**Project Description**



A car rental company (let's call it CRC) wants to develop a relational database to monitor customers, rentals, fleet and locations. CRC's fleet consists of cars of different types. A car is described via a unique code (VIN), a description, color, brand, model, and date of purchase. A car may belong to one (exactly one) vehicle category (compact, economy, convertible, etc.). Each category is described by a unique ID, a label and a detailed description. CRC has several locations around the globe. Each location has a unique ID, an address (street, number, city, state, country) and one or more telephone numbers. CRC also keeps data about its customers. A customer is described by a unique ID, SSN, Name (First, Last), email, mobile phone number and lives in a state and country. Customers rent cars. A car rental has a unique reservation number, an amount (the value of the rental), the pickup and the return date. The car is picked up from a location and returned to another location (not necessarily the same.)

**Questions**



**Question 3**

Run the following queries:

a. Show the reservation number and the location ID of all rentals on 5/20/2015

----->**SELECT Reservation\_Number, Pick\_up\_location FROM `Rentals` WHERE Pick\_up\_date='2015-05-20';**

b. Show the first and the last name and the mobile phone number of these customers that have rented a car in the category that has label = 'luxury'

**---->SELECT First\_Name, Last\_Name, Mobile\_phone FROM Customers as c WHERE c.Customer\_ID IN (SELECT r.Customer\_ID FROM Rentals as r WHERE VIN IN(SELECT cat.VIN FROM Cars as cat, Car\_Category as d WHERE cat.Category\_ID=d.Category\_ID AND Label='luxury'));**

c. Show the total amount of rentals per location ID (pick up)

**---->SELECT SUM(Amount) AS 'Total Amount', Pick\_up\_location FROM `Rentals` GROUP BY Pick\_up\_location;**

d. Show the total amount of rentals per car's category ID and month

**---->Select SUM(Amount), Category\_ID, EXTRACT(MONTH FROM Pick\_up\_date) 'Month' from Rentals**

**inner join Cars ON Rentals.VIN = Cars.VIN**

**group by Category\_ID, Month**

e. For each rental‟s state (pick up) show the top renting category

f. Show how many rentals there were in May 2015 in „NY‟, „NJ‟ and „CA‟ (in three columns)

**---->SELECT**

**(SELECT COUNT(\*) FROM Rentals r**

**LEFT JOIN Location l on l.Location\_ID = r.Pick\_up\_location**

**WHERE l.State = 'NY' AND extract(month from r.Pick\_up\_date) = 5 AND extract(year from r.Pick\_up\_date) = 2015) AS NY,**

**(SELECT COUNT(\*)**

**FROM Rentals r**

**LEFT JOIN Location l on l.Location\_ID = r.Pick\_up\_location**

**WHERE l.State = 'NJ' AND extract(month from r.Pick\_up\_date) = 5 AND extract(year from r.Pick\_up\_date) = 2015) AS NJ,**

**(SELECT COUNT(\*)**

**FROM Rentals r**

**LEFT JOIN Location l on l.Location\_ID = r.Pick\_up\_location**

**WHERE l.State = 'CA' AND extract(month from r.Pick\_up\_date) = 5 AND extract(year from r.Pick\_up\_date) = 2015) AS CA**

**;**

g. For each month of 2015, count how many rentals had amount greater than this month's average rental amount

h. For each month of 2015, show the percentage change of the total amount of rentals over the total amount of rentals of the same month of 2014

i. For each month of 2015, show in three columns: the total rentals‟ amount of the

previous months, the total rentals‟ amount of this month and the total rentals‟ amount of the following months