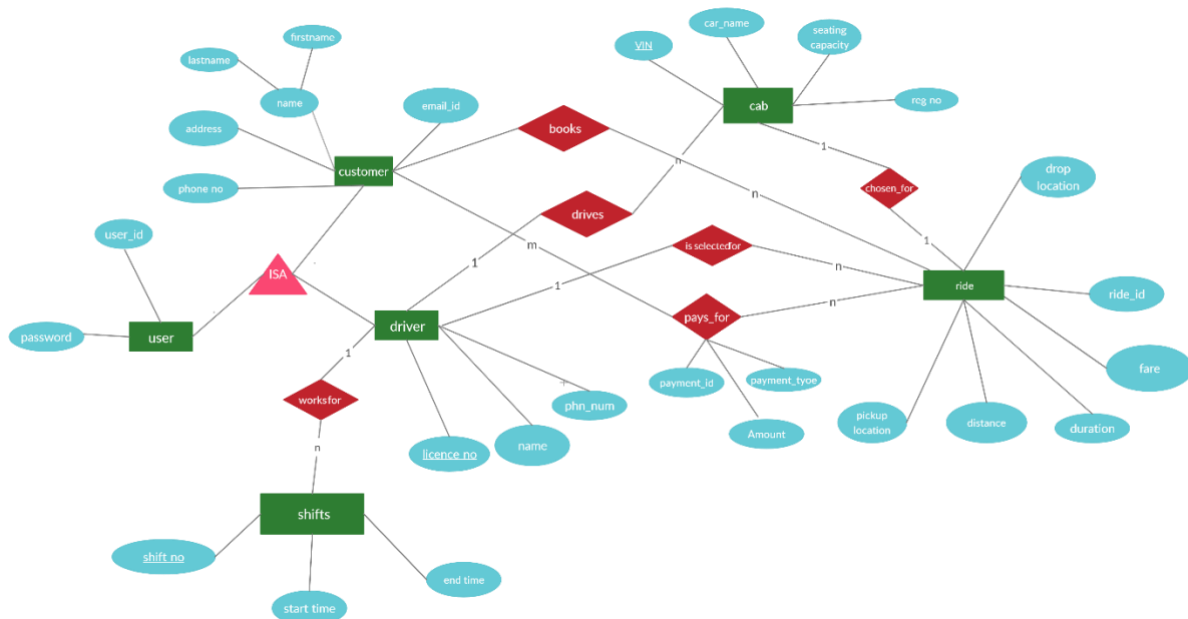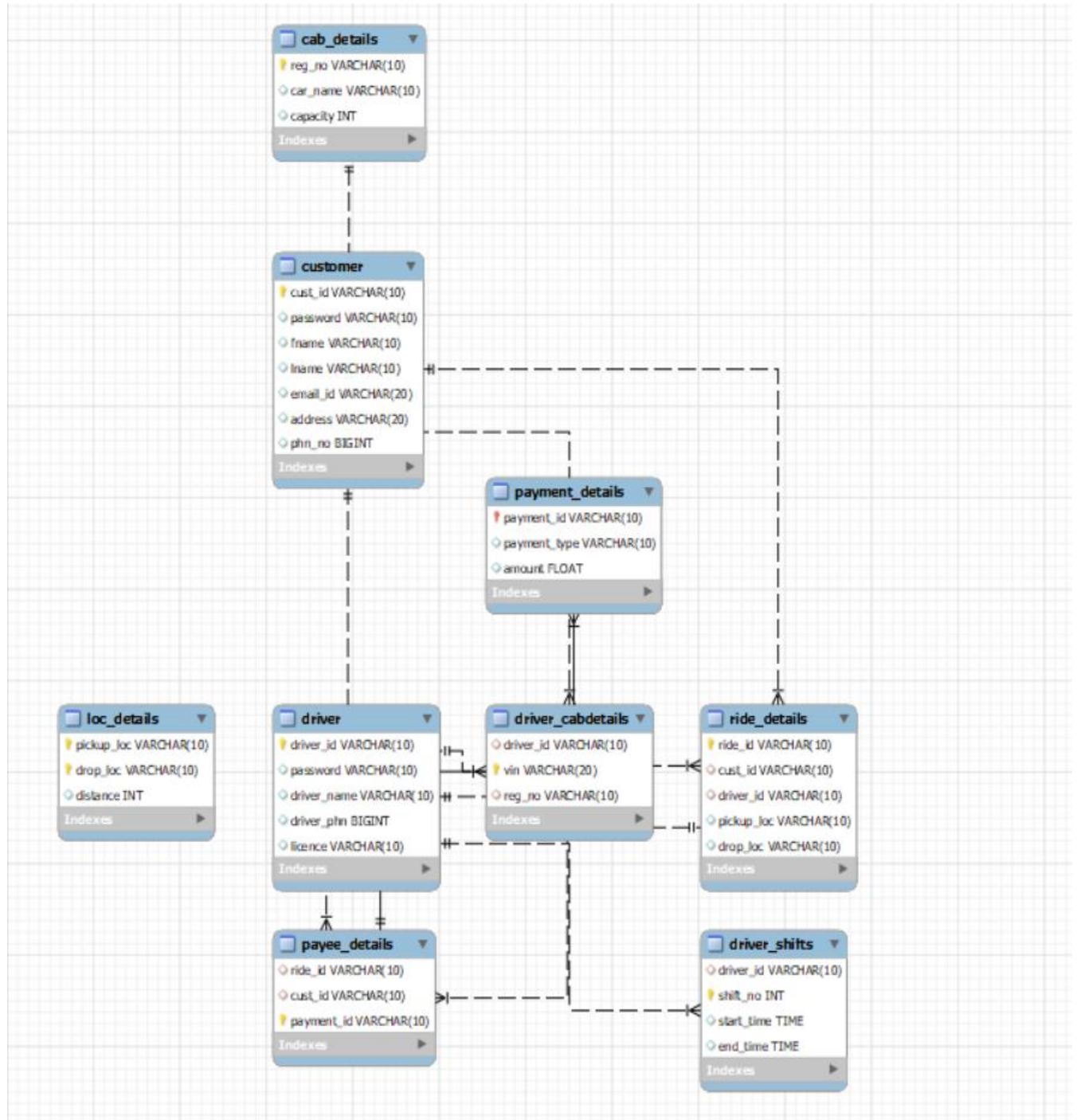# DBMS PROJECT

