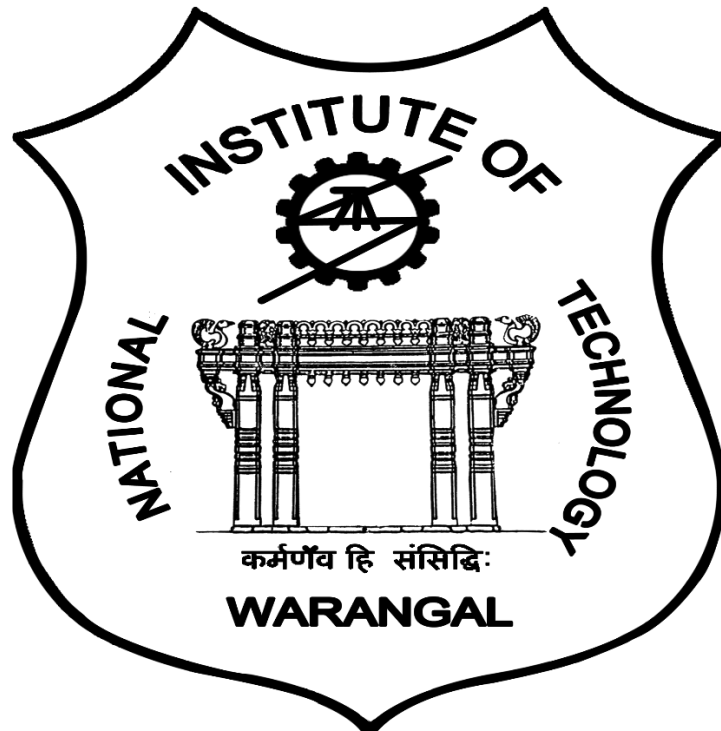# Department of

Computer Science and Engineering

NIT WARANGAL

DBMS PROJECT – I

Name: <u>Vehicle Rental Management Database System</u>

By

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Under the Guidance of

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Problem Statement:

We are developing a comprehensive database system to streamline the rental process, offering customers a seamless experience from booking to payment. It enables users to create personalized accounts, select from a range of vehicle categories, and access detailed information about available options. The platform incorporates features such as a loyalty program for frequent renters and insurance coverage for added convenience and security. With integrated payment gateways, customers can securely complete transactions, while the system efficiently tracks vehicle availability across multiple locations. Each rental is associated with a specific agency responsible for maintenance and customer support, ensuring operational efficiency and service quality. Overall, the system aims to provide a user-friendly interface, efficient operations, and personalized services to meet diverse customer needs.

ER Model Diagram:
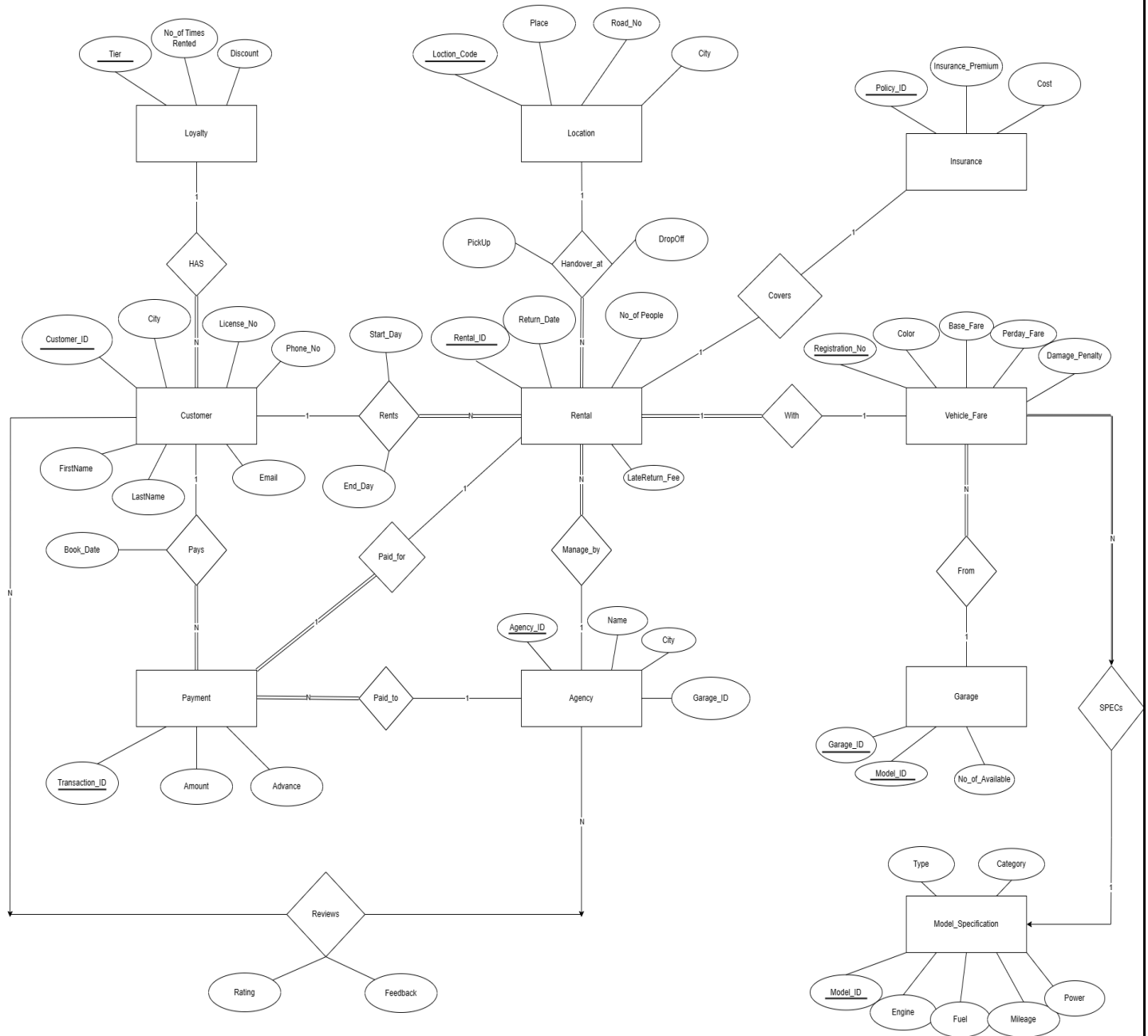
Assumptions:

1. A Customer can have many Rental (ONE TO MANY)

2. A Rental should have only one vehicle at a time (ONE TO ONE)

3. A Customer can pay multiple payments (ONE TO MANY)

4. An Agency can receive multiple payments (MANY TO ONE)

5. A Rental has only one Payment entry (ONE TO ONE)

6. An Agency can manage many Rentals (ONE TO MANY)

7. Each Agency has a Garage to maintain Vehicles (ONE TO ONE)

8. Each Customer has a Loyalty tier (ONE TO MANY)

9. Any Customer can rate any Agency (MANY TO MANY)

10. Each Rental has an Optional insurance plan, Covers (ONE TO ONE)

11.A Customer has loyalty tier to Obtain Discount (ONE TO MANY)

Relational Schema:

Customer(**Customer_ID**,FirstName,LastName,City,License_No,Phone_No,Email,tier)

Loyalty(**Tier**,Minimum_No_of_Times_Rented,Discount)

Location(**Location_Code**,Place,Road_No,City)

Model_Specifications(**Model_ID**,Engine,Fuel,Mileage,Power,Type,Category)

Vehical_Fare(**Registration_No**,Model_ID,Garage_ID,Color,Base_Fare,PerDay_Fare,Damage_Penalty)

Agency(**Agnecy_ID**,Name,City,Garage_ID)

