NEAR EAST UNIVERSITY

FACULTY OF ECONOMICA AND ADMINISTRATIVE SCIENCES

DEPARTMENT OF COMPUTER INFORMATION SYSTEMS

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CIS 400
(Graduation Project)

"RENT A CAR" BUSINESS MANAGEMENT SYSTEM

Visual Basic with Access 2002

Submitted to : Department of C.I.S.
Submitted by: Mofdi Al_Shanableh
Student No. : 20011140

Lefkosa
2005

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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 Ilham Hussenov who helped me from the core, and helped me when ever I was struck in programming matters.

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

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

And also I want to thanks my uncle Mr.Tayseer AL.Shanableh he was always with me whenever I needed him and to his family..

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.

"RENT A CAR" BUSINESS MANAGEMENT SYSTEM

Introduction:

"Rent a Car" is a kind of business in which a company holds several cars of different category and made 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 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.

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 on paper in files, I came up with a solution described below.

Solution:

In car rent business to have a computer based system the program must have the utilities for

1. Date entry of all 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. Registering rented 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 Entry	(Registration of a car)
2.	Members	(Registration of a member)

3. Reservation
4. Rentals
5. Accounts
6. Reports

Each of this process is explained as;

1. Car Entry:

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 info, 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 thus making it unavailable for renting purpose further.

2. Members:

This process is used incase if someone becomes a member to the business. Members of the business have some special benefits 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 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 of simply cancel the reservation of the car.

4. Rentals:

This process is registering 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.

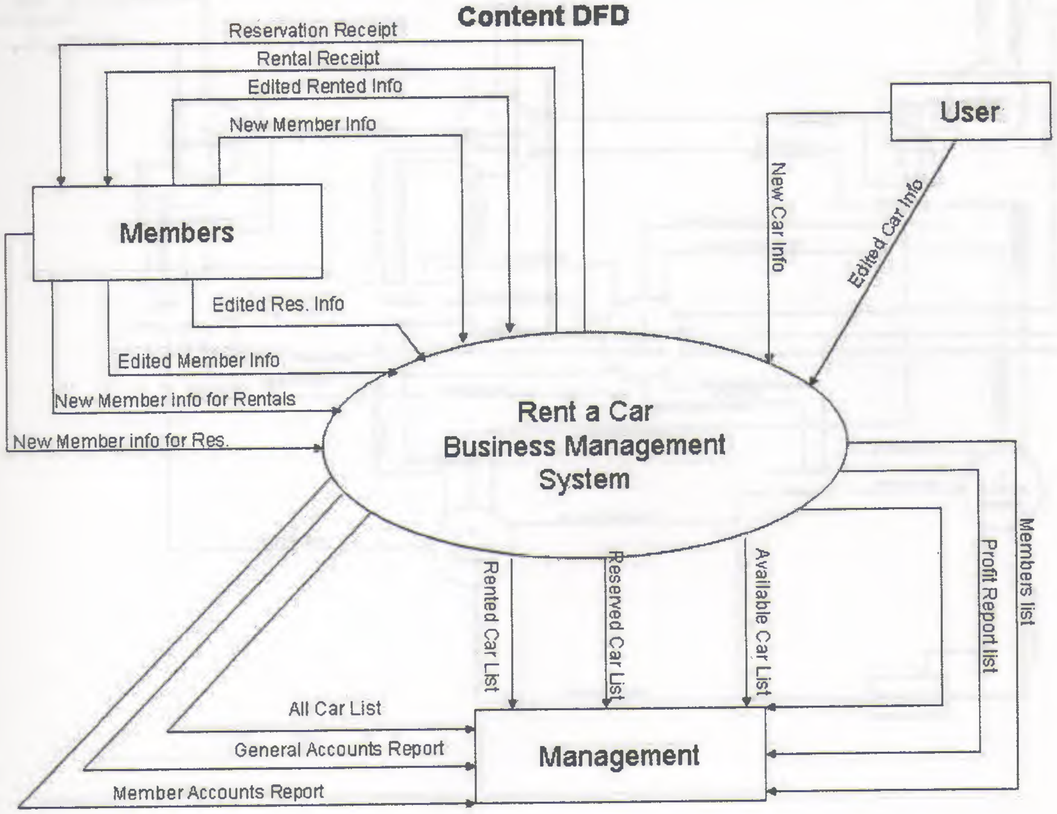
Figure 1 **Reports:**

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;

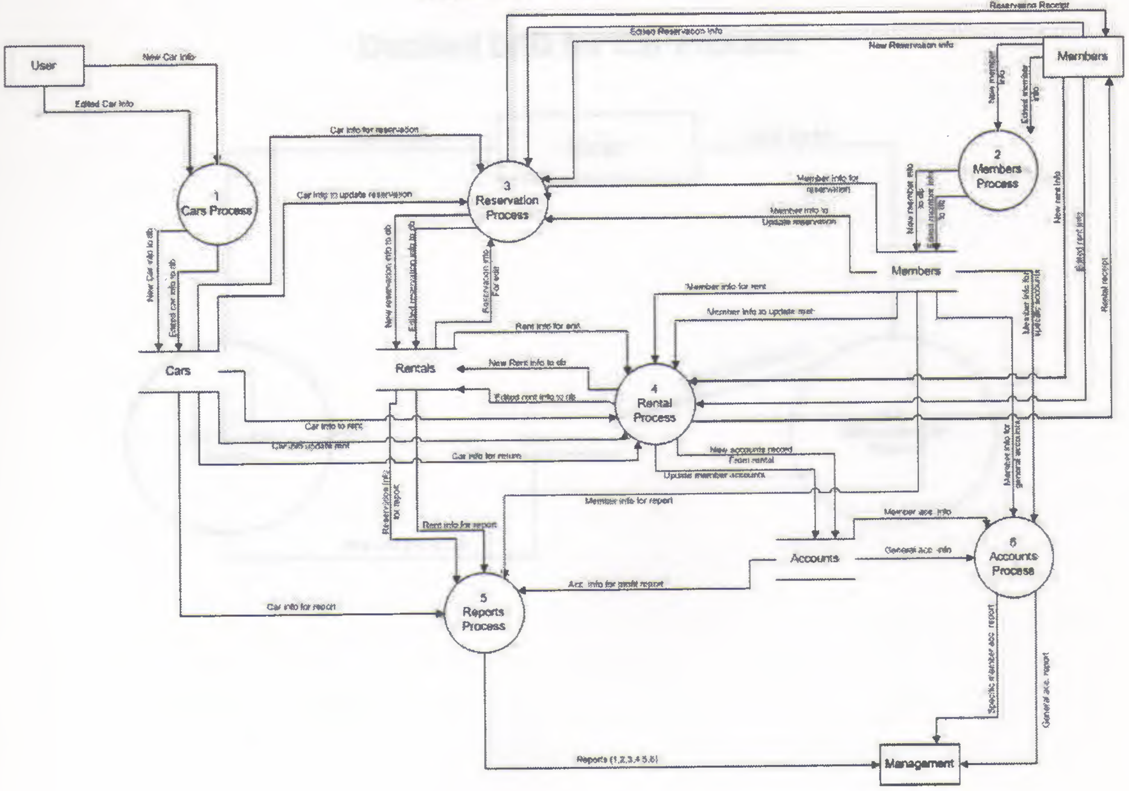
- All reservation in specific period of time
- All rentals in specific period of time
- Members' List
- Cars' List
- Available cars
- Profit reports etc.

I tried my best to come up with the best solution ever made for this business but I would love to appreciate any good suggestion if there is any.

