center_address, contact_no)	centre_id -> R contact_no -> R	centre_id contact_no	YES	YES	YES	YES
8	goes_to (centre_id, vehicle_id)	R -> R	centre_id, vehicle_id	YES	YES	YES	YES
9	pays_bil (customer_id, bill_id)	R -> R	customer_id, bill_id	YES	YES	YES	YES
10	review_of_driver (trip_id, driver_id, points_out_of_5, customer_id)	trip_id -> R	trip_id	YES	YES	YES	YES
11	takes_vehicle (customer_id, vehical_id)	R -> R	Customer_id, vehical_id	YES	YES	YES	YES
12	makes_trip (customer_id, trip_id)	R -> R	Customer_id, Trip_id	YES	YES	YES	YES
13	Trip (trip_id, start_date, no_of_days)	trip_id -> R	trip_id	YES	YES	YES	YES
14	review_of_vehicle (trip_id, vehical_id, points_out_of_5, customer_id)	trip_id -> R	trip_id	YES	YES	YES	YES
15	final_bill (bill_id, offer_code, final_amount)	bill_id -> R	bill_id	YES	YES	YES	YES

16	Offer (offer_code, offer_amount)	offer_code -> R	offer_code	YES	YES	YES	YES
17	Vehicle (vehicle_id, vehicle_name, vehicle_type, expected_avg, price_per_day)	vehicle_id -> R vehicle_name -> vehicle_type	vehicle_id vehicle_name	YES	YES	YES	YES

Uniqueness of project as to existing work:

- It's somewhat similar to that of Zoomcar as per as the service is concerned but as of now we are working on the database model of it which is the main aspect of it.

- If you will go through the reviews given by the users of Zoomcar you will get to know that they lack coordination which in turn means that the database is not proper and its not used up to its optimum level.

- You can read the reviews at https://www.mouthshut.com/product-reviews/Zoom-Cars-reviews-925725994

- Also, our customers will have option of opting for driver instead of self-driving.

- Our major concern is cars but we also provide two-wheeler services.

Stored Function

Definition: -

The CREATE FUNCTION statement is used for creating a stored function and user-defined functions. A stored function is a set of SQL statements that perform some operation and return a single value.

Advantage: -

- They allow modular programming.
- They allow faster execution.

Disadvantage: -

- There are limitations as per as error handling is concerned.
- Use of temporary tables is not permitted in function.

Examples: -

1.

```
Create function net_amount(base_amount numeric(5,1) ,fine numeric(6,0)
,driver_charge numeric(4,1) ,driver_charge numeric(4,1))

Returns numeric(7,1) as

Deterministic

Begin

    Return base_amount + fine + driver_charge – deposit_paid;

End;
```

2.

```
Create function amount(base_amount numeric(5,1) ,fine numeric(6,0) ,driver_charge
numeric(4,1))

Returns numeric(7,1) as

Deterministic

Begin

        Return base_amount + fine + driver_charge;

End;
```

3.

```
Create function FinalAmount(net_amount numeric(7,1) , offer_amount
numeric(3,0))

Returns numeric(7,1) as

deterministic

Begin

        Return net_amount – offer_amount;

End;
```

4.

```
DELIMITER $$
CREATE FUNCTION car_Level(
    base_amount DECIMAL(10,2)
)
RETURNS VARCHAR(20)
DETERMINISTIC
BEGIN
    DECLARE car_level VARCHAR(20);

    IF credit base_amount > 5000  THEN
        SET car_level = 'EXCELLENT';
    ELSEIF ( base_amount<=5000 AND
            base_amount >= 1000) THEN
        SET car_level = 'GOOD';
    ELSEIF base_amount < 1000 THEN
        SET car_level = 'POOR';
    END IF;
    -- return the car_level
    RETURN (car_level);
END$$
DELIMITER ;
```

5.

```
CREATE FUNCTION find_driver_class
( driver_id VARCHAR(20))
RETURNS
@driverclass table (
driver_id VARCHAR(20),
avg(points_out_of_5 as rating )  ??????,
class_of_driver VARCHAR(20)
)
AS
BEGIN
INSERT INTO @driverclass
SELECT  driver_id,avg(points_out_of_5) as rating,class_of_driver
FROM review_of_driver
 GROUP BY driver_id
IF @@rating >5 THAN
BEGIN
INSERT INTO @AuthorsByState
VALUES (' ','Best')
END
IF @@rating >4 THAN
BEGIN
INSERT INTO @AuthorsByState
```

```
VALUES (' ','Good')
END
IF @@rating >3 THAN
BEGIN
INSERT INTO @AuthorsByState
VALUES (' ','Medium')
END
IF @@rating >2 THAN
BEGIN
INSERT INTO @AuthorsByState
VALUES (' ','Poor')
END
IF @@rating >1 THAN
BEGIN
INSERT INTO @AuthorsByState
VALUES (' ','Bed')
END
RETURN
END
GO
```

Conclusion, future work and references

Each time we have learnt something new, we have gone through many corrections after which we arrived at the above database model. Though, we do not claim that it is the optimum model as per as the practical use is concerned but we do conclude that after certain modifications it can match the standards of the present similar working database model which does require more exposure to this subject and a good experience of the practically working database models which we can analyze.