NEAR EAST UNIVERSITY

FACULTY OF ECONOMICA AND ADMINISTRATIVE SCIENCES

DEPARTMENT OF COMPUTER INFORMATION SYSTEMS

2005/2006 SPRING TERM CIS 400 (Graduation Project)

"RENT A CAR MANAGEMENT SYSTEM

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> Lefkosa 2006



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ACKNOWLEDGEMENTS

First of all I say thanks to my Almighty God who gave me abilities and helped me do anything that was possible by me.

I am then very much thankful to my advisor Dr. Mustafa Menekay who helped me from the core, and helped me when ever I was struck in programming problems.

I then say thanks to my parents who helped me and supported me till this very time, thank you very much mom and dad.

I will not forget my friends here who always motivated me when ever I got disappointed in any point while making this program

ABSTRACT

This software is a specific program only suitable for rent a car management system that makes business in keeping several cars and renting them to the public. The renting system is divided into 6 main processes in order for better user interface and friendly environment.

My solution to the problem I guess is quite understandable as I divided the system into main six processes, such as cars, members, reservations, rentals, reports and accounts. Each of the section I designed is easy to understand and learn fast. There are no menus used but command buttons were preferred instead so all is in front of the user for quick access.

I added user messages as well for the correspondence with the program so user may understand a bit the inside logic of the program how his process is handled.

I hope this software will help the rent a car management business manager keep close eye on his business accounts, his cars and performance, his customers activities using the IRS I designed for the purpose.

As there are hundreds of ways to solve any problem so if you find any suggestions about my program please do not hesitate telling me them.

INTRODUCTION RENT A CAR MANAGEMENT SYSTEM

Brief explanation of the business:

"Rent a Car" is a kind of business in which a company holds several cars of different category and makes and give the cars to different people who are permitted by the law of the local government to drive a car for a specific period of time with a definite price called rent. Thus making profit through business.

All cars are insured with an insurance company so incase of any damage by a customer to the car or accident, the company (Rent A Car Company) does not pay the lost caused by that damage.

The company keeps records of all of its customers, cars, renting details, and its accounts. These records help them to maintain their performance and provide better service to their customers. It also helps the management in keeping the track of reservations, renting, or a customer's profile may help in the reputation of that particular customer where to rent a car to him or not if he use to damage the cars.

Aim of the project:

My project is focused on converting a manual system of any "Rent a Car" company into a computer based system that shall keep records of the available cars, customers profiles, reservation details, renting details and other accounting information related to the business.

Like all other programs I shall try to focus on reducing the time consumed by the user in order to retrieve any kind of information out of the database than it would take doing it manually.

Besides this reservations and proper reservations play a key role in this kind of business. I have focused on this process as well in order to avoid multi reservations of a vehicle where the dates are conflicting.

Thus I can say that my this new database application program shall increase efficiency of the business providing accurate information based on the data entered by the user right in time, where for managers to choose the best decision before hand.

Existing System (Manual):

On the reception desk they have a big file that contains two basic parts.

1. Reservations

2. Renting

In reservation part they keep the information of the customer along with the car he is interested in, the dates and the duration of the vehicle that will stay with the customer.

In the other section receptionist writes down the name, surname, and the license number of the customer along with the car registration number, with the amount received.

Drawbacks of the Existing Manual System:

After my study I found following drawbacks in the existing manual system;

- There is no file of the vehicles that are available, but the receptionist look at the car in order to tell the customer its specifications or he/she remembers it by heart.
- It is very difficult for a new employee to tell the customer specification of a car as there is no detail data about the cars.
- Without such file or written information, it is very difficult rather impossible for new employee to convince which car is best suiting customer's need.
- There is no file about customer profile, their history of car hiring from the same company, but only in the reservation or renting book.
- Multiple data is entered in the registration book, meaning if the same customer comes to hire any car, all of his data is written again in the book, waste of time.
- Incase of lot of customers, two or more reservations dates may conflict each other thus causing customer dissatisfaction affecting badly the business in the local market.
- Same may happen for renting a car as well.
- Accounts are not kept accurately, who paid for which renting is not exactly known. In a file manually amount received is written by the receptionist.
- Employee takes lot of time in order to tell the business owner the detail activities of the day of the business and might not be correct.

New Computerized System:

As business grows, it becomes more and more difficult for the management to keep eye on all of the activities mentioned above manually. So the computer comes in the field to provide a better IRS having a bottle neck analysis, keep eye on all the records and maintaining them up to date, thus helping the management officers to take an appropriate action before hand.

After analyzing system of a local car renting company that was using a manual system of their record keeping of their customers, cars, renting activities as well as reservations in their only book, I came up with a solution described below.

Solution:

In car rent business to have a computer based system the application must posses the utilities for;

- 1. Date entry of all available cars
- 2. Edit/Update car specifications
- 3. Search a car and its availability
- 4. Customers and member registration with edit and update options
- 5. A proper reservation system that manages to schedule the dates so no conflict occurs
- 6. Hiring (renting) cars into the database and keeping track of all the cars rented when and to whom
- 7. Proper IRS (Information Reporting System) based on the data collected by the above mentioned processes
- 8. Computerized accounting system showing details of profit and loss as well as customer, members and business accounts

Keeping in mind the above eight (8) facilities I divided the whole system into six (6) main processes.

- 1. Car Registration (Registration of a car)
- 2. Members (Registration of a customer)
- 3. Reservation
- 4. Rentals
- 5. Accounts
- 6. Reports

Each of this process is explained as;

1. Car Registration:

This is our first main process in which we enter for the first time any car details to our system with all of its specifications and renting prices. In this process we have ability to enter a new car information, search for an existing car in the database, to modify or update the detail of a specific car in the database or may mark it up as a discontinue item incase it is to be no longer use in the business.