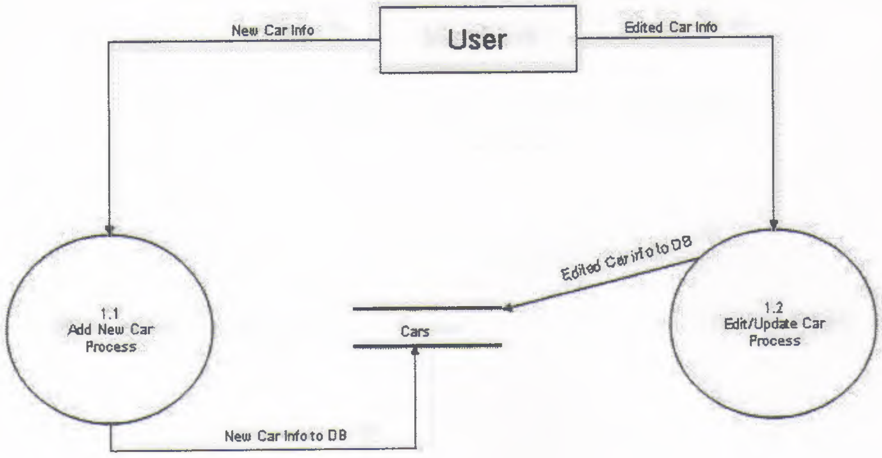
Data Flow Diagrams



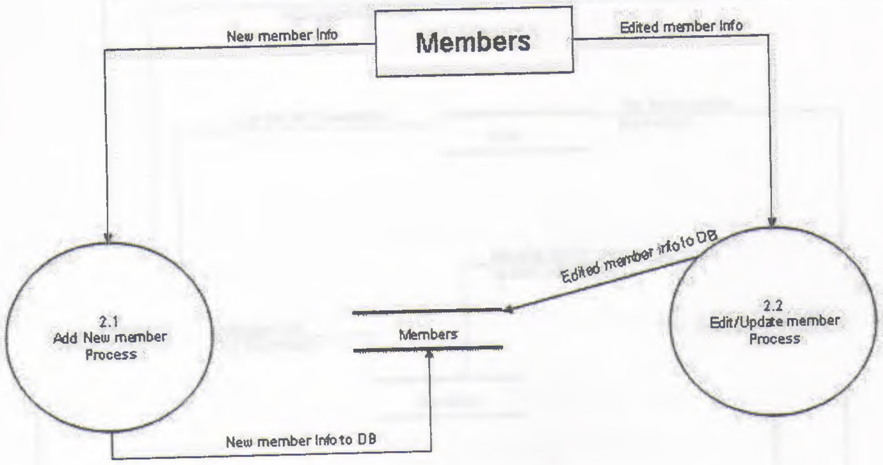
Top Level DFD of Rent a Car



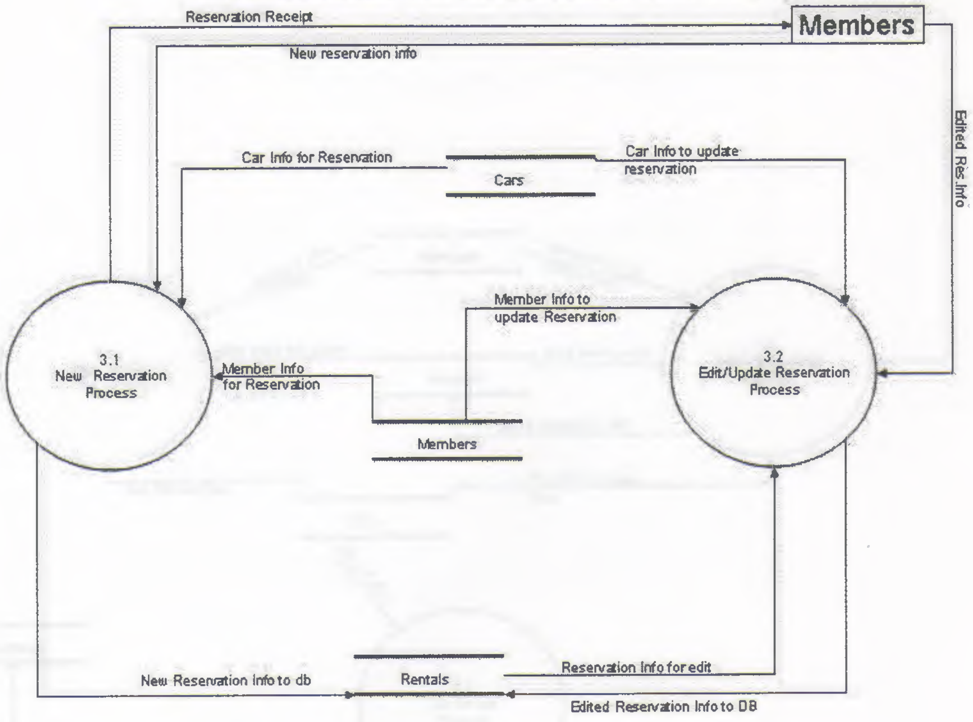
Detailed DFD for Car Process



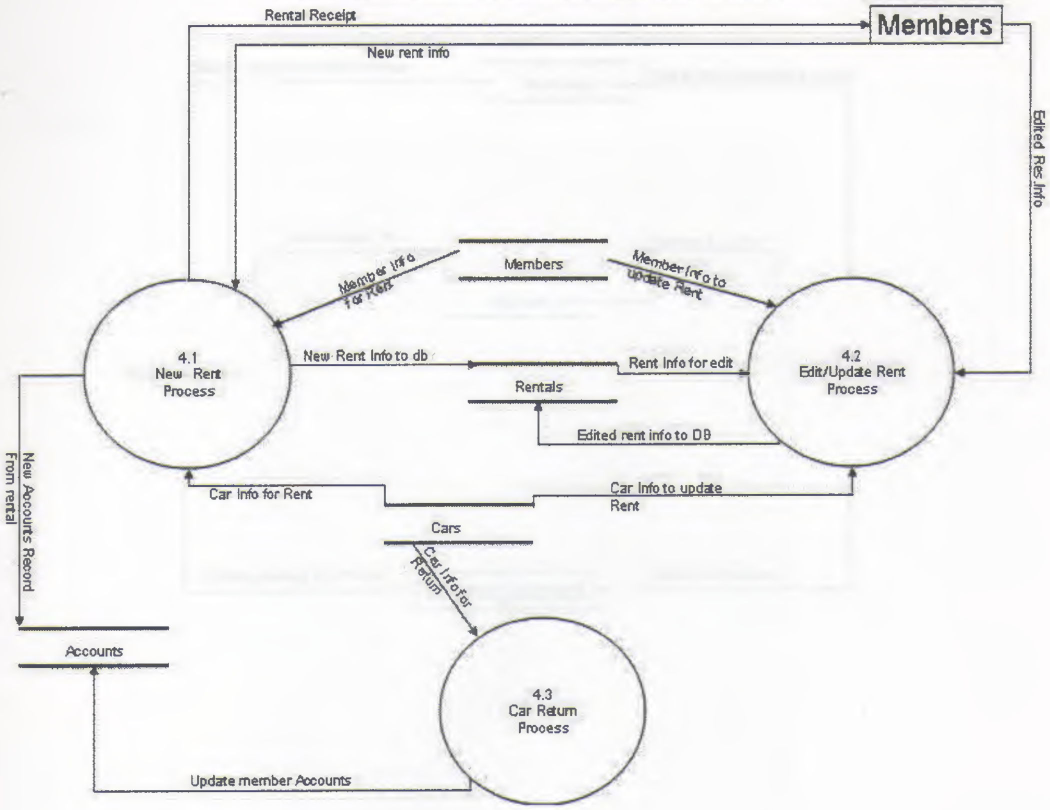
Detailed DFD for Member Process



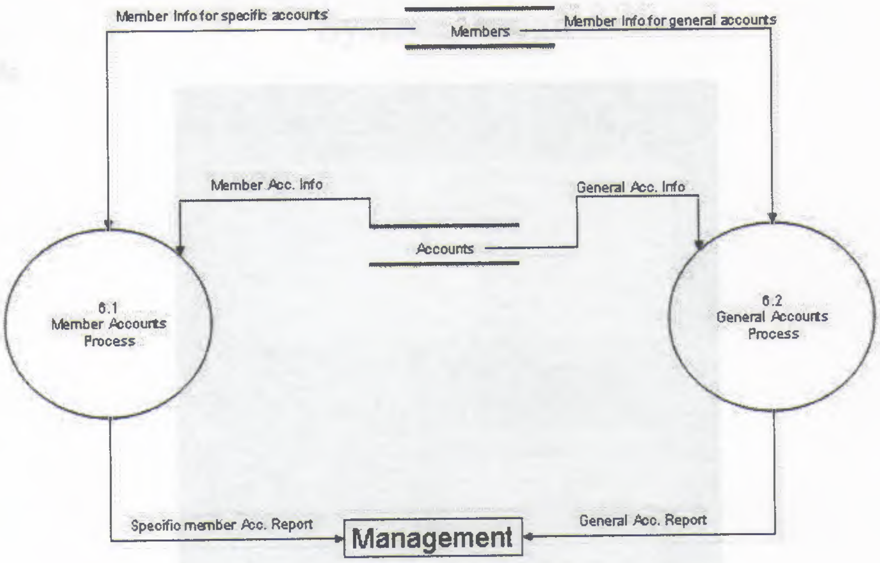
Detailed DFD for Reservation Process


Reservation Receipt
Members
New reservation info
Edited Res.Info
Car Info for Reservation
Cars
Car Info to update reservation
Member Info to update Reservation
3.1 New Reservation Process
Member Info for Reservation
3.2 Edit/Update Reservation Process
Members
New Reservation Info to db
Rentals
Reservation Info for edit
Edited Reservation Info to DB

Detailed DFD for Rentals Process

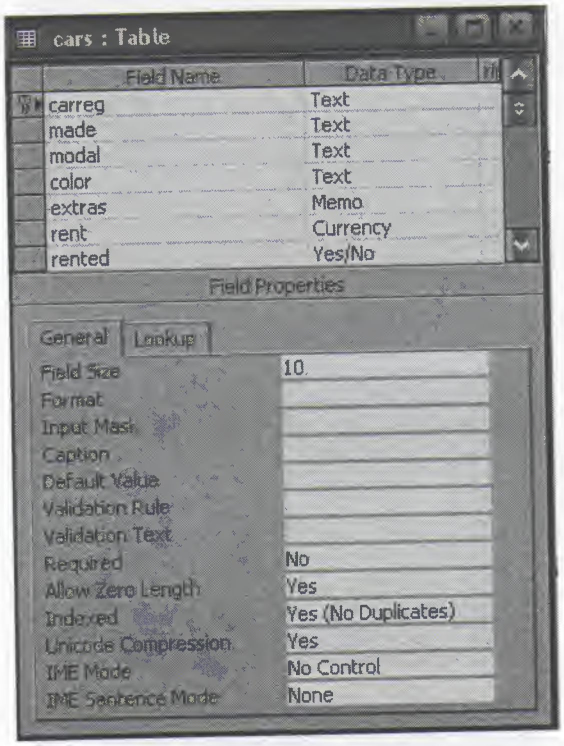


Detailed DFD for Accounts Process



System Design

Car Table



cars : Table

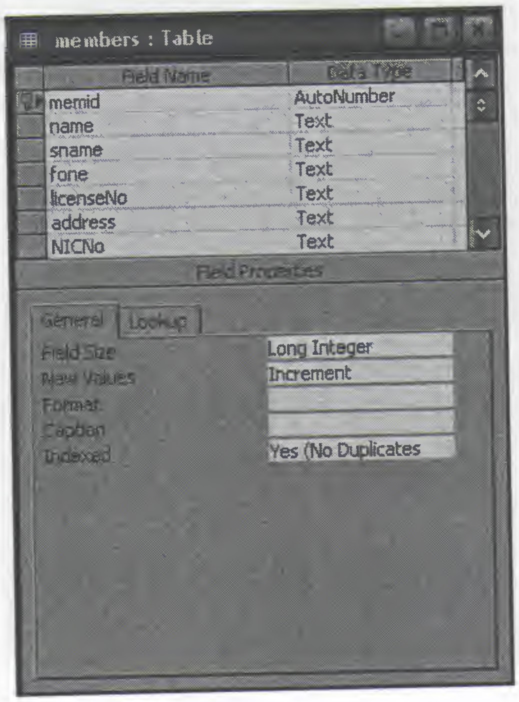
Field Name	Data Type
carreg	Text
made	Text
modal	Text
color	Text
extras	Memo
rent	Currency
rented	Yes/No

Field Properties

General | Lookup

Field Size	10
Format	
Input Mask	
Caption	
Default Value	
Validation Rule	
Validation Text	
Required	No
Allow Zero Length	Yes
Indexed	Yes (No Duplicates)
Unicode Compression	Yes
IME Mode	No Control
IME Sentence Mode	None

Members Table



members : Table

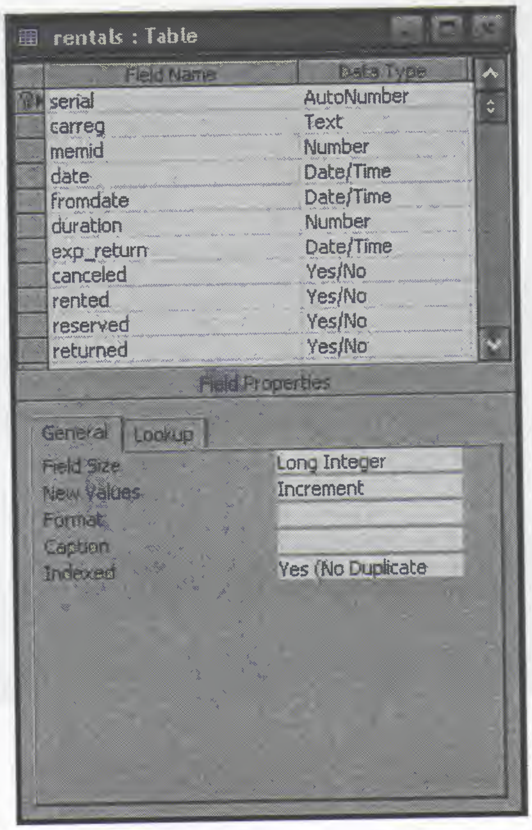
Field Name	Data Type
memid	AutoNumber
name	Text
sname	Text
fone	Text
licenseNo	Text
address	Text
NICNo	Text

Field Properties

General | Lookup

Field Size	Long Integer
New Values	Increment
Format	
Caption	
Indexed	Yes (No Duplicates

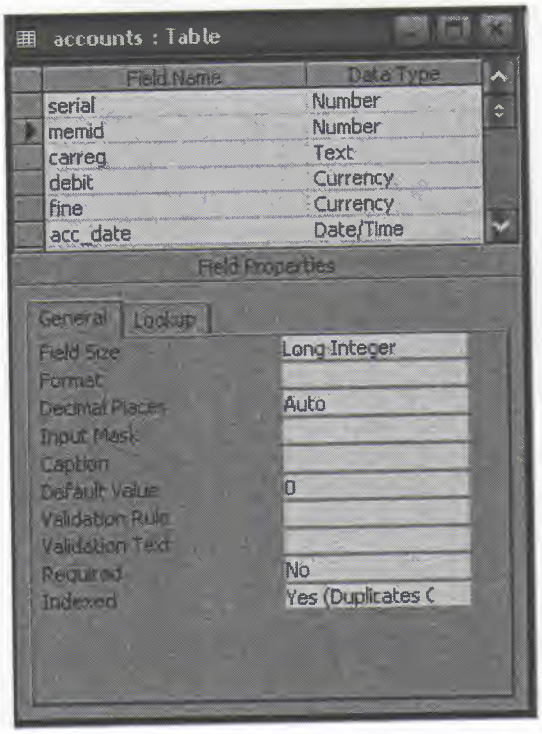
Rentals Table



Field Name	Data Type
serial	AutoNumber
carreg	Text
memid	Number
date	Date/Time
fromdate	Date/Time
duration	Number
exp_return	Date/Time
canceled	Yes/No
rented	Yes/No
reserved	Yes/No
returned	Yes/No

Field Size	Long Integer
New Values	Increment
Format	
Caption	
Indexed	Yes (No Duplicate