TITLE: TAXI MANGEMENT DATABASE SYSTEM

Problem statement:

It should provide efficient interface between user and driver. It should solve frequent customer queries in providing info about booking, driver, capacity and provide optimised routes for travelling. By this software a common person can find taxis easily in time with a reasonable price and it is helpful lot of drivers in fetching customers frequently. It gives a platform to have a safe journey to the customers.

ENTITY RELATIONSHIP DIAGRAM:

RELATIONAL SCHEMA:

cab_details
- reg_no VARCHAR(10)
- car_name VARCHAR(10)
- capacity INT
- Indexes

customer
- cust_id VARCHAR(10)
- password VARCHAR(10)
- fname VARCHAR(10)
- lname VARCHAR(10)
- email_id VARCHAR(20)
- address VARCHAR(20)
- phn_no BIGINT
- Indexes

payment_details
- payment_id VARCHAR(10)
- payment_type VARCHAR(10)
- amount FLOAT
- Indexes

loc_details
- pickup_loc VARCHAR(10)
- drop_loc VARCHAR(10)
- distance INT
- Indexes

driver
- driver_id VARCHAR(10)
- password VARCHAR(10)
- driver_name VARCHAR(10)
- driver_phn BIGINT
- licence VARCHAR(10)
- Indexes

driver_cabdetails
- driver_id VARCHAR(10)
- vin VARCHAR(20)
- reg_no VARCHAR(10)
- Indexes

ride_details
- ride_id VARCHAR(10)
- cust_id VARCHAR(10)
- driver_id VARCHAR(10)
- pickup_loc VARCHAR(10)
- drop_loc VARCHAR(10)
- Indexes

payee_details
- ride_id VARCHAR(10)
- cust_id VARCHAR(10)
- payment_id VARCHAR(10)
- Indexes

driver_shifts
- driver_id VARCHAR(10)
- shift_no INT
- start_time TIME
- end_time TIME
- Indexes

NORMALISATION:

1.CUSTOMER:

Cust_id	PK
Password	
Fname	
Lname	
Email_id	

Phn_no

Functional dependencies:

Cust_id →password

Cust_id→fname

Cust_id→Lname

Cust_id→email_id

Cust_id→phn_no

This relation is in 3NF. There is no multivalued attribute so it is in 1NF and all the non-candidate keys are depended on primary key so it is in 2NF. There is no transitive dependency so it is in 3NF.