Rental(**Rental_ID**,Customer_ID,No_of_People,Start_Day,End_Day,PickUp_Location,Dropoff_Location,Return_Date,LateReturn_Fee,Agency_ID,Registration_No)

Insurance(**Policy_ID**,Insurance_Premium,Cost)
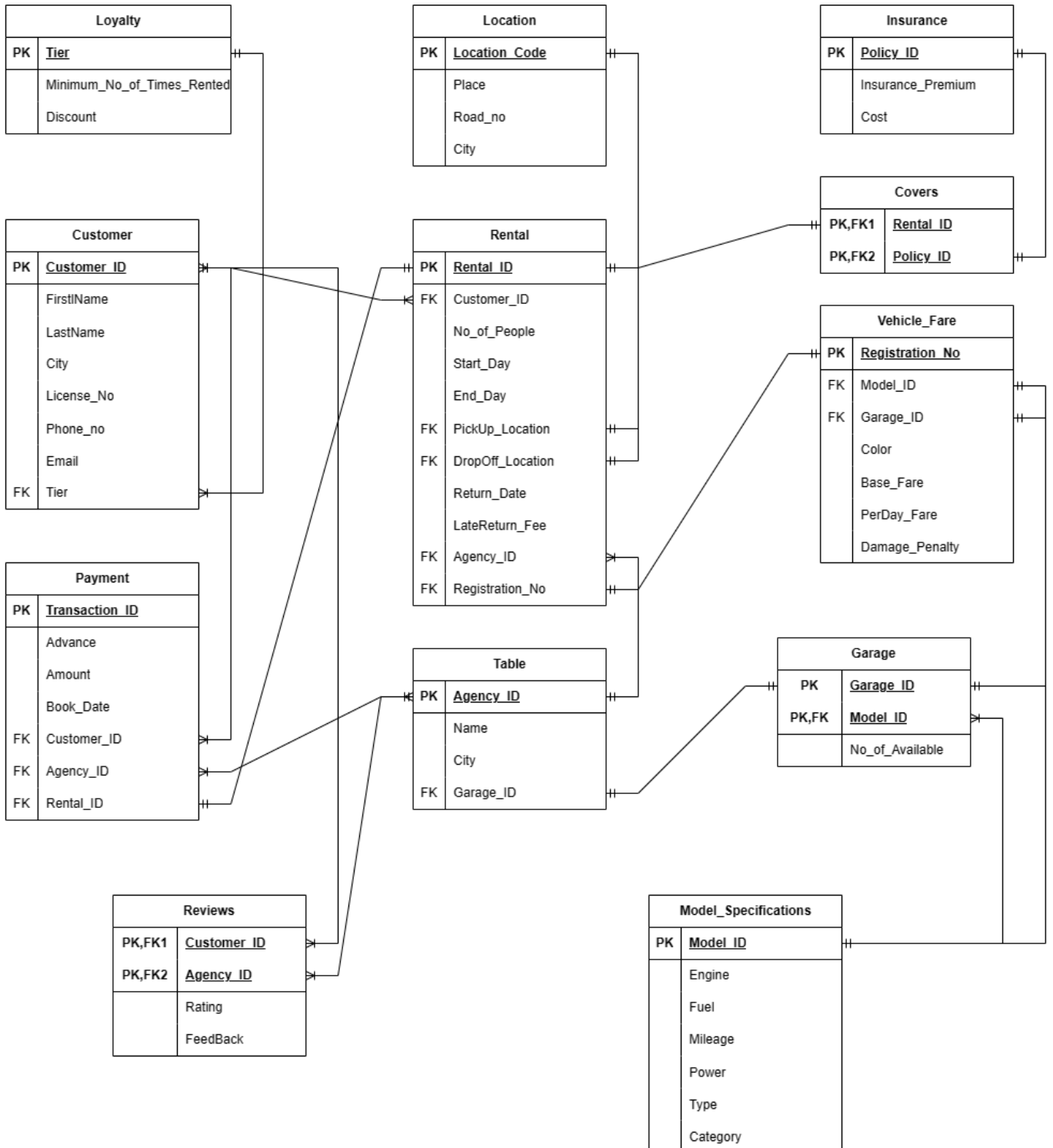
Garage(**Garage_ID**,**Model_ID**,No_of_Available,City)

Payment(**Transaction_ID**,Advance,Amount,Book_Date,Customer_ID,Agency_ID,Rental_ID)

Reviews(**Customer_ID**,**Agency_ID**,Rating,FeedBack)

Covers(**Rental_ID**,**Policy_ID**)

Relational Model Diagram:

Loyalty

PK	<u>Tier</u>
	Minimum_No_of_Times_Rented
	Discount

Location

PK	<u>Location_Code</u>
	Place
	Road_no
	City

Insurance

PK	<u>Policy_ID</u>
	Insurance_Premium
	Cost

Customer

PK	<u>Customer_ID</u>
	FirstlName
	LastName
	City
	License_No
	Phone_no
	Email
FK	Tier

Rental

PK	<u>Rental_ID</u>
FK	Customer_ID
	No_of_People
	Start_Day
	End_Day
FK	PickUp_Location
FK	DropOff_Location
	Return_Date
	LateReturn_Fee
FK	Agency_ID
FK	Registration_No

Covers

PK,FK1	<u>Rental_ID</u>
PK,FK2	<u>Policy_ID</u>

Vehicle_Fare

PK	<u>Registration_No</u>
FK	Model_ID
FK	Garage_ID
	Color
	Base_Fare
	PerDay_Fare
	Damage_Penalty

Payment

PK	<u>Transaction_ID</u>
	Advance
	Amount
	Book_Date
FK	Customer_ID
FK	Agency_ID
FK	Rental_ID

Table

PK	<u>Agency_ID</u>
	Name
	City
FK	Garage_ID

Garage

PK	<u>Garage_ID</u>
PK,FK	<u>Model_ID</u>
	No_of_Available

Reviews

PK,FK1	<u>Customer_ID</u>
PK,FK2	<u>Agency_ID</u>
	Rating
	FeedBack

Model_Specifications

PK	<u>Model_ID</u>
	Engine
	Fuel
	Mileage
	Power
	Type
	Category

Tables After Normalization:

1. Loyalty

Field	Type	Null	Key	Default	Extra
▶ TIER	varchar(20)	NO	PRI	NULL	
MINIMUM_NO_OF_TIMES_RENTED	int	YES		NULL	
DISCOUNT	float	YES		NULL	

2. Customer

Field	Type	Null	Key	Default	Extra
▶ CUSTOMER_ID	varchar(20)	NO	PRI	NULL	
FIRST_NAME	varchar(50)	YES		NULL	
LAST_NAME	varchar(50)	YES		NULL	
CITY	varchar(20)	YES		NULL	
TIER	varchar(20)	YES	MUL	NULL	
LICENSE_NO	char(16)	YES		NULL	
PHONE_NO	decimal(10,0)	YES		NULL	
EMAIL	varchar(50)	YES		NULL	

3. Location

Field	Type	Null	Key	Default	Extra
▶ LOCATION_CODE	varchar(20)	NO	PRI	NULL	
PLACE	varchar(50)	NO		NULL	
ROAD_NO	varchar(50)	YES		NULL	
CITY	varchar(20)	NO		NULL	

4. Classified

Field	Type	Null	Key	Default	Extra
▶ VEHICLE_TYPE	varchar(30)	NO	PRI	NULL	
CATEGORY	varchar(30)	YES		NULL	