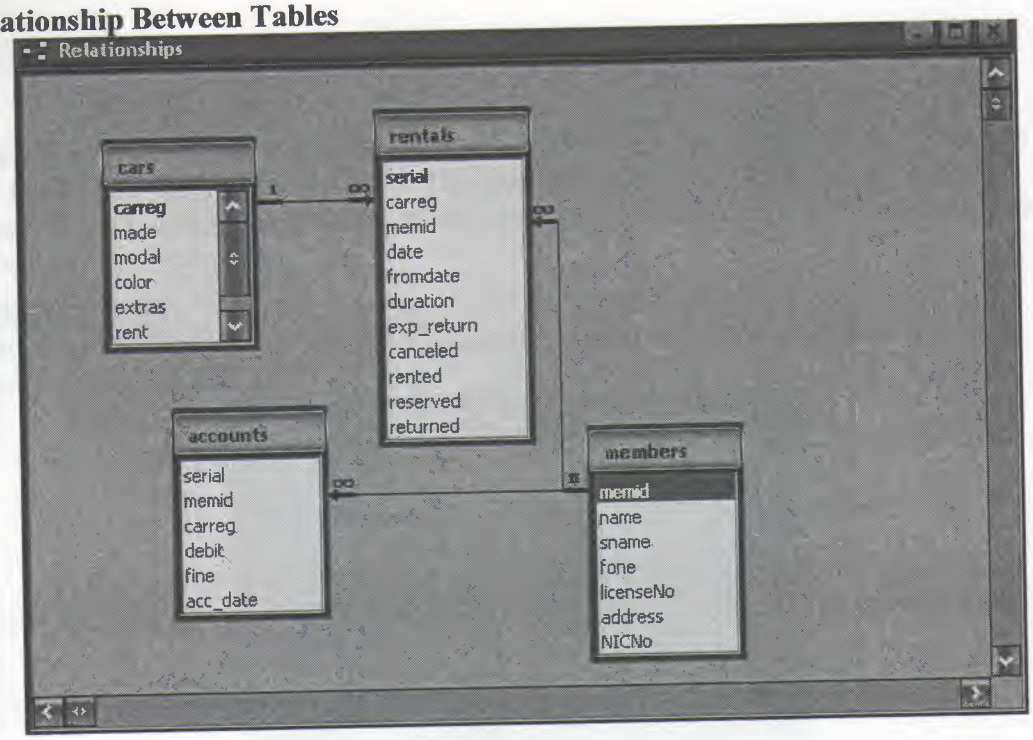
Accounts Table



Field Name	Data Type
serial	Number
memid	Number
carreg	Text
debit	Currency
fine	Currency
acc_date	Date/Time

Field Size	Long Integer
Format	
Decimal Places	Auto
Input Mask	
Caption	
Default Value	0
Validation Rule	
Validation Text	
Required	No
Indexed	Yes (Duplicates C

Relationship Between Tables



User Manual

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

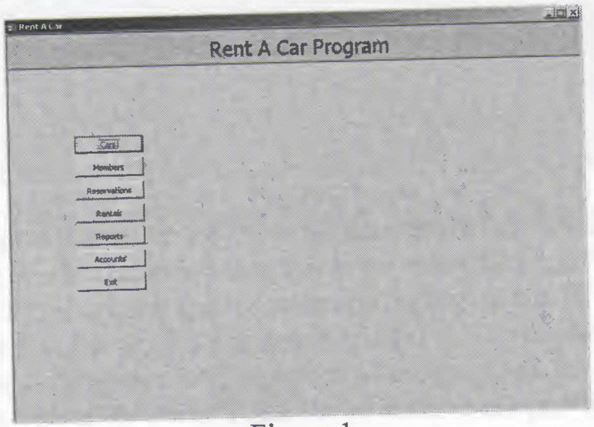


Figure 1

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.

Cars

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

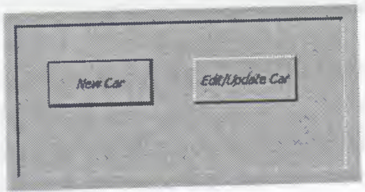


Figure 2

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

New Car

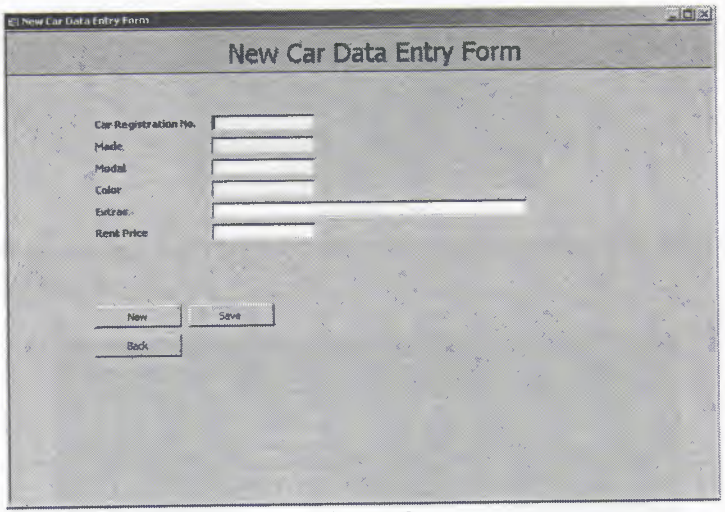


Figure 3

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 "*S*ave" button and the information will be stored in the database for future. To enter another car data click "*N*ew" or click "*B*ack" to go back to the previous menu.

Edit Car

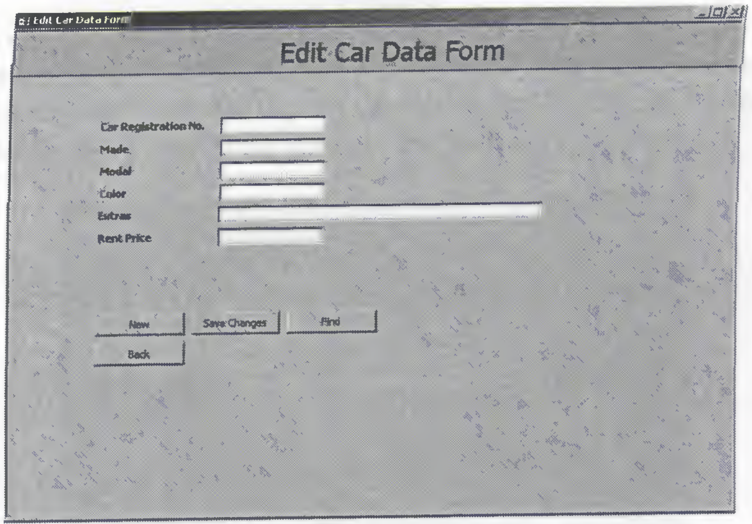


Figure 4

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

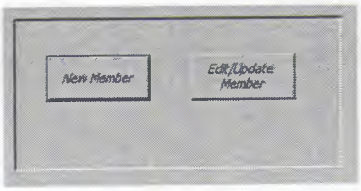


Figure 5

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

New Member

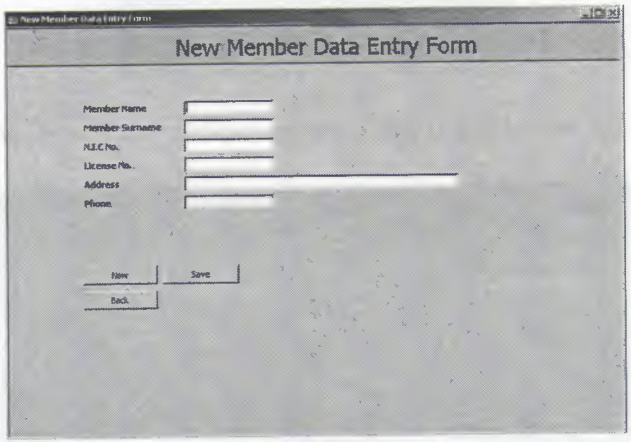


Figure 6

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 "*S*ave" in order to save the record in the database, "*N*ew" to enter a new member's data and *"B*ack" to go back to the previous sub menu.

Edit Member

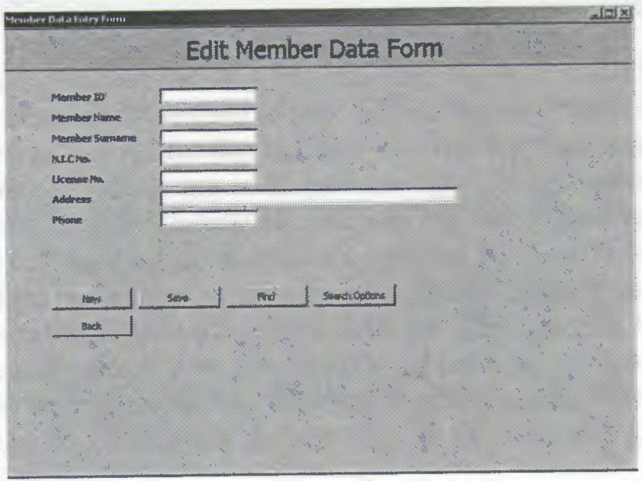


Figure 7

On this form we enter member id if we know and click "*F*ind", 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 "*S*earch 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 "*F*ind" button to retrieve the record, make any changes as u desire and then click save again, to search for another member click "*N*ew" or "*B*ack" to go back to the previous menu.

Reservations

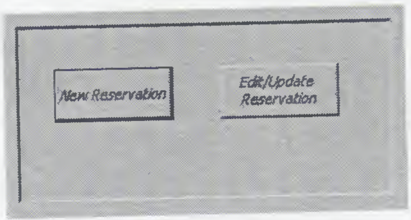
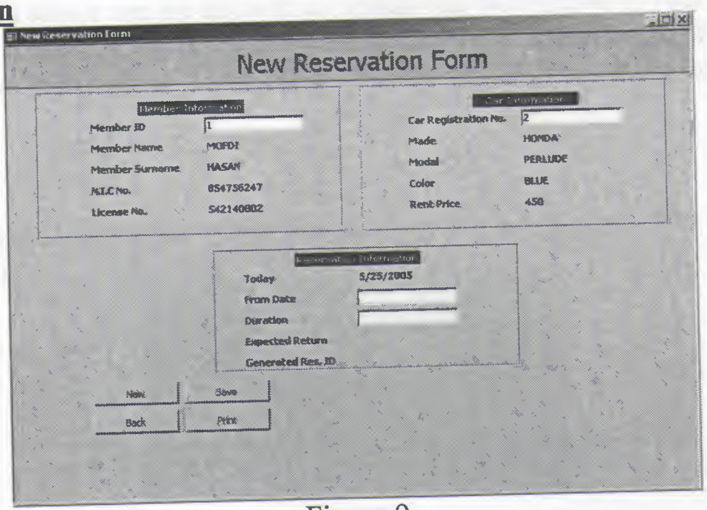


Figure 8

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

New Reservation


New Reservation Form

New Reservation Form

Member Information

Member ID: 1
Member Name: MOFDI
Member Surname: HASAN
N.I.C No.: 854756247
License No.: 542140802

Car Information

Car Registration No.: 2
Made: HONDA
Modal: PERLUDE
Color: BLUE
Rent Price: 450

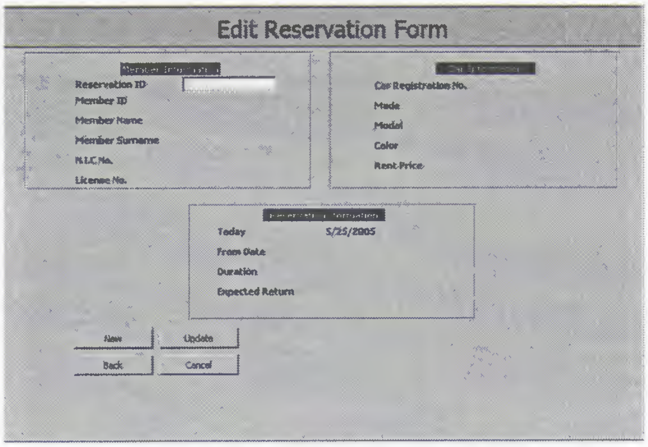
Reservation Information

Today: 5/25/2005
From Date:
Duration:
Expected Return
Generated Res. ID

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 "*S*ave" 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 "*P*rint" button. Use "*Back*" button to go to previous menu.

Edit Reservation



Edit Reservation Form

Member Information

Reservation ID

Member ID

Member Name

Member Surname

N.I.C No.

License No.

Car Registration No.

