NEAR EAST UNIVERSITY

Faculty Of Economics And Administrative Sciences

Department Of Computer Information Systems

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CIS 400
(Graduation Project)

Property Management System

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1. ACKNOWLEDGEMENTS

I have taken a lot of care and attention in preparing this project, it is a reflection of my System Analysis, Management information & Programming skills which I have encountered throughout my Computer Information System BSC at Near East University.

I'd like to thank all of my teachers at the University who have helped me gather and maintain the knowledge that I have gathered throughout my degree. In preparing this project I'd like to reserve a space and Thank Miss Nadire Çavus and Dr. Yalcın Akçalı who have taken the responsibility to assist us in preparing and documenting our Final Project. Their assistance and help will be greatly remembered by me and others.

I would also like to thank Assoc. Prof. Ilham Huseynov who taught me Access and helped me become a competent Access Database designer, and for all of his good nature and will.

To finalize I would like to say that this project has assisted me to maximize my database and system analysis skills, and has prepared me for a post in this field.

2. ABSTRACT

The final year project of the BSc Computer Information System is based on The Real Estate Agency which is located in Girne. The main idea of the project is to dedicate how the designed system will improve the business operations and the activities of the company by removing the current paper based system. Therefore the project entails the investigation of the current business environment and designs a new system for the business requirements which have been implemented by using MsAcess 2000.

3. INTRODUCTION

3.1. Company Overview & System Analysis

The "Property Management System" is designed to computerize the manual work done at Real Estate Agency. The Business carries out the main tasks involved in an Estate Agency. The staff Buy, Sell and Rent properties in Northern Cyprus. They also buy and sell Land around Northern Cyprus. Before they can do this they need to follow the Government procedures for this, so all staff at the business are fully trained to follow Governmental procedures, and have been trained to maximize their Sales and Communication Skills.

The Company earns commission on each business deal done. The Commission differs on each property & business type. At the moment there is one flaw in the Administrative work done at the office. There is no centralised database system to keep records of the files. The company deals with huge amounts of documented paper work which requires lots of storage space within the office. Therefore the company cannot maintain information which has been held for many long periods.

The Administrative work done at the office consists of regular work done at all Property Estate Agencies. They keep records of the properties that they have to Sell, Rent, leased out or which they have bought, along with Land that they may have business deals with! Details and description of the property are kept alongside with it's location & address. Also the 'Deed' details must also be kept for each property or land and who it is currently owned buy. Each business type has an earned commission rate and price at which it shall be done. For example if the business type is rental there is a fixed price in which the commission rate will calculate the amount earned on it for the company.

My aim is to design a database System with processes and interrelated sub-processes to keep this data organized and easy to maintain. The data must be easily retrievable and the database should be reliable enough to produce valid information. (Access turns the Data into information via queries and outputs them to the user via reports.)

Real Estate Agency have been operating sine April 20002. Already they have realized the importance of Computerization, as this will reduce time when dealing with customer queries, make their data more secure and they will have the satisfaction of using technology while at work.

3.2. Determining the purpose of the Database

A Database must be designed to maintain the Business needs and to keep records of their data and transactions.

The first step in designing a database is to determine its purpose and how it's to be used. You need to know what information you want from the database. From that, you can determine what subjects you need to store facts about in the tables (or database).

Talk to people who will use the database. Brainstorm about the questions you and they would like the database to answer. Sketch out the reports you'd like it to produce. Gather the forms you currently use to record your data. To do this efficiently I have examined well-designed databases similar to the one that I will be designing.

The decided project to design is a "Property Management System". Which will be a relational database that will store data in a tabular form. Each file will be implemented as a table. Each field is a column in the table. Each record in the file is a row in a table. Related records between two tables (e.g Client & Property) are implemented by intentionally duplicating columns in the two tables (in our case PID).

3.3. "The Property Management Database" Maintenance Aim

The Database aims to manage and maintain the following in it's design:

- Add, Upgrade, Delete, Find details of

1. Customers	2.Business	3.Business Deal	4.Property
5. Location	6.Pafta	7.Landroute	8.Currency
9.Commission		10.Transaction	

- Produce Reports on the following:

1. Available Property Report
2. Property by Location & Business
3. Property by Dönüm & Business
4. Property by Price & Business
5. Property by Business Deal
6. Property by Customer ID

3.4. Business Objectives

The opportunities for an information system to improve the business operation are as follows.

- Implementing a system streamline business operations and activities by eliminating part of the current paper based system.

The designed system will eliminate most of the current paperwork of the business, however not all. In the current business environment, all the data is saved and filed inside the files, which take up space and organizing. Because of this the company cannot generate any reports to evaluate business performance in order to carry out future changes to the business. Moreover this results in poor data mining in order to satisfy customers and partners of the Property Estate industry.

- Improve the work flow of information in the company by using an automated system

- Automate the storing of data about Customers, their Reg. No's and Transaction details

The designed database for the system will enhance the business's data storage. Most of the information about the business issues such as Transaction, Customer, location will be held in the database. This again enables the data to be easily retrieved from the database.

- To reduce the time wasted when carrying out the business operations and the activities.

The designed system will increase the speed of the business operations and the activities. During most of the activities and operations, the staff spent a lot of time with the writing of documentation, removing and filing of the manual paper based system.

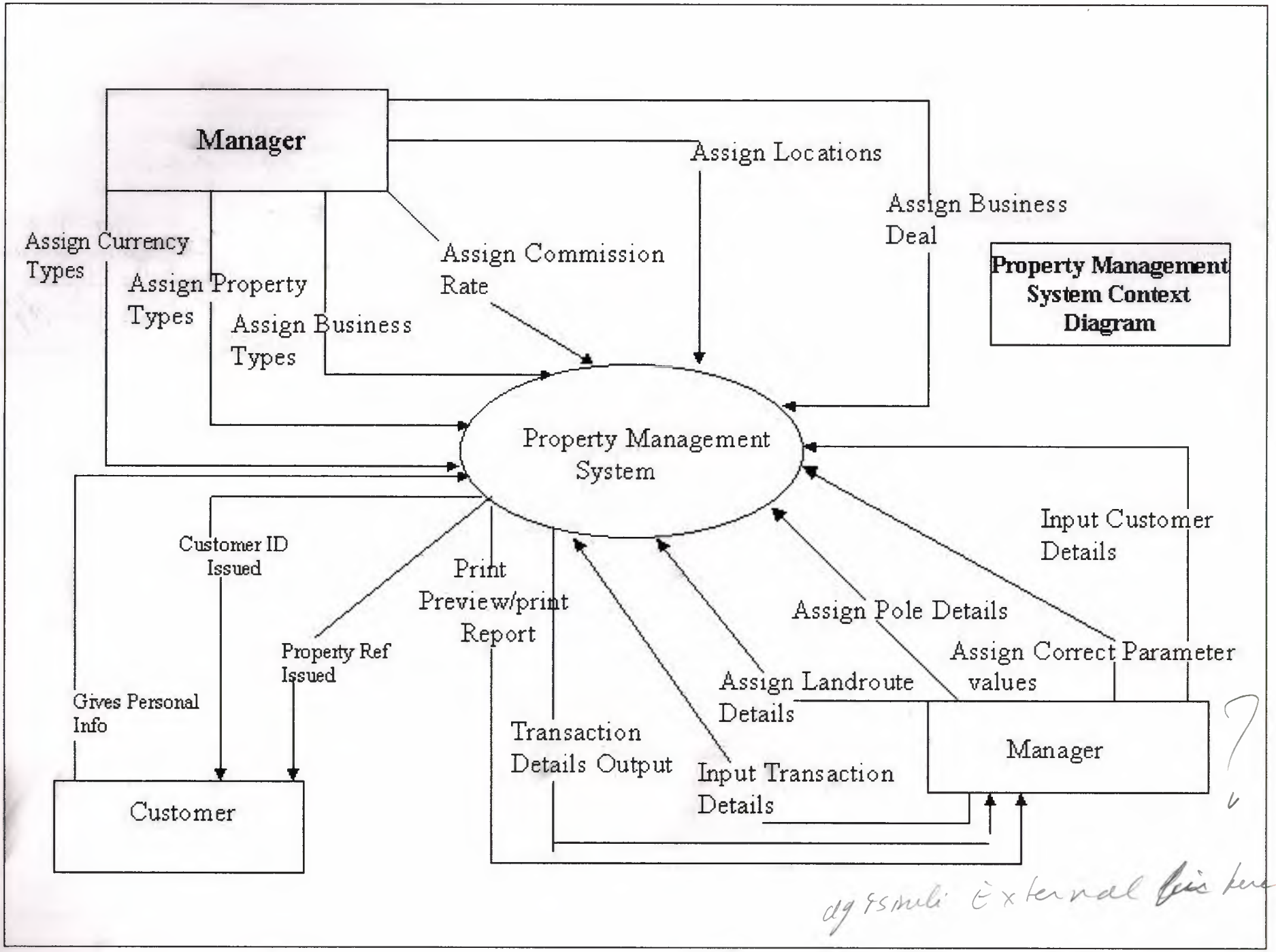
In addition to this the searching for required documentation takes a large amount of time which causes delays for all business operations. Therefore the database had to be developed to enable information for each client to be automated instantly. The sub forms and reports provided this facility.

4. Explanation Of The System

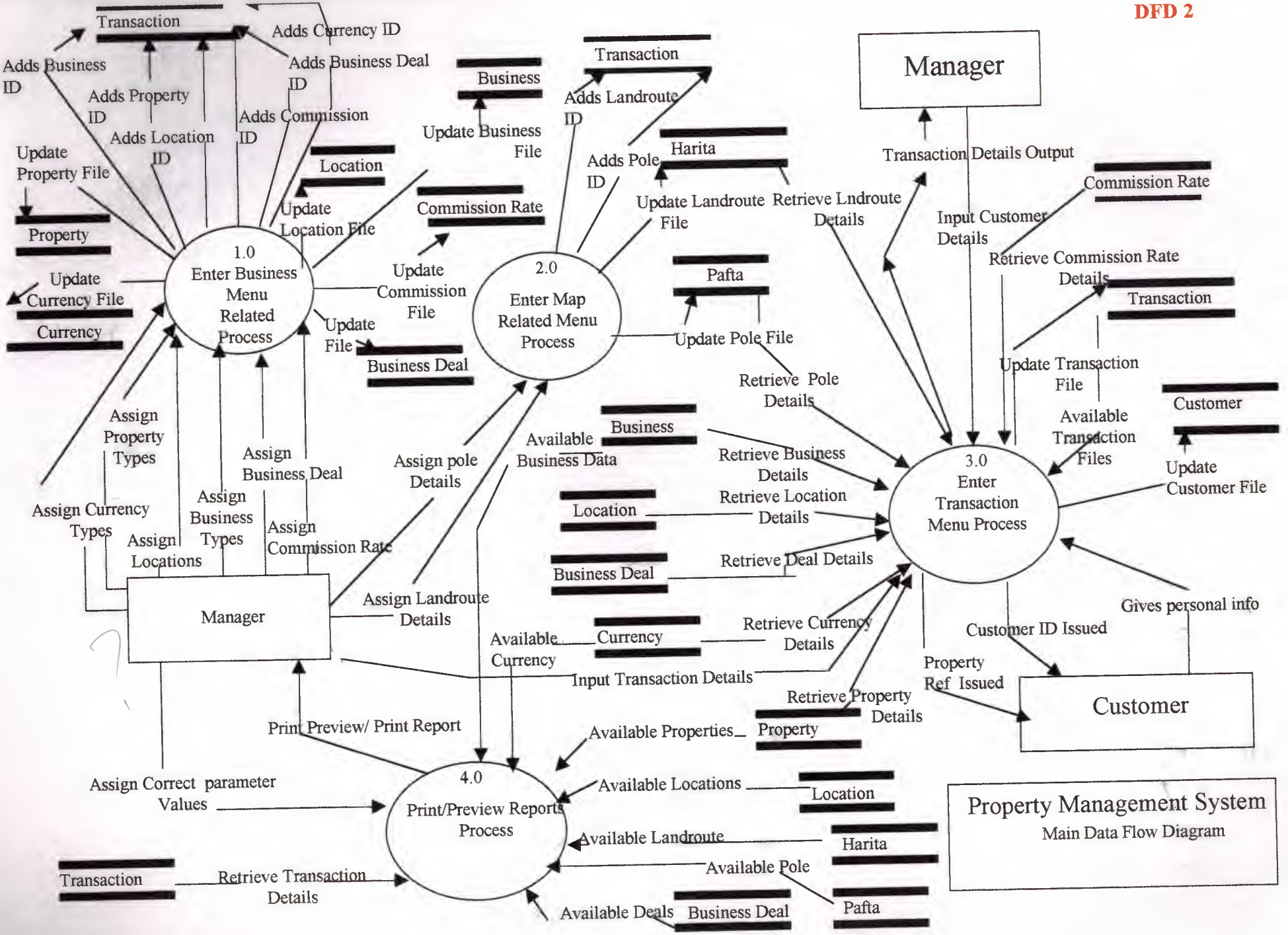
A Data Flow Diagram (DFD), is a tool that depicts the flow of data through a system and the work or processing performed by that system. DFD designing begins after gathering information about existing system's problems and requirements and determination DFD is a model, which define how data flow through an information, the relationships among the data flows, and how data come to be stored. DFDs also show the processes that change or transform data.

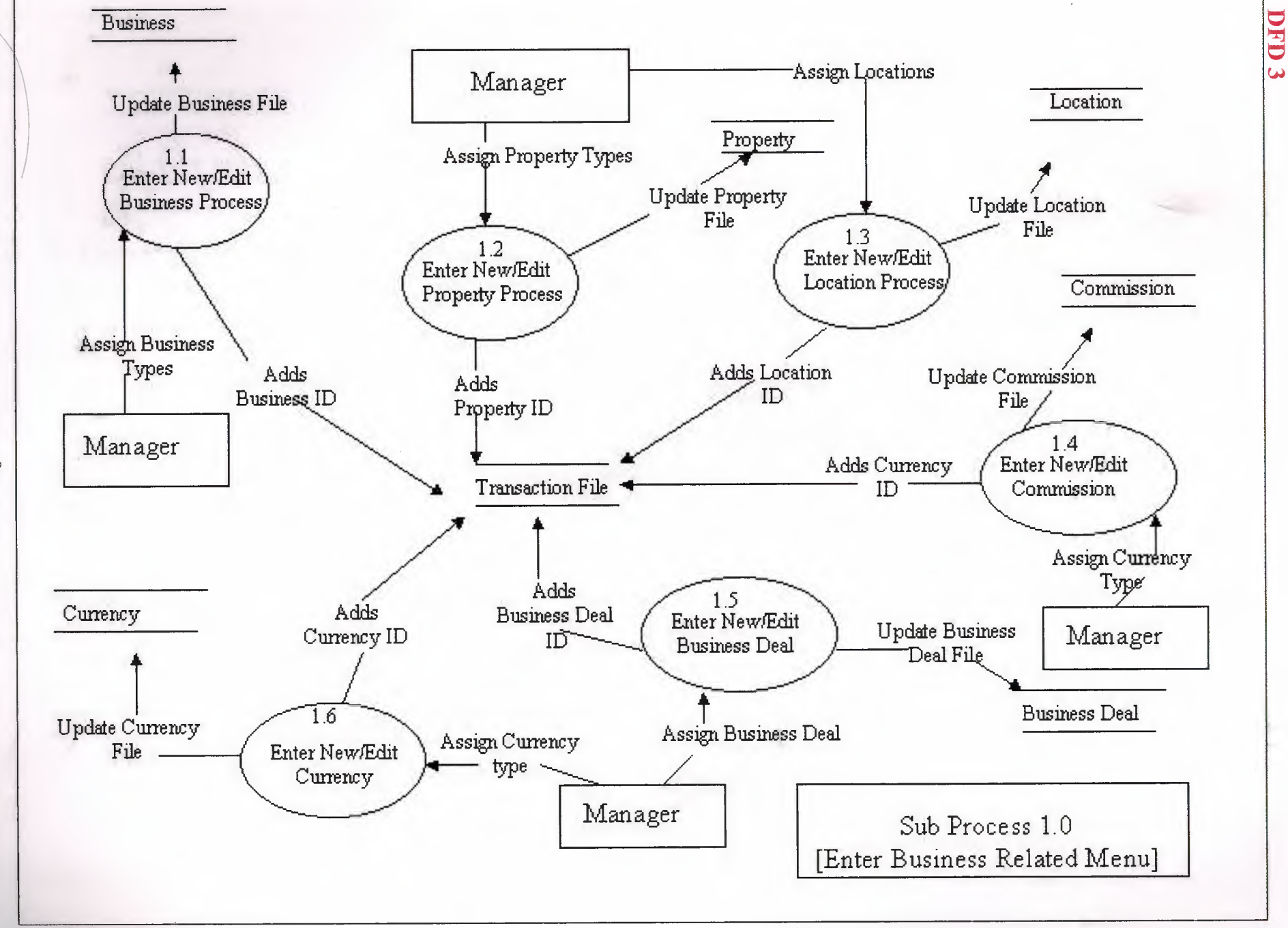
DFD 1 illustrates the 'Context Diagram' (The highest-level view of the 'Property Management System'), DFD 2 explains how the main processes are inter-related, and DFD 3 to DFD 5 show how the sub-process work.

DFD 1

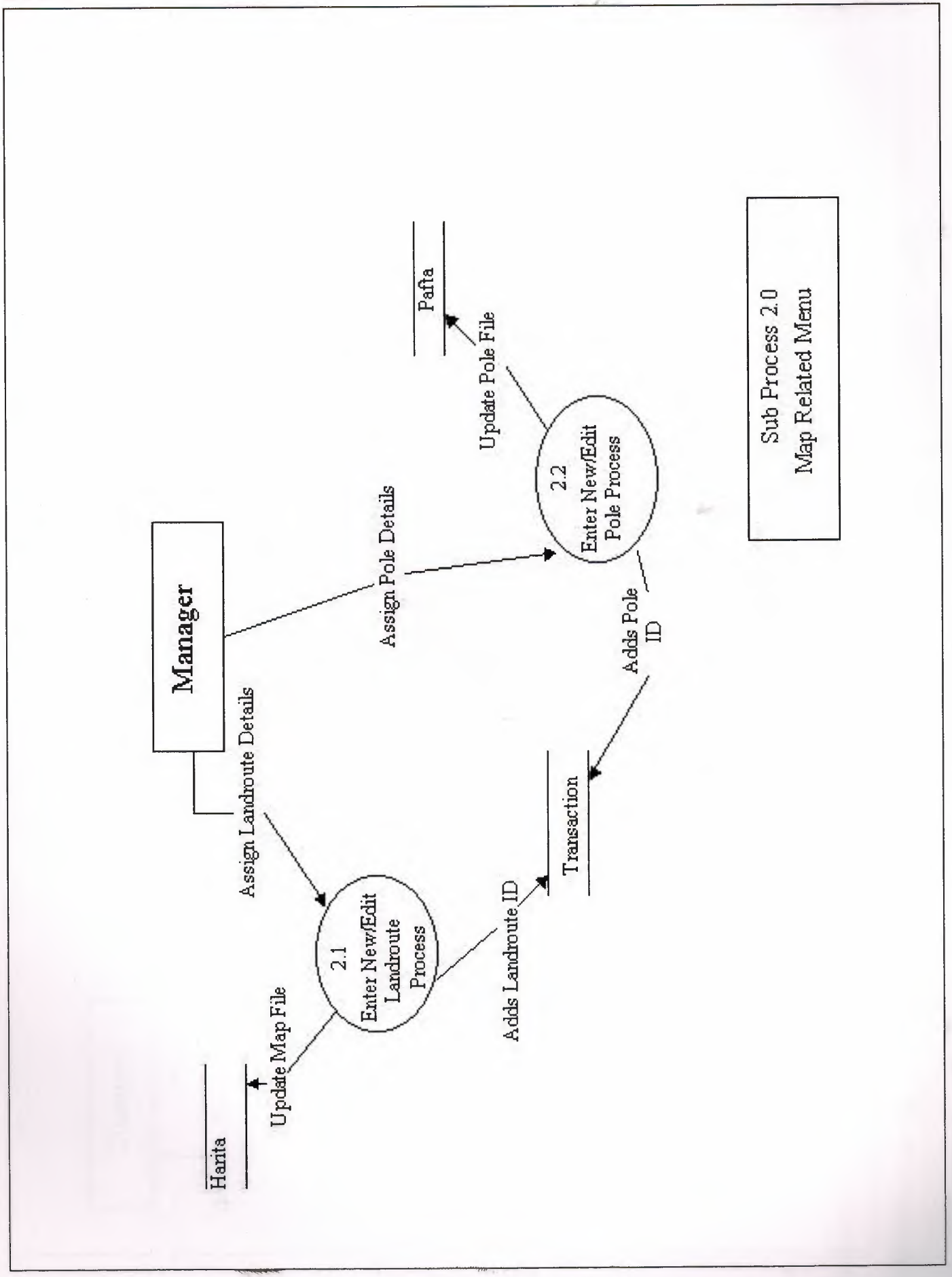

Manager
Assign Locations
Assign Business Deal
Assign Currency Types
Assign Property Types
Assign Business Types
Assign Commission Rate
Property Management System Context Diagram
Property Management System
Customer ID Issued
Print Preview/print Report
Input Customer Details
Assign Pole Details
Assign Correct Parameter values
Property Ref Issued
Assign Landroute Details
Gives Personal Info
Transaction Details Output
Input Transaction Details
Manager
Customer

DFD 2

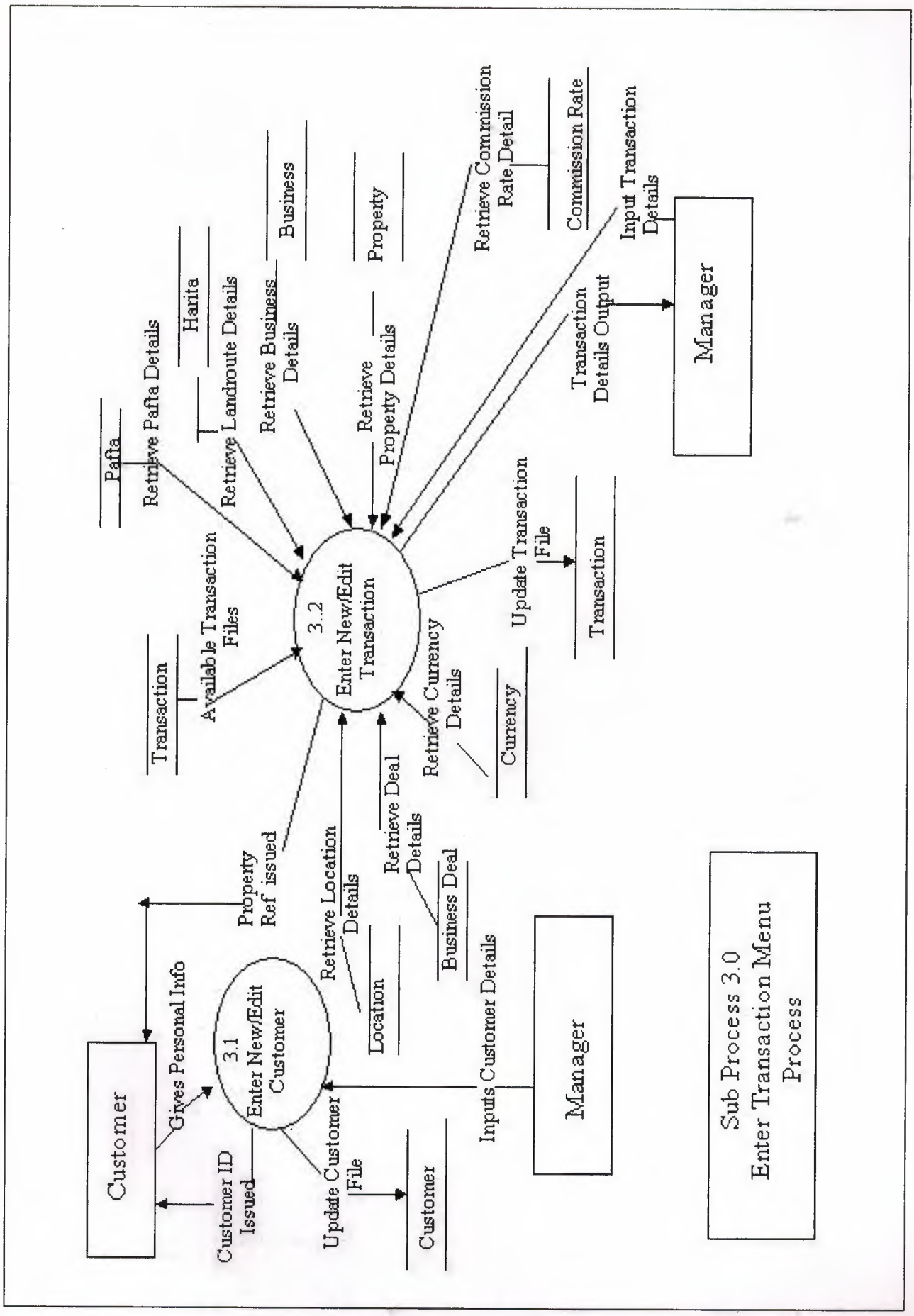

Transaction
Adds Currency ID
Adds Business ID
Adds Business Deal ID
Adds Property ID
Adds Location ID
Adds Commission ID
Business
Update Business File
Transaction
Adds Landroute ID
Manager
Update Property File
Location
Update Location File
Commission Rate
Adds Pole ID
Harita
Update Landroute File
Retrieve Lndroute Details
Transaction Details Output
Commission Rate
Input Customer Details
Property
1.0 Enter Business Menu Related Process
Update Commission File
2.0 Enter Map Related Menu Process
Pafta
Update Pole File
Retrieve Commission Rate Details
Transaction
Update Currency File
Currency
Update File
Business Deal
Retrieve Pole Details
Update Transaction File
Customer
Assign Property Types
Assign Business Deal
Assign pole Details
Available Business Data
Business
Retrieve Business Details
Available Transaction Files
Update Customer File
Assign Currency Types
Assign Business Types
Assign Commission Rate
Location
Retrieve Location Details
3.0 Enter Transaction Menu Process
Assign Locations
Business Deal
Retrieve Deal Details
Manager
Assign Landroute Details
Gives personal info
Available Currency
Currency
Retrieve Currency Details
Customer ID Issued
Input Transaction Details
Property Ref Issued
Retrieve Property Details
Customer
Print Preview/ Print Report
Available Properties
Property
Assign Correct parameter Values
4.0 Print/Preview Reports Process
Available Locations
Location
Property Management System
Main Data Flow Diagram
Available Landroute
Harita
Transaction
Retrieve Transaction Details
Available Pole
Pafta
Available Deals
Business Deal


Business
Update Business File
1.1
Enter New/Edit
Business Process
Manager
Assign Business
Types
Adds
Business ID
Manager
Assign Property Types
Property
Update Property
File
1.2
Enter New/Edit
Property Process
Adds
Property ID
Assign Locations
Location
Update Location
File
1.3
Enter New/Edit
Location Process
Adds Location
ID
Commission
Update Commission
File
1.4
Enter New/Edit
Commission
Assign Currency
Type
Manager
Transaction File
Adds Currency
ID
Currency
Update Currency
File
1.6
Enter New/Edit
Currency
Adds
Currency ID
Assign Currency
type
Manager
Adds
Business Deal
ID
1.5
Enter New/Edit
Business Deal
Assign Business Deal
Update Business
Deal File
Business Deal
Sub Process 1.0
[Enter Business Related Menu]

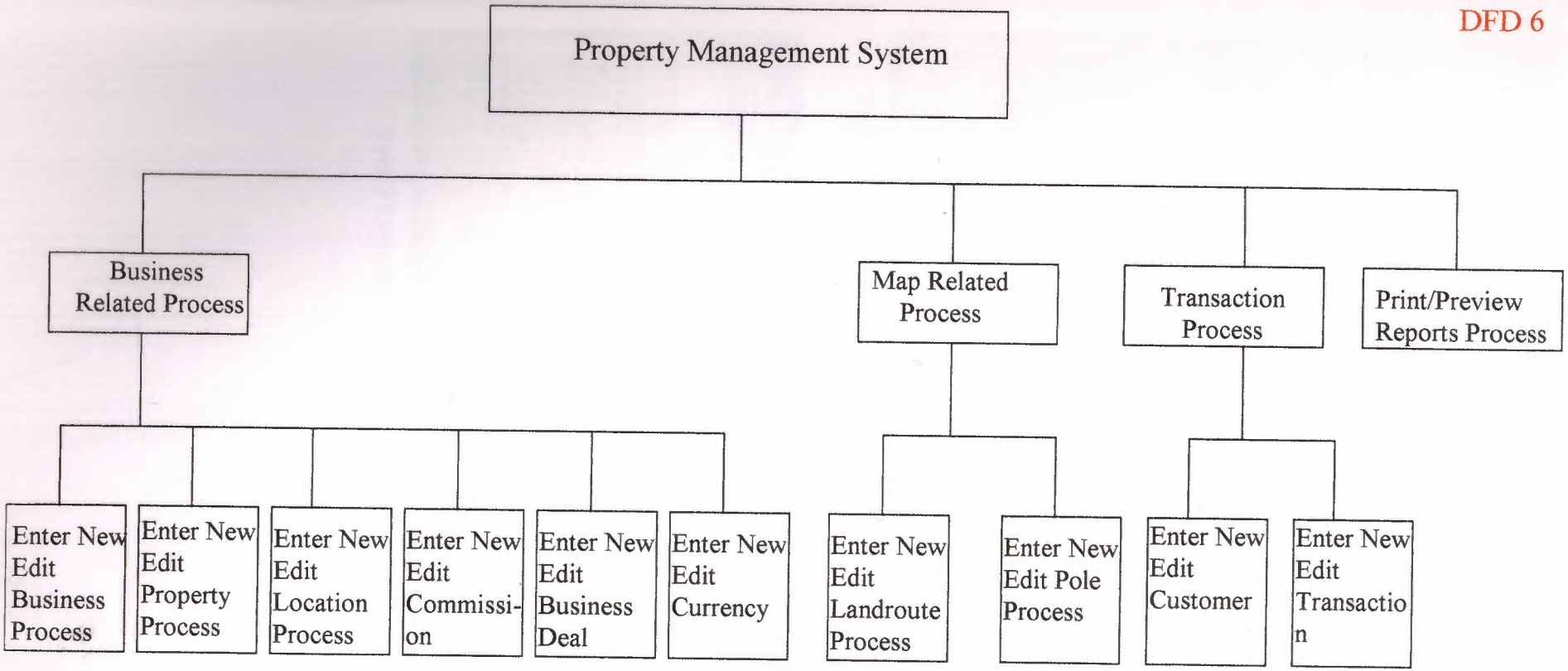
DFD 4


Manager
Assign Landroute Details
Assign Pole Details
Update Pole File
Pafta
Harita
Update Map File
2.1
Enter New/Edit
Landroute
Process
Adds Landroute ID
Transaction
Adds Pole
ID
2.2
Enter New/Edit
Pole Process
Sub Process 2.0
Map Related Menu

DFD5


Customer
Gives Personal Info
Customer ID Issued
3.1
Enter New/Edit Customer
Update Customer File
Customer
Property Ref issued
Retrieve Location Details
Location
Retrieve Deal Details
Business Deal
Inputs Customer Details
Manager
Sub Process 3.0
Enter Transaction Menu Process
Transaction
Available Transaction Files
3.2
Enter New/Edit Transaction
Retrieve Currency Details
Currency
Update Transaction File
Transaction
Pafta
Retrieve Pafta Details
Harita
Retrieve Landroute Details
Retrieve Business Details
Business
Retrieve Property Details
Property
Retrieve Commission Rate Detail
Commission Rate
Transaction Details Output
Input Transaction Details
Manager

DFD 6



System Block Diagram Of The Property Management System

4.1. System Block Diagram

DFD 6 Shows the system as whole as a hierarchical model.

4.2. Creating Tables

The Property Management System consists of 10 Tables. Illustrations of each of the tables are shown below. Each table has to have a Primary Key which is shown by a key next to the field.