5. Model_specifications

Field	Type	Null	Key	Default	Extra
MODEL_ID	varchar(20)	NO	PRI	NULL	
ENGINE_CC	int	YES		NULL	
FUEL_TYPE	varchar(20)	YES		NULL	
MILEAGE	int	YES		NULL	
POWER_HP	int	YES		NULL	
VEHICLE_TYPE	varchar(30)	YES	MUL	NULL	

6. Garage

Field	Type	Null	Key	Default	Extra
GARAGE_ID	varchar(20)	NO	PRI	NULL	
MODEL_ID	varchar(20)	NO	PRI	NULL	
NO_OF_AVAILABLE	int	YES		NULL	

7. Vehicle_Fare

Field	Type	Null	Key	Default	Extra
REGISTRATION_NO	char(10)	NO	PRI	NULL	
MODEL_ID	varchar(20)	YES	MUL	NULL	
GARAGE_ID	varchar(20)	YES	MUL	NULL	
COLOR	varchar(10)	YES		NULL	
BASE_FARE	int	YES		NULL	
PERDAY_FARE	int	YES		NULL	
DAMAGE_PENALTY	int	YES		NULL	

8. Agency

Field	Type	Null	Key	Default	Extra
AGENCY_ID	varchar(20)	NO	PRI	NULL	
NAME	varchar(30)	YES		NULL	
CITY	varchar(20)	YES		NULL	
GARAGE_ID	varchar(20)	YES	MUL	NULL	

9. Rental

Field	Type	Null	Key	Default	Extra
CUSTOMER_ID	varchar(20)	YES	MUL	NULL	
RENTAL_ID	varchar(20)	NO	PRI	NULL	
NO_OF_PEOPLE	int	YES		NULL	
START_DAY	date	YES		NULL	
END_DAY	date	YES		NULL	
PICKUP_LOCATION	varchar(20)	YES	MUL	NULL	
DROPOFF_LOCATION	varchar(20)	YES	MUL	NULL	
RETURN_DATE	date	YES		NULL	
LATERETURN_FEE	int	YES		NULL	
AGENCY_ID	varchar(20)	YES	MUL	NULL	
REGISTRATION_NO	char(10)	YES	MUL	NULL	

10.   Payment

Field	Type	Null	Key	Default	Extra
TRANSACTION_ID	int	NO	PRI	NULL	
ADVANCE	int	YES		NULL	
AMOUNT	int	YES		NULL	
BOOK_DATE	date	YES		NULL	
CUSTOMER_ID	varchar(20)	YES	MUL	NULL	
AGENCY_ID	varchar(20)	YES	MUL	NULL	
RENTAL_ID	varchar(20)	YES	MUL	NULL	

11.   Insurance

Field	Type	Null	Key	Default	Extra
POLICY_ID	varchar(10)	NO	PRI	NULL	
INSURANCE_PREMIUM	int	YES		NULL	
COST	int	YES		NULL	

12.   Covers

Field	Type	Null	Key	Default	Extra
RENTAL_ID	varchar(20)	NO	PRI	NULL	
POLICY_ID	varchar(10)	NO	PRI	NULL	

13.   Reviews

	Field	Type	Null	Key	Default	Extra
▶	CUSTOMER_ID	varchar(20)	NO	PRI	NULL	
	AGENCY_ID	varchar(20)	NO	PRI	NULL	
	RATING_SCALE10	int	YES		NULL	
	FEEDBACK	varchar(100)	YES		NULL	

Normalisation:-

1. <u>LOYALTY</u>

   ➢ Primary Key : TIER
   - All attributes are atomic, ensuring 1NF.
   - All non-key attributes are fully dependent on the primary key, satisfying 2NF.
   - There are no transitive dependencies between non-key attributes, thus adhering to 3NF.
   - There are no non-trivial functional dependencies where the determinant is not a candidate key (TIER), meeting BCNF.

2. <u>CUSTOMER</u>

   ➢ Primary Key : CUSTOMER_ID
   - All attributes are atomic.
   - All non-key attributes are fully dependent on the primary key.
   - There is one transitive dependency between non-key attributesi.e,
   - There are no non-trivial functional dependencies where the determinant is not a candidate key (CUSTOMER_ID), meeting BCNF.

3.<u>LOCATION</u>

   ➢ Primary Key: LOCATION_CODE
   - All attributes are atomic.
   - All non-key attributes are fully dependent on the primary key.
   - There are no transitive dependencies between non-key attributes.
   - There are no non-trivial functional dependencies where the determinant is not a candidate key (LOCATION_CODE), meeting BCNF.

4. <u>MODEL_SPECIFICATIONS</u>
   ➢ Primary Key : MODEL_ID
   - All attributes are atomic.
   - All non-key attributes are fully dependent on the primary key.
   - There is one transitive dependencies between non-key attributesi.e,

VEHICLE_TYPE -> CATEGORY
{VECHILE_TYPE & CATEGORY are non-prime attributes,
That's why it isn't 3NF }

By Decomposing we will get,

4A). CLASSIFIED:

Primary Key: VEHICLE_TYPE

Attributes:VEHICLE_TYPE (Primary Key),CATEGORY

Functional Dependencies:VEHICLE_TYPE -> CATEGORY

Candidate Key:VEHICLE_TYPE

4B). MODEL_SPECIFICATIONS:

Primary Key: MODEL_ID

Attributes: MODEL_ID (Primary Key), ENGINE_CC, FUEL_TYPE, MILEAGE, POWER_HP,
        VEHICLE_TYPE (Foreign Key referencing CLASSIFIED),

Functional Dependencies:MODEL_ID -> ENGINE_CC,FUEL_TYPE,MILEAGE,POWER_HP,VEHICLE_TYPE

Candidate Key:MODEL_ID

- Now, there is no non-trivial functional dependencies in both tables, meeting BCNF

5. GARAGE:
   - Primary Key: GARAGE_ID, MODEL_ID
   - All attributes are atomic.
   - All non-key attributes are fully dependent on the primary key.
   - There are no transitive dependencies between non-key attributes.
   - There are no non-trivial functional dependencies where the determinant is not a candidate key (GARAGE_ID, MODEL_ID) , meeting BCNF.

6. VEHICLE_FARE:
   - Primary Key: REGISTRATION_NO
   - All attributes are atomic.
   - All non-key attributes are fully dependent on the primary key.
   - There are no transitive dependencies between non-key attributes.
   - There are no non-trivial functional dependencies where the determinant is not a candidate key (REGISTRATION_NO) , meeting BCNF.