2. Members:

This process is used incase whenever a new customer arrives at the office for hiring a car, we call our customers as our members. Members of the business have some special benefits depending on how frequently does he/she hire car that a normal customer does not have i.e. a member may rent a car in credits, always availability of a car, etc. usually a member is not an individual person but is another company or any hotel business partner. This process is sub divided into three processes

- Add new member
- Edit/update member info
- Member Search

3. Reservations:

This process is very sensitive for the business. A proper reservation system makes the company popular among its customers otherwise conflicts in dates of reservation of the same car for two different customers may result into a very bad image in the market. I designed a computer program that will thoroughly check the reservation records in the database before a user is permitted to add another reservation for a specific period of time. Incase of any conflict the user will be prompted and not permitted to make further process. There are two sub processes in Reservations

- New Reservation
- Edit Reservation

In new reservation we add a new record to the database confirming the reservation has been made by the system, while the other sub process allows us to edit the dates of reservation, update it to rent a car or simply cancel the reservation of the car. Here I would like to mention that we do not edit the dates of the reservation but cancel it an reserve it for new dates if required.

4. Rentals:

This process is hiring a car to a specific customer mentioned in the program who rents the car into the database. We add the information of the customer in here to our database that can be used in the future by the management officers. Accounts of business and its members are automatically updated through this process. It has also two sub parts in it, i.e.

- Rent a car to new customer
- Rent a car to member

5. Accounts:

Here we can check the accounts details of our business and our members. From here we can find out if we made profit or loss for a specific period of time.

6. Reports:

This section is dedicated to the managerial purpose only. It allows them to have a complete look on their business activities, reservations, rental details, cars and their

members as well as their accounts. Profit can be checked from here; some reports are mentioned as an example here below;

- All reservation in specific period of time
- All rentals in specific period of time
- Members' List
- Cars' List
- Available cars
- Profit reports etc.

6. Benefits of new system:

- It keeps all records of the available cars for hiring in the business
- It is very user friendly
- New employee can easily adopt this system thus being enable to discuss any car with the customer easily
- Reservation dates confliction is completely avoided
- Accounts of the business are secured
- Status of each vehicle is recorded and can be found easily through the application where exactly and to whom exactly it is hired.
- History of the cars is available, enabling owner to decide for future what car is most liked by the customer
- History of the customer is available, thus enabling receptionist if to rent a car to him or not, as it may happen that same customer has a damage record more than once.
- History of the reservation is available
- History of hiring car is available
- Based on all the above reports it is very easy to determine any kind of mistake or problem in the business and take an appropriate action before time.

PROJECT BOUNDRIES

- 1) Most of the employees do not have computer knowledge.
- 2) Registering specifications of the cars might be a boring task for existing employees and can be time consuming.
- 3) Wrong entry to the system may cause in generating wrong reports.
- 4) Loss of computer, damage to hard disk etc, all data might be lost, so all reports are kept manually as well.
- 5) It is not easy to train employee and is time consuming as well.
- 6) Most of old fashion experienced employees do not want to accept computer based application as they have fear new young may replace them
- 7) Purchase of computers and making a network system in the company cost, and maintenance is expensive.

SYSTEM REQUIREMENTS

- Two computers for reception and one for the boss
- Computer minimum 1.5 GHz
- Hard Disk capacity 100 MB
- Operating system: Windows XP or Windows NT
- Installed MS Office 2002 on the system

I consider that my study shall bring positive solution to such any "Rent a Car" company. Besides that I shall be very glad for anyone's good suggestion to my solutions.





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Detailed DFD for Car Process

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Detailed DFD for Accounts Process





Detailed DFD for Report Process

the Cold Cold State

Car Table

System Design

💷 cars : Table		
Field Name	Data Type	
	Text	
made	Text	
modal	Text	
color	Text	
extras.	Memo	
rent	Currency	
rented	Yes/No	
picture	Text	
deactivate	Yes/No	
Field Pro	nerties	
General Lookup Field Size Format Input Mask Caption Default Value Validation Rule Validation Text Required Allow Zero Length Indexed Unicode Compression IME Mode IME Sentence Mode Smart Tags	10 No Yes Yes (No Duplicate Yes No Control None	

Members Table

	members : Table		зIXI
	Field Name	Data Tvi	18
81	memid	AutoNumber	
	name	Text	A COLOR
	sname	Text	
	fone	Text	in and the second
	licenseNo	Text	
	address	Text	
<u></u>	NICNO.	Text	
	emali Ficial Bases	iext	SK) COURT
	Field Prope	rcies	
ſ	Seneral Lookup		
F	field Size	Lona Inteaer	1
p	lew Values	Increment	
) F	ormat		
1	Laption		
I	ndexed	Yes (No Dupli	
	imart Tags		
10			
98 1			
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		a la marca da terra da constructor de la versar marca da se da marca da secona da secona da secona da secona d	n-9316-939-9566

Reservation Table

Field Nome	Data Type	tric A
rielu Nallo	AutoNumber	
rires_serier	Text	
l concy	Number	
date	Date/Time	
fromdate	Date/Time	
Iduration	Number	
exp return	Date/Time	
canceled	Yes/No	
rented	Yes/No	-
reserved	YesiNo	
returned	Yes/No	
General Lookup Field Size New Values	Long Integer Increment	
Format Caption Indexed Smart Tags	Yes (No Duplicates)	

Accounts Table

Field Name	Data Type	्याः
acc_serial	Number	
memid	Number	
carreg	Text	19
debit	Currency	
fine	Currency	
acc_date	Daterime	
credit	Luttency	, (t
cr_description	ICXL	
General Lookup	Long Integer	_
General Lookup	Long Integer	
General Lookup Field Size Format Decimal Places Input Mask	Long Integer Auto	
General Lookup Field Size Format Decimal Places Input Mask Caption	Long Integer Auto	
General Lookup Field Size Format Decimal Places Input Mask Caption Default Value	Long Integer Auto	
General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule	Long Integer Auto	
General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule Validation Text	Long Integer Auto	
General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule Validation Text Required	Long Integer Auto D No	
General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule Validation Text Required Indexed	Long Integer Auto D No Yes (Duplicates O	
General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule Validation Rule Validation Text Required Indexed Smart Tags	Long Integer Auto D No Yes (Duplicates O	

Relationship Between Tables

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User Guidelines

I tried my best to design my system that suits the best and acquire all the requirements of the users of the Car renting business. The system is very much user friendly and it communicates with the user incase of any wrong data entry. Here I will explain how the system works step by step.