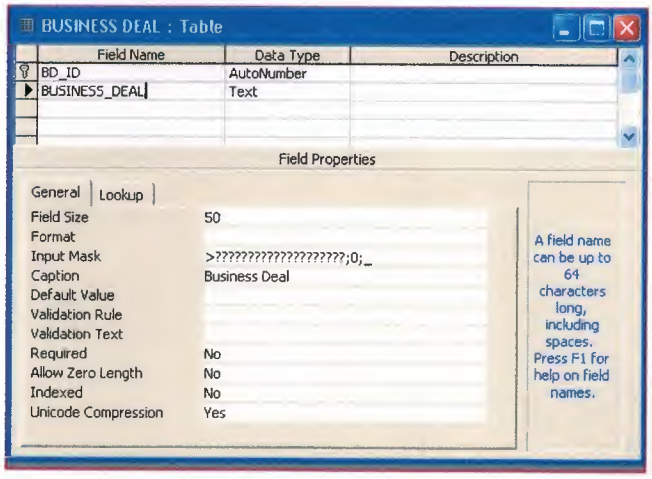


Table 1 Business Deal & Properties

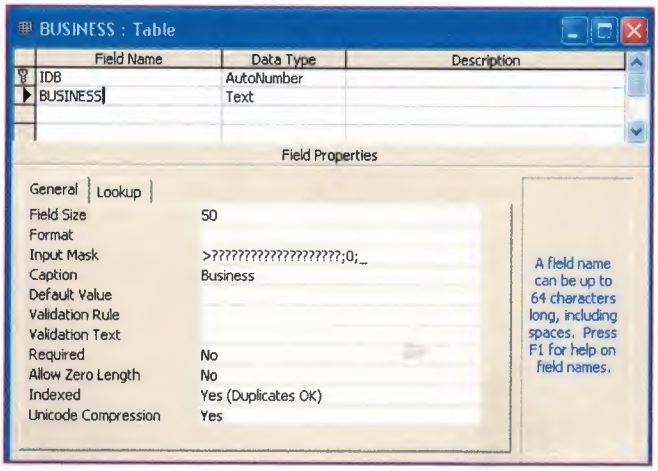


Table 2 Business & Properties

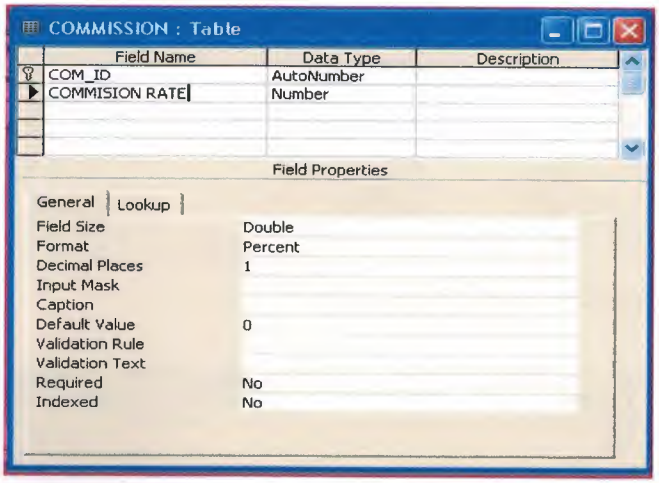


Table 3 Commission & Properties

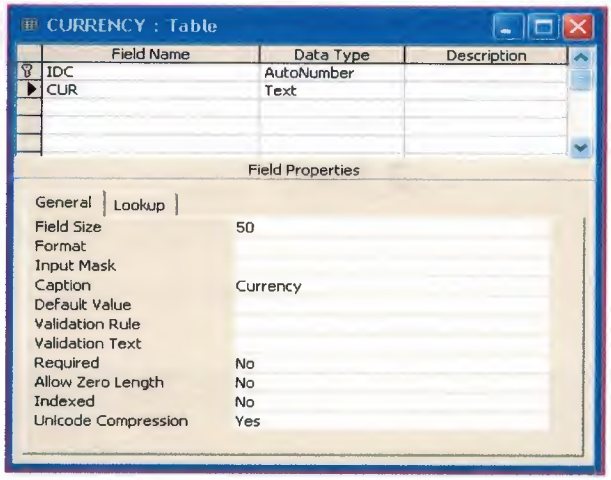


Table 4 Currency & Properties

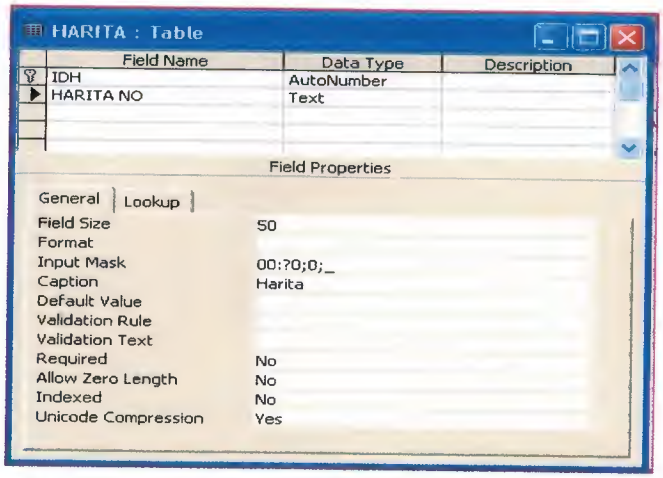


Table 5 Harita & Properties

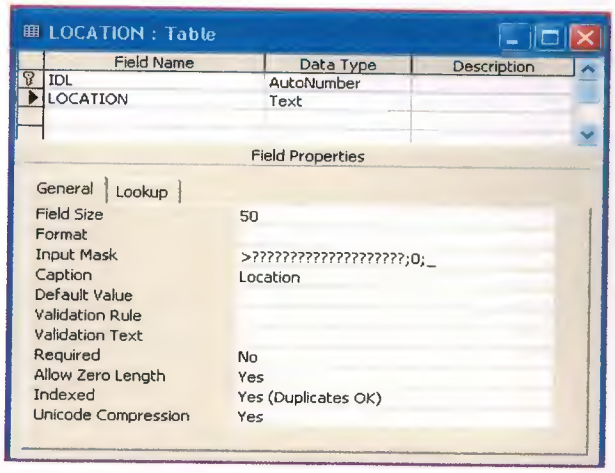


Table 6 Location & Properties

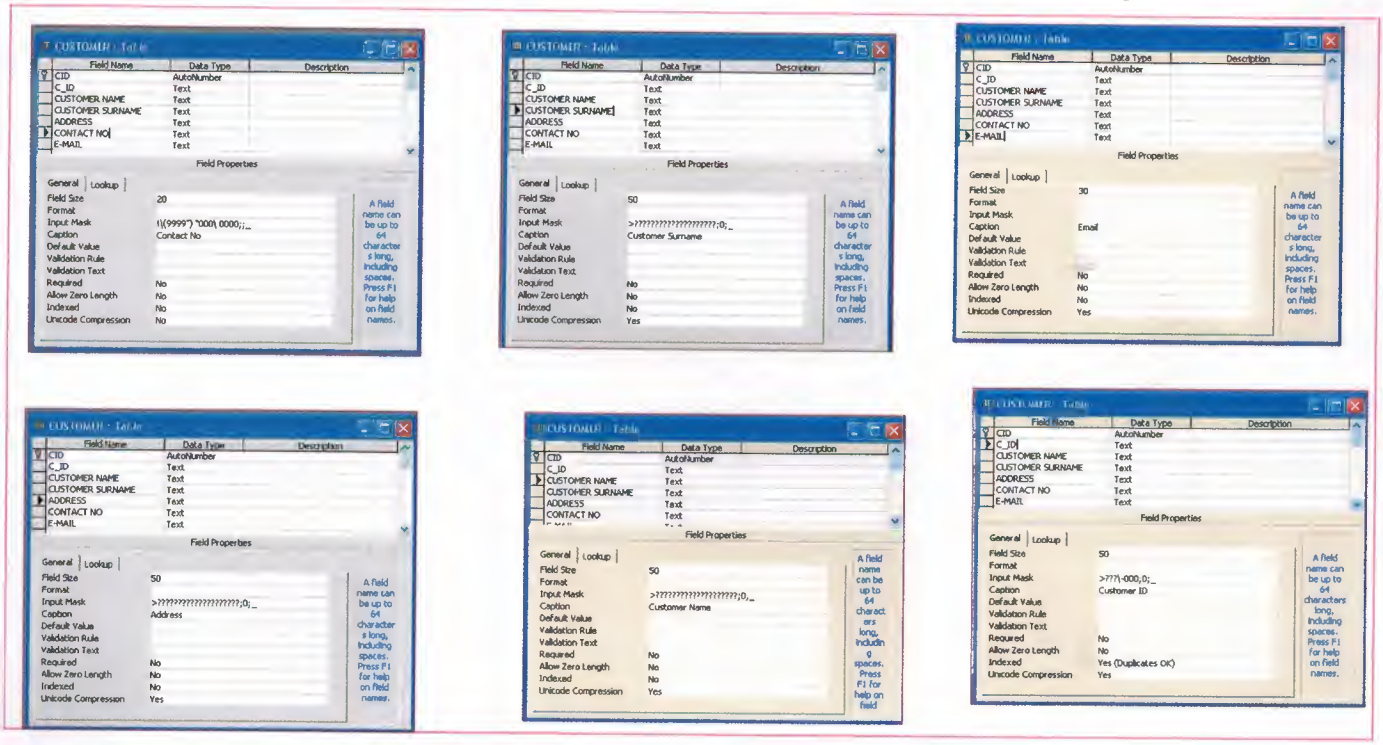


Table 7 Customer & corresponding Properties for each field

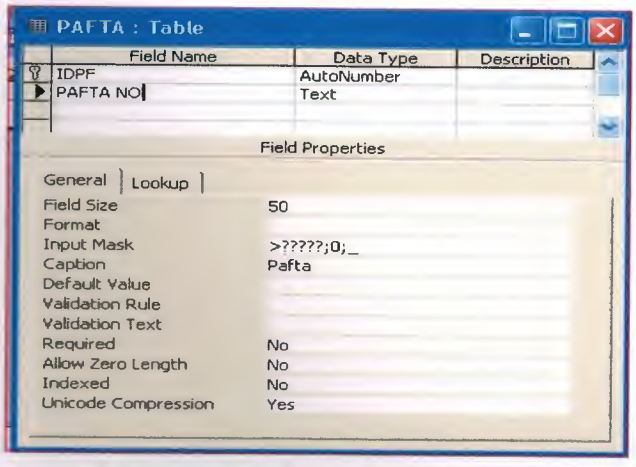


Table 8 Pafta & Properties

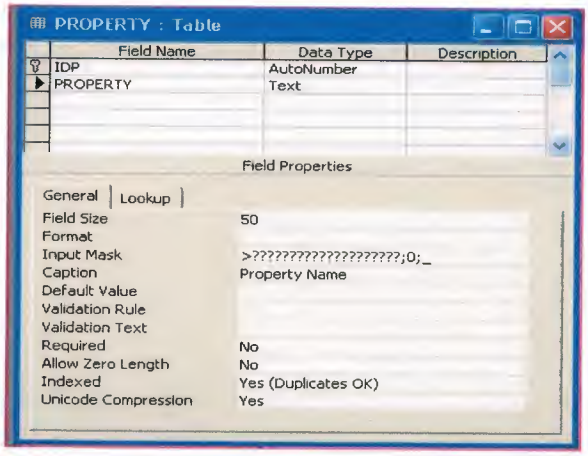


Table 9 Property & Properties

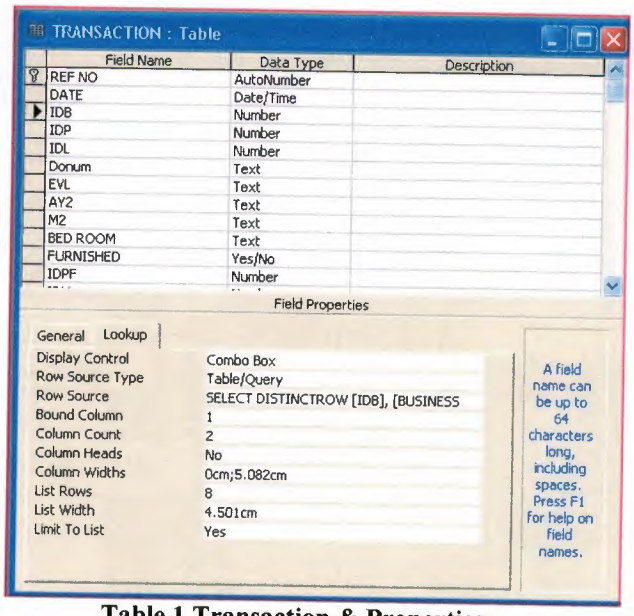


Table 1 Transaction & Properties

Each field in a table has corresponding properties as shown for table 7 [Customer]. They have the General and Lookup Properties.

Table 10 shows the Lookup properties for Field Name IDP showing that the field in the table is designed as a Combo Box.

Tables are used & designed by the programmers. The end users should not interact with this interface.

4.3. Relationship of Tables

After you've set up different tables for each subject in your Microsoft Access database, you need a way of telling Microsoft Access how to bring that information back together again. The first step in this process is to define relationships between your tables. After you've done that, you can create queries, forms, and reports to display information from several tables at once. For example, this form includes information from ninetables: (5 are shown. All list Box entries are data retrieved from the corresponding tables. List Box has an arrow adjacent to the box.)

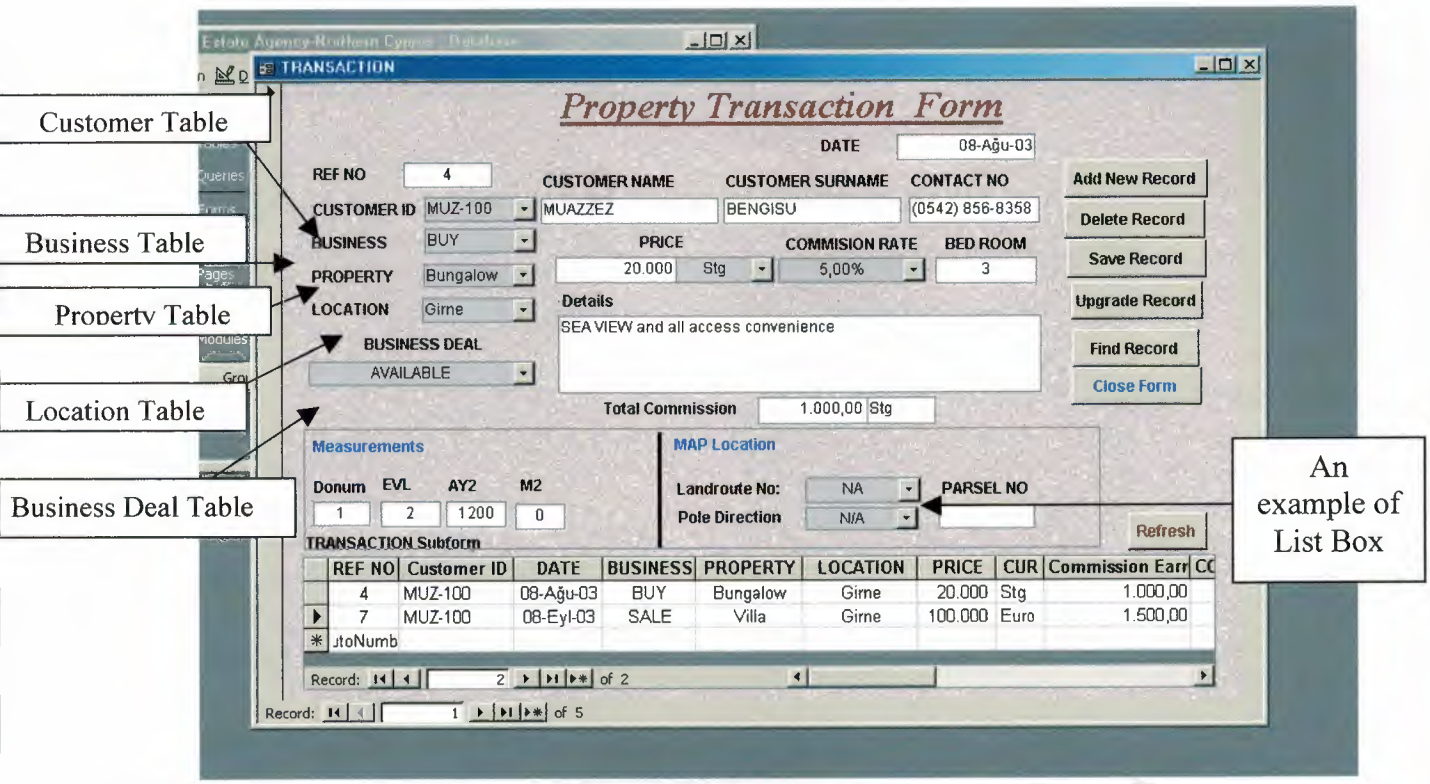


Figure 7.1b Property Transaction Form

As you can see nine of the tables are all joined with their Primary & corresponding Foreign Keys to the Main Table 10. which is the transaction table which makes The Property Transaction Form Figure 7.1b.

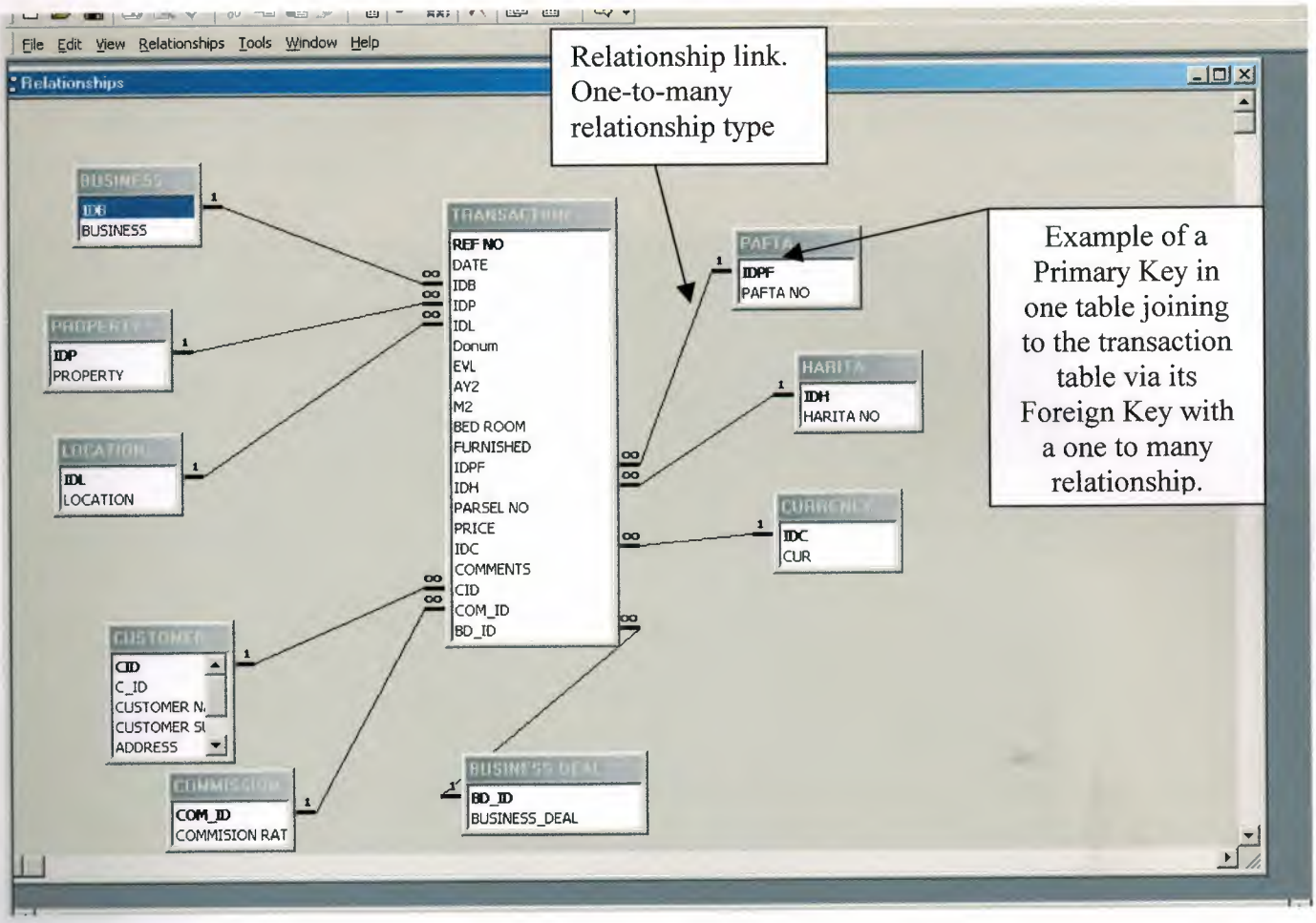


Figure 9 RELATIONSHIPS

4.4 How do relationships work?

The fields in the ten tables must be coordinated so that they show information about the same order. This coordination is accomplished with **relationships** between tables. A relationship works by matching data in key fields — usually a field with the same name in both tables. In most cases, these matching fields are the **primary key** from one table, which provides a unique identifier for each record, and a **foreign key** in the other table. For example, customer can be associated with Ref No's they're assigned for by creating a relationship between the Customer's table and the Transaction table using the CID fields.

primary key One or more fields (columns) whose value or values uniquely identify each record in a table. A primary key cannot allow Null values and must always have a unique index. A primary key is used to relate a table to foreign keys in other tables.

foreign key One or more table fields (columns) that refer to the primary key field or fields in another table. A foreign key indicates how the tables are related. The data in the foreign key and primary key fields must match, though the field names do not have to be the same. For example, the Transaction table might contain the foreign key CID, which relates to the primary key CID in the Customers table.

5. USER MANUAL

1. In order to gain access to the Real Estate Agent Program you Must First click the shortcut on the Desktop.

Figure 2. Desktop

Click This Shortcut
Located in your Desktop

2. Straight after the Password Box appears. You must type in the correct password to enter in to the Database Environment.

Enter Correct Password
Assigned by your Admin.

Figure 3 Password Dialogue Box

3. [The Switchboard Manager is used to create the switchboard which makes it easy to navigate between the forms and reports in an Access Database. A preview of the main switchboard is shown below.]

At the next stage the programs main menu appears. Here you have a list of options to choose from.

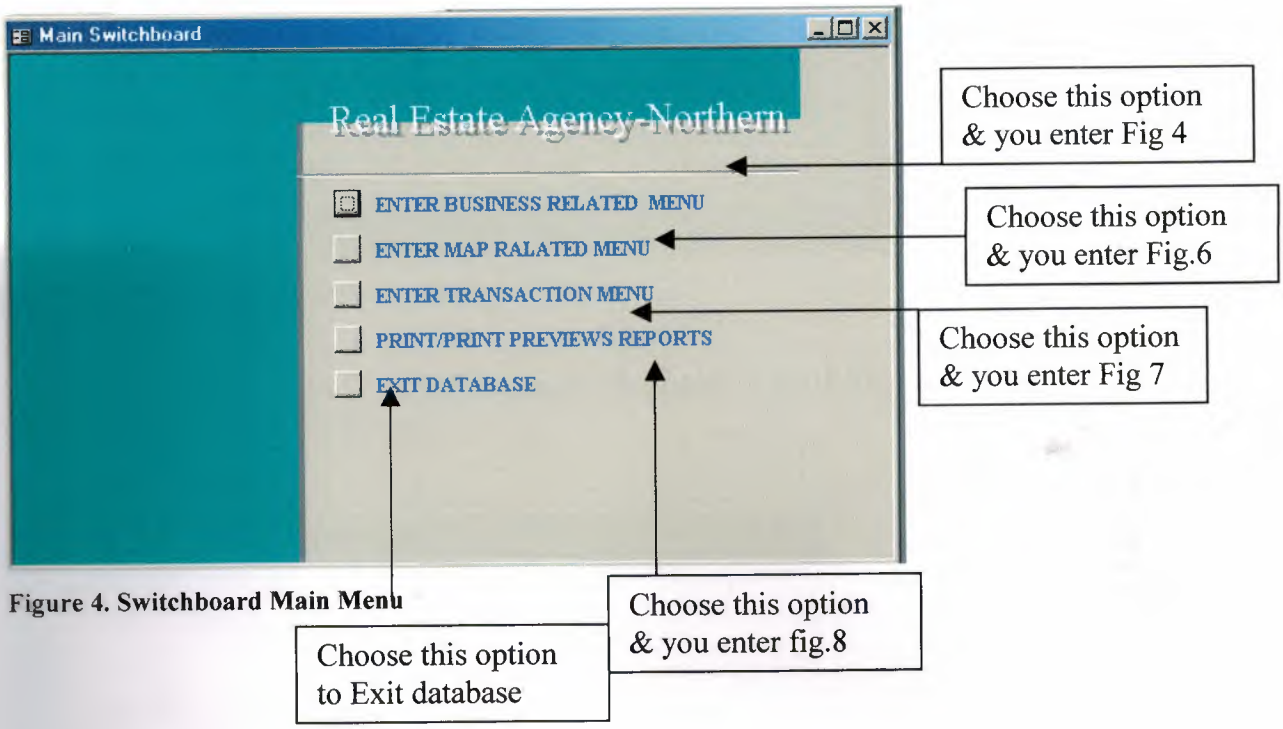


Figure 4. Switchboard Main Menu

4. [Enter Business Related Option] This section deals with inputting the Estate Agents Business related Data which is assigned and determined by the manager as a task to the User's of the Program.

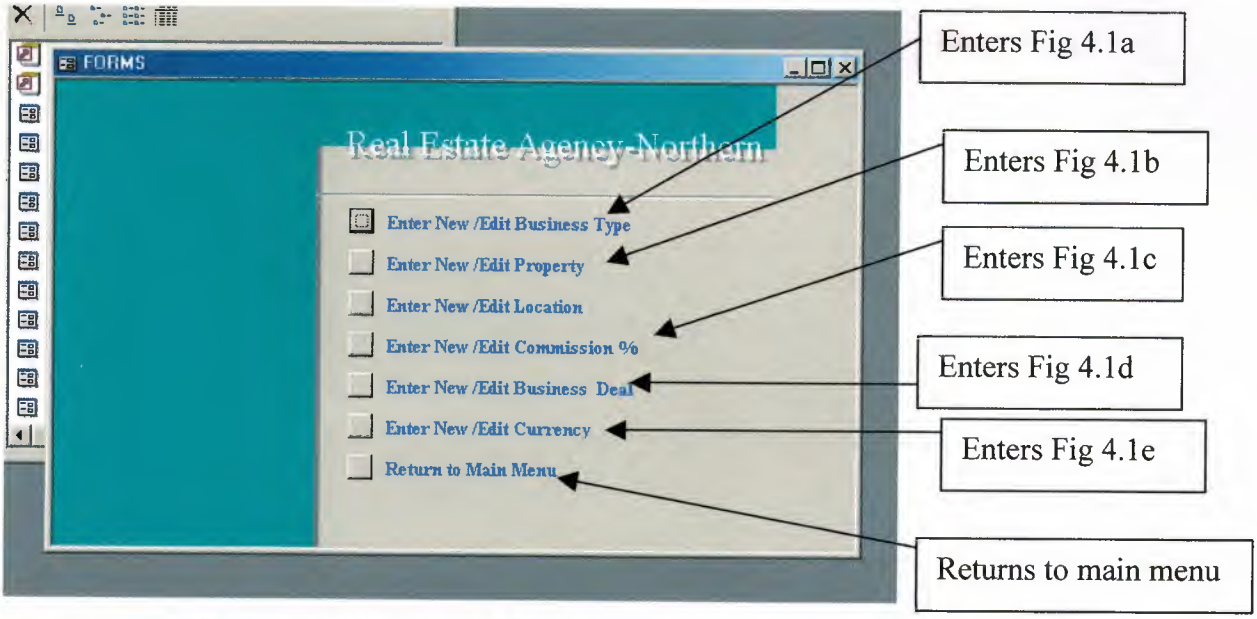
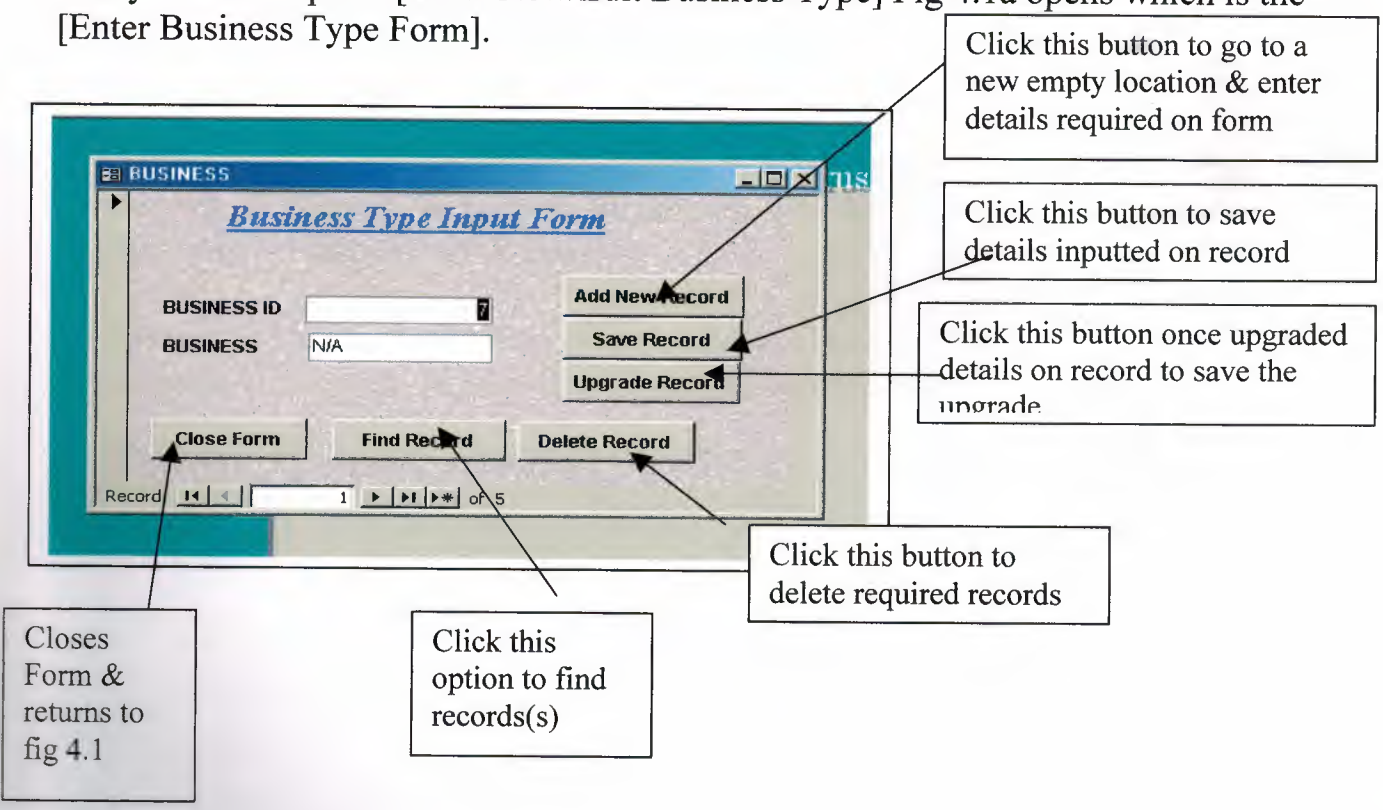


Figure 5.1 Business Related Menu

5. If you select option [Enter New/Edit Business Type] Fig 4.1a opens which is the [Enter Business Type Form].



6 The Find Dialogue Box is as follows.

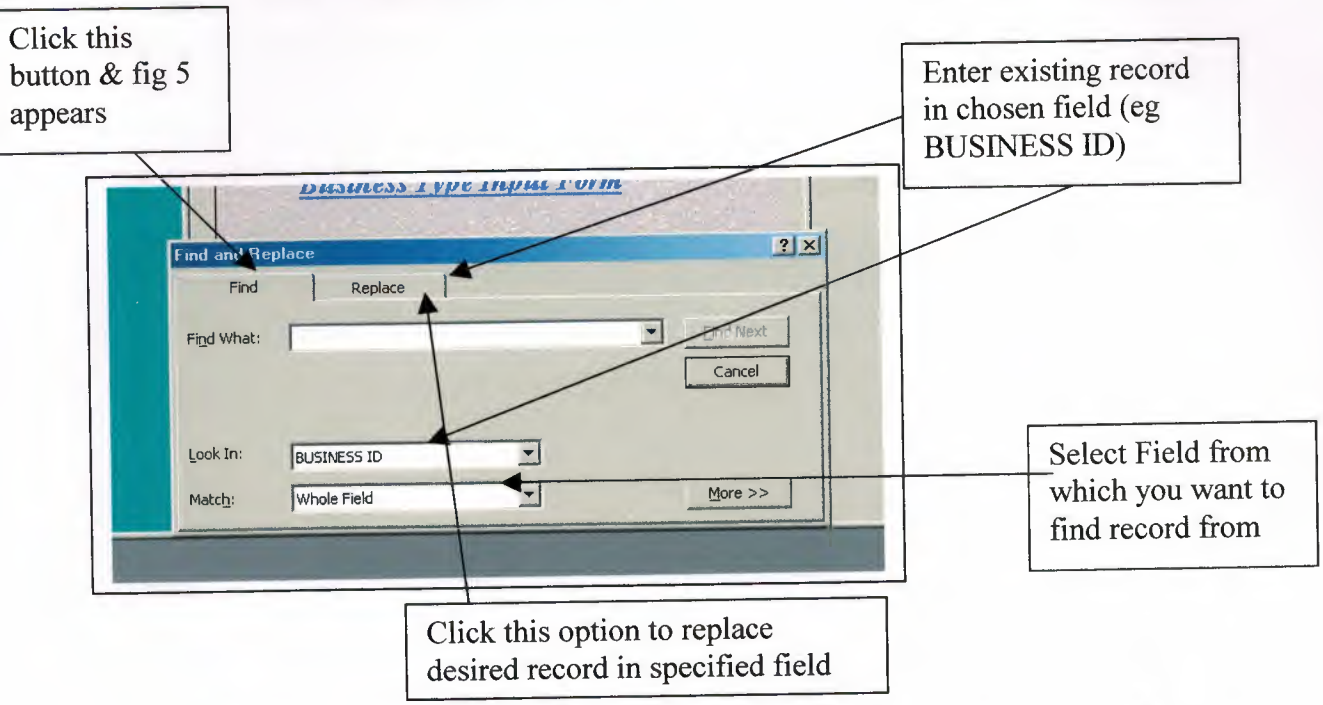


Figure 6. Find Dialogue Box

6. Select option [Enter New/Edit Property] to input property types you deal with at the Estate Agency. These property types will then be listed in the transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

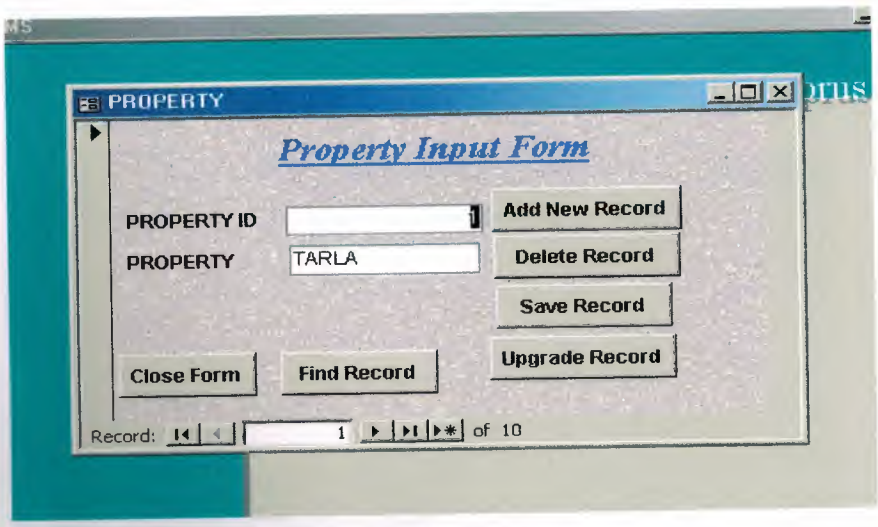


Figure 4.7b Property Input Form

7. Select option [Enter New/Edit Location] to input Locations that you will deal with at the Estate Agency. These Property types will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

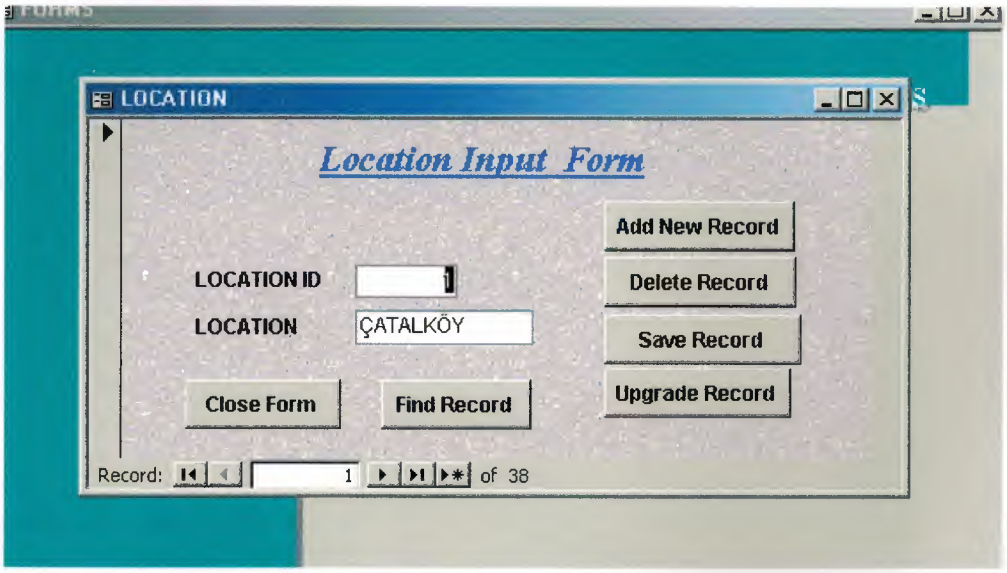


Figure 4.1c Location Input form

8. Select option [Enter New/Edit Commission] to input Commission Rates that you will deal with at the Estate Agency. These commission rates will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

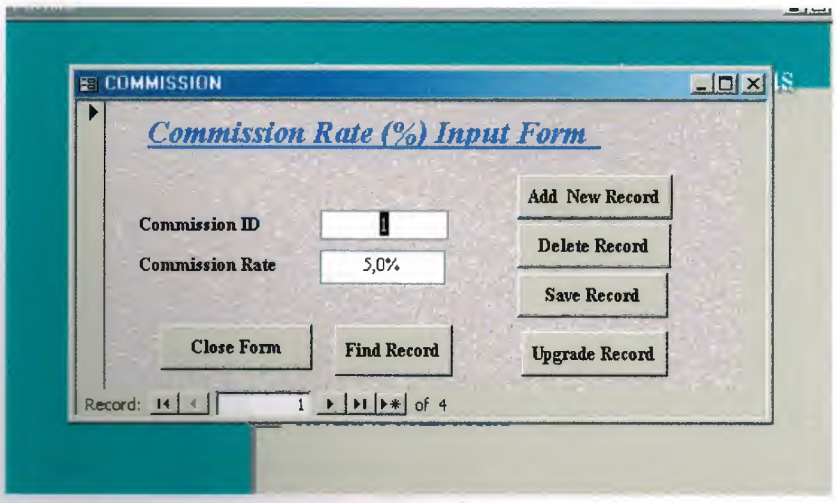


Figure 4.8d Commission Rate Input Form

9. Select option [Enter New/Edit Business Deal] to input Business Deals that you will deal with at the Estate Agency. These Business Deal types will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

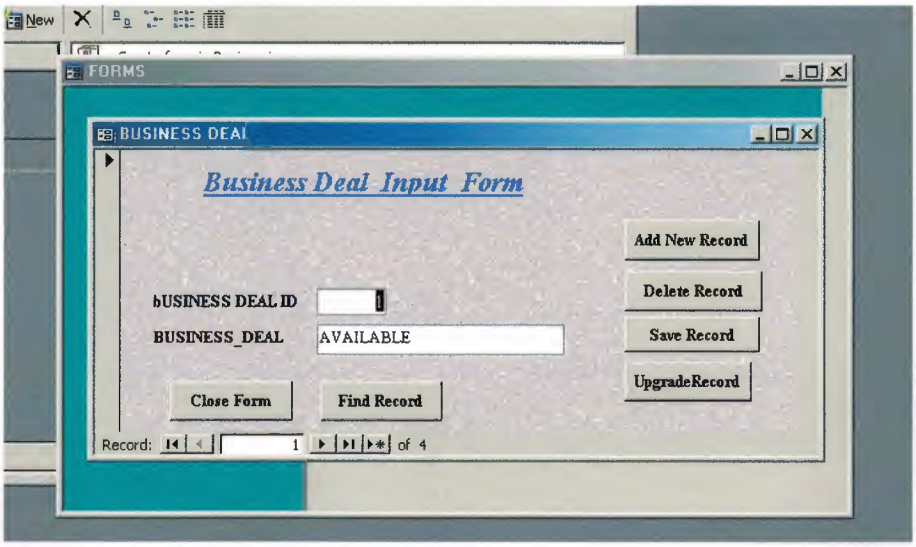


Figure 4.1e Business Deal Input Form

10. Select option [Enter New/Edit Currency] to input Currency types that you will deal with at the Estate Agency. These Currency types will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

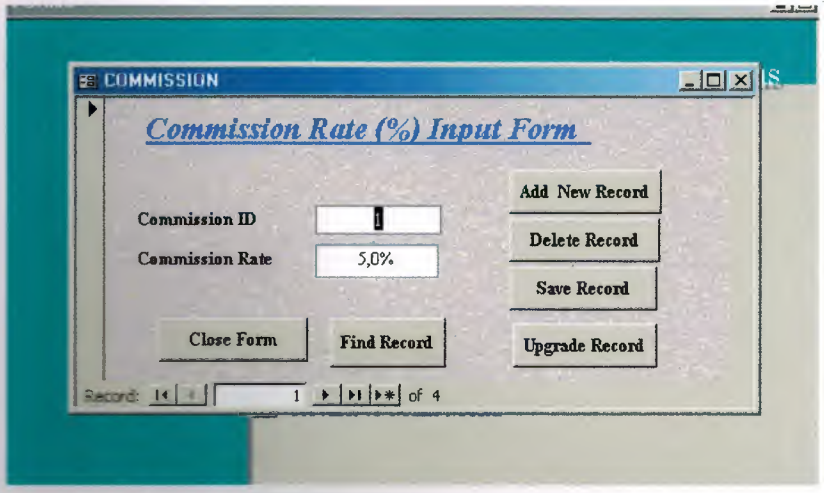


Figure 4.1f Commission rate Input Form

11. Select option [Enter map related menu] to go to fig 6. Map related Menu. Here you can select to enter Landroute Input Form or Pole Input Form .