Made

Model

Color

Rent Price

Reservation Information

Today 5/25/2005

From Date

Duration

Expected Return

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

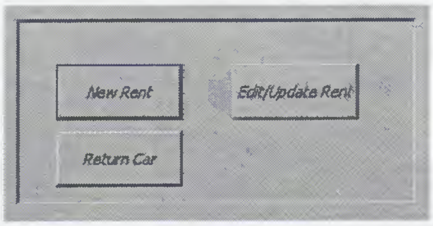
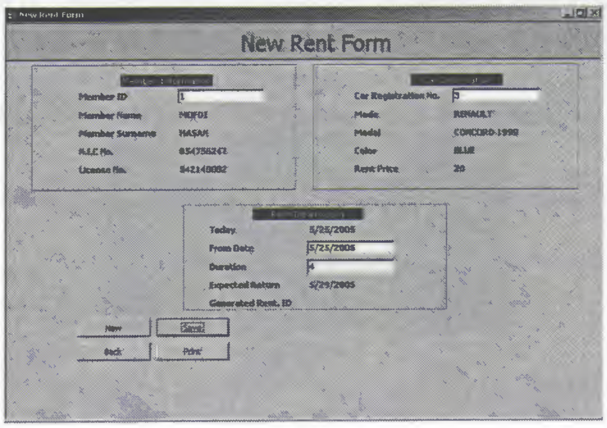


Figure 11

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.



New Rent Form

New Rent Form

Member ID 1

Member Name MOFDI

Member Surname HASAN

N.I.C No. 054756241

License No. 542140082

Car Registration No. 3

Made RENAULT

Model CONCORD-1990

Color BLUE

Rent Price 20

Today 5/25/2005

From Date 5/25/2005

Duration 4

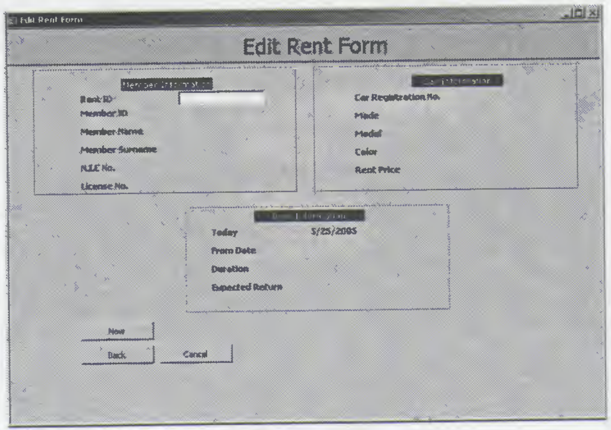
Expected Return 5/29/2005

Generated Rent. ID

Figure 12

Edit Rent

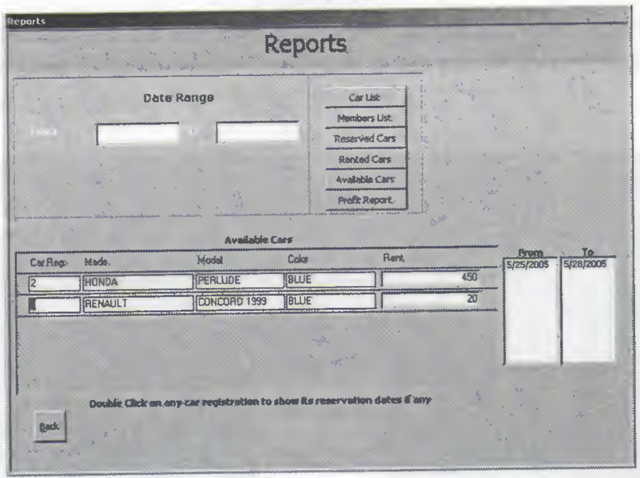
Here a user can edit his rental information similar to the edit reservation process as explained above



Today 5/25/2005

Figure 13

Reports



Available Cars

Car Reg.	Made.	Model	Color	Rent
2	HONDA	PERLUDE	BLUE	450
	RENAULT	CONCORD 1999	BLUE	20

From	To
5/25/2005	5/28/2005

Double Click on any car registration to show its reservation dates if any

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

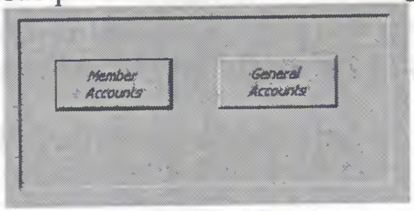
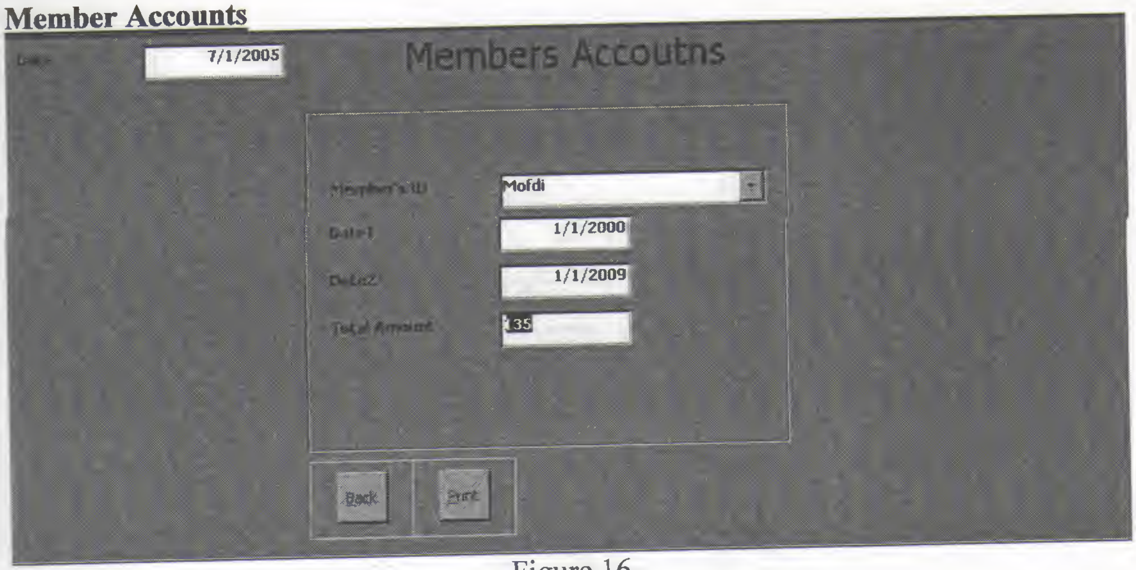


Figure 15

Member Accounts



Date: 7/1/2005

Member's ID: Mofdi

Date1: 1/1/2000

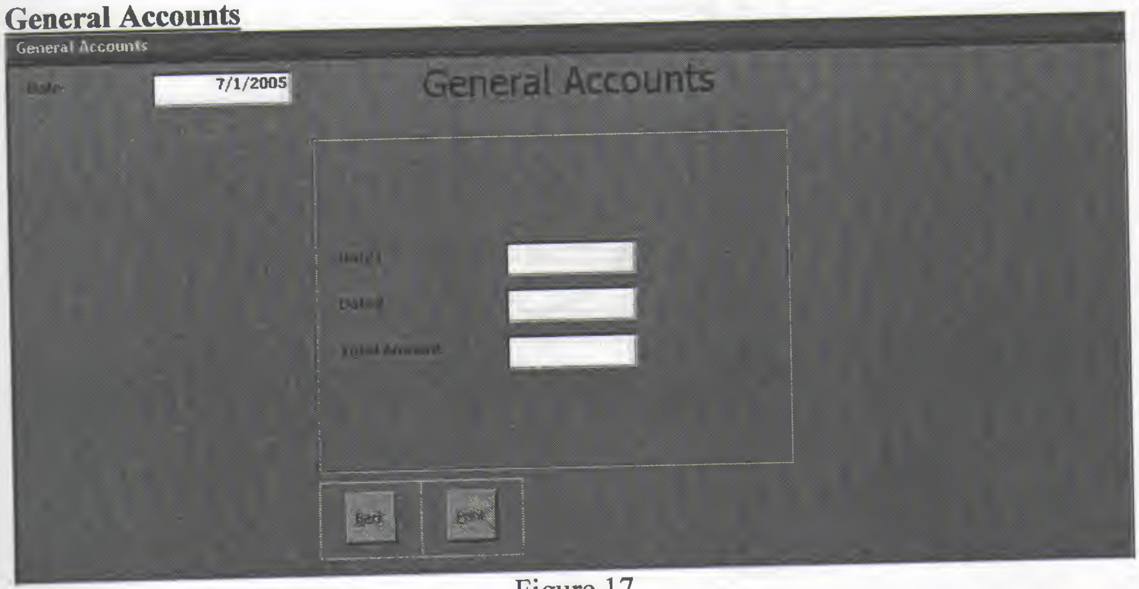
Date2: 1/1/2009

Total Amount: 135

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 "*P*rint" button.

General Accounts



Date: 7/1/2005

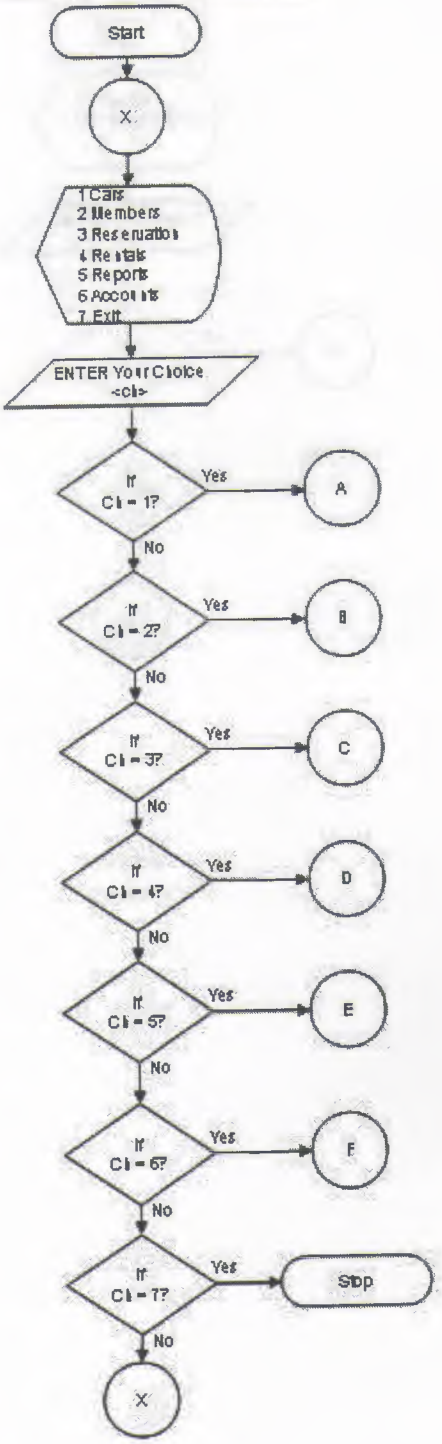
Figure 17

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.

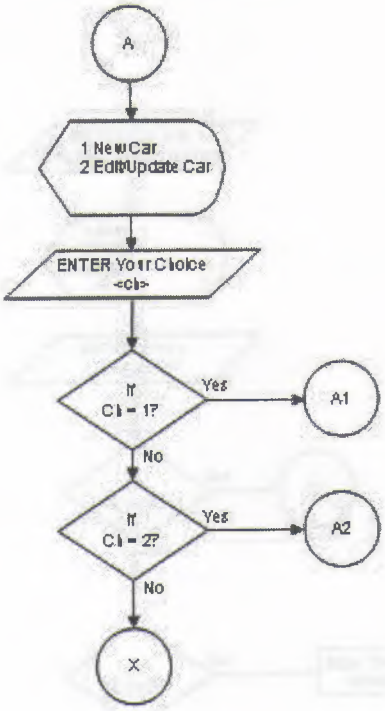
I hope this user manual will help all the users of my program.