Main Menu

First of all I will begin with the main menu of the program that is shown in the figure below



Figure 1

Figure 1 shows the main options of Rent a car program. It has 6 main processes with one extra exit option.

- 1. Cars
- 2. Members
- 3. Reservations
- 4. Rentals
- 5. Reports
- 6. Accounts
- 7. Exit (to log out of the system)

I will explain each of the above main processes one by one how to operate them.

<u>Cars</u>

This is the first main process of the system which contains two sub processes as shown in figure 2 below



Figure 2

Each of the above process is explained how it works and what does it do one by one



Figure 3

This is the very first process where we enter the data about the cars that we are going to rent for the first time. In the corresponding fields we enter the specific data such as car registration number, its model and made, color and rent price etc. We have then three buttons to choose the process what the program should do. To save the data click the "Save" button and the information will be stored in the database for future. To enter another car data click "New" or click "Back" to go back to the previous menu. Edit Car



Figure 4

On this form after choosing the edit car option from the sub menu, we enter the car registration number in its corresponding and then click "*Find*", if the record with such registration number exists in the database its data will be displayed in rest of the fields otherwise the user will be prompted to enter the car registration number again with an error message.



Members

Figure 5

Like the cars sub menu this sub menu contains two sub processes as well. Each is described in detail below

New Member



Figure 6

In figure 6 we can see that this process is similar to the new car data entry form. The only difference here is that we enter a member's data or new customer's data instead of the car information. Click "Save" in order to save the record in the database, "New" to enter a new member's data and "Back" to go back to the previous sub menu. **Edit Member**

Member ID		(22)
Member Name		ndis
Member Surname	554222	「そうたみ」
License No.	5421404521	
Address	NICOSIA, GOCMENKOY HENDEK SOK. APT 5 NOS	
Phone	(533) 875-4587	
Email	ayse19@yahpo.co.uk	
Nationality	Britis	
New	Save Find Search Cylinia	
Back		
9299227922222222222200929232222242223		
		and the second

Figure 7

On this form we enter member id if we know and click "Find", the required information will be retrieved from the database and will be displayed in their relative text fields. If the member ID is not known there is an option to search for a member using his name or surname as query parameter. To do so click "Search Options" and a small form will pop up enter the name or surname as the query parameter and click "Go" if any data exists in the database as a result of the query it will be displayed as a list, double click the required member ID and then click "Find" button to retrieve the record, make any changes as u desire and then click save again, to search for another member click "New" or "Back" to go back to the previous menu.

Reservations



Figure 8

This process also consists of two sub processes. Each is explained below New Reservation



Figure 9

This process is for making reservation if any customer wants. It should be noted here that the reservation can be made for registered user. If he is not registered, user must register him before he can make reservation through new member's process. In the member ID field enter the member ID who wants to make reservation, if the data is found in the database his information will be displayed, similarly the car registration number is given to the form process and then the reservation date and the duration of the renting, if there comes out any conflict in the dates of the reservation made before user will be prompted for that and no reservation will be made after click the "Save" button. Once the reservation is made successfully a reservation ID will be shown on the screen, user must remember that ID in order to update the reservation which can be done easily by printing the reservation slip by clicking "Print" button. Use "Back" button to go to previous menu.

Edit Reservation



Figure 10

This is the process where we are allowed to update the reservation to rent the car or cancel it simply. A reservation ID is given to the form and if that is found active will be displayed with the information on the form. Choose appropriate option for specific process.

Rentals

This is similar to the reservation sub process containing a sub menu with three options as shown in figure 11



Figure 11

New Rent

This process is just similar to the new reservation on the form, the only difference between them is that here directly a car is rented to the customer (member) and his accounts are updated.



Figure 12

Edit Rent

Here a user can edit his rental information similar to the edit reservation process as explained above



Figure 13



Figure 14

This is a process for managerial purpose. All reports are printed through this process except accounts process. Choose the appropriate button for the desired report, For profit reports or reservation or renting report or member between a period of time you must give a period of two dates.

Accounts

This process consists of two sub processes as shown in the figure





Member Accounts

Members Accounts		
Date 7/1/2006	Members Accoutes	
	Mémber's ID Date1 Date2 Total Amount	
	Back	

Figure 16

In this process we choose the member and give two dates as a period of time and we get the information how many times did he rent cars from us for how much money. The report can be printed by clicking the "Print" button.

General Accounts



Figure 17

In this process we simply give two dates and get who ever rented car between those two dates with the amount of money they paid each time. Same report can be printed as well.

I hope this user manual will help all the users of my program.







New Car Registration

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Edit Car Specifications



Members Sub Menu



New Member Registration



Edit Member Specifications



Reservation Sub Menu





New Reservation continue



Note: <u>Conficit</u> In From_Date≪Todays Date?