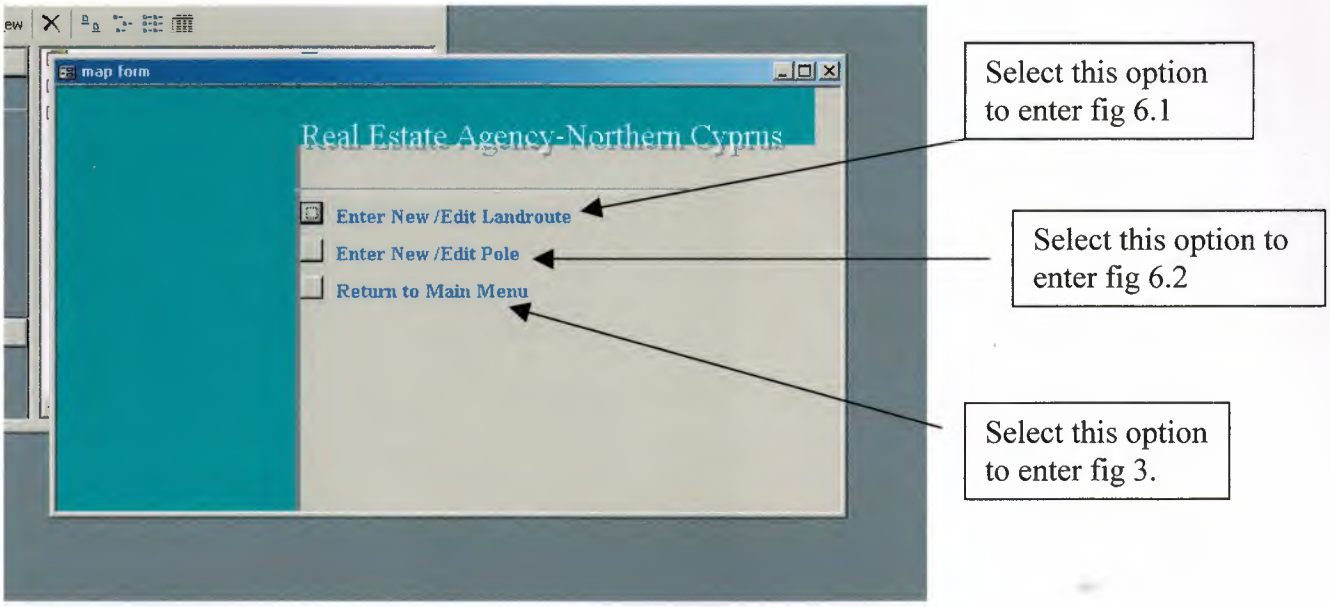


Figure 6 Map Related Menu

12. Select option [Enter New/Edit Landroute] to input Landroute No's available on a map that you will deal with at the Estate Agency. These Landroute Nos's will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

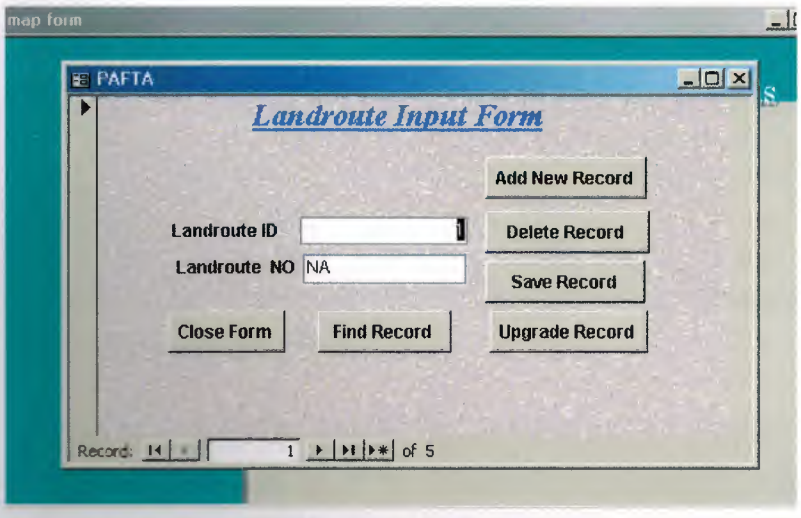


Figure 6.1a Landroute Input Form

13. Select option [Enter New/Edit Pole] to input Pole No's available on a map that you will deal with at the Estate Agency. These Pole Nos's will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

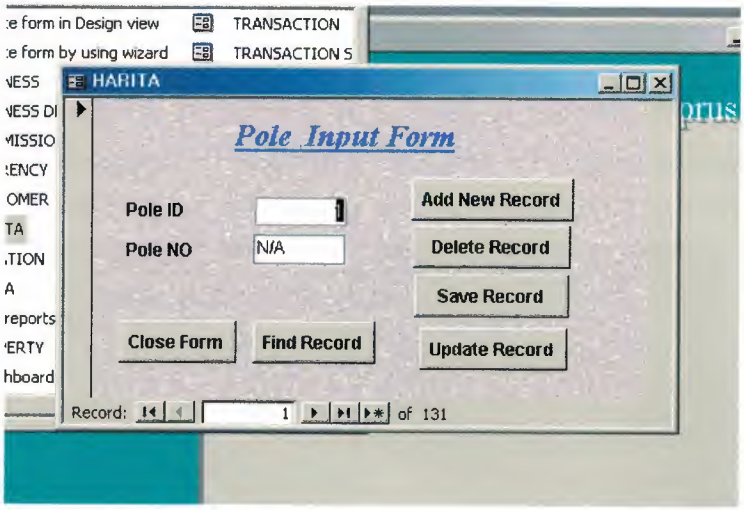


Figure 6.9b Pole Input Form

14. Select option [Enter Transaction Menu] to go to Fig 7 from main switchboard.

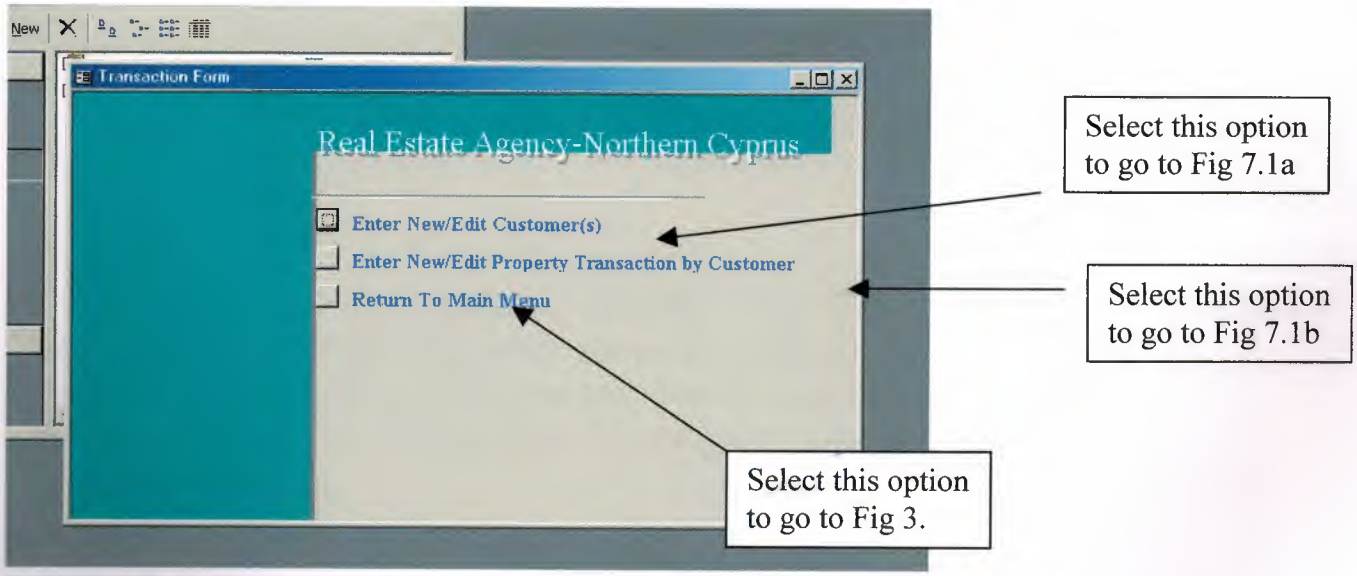
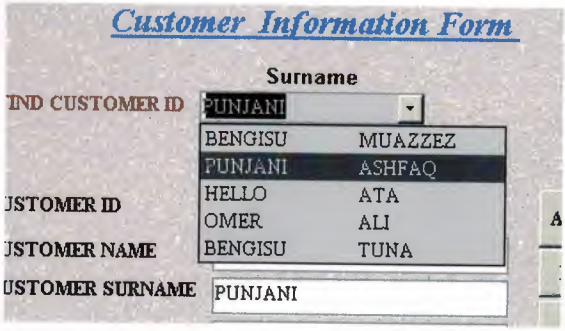


Figure 7.10 Transaction Menu

15. Select option [Enter New/Edit Customer(s)] to input Customer Details. The Customer ID's will then be used in the transaction form fig 7.1b and selected from the listbox. Customer details will then be displayed by auto lookup.



The form is also designed to find Customer ID by surname and name. For example a Customer phones up and wishes to enquire about his or her property but he has forgotten his Customer ID. The user of the program enters this form and types in the surname and finds the corresponding name(s), (more than one person can have the surname) and then selects the applying surname & name. The details including unique Customer ID are displayed in the record fields

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

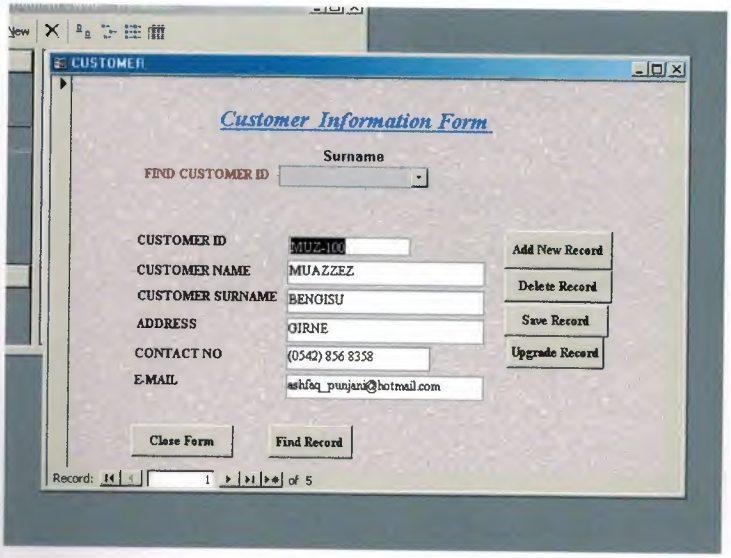


Figure 7.1a Customer Information Form

16. Select option [Enter New/Edit Transaction By Customer] to Fill out the Property Transaction Details when a customer comes to the Estate Agency.
{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

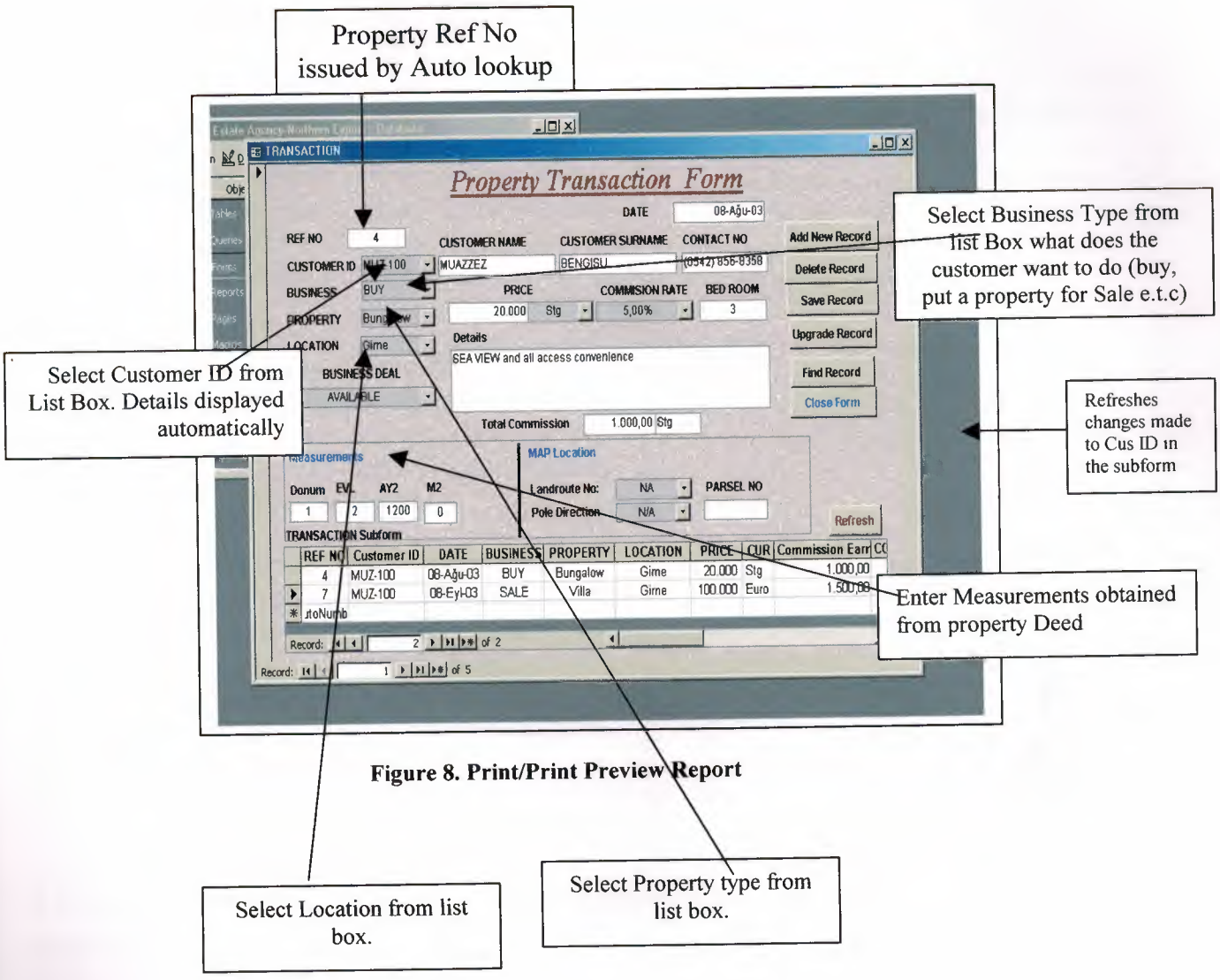


Figure 8. Print/Print Preview Report

Business type is selected from list to determine what business transaction is to be made. For Sale, Buy, Vendor or Tendant.

For Sale: The Customer wants to put property on sale. Deed info is entered & commisssion rate, & property info. In Business Deal **Available For Sale** is selected. Once Sold, record is found and **Sold** is selected in Business Deal and upgraded.

Buy: Customer is looking for property to buy. Details entered. Measurement & Map location is not entered. NA is chosen for landroute & pole. In business Deal **Still looking for** is selected. Once they have bought a property **Bought** is selected from Business Deal List.

Vendor: This option is selected from the list box when a customer is the landlord of the property and is putting the property for rent. Hence **For Rent** is selected in the Business Deal list box. Measurements and Map Location not needed to be filled out. Once property is rented the Business Deal is changed to **Rented** and hence upgraded.

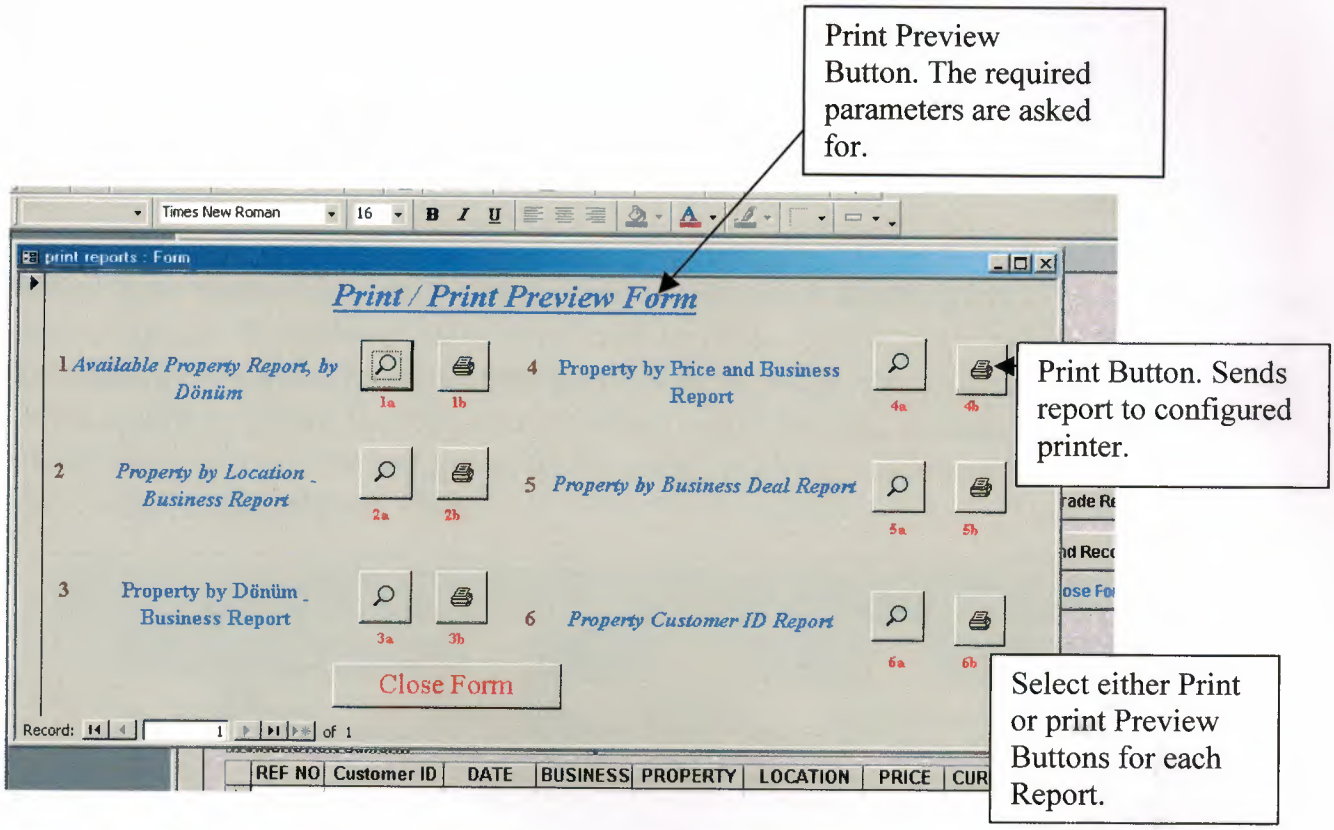
.

Tendant: This option is selected when a customer wishes to rent out a property. Details of property type, location and what price they are willling to pay monthly are filled out on the form. In Business Deal list box **Still looking for** is selected. Once the Customer has rented a property this is changed to **Rented.**

If in the Business List box the Customer has not decided what to do with his/her property "Undecided" should be selected and Not Applicable in the Business Deal list box.

The sub-form displays all the associated Ref No's for each Customer. You can change the Customer ID for given transaction details if any external changes are made to the property (i.e owner changes). Select from list & Refresh.

17. Select option [Print/Print Preview Reports] to gain access to the various reports available with the program.



This section provides the user with various reports based on the details that they have inputted in the Transaction Form. These reports were designed on the demands of the Estate Agency. What info & Reports that they need to make effective decisions on the business.

1. This report gives details on all available properties either Available For Sale, Available for Rent. We choose the property type we want to see report on.

2. Shows all Properties by Business and location. For example all Sale Properties in Girne, or all Vendor properties in ozankoy.

3. This report shows all properties in the given range of Donum measurements.

4. This report shows all the properties in the defined price range and business within the business.

5. This report shows all the properties by chosen business deal, and hence the commission earned.

6. This report shows all the details available with the associated Customer ID in the transaction form.

Example of each Report is attached on the following pages.

Reports are made using the Queries Tool in access. A select query is the most common type of query. It retrieves data from one or more tables and displays the results in a datasheet where you can update the records (with some restrictions). You can also use a select query to group records and calculate sums, counts, averages, and other types of totals. However we are not going to view the results in datasheet view in normal view, and we have grouped our Data.

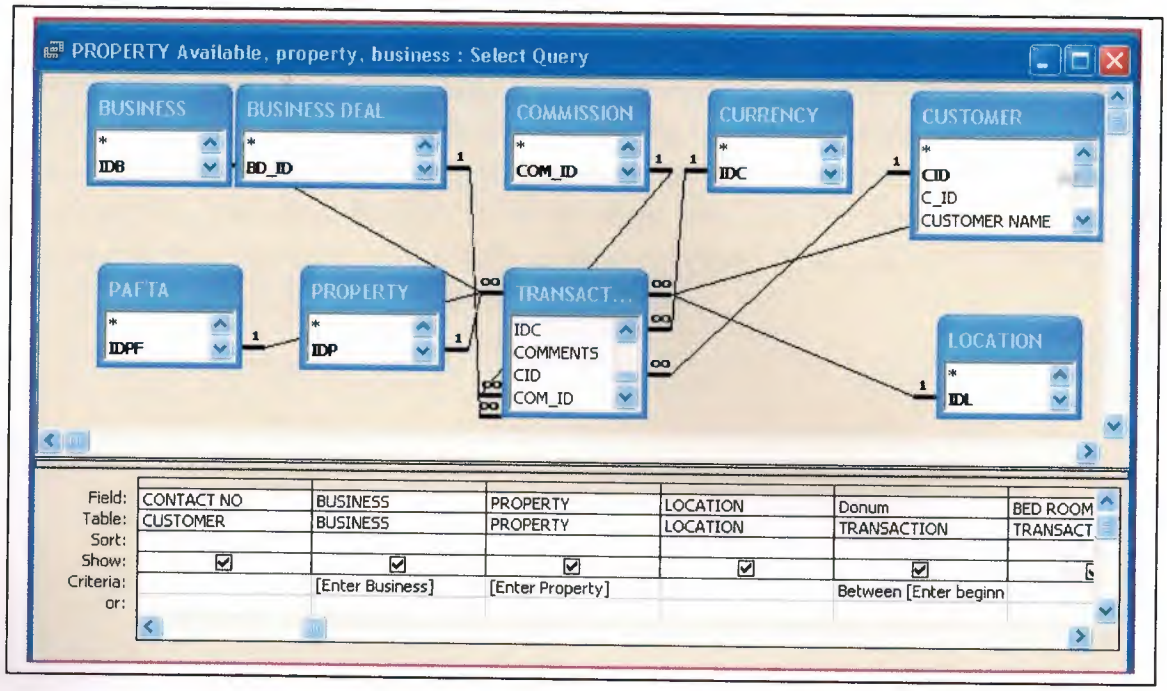


Figure 110 An Example Of Query in Design View

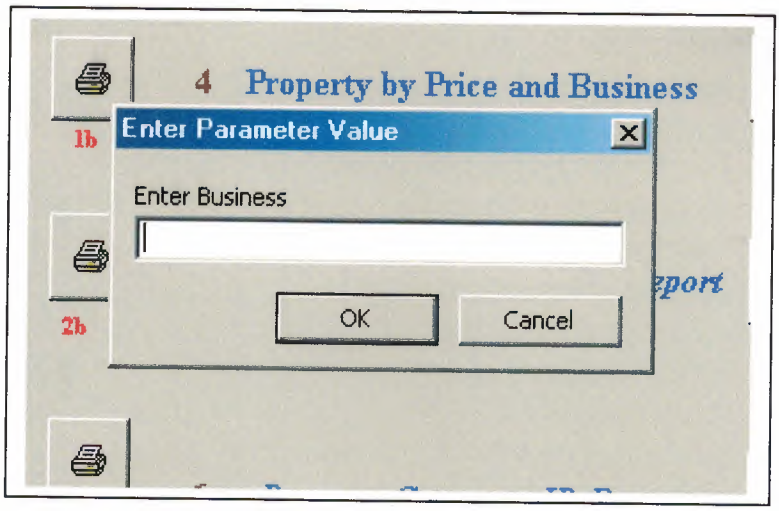


Figure 11 Example of a Parameter Query box

A parameter query is a query that when run displays its own dialog box prompting you for information, such as criteria for retrieving records or a value you want to insert in a field. You can design the query to prompt you for more than one piece of information; for example, you can design it to prompt you for Property & Location. Microsoft Access can then retrieve all records in that property & location

REPORT BY CUSTOMER ID

CUATOMER ID TUN-100

Ref No	Location	Date	Business	Property	Name	Surname	Contact	Bed(s)	Price	Don	EVL	AY2	M2	Com. Rate	Com. Earn
15	OZANKOY		FOR SALE	BUNGALOW	TUNA	BENGISU	(0542) 856-8358	3	10,000 Stg	1	1	1200		0.0%	0.00

Property by Price

BUSINESS FOR SALE

PROPERTY Bungalow

LOCATION OZANKOY

Ref No	Date	CID	Bed(s)	PRICE		Donum	EVL	AY2	M2	Pafta	Harita	Parsel	Commission Rate	Comments	Commission Earn
15		TUN-100	3	10,000	Stg	1	1	1200		NA	N/A		0.0%	GOOD MOUNTAIN VIEW	0

PROPERTY Ev

LOCATION Girne

Ref No	Date	CID	Bed(s)	PRICE		Donum	EVL	AY2	M2	Pafta	Harita	Parsel	Commission Rate	Comments	Commission Earn
14		GUL-100	3	50,000	Stg					NA	N/A		0.0%	SOSYAL KONUKLAR	0

PROPERTY Villa

LOCATION Girne

Ref No	Date	CID	Bed(s)	PRICE		Donum	EVL	AY2	M2	Pafta	Harita	Parsel	Commission Rate	Comments	Commission Earn
16		GUL-100		500,000	Stg					NA	N/A		0.0%		0

Total Commission Earned **0**

Property By Location

BUSINESS FOR SALE

PROPERTY Bungalow

LOCATION OZANKOY

Ref No	Date	CID	Bed(s)	PRICE		Donum	EVL	AY2	M2	Pafta	Harita	Parsel	Commission Rate	Commission Earn	Comments
15		TUN-100	3	10,000	Stg					NA	N/A		0.0%	0.00	GOOD MOUNTAIN VIEW

Available Property

BUSINESS FOR SALE

PROPERTY Bungalow

BUSINESS DEAL AVAILABLE FOR SALE

Ref No	Location	Date	CID	Name	Surname	Contact	Bed(s)	Price	Don	EVL	AY2	M2	Commission Rate	Commission Earn
15	Ozanköy		TUN-100	TUNA	BENGISU	05428568358	3	10,000	Stg				0.0%	0.00

Propert Available by Donum

BUSINESS FOR SALE

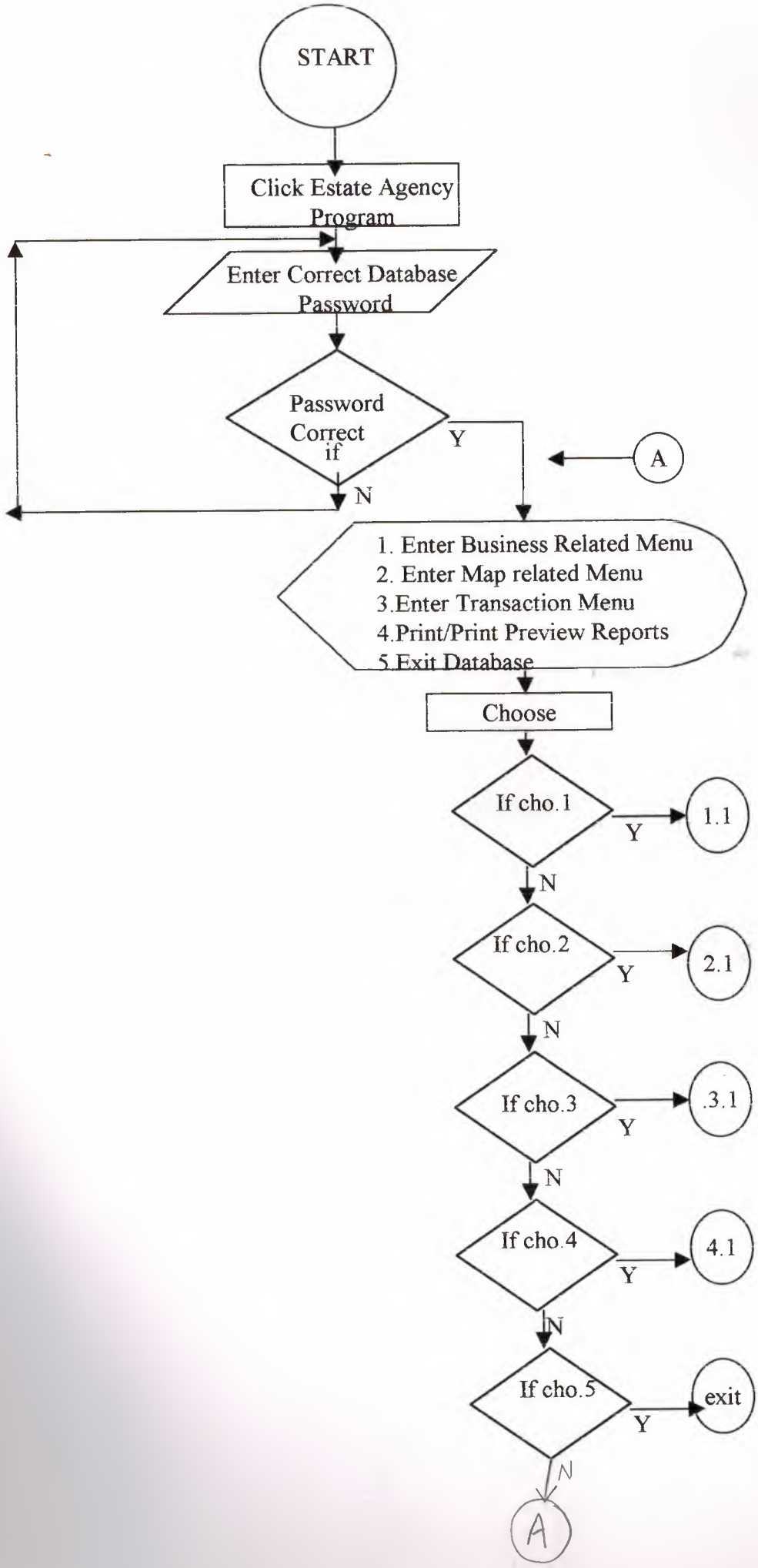
PROPERTY Bungalow

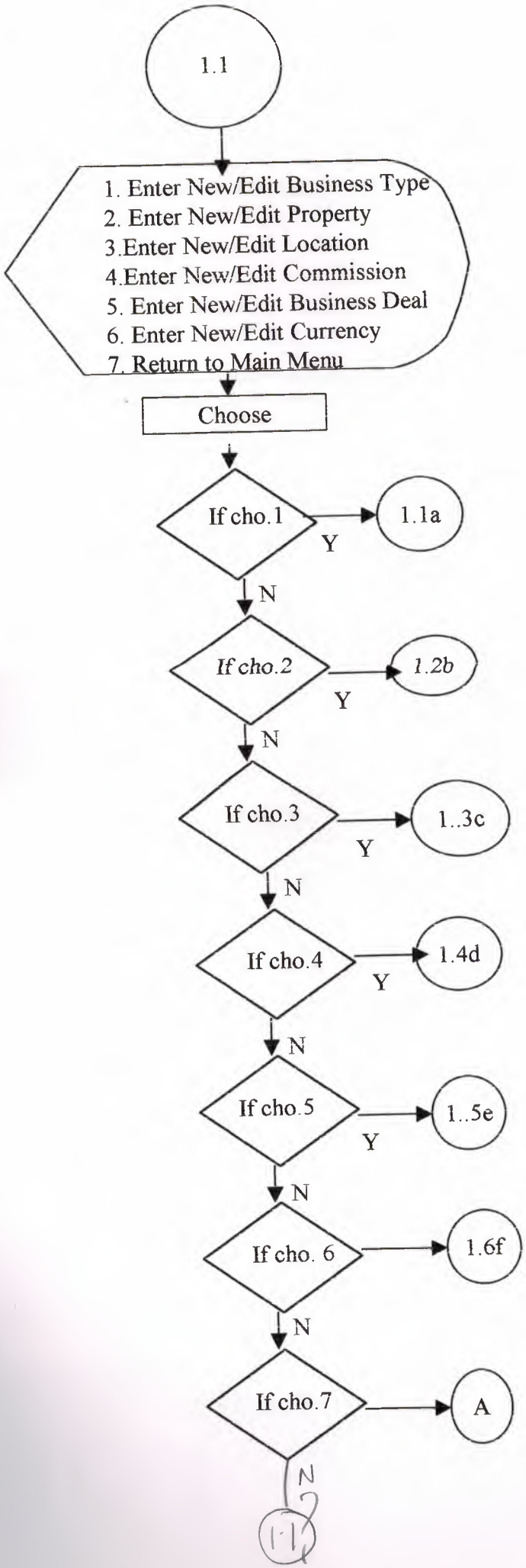
Donum 1

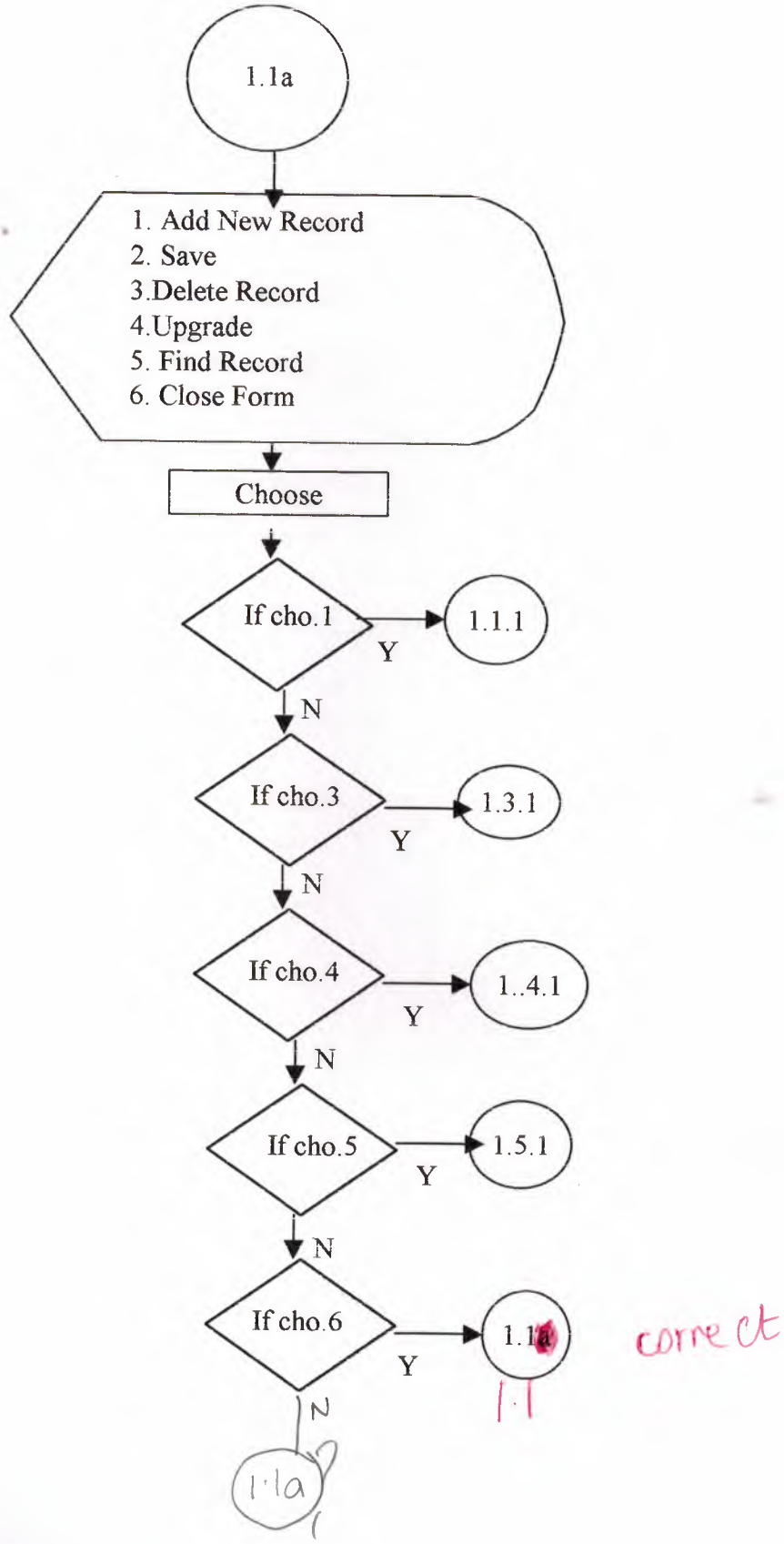
Ref No Date	CID	Location	Bed(s)	PRICE		EVL	AY2	M2	Pafta	Harita	Parsel	COMMISION RATE	Commission Earn
15	TUN-100	OZANKOY	3	10,000	Stg	1	1200		NA	N/A		0.0%	0
												Total Commission Earned	**0**