7. AGENCY:
   - Primary Key: AGENCY_ID
   - All attributes are atomic.
   - All non-key attributes are fully dependent on the primary key.
   - There are no transitive dependencies between non-key attributes.
   - There are no non-trivial functional dependencies where the determinant is not candidate key (AGENCY_ID) , meeting BCNF.
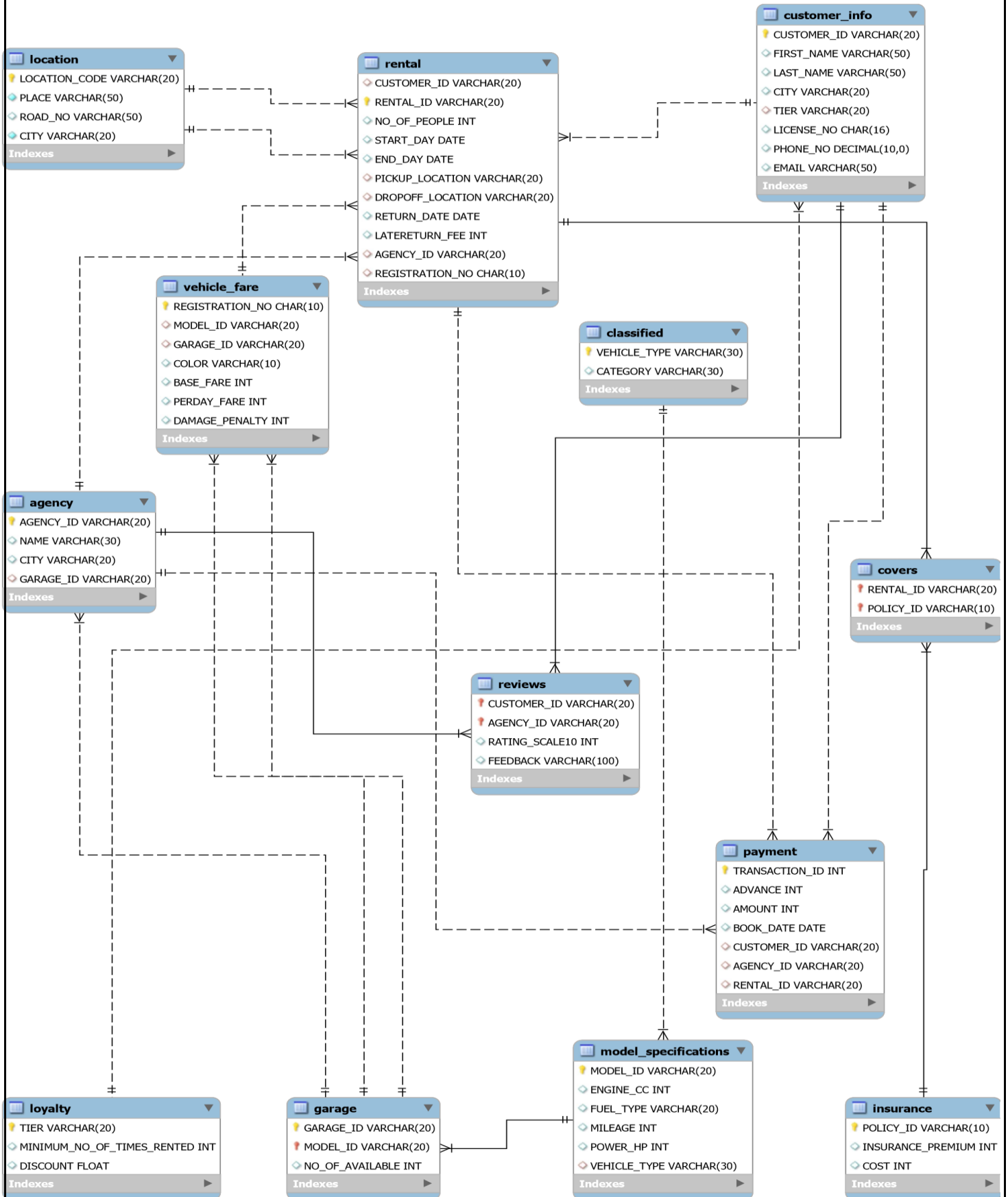
8. RENTAL:

- ➢ Primary Key: RENTAL_ID
- All attributes are atomic.
- All non-key attributes are fully dependent on the primary key.
- There are no transitive dependencies between non-key attributes.
- There are no non-trivial functional dependencies where the determinant is not a candidate key (RENTAL_ID) , meeting BCNF.

9. PAYMENT:

- ➢ Primary Key: TRANSACTION_ID
- All attributes are atomic.
- All non-key attributes are fully dependent on the primary key.
- There are no transitive dependencies between non-key attributes.
- There are no non-trivial functional dependencies where the determinant is not a candidate key (TRANSACTION_ID) , meeting BCNF.

10. INSURANCE:
- ➢ Primary Key: POLICY_ID
- All attributes are atomic.
- All non-key attributes are fully dependent on the primary key.
- There are no transitive dependencies between non-key attributes.
- There are no non-trivial functional dependencies where the determinant is not a candidate key (POLICY_ID) , meeting BCNF.

11. COVERS:

- ➢ Primary Key: RENTAL_ID, POLICY_ID
- All attributes are atomic.
- All non-key attributes are fully dependent on the primary key.
- There are no transitive dependencies between non-key attributes.
- There are no non-trivial functional dependencies where the determinant is not a candidate key (RENTAL_ID, POLICY_ID) , meeting BCNF.

12. REVIEWS:

- ➢ Primary Key: CUSTOMER_ID, AGENCY_ID
- All attributes are atomic.
- All non-key attributes are fully dependent on the primary key.
- There are no transitive dependencies between non-key attributes.
- There are no non-trivial functional dependencies where the determinant is not a candidate key (CUSTOMER_ID, AGENCY_ID) , meeting BCNF.

Final Relations:

location
- LOCATION_CODE VARCHAR(20)
- PLACE VARCHAR(50)
- ROAD_NO VARCHAR(50)
- CITY VARCHAR(20)
- Indexes

rental
- CUSTOMER_ID VARCHAR(20)
- RENTAL_ID VARCHAR(20)
- NO_OF_PEOPLE INT
- START_DAY DATE
- END_DAY DATE
- PICKUP_LOCATION VARCHAR(20)
- DROPOFF_LOCATION VARCHAR(20)
- RETURN_DATE DATE
- LATERETURN_FEE INT
- AGENCY_ID VARCHAR(20)
- REGISTRATION_NO CHAR(10)
- Indexes

customer_info
- CUSTOMER_ID VARCHAR(20)
- FIRST_NAME VARCHAR(50)
- LAST_NAME VARCHAR(50)
- CITY VARCHAR(20)
- TIER VARCHAR(20)
- LICENSE_NO CHAR(16)
- PHONE_NO DECIMAL(10,0)
- EMAIL VARCHAR(50)
- Indexes

vehicle_fare
- REGISTRATION_NO CHAR(10)
- MODEL_ID VARCHAR(20)
- GARAGE_ID VARCHAR(20)
- COLOR VARCHAR(10)
- BASE_FARE INT
- PERDAY_FARE INT
- DAMAGE_PENALTY INT
- Indexes

classified
- VEHICLE_TYPE VARCHAR(30)
- CATEGORY VARCHAR(30)
- Indexes

covers
- RENTAL_ID VARCHAR(20)
- POLICY_ID VARCHAR(10)
- Indexes

agency
- AGENCY_ID VARCHAR(20)
- NAME VARCHAR(30)
- CITY VARCHAR(20)
- GARAGE_ID VARCHAR(20)
- Indexes

reviews
- CUSTOMER_ID VARCHAR(20)
- AGENCY_ID VARCHAR(20)
- RATING_SCALE10 INT
- FEEDBACK VARCHAR(100)
- Indexes

payment
- TRANSACTION_ID INT
- ADVANCE INT
- AMOUNT INT
- BOOK_DATE DATE
- CUSTOMER_ID VARCHAR(20)
- AGENCY_ID VARCHAR(20)
- RENTAL_ID VARCHAR(20)
- Indexes

model_specifications
- MODEL_ID VARCHAR(20)
- ENGINE_CC INT
- FUEL_TYPE VARCHAR(20)
- MILEAGE INT
- POWER_HP INT
- VEHICLE_TYPE VARCHAR(30)
- Indexes

loyalty
- TIER VARCHAR(20)
- MINIMUM_NO_OF_TIMES_RENTED INT
- DISCOUNT FLOAT
- Indexes

garage
- GARAGE_ID VARCHAR(20)
- MODEL_ID VARCHAR(20)
- NO_OF_AVAILABLE INT
- Indexes

insurance
- POLICY_ID VARCHAR(10)
- INSURANCE_PREMIUM INT
- COST INT
- Indexes

Creation of Tables:

1. Loyalty

CREATE TABLE LOYALTY (

   TIER VARCHAR(20),

   MINIMUM_NO_OF_TIMES_RENTED INT,

   DISCOUNT FLOAT,

   PRIMARY KEY(TIER)

