



Term Project Description

Date: February 2002

Due Date: Week 14

Contracts(ContratID , BeginDate, EndDate, Distance, FromOffice, ToOffice, DriverName, DriverBirthday, VehiclePlate)

*Foreign key FromOffice, ToOffice references **Offices***

*Foreign key DriverName, DriverBirthday **Customers***

*Foreign key VehiclePlate references **Vehicles***

Customers(DriverName, DriverBirthday, DriverLicenceNr, DriverStreet, DriverCity, DriverZip, DriverCountry, DriverCustomerCategory)

*Foreign key DriverCustomerCategory references **Discounts***

ExtraCharges(DriverBirthday, DriverCustomerCategory, ExtraCharges)

Discounts(DriverCustomerCategory, DiscountPercent)

Vehicles(VehiclePlate, VehicleBrand, VehicleModelNo, VehicleCategory, VehicleNoSeats, VehicleHomeOffice)

*Foreign key VehicleHomeOffice references **Offices***

KmPrices(VehicleBrand, VehicleCategory, VehicleNoSeats, VehicleFreeKm, VehiclePricePerDay, PricePerKm)

Offices(OfficeId, OfficeStreet, OfficeCity, OfficeProvince, OfficeCountry, OfficePhone, OfficeFax, OfficeRegionCode)

*Foreign Key OfficeRegionCode references **Managers***

Managers(OfficeRegionCode, OfficeManager)

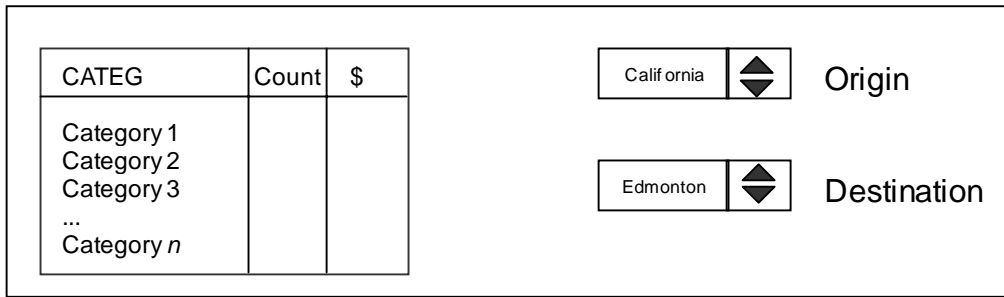
Based on the tables in the solution of assignment 1 (see above) build a web-based application for management and decision support as described below and the following requirement are answered.

1.
 - a) Report the 10 rental offices with the highest number of car rentals per time period (month/quarter/year). Print a list of rental offices with the count of rentals and a total amount made, sorted on the count of rentals. Display only the list for a given level of time period (month or quarter or year) as selected by the user.
 - b) Report the 10 rental offices with the greatest amount of dollar made in car rentals per time period (month/quarter/year). Print a list of rental offices with the count of rentals and a total amount made, sorted on the amount made. Display only the list for a given level of time period (month or quarter or year) as selected by the user.
 - c) Display the list of questions a) and b) on the same page in addition to the list of the intersection between list a) and b), i.e., list c) is the list of the at the same time most profitable and the most popular rental offices. The choice of the time period (month/quarter/year) should apply to the lists a), b), and c) simultaneously.

most popular	1999 ▼	Year
most profitable	Jan ▼	Month
intersection	none ▼	Quarter

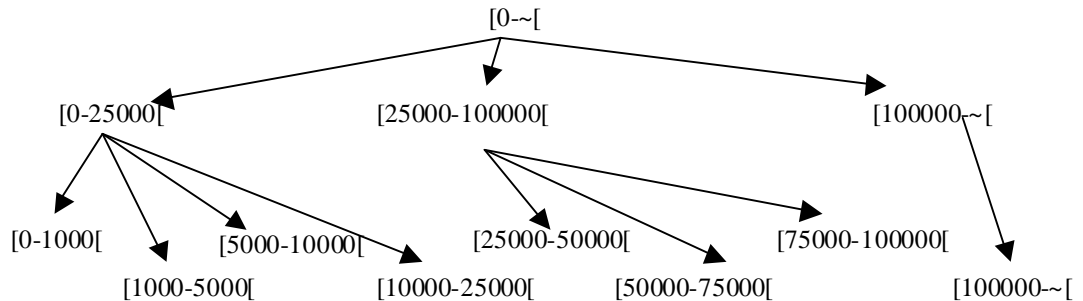
2. Create a list of car categories for a given route (origin→destination). The list should display the car category with the number of rentals and the total amount. The user should be able to select the origin and destination of the route, and be able to generalize and

specialize origin and destination along a hierarchy of locations.



3.

a) Characterize car categories in the rental offices by rental office location and mileage ranges. The mileage ranges are specified as follows:



The rental office locations are also organized in a hierarchy based on city, province and country.

The characterization should be displayed in a cross-table. Each cell of the table contains the distribution of the car categories for a given rental office location and a mileage range. The displayed values should be the absolute count and the relative percentage of the given range and the given location for that cell. In addition the table has also a column that shows the sum of the rows as well as a row that shows the sum of the column values.

The user should be able to perform generalization and specialization on either the mileage range hierarchy or the location hierarchy. See the following figure for an illustration.

▲▼ Mileage Range

Location ▲▼

	Millage 1		Millage 2		...	Millage k		All Ranges	
		count %		count %			count %		count %
Location 1	Category 1 Category 2 ... Category N		Category 1 Category 2 ... Category N		...	Category 1 Category 2 ... Category N		Category 1 Category 2 ... Category N	
...	
Location N	Category 1 Category 2 ... Category N		Category 1 Category 2 ... Category N		...	Category 1 Category 2 ... Category N		Category 1 Category 2 ... Category N	
All Locations	Category 1 Category 2 ... Category N		Category 1 Category 2 ... Category N		...	Category 1 Category 2 ... Category N		Category 1 Category 2 ... Category N	

b) The user should be able to select a column from the cross-table, and the system will display then the absolute counts of that column in a set of bar charts. Each bar chart represents the distribution of the absolute counts per car category for a given location at the current location hierarchy level. Below is an illustrative example. Notice the bar chart for “total” corresponding to the aggregate row in the cross-table.