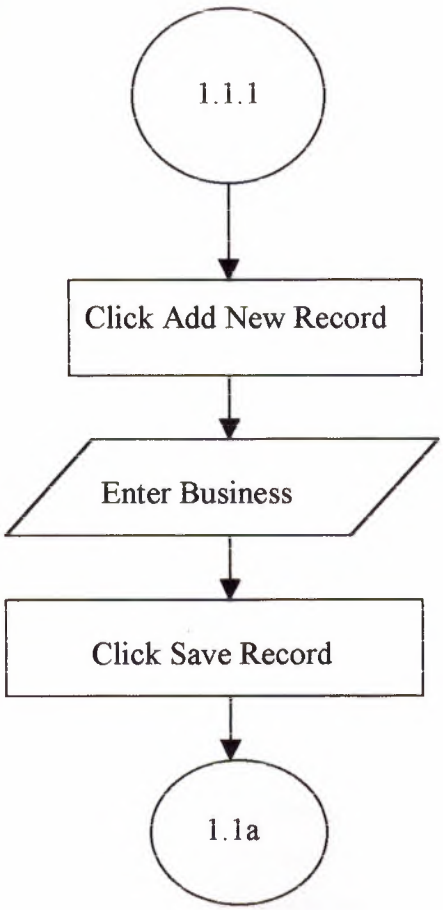
6. Program Flow charts

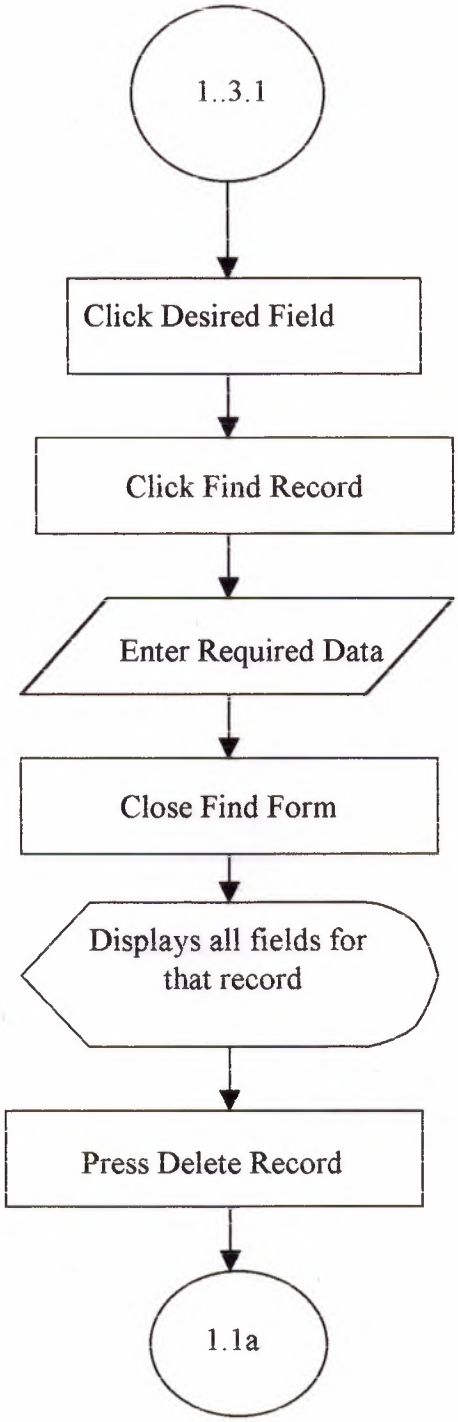
The following section describes how to use the program via User Flow charts

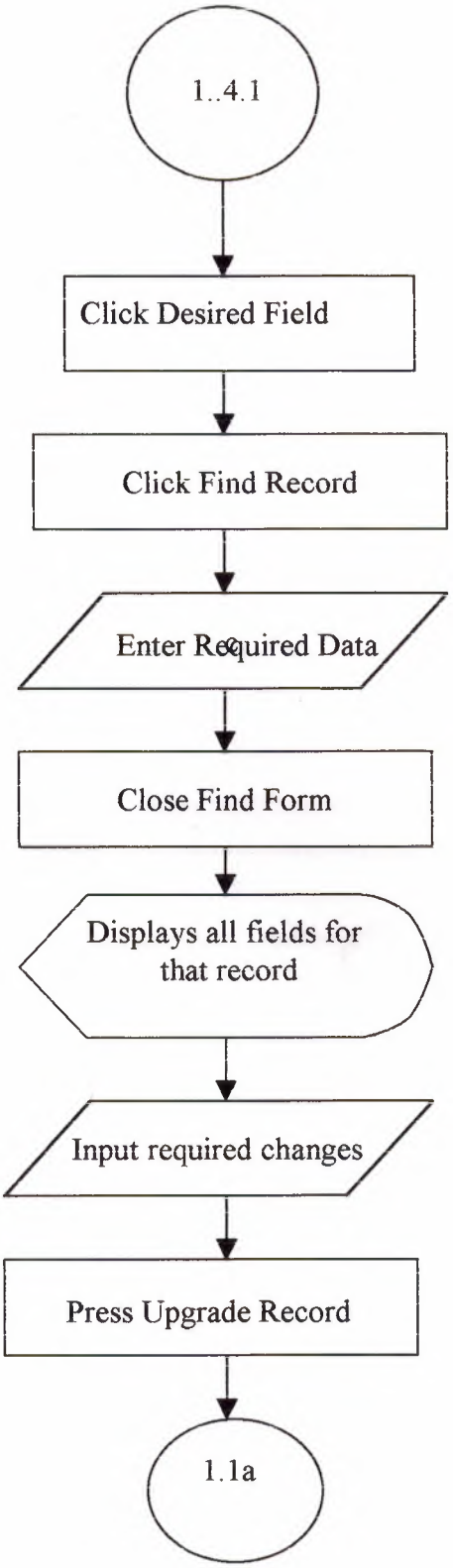

START
Click Estate Agency Program
Enter Correct Database Password
Password Correct if
Y
N
A
1. Enter Business Related Menu
2. Enter Map related Menu
3.Enter Transaction Menu
4.Print/Print Preview Reports
5.Exit Database
Choose
If cho.1
Y
1.1
N
If cho.2
Y
2.1
N
If cho.3
Y
.3.1
N
If cho.4
Y
4.1
N
If cho.5
Y
exit
N
A

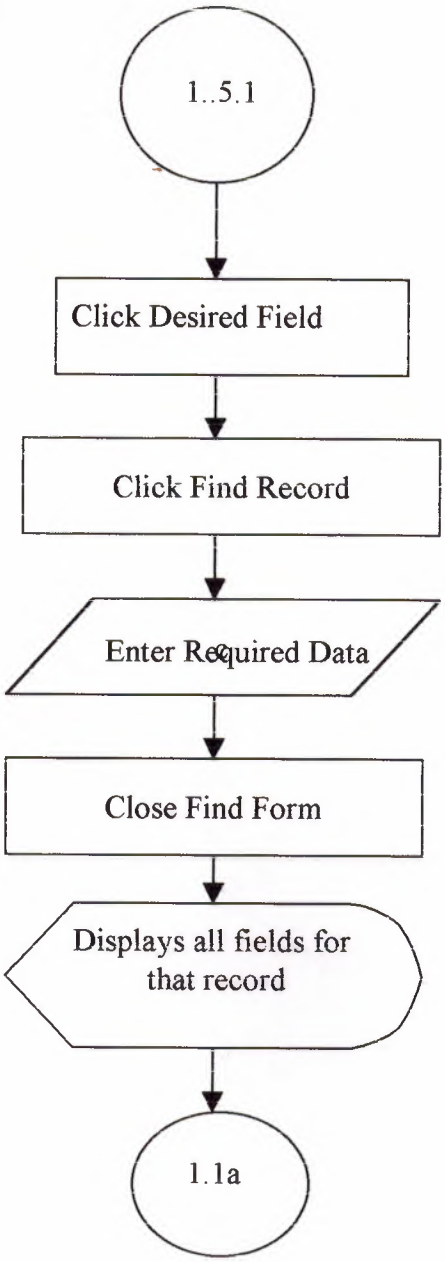

1.1
1. Enter New/Edit Business Type
2. Enter New/Edit Property
3.Enter New/Edit Location
4.Enter New/Edit Commission
5. Enter New/Edit Business Deal
6. Enter New/Edit Currency
7. Return to Main Menu
Choose
If cho.1
Y
1.1a
N
If cho.2
Y
1.2b
N
If cho.3
Y
1..3c
N
If cho.4
Y
1.4d
N
If cho.5
Y
1..5e
N
If cho. 6
1.6f
N
If cho.7
A
N
1.1

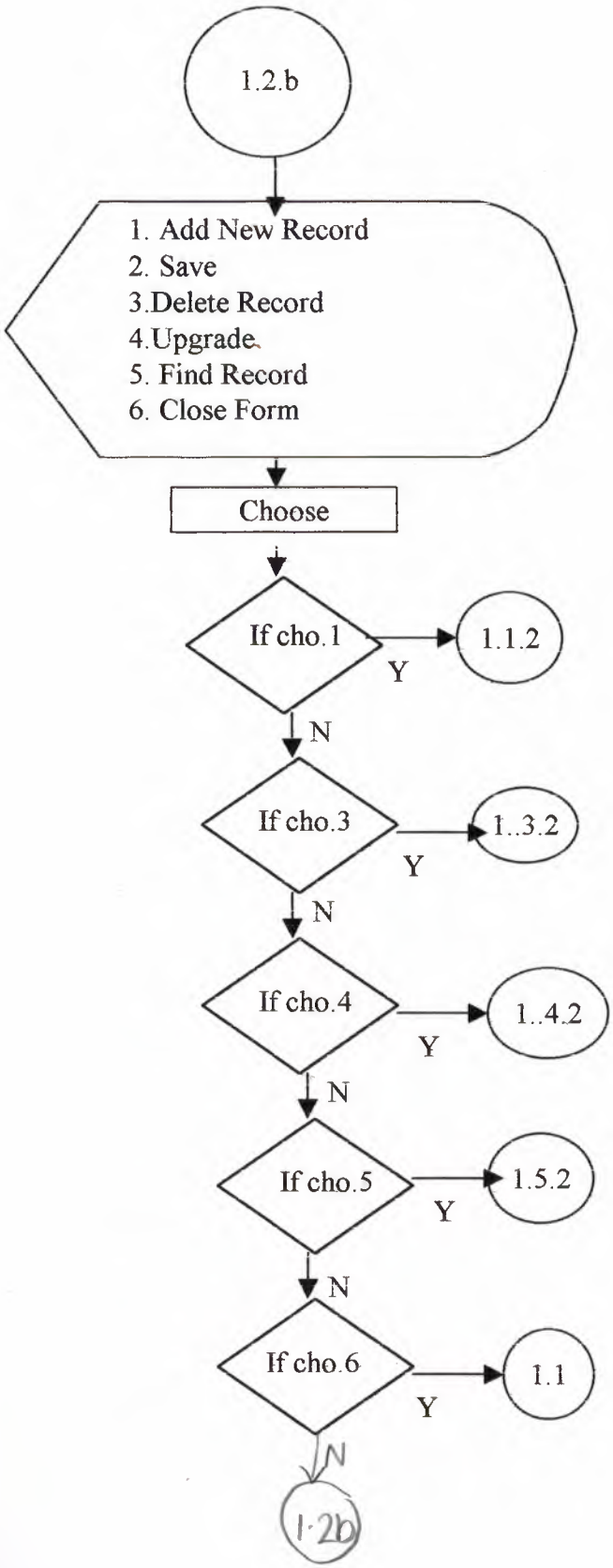

1.1a
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.1
N
If cho.3
Y
1.3.1
N
If cho.4
Y
1..4.1
N
If cho.5
Y
1.5.1
N
If cho.6
Y
1.1a
N
1.1a
correct
1.1

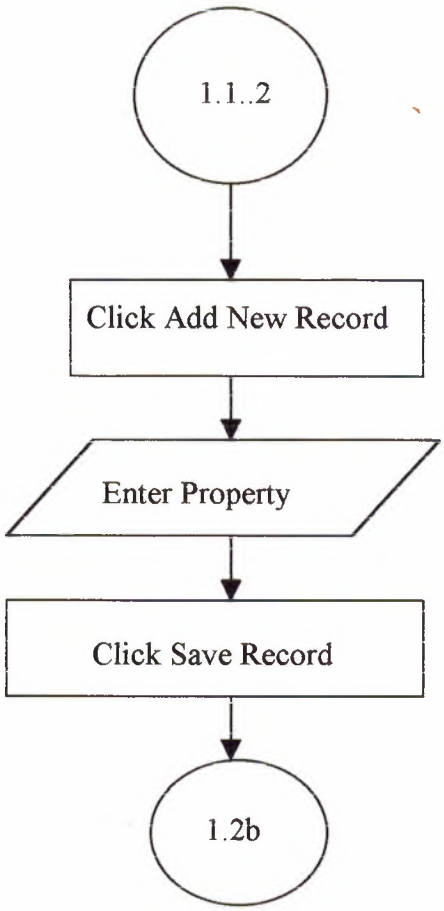

1.1.1
Click Add New Record
Enter Business
Click Save Record
1.1a

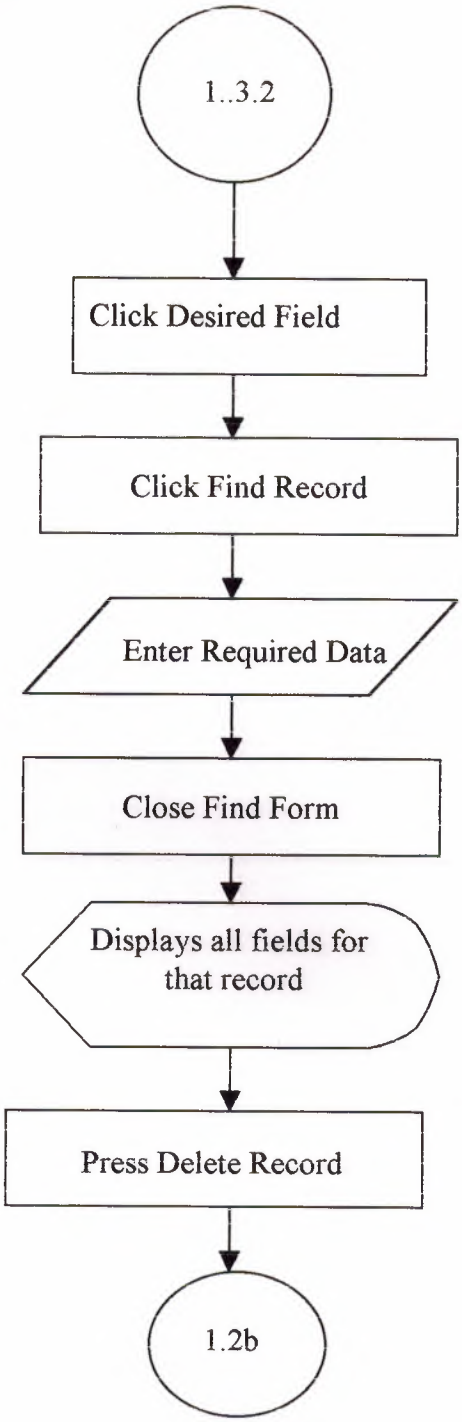

1..3.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.1a

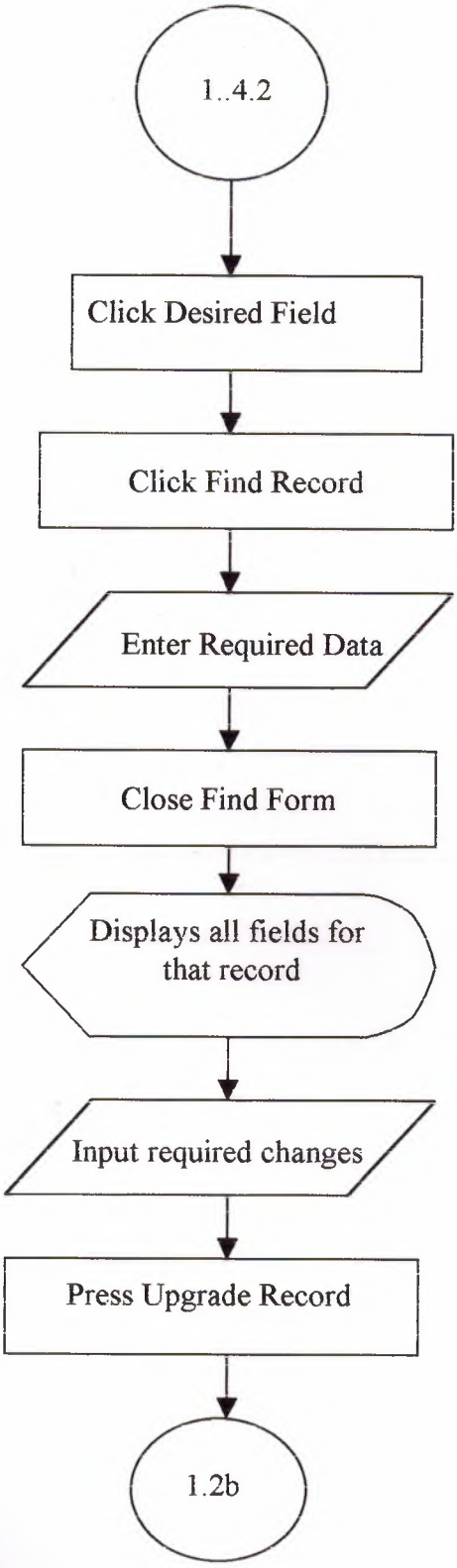

1..4.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.1a

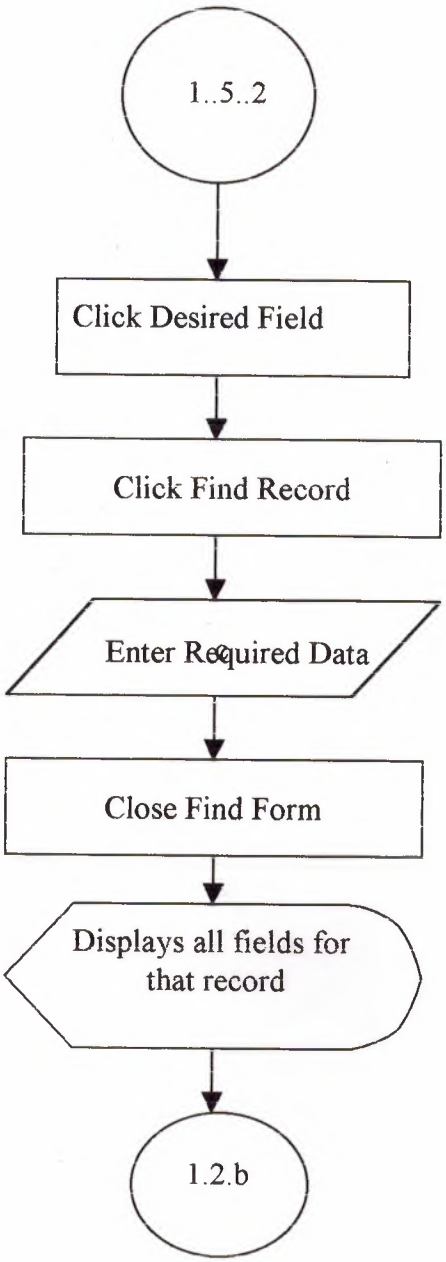

1..5.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1.1a

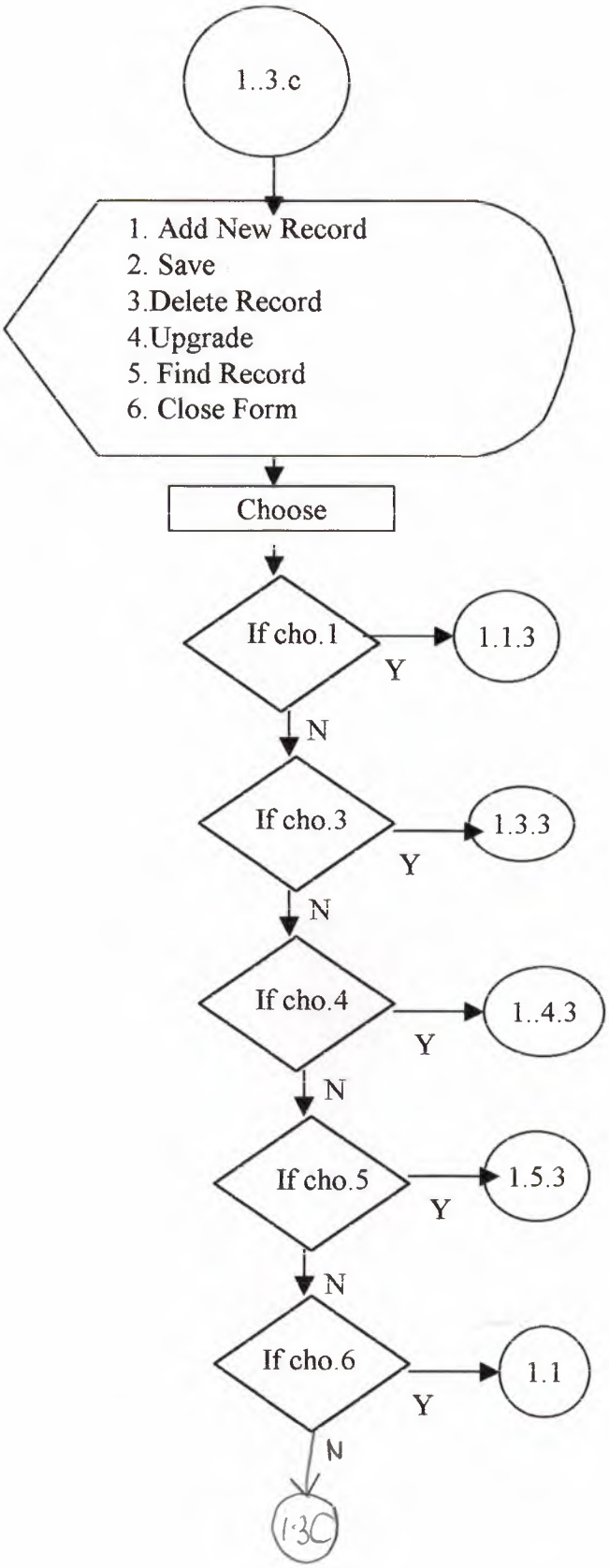

1.2.b
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.2
N
If cho.3
Y
1..3.2
N
If cho.4
Y
1..4.2
N
If cho.5
Y
1.5.2
N
If cho.6
Y
1.1
N
1·2b

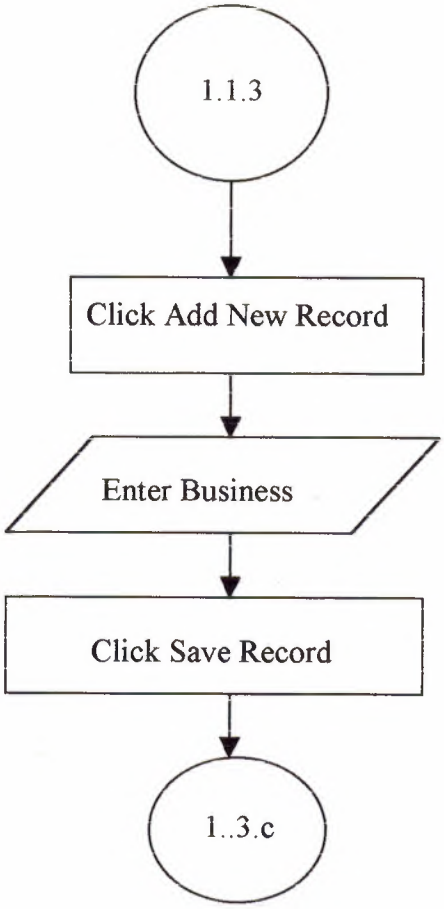

1.1..2
Click Add New Record
Enter Property
Click Save Record
1.2b

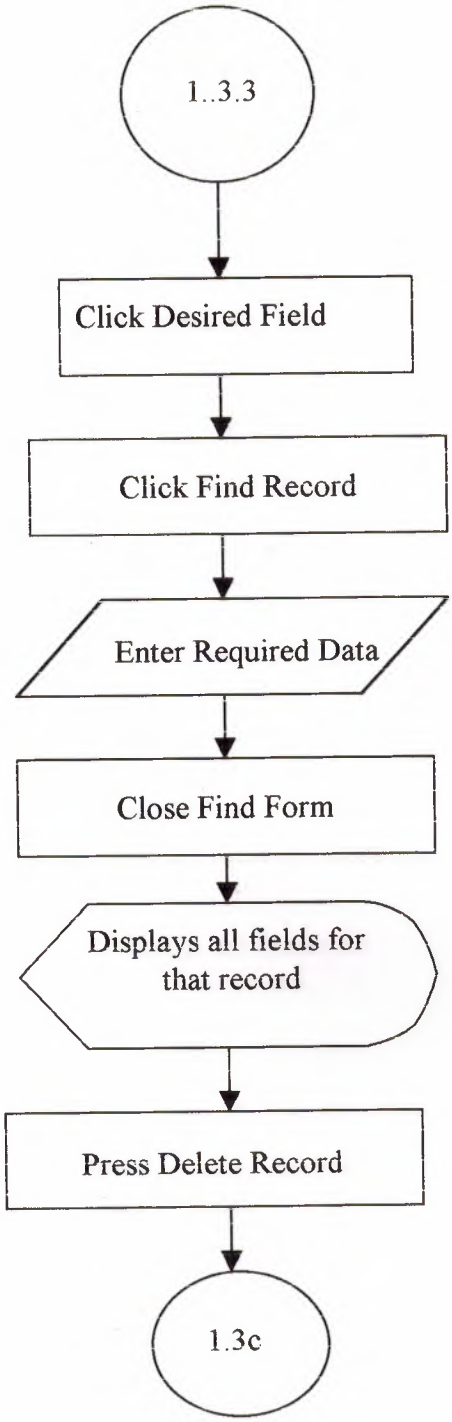

1..3.2
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.2b

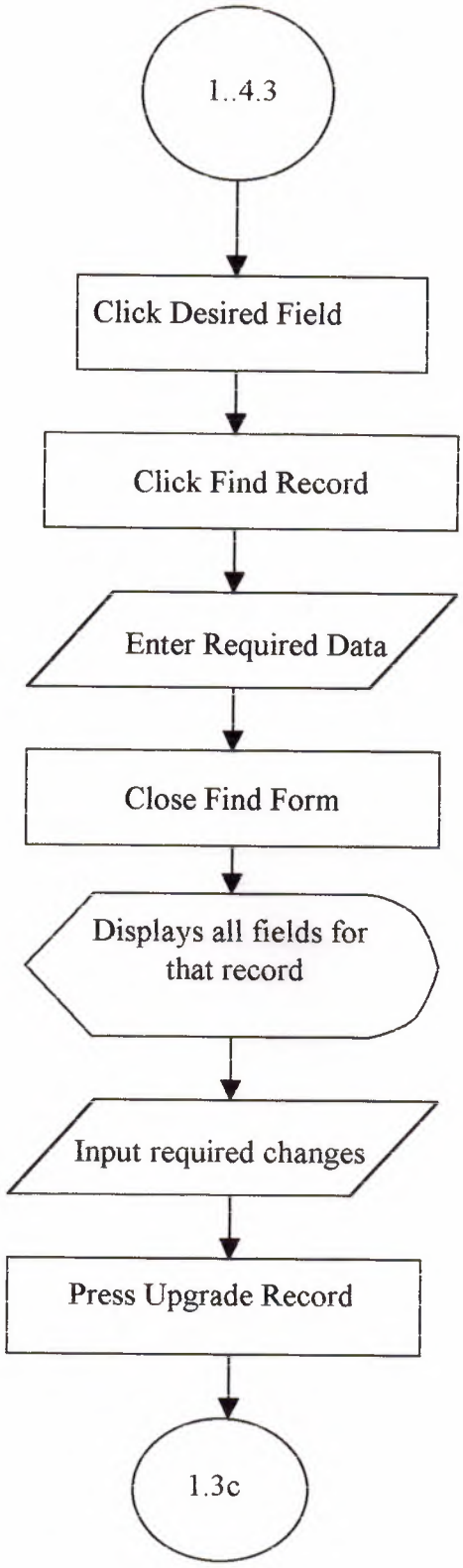

1..4.2
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.2b

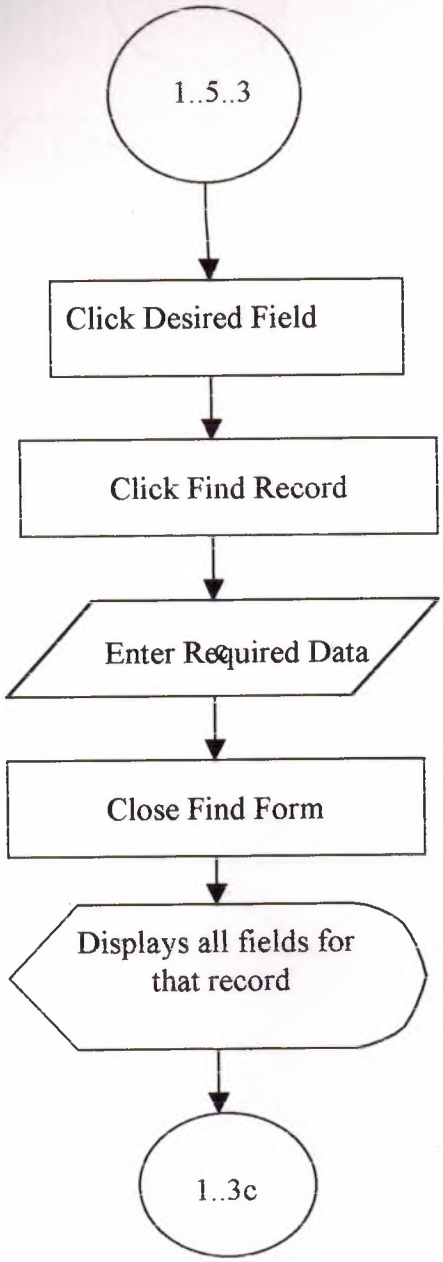

1..5..2
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1.2.b

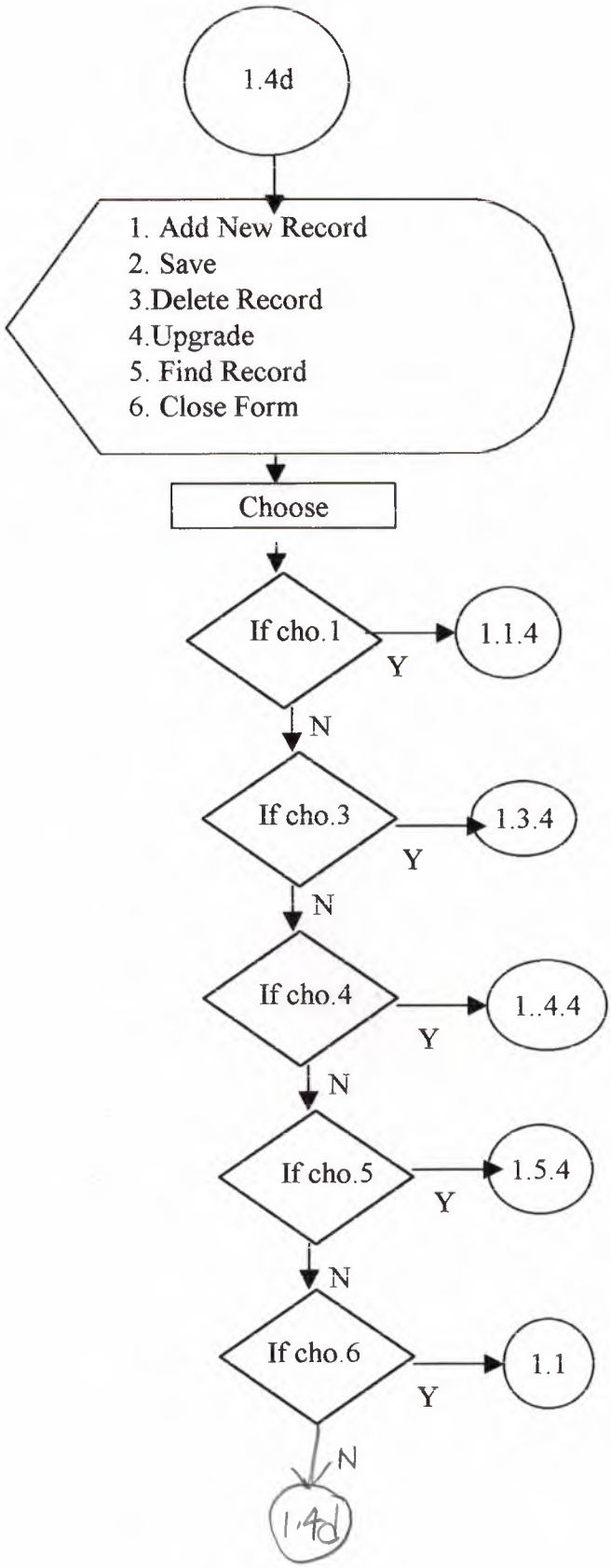

1..3.c
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.3
N
If cho.3
Y
1.3.3
N
If cho.4
Y
1..4.3
N
If cho.5
Y
1.5.3
N
If cho.6
Y
1.1
N
1·3C