);

2. Customer_Info

CREATE TABLE CUSTOMER_INFO (

   CUSTOMER_ID VARCHAR(20),

   FIRST_NAME VARCHAR(50),

   LAST_NAME VARCHAR(50),

   CITY VARCHAR(20),

   TIER VARCHAR(20),

   LICENSE_NO CHAR(16),

   PHONE_NO NUMERIC(10,0),

   EMAIL VARCHAR(50),

   PRIMARY KEY(CUSTOMER_ID),

   FOREIGN KEY(TIER) REFERENCES LOYALTY(TIER)

);

3. Location

CREATE TABLE LOCATION (

   LOCATION_CODE VARCHAR(20),

   PLACE VARCHAR(50) NOT NULL,

   ROAD_NO VARCHAR(50),

   CITY VARCHAR(20) NOT NULL,

   PRIMARY KEY(LOCATION_CODE)

);

4. Classified

```
CREATE TABLE CLASSIFIED (
    VEHICLE_TYPE VARCHAR(30),
    CATEGORY VARCHAR(30),
    PRIMARY KEY(VEHICLE_TYPE)
);
```

5. Model Specifications

```
CREATE TABLE MODEL_SPECIFICATIONS (
    MODEL_ID VARCHAR(20),
    ENGINE_CC INT,
    FUEL_TYPE VARCHAR(20),
    MILEAGE INT,
    POWER_HP INT,
    VEHICLE_TYPE VARCHAR(30),
    PRIMARY KEY(MODEL_ID),
    FOREIGN KEY(VEHICLE_TYPE) REFERENCES CLASSIFIED(VEHICLE_TYPE)
);
```

6. Garage

```
CREATE TABLE GARAGE (
    GARAGE_ID VARCHAR(20),
    MODEL_ID VARCHAR(20),
    NO_OF_AVAILABLE INT,
    PRIMARY KEY(GARAGE_ID,MODEL_ID),
    FOREIGN KEY(MODEL_ID) REFERENCES MODEL_SPECIFICATIONS(MODEL_ID)
);
```

7. Vehical Fare

```
CREATE TABLE VEHICLE_FARE (
    REGISTRATION_NO CHAR(10),
    MODEL_ID VARCHAR(20),
    GARAGE_ID VARCHAR(20),
```

```
      COLOR VARCHAR(10),

      BASE_FARE INT,

      PERDAY_FARE INT,

      DAMAGE_PENALTY INT,

      PRIMARY KEY(REGISTRATION_NO),

      FOREIGN KEY(GARAGE_ID) REFERENCES GARAGE(GARAGE_ID),

      FOREIGN KEY(MODEL_ID) REFERENCES GARAGE(MODEL_ID)

);
```

8. Agency

```
CREATE TABLE AGENCY (

     AGENCY_ID VARCHAR(20),

     NAME VARCHAR(30),

     CITY VARCHAR(20),

     GARAGE_ID VARCHAR(20),

     PRIMARY KEY(AGENCY_ID),

     FOREIGN KEY(GARAGE_ID) REFERENCES GARAGE(GARAGE_ID)

);
```

9. Rental

```
CREATE TABLE RENTAL (

     CUSTOMER_ID VARCHAR(20),

     RENTAL_ID VARCHAR(20),

     NO_OF_PEOPLE INT,

     START_DAY DATE,

     END_DAY DATE,

     PICKUP_LOCATION VARCHAR(20),

     DROPOFF_LOCATION VARCHAR(20),

     RETURN_DATE DATE,

     LATERETURN_FEE INT,

     AGENCY_ID VARCHAR(20),

     REGISTRATION_NO CHAR(10),

     PRIMARY KEY(RENTAL_ID),

     FOREIGN KEY(AGENCY_ID) REFERENCES AGENCY(AGENCY_ID),
```

```
    FOREIGN KEY(REGISTRATION_NO) REFERENCES VEHICLE_FARE(REGISTRATION_NO),

    FOREIGN KEY(PICKUP_LOCATION) REFERENCES LOCATION(LOCATION_CODE),

    FOREIGN KEY(DROPOFF_LOCATION) REFERENCES LOCATION(LOCATION_CODE),

     FOREIGN KEY(CUSTOMER_ID) REFERENCES CUSTOMER_INFO(CUSTOMER_ID)

);
```

10.   Payment

```
CREATE TABLE PAYMENT (

  TRANSACTION_ID INT,

   ADVANCE INT,

   AMOUNT INT,

   BOOK_DATE DATE,

   CUSTOMER_ID VARCHAR(20),

   AGENCY_ID VARCHAR(20),

   RENTAL_ID VARCHAR(20),

   PRIMARY KEY(TRANSACTION_ID),

   FOREIGN KEY(CUSTOMER_ID) REFERENCES CUSTOMER_INFO(CUSTOMER_ID),

   FOREIGN KEY(AGENCY_ID) REFERENCES AGENCY(AGENCY_ID),

   FOREIGN KEY(RENTAL_ID) REFERENCES RENTAL(RENTAL_ID)

);
```

11.   Insurance

```
CREATE TABLE INSURANCE (

    POLICY_ID VARCHAR(10),

   INSURANCE_PREMIUM INT,

   COST INT,

   PRIMARY KEY(POLICY_ID)

);
```

12. Covers

```
CREATE TABLE COVERS (
    RENTAL_ID VARCHAR(20),
    POLICY_ID VARCHAR(10),
    PRIMARY KEY(RENTAL_ID,POLICY_ID),
    FOREIGN KEY(RENTAL_ID) REFERENCES RENTAL(RENTAL_ID),
    FOREIGN KEY(POLICY_ID) REFERENCES INSURANCE(POLICY_ID)
);
```

13. Reviews

```
CREATE TABLE REVIEWS (
    CUSTOMER_ID VARCHAR(20),
    AGENCY_ID VARCHAR(20),
    RATING_SCALE10 INT,
    FEEDBACK VARCHAR(100),
    PRIMARY KEY(CUSTOMER_ID,AGENCY_ID),
    FOREIGN KEY(CUSTOMER_ID) REFERENCES CUSTOMER_INFO(CUSTOMER_ID),
    FOREIGN KEY(AGENCY_ID) REFERENCES AGENCY(AGENCY_ID)
);
```

Data Insertion:

1. Loyalty

```
INSERT INTO LOYALTY VALUES ('BRONZE',0,0.05);
INSERT INTO LOYALTY VALUES ('SILVER',5,0.10);
INSERT INTO LOYALTY VALUES ('GOLD',10,0.15);
INSERT INTO LOYALTY VALUES ('PLATINUM',15,0.20);
```

2. Customer_Info

```
INSERT INTO CUSTOMER_INFO VALUES
('CUST1', 'John', 'Doe', 'Mumbai', 'Gold', 'DL-0720090054321', 9876543210, 'john.doe@example.com'),
```

('CUST2', 'Jane', 'Smith', 'Delhi', 'Silver', 'DL14 20120098765', 9876543211, 'jane.smith@example.com'),

('CUST3', 'Michael', 'Johnson', 'Pune', 'Bronze', 'MH-0820180012345', 9876543212, 'michael.j@example.com'),

('CUST4', 'Emily', 'Brown', 'Bangalore', 'Platinum', 'MH06 20210012345', 9876543213, 'emily.b@example.com'),

('CUST5', 'David', 'Lee', 'Ahmedabad', 'Silver', 'GJ-0520190067890', 9876543214, 'david.lee@example.com'),

('CUST6', 'Emma', 'Wilson', 'Surat', 'Gold', 'GJ03 20220098765', 9876543215, 'emma.wilson@example.com'),