User Flowcharts

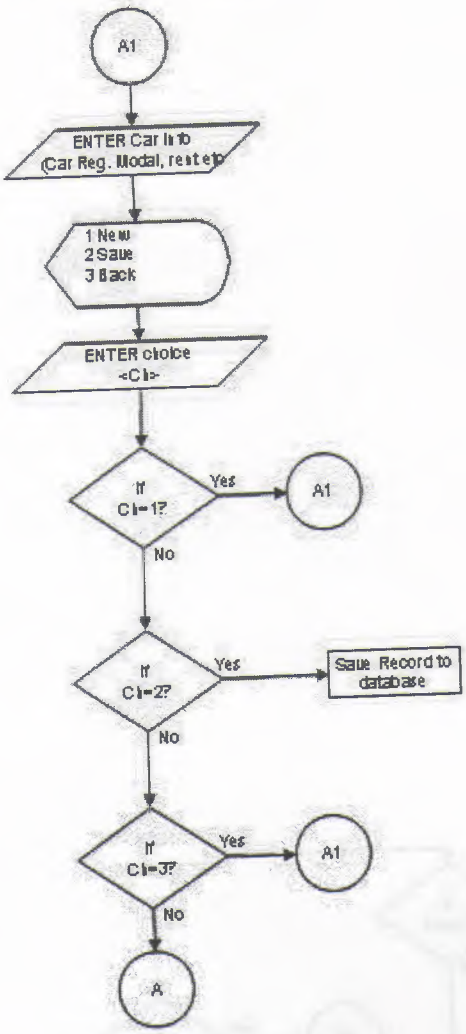
MAIN MENU (MAIN PAGE)