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New Rent D1 ENTER Member ID 11 101 10? No D1 Yves Member Name , Striame (01010 ENTER Car ID 1 ۲ torid? No Car Mad, Modal, Rest (origin) ÷ D X Exter From_Date, dvration ł 1 New 2 Salle 3 Prist 4 B 20k Enter yönrcholce «Ch» D 1.1

New Rent continue







Reference

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Screen Outputs



Car Submenu Form



New Car Form



Edit Car Form



Members Submenu



New Member Form

a la construction de la const		
Member Name		
Member Surname		
N.I.C No.		
License No.		
Address		
Email		
Nationality	ter and the second s	
New	Pare	
Back		

Edit Member Form



Reservation Submenu

New Reservatio	'n	Edit/Update	
		Reservation	

New Reservation Form



Edit Reservation Form



Rental Submenu



New Rent Form



Edit Rent Form



Reports Form



Accounts Submenu



Members' Accounts Form



General Accounts Form

Date	7/1/2006	Genera	al Accounts		
Dates Date2 Total Amount	Back	Register Exp.	Car Registration Invoice Nn Company Amaunt Descriptions	Save	

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Source Codes of the program PROGRAM CODES

MAIN MENU

Accounts Sub Menu

Private Sub cmdaccounts_Click() Me.sub_menu.Visible = True Me.sub_menu.SourceObject = "subaccmenu" End Sub

Cars Sub Menu

Private Sub cmdcars_Click() Me.sub_menu.Visible = True Me.sub_menu.SourceObject = "subcarsmenu" End Sub

Exit Button

Private Sub cmdExit_Click() If MsgBox("Do you want to log out", vbYesNo, Me.Caption) = vbYes Then DoCmd.Close acForm, "Main_menu" Quit End If End Sub

Members Sub Menu

Private Sub cmdmembers_Click() Me.sub_menu.Visible = True Me.sub_menu.SourceObject = "submembmenu" End Sub

Rentals Sub Menu

Private Sub cmdrentals_Click() Me.sub_menu.Visible = True Me.sub_menu.SourceObject = "subrentmenu" End Sub

To Open Reports Form

Private Sub cmdreports_Click() DoCmd.OpenForm "report" End Sub

Reservation Sub Menu

Private Sub cmdreservation_Click() Me.sub_menu.Visible = True Me.sub_menu.SourceObject = "subresmenu" End Sub Sub Form Invisible Code Private Sub Detail_Click() Me.cmdcars.SetFocus Me.sub menu.Visible = False

SUB FORM CARS

End Sub

To Open New Car Data Entry Form Private Sub Command0_Click() DoCmd.OpenForm "NewCar" End Sub

To Open Edit Car Data Form Private Sub Command1_Click() DoCmd.OpenForm "EditCar" End Sub

NEW CAR FORM

Option Comparé Database Public db As DAO.Database Public rs As DAO.Recordset Public s As String

To Go Back To Main Menu

Private Sub cmdBack_Click() DoCmd.Close acForm, "NewCar" End Sub

To Initial All Form Fields

Private Sub cmdNew_Click() Me.txtcarreg = "": Me.txtmade = "" Me.txtcolor = "": Me.txtrent = "" Me.txtextras = "": Me.txtmodal = "" Me.txtcarreg.SetFocus End Sub

Save Button

Private Sub cmdSave_Click() Set db = CurrentDb() s = "SELECT * FROM cars WHERE carreg="" & Me.txtcarreg & """ Set rs = db.OpenRecordset(s) If rs.EOF And rs.BOF Then rs.AddNew

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 $\mathcal{F} = \{ P_{i}, P_{i} \}$

rs.Fields("carreg").Value = Me.txtcarreg rs.Fields("made").Value = Me.txtmade rs.Fields("modal").Value = Me.txtmodal rs.Fields("color").Value = Me.txtcolor rs.Fields("extras").Value = Me.txtextras rs.Fields("rent").Value = Me.txtrent rs.Update MsgBox ("New record of a car has been added to the database"), vbInformation, Me.Caption Else MsgBox ("This car registration number already exists in the database"), vbCritical, Me.Caption End If rs.Close: Set rs = Nothing db.Close: Set db = Nothing

EDIT FORM

End Sub

Option Compare Database

Public db As DAO.Database Public rs As DAO.Recordset Public s As String

To Go Back to Main Menu

Private Sub cmdBack_Click() DoCmd.Close acForm, "EditCar" End Sub

Find Button

Private Sub cmdFind_Click() Set db = CurrentDb() s = "SELECT * FROM cars WHERE carreg=" & Me.txtcarreg & "" Set rs = db.OpenRecordset(s) If rs.EOF And rs.BOF Then MsgBox ("This car registration number does not exists in the database"), vbCritical, Me.Caption Me.txtcarreg.SetFocus Else Me.txtmade = rs.Fields("made").Value Me.txtmodal = rs.Fields("modal").Value Me.txtcolor = rs.Fields("color").Value Me.txtextras = rs.Fields("color").Value Me.txtextras = rs.Fields("extras").Value

Me.txtrent = rs.Fields("rent").Value

End If

rs.Close: Set rs = Nothing

db.Close: Set db = Nothing End Sub

Private Sub cmdNew_Click() Me.txtcarreg = "": Me.txtmade = "" Me.txtcolor = "": Me.txtrent = "" Me.txtextras = "": Me.txtmodal = "" Me.txtcarreg.SetFocus End Sub

Save Changes Button

Private Sub cmdSave_Click() Set db = CurrentDb() s = "SELECT * FROM cars WHERE carreg="" & Me.txtcarreg & """ Set rs = db.OpenRecordset(s) If rs.EOF And rs.BOF Then MsgBox ("This car registration number does not exists in the database"), vbCritical, Me.Caption Me.txtcarreg.SetFocus Else rs.Edit rs.Fields("made").Value = Me.txtmade rs.Fields("modal").Value = Me.txtmodal rs.Fields("color").Value = Me.txtcolor rs.Fields("extras").Value = Me.txtextras rs.Fields("rent").Value = Me.txtrent rs.Update MsgBox ("Record has been updated in the database"), vbInformation, Me.Caption End If rs.Close: Set rs = Nothing db.Close: Set db = Nothing End Sub