('CUST7', 'Christopher', 'Martinez', 'Jaipur', 'Bronze', 'RJ-0120160034567', 9876543216, 'chris.m@example.com'),

('CUST8', 'Olivia', 'Taylor', 'Lucknow', 'Platinum', 'RJ14 20190076543', 9876543217, 'olivia.t@example.com'),

('CUST9', 'Daniel', 'Anderson', 'Chennai', 'Silver', 'KA-0920170043210', 9876543218, 'daniel.a@example.com'),

('CUST10', 'Sophia', 'Garcia', 'Hyderabad', 'Gold', 'KA06 20200098765', 9876543219, 'sophia.g@example.com');

3. Location

INSERT INTO LOCATION VALUES

('LOC001', 'Mumbai Airport', 'Airport Road', 'Mumbai'),

('LOC002', 'Bandra', 'Linking Road', 'Mumbai'),

('LOC003', 'Gateway of India', 'Apollo Bunder', 'Mumbai'),

('LOC004', 'Juhu Beach', 'Juhu Tara Road', 'Mumbai'),

('LOC005', 'Marine Drive', 'Netaji Subhash Chandra Bose Road', 'Mumbai'),

('LOC006', 'Haji Ali Dargah', 'Lala Lajpatrai Marg', 'Mumbai'),

('LOC007', 'Siddhivinayak Temple', 'SK Bole Marg', 'Mumbai'),

('LOC008', 'Film City', 'Goregaon East', 'Mumbai'),

('LOC009', 'India Gate', 'Rajpath', 'Delhi'),

('LOC010', 'Lotus Temple', 'Lotus Temple Road', 'Delhi'),

('LOC011', 'Qutub Minar', 'Mehrauli', 'Delhi'),

('LOC012', 'Red Fort', 'Netaji Subhash Marg', 'Delhi'),

('LOC013', 'Humayun's Tomb', 'Mathura Road', 'Delhi'),

('LOC014', 'Connaught Place', 'Inner Circle', 'Delhi'),

('LOC015', 'Chandni Chowk', 'Old Delhi', 'Delhi'),

('LOC016', 'Jama Masjid', 'Meena Bazaar', 'Delhi'),

('LOC017', 'Bangalore Palace', 'Palace Road', 'Bangalore'),

('LOC018', 'Lalbagh Botanical Garden', 'Mavalli', 'Bangalore'),

('LOC019', 'Cubbon Park', 'Kasturba Road', 'Bangalore'),

('LOC020', 'ISKCON Temple', 'Hare Krishna Hill', 'Bangalore'),

('LOC021', 'Tipu Sultan's Summer Palace', 'Albert Victor Road', 'Bangalore'),

('LOC022', 'Vidhana Soudha', 'Dr Ambedkar Veedhi', 'Bangalore'),

('LOC023', 'Wonderla Amusement Park', 'Mysore Road', 'Bangalore'),

('LOC024', 'Bannerghatta National Park', 'Bannerghatta Road', 'Bangalore'),

('LOC025', 'Marina Beach', 'Kamarajar Salai', 'Chennai'),

('LOC026', 'Kapaleeshwarar Temple', 'Kutchery Road', 'Chennai'),

('LOC027', 'Fort St. George', 'Rajaji Salai', 'Chennai'),

('LOC028', 'Arignar Anna Zoological Park', 'GST Road', 'Chennai'),

('LOC029', 'San Thome Church', 'Santhome High Road', 'Chennai'),

('LOC030', 'Guindy National Park', 'Sardar Patel Road', 'Chennai'),

('LOC031', 'Charminar', 'Charminar Road', 'Hyderabad'),

('LOC032', 'Golconda Fort', 'Fort Road', 'Hyderabad'),

('LOC033', 'Ramoji Film City', 'Anajpur', 'Hyderabad'),

('LOC034', 'Salar Jung Museum', 'Darushifa', 'Hyderabad'),

('LOC035', 'Hussain Sagar Lake', 'Tank Bund Road', 'Hyderabad'),

('LOC036', 'Birla Mandir', 'Hill Fort Road', 'Hyderabad'),

('LOC037', 'Victoria Memorial', 'Queens Way', 'Kolkata'),

('LOC038', 'Dakshineswar Kali Temple', 'May Dibas Pally', 'Kolkata'),

('LOC039', 'Indian Museum', 'Jawaharlal Nehru Road', 'Kolkata'),

('LOC040', 'Howrah Bridge', 'Strand Road', 'Kolkata');

4. Classified

INSERT INTO CLASSIFIED VALUES

('SUV', 'CAR'),

('SEDAN', 'CAR'),

('CUV', 'CAR'),

('HATCH_BACK', 'CAR'),

('ROADSTER', 'CAR'),

('PICKUP', 'CAR'),

('SUPERCAR', 'CAR'),

('COUPE', 'CAR'),

('CABRIOLET', 'CAR'),

('SPORTS', 'CAR'),

('TESLA', 'CAR'),

('STANDARD', 'BIKE'),

('CRUISER', 'BIKE'),

('SPORTS_B', 'BIKE'),

('SCOOTER', 'BIKE'),

('MOPED', 'BIKE'),

('ADVENTURE', 'BIKE'),

('NAKED', 'BIKE'),

('ELECTRIC', 'BIKE'),

('BUS_A', 'BUS'),

('BUS_B', 'BUS'),

('BUS_C', 'BUS'),

('TRAVELLER', 'BUS');

5. Model_Specifications

INSERT INTO MODEL_SPECIFICATIONS (MODEL_ID, ENGINE_CC, FUEL_TYPE, MILEAGE, POWER_HP, VEHICLE_TYPE) VALUES

('CAR001', 2000, 'Petrol', 15, 150, 'SUV'),

('CAR002', 1800, 'Diesel', 18, 140, 'SEDAN'),

('CAR003', 1600, 'Petrol', 20, 130, 'CUV'),

('CAR004', 1500, 'Diesel', 22, 120, 'HATCH_BACK'),

('CAR005', 2500, 'Petrol', 12, 180, 'ROADSTER'),

('CAR006', 2200, 'Diesel', 14, 170, 'PICKUP'),

('CAR007', 3000, 'Petrol', 10, 250, 'SUPERCAR'),

('CAR008', 2000, 'Petrol', 18, 160, 'COUPE'),

('CAR009', 1800, 'Electric', 25, 200, 'CABRIOLET'),

('CAR010', 2000, 'Petrol', 17, 170, 'SPORTS'),

('CAR011', 0, 'Electric', 50, 300, 'TESLA'),

('BIKE001', 150, 'Petrol', 40, 12, 'STANDARD'),

('BIKE002', 200, 'Petrol', 35, 15, 'CRUISER'),

('BIKE003', 250, 'Petrol', 30, 18, 'SPORTS_B'),

('BIKE004', 125, 'Petrol', 50, 10, 'SCOOTER'),

('BIKE005', 100, 'Electric', 60, 8, 'MOPED'),

('BIKE006', 200, 'Petrol', 30, 20, 'ADVENTURE'),

('BIKE007', 180, 'Petrol', 35, 14, 'NAKED'),

('BIKE008', 0, 'Electric', 70, 15, 'ELECTRIC'),

('BUS001', 6000, 'Diesel', 8, 300, 'BUS_A'),

```
('BUS002', 8000, 'Diesel', 6, 400, 'BUS_B'),

('BUS003', 5000, 'Diesel', 10, 250, 'BUS_C'),

('BUS004', 4500, 'Diesel', 12, 200, 'TRAVELLER');
```