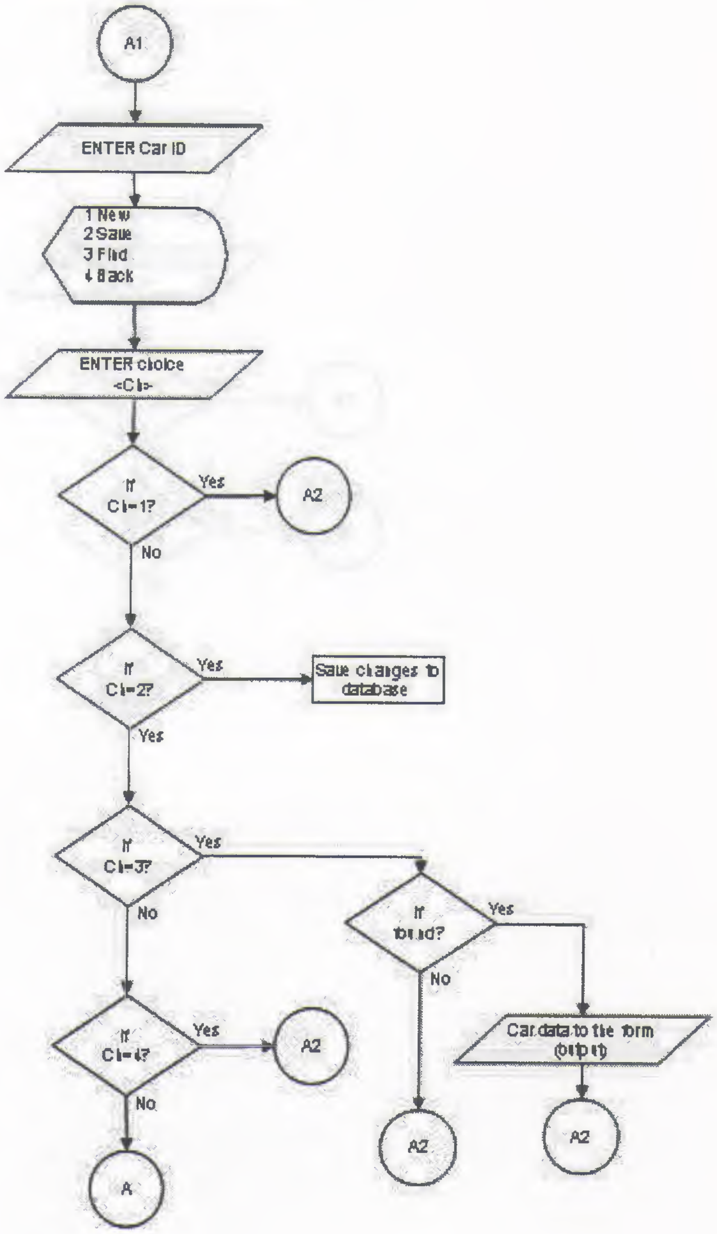
Cars Sub Menu



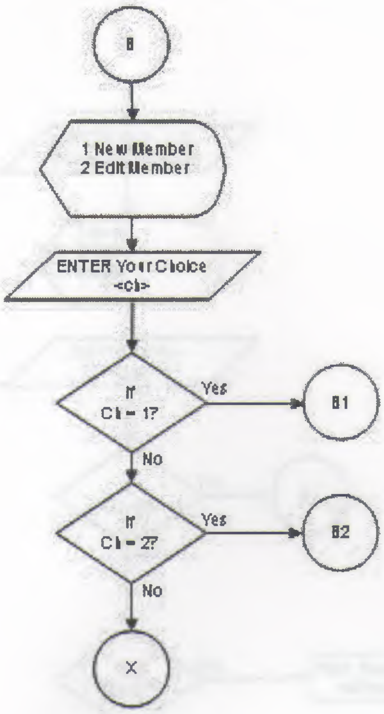
New Car Registration



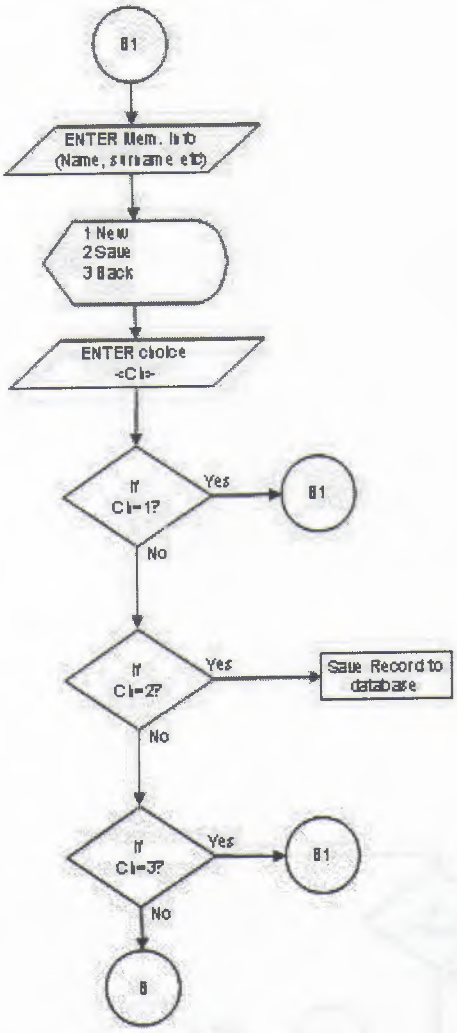
Edit Car Specifications



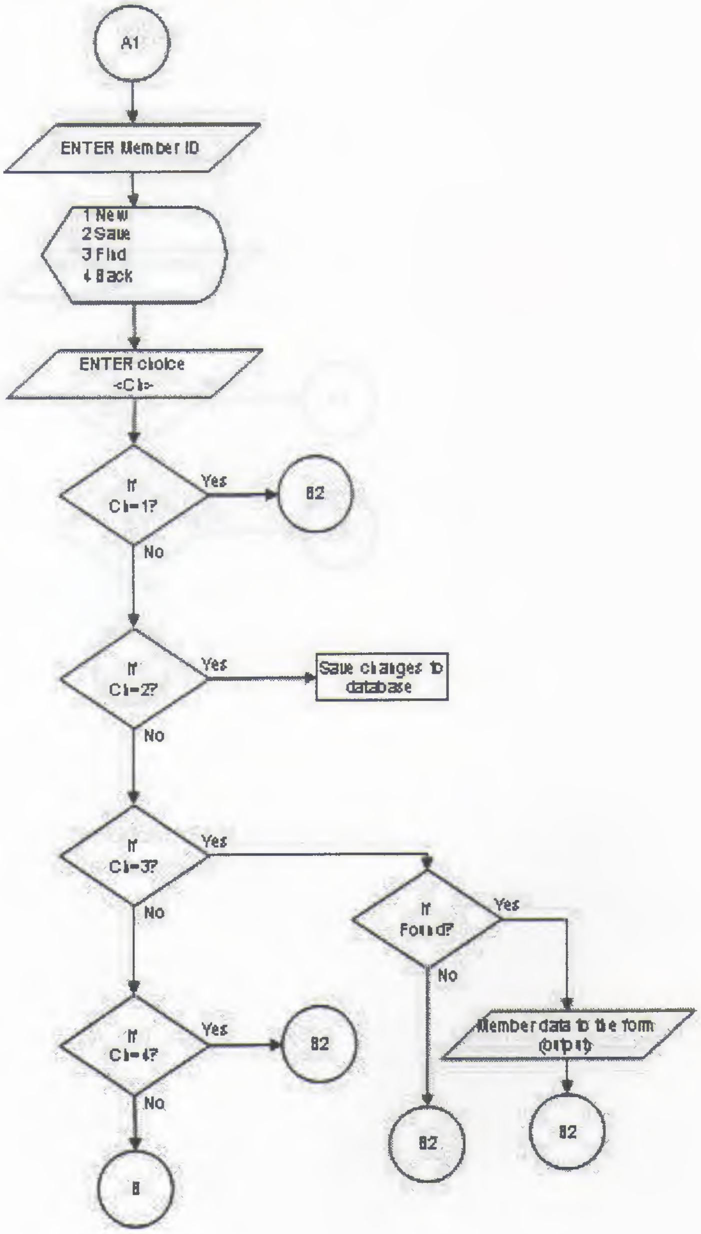
Members Sub Menu



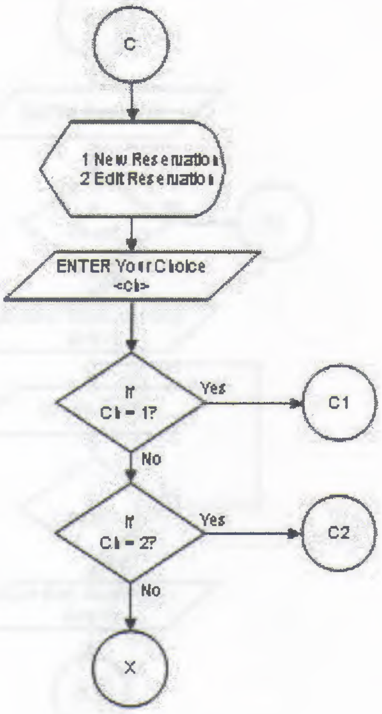
New Member Registration



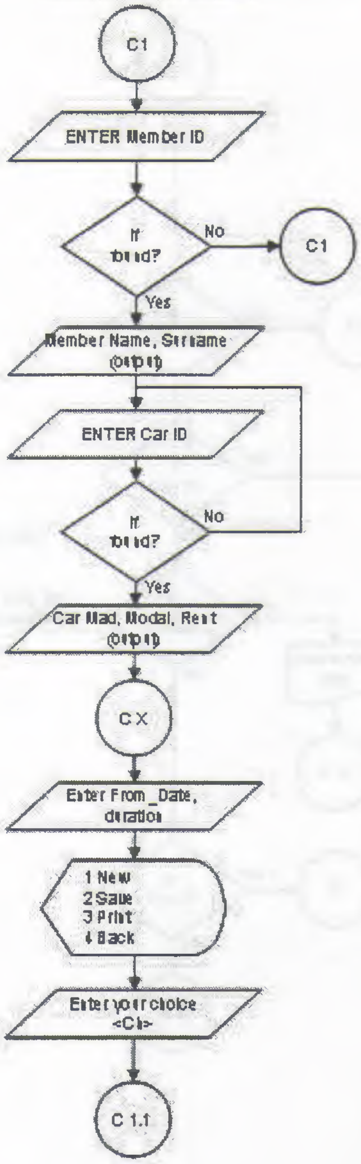
Edit Member Specifications



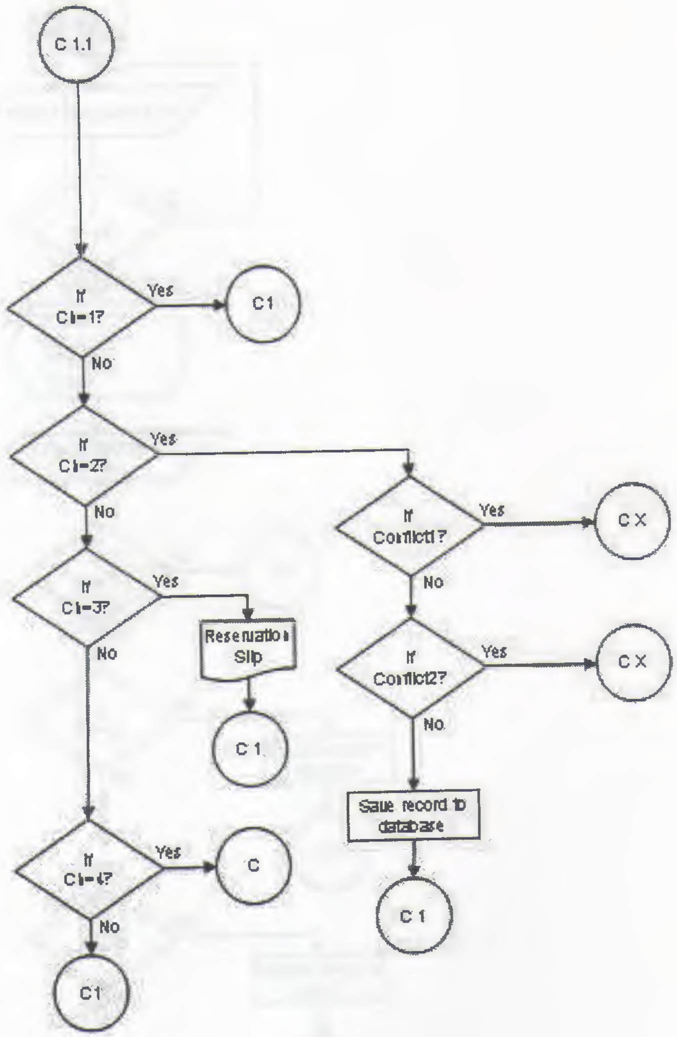
Reservation Sub Menu



New Reservation



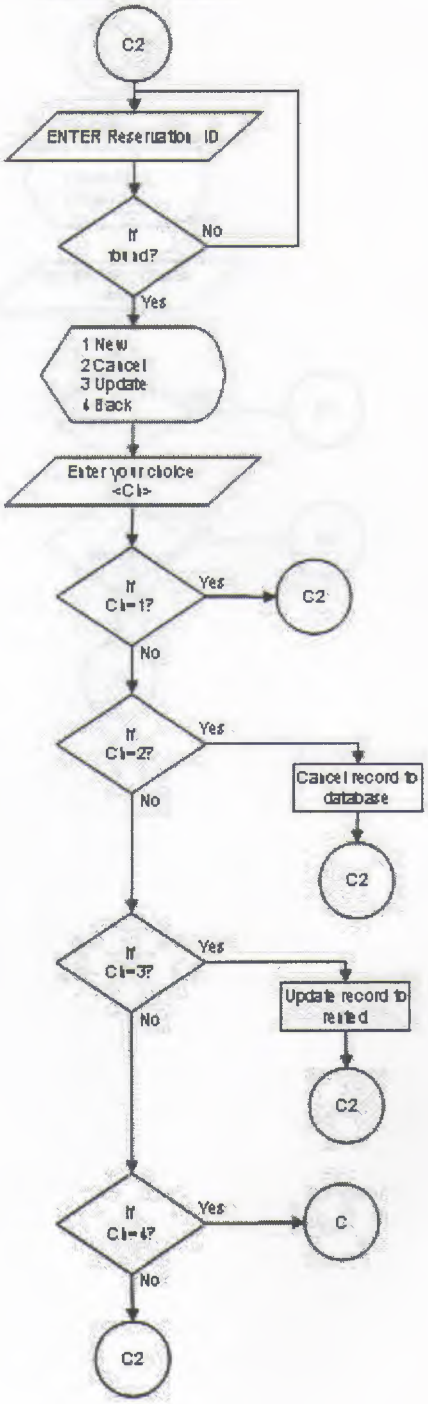
New Reservation continue



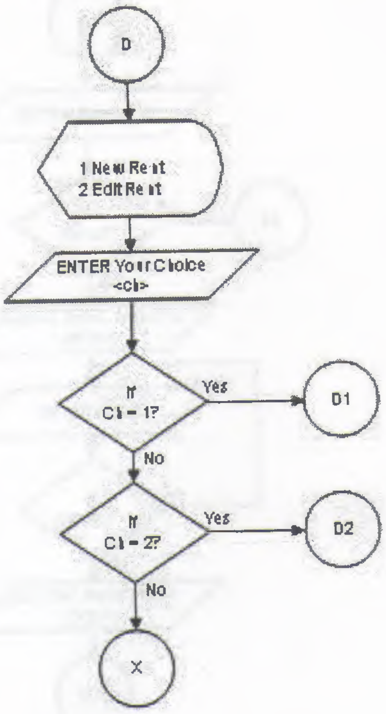
Note:
Conflict1
If From _Date<Today's Date?

Conflict2
If From _date or Return date lies between any Active Reservation?

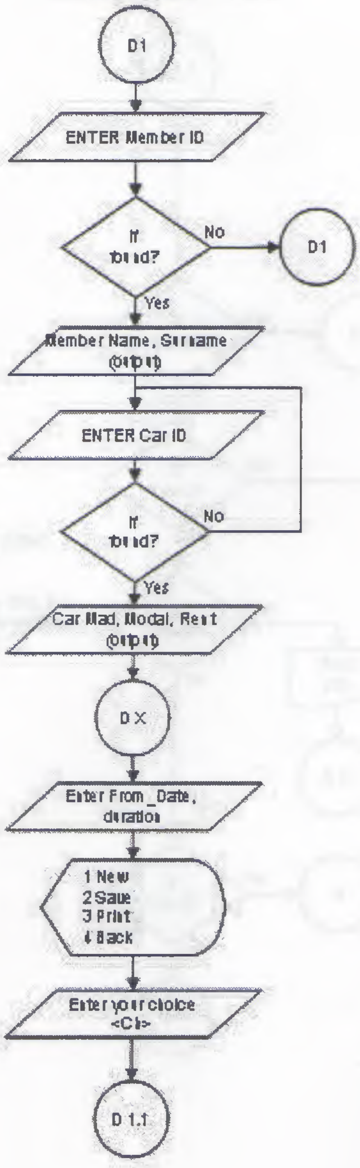
Edit Reservation



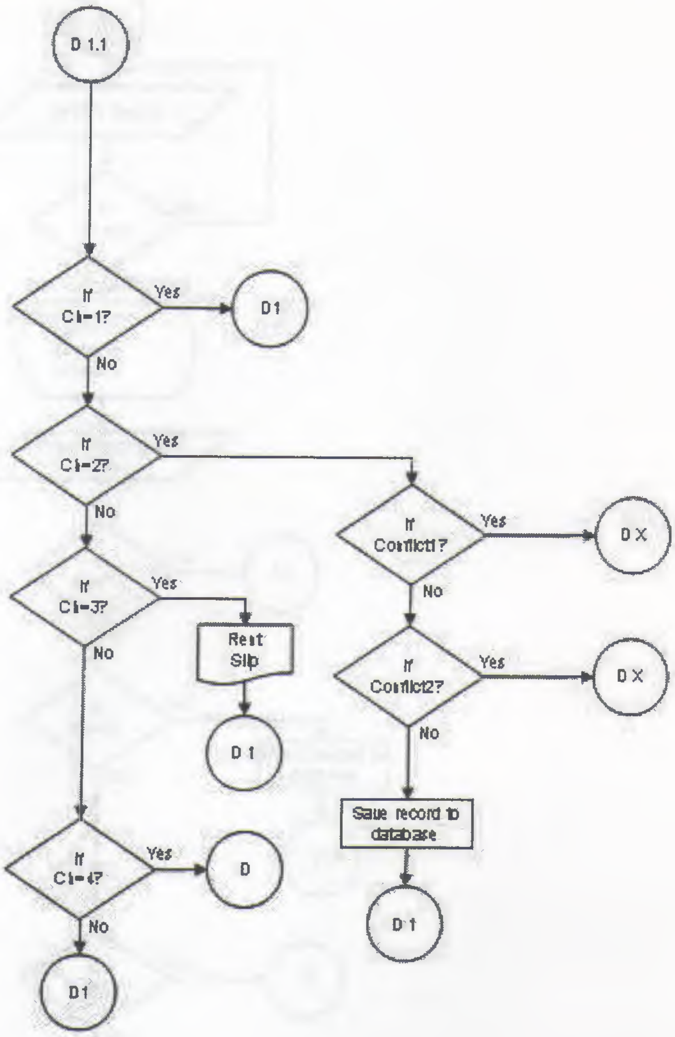
Rent Sub Menu



New Rent


D1
ENTER Member ID
If found?
No
D1
Yes
Member Name, Surname (output)
ENTER Car ID
If found?
No
Yes
Car Mad, Modal, Rent (output)
D X
Enter From_Date, duration
1 New
2 Save
3 Print
4 Back
Enter your choice <Ch>
D 1.1

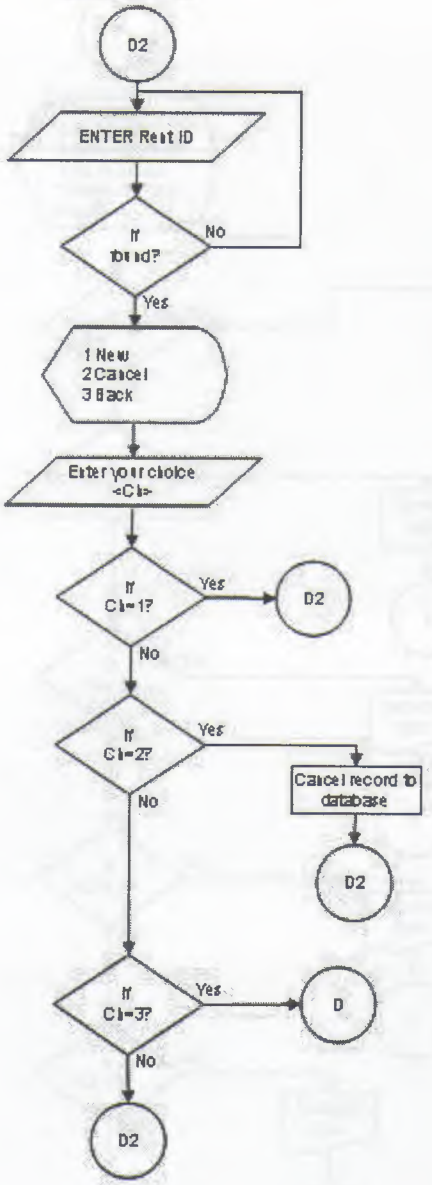
New Rent continue

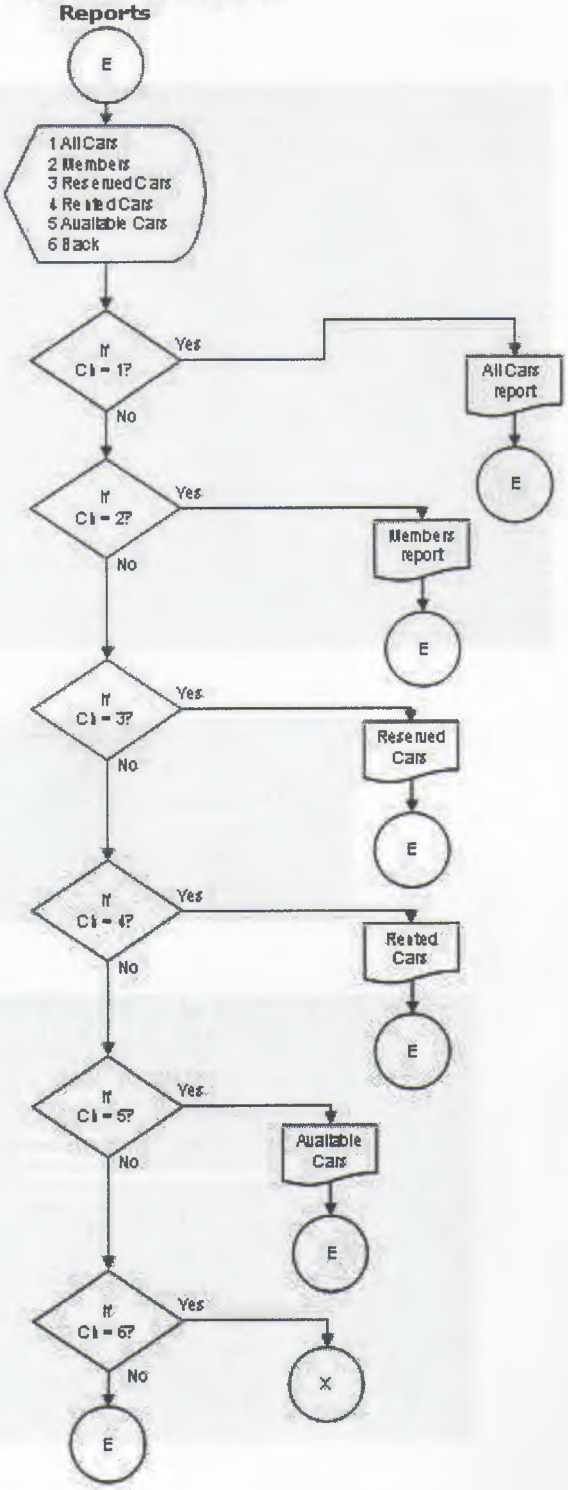


Note:
Conflict1
If From_Date<Today's Date?