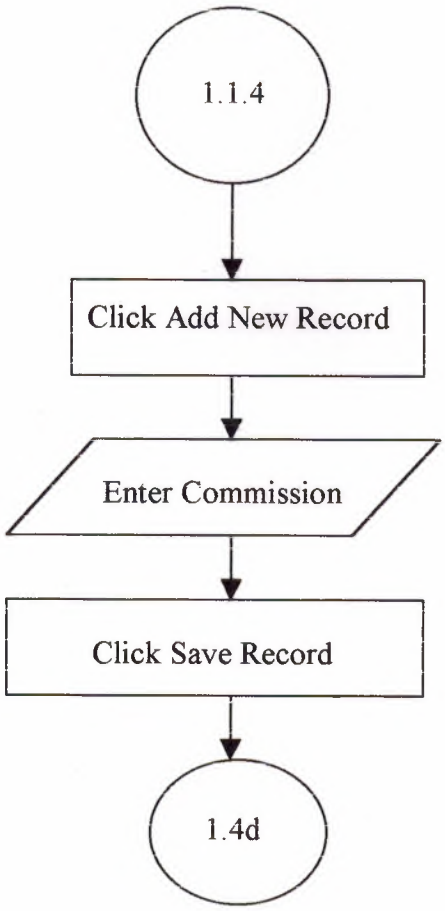

1.1.3
Click Add New Record
Enter Business
Click Save Record
1..3.c

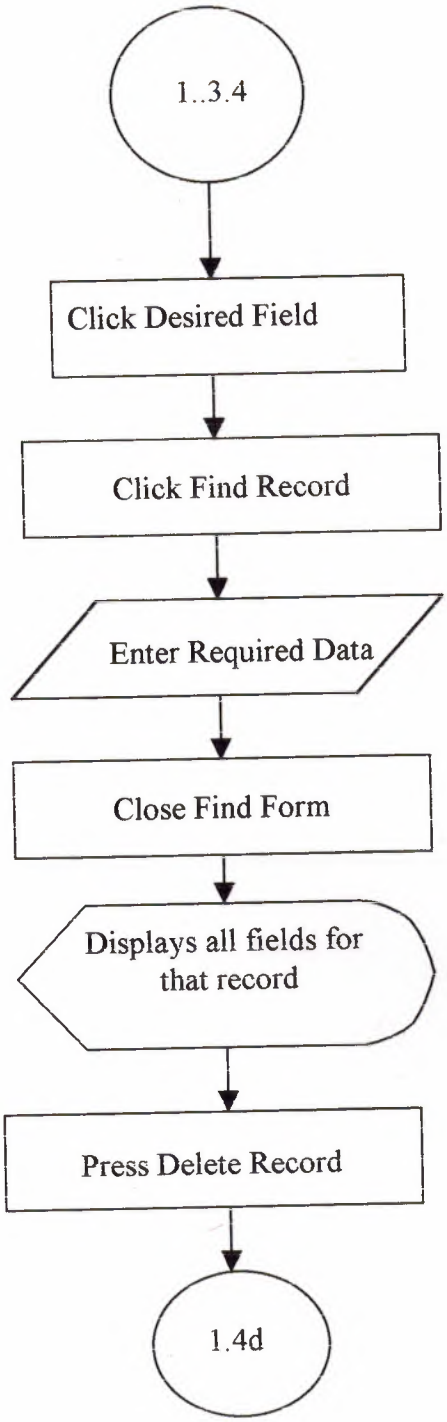


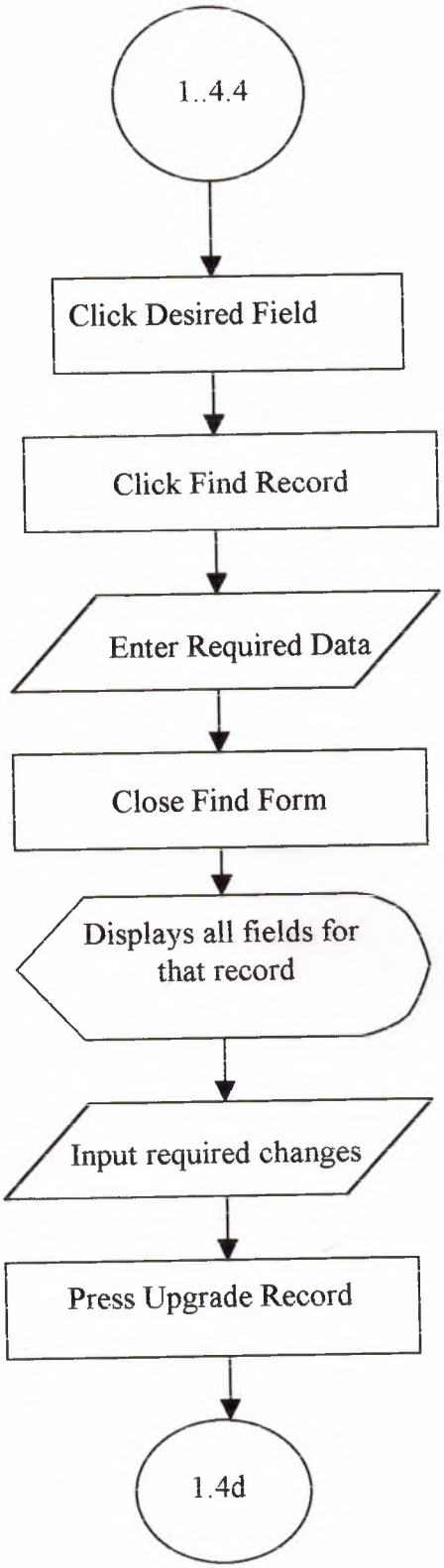

1..4.3
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.3c

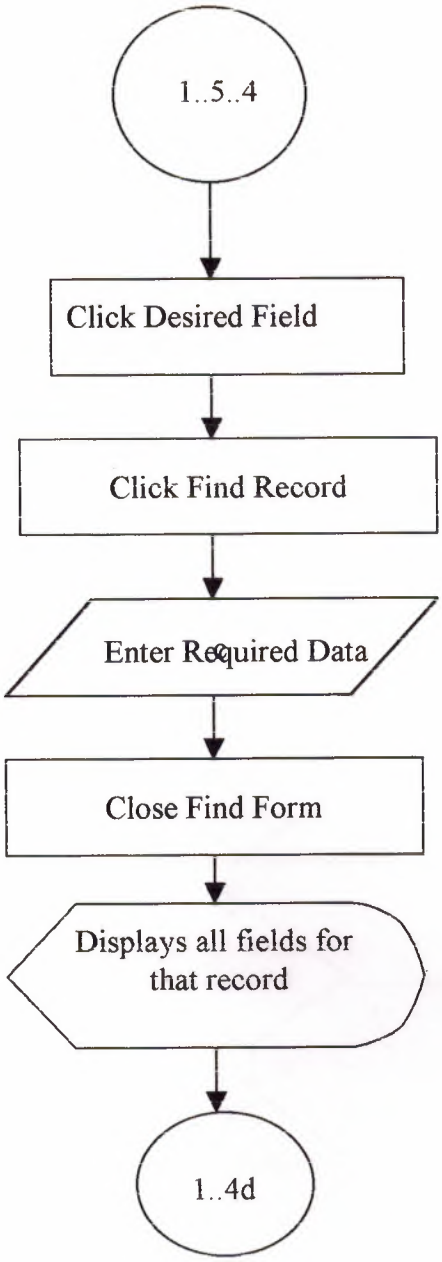

1..5..3
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1..3c

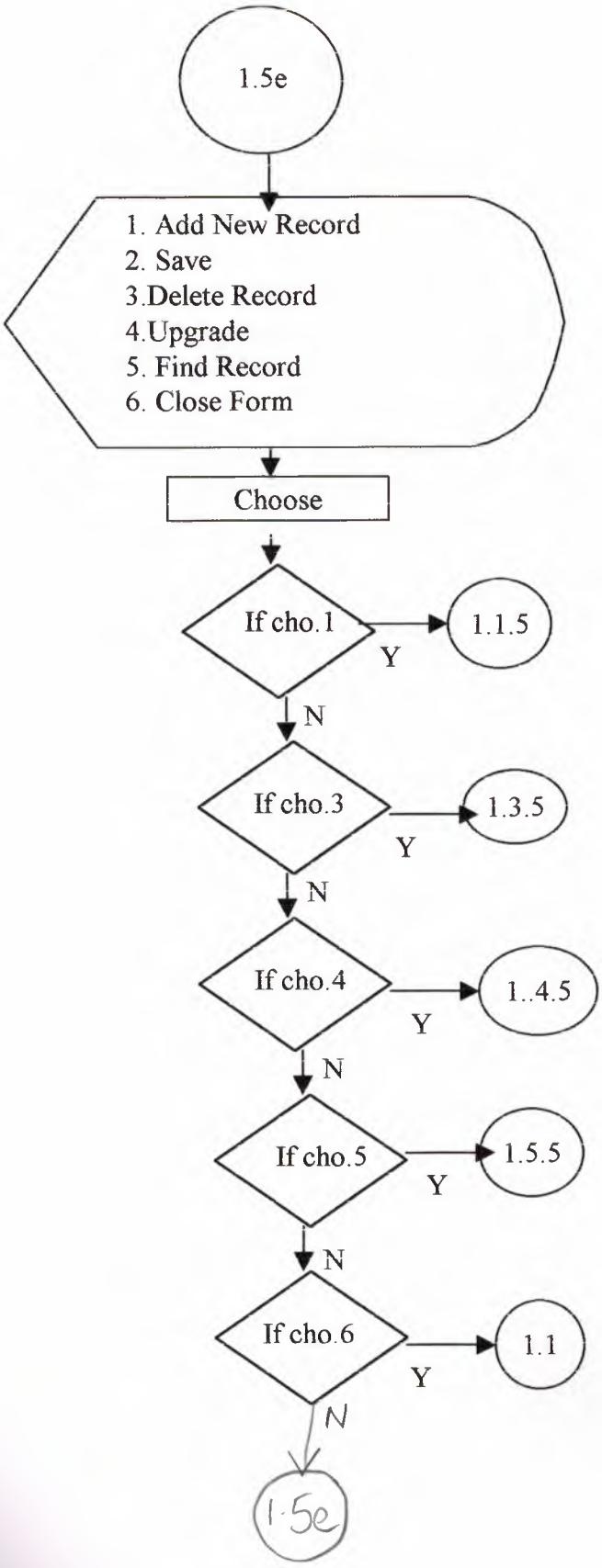

1.4d
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.4
N
If cho.3
Y
1.3.4
N
If cho.4
Y
1..4.4
N
If cho.5
Y
1.5.4
N
If cho.6
Y
1.1
N
1.4d

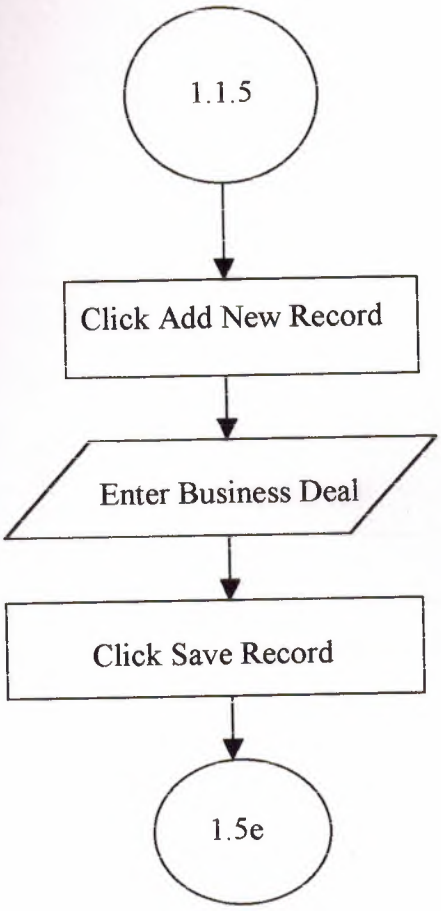

1.1.4
Click Add New Record
Enter Commission
Click Save Record
1.4d

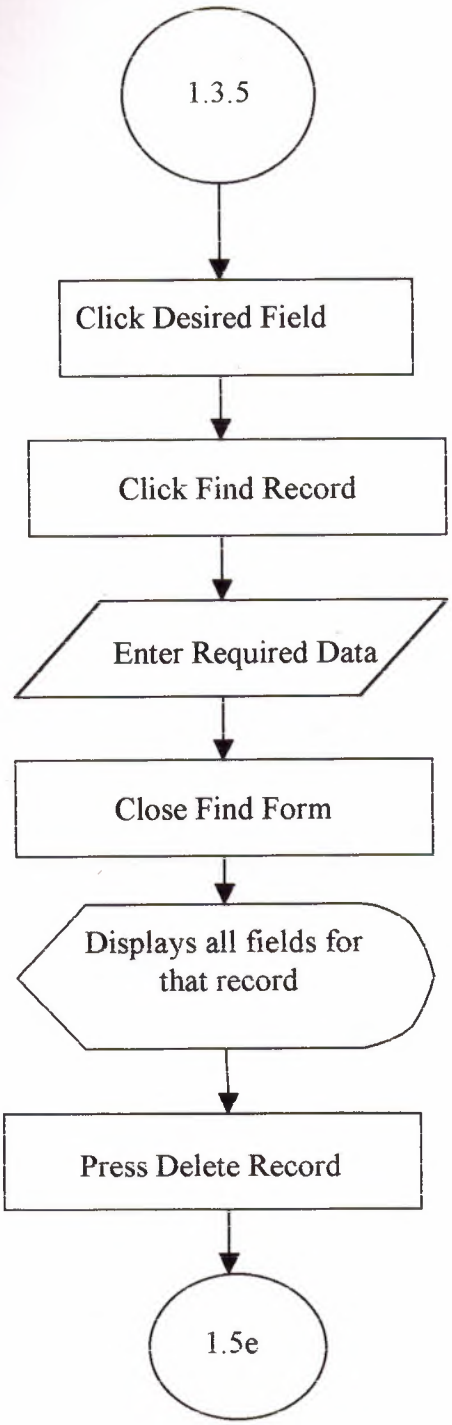

1..3.4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.4d

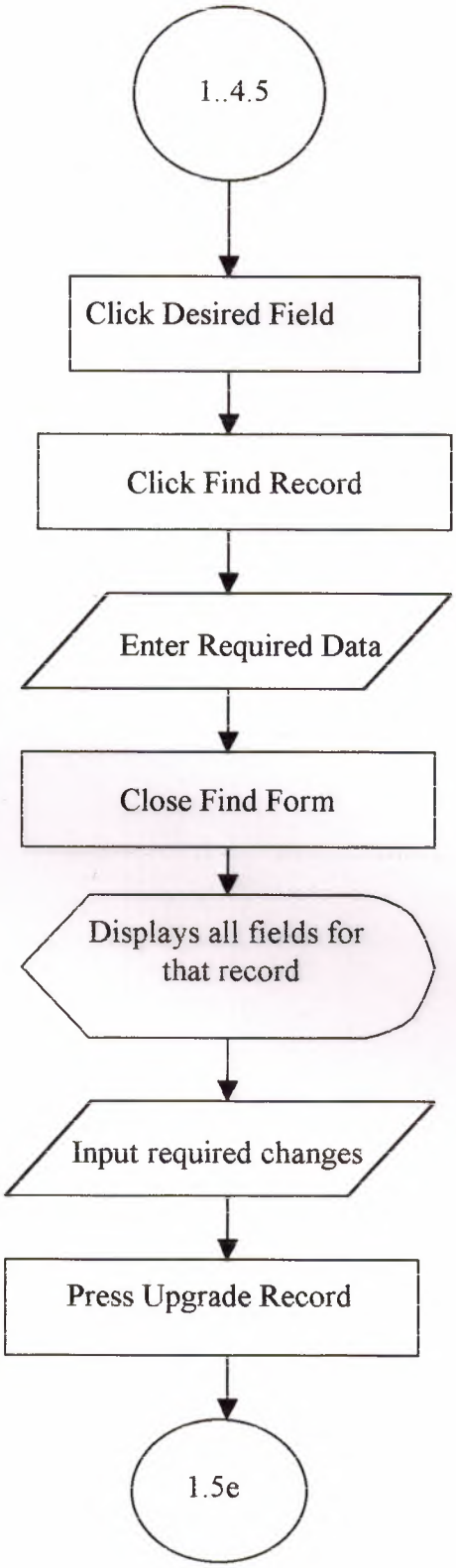

1..4.4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.4d

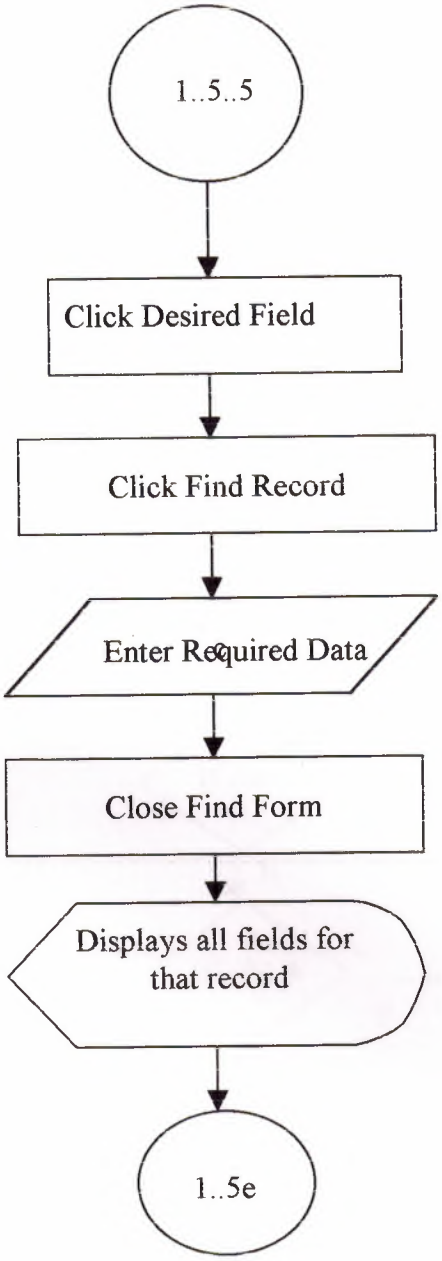

1..5..4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1..4d


1.5e
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.5
N
If cho.3
Y
1.3.5
N
If cho.4
Y
1..4.5
N
If cho.5
Y
1.5.5
N
If cho.6
Y
1.1
N
1.5e


1.1.5
Click Add New Record
Enter Business Deal
Click Save Record
1.5e


1.3.5
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.5e


1..4.5
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.5e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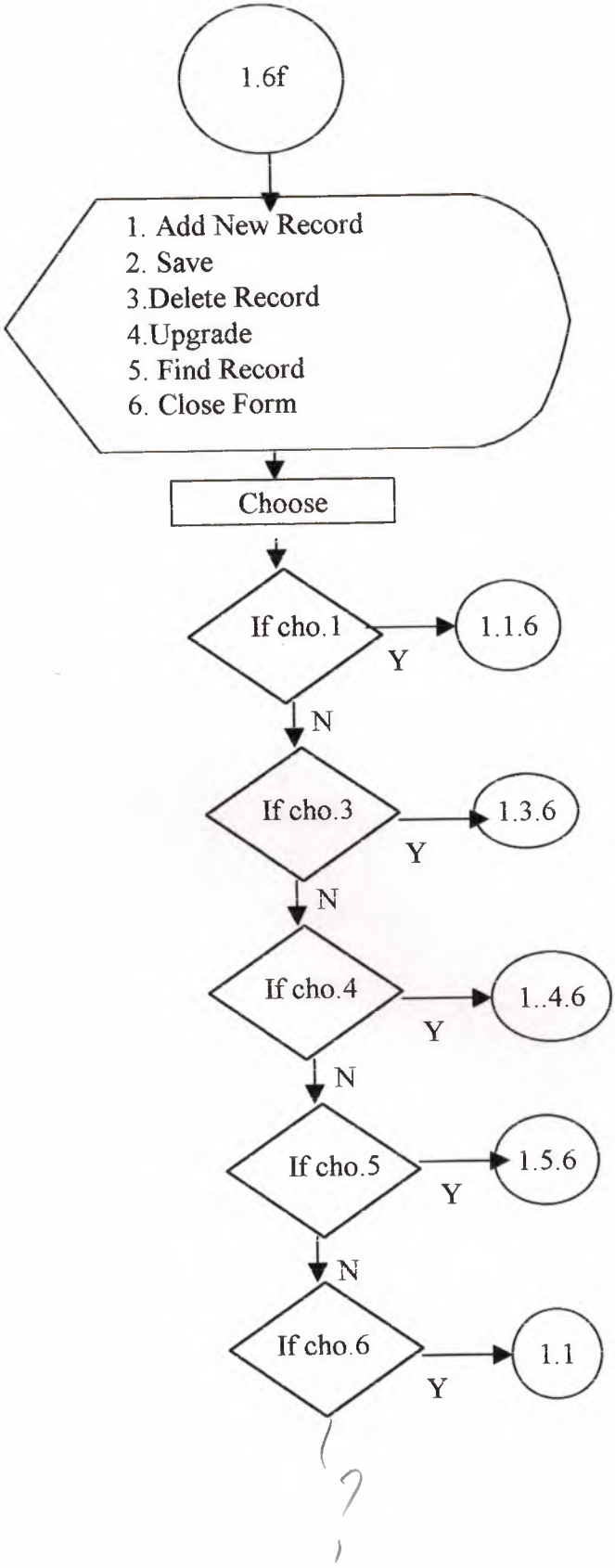
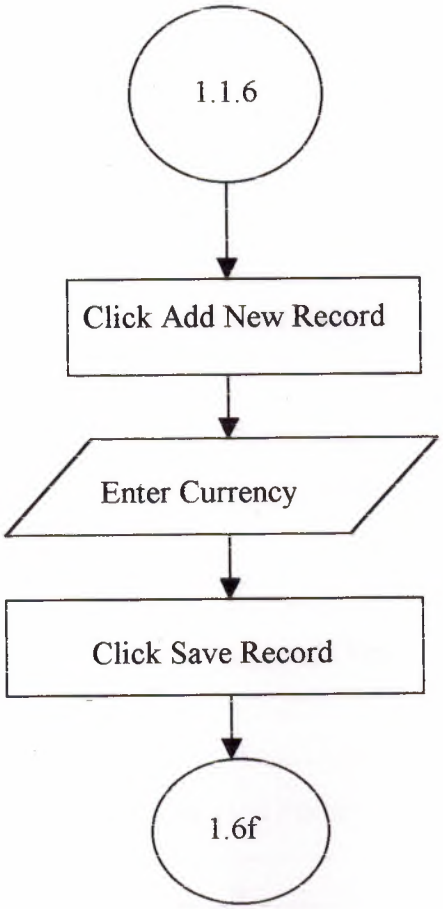
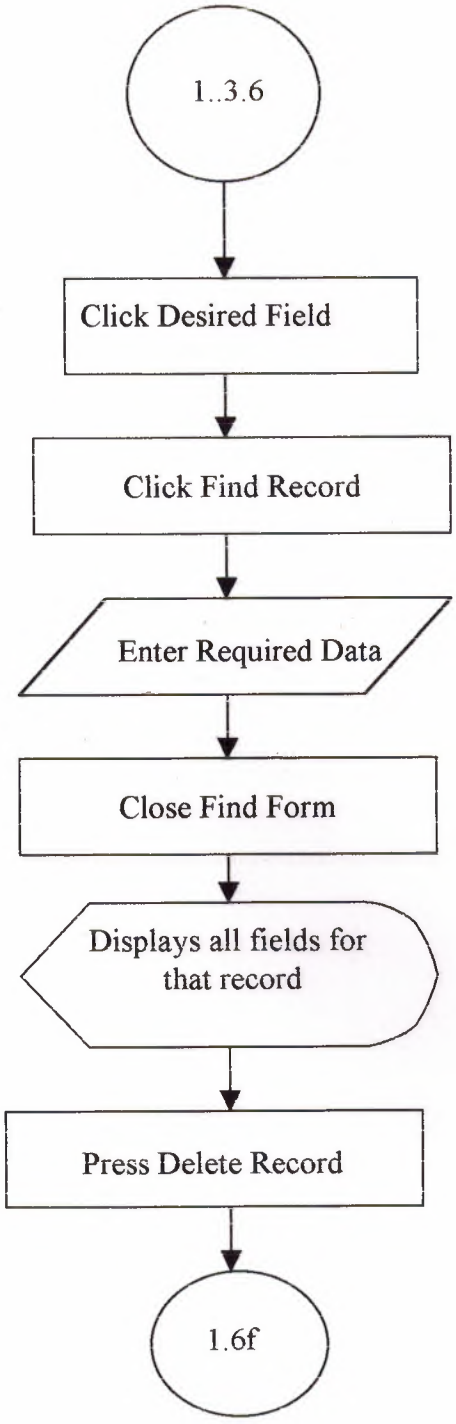
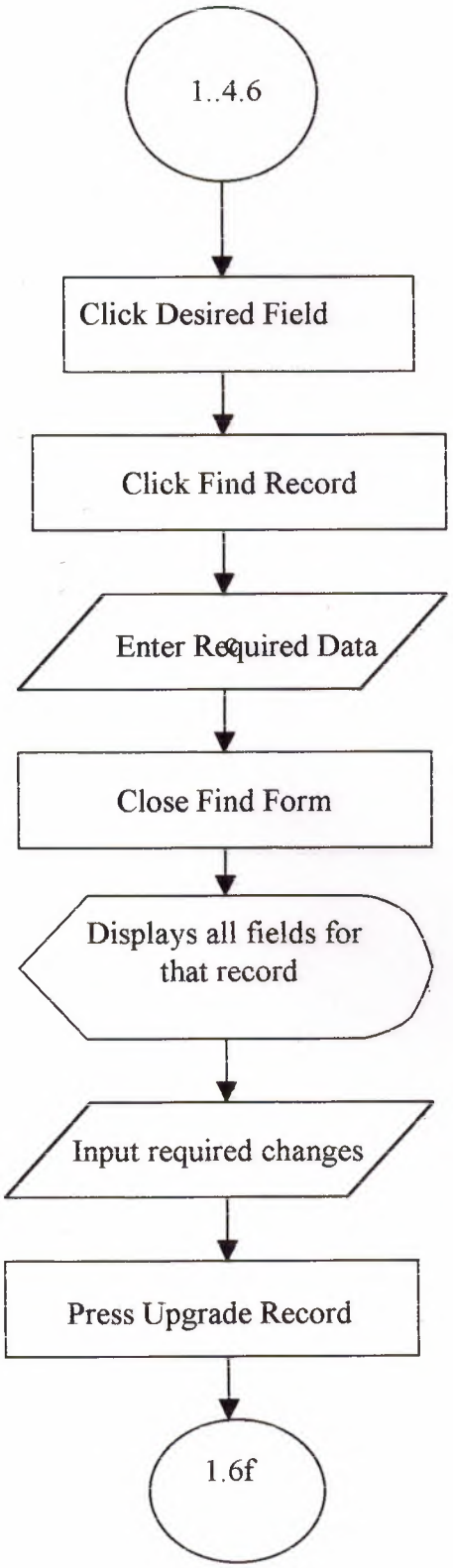
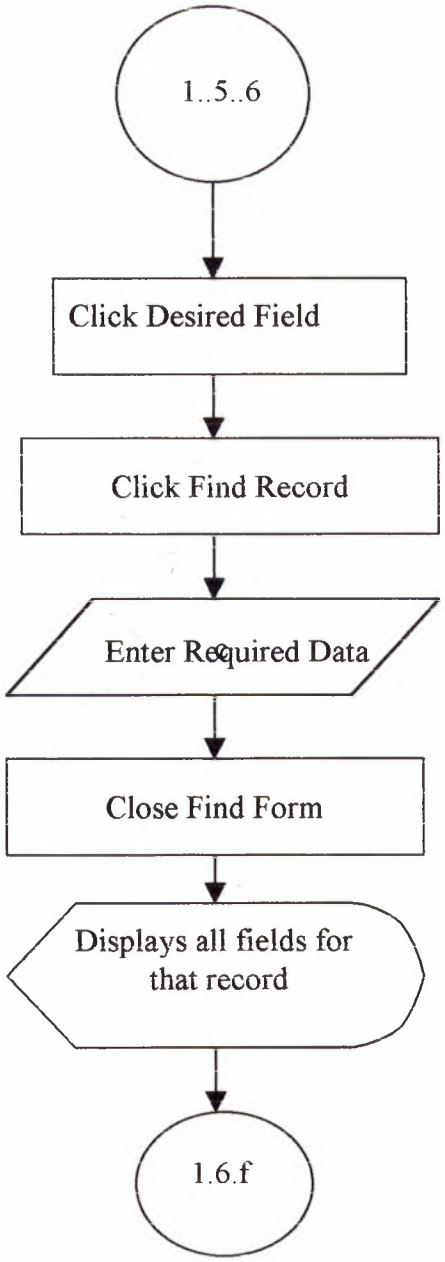
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1..5e

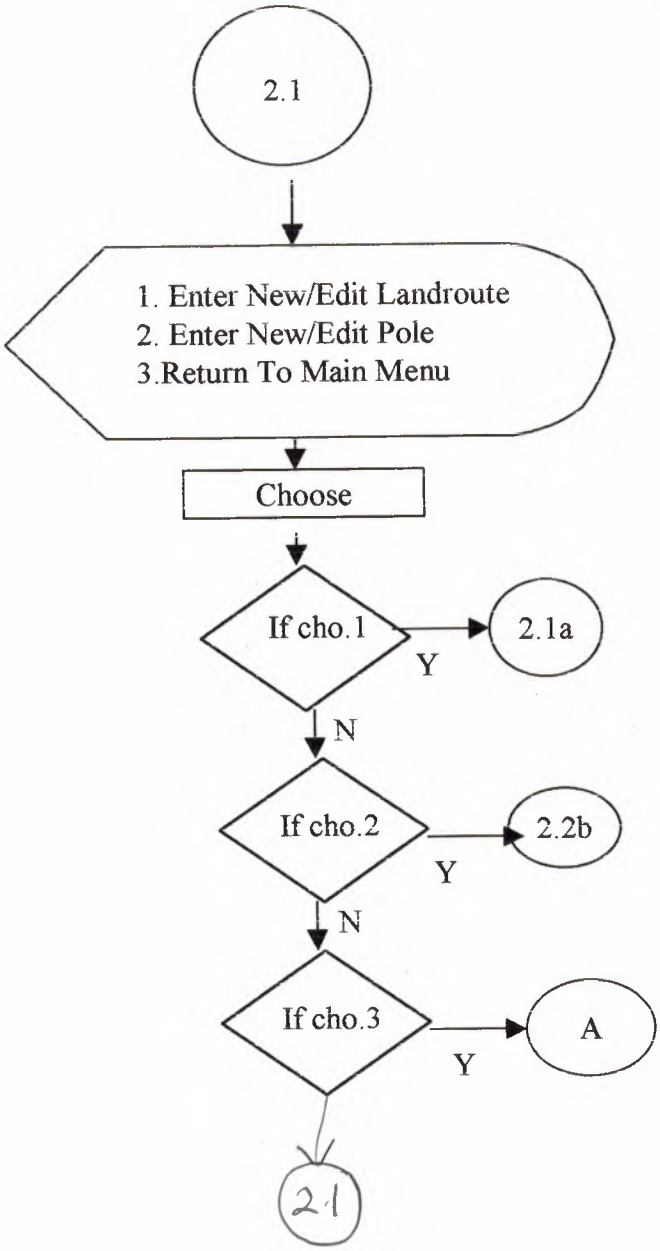

1.6f
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.6
N
If cho.3
Y
1.3.6
N
If cho.4
Y
1..4.6
N
If cho.5
Y
1.5.6
N
If cho.6
Y
1.1

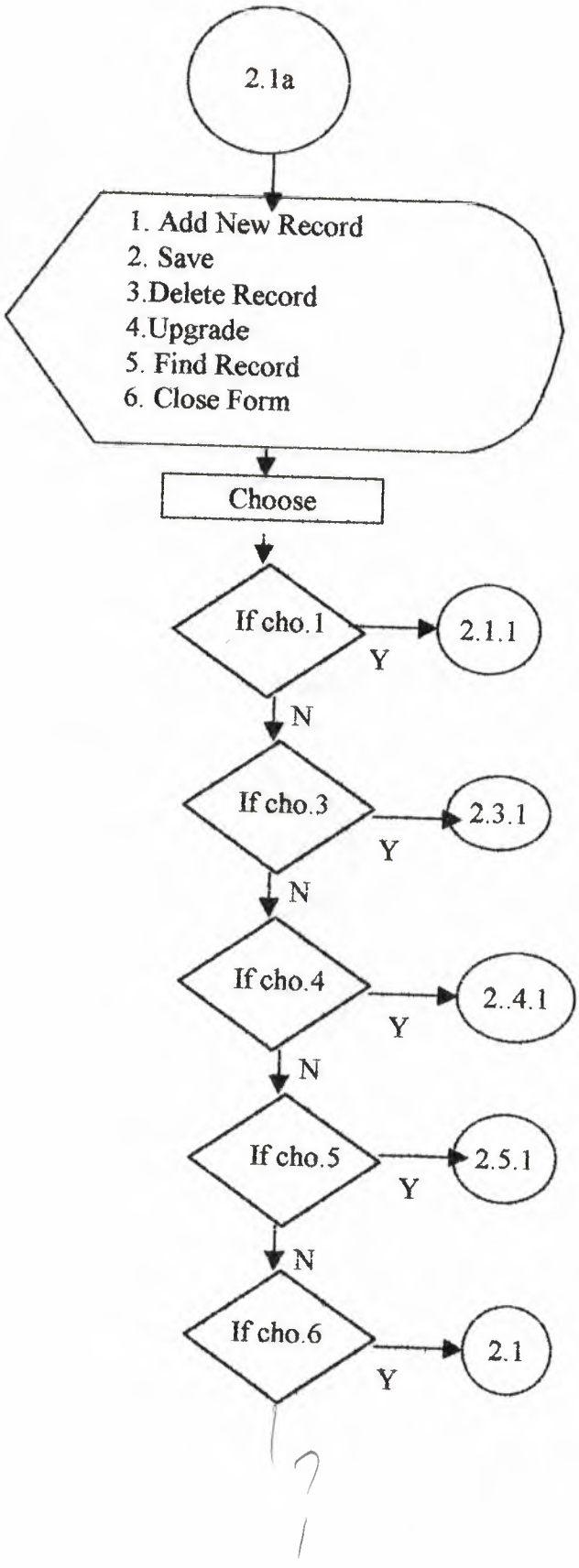

1.1.6
Click Add New Record
Enter Currency
Click Save Record
1.6f

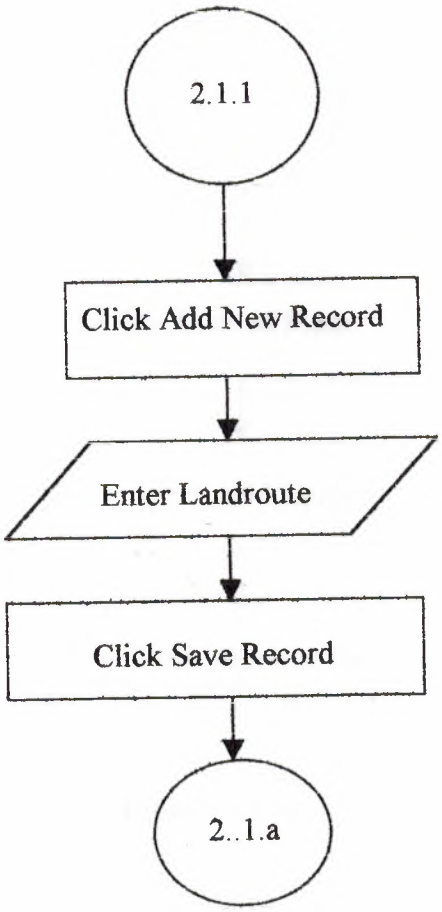

1..3.6
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.6f

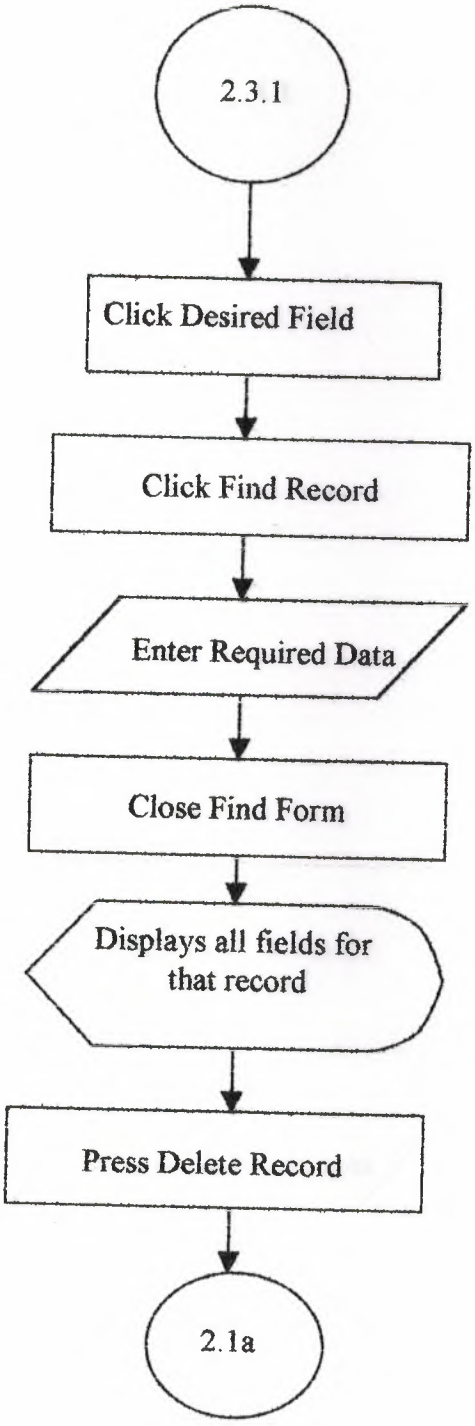

1..4.6
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.6f


1..5..6
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1.6.f


2.1
1. Enter New/Edit Landroute
2. Enter New/Edit Pole
3.Return To Main Menu
Choose
If cho.1
Y
2.1a
N
If cho.2
Y
2.2b
N
If cho.3
Y
A
2.1


2.1a
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
2.1.1
N
If cho.3
Y
2.3.1
N
If cho.4
Y
2..4.1
N
If cho.5
Y
2.5.1
N
If cho.6
Y
2.1


2.1.1
Click Add New Record
Enter Landroute
Click Save Record
2..1.a


2.3.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
2.1a

NEAR EAST UNIVERSITY

Faculty Of Economics And Administrative Sciences

Department Of Computer Information Systems

2003 Summer Term
CIS 400
(Graduation Project)

Property Management System

Submitted to: DR. Yalçın Akçalı
Miss Nadire Çavuş

Submitted by : Muazzez Bengisu ~
(20002050)

CONTENTS

PAGE NO

1. ACKNOWLEDGEMENTS

I have taken a lot of care and attention in preparing this project, it is a reflection of my System Analysis, Management information & Programming skills which I have encountered throughout my Computer Information System BSC at Near East University.

I'd like to thank all of my teachers at the University who have helped me gather and maintain the knowledge that I have gathered throughout my degree. In preparing this project I'd like to reserve a space and Thank Miss Nadire Çavus and Dr. Yalcın Akçalı who have taken the responsibility to assist us in preparing and documenting our Final Project. Their assistance and help will be greatly remembered by me and others.

I would also like to thank Assoc. Prof. Ilham Huseynov who taught me Access and helped me become a competent Access Database designer, and for all of his good nature and will.

To finalize I would like to say that this project has assisted me to maximize my database and system analysis skills, and has prepared me for a post in this field.

2. ABSTRACT

The final year project of the BSc Computer Information System is based on The Real Estate Agency which is located in Girne. The main idea of the project is to dedicate how the designed system will improve the business operations and the activities of the company by removing the current paper based system. Therefore the project entails the investigation of the current business environment and designs a new system for the business requirements which have been implemented by using MsAcess 2000.

3. INTRODUCTION

3.1. Company Overview & System Analysis

The "Property Management System" is designed to computerize the manual work done at Real Estate Agency. The Business carries out the main tasks involved in an Estate Agency. The staff Buy, Sell and Rent properties in Northern Cyprus. They also buy and sell Land around Northern Cyprus. Before they can do this they need to follow the Government procedures for this, so all staff at the business are fully trained to follow Governmental procedures, and have been trained to maximize their Sales and Communication Skills.

The Company earns commission on each business deal done. The Commission differs on each property & business type. At the moment there is one flaw in the Administrative work done at the office. There is no centralised database system to keep records of the files. The company deals with huge amounts of documented paper work which requires lots of storage space within the office. Therefore the company cannot maintain information which has been held for many long periods.