6. Garage

```
INSERT INTO GARAGE VALUES

('GARAGE001', 'CAR001', 3),

('GARAGE001', 'CAR002', 2),

('GARAGE002', 'CAR003', 1),

('GARAGE002', 'CAR004', 2),

('GARAGE003', 'CAR005', 3),

('GARAGE003', 'CAR006', 1),

('GARAGE004', 'CAR007', 2),

('GARAGE004', 'CAR008', 1),

('GARAGE005', 'CAR009', 2),

('GARAGE005', 'CAR010', 1),

('GARAGE006', 'CAR011', 2),

('GARAGE001', 'BIKE001', 1),

('GARAGE002', 'BIKE002', 2),

('GARAGE003', 'BIKE003', 1),

('GARAGE004', 'BIKE004', 2),

('GARAGE001', 'BUS001', 1),

('GARAGE002', 'BUS002', 2),

('GARAGE003', 'BUS003', 1),

('GARAGE004', 'BUS004', 2);
```

7. Vehical_Fare

```
INSERT INTO VEHICLE_FARE VALUES

('MH01AB1234', 'CAR001', 'GARAGE001', 'Red', 2000, 1500, 1000),

('GJ05CD5678', 'CAR001', 'GARAGE001', 'Blue', 2000, 1500, 1000),

('AP09EF9012', 'CAR001', 'GARAGE001', 'Black', 2000, 1500, 1000),

('TS12GH3456', 'CAR002', 'GARAGE001', 'White', 1800, 1400, 900),

('TN15IJ7890', 'CAR002', 'GARAGE001', 'Silver', 1800, 1400, 900),

('TN20KL2345', 'CAR003', 'GARAGE002', 'Gray', 1600, 1300, 800),
```

```
('AP25MN6789', 'CAR004', 'GARAGE002', 'Green', 1500, 1200, 700),

('RJ30OP0123', 'CAR005', 'GARAGE003', 'Yellow', 1500, 1200, 700),

('MP35QR4567', 'CAR005', 'GARAGE003', 'Brown', 2500, 1800, 1100),

('PB40ST8901', 'CAR005', 'GARAGE003', 'Orange', 2200, 1700, 1000),

('MH10BC1234', 'CAR006', 'GARAGE003', 'Red', 2000, 1500, 1000),

('GJ05CD5677', 'CAR007', 'GARAGE004', 'Blue', 2000, 1500, 1000),

('AP09EF9011', 'CAR007', 'GARAGE004', 'Black', 2000, 1500, 1000),

('TS12GH3457', 'CAR008', 'GARAGE004', 'White', 1800, 1400, 900),

('TN15IJ7801', 'CAR009', 'GARAGE005', 'Silver', 1800, 1400, 900),

('TN20KL2344', 'CAR009', 'GARAGE005', 'Gray', 1600, 1300, 800),

('AP35MN6789', 'CAR010', 'GARAGE005', 'Green', 1500, 1200, 700),

('RJ40OP0123', 'CAR011', 'GARAGE006', 'Yellow', 1500, 1200, 700),

('MP55QR4567', 'CAR011', 'GARAGE006', 'Brown', 2500, 1800, 1100),

('MH50AB1001', 'BIKE001', 'GARAGE001', 'Red', 1500, 1000, 500),

('GJ55CD2002', 'BIKE002', 'GARAGE002', 'Blue', 2000, 1500, 600),

('KA60EF3003', 'BIKE002', 'GARAGE002', 'Green', 2000, 1500, 600),

('AN65GH4004', 'BIKE003', 'GARAGE003', 'Yellow', 2500, 2000, 700),

('UP70IJ5005', 'BIKE004', 'GARAGE004', 'White', 1250, 8000, 400),

('TN75KL6006', 'BIKE004', 'GARAGE004', 'Black', 1250, 8000, 400),

('AP80MN7007', 'BUS001', 'GARAGE001', 'Red', 5000, 3000, 200),

('RJ85OP8008', 'BUS002', 'GARAGE002', 'Blue', 8000, 4000, 250),

('MP90QR9009', 'BUS002', 'GARAGE002', 'Green', 8000, 4000, 2500),

('PB95ST0010', 'BUS003', 'GARAGE003', 'Yellow', 5000, 2500, 1500),

('HR00UV1011', 'BUS004', 'GARAGE004', 'White', 4500, 2000, 1500),

('CG05WX2012', 'BUS004', 'GARAGE004', 'Black', 4500, 2000, 1500);
```

8. Agency

```
INSERT INTO AGENCY (AGENCY_ID, NAME, CITY, GARAGE_ID) VALUES

('AGY001', 'City Rent-a-Car', 'Mumbai', 'GARAGE001'),

('AGY002', 'Zoom Rentals', 'Delhi', 'GARAGE002'),

('AGY003', 'Go Rentals', 'Bangalore', 'GARAGE003'),

('AGY004', 'Speedy Cars', 'Chennai', 'GARAGE004'),

('AGY005', 'Easy Drive', 'Hyderabad', 'GARAGE005'),

('AGY006', 'Wheels on Wheels', 'Kolkata', 'GARAGE006');
```