2. DRIVER

Driver_id   PK
Password
Driver_name
Driver_phn
Licence

This relation also in 3NF as there is no transitive dependency and all the non-candidate keys are depended on primary key and no multivalued valued attributes.

3. RIDE

Ride_id   PK
Pickup_loc
Drop_loc
Distance
Duration
sFare
Cust_id
Driver_id
Vin

Functional dependencies:

Ride_id→cust_id

Ride_id→driver_id

Ride_id→pickup_loc

Ride_id→drop_loc

(Pickup_loc,drop_loc)→distance

Distance→duration

Distance→fare

This relation is not in 3NF because all the non-key attributes are not totally depended on primary key. Also there are some transitive dependencies so the above relation is decomposed into following relations.

```
                    ┌──────────────────┐
                    │  Ride_details    │
                    └──────────────────┘

                    ┌──────────────────┐
  RIDE              │  Loc_details     │
                    └──────────────────┘

                    ┌──────────────────┐
                    │  Fare_details    │
                    └──────────────────┘
```
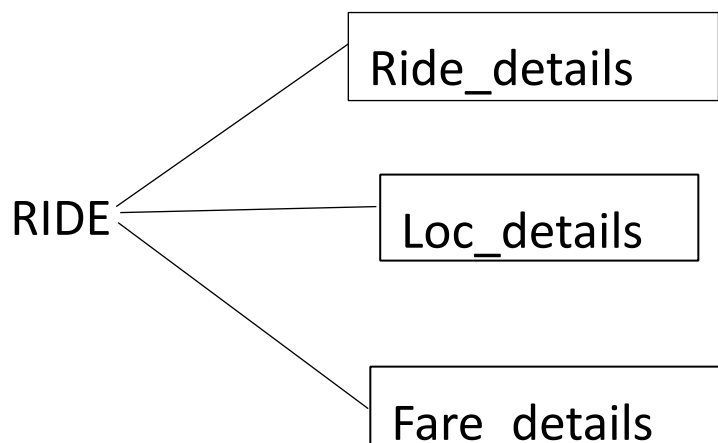
(i)   Ride_details

Ride_id	PK
Cust_id	
Driver_id	
Pickup_loc	
Drop_loc	

Now this relation is in 3NF.

(ii)   Loc_details

Pickup_loc	CK
Drop_loc	CK
Distance	

This relation is in 3NF.

(iii)   Fare_details

Distance	**PK**
Duration	
fare	

Finally this relation is also in 3NF.

4.DRIVER_SHIFTS:

Shift _no. **pk**
Start_time
End_time
Driver_id

FUNCTIONAL DEPENDENCIES:

Shift_no → Strt_time

Shift_no. → end_time

Shift_no. → Driver_id

5.CAB_DETAILS:

Reg_no	**PK**
Car_name	
VIN	
Seating_capacity	
Driver_id	

Fuctional dependencies:

Reg_no→ carname

Reg_no → seating_capacity

Driver_id → VIN

Reg_no → driver_id

VIN → Reg_no

Car_name → Seating_capacity Driver_id

→ Reg_no

This relation is not in 3NF because all the non-key attributes are not totally depended on primary key.Also there are some transitive dependencies so the above relation is decomposed into following relations.

```
                              ┌──────────────────┐
                            ╱ │  Cab_details     │
                          ╱   └──────────────────┘
                        ╱
                        ╲
                          ╲   ┌──────────────────┐
                            ╲ │  Drivercab_details │
                              └──────────────────┘
```
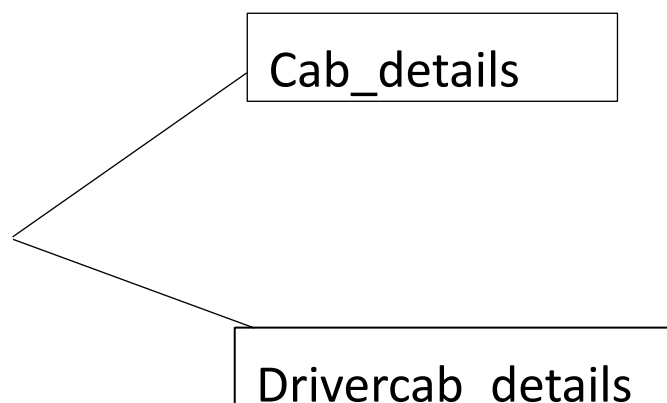
CAB DETAILS:

1.Cab details:

Reg_no **PK**
Car_no
Capacity

This relation is in 3NF.