MEMBER SUB MENU FORM

To Open New Member Data Entry Form Private Sub Command0_Click()

DoCmd.OpenForm "NewMember" End Sub

To Open Edit Member Data Form

Private Sub Command1_Click() DoCmd.OpenForm "EditMember" End Sub

NEW MEMBER FORM

Option Compare Database

Public db As DAO.Database Public rs As DAO.Recordset Public s As String

To Go Back To Main Menu

Private Sub cmdBack_Click() DoCmd.Close acForm, "NewMember" End Sub

Form Field Initializing

Private Sub cmdNew_Click() Me.txtname = "": Me.txtsname = "" Me.txtadd = "": Me.txtfone = "" Me.txtlicense = "": Me.txtNIC = "" Me.txtname.SetFocus End Sub

Save Button

Private Sub cmdSave_Click() Set db = CurrentDb()

Set rs = db.OpenRecordset("members") rs.AddNew rs.Fields("name").Value = Me.txtname rs.Fields("sname").Value = Me.txtsname rs.Fields("address").Value = Me.txtdd rs.Fields("fone").Value = Me.txtfone rs.Fields("licenseNo").Value = Me.txtlicense rs.Fields("NICNo").Value = Me.txtNIC rs.Update MsgBox ("New record of a member has been added to the database"), vbInformation, Me.Caption rs.Close: Set rs = Nothing db.Close: Set db = Nothing End Sub

EDIT MEMBER FORM

Option Compare Database Public db As DAO.Database Public rs As DAO.Recordset Public s As String

To Go Back To Main Menu

Private Sub cmdBack_Click() DoCmd Close acForm, "NewMember" End Sub

Form Fields Initializer

Private Sub cmdNew_Click() Me.txtname = "": Me.txtsname = "" Me.txtadd = "": Me.txtfone = "" Me.txtlicense = "": Me.txtNIC = "" Me.txtname.SetFocus End Sub

To Open Search Member Options

Private Sub cmdFind2_Click() DoCmd.OpenForm "submemsearch" End Sub

Query Member Search Result Form

Private Sub cmdSearch_Click() DoCmd.OpenForm "memsearch" DoCmd.Close acForm, "submemsearch" End Sub

Save Changes Button

Private Sub cmdSave_Click() Set db = CurrentDb()

Set rs = db.OpenRecordset("members") rs.AddNew rs.Fields("name").Value = Me.txtname rs.Fields("sname").Value = Me.txtsname rs.Fields("address").Value = Me.txtdd rs.Fields("fone").Value = Me.txtfone rs.Fields("licenseNo").Value = Me.txtlicense rs.Fields("NICNo").Value = Me.txtNIC rs.Update MsgBox ("New record of a member has been added to the database"), vbInformation, Me.Caption rs.Close: Set rs = Nothing db.Close: Set db = Nothing End Sub

RSERVATION SUB MENU

New Reservation Button

Private Sub Command0_Click() DoCmd.OpenForm "NewReservation" End Sub

Edit Reservation Button

Private Sub Command1_Click() DoCmd.OpenForm "EditReservation" End Sub

NEW RESERVATION FORM

Option Compare Database

Public db As DAO.Database Public rs As DAO.Recordset Public s As String

To Go Back to Main Menu

Private Sub cmdBack_Click() DoCmd.Close acForm, "NewReservation" End Sub

Form Fields Initialize Code

Private Sub cmdNew_Click() Me.txtID = "": Me.txtname = "": Me.txtsname = "" Me.txtlicense = "": Me.txtNIC = "" Me.txtcarreg = "": Me.txtcolor = "": Me.txtmade = "" Me.txtrent = "": Me.txtmodal = "" Me.txtduration = "": Me.txtfrom = "" Me.txtID.SetFocus End Sub

Print Reservation Slip Button

Private Sub cmdPrint_Click() DoCmd.OpenReport "resSlip", acViewPreview End Sub

Save Reservation Data Button

Private Sub cmdSave_Click() Set db = CurrentDb() If Me.txtfrom < Me.txtdate Then MsgBox "You cant make a reservation for past dates" Else

s = "SELECT * FROM rentals WHERE (((#" & Format(Me.txtfrom, "mm \vee dd \vee yyyy") & "# >= fromdate) AND (#" & Format(Me.txtfrom, "mm\/dd\/yyyy") & "# < exp_return) AND (carreg=" & Me.txtcarreg & ") AND (canceled=False) AND (reserved=True) AND (rented=False))) OR (((#" & Format(Me.txtexp_return, "mm\/dd\/yyyy") & "#>= fromdate) AND (#" & Format(Me.txtexp_return, "mm\/dd\/yyyy") & "# < exp_return) AND (carreg=" & Me.txtcarreg & ") AND (canceled=False) AND (reserved=True)

AND (rented=False)))"

Set rs = db.OpenRecordset(s)

If rs.EOF And rs.BOF Then

rs.AddNew

rs.Fields("carreg").Value = Me.txtcarreg

rs.Fields("memid").Value = Me.txtID

rs.Fields("date").Value = Me.txtdate

rs.Fields("duration").Value = Me.txtduration

rs.Fields("exp_return").Value = Me.txtexp_return

rs.Fields("fromdate").Value = Me.txtfrom

Me.txtresID = rs.Fields("serial").Value

rs.Fields("reserved").Value = True

rs.Update

MsgBox "Reservation is successfull"