9. Rental

INSERT INTO RENTAL VALUES

('CUST1', 'RENTAL001', 2, '2024-04-01', '2024-04-05', 'LOC001', 'LOC002', '2024-04-06', 0, 'AGY001', 'GJ05CD5678') ,

('CUST1', 'RENTAL002', 1, '2024-04-10', '2024-04-15', 'LOC003', 'LOC004', '2024-04-16', 0, 'AGY002', 'TN20KL2345') ,

('CUST1', 'RENTAL003', 4, '2024-04-20', '2024-04-25', 'LOC005', 'LOC006', '2024-04-26', 0, 'AGY003', 'PB40ST8901') ,

('CUST1', 'RENTAL004', 3, '2024-05-01', '2024-05-05', 'LOC007', 'LOC008', '2024-05-06', 0, 'AGY004', 'AP09EF9011') ,

('CUST1', 'RENTAL005', 2, '2024-05-10', '2024-05-15', 'LOC009', 'LOC010', '2024-05-16', 0, 'AGY005', 'TN15IJ7801') ,

('CUST1', 'RENTAL006', 1, '2024-05-20', '2024-05-25', 'LOC011', 'LOC012', '2024-05-26', 0, 'AGY006', 'RJ40OP0123') ,

('CUST1', 'RENTAL007', 2, '2024-06-01', '2024-06-05', 'LOC013', 'LOC014', '2024-06-06', 0, 'AGY001', 'MH50AB1001') ,

('CUST2', 'RENTAL008', 1, '2024-06-10', '2024-06-15', 'LOC015', 'LOC016', '2024-06-16', 0, 'AGY002', 'AN65GH4004') ,

('CUST2', 'RENTAL010', 2, '2024-07-01', '2024-07-05', 'LOC019', 'LOC020', '2024-07-06', 0, 'AGY004', 'AP80MN7007') ,

('CUST2', 'RENTAL011', 1, '2024-07-10', '2024-07-15', 'LOC021', 'LOC022', '2024-07-16', 0, 'AGY005', 'TN15IJ7890') ,

('CUST2', 'RENTAL012', 4, '2024-07-20', '2024-07-25', 'LOC023', 'LOC024', '2024-07-26', 0, 'AGY006', 'AP25MN6789') ,

('CUST3', 'RENTAL013', 3, '2024-08-01', '2024-08-05', 'LOC025', 'LOC026', '2024-08-06', 0, 'AGY001', 'MH10BC1234') ,

('CUST3', 'RENTAL014', 2, '2024-08-10', '2024-08-15', 'LOC027', 'LOC028', '2024-08-16', 0, 'AGY002', 'TS12GH3457') ,

('CUST3', 'RENTAL015', 1, '2024-08-20', '2024-08-25', 'LOC029', 'LOC030', '2024-08-26', 0, 'AGY003', 'AP35MN6789') ,

('CUST3', 'RENTAL016', 2, '2024-09-01', '2024-09-05', 'LOC031', 'LOC032', '2024-09-06', 0, 'AGY004', 'GJ05CD5678') ,

('CUST4', 'RENTAL017', 1, '2024-09-10', '2024-09-15', 'LOC033', 'LOC034', '2024-09-16', 0, 'AGY005', 'GJ55CD2002') ,

('CUST4', 'RENTAL018', 4, '2024-09-20', '2024-09-25', 'LOC035', 'LOC036', '2024-09-26', 0, 'AGY006', 'UP70IJ5005') ,

('CUST4', 'RENTAL021', 1, '2024-10-20', '2024-10-25', 'LOC001', 'LOC004', '2024-10-26', 0, 'AGY003', 'RJ85OP8008') ,

('CUST4', 'RENTAL022', 2, '2024-11-01', '2024-11-05', 'LOC003', 'LOC004', '2024-11-06', 0, 'AGY004', 'PB95ST0010') ,

('CUST5', 'RENTAL023', 1, '2024-11-10', '2024-11-15', 'LOC005', 'LOC006', '2024-11-16', 0, 'AGY005', 'AP80MN7007') ,

('CUST5', 'RENTAL024', 4, '2024-11-20', '2024-11-25', 'LOC007', 'LOC008', '2024-11-26', 0, 'AGY006', 'HR00UV1011') ,

('CUST5', 'RENTAL025', 3, '2024-12-01', '2024-12-05', 'LOC009', 'LOC001', '2024-12-06', 0, 'AGY001', 'TS12GH3456') ,

('CUST6', 'RENTAL026', 2, '2024-12-10', '2024-12-15', 'LOC010', 'LOC012', '2024-12-16', 0, 'AGY002', 'AP25MN6789') ,

('CUST7', 'RENTAL027', 1, '2024-12-20', '2024-12-25', 'LOC040', 'LOC001', '2024-12-26', 0, 'AGY003', 'MH10BC1234') ,

('CUST7', 'RENTAL028', 2, '2025-01-01', '2025-01-05', 'LOC005', 'LOC036', '2025-01-06', 0, 'AGY004', 'TS12GH3457') ,

('CUST7', 'RENTAL029', 1, '2025-01-10', '2025-01-15', 'LOC007', 'LOC005', '2025-01-16', 0, 'AGY005', 'AP35MN6789') ,

('CUST7', 'RENTAL030', 4, '2025-01-20', '2025-01-25', 'LOC009', 'LOC006', '2025-01-26', 0, 'AGY006', 'AP09EF9012') ,

('CUST7', 'RENTAL031', 3, '2025-02-01', '2025-02-05', 'LOC001', 'LOC002', '2025-02-06', 0, 'AGY001', 'MH50AB1001') ,

('CUST7', 'RENTAL032', 2, '2025-02-10', '2025-02-15', 'LOC005', 'LOC015', '2025-02-16', 0, 'AGY002', 'AN65GH4004') ,

('CUST7', 'RENTAL034', 2, '2025-03-01', '2025-03-05', 'LOC007', 'LOC008', '2025-03-06', 0, 'AGY004', 'AP80MN7007') ,

('CUST8', 'RENTAL035', 1, '2025-03-10', '2025-03-15', 'LOC009', 'LOC010', '2025-03-16', 0, 'AGY005', 'TS12GH3456') ,

('CUST8', 'RENTAL036', 4, '2025-03-20', '2025-03-25', 'LOC011', 'LOC012', '2025-03-26', 0, 'AGY006', 'AP25MN6789') ,

('CUST9', 'RENTAL037', 3, '2025-04-01', '2025-04-05', 'LOC013', 'LOC014', '2025-04-06', 0, 'AGY001', 'MH10BC1234') ,

('CUST9', 'RENTAL038', 2, '2025-04-10', '2025-04-15', 'LOC015', 'LOC016', '2025-04-16', 0, 'AGY002', 'TS12GH3457');

10.   Payment (A Method to Add Payments from Rental data)

INSERT INTO PAYMENT (TRANSACTION_ID, ADVANCE, AMOUNT, BOOK_DATE, CUSTOMER_ID, AGENCY_ID, RENTAL_ID)

SELECT

  ROW_NUMBER() OVER (ORDER BY R.RENTAL_ID) AS TRANSACTION_ID,

  V.BASE_FARE AS ADVANCE,

  (V.BASE_FARE + (V.PERDAY_FARE * (DATEDIFF(R.END_DAY, R.START_DAY) + 1))) AS AMOUNT,

  CURRENT_DATE() AS BOOK_DATE,

  R.CUSTOMER_ID,

```
    R.AGENCY_ID,

    R.RENTAL_ID

FROM

    RENTAL R

JOIN

    VEHICLE_FARE V ON R.REGISTRATION_NO = V.REGISTRATION_NO;
```

11.   Insurance

```
INSERT INTO INSURANCE VALUES

('POL001', 5000, 1500), -- Highest premium

('POL002', 3000, 1200), -- Medium premium

('POL003', 2000, 1000), -- Medium premium

('POL004', 1000, 800),  -- Lowest premium

('POL005', 2500, 1100); -- Medium premium
```

12.   Covers

```
INSERT INTO COVERS (RENTAL_ID, POLICY_ID) VALUES

('RENTAL001', 'POL001'), -- Assigned highest premium policy

('RENTAL002', 'POL002'), -- Assigned medium premium policy

('RENTAL003', 'POL003'), -- Assigned medium premium policy

('RENTAL004', 'POL004'), -- Assigned lowest premium policy

('RENTAL005', 'POL005'), -- Assigned medium premium policy

('RENTAL006', 'POL001'), -- Assigned highest premium policy

('RENTAL007', 'POL002'), -- Assigned medium premium policy

('RENTAL008', 'POL003'), -- Assigned medium premium policy

('RENTAL030', 'POL004'), -- Assigned lowest premium policy

('RENTAL010', 'POL005'), -- Assigned medium premium policy

('RENTAL011', 'POL001'), -- Assigned highest premium policy

('RENTAL012', 'POL002'), -- Assigned medium premium policy

('RENTAL013', 'POL003'), -- Assigned medium premium policy

('RENTAL014', 'POL004'), -- Assigned lowest premium policy

('RENTAL015', 'POL005'), -- Assigned medium premium policy

('RENTAL016', 'POL001'), -- Assigned highest premium policy

('RENTAL017', 'POL002'); -- Assigned medium premium policy
```

13.   Reviews

INSERT INTO REVIEWS (CUSTOMER_ID, AGENCY_ID, RATING_SCALE10, FEEDBACK) VALUES

('CUST1', 'AGY001', 8, 'Great service overall'),

('CUST2', 'AGY002', 7, 'Smooth experience, would rent again'),

('CUST3', 'AGY003', 9, 'Excellent customer support'),

('CUST4', 'AGY004', 6, 'Average experience, could be improved'),

('CUST5', 'AGY005', 8, 'Good selection of vehicles'),

('CUST6', 'AGY002', 9, 'Very satisfied with the rental process'),

('CUST7', 'AGY001', 7, 'Decent service, but room for improvement'),

('CUST8', 'AGY005', 8, 'Friendly staff, easy pickup and drop-off'),

('CUST9', 'AGY001', 9, 'Highly recommended, will rent again');

INSERT INTO REVIEWS (CUSTOMER_ID, AGENCY_ID, RATING_SCALE10, FEEDBACK) VALUES

('CUST1', 'AGY001', 8, 'Great service overall'),

('CUST2', 'AGY002', 7, 'Smooth experience, would rent again'),