The Administrative work done at the office consists of regular work done at all Property Estate Agencies. They keep records of the properties that they have to Sell, Rent, leased out or which they have bought, along with Land that they may have business deals with! Details and description of the property are kept alongside with it's location & address. Also the 'Deed' details must also be kept for each property or land and who it is currently owned buy. Each business type has an earned commission rate and price at which it shall be done. For example if the business type is rental there is a fixed price in which the commission rate will calculate the amount earned on it for the company.

My aim is to design a database System with processes and interrelated sub-processes to keep this data organized and easy to maintain. The data must be easily retrievable and the database should be reliable enough to produce valid information. (Access turns the Data into information via queries and outputs them to the user via reports.)

Real Estate Agency have been operating sine April 20002. Already they have realized the importance of Computerization, as this will reduce time when dealing with customer queries, make their data more secure and they will have the satisfaction of using technology while at work.

3.2. Determining the purpose of the Database

A Database must be designed to maintain the Business needs and to keep records of their data and transactions.

The first step in designing a database is to determine its purpose and how it's to be used. You need to know what information you want from the database. From that, you can determine what subjects you need to store facts about in the tables (or database).

Talk to people who will use the database. Brainstorm about the questions you and they would like the database to answer. Sketch out the reports you'd like it to produce. Gather the forms you currently use to record your data. To do this efficiently I have examined well-designed databases similar to the one that I will be designing.

The decided project to design is a "Property Management System". Which will be a relational database that will store data in a tabular form. Each file will be implemented as a table. Each field is a column in the table. Each record in the file is a row in a table. Related records between two tables (e.g Client & Property) are implemented by intentionally duplicating columns in the two tables (in our case PID).

3.3. "The Property Management Database" Maintenance Aim

The Database aims to manage and maintain the following in it's design:

- Add, Upgrade, Delete, Find details of

1. Customers	2.Business	3.Business Deal	4.Property
5. Location	6.Pafta	7.Landroute	8.Currency
9.Commission		10.Transaction	

- Produce Reports on the following:

1. Available Property Report
2. Property by Location & Business
3. Property by Dönüm & Business
4. Property by Price & Business
5. Property by Business Deal
6. Property by Customer ID

3.4. Business Objectives

The opportunities for an information system to improve the business operation are as follows.

- Implementing a system streamline business operations and activities by eliminating part of the current paper based system.

The designed system will eliminate most of the current paperwork of the business, however not all. In the current business environment, all the data is saved and filed inside the files, which take up space and organizing. Because of this the company cannot generate any reports to evaluate business performance in order to carry out future changes to the business. Moreover this results in poor data mining in order to satisfy customers and partners of the Property Estate industry.

- Improve the work flow of information in the company by using an automated system

- Automate the storing of data about Customers, their Reg. No's and Transaction details

The designed database for the system will enhance the business's data storage. Most of the information about the business issues such as Transaction, Customer, location will be held in the database. This again enables the data to be easily retrieved from the database.

- To reduce the time wasted when carrying out the business operations and the activities.

The designed system will increase the speed of the business operations and the activities. During most of the activities and operations, the staff spent a lot of time with the writing of documentation, removing and filing of the manual paper based system.

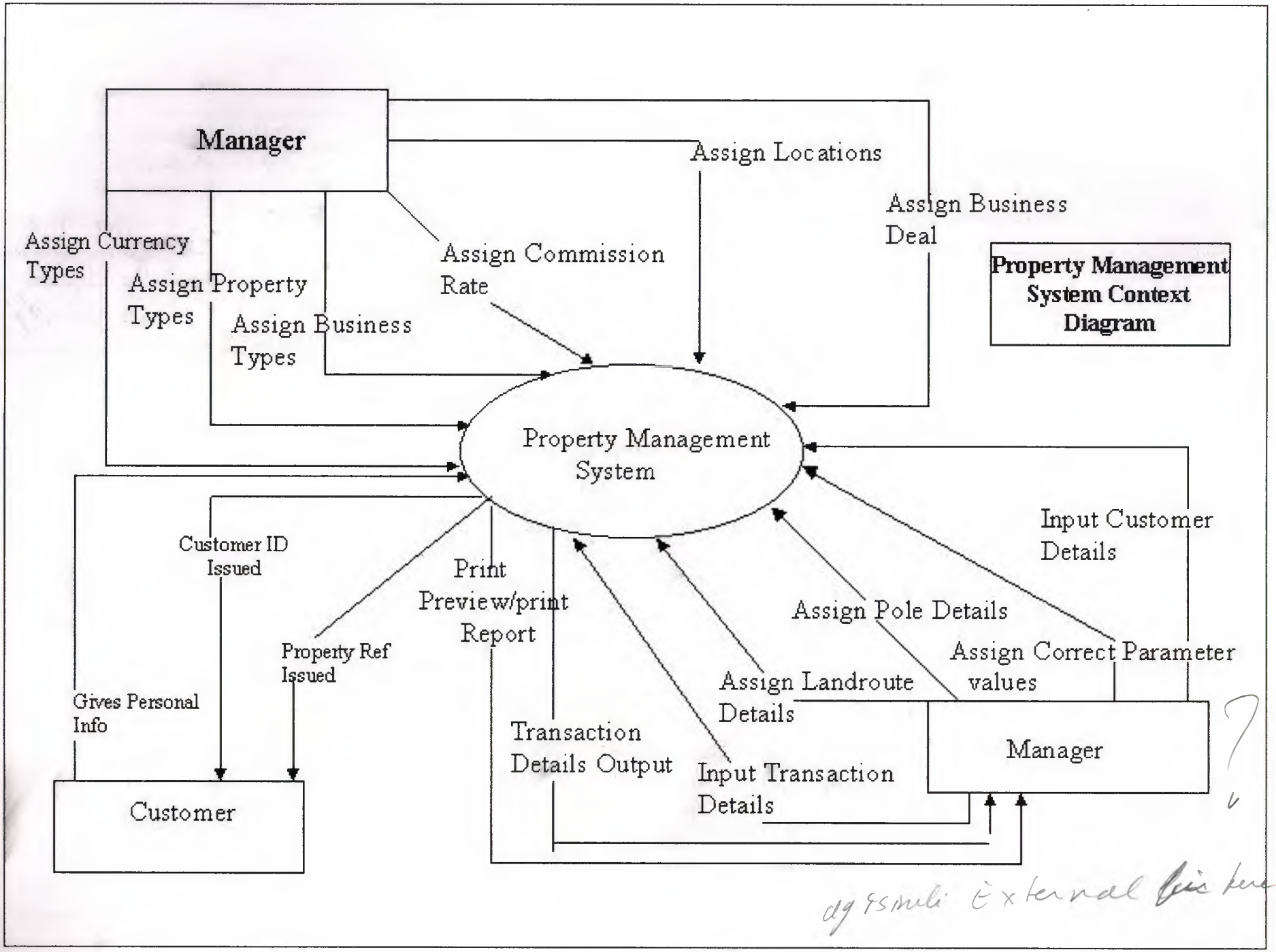
In addition to this the searching for required documentation takes a large amount of time which causes delays for all business operations. Therefore the database had to be developed to enable information for each client to be automated instantly. The sub forms and reports provided this facility.

4. Explanation Of The System

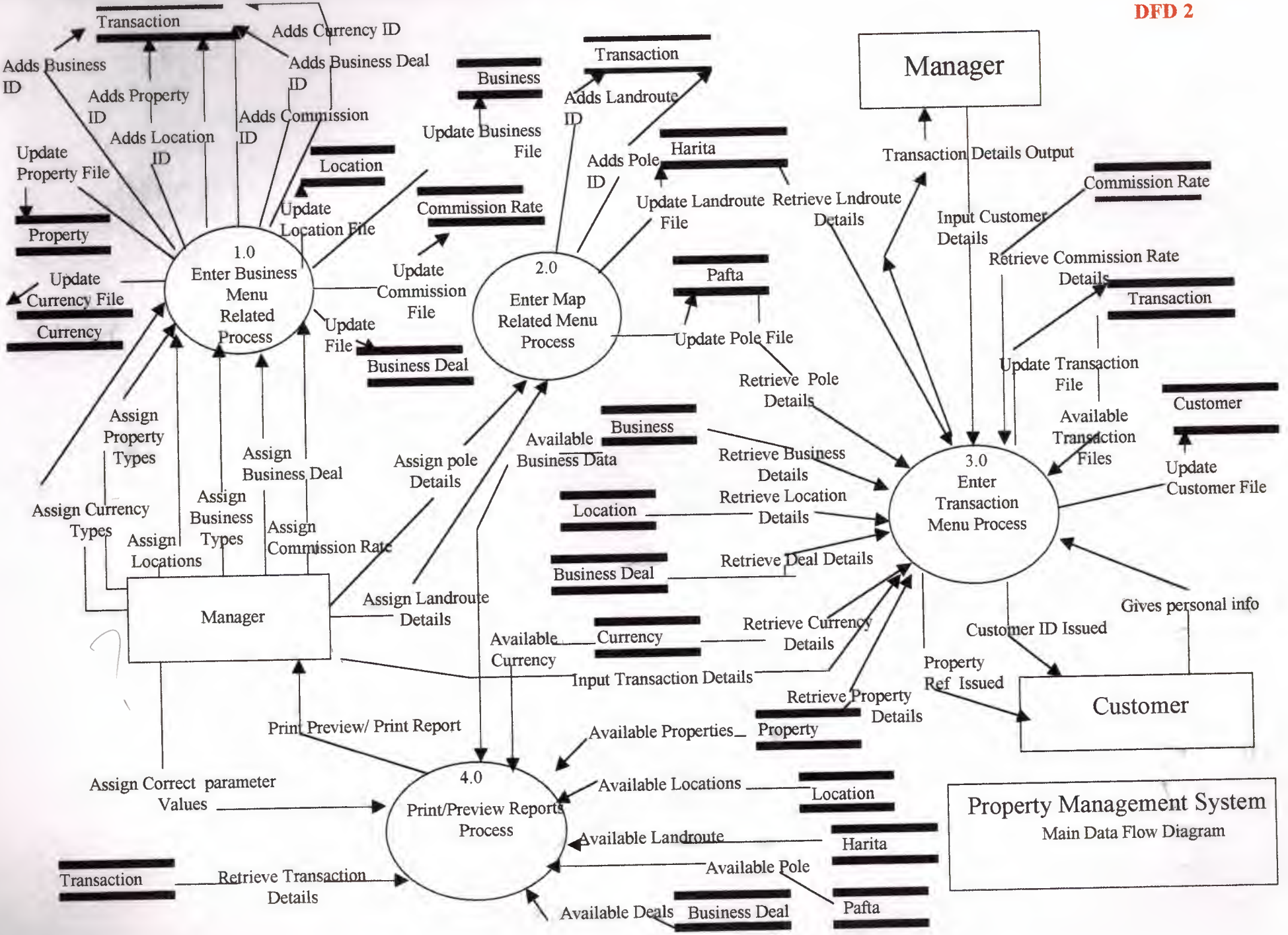
A Data Flow Diagram (DFD), is a tool that depicts the flow of data through a system and the work or processing performed by that system. DFD designing begins after gathering information about existing system's problems and requirements and determination DFD is a model, which define how data flow through an information, the relationships among the data flows, and how data come to be stored. DFDs also show the processes that change or transform data.

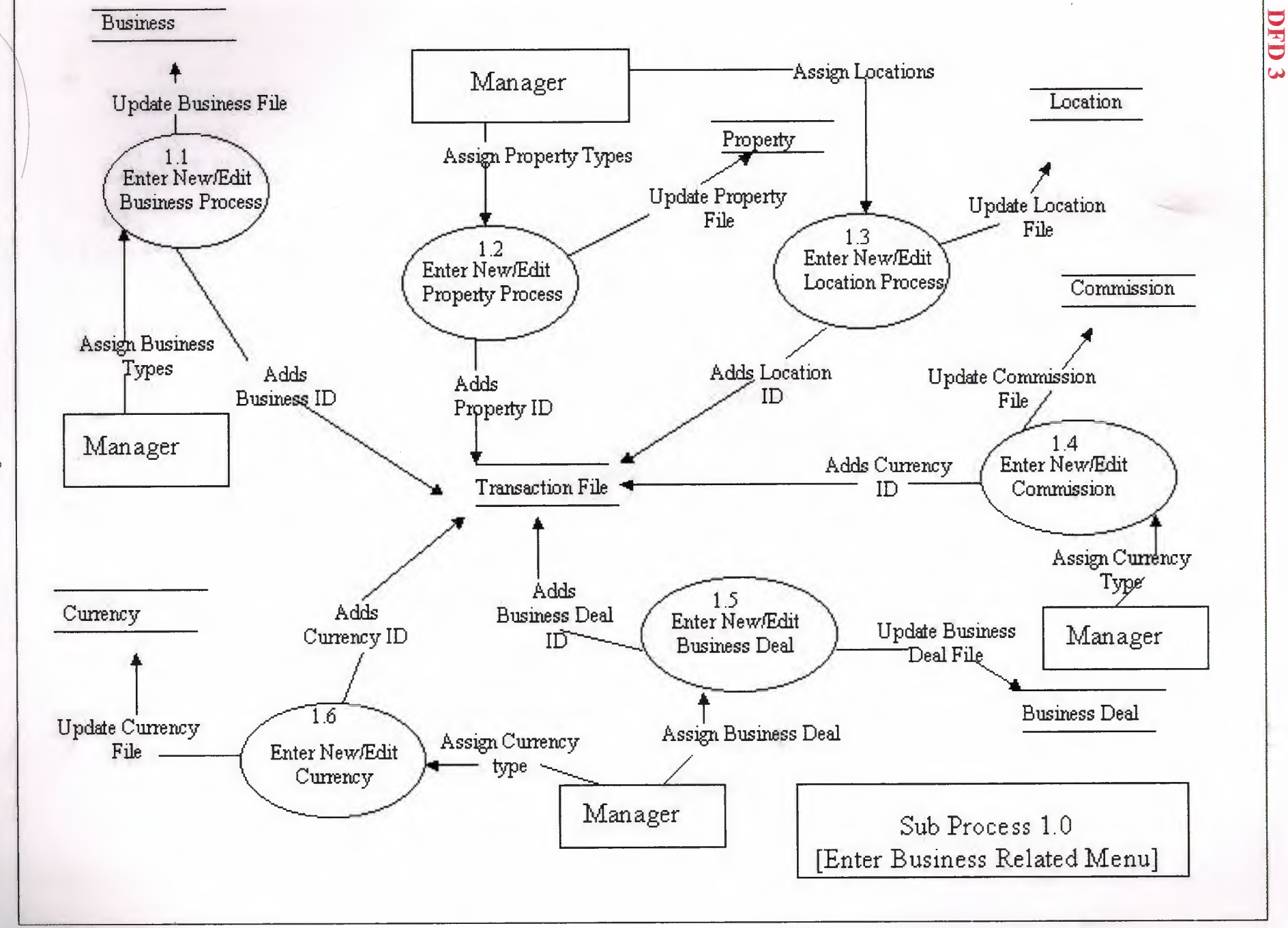
DFD 1 illustrates the 'Context Diagram' (The highest-level view of the 'Property Management System'), DFD 2 explains how the main processes are inter-related, and DFD 3 to DFD 5 show how the sub-process work.

DFD 1

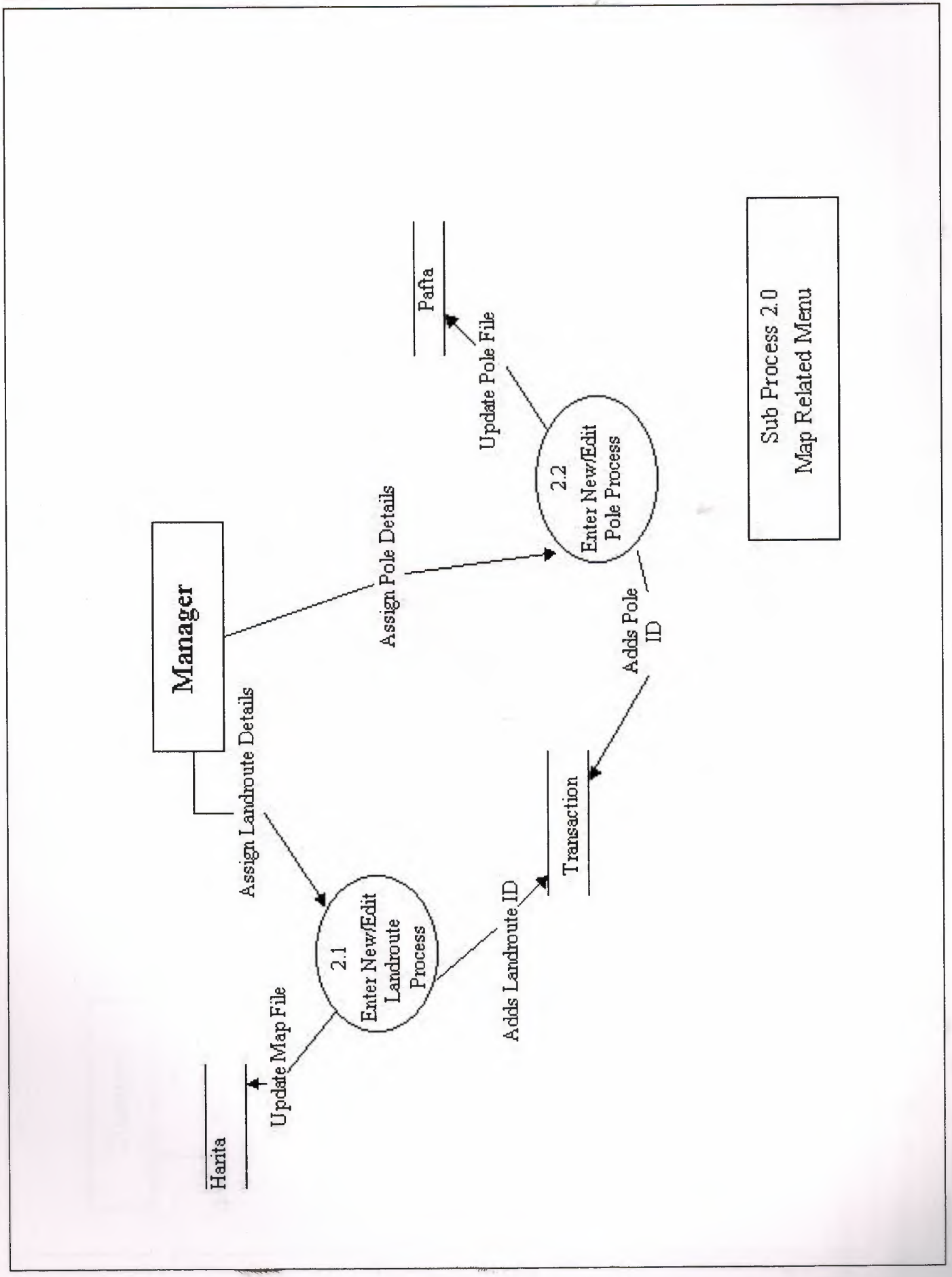

Manager
Assign Locations
Assign Business Deal
Assign Currency Types
Assign Property Types
Assign Business Types
Assign Commission Rate
Property Management System Context Diagram
Property Management System
Customer ID Issued
Print Preview/print Report
Input Customer Details
Assign Pole Details
Assign Correct Parameter values
Property Ref Issued
Assign Landroute Details
Gives Personal Info
Transaction Details Output
Input Transaction Details
Manager
Customer

DFD 2

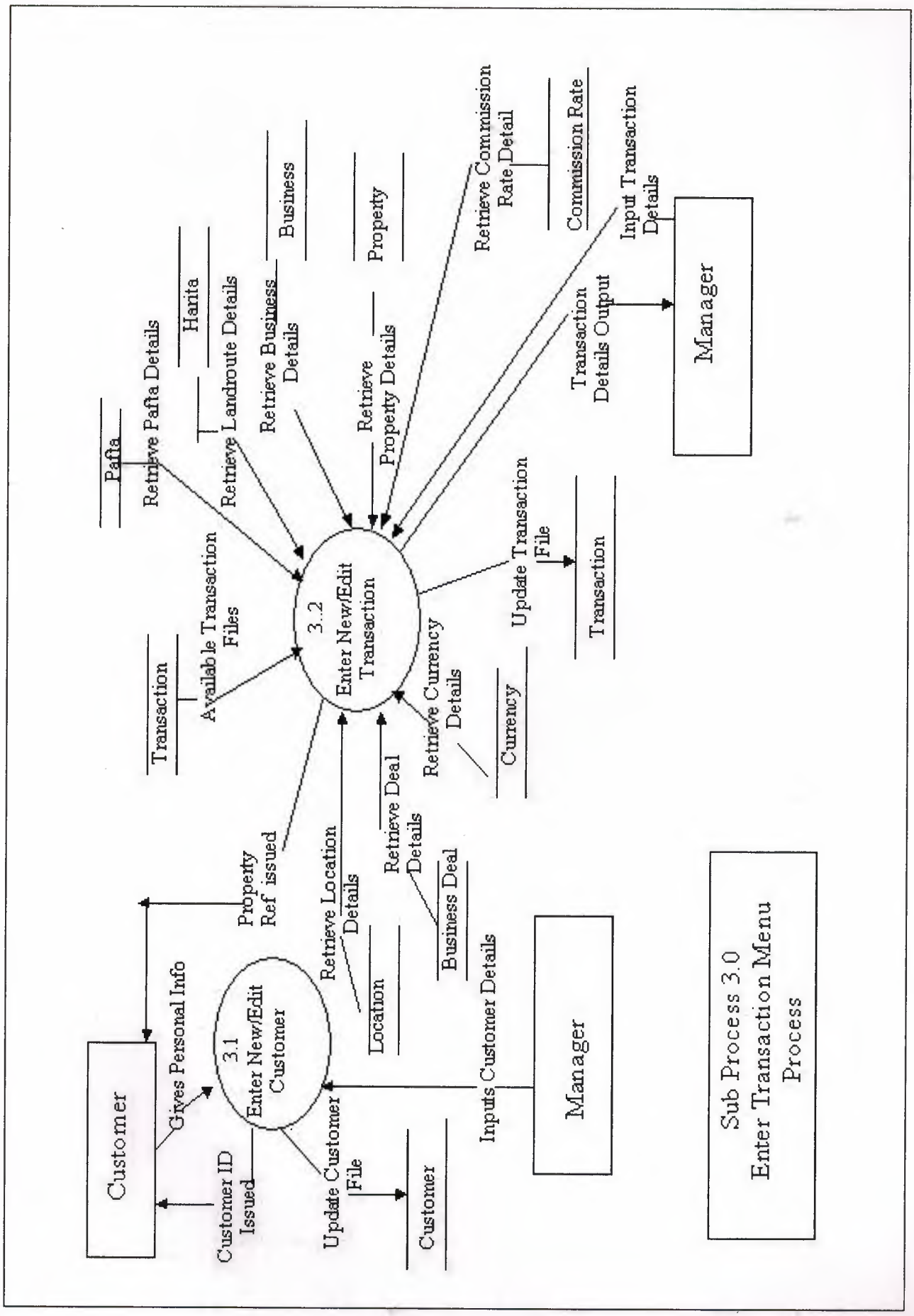

Transaction
Adds Currency ID
Adds Business ID
Adds Business Deal ID
Adds Property ID
Adds Location ID
Adds Commission ID
Business
Update Business File
Transaction
Adds Landroute ID
Manager
Update Property File
Location
Update Location File
Commission Rate
Adds Pole ID
Harita
Update Landroute File
Retrieve Lndroute Details
Transaction Details Output
Commission Rate
Input Customer Details
Property
1.0 Enter Business Menu Related Process
Update Commission File
2.0 Enter Map Related Menu Process
Pafta
Update Pole File
Retrieve Commission Rate Details
Transaction
Update Currency File
Currency
Update File
Business Deal
Retrieve Pole Details
Update Transaction File
Customer
Assign Property Types
Assign Business Deal
Assign pole Details
Available Business Data
Business
Retrieve Business Details
Available Transaction Files
Update Customer File
Assign Currency Types
Assign Business Types
Assign Commission Rate
Location
Retrieve Location Details
3.0 Enter Transaction Menu Process
Assign Locations
Business Deal
Retrieve Deal Details
Manager
Assign Landroute Details
Gives personal info
Available Currency
Currency
Retrieve Currency Details
Customer ID Issued
Input Transaction Details
Property Ref Issued
Retrieve Property Details
Customer
Print Preview/ Print Report
Available Properties
Property
Assign Correct parameter Values
4.0 Print/Preview Reports Process
Available Locations
Location
Property Management System
Main Data Flow Diagram
Available Landroute
Harita
Transaction
Retrieve Transaction Details
Available Pole
Pafta
Available Deals
Business Deal


Business
Update Business File
1.1
Enter New/Edit
Business Process
Manager
Assign Business
Types
Adds
Business ID
Manager
Assign Property Types
Property
Update Property
File
1.2
Enter New/Edit
Property Process
Adds
Property ID
Assign Locations
Location
Update Location
File
1.3
Enter New/Edit
Location Process
Adds Location
ID
Commission
Update Commission
File
1.4
Enter New/Edit
Commission
Assign Currency
Type
Manager
Transaction File
Adds Currency
ID
Currency
Update Currency
File
1.6
Enter New/Edit
Currency
Adds
Currency ID
Assign Currency
type
Manager
Adds
Business Deal
ID
1.5
Enter New/Edit
Business Deal
Assign Business Deal
Update Business
Deal File
Business Deal
Sub Process 1.0
[Enter Business Related Menu]

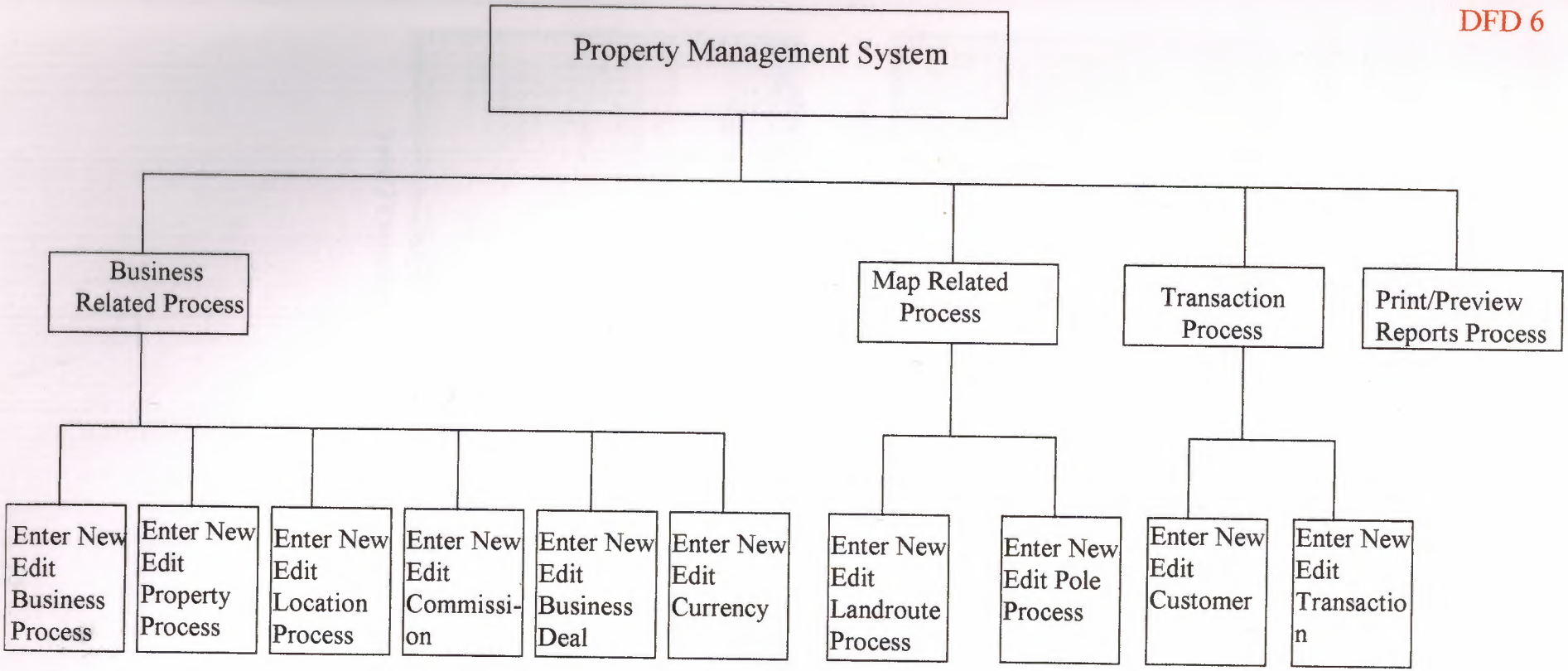
DFD 4


Manager
Assign Landroute Details
Assign Pole Details
Update Pole File
Pafta
Harita
Update Map File
2.1
Enter New/Edit
Landroute
Process
Adds Landroute ID
Transaction
Adds Pole
ID
2.2
Enter New/Edit
Pole Process
Sub Process 2.0
Map Related Menu

DFD5


Customer
Gives Personal Info
Customer ID Issued
3.1
Enter New/Edit Customer
Update Customer File
Customer
Property Ref issued
Retrieve Location Details
Location
Retrieve Deal Details
Business Deal
Inputs Customer Details
Manager
Sub Process 3.0
Enter Transaction Menu Process
Transaction
Available Transaction Files
3.2
Enter New/Edit Transaction
Retrieve Currency Details
Currency
Update Transaction File
Transaction
Pafta
Retrieve Pafta Details
Harita
Retrieve Landroute Details
Retrieve Business Details
Business
Retrieve Property Details
Property
Retrieve Commission Rate Detail
Commission Rate
Transaction Details Output
Input Transaction Details
Manager

DFD 6



System Block Diagram Of The Property Management System

4.1. System Block Diagram

DFD 6 Shows the system as whole as a hierarchical model.

4.2. Creating Tables

The Property Management System consists of 10 Tables. Illustrations of each of the tables are shown below. Each table has to have a Primary Key which is shown by a key next to the field.

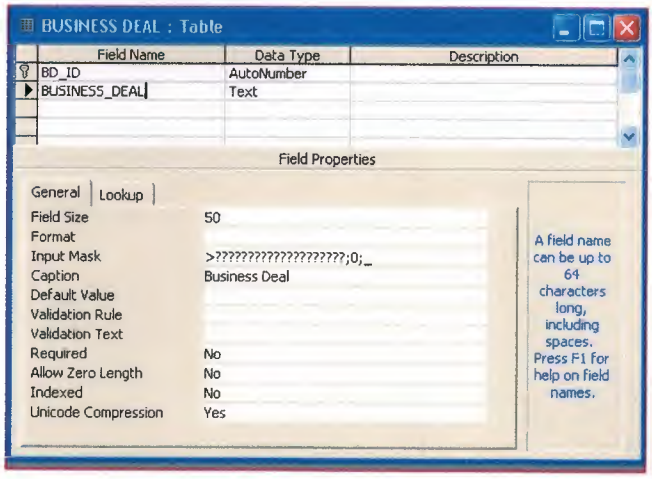


Table 1 Business Deal & Properties

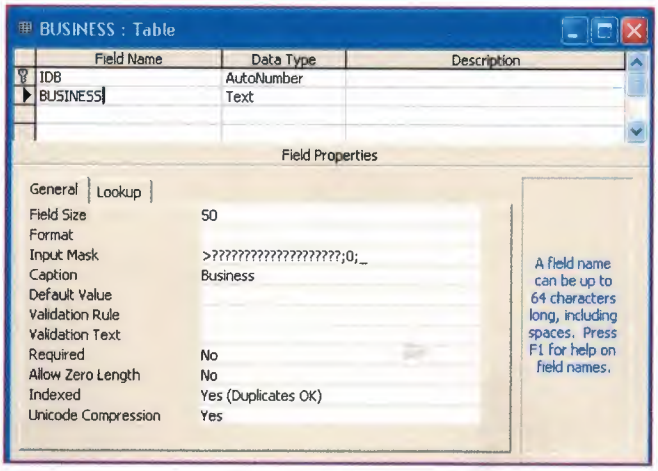


Table 2 Business & Properties

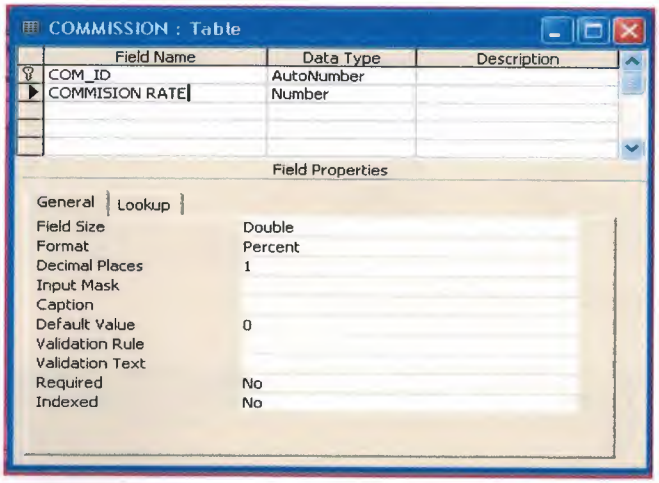


Table 3 Commission & Properties

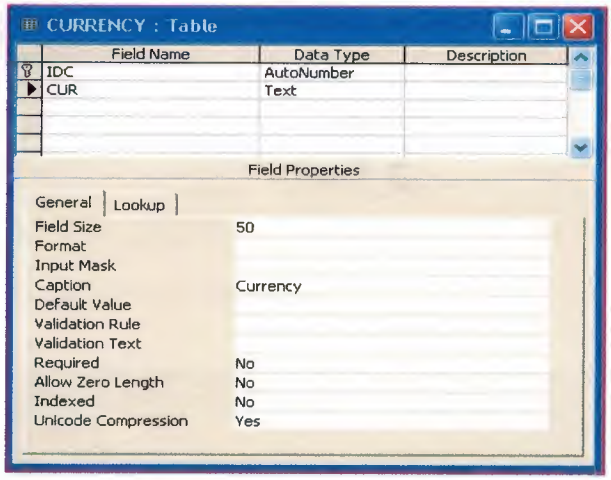


Table 4 Currency & Properties

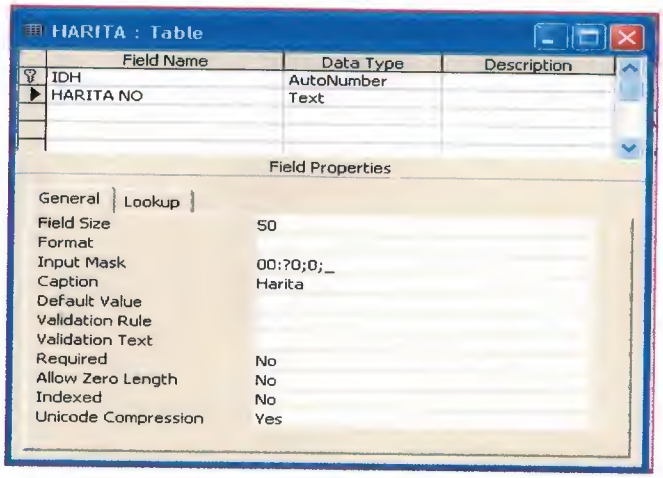


Table 5 Harita & Properties

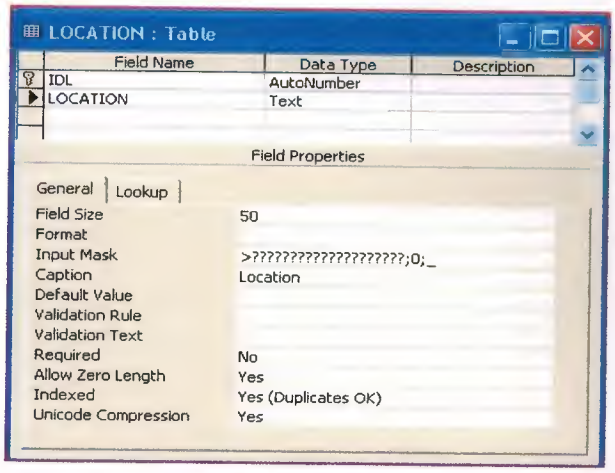


Table 6 Location & Properties

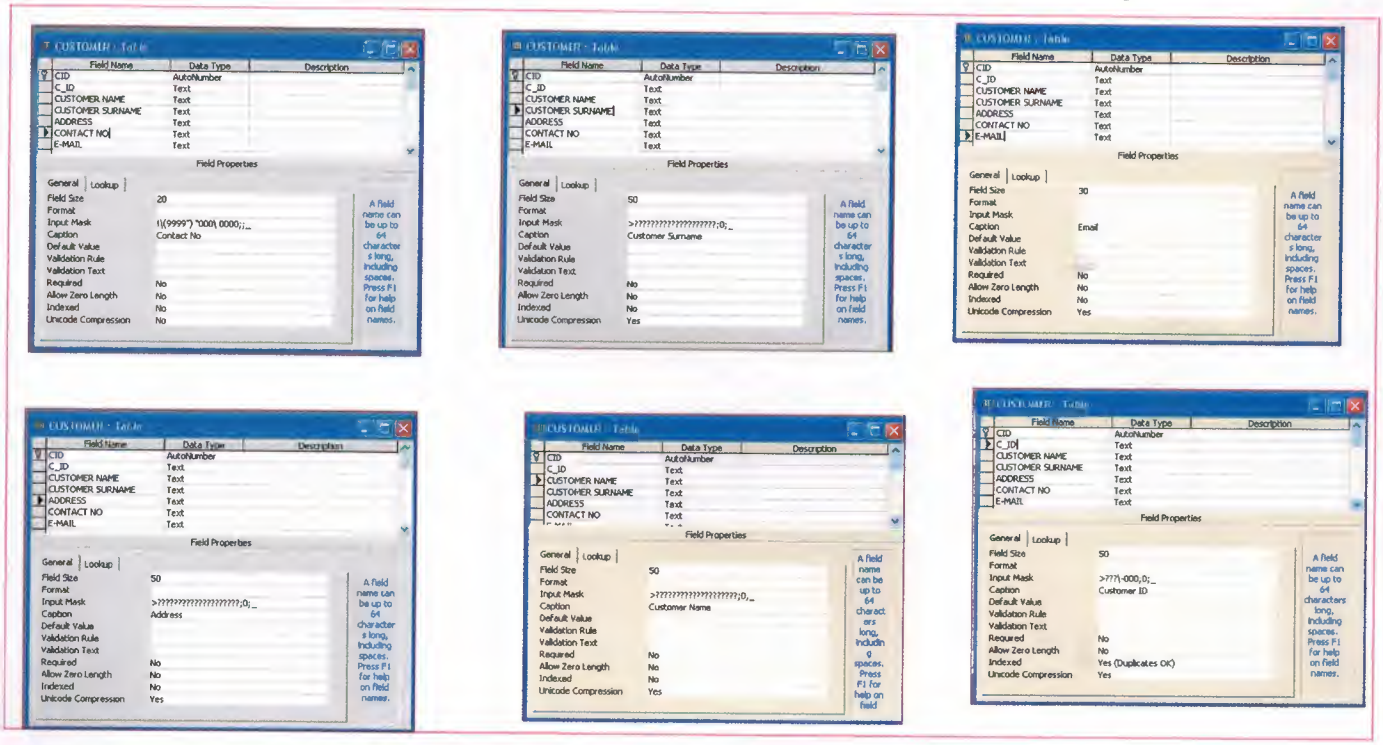


Table 7 Customer & corresponding Properties for each field

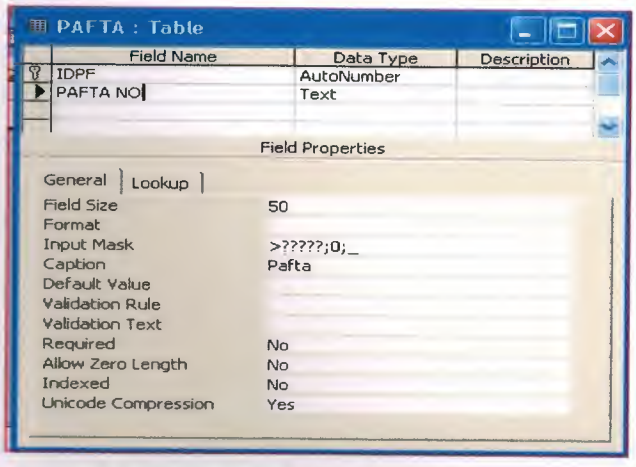


Table 8 Pafta & Properties

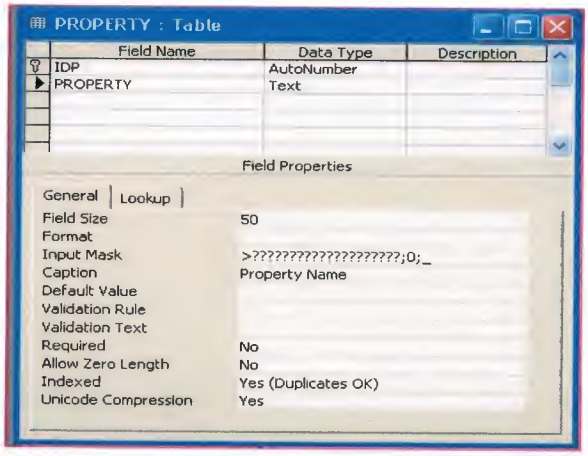


Table 9 Property & Properties

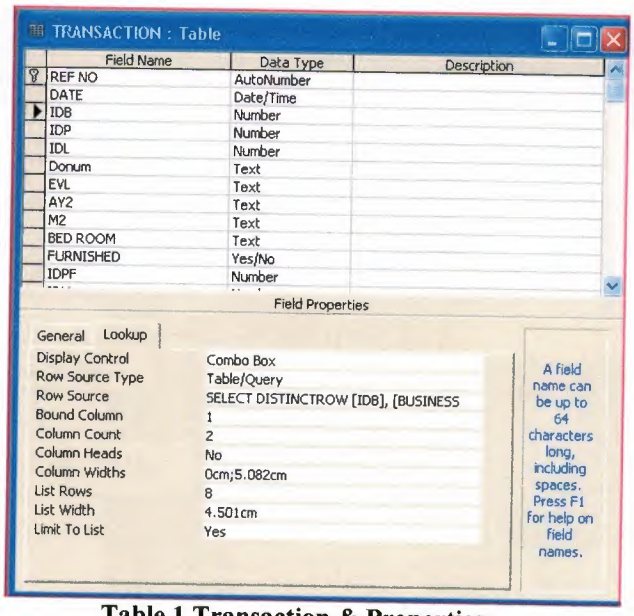


Table 1 Transaction & Properties

Each field in a table has corresponding properties as shown for table 7 [Customer]. They have the General and Lookup Properties.