Conflict2
If From_date or Return date lies between any Active Reservation?

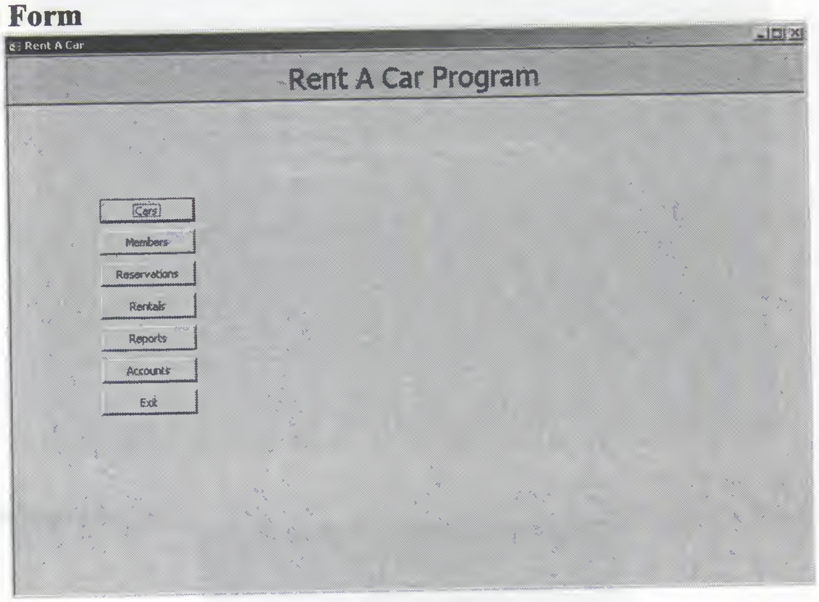
Edit Rent


D2
ENTER Rent ID
If found?
No
Yes
1 New
2 Cancel
3 Back
Enter your choice <Ch>
If Ch=1?
Yes
D2
No
If Ch=2?
Yes
Cancel record to database
D2
No
If Ch=3?
Yes
D
No
D2

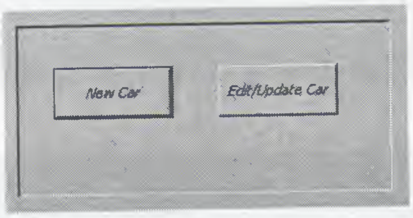

Reports
E
1 All Cars
2 Members
3 Reserved Cars
4 Rented Cars
5 Available Cars
6 Back
If
Ch = 1?
Yes
No
All Cars report
E
If
Ch = 2?
Yes
No
Members report
E
If
Ch = 3?
Yes
No
Reserved Cars
E
If
Ch = 4?
Yes
No
Rented Cars
E
If
Ch = 5?
Yes
No
Available Cars
E
If
Ch = 6?
Yes
No
X
E

Screen Outputs

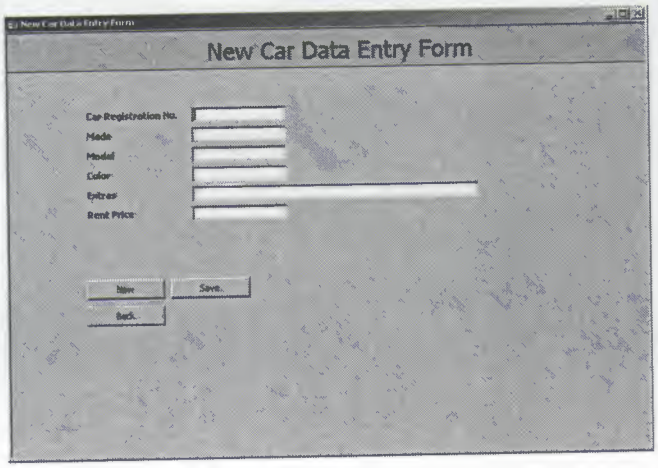
Main Menu Form



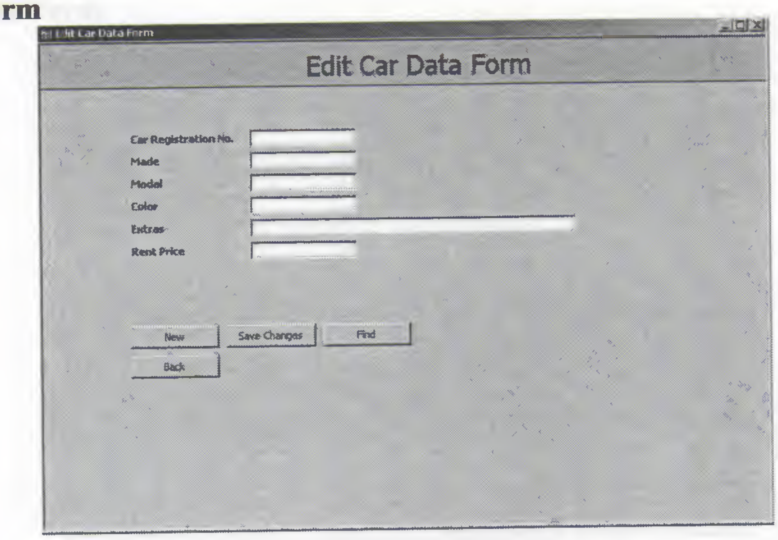
Car Submenu Form



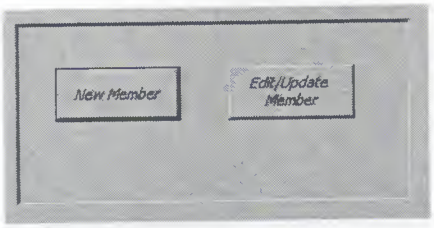
New Car Form



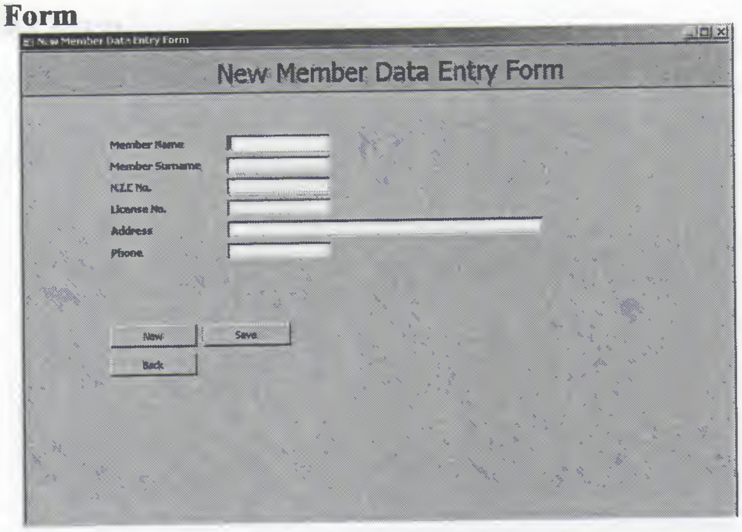
Edit Car Form



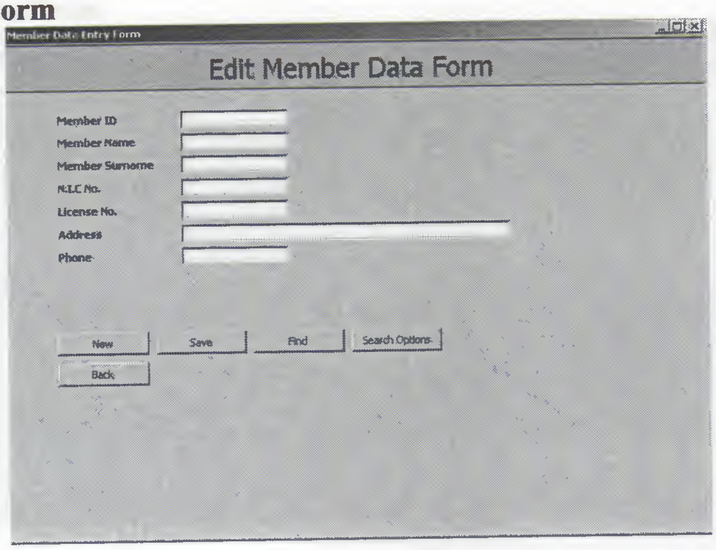
Members Submenu



New Member Form



Edit Member Form



Member Data Entry Form

Edit Member Data Form

Member ID

Member Name

Member Surname

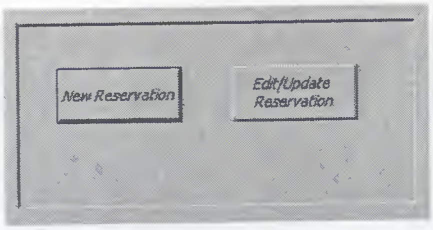
N.I.C No.

License No.

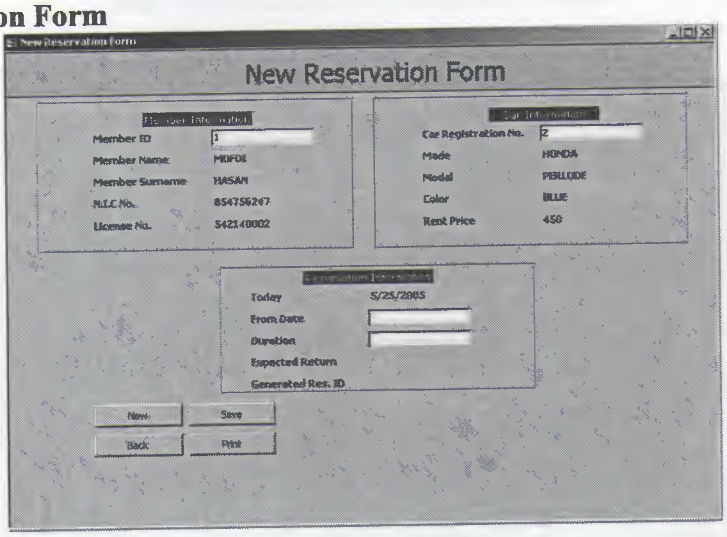
Address

Phone

Reservation Submenu



New Reservation Form



New Reservation Form

Member Information

Member ID 1

Member Name MOFDI

Member Surname HASAN

N.I.C No. 854756247

License No. 542140002

Car Information

Car Registration No. 2

Made HONDA

Model PERLUDE

Color BLUE

Rent Price 450

Reservation Information

Today 5/25/2005

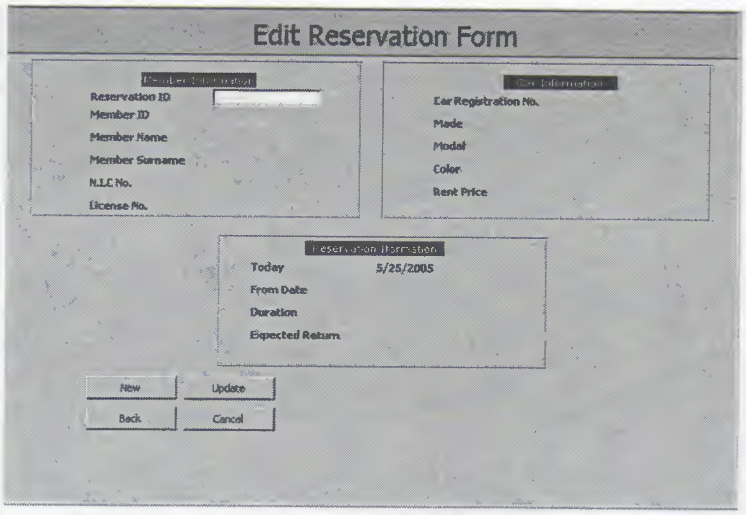
From Date

Duration

Expected Return

Generated Res. ID

Edit Reservation Form



Edit Reservation Form

Member Information

Reservation ID
Member ID
Member Name
Member Surname
N.I.C No.
License No.