Else

MsgBox "Reservation exists for the mentioned dates" End If rs.Close: Set rs = Nothing db.Close: Set db = Nothing End If End Sub

Car registration Update Event

Private Sub txtcarreg_AfterUpdate() Set db = CurrentDb() s = "SELECT * FROM cars WHERE carreg="" & Me.txtcarreg & """ Set rs = db.OpenRecordset(s) If rs.EOF And rs.BOF Then MsgBox ("This car registration number does not exists in the database"), vbCritical, Me.Caption Me.txtID.SetFocus

Me.txtcarreg = "" Me.txtcarreg.SetFocus

Else

Me.txtmade = rs.Fields("made").Value Me.txtmodal = rs.Fields("modal").Value Me.txtcolor = rs.Fields("color").Value Me.txtrent = rs.Fields("rent").Value End If rs.Close: Set rs = Nothing

db.Close: Set db = Nothing End Sub

Member ID Update Event

Private Sub txtID_AfterUpdate() Set db = CurrentDb() s = "SELECT * FROM members WHERE memid=" & Me.txtID & "" Set rs = db.OpenRecordset(s) If rs.EOF And rs.BOF Then MsgBox ("No record found"), vbCritical, Me.Caption Me.txtcarreg.SetFocus Me.txtID = "" Me.txtID.SetFocus Else Me.txtname = rs.Fields("name").Value

Me.txtsname = rs.Fields("sname").Value Me.txtlicense = rs.Fields("licenseNo").Value Me.txtNIC = rs.Fields("NICNo").Value End If rs.Close: Set rs = Nothing db.Close: Set db = Nothing End Sub

EDIT RESERVATION FORM ·

Option Compare Database

Public db As DAO.Database Public rs As DAO.Recordset, rs1 As DAO.Recordset Public s As String, s1 As String

Back to Main Menu Button

Private Sub cmdBack_Click() DoCmd.Close acForm, "EditReservation" End Sub

Reservation Cancel Button

Private Sub cmdcancel_Click() s = "SELECT * FROM rentals WHERE serial=" & Me.txtserial & " AND Set db = CurrentDb() reserved=True" Set rs = db.OpenRecordset(s) If rs.EOF And rs.BOF Then

MsgBox "No such active reservation found in the database", vbCritical, Me.Caption Else

If MsgBox("Are you sure you want to cancel the selected reservation", vbYesNo) = vbYes Then

rs.Edit rs.Fields("canceled").Value = True rs.Fields("reserved").Value = False rs.Update MsgBox "Reservation has been canceled", , Me.Caption End If End If End Sub

Form Fields Initialize Button

Private Sub cmdNew_Click() Me.txtID = "": Me.txtname = "": Me.txtsname = "" Me.txtlicense = "": Me.txtNIC = ""

Me.txtcarreg = "": Me.txtcolor = "": Me.txtmade = "" Me.txtrent = "": Me.txtmodal = ""

Me.txtduration = "": Me.txtfrom = "": Me.txtserial = "" Me.txtserial.SetFocus End Sub

Reservation Update to Rent Button

Private Sub cmdUpdate Click() Set db = CurrentDb()s = "SELECT * FROM rentals WHERE serial=" & Me.txtserial & " AND reserved=True" Set rs = db.OpenRecordset(s) If rs.EOF And rs.BOF Then MsgBox "No such reservation found in the database", vbCritical, Me.Caption Else If MsgBox("Are you sure you want to rent", vbYesNo) = vbYes Then rs.Edit rs.Fields("rented").Value = True rs.Update Set rs = db.OpenRecordset("accounts") rs.AddNew rs.Fields("serial").Value = Me.txtresID rs.Fields("memid").Value = Me.txtID rs.Fields("carreg").Value = Me.txtcarreg rs.Fields("debit").Value = Me.txtrent * Me.txtduration rs.Fields("acc_date").Value = Me.txtdate rs.Update MsgBox "Car is rented to the customer", , Me.Caption End If End If End Sub

```
Private Sub txtcarreg_AfterUpdate()
Set db = CurrentDb()
s = "SELECT * FROM cars WHERE carreg="" & Me.txtcarreg & """
Set rs = db.OpenRecordset(s)
If rs.EOF And rs.BOF Then
MsgBox ("This car registration number does not exists in the database"), vbCritical,
Me.Caption
Me.txtID.SetFocus
```

Me.txtcarreg = "" Me.txtcarreg.SetFocus

Else

```
Me.txtmade = rs.Fields("made").Value
Me.txtmodal = rs.Fields("modal").Value
Me.txtcolor = rs.Fields("color").Value
Me.txtrent = rs.Fields("rent").Value
End If
rs.Close: Set rs = Nothing
db.Close: Set db = Nothing
End Sub
```

Member ID After Update Event

```
Private Sub txtID_AfterUpdate()
Set db = CurrentDb()
s = "SELECT * FROM members WHERE memid=" & Me.txtID & ""
Set rs = db.OpenRecordset(s)
If rs.EOF And rs.BOF Then
  MsgBox ("No record found"), vbCritical, Me.Caption
  Me.txtcarreg.SetFocus
  Me.txtID = ""
   Me.txtID.SetFocus
Else
   Me.txtname = rs.Fields("name").Value
   Me.txtsname = rs.Fields("sname").Value
   Me.txtlicense = rs.Fields("licenseNo") Value
   Me.txtNIC = rs.Fields("NICNo").Value
 End If
 rs.Close: Set rs = Nothing
 db.Close: Set db = Nothing
 End Sub
```

Reservation ID After Update Event

Private Sub txtserial_AfterUpdate() Set db = CurrentDb() s = "SELECT * FROM rentals WHERE serial=" & Me.txtserial & "" Set rs = db.OpenRecordset(s)

If rs.EOF And rs.BOF Then

MsgBox "No such reservation number found in the database"

