**CAR RENTAL DATABASE PRPOJECT**

**A detailed schema using the E­R model including: (50 points)**

* **Design a corresponding set of tables that are in at least 3NF. (25 points)**
* **List of the attributes for each entity and relationship. (15 points)**
* **Explanations of the non-­obvious entities and relationships. (10 points)**

1. **Car\_Branch** 🡪 branch\_id, bname, blocation

**Primary key** : branch\_id

2. **Cars\_Info**🡪 car\_id, manufacturer, model,size , reg\_no, branch\_id, price

**Primary key** : car\_id

Foreign key 🡪 branch\_id (car\_branch)

3. **Cust\_details** 🡪 cust\_id, fname, lname,address, dl, membership,bank

**Primary key** : cust\_id

4. **Special\_Deals** 🡪 dealid, car\_id, size, price, duration

**Primary key** : deal\_id

**Foreign key** : car\_id (cars\_info)

5. **Cust\_main** : id, cust\_id,car\_id, duration, size, price, dealid, branch\_id

**Primary key** : id

**Foreign key** : branch\_id (car\_branch)

**Foreign key** : car\_id (cars\_info)

**Foreign key** : cust\_id (cust\_details)

**Foreign key** : dealid (special\_deals)

**ERD Diagram**

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| **CUST\_MAIN** |
| **ID** |
| **CUST\_ID** |
| **CAR\_ID** |
| **SIZE** |
| **DEALID** |
| **BRANCH\_ID** |
| **DURATION** |

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| **CARS\_INFO** |
| **CAR\_ID** |
| **COLOR** |
| **MODEL** |
| **SIZE** |
| **STATE** |
| **REG\_NO** |
| **PRICE** |
| **BRANCH\_ID** |

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| **CUST\_DETAILS** |
| **CUST\_ID** |
| **FNAME** |
| **LNAME** |
| **DL** |
| **MEMBERSHIP** |
| **ADDRESS** |
| **BANK** |

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| **CAR\_BRANCH** |
| **BRANCH\_ID** |
| **BNAME** |
| **BLOCATION** |

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| **SPECIAL\_DEALS** |
| **DEALID** |
| **CAR\_ID** |
| **SIZE** |
| **DURATION** |

**Provide DDL including: (50 points)**

* **CREATE tables. (25 points)**
* **Populate (INSERT Statements) tables with some data. (10 points)**
* **Construct the following queries and provide results: (15 points)**

**DDL Statements to create tables:**

CREATE DATABASE car ;

CREATE TABLE `car\_branch` (

`branch\_id` INT PRIMARY KEY,

`bname` VARCHAR(15),

`blocation` VARCHAR(15));

CREATE TABLE `cars\_info` (

`car\_id` varchar(5) primary key,

`color` VARCHAR(20),

`size` VARCHAR(20),

`reg\_no` varchar(10),

`branch\_id` varchar(5) REFERENCES branch,

`price` varchar(6),

`model` VARCHAR(20));

CREATE TABLE `cust\_main` (

`id` VARCHAR(5) primary key,

`cust\_id` VARCHAR(5) REFERENCES cust\_details,

`car\_id` VARCHAR(5) REFERENCES cars\_info,

`size` varchar(20),

`dealid` varchar(5) REFERENCES special\_deals,

`branch\_id` varchar(5) REFERENCES branch,

`duration` varchar(10));

CREATE TABLE `cust\_details` (

`cust\_id` INT primary key,

`fname` VARCHAR(20),

`lname` VARCHAR(20),

`address` VARCHAR(30),

`dl` VARCHAR(10),

`bankacc` VARCHAR(20),

`membership` varchar(20)

);

CREATE TABLE `special\_deals` (

`dealid` INT primary key,

`car\_id` VARCHAR(5) REFERENCES cars\_info,

`size` VARCHAR(20),

`offerprice` varchar(10),

`duration` varchar(5)

);

INSERT into `car\_branch` (`branch\_id`, `bname`, `blocation`) VALUES

(1,'XYZ','Dallas'),

(2,'ABC','Austin'),

(3,'DEF','Houston');

INSERT into `cars\_info`(`car\_id`,`color`,`size`,`reg\_no`,`branch\_id`,`price`, `model`) VALUES

(11,'red','Compact','124XYZ',1,260,'Camry'),

(22,'blue','Fullsize','123XYZ',2,150,'Accord');

INSERT into `cust\_details` (`cust\_id`,`fname`,`lname`,`address`,`dl`,`bankacc`,`membership`)VALUES

(1,'priya','G','123 eldridge pkwy',123456,1234567812345678,'yes'),

(2,'ravi','M','503 southwest pkwy',456345,9876543212344567,'no');

INSERT into `cust\_main` (`id`,`cust\_id`,`car\_id`,`size`,`dealid`,`branch\_id`, `duration`) VALUES

(1,1,11,'compact',111,1,'3days'),

(2,2,22,'fullsize',222,2,'5days');

INSERT into `special\_deals` (`dealid`,`car\_id`,`size`,`offerprice`,`duration`) VALUES

(111,11,'compact',150,'3days'),

(222,22,'Fullsize',150,'5days');

**What compact cars are available at a particular (pick any) branch?**

Select car\_branch.bname, car\_branch.blocation, cars\_info.car\_id, cars\_info.color,

cars\_info.model, cars\_info.reg\_no, cars\_info.price

from cars\_info, car\_branch

where cars\_info.branch\_id=car\_branch.branch\_id and cars\_info.size='compact' and branch.branchid=1;

A picture containing application

Description automatically generated

**Show all cars available, sizes, location to pick. Group by sizes, and location.**

Select car\_branch.bname, car\_branch.blocation, cars\_info.car\_id, cars\_info.color,

cars\_info.model, cars\_info.reg\_no, cars\_info.price, cars\_info.size

from cars\_info, car\_branch where cars\_info.branch\_id=car\_branch.branch\_id

Group by cars\_info.size,car\_branch.blocation;

Graphical user interface, application, table

Description automatically generated

**Display the car rental history of a particular (pick any) customer.**

Select cust\_main.cust\_id,cust\_main.car\_id,cust\_main.duration,cust\_main.size,cust\_details.fname,cust\_details.lname from cust\_main,cust\_details where cust\_details.cust\_id=cust\_main.cust\_id and cust\_main.cust\_id=1;

Graphical user interface, application

Description automatically generated with medium confidence