Table 10 shows the Lookup properties for Field Name IDP showing that the field in the table is designed as a Combo Box.

Tables are used & designed by the programmers. The end users should not interact with this interface.

4.3. Relationship of Tables

After you've set up different tables for each subject in your Microsoft Access database, you need a way of telling Microsoft Access how to bring that information back together again. The first step in this process is to define relationships between your tables. After you've done that, you can create queries, forms, and reports to display information from several tables at once. For example, this form includes information from ninetables: (5 are shown. All list Box entries are data retrieved from the corresponding tables. List Box has an arrow adjacent to the box.)

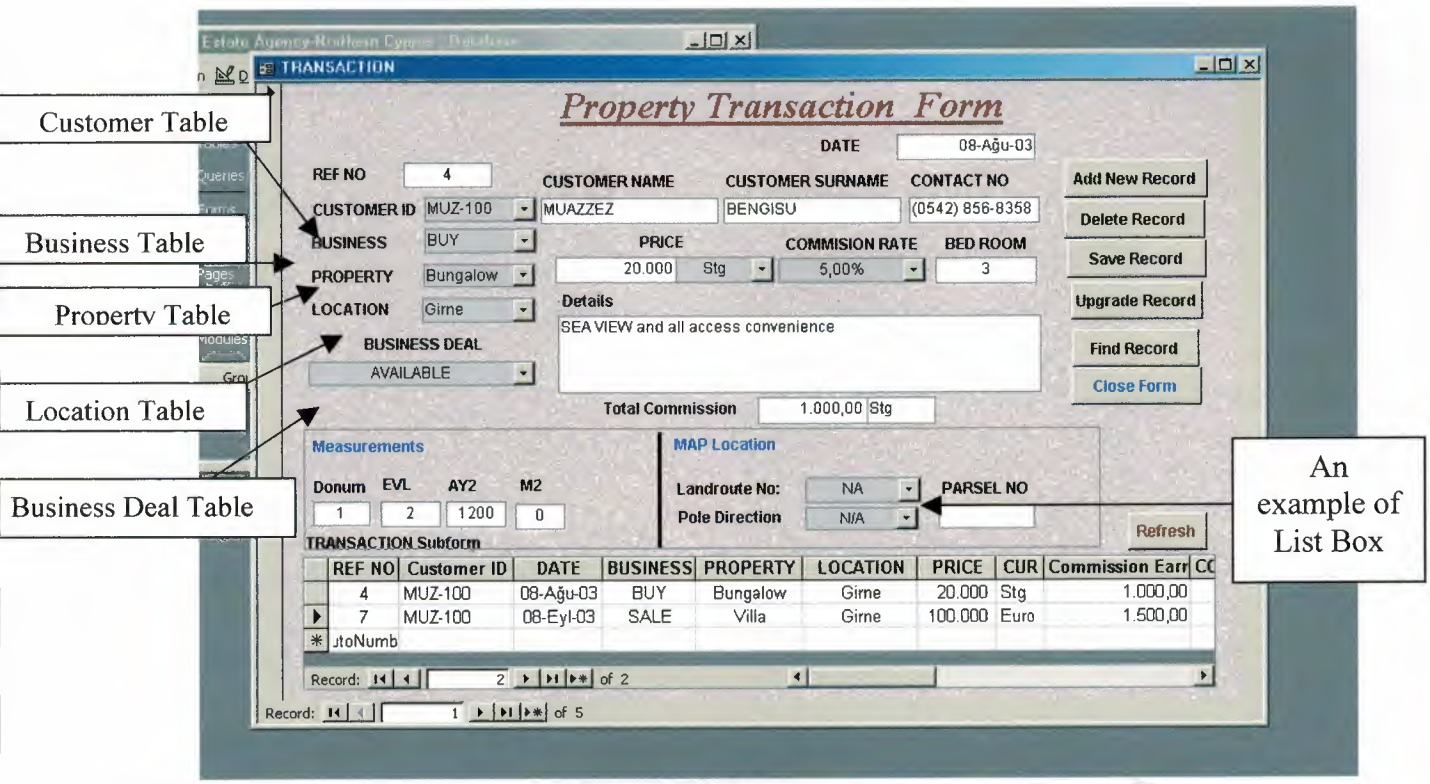


Figure 7.1b Property Transaction Form

As you can see nine of the tables are all joined with their Primary & corresponding Foreign Keys to the Main Table 10. which is the transaction table which makes The Property Transaction Form Figure 7.1b.

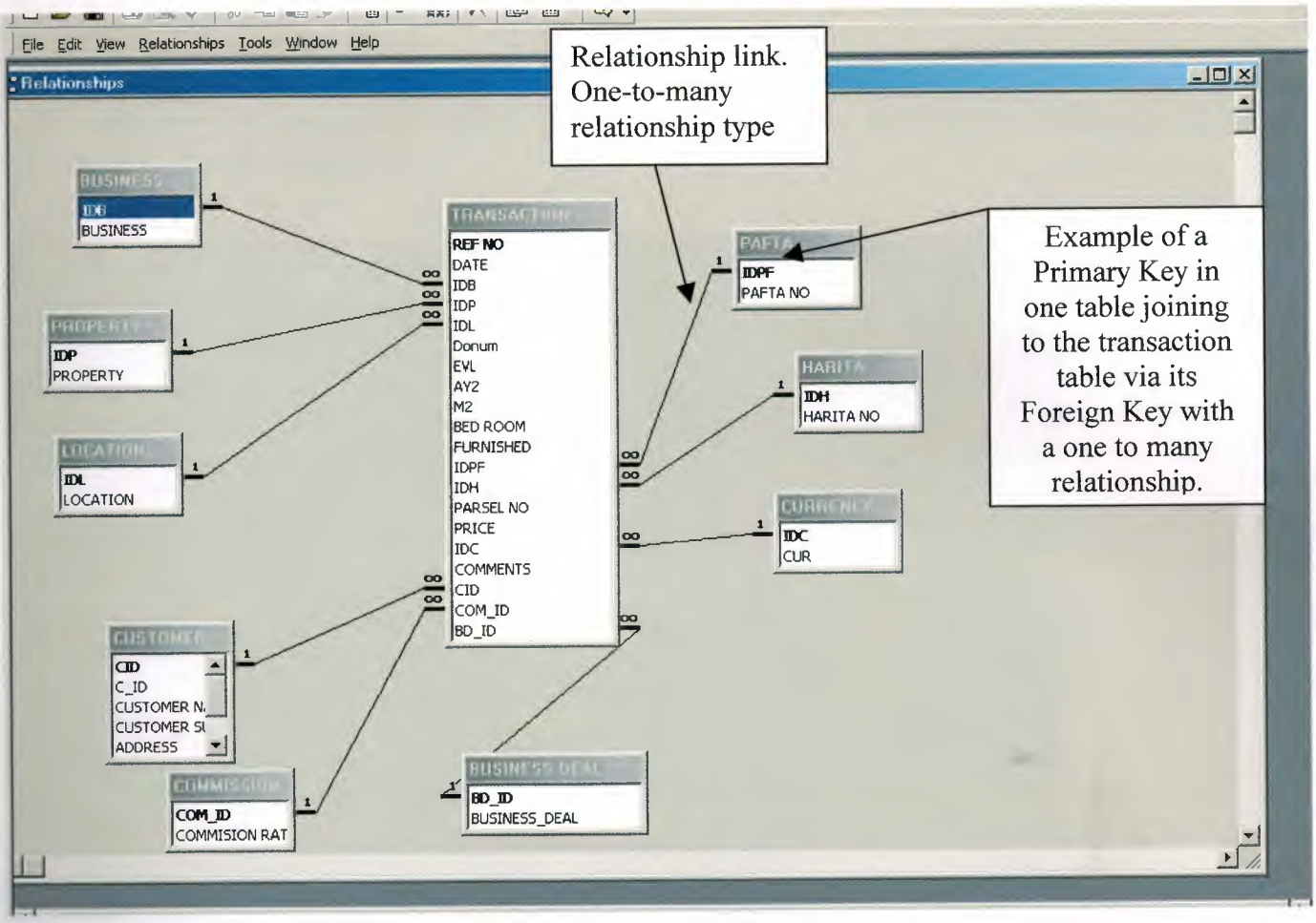


Figure 9 RELATIONSHIPS

4.4 How do relationships work?

The fields in the ten tables must be coordinated so that they show information about the same order. This coordination is accomplished with **relationships** between tables. A relationship works by matching data in key fields — usually a field with the same name in both tables. In most cases, these matching fields are the **primary key** from one table, which provides a unique identifier for each record, and a **foreign key** in the other table. For example, customer can be associated with Ref No's they're assigned for by creating a relationship between the Customer's table and the Transaction table using the CID fields.

primary key One or more fields (columns) whose value or values uniquely identify each record in a table. A primary key cannot allow Null values and must always have a unique index. A primary key is used to relate a table to foreign keys in other tables.

foreign key One or more table fields (columns) that refer to the primary key field or fields in another table. A foreign key indicates how the tables are related. The data in the foreign key and primary key fields must match, though the field names do not have to be the same. For example, the Transaction table might contain the foreign key CID, which relates to the primary key CID in the Customers table.

5. USER MANUAL

1. In order to gain access to the Real Estate Agent Program you Must First click the shortcut on the Desktop.

Figure 2. Desktop

Click This Shortcut
Located in your Desktop

2. Straight after the Password Box appears. You must type in the correct password to enter in to the Database Environment.

Enter Correct Password
Assigned by your Admin.

Figure 3 Password Dialogue Box

3. [The Switchboard Manager is used to create the switchboard which makes it easy to navigate between the forms and reports in an Access Database. A preview of the main switchboard is shown below.]

At the next stage the programs main menu appears. Here you have a list of options to choose from.

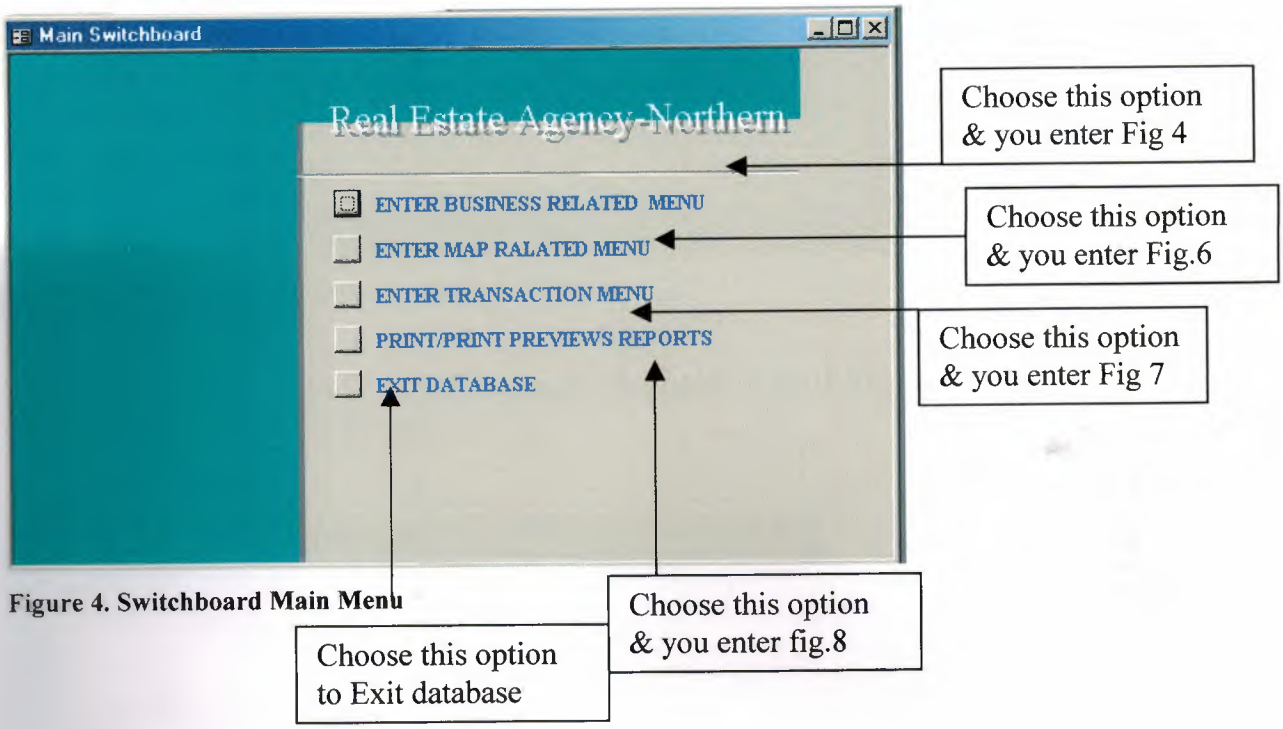


Figure 4. Switchboard Main Menu

4. [Enter Business Related Option] This section deals with inputting the Estate Agents Business related Data which is assigned and determined by the manager as a task to the User's of the Program.

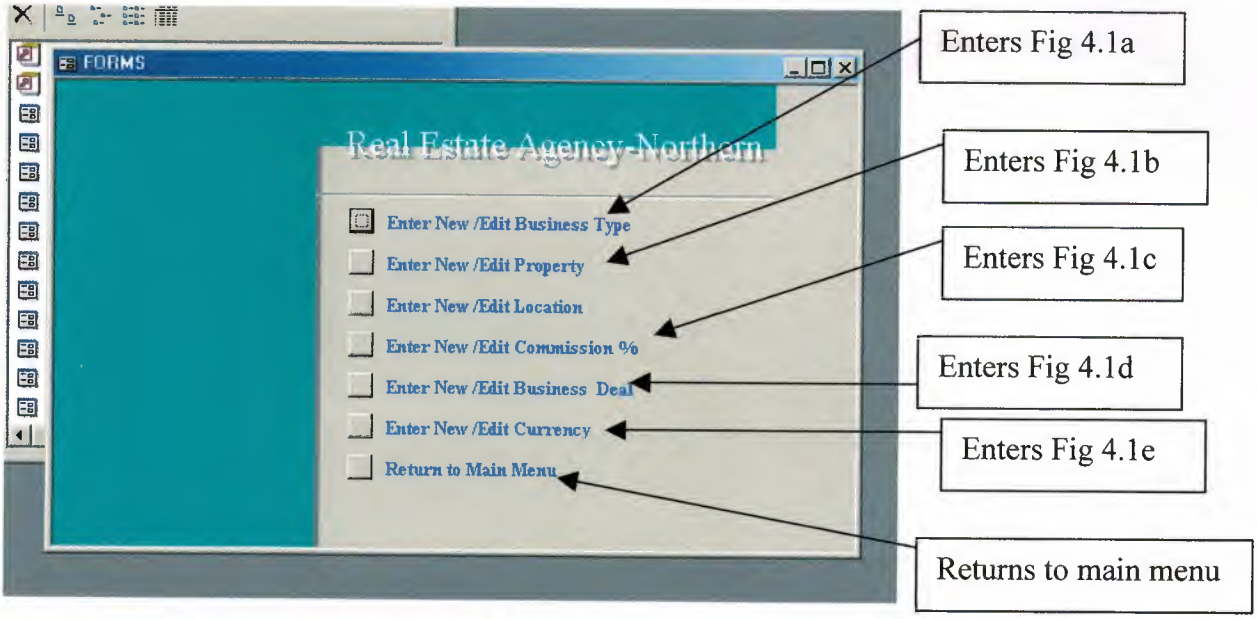
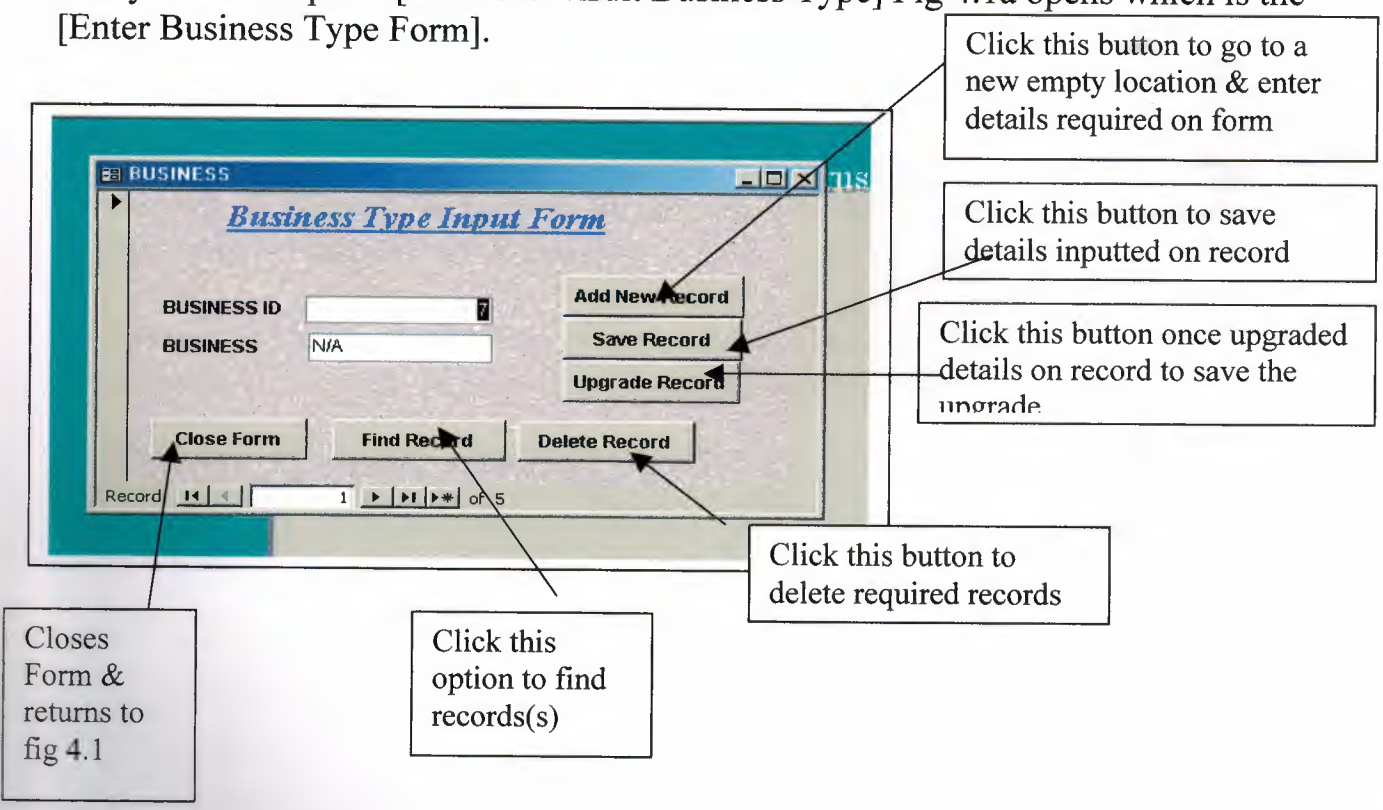


Figure 5.1 Business Related Menu

5. If you select option [Enter New/Edit Business Type] Fig 4.1a opens which is the [Enter Business Type Form].



6 The Find Dialogue Box is as follows.

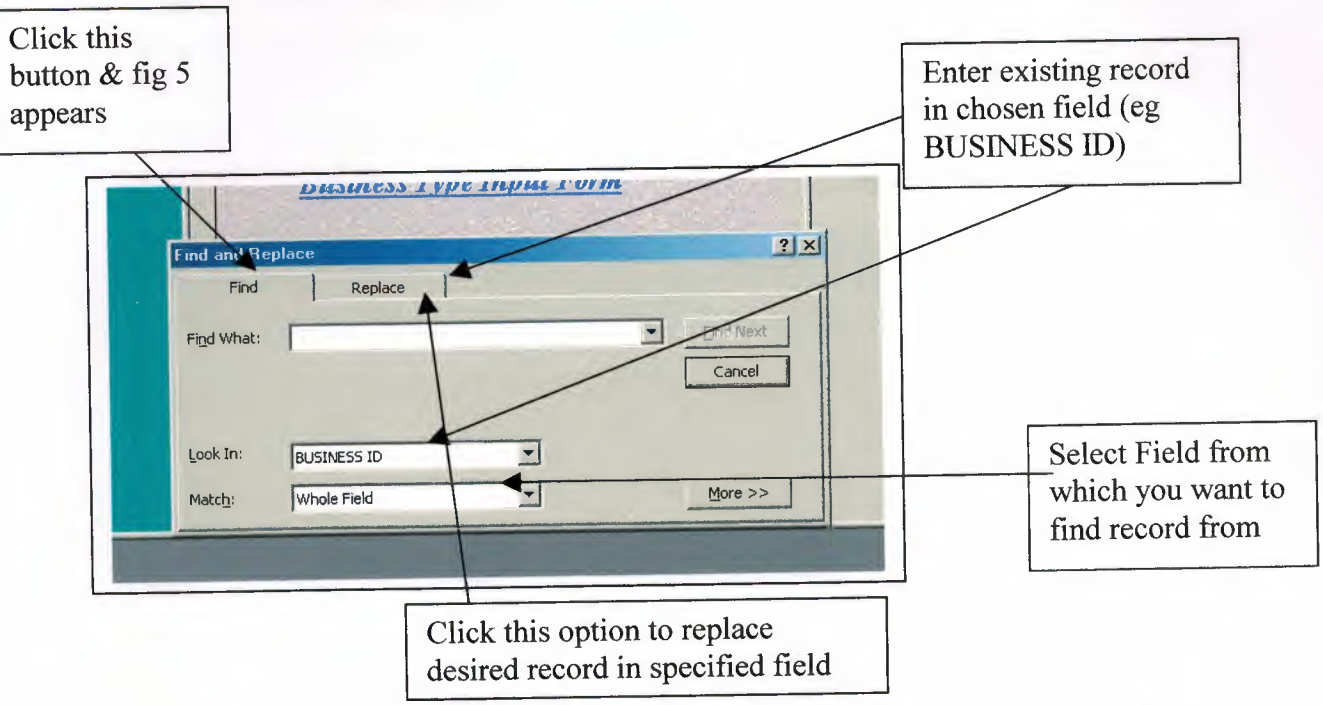


Figure 6. Find Dialogue Box

6. Select option [Enter New/Edit Property] to input property types you deal with at the Estate Agency. These property types will then be listed in the transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

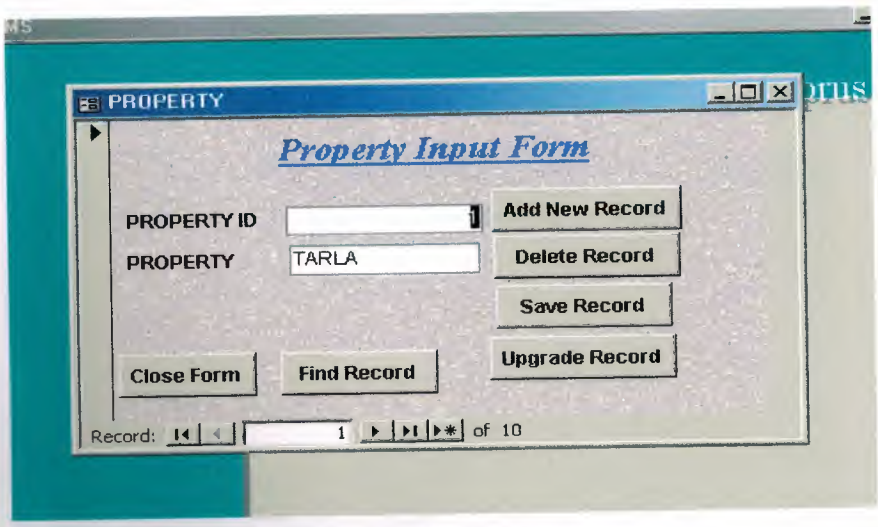


Figure 4.7b Property Input Form

7. Select option [Enter New/Edit Location] to input Locations that you will deal with at the Estate Agency. These Property types will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

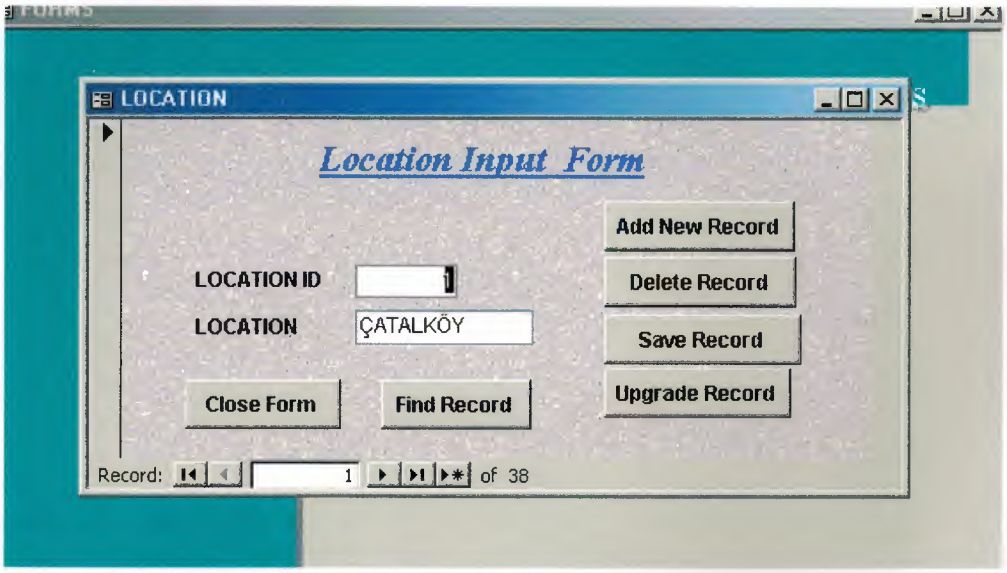


Figure 4.1c Location Input form

8. Select option [Enter New/Edit Commission] to input Commission Rates that you will deal with at the Estate Agency. These commission rates will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

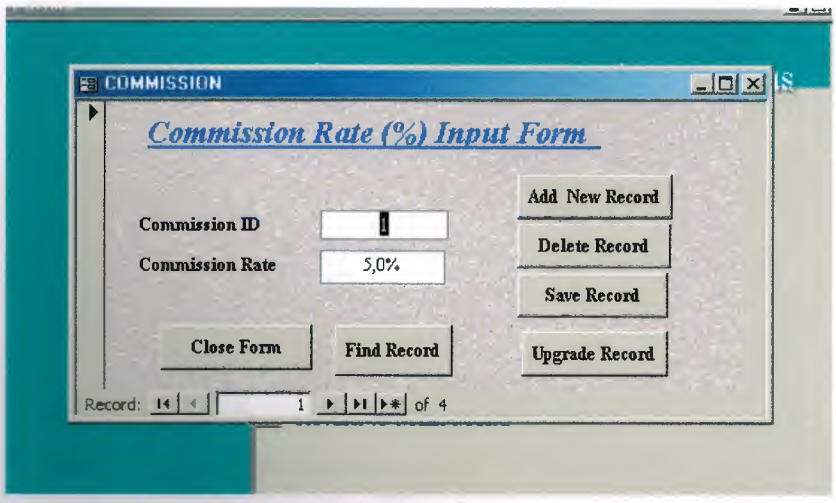


Figure 4.8d Commission Rate Input Form

9. Select option [Enter New/Edit Business Deal] to input Business Deals that you will deal with at the Estate Agency. These Business Deal types will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

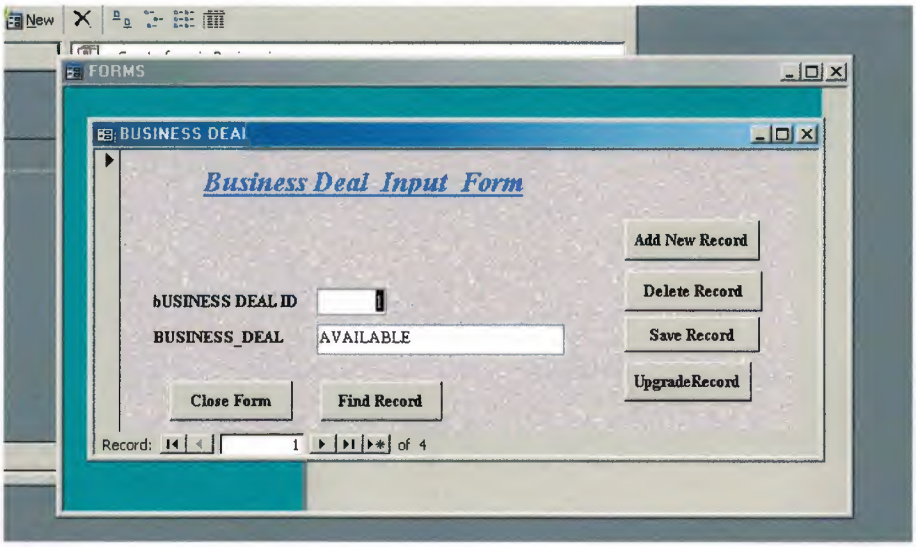


Figure 4.1e Business Deal Input Form

10. Select option [Enter New/Edit Currency] to input Currency types that you will deal with at the Estate Agency. These Currency types will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

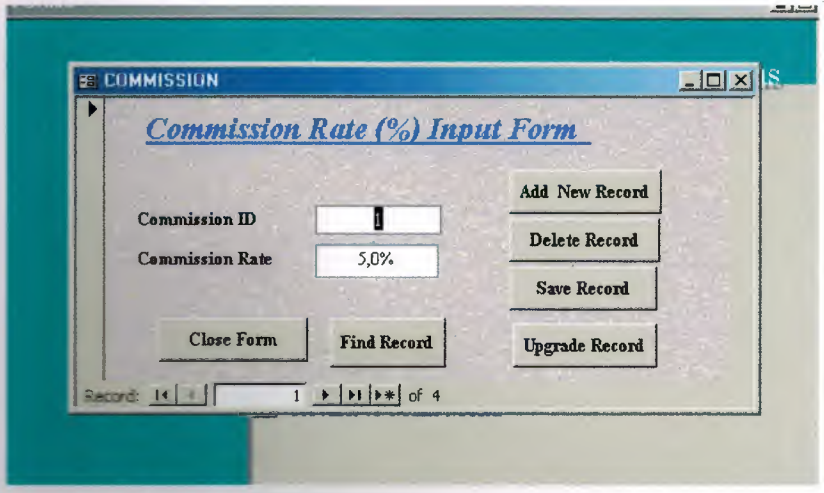


Figure 4.1f Commission rate Input Form

11. Select option [Enter map related menu] to go to fig 6. Map related Menu. Here you can select to enter Landroute Input Form or Pole Input Form .