2. Drivercab details:

Driver_id
VIN   **PK**
Reg_no

This relation is in 3NF.

6.PAYMENT DETAILS:

Payment_id   **PK**
Payment_type
Amount
Customer_id
Ride_id

Functional dependencies:

Payment_id → Payment_type

Payment_id → Amount

Payment_id → Customer_id

Payment_id → Ride_id Ride_id → Customer_id

This relation is not in 3NF because all the non-key attributes are not totally depended on primary key.Also there are some transitive dependencies so the above relation is decomposed into following relations.

PAYMENT_DETAILS:
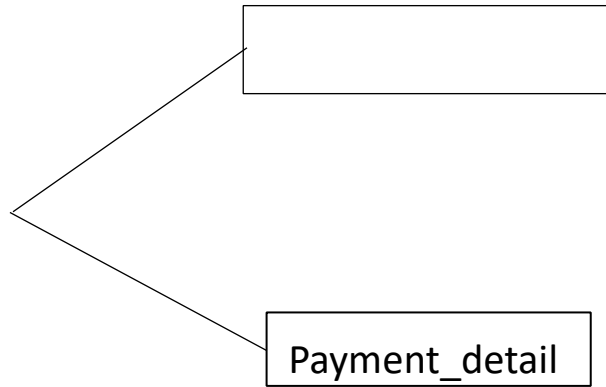
Payment_detail

1. Payee details:

Ride_id	
Customer_id	
Payment_id	**PK**

This relation is in 3NF.

2. Payment details:

Payment_id	**PK**
Payment_type	
Amount	

This relation is in 3NF.

TABLES:

1.

create table customer(cust_id varchar(10),password varchar(10),fname varchar(10),lname varchar(10),email_id varchar(20),address varchar(20),phn_no bigint, primary key(cust_id));

2.

create table driver(driver_id varchar(10),password varchar(10),driver_name varchar(10),driver_phn bigint,licence varchar(10),primary key(driver_id));

3.

create table cab_details(reg_no varchar(10),car_name varchar(10),capacity int,primary key(reg_no));

4.

create table driver_cabdetails(driver_id varchar(10),vin varchar(20),reg_no varchar(10), primary key(vin),foreign key(driver_id) references

driver,foreign key(reg_no) references cab_details);

5.

create table ride_details(ride_id varchar(10),cust_id varchar(10),driver_id varchar(10), pickup_loc varchar(10),drop_loc varchar(10), primary key(ride_id),foreign key(cust_id) references customer, foreign key(driver_id) references driver);

6.

create table loc_details(pickup_loc varchar(10),drop_loc varchar(10),distance int,

primary key(pickup_loc,drop_loc));

7.

create table fare_details(distance int, duration int, fare float, primary key(distance));

8.

create table payee_details(ride_id varchar(10),cust_id varchar(10),payment_id varchar(10),primary key(payment_id),foreign key(ride_id) references ride_details, foreign key(cust_id) references customer);

9.

```sql
create table payment_details(payment_id
varchar(10),payment_type varchar(10),amount
float,foreign key (payment_id) references
payee_details,primary key(payment_id));
```