Else

Me.txtcarreg = rs.Fields("carreg").Value Me.txtID = rs.Fields("memid").Value Me.txtfrom = rs.Fields("fromdate").Value Me.txtduration = rs.Fields("duration").Value s1 = "SELECT * FROM members WHERE memid=" & Me.txtID & "" Set rs1 = db.OpenRecordset(s1) If rs1.EOF And rs1.BOF Then MsgBox "No member found" Else Me.txtname = rs1.Fields("name").Value Me.txtsname = rs1.Fields("sname").Value Me.txtlicense = rs1.Fields("licenseNo").Value Me.txtNIC = rs1.Fields("NICNo").Value End If s1 = "SELECT * FROM cars WHERE carreg="" & Me.txtcarreg & """ Set rs1 = db.OpenRecordset(s1) If rs1.EOF And rs1.BOF Then MsgBox "Nothing found" Else Me.txtcolor = rs1.Fields("color").Value Me.txtmade = rs1.Fields("made").Value Me.txtmodal = rs1.Fields("modal").Value Me.txtrent = rs1 Fields("rent").Value End If End If End Sub

RENT SUB MENU

Return Car Form Button

Private Sub cmdReturn_Click() DoCmd.OpenForm "ReturnCar" End Sub

New Rent Form Button

Private Sub Command0_Click() DoCmd.OpenForm "NewRent" End Sub

Edit Rent Form Button Private Sub Command1_Click() DoCmd.OpenForm "EditRent" End Sub

NEW RENT FORM

Option Compare Database

Public db As DAO.Database Public rs As DAO.Recordset Public s As String

Back Button

Private Sub cmdBack_Click() DoCmd.Close acForm, "NewRent" End Sub

Form Fields Initializer

Private Sub cmdNew_Click() Me.txtID = "": Me.txtname = "": Me.txtsname = "" Me.txtlicense = "": Me.txtNIC = "" Me.txtcarreg = "": Me.txtcolor = "": Me.txtmade = "" Me.txtrent = "": Me.txtmodal = "" Me.txtduration = "": Me.txtfrom = "" Me.txtID.SetFocus End Sub

Print Rent Slip Button

Private Sub cmdPrint_Click() DoCmd.OpenReport "rentSlip", acViewPreview End Sub

Save Rent Data Button

Private Sub cmdSave_Click() Set db = CurrentDb() If Me.txtfrom < Me.txtdate Then

MsgBox "You cant rent a car in past dates"

Else

s = "SELECT * FROM cars WHERE carreg="" & Me.txtcarreg & "' AND rented=True"

Set rs = db.OpenRecordset(s)

If rs.EOF And rs.BOF Then

s = "SELECT * FROM rentals WHERE (((#" & Format(Me.txtfrom, "mm\/dd\/yyyy") & "# >= fromdate) AND (#" & Format(Me.txtfrom, "mm\/dd\/yyyy") & "# < exp_return) AND (carreg="" & Me.txtcarreg & "') AND (canceled=False) AND (reserved=True) AND (rented=false))) OR (((#" & Format(Me.txtexp_return, "mm\/dd\/yyyy") & "# >= fromdate) AND (#" & Format(Me.txtexp_return, "mm\/dd\/yyyy") & "# < exp_return) AND (carreg="" & Me.txtcarreg & "') AND (canceled=False) AND (reserved=True) AND (rented=false))) OR (((#" & Format(Me.txtexp_return, "mm\/dd\/yyyy") & "# >= fromdate) AND (#" & Format(Me.txtexp_return, "mm\/dd\/yyyy") & "# < exp_return) AND (carreg="" &</pre>

```
Me.txtcarreg & "") AND (canceled=False) AND (reserved=True) AND (rented=True)))
OR (((#" & Format(Me.txtfrom, "mm\/dd\/yyyy") & "# >= fromdate) AND (#" &
Format(Me.txtfrom, "mm\/dd\/yyyy") & "# < exp_return) AND (carreg=" &
Me.txtcarreg & "") AND (canceled=False) AND (reserved=True) AND
(rented=TRUE)))"
     Set rs = db.OpenRecordset(s)
     If rs.EOF And rs.BOF Then
       rs.AddNew
       rs.Fields("carreg").Value = Me.txtcarreg
       rs.Fields("memid").Value = Me.txtID
       rs.Fields("date").Value = Me.txtdate
       rs.Fields("duration").Value = Me.txtduration
       rs.Fields("exp_return").Value = Me.txtexp_return
       rs.Fields("fromdate").Value = Me.txtfrom
       Me.txtresID = rs.Fields("serial").Value
        rs.Fields("reserved").Value = True
        rs.Fields("rented").Value = True
        rs.Update
        s = "SELECT * FROM cars WHERE carreg="" & Me.txtcarreg & """
        Set rs = db.OpenRecordset(s)
        If rs.EOF And rs.BOF Then
        Else
           rs.Edit
          rs.Fields("rented").Value = True
           rs.Update
        End If
        Set rs = db.OpenRecordset("accounts")
        rs.AddNew
        rs.Fields("serial").Value = Me.txtresID
        rs.Fields("memid").Value = Me.txtID
         rs.Fields("carreg").Value = Me.txtcarreg
         rs Fields("debit").Value = Me.txtrent * Me.txtduration
         rs.Fields("acc_date").Value = Me.txtdate
         rs.Update
         MsgBox "Car rented successfull"
       Else
         MsgBox "Car can not be rented out in these dates"
       End If
    Else
       MsgBox "Car already rented out"
     End If
     rs.Close: Set rs = Nothing
     db.Close: Set db = Nothing
  End If
  End Sub
```

Car reg. After Update Event

Private Sub txtcarreg_AfterUpdate()

