**Chapter 10 – Team Project - Planning for Distribution**

Read the sample project steps for this chapter and apply the same techniques to the team project that you are developing. Use the normalized set of relations developed in Chapter 6 as the global schema. For the team project, assume that there are at least four locations or branches for the enterprise and that the processing is to be distributed to these locations. Identify the applications that will be performed at each of the locations and then follow the steps below to plan the distribution of your database.

**Step 10.1 – Write out the normalized set of relations developed in Chapter 6 as the global schema.**

1. CuZip(zip, city, state)
2. CarCustomer(custId, firstName, lastName, street, *zip*, areaCode, phoneNumber, driversLicNo, referredBy, adSeen)
3. CarAd(placeIn, initialDate, totalCost, frequency, contactPerson, areaCode, phoneNumber)
4. CarModel(model, cylinders, doors, weight, capacity)
5. CarNewCar(VIN, make, *model*, listPrice, datManufactured, placeManufactured, cylinders, doors, weight, capacity, color, delDate, delMiles)
6. CarOptionsMenu(carOption, price)
7. CarNewCar\_Options(VIN, *carOption*)
8. CarCustomizationMenu(customItem, price)
9. CarSalesPerson(empId, firstName, lastName, street, zip, homeAreaCode, homePhoneNumber, officeAreaCode, officePhoneNumber, cellAreaCode, cellPhoneNumber, dateHired)
10. SalesPZip(zip, city, state)
11. CarRegistration(registrationNo, plateNo, fee)
12. In\_Zip(zip, state, city)
13. InsuranceCompanyName(companyName, street, *zip*, areaCode, phoneNumber)
14. InsurancePolicy(insPolicyNo, *companyName*, startDate, endDate)
15. FinanceZip(zip, city, state)
16. FinanceCompany(companyName, street, *zip*)
17. FinancedAmount(amountFinanced, rate, numberMonths, startDate)
18. FinancedCar(finPolicyNo, *companyName, amountFinanced*)
19. CarWarranty(warType, cost, period)
20. CarUsedCarSpec(model, cylinders, doors, weight, capacity)
21. CarUsedCarVIN(VIN, make, *model*, color, modelYear, mileage, bookValue)
22. CarUsedCarFeatures(*VIN*, feature)
23. CarSale(*invoiceNo*,saleDate,salePrice, tax, registrationFee, tradeinAmount, amountPaid, amountDue, commission,saleMiles, *custId, empId, newCarVIN, usedCarVIN, insPolNo,* *insCoName*,*finPolNo*, tradeInVIN, *registrationNo*, *warType*)
24. CarSale\_CustomItem(*invoiceNo, CustomItem*)
25. CarSurvey(surveyNumber, dealershipRating, carRating, salesPersonRating, *invoiceNo*)

**Step 10.2 - Write out a set of end user locations and the applications performed at each. Provide a reason to justify why you chose this data distribution plan.**

**The two locations are Midtown Manhanttan and Brookyln. We have divided the application data using customers location using heirirical data distributed plan. We have used this distributed plan because it will keep the data easy to access and increases efficiency. The applications performed at each location are:**

1. **Maintaining Customer records.**
2. **Maintaining New Car records.**
3. **Maintaining Salesperson records**
4. **Maintaining CarAd records**
5. **Maintaining Insurance Company records.**
6. **Maintaining Finance Company records.**
7. **Maintaining Used Car records.**
8. **Maintaining Car registration records.**
9. **Maintaining Car Warranty records.**
10. **Producing the Sold Car invoice.**
11. **Producing the invoice of the financed car.**
12. **Producing the Salesperson report.**

**Step 10.3 - For each application, decide what tables are required.**

1. **Maintaining Customer records – CarCustomer, CuZip, CarSurvey, CarSale, CarSaleCutomItem, CarAd, CarSurvey**
2. **Maintaining New Car records – CarNewCar, CarModel, CarOptionsMenu, CarNewCar\_Options, CarCustomizationMenu, CarSurvey**
3. **Maintaining Salesperson records – CarSalesPerson, SalesPZip, CarSale, CarSurvey**
4. **Maintaining CarAd records – CarAd, CarCustomer**
5. **Maintaining Insurance Company records – InsuranceCompanyName, InsurancePolicy, In\_Zip, CarSale**
6. **Maintaining Finance Company records – FinanceCompany, FinanceZip, FinancedCar, FinancedAmount**
7. **Maintaining Used Car records – CarUsedCarVIN, CarUsedCarSpec, CarUsedCarFeatures, CarSale**
8. **Maintaining Car registration records – CarRegistration, CarSale, CarCustomer**
9. **Maintaining Car Warranty records – CarWarranty, CarSale, CarNewCar,**
10. **Producing the Sold Car invoice – CarSale, CarSale\_CustomItem, CarSalesPerson, CarCustomer, CarRegistration, FinanceCompany, FinanceZip, FinancedCar, FinancedAmount, InsuranceCompanyName, InsurancePolicy, In\_Zip**
11. **Producing the invoice of the financed car – FinanceCompany, FinanceZip, FinancedCar, FinancedAmount**
12. **Producing the Salesperson report -CarSalesPerson, CarSale, CarSurvey**

**Step 10.4 - Using the normalized relations, perform selection and projection operations, to create the set of vertical, horizontal and mixed data fragments needed for each application.**

**Step 10.5 - Map the fragments to the applications and locations.**

For each fragment that is required at more than one application location, decide whether the fragment can be replicated, by considering frequency of use and of update.

**Step 10.6 - Make a table showing a geographical network, listing nodes and applications and showing the data fragments at each node.**

**Step 10.7 - For each application in the geographical network, determine whether access will be local, remote, or compound.**

Make up a table showing each site, and the applications requiring local access, remote access, and compound access.

**Step l0.8 - For each of the non-local accesses, identify the application and the location of the data.**

Estimate the number of accesses required per day using estimates such as low, medium, or high. If it is high, justify your choice of non-local storage.

**Step 10.9 - Make any adjustments indicated by your analysis of applications and traffic, and plan a final geographical network.**