10.

```sql
create table driver_shifts(driver_id
varchar(10),shift_no int,start_time time,end_time
time,primary key(shift_no),

foreign key(driver_id) references driver);
```

```sql
insert into customer
values('c01','p01','pallavi','talari','pallavi@gmail.com','d
-01-5',8080909080);

insert into customer
values('c02','p02','tanvi','alari','tanvi@gmail.com','d-
02-5',8080909090);

insert into customer
values('c03','p03','prakash','nigirii','prakash@gmail.co
m','d-03-5',7090909090);
```

```
insert into customer
values('c04','p04','piyush','tamari','piyush@gmail.com',
'd-07-6',9690909090);


insert into customer
values('c05','p05','soumya','talari','soumya@gmail.com
','d-01-5',9090909090);



insert into customer
values('c06','p06','amartya','talari','amartya@gmail.co
m','d-01-5',9090909090);



insert into customer
values('c07','p07','suresh','talari','suresh@gmail.com','
d-01-5',9090909090);
insert into customer
values('c08','p08','ramesh','talari','ramesh@gmail.com'
,'d-01-5',9090909090);

insert into driver
values('d01','m01','madhu',9874561456,'abc101');


insert into driver
values('d02','m02','rama',9874761456,'abc102');
```

```sql
insert into driver
values('d03','m03','vishnu',9834561456,'abc103');

insert into driver
values('d04','m04','sundar',9874561476,'abc104');

insert into driver
values('d05','m05','vinay',9874561452,'abc105');

insert into driver
values('d06','m06','sunny',9874561451,'abc106');

insert into driver
values('d07','m07','krish',9874561454,'abc107');

insert into driver
values('d08','m08','vishnu',9874561426,'abc108');

insert into cab_details values('TS123','maruthi',4);

insert into cab_details values('TS124','celerio',4);

insert into cab_details values('TS143','nano',4);
```

insert into cab_details values('TS243','swift',4);

insert into cab_details values('AP245','balano',4);

insert into cab_details values('AP235','santtro',4);

insert into cab_details values('AP145','maruthi',4);

insert into cab_details values('AP146','qualis',6);

insert into driver_cabdetails values('d01','v01','TS123');

insert into driver_cabdetails values('d02','v02','TS124');

insert into driver_cabdetails values('d03','v03','TS143');

insert into driver_cabdetails values('d04','v04','TS243');

insert into driver_cabdetails values('d05','v05','AP235');

insert into driver_cabdetails values('d06','v06','AP245');

insert into driver_cabdetails values('d07','v07','AP145');

```sql
insert into driver_cabdetails values('d08','v08','AP146');

insert into ride_details values ('r01','c01','d01','a','b');

insert into ride_details values ('r02','c02','d02','c','d');

insert into ride_details values ('r03','c03','d03','d','e');

insert into ride_details values ('r04','c04','d04','e','f');

insert into ride_details values ('r05','c05','d05','f','g');

insert into ride_details values ('r06','c06','d06','g','h');

insert into ride_details values('r07','c07','d07','h','i');

insert into loc_details values ('a','b',5);

insert into loc_details values ('b','c',25);

insert into loc_details values ('c','d',35);

insert into loc_details values ('d','e',45);

insert into loc_details values ('e','f',55);
```

```sql
insert into loc_details values ('f','g',65);

insert into loc_details values ('g','h',75);

insert into loc_details values ('h','i',85);

insert into fare_details values (5,15,20); insert
into fare_details values ( 25,45,100); insert
into fare_details values ( 35,70,140); insert
into fare_details values ( 45,90,180); insert
into fare_details values ( 55,120,220); insert
into fare_details values ( 65,140,260); insert
into fare_details values ( 75,160,300); insert
into fare_details values ( 85,180,340);

insert into payee_details values ('r01','c02','p01'); insert
into payee_details values ('r02','c03','p02'); insert into
payee_details values ('r03','c04','p03'); insert into
payee_details values ('r04','c05','p04'); insert into
payee_details values ('r05','c06','p05'); insert into
payee_details values ('r06','c07','p06'); insert into
payee_details values ('r07','c08','p07');
```

```sql
insert into payment_details values ('p01','card',20);

insert into payment_details values ('p02','cash',40);
insert into payment_details values ('p03','card',50);

insert into payment_details values ('p04','card',60);

insert into payment_details values ('p05','cash',70);

insert into payment_details values ('p06','cash',80);

insert into payment_details values ('p07','card',90);
insert into driver_shifts values ('d01',1,'07:00:00','10:00:00');
insert into driver_shifts values ('d02',2,'10:00:00','13:00:00');
insert into driver_shifts values ('d03',3,'13:00:00','16:00:00');
insert into driver_shifts values ('d04',4,'16:00:00','19:00:00');
insert into driver_shifts values ('d05',5,'19:00:00','22:00:00');
```

```
insert into driver_shifts values ('d06',6,'22:00:00','01:00:00');
insert into driver_shifts values ('d07',7,'01:00:00','04:00:00');
insert into driver_shifts values ('d08',8,'04:00:00','07:00:00');
```