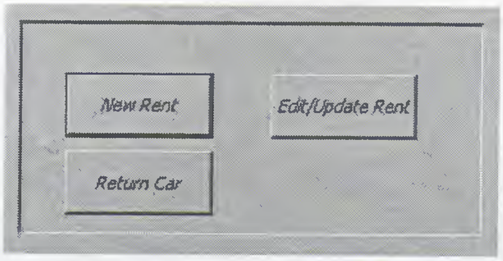
Car Information

Car Registration No.
Made
Modal
Color
Rent Price

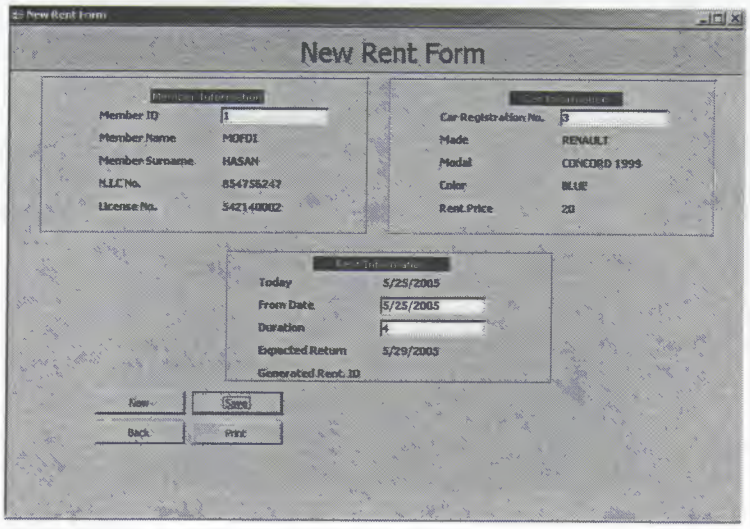
Reservation Information

Today 5/25/2005
From Date
Duration
Expected Return

Rental Submenu



New Rent Form



New Rent Form

Member Information

Member ID	1
Member Name	MOFDI
Member Surname	HASAN
N.I.C No.	854756247
License No.	542140002

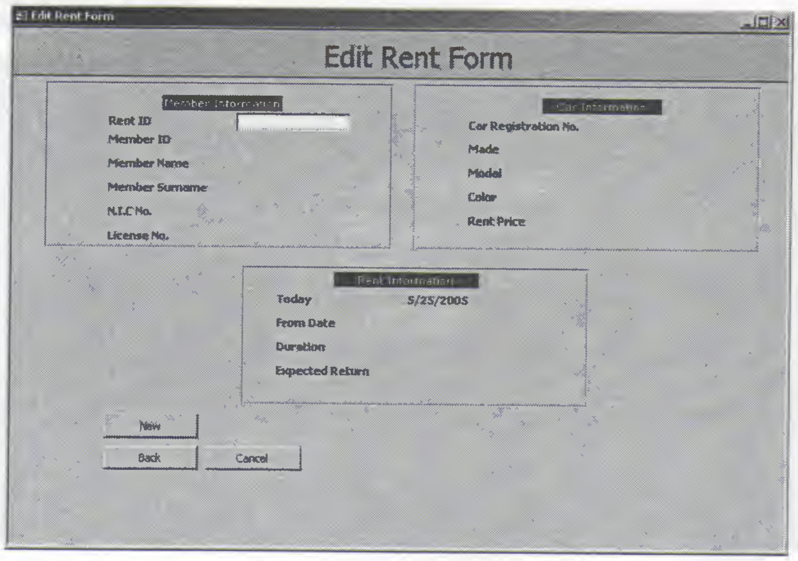
Car Information

Car Registration No.	3
Made	RENAULT
Modal	CONCORD 1999
Color	BLUE
Rent Price	20

Rent Information

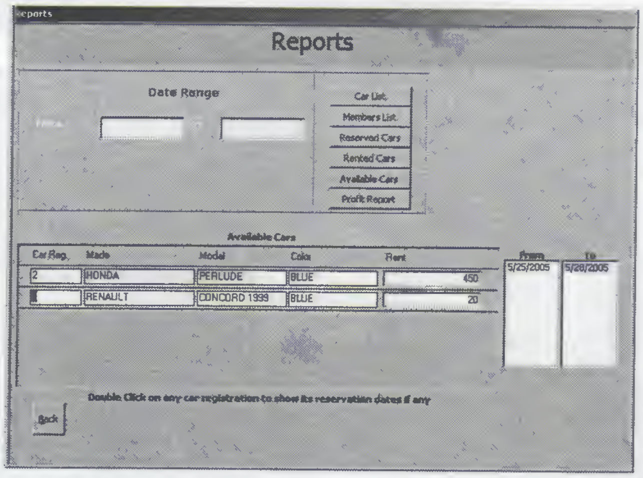
Today	5/25/2005
From Date	5/25/2005
Duration	4
Expected Return	5/29/2005
Generated Rent. ID	

Edit Rent Form



Today 5/25/2005

Reports Form



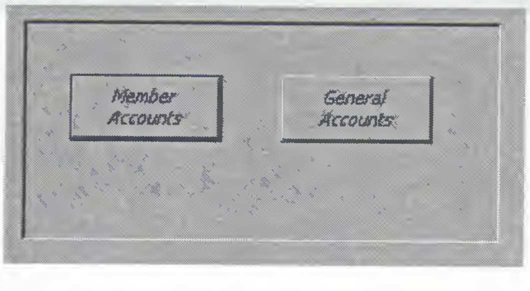
Available Cars

Car Reg.	Made	Model	Color	Rent
2	HONDA	PERLUDE	BLUE	450
	RENAULT	CONCORD 1999	BLUE	20

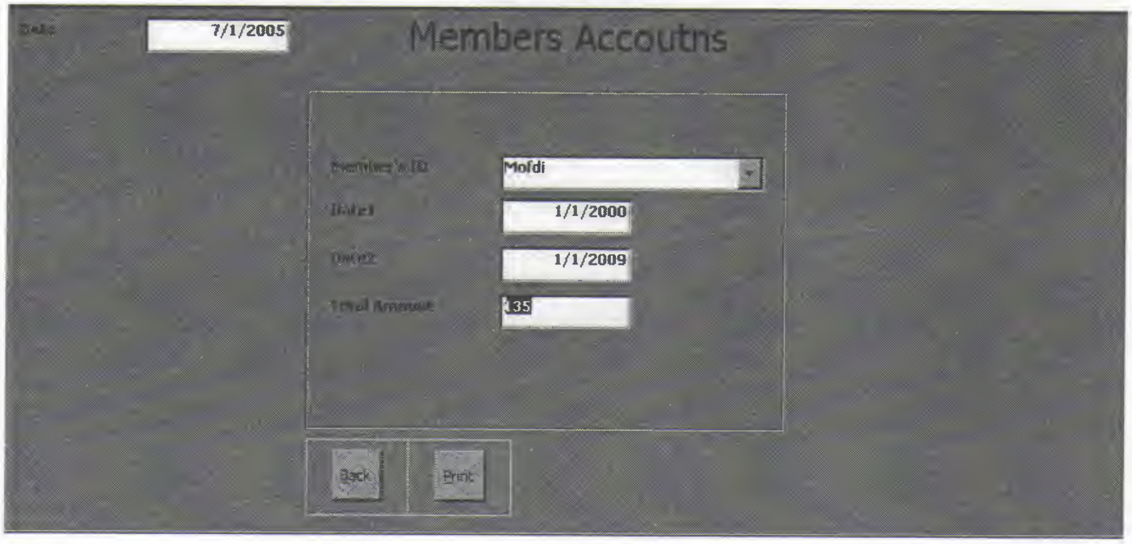
From	To
5/25/2005	5/28/2005

Double Click on any car registration to show its reservation dates if any

Accounts Submenu



Members' Accounts Form



Members Accoutns

Date: 7/1/2005

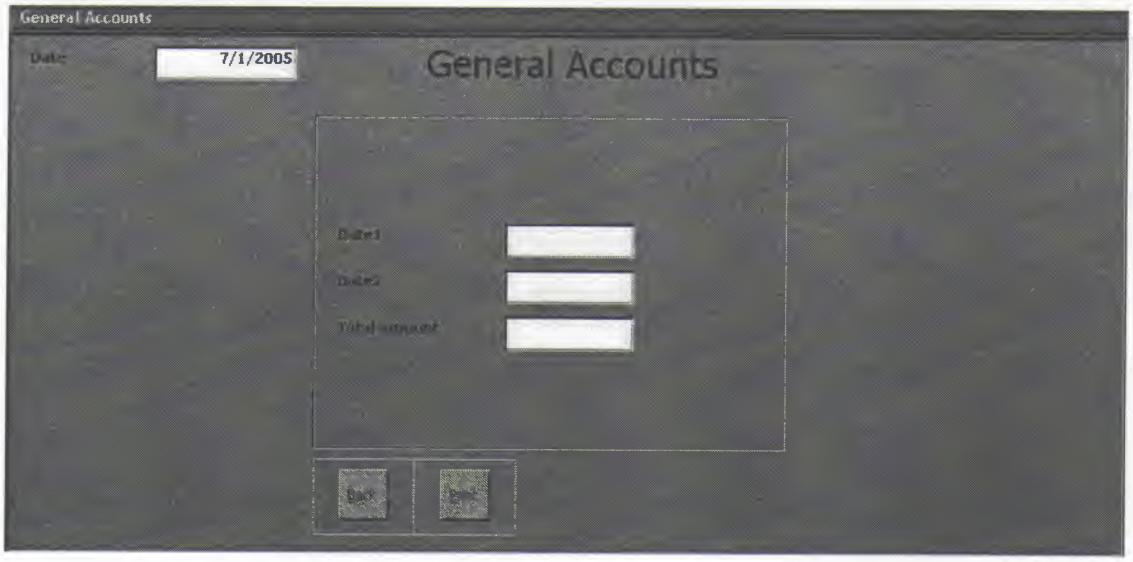
Member's ID: Mofdi

Date1: 1/1/2000

Date2: 1/1/2009

Total Amount: 135

General Accounts Form



General Accounts

Date: 7/1/2005

Date1:

Date2:

Total amount:

Reference

1. Jones Dana and Novalis Susan, “Access 2002 VBA Handbook”, published by SYBEX, 2002.
2. Microsoft Office Proffecional 2002 for windows XP help.
3. Suraski, Zeev, “Basics of Visual Basic”, edition No. 1, published by PEARSON, 2001.
4. www.access-programmers.com
5. http://www.microsoft.com/mspress/books/5054.asp
6. www.utteraccess.com

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
End Sub
```

SUB FORM CARS

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 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, "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
   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
End Sub
```

EDIT 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, "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("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.txtadd
  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.txtadd
  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\/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)))"
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()
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 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='" &
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 = Nothing
    End 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
```