Set db = CurrentDb()

s = "SELECT * FROM cars WHERE carreg="" & Me.txtcarreg & """

Set rs = db.OpenRecordset(s)

If rs.EOF And rs.BOF Then

MsgBox ("This car registration number does not exists in the database"), vbCritical, Me.Caption

Me.txtID.SetFocus Me.txtcarreg = "" Me.txtcarreg.SetFocus

Else

Me.txtmade = rs.Fields("made").Value Me.txtmodal = rs.Fields("modal").Value Me.txtcolor = rs.Fields("color").Value Me.txtrent = rs.Fields("rent").Value End If rs.Close: Set rs = Nothing db.Close: Set db = Nothing

End Sub

Member ID After Update Event

```
Private Sub txtID_AfterUpdate()
Set db = CurrentDb()
s = "SELECT * FROM members WHERE memid=" & Me.txtID & ""
Set rs = db.OpenRecordset(s)
If rs.EOF And rs.BOF Then
  MsgBox ("No record found"), vbCritical, Me.Caption
  Me.txtcarreg.SetFocus
  Me.txtID = ""
   Me.txtID.SetFocus
Else
  Me.txtname = rs.Fields("name").Value
   Me.txtsname = rs.Fields("sname").Value
```

Me.txtlicense = rs.Fields("licenseNo").Value

Me.txtNIC = rs.Fields("NICNo").Value

End If

rs.Close: Set rs = Nothing db.Close: Set db = NothingEnd Sub

EDIT RENT FORM

Option Compare Database

Public db As DAO.Database Public rs As DAO.Recordset, rs1 As DAO.Recordset Public s As String, s1 As String

Back Button

Private Sub cmdBack_Click() DoCmd.Close acForm, "EditRent" End Sub

Cancel Button

Private Sub cmdcancel_Click() Set db = CurrentDb() If Me.txtfrom >= Me.txtdate Then MsgBox "Sorry you can not cancel this rental", , Me.Caption

Else

s = "SELECT * FROM rentals WHERE serial=" & Me.txtserial & " AND rented=True" Set rs = db.OpenRecordset(s)

If rs.EOF And rs.BOF Then

MsgBox "No such active rental found in the database", vbCritical, Me.Caption Else

If MsgBox("Are you sure you want to do the selected operation", vbYesNo) = vbYes Then

rs.Edit

rs.Fields("canceled").Value = True rs.Fields("reserved").Value = False rs.Fields("rented").Value = False rs.Update MsgBox "Rent has been canceled", , Me.Caption End If End If End If

End Sub

Private Sub cmdNew_Click() Me.txtID = "": Me.txtname = "": Me.txtsname = "" Me.txtlicense = "": Me.txtNIC = ""

Me.txtcarreg = "": Me.txtcolor = "": Me.txtmade = "" Me.txtrent = "": Me.txtmodal = ""

```
Me.txtduration = "": Me.txtfrom = "": Me.txtserial = ""
Me.txtserial.SetFocus
End Sub
```

```
Rent ID After Update Event
```

Private Sub txtserial_AfterUpdate() Set db = CurrentDb()

s = "SELECT * FROM rentals WHERE serial=" & Me.txtserial & " AND rented=True" Set rs = db.OpenRecordset(s)

If rs.EOF And rs.BOF Then

MsgBox "No such reservation number found in the database"

Else

Me.txtcarreg = rs.Fields("carreg").Value

Me.txtID = rs.Fields("memid").Value

Me.txtfrom = rs.Fields("fromdate").Value

Me.txtduration = rs.Fields("duration").Value

s1 = "SELECT * FROM members WHERE memid=" & Me.txtID & ""

Set rs1 = db.OpenRecordset(s1)

If rs1.EOF And rs1.BOF Then

MsgBox "No member found"

Else

Me.txtname = rs1.Fields("name").Value Me.txtsname = rs1.Fields("sname").Value Me.txtlicense = rs1.Fields("licenseNo").Value Me.txtNIC = rs1.Fields("NICNo").Value

End If

s1 = "SELECT * FROM cars WHERE carreg=" & Me.txtcarreg & "" Set rs1 = db.OpenRecordset(s1)

If rs1.EOF And rs1.BOF Then

MsgBox "Nothing found"

Else

Me.txtcolor = rs1.Fields("color").Value Me.txtmade = rs1.Fields("made").Value Me.txtmodal = rs1.Fields("modal").Value Me.txtrent = rs1.Fields("rent").Value End If

End If

End Sub

REPORTS FORM

Back Button

Private Sub cmdBack_Click() DoCmd.Close acForm, "report" End Sub

Available Cars Report

Private Sub cmdavailable_Click() Me.Label4.Visible = True Me.Label3.Visible = True Me.Label5.Visible = True Me.listfrom.Visible = True Me.listto.Visible = True Me.subform1.Visible = True Me.Label2.Visible = True If MsgBox("Do you want to print the list", vbYesNo) = vbYes Then DoCmd.OpenReport "availablerpt", acViewPreview End If End Sub

Cars List Report

Private Sub cmdPrintord_Click() DoCmd.OpenReport "carslist", acViewPreview Me.subform1.Visible = False Me.Label2.Visible = False End Sub

Members Report Button

Private Sub cmdPrintrec_Click() DoCmd.OpenReport "membersrpt", acViewPreview Me.subform1.Visible = False Me.Label2.Visible = False End Sub

Reserved Cars Report

Private Sub cmdPrintsup_Click() DoCmd.OpenReport "reservedrpt", acViewPreview Me.subform1.Visible = False Me.Label2.Visible = False End Sub

Rented Car Report Button

Private Sub cmdVAcc_Click() DoCmd.OpenReport "rentedrpt", acViewPreview Me.subform1.Visible = False Me.Label2.Visible = False End Sub