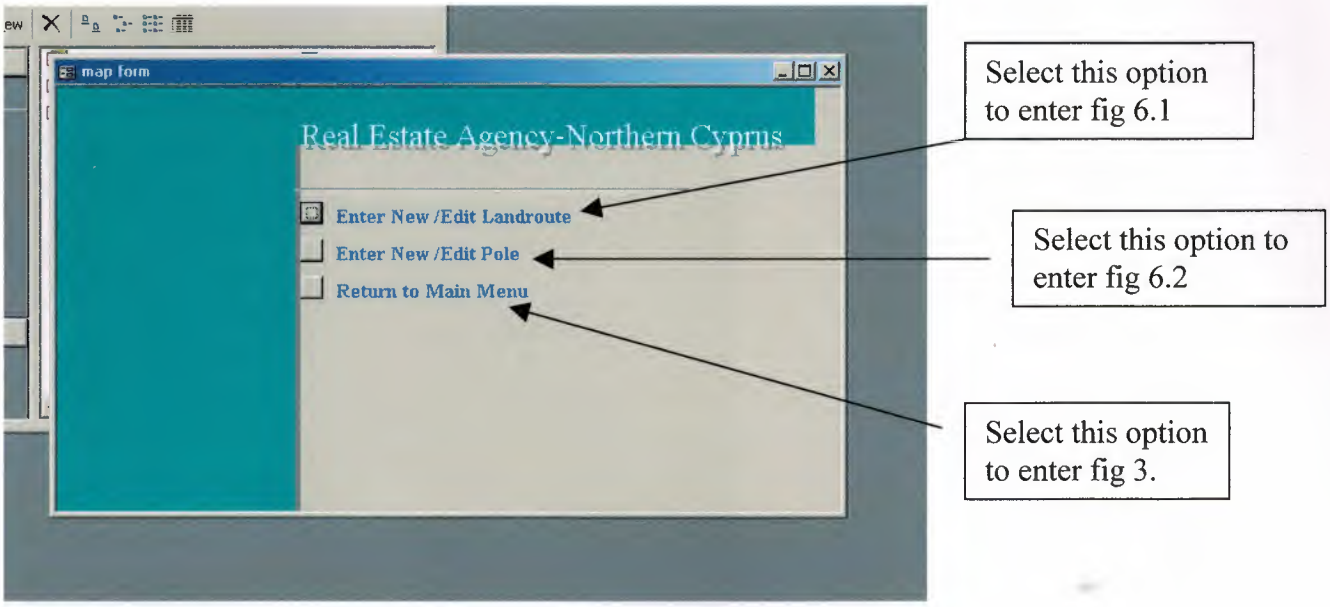


Figure 6 Map Related Menu

12. Select option [Enter New/Edit Landroute] to input Landroute No's available on a map that you will deal with at the Estate Agency. These Landroute Nos's will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

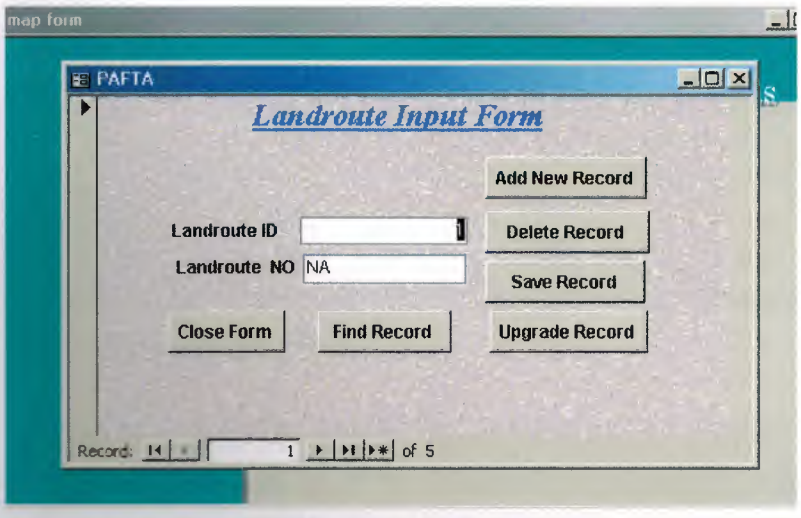


Figure 6.1a Landroute Input Form

13. Select option [Enter New/Edit Pole] to input Pole No's available on a map that you will deal with at the Estate Agency. These Pole Nos's will then be listed in the Transaction form when dealing with Customer transactions fig .

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

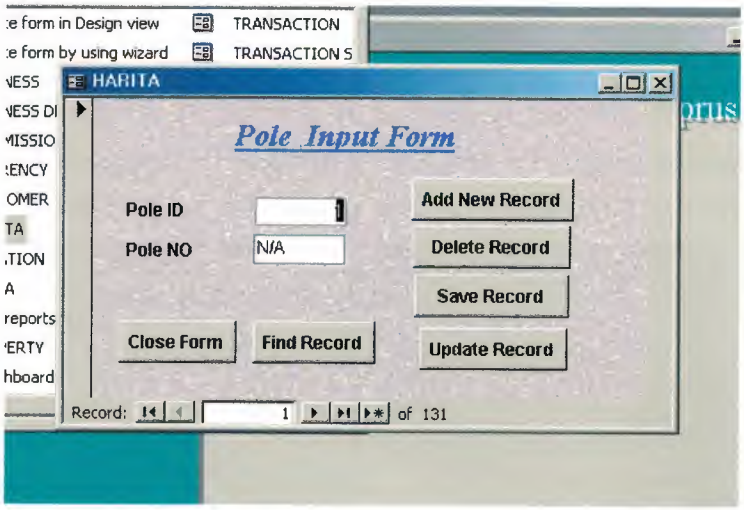


Figure 6.9b Pole Input Form

14. Select option [Enter Transaction Menu] to go to Fig 7 from main switchboard.

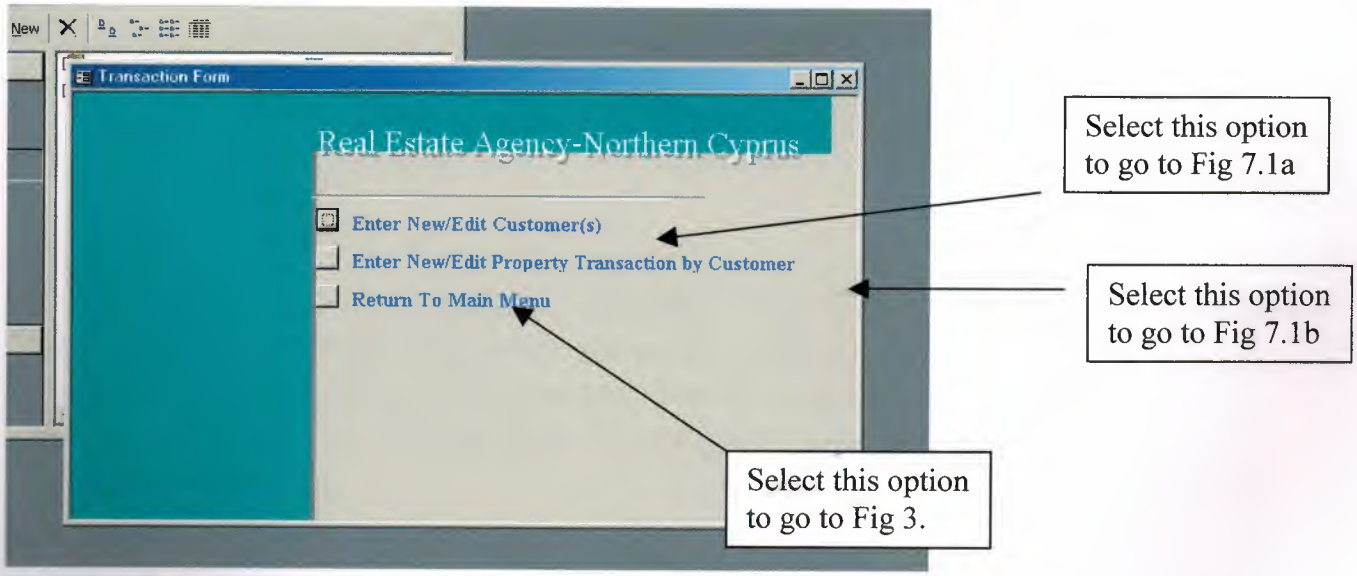
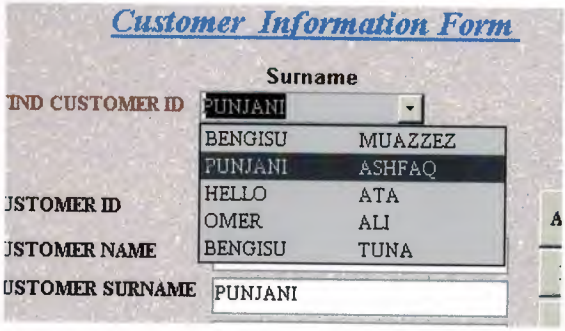


Figure 7.10 Transaction Menu

15. Select option [Enter New/Edit Customer(s)] to input Customer Details. The Customer ID's will then be used in the transaction form fig 7.1b and selected from the listbox. Customer details will then be displayed by auto lookup.



The form is also designed to find Customer ID by surname and name. For example a Customer phones up and wishes to enquire about his or her property but he has forgotten his Customer ID. The user of the program enters this form and types in the surname and finds the corresponding name(s), (more than one person can have the surname) and then selects the applying surname & name. The details including unique Customer ID are displayed in the record fields

{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

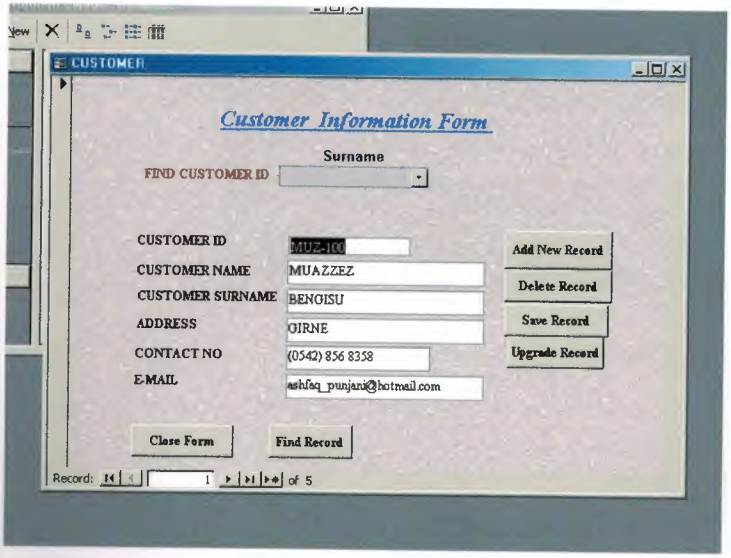


Figure 7.1a Customer Information Form

16. Select option [Enter New/Edit Transaction By Customer] to Fill out the Property Transaction Details when a customer comes to the Estate Agency.
{Please recall step 4 pg to view command button operations}
{Please recall step 5 pg to view Find Record Button Dialogue Box}

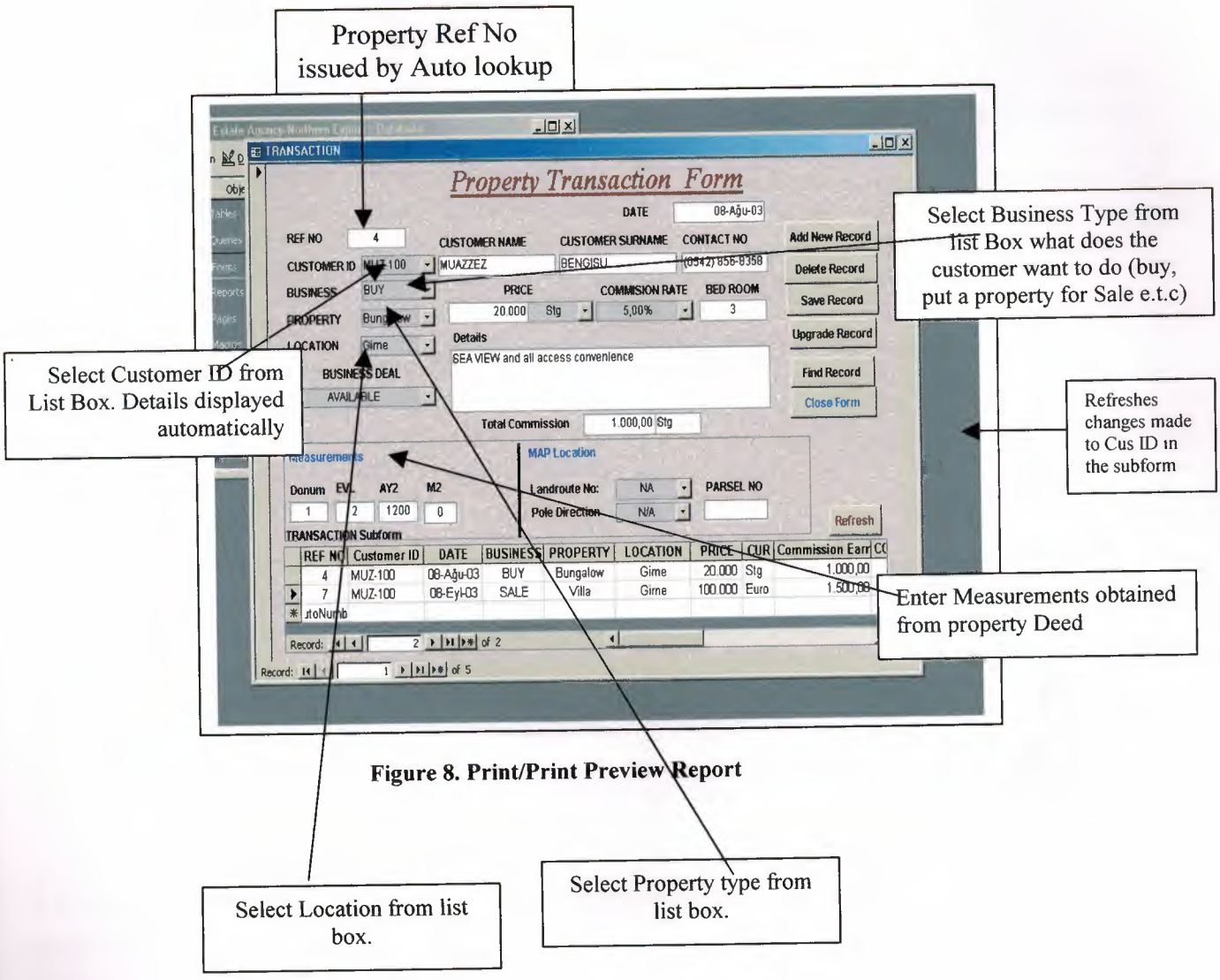


Figure 8. Print/Print Preview Report

Business type is selected from list to determine what business transaction is to be made. For Sale, Buy, Vendor or Tendant.

For Sale: The Customer wants to put property on sale. Deed info is entered & commisssion rate, & property info. In Business Deal **Available For Sale** is selected. Once Sold, record is found and **Sold** is selected in Business Deal and upgraded.

Buy: Customer is looking for property to buy. Details entered. Measurement & Map location is not entered. NA is chosen for landroute & pole. In business Deal **Still looking for** is selected. Once they have bought a property **Bought** is selected from Business Deal List.

Vendor: This option is selected from the list box when a customer is the landlord of the property and is putting the property for rent. Hence **For Rent** is selected in the Business Deal list box. Measurements and Map Location not needed to be filled out. Once property is rented the Business Deal is changed to **Rented** and hence upgraded.

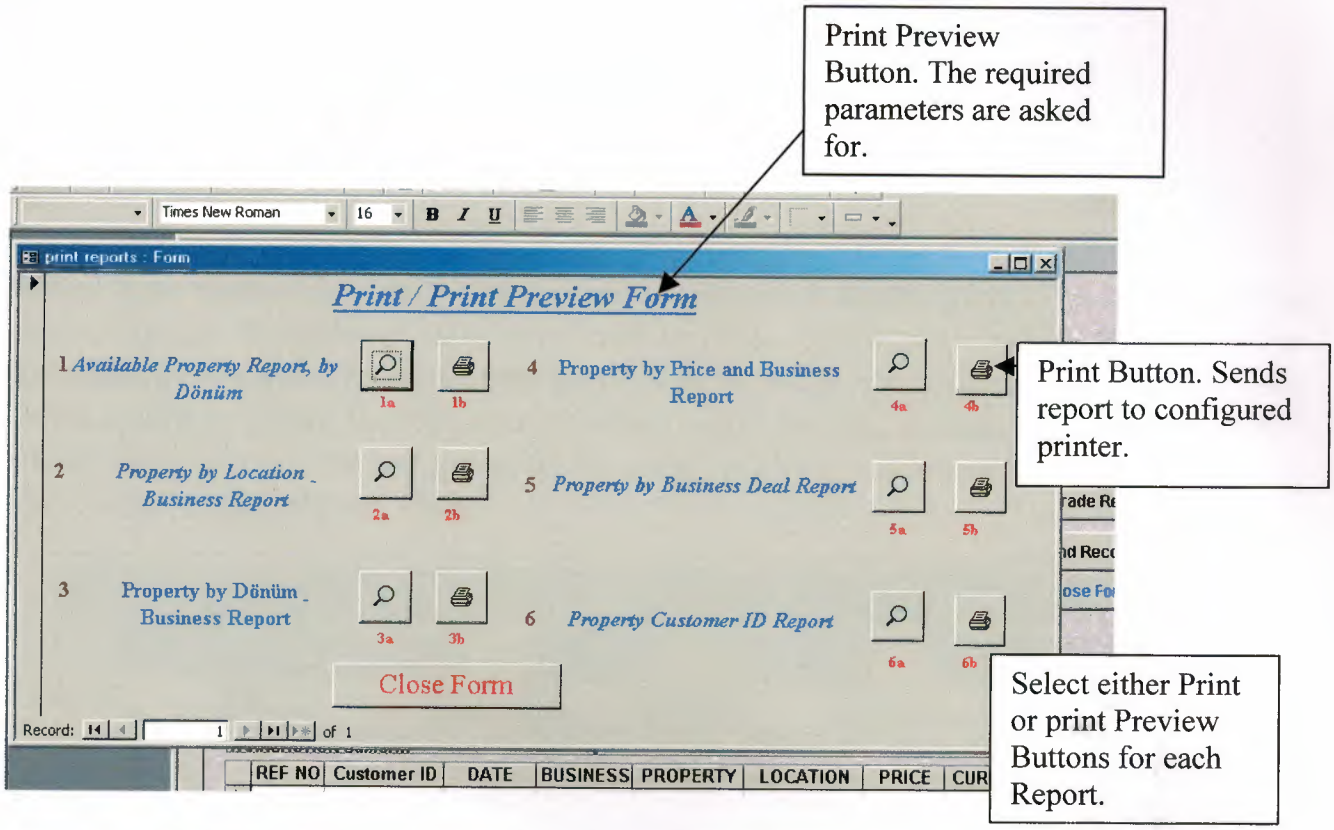
.

Tendant: This option is selected when a customer wishes to rent out a property. Details of property type, location and what price they are willling to pay monthly are filled out on the form. In Business Deal list box **Still looking for** is selected. Once the Customer has rented a property this is changed to **Rented.**

If in the Business List box the Customer has not decided what to do with his/her property "Undecided" should be selected and Not Applicable in the Business Deal list box.

The sub-form displays all the associated Ref No's for each Customer. You can change the Customer ID for given transaction details if any external changes are made to the property (i.e owner changes). Select from list & Refresh.

17. Select option [Print/Print Preview Reports] to gain access to the various reports available with the program.



This section provides the user with various reports based on the details that they have inputted in the Transaction Form. These reports were designed on the demands of the Estate Agency. What info & Reports that they need to make effective decisions on the business.

1. This report gives details on all available properties either Available For Sale, Available for Rent. We choose the property type we want to see report on.

2. Shows all Properties by Business and location. For example all Sale Properties in Girne, or all Vendor properties in ozankoy.

3. This report shows all properties in the given range of Donum measurements.

4. This report shows all the properties in the defined price range and business within the business.

5. This report shows all the properties by chosen business deal, and hence the commission earned.

6. This report shows all the details available with the associated Customer ID in the transaction form.

Example of each Report is attached on the following pages.

Reports are made using the Queries Tool in access. A select query is the most common type of query. It retrieves data from one or more tables and displays the results in a datasheet where you can update the records (with some restrictions). You can also use a select query to group records and calculate sums, counts, averages, and other types of totals. However we are not going to view the results in datasheet view in normal view, and we have grouped our Data.

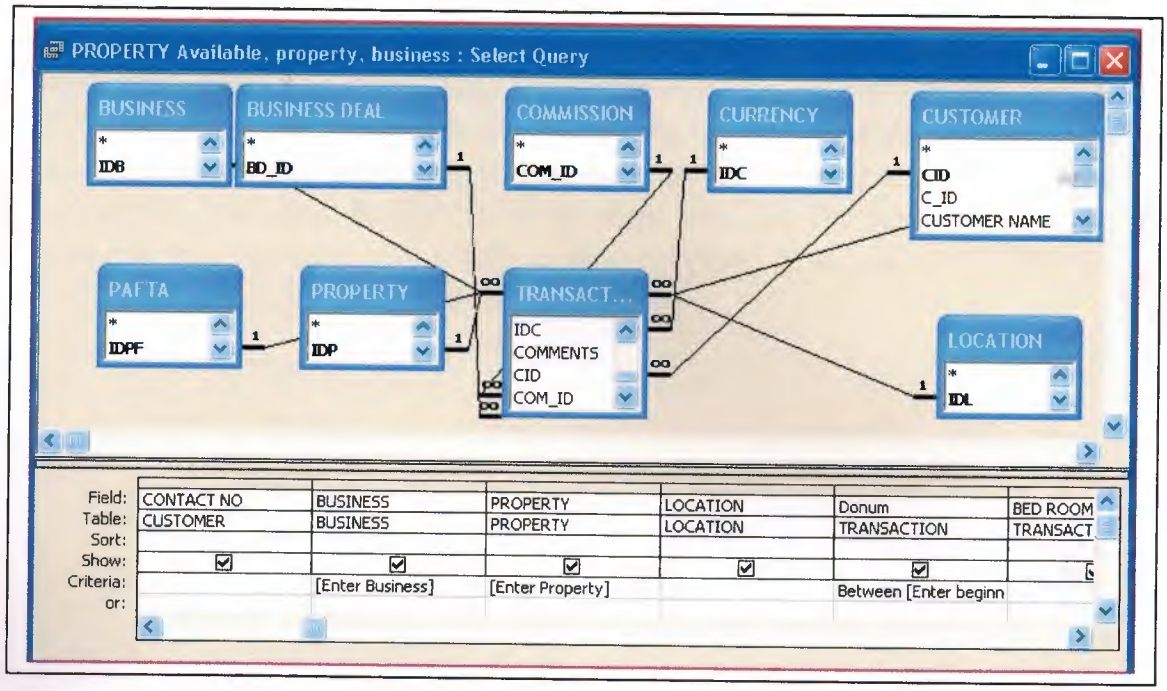


Figure 110 An Example Of Query in Design View

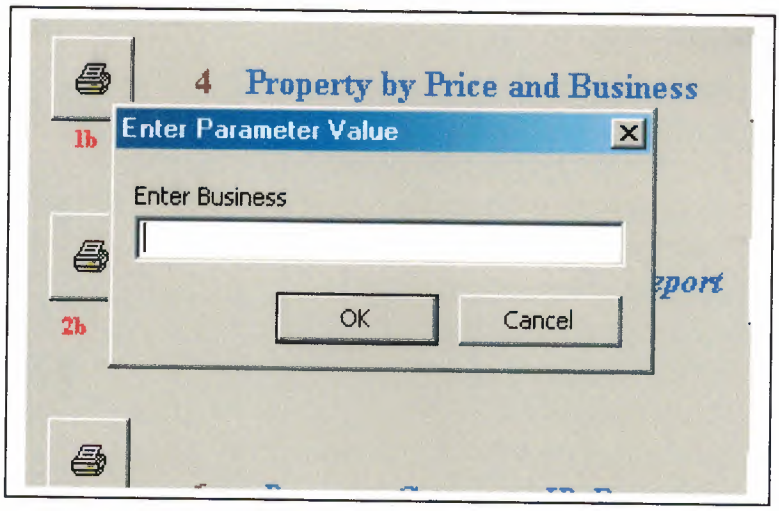


Figure 11 Example of a Parameter Query box

A parameter query is a query that when run displays its own dialog box prompting you for information, such as criteria for retrieving records or a value you want to insert in a field. You can design the query to prompt you for more than one piece of information; for example, you can design it to prompt you for Property & Location. Microsoft Access can then retrieve all records in that property & location

REPORT BY CUSTOMER ID

CUATOMER ID TUN-100

Ref No	Location	Date	Business	Property	Name	Surname	Contact	Bed(s)	Price	Don	EVL	AY2	M2	Com. Rate	Com. Earn
15	OZANKOY		FOR SALE	BUNGALOW	TUNA	BENGISU	(0542) 856-8358	3	10,000 Stg	1	1	1200		0.0%	0.00

Property by Price

BUSINESS FOR SALE

PROPERTY Bungalow

LOCATION OZANKOY

Ref No	Date	CID	Bed(s)	PRICE		Donum	EVL	AY2	M2	Pafta	Harita	Parsel	Commission Rate	Comments	Commission Earn
15		TUN-100	3	10,000	Stg	1	1	1200		NA	N/A		0.0%	GOOD MOUNTAIN VIEW	0

PROPERTY Ev

LOCATION Girne

Ref No	Date	CID	Bed(s)	PRICE		Donum	EVL	AY2	M2	Pafta	Harita	Parsel	Commission Rate	Comments	Commission Earn
14		GUL-100	3	50,000	Stg					NA	N/A		0.0%	SOSYAL KONUKLAR	0

PROPERTY Villa

LOCATION Girne

Ref No	Date	CID	Bed(s)	PRICE		Donum	EVL	AY2	M2	Pafta	Harita	Parsel	Commission Rate	Comments	Commission Earn
16		GUL-100		500,000	Stg					NA	N/A		0.0%		0

Total Commission Earned **0**

Property By Location

BUSINESS FOR SALE

PROPERTY Bungalow

LOCATION OZANKOY

Ref No	Date	CID	Bed(s)	PRICE		Donum	EVL	AY2	M2	Pafta	Harita	Parsel	Commission Rate	Commission Earn	Comments
15		TUN-100	3	10,000	Stg					NA	N/A		0.0%	0.00	GOOD MOUNTAIN VIEW

Available Property

BUSINESS FOR SALE

PROPERTY Bungalow

BUSINESS DEAL AVAILABLE FOR SALE

Ref No	Location	Date	CID	Name	Surname	Contact	Bed(s)	Price	Don	EVL	AY2	M2	Commission Rate	Commission Earn
15	Ozanköy		TUN-100	TUNA	BENGISU	05428568358	3	10,000	Stg				0.0%	0.00

Propert Available by Donum

BUSINESS FOR SALE

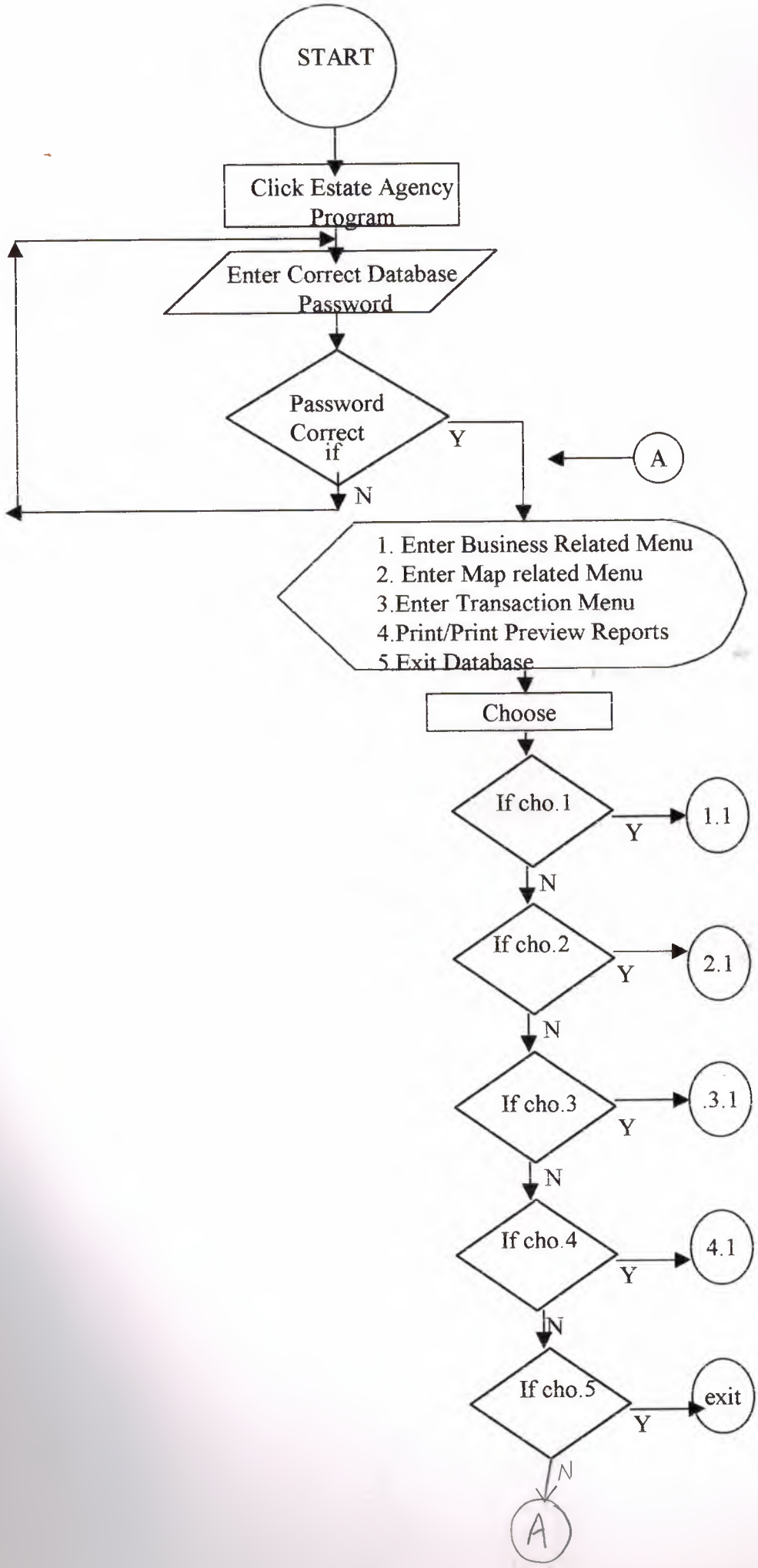
PROPERTY Bungalow

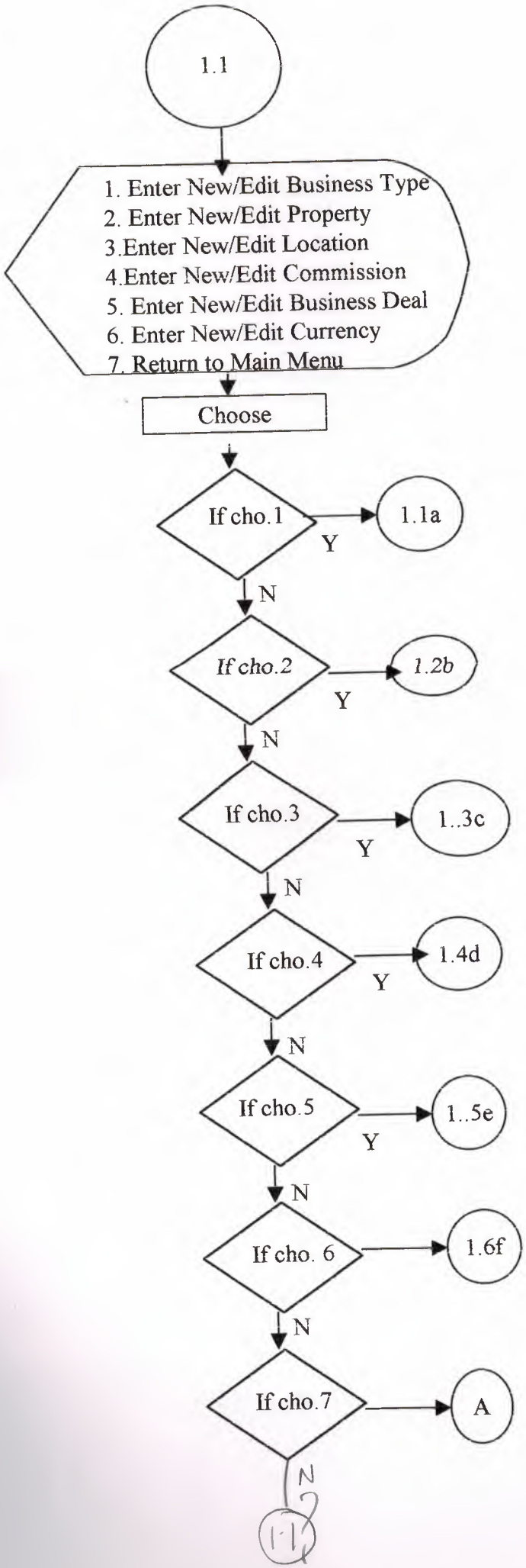
Donum 1

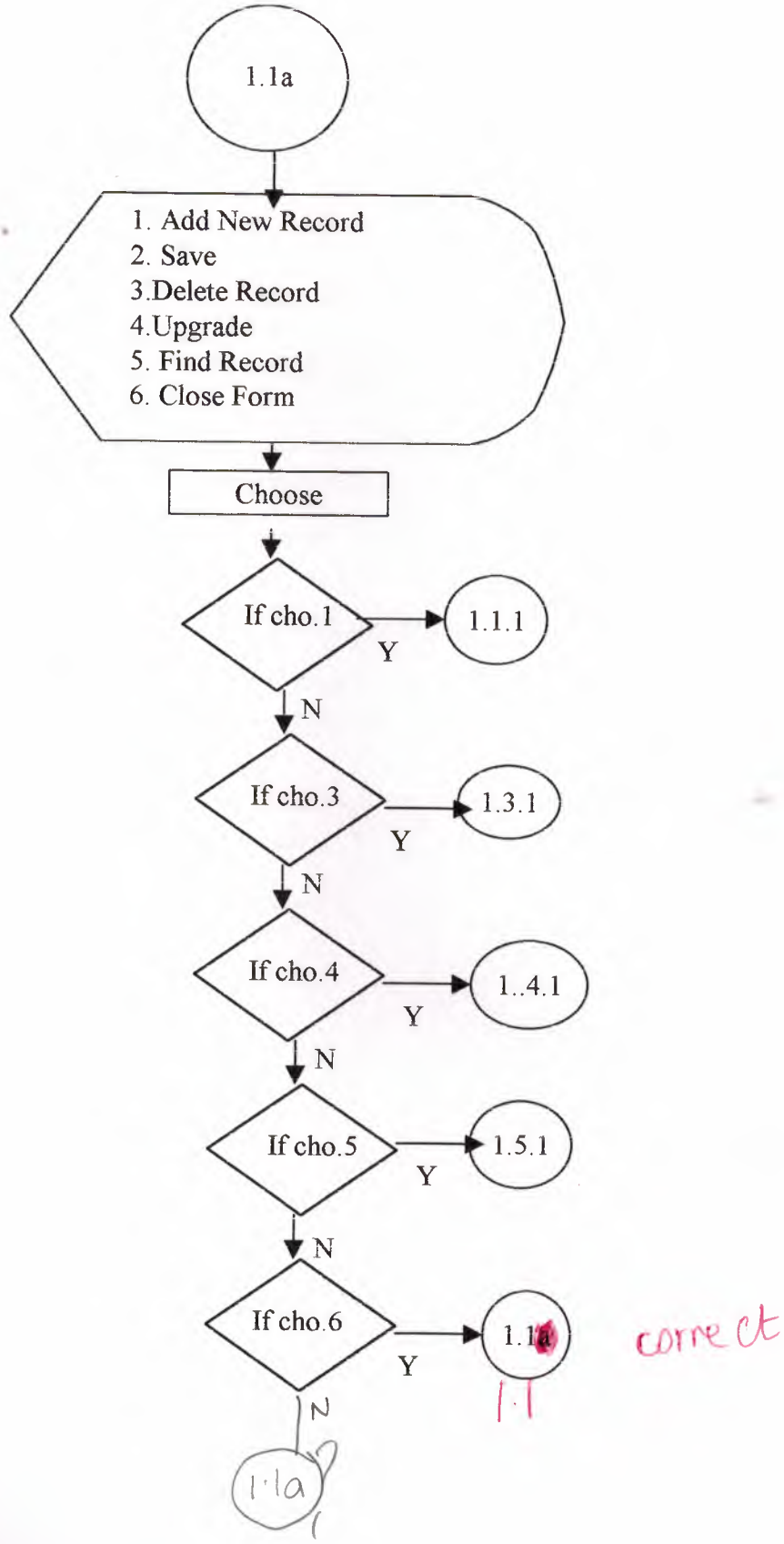
Ref No Date	CID	Location	Bed(s)	PRICE		EVL	AY2	M2	Pafta	Harita	Parsel	COMMISION RATE	Commission Earn
15	TUN-100	OZANKOY	3	10,000	Stg	1	1200		NA	N/A		0.0%	0
												Total Commission Earned	**0**

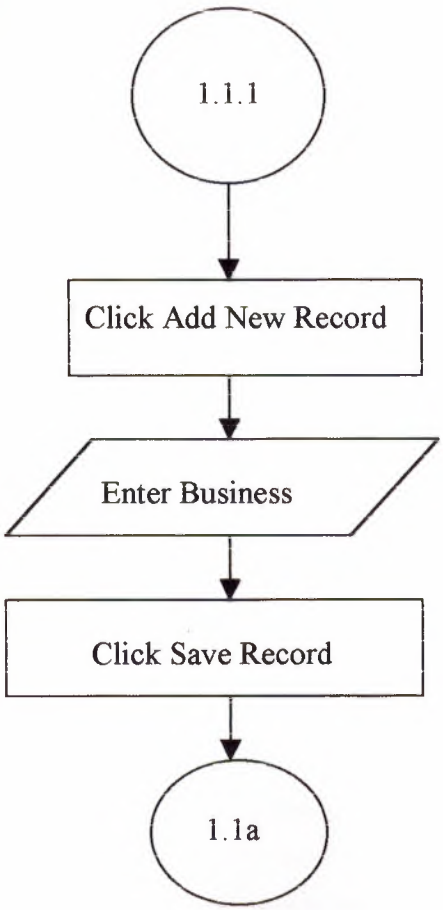
6. Program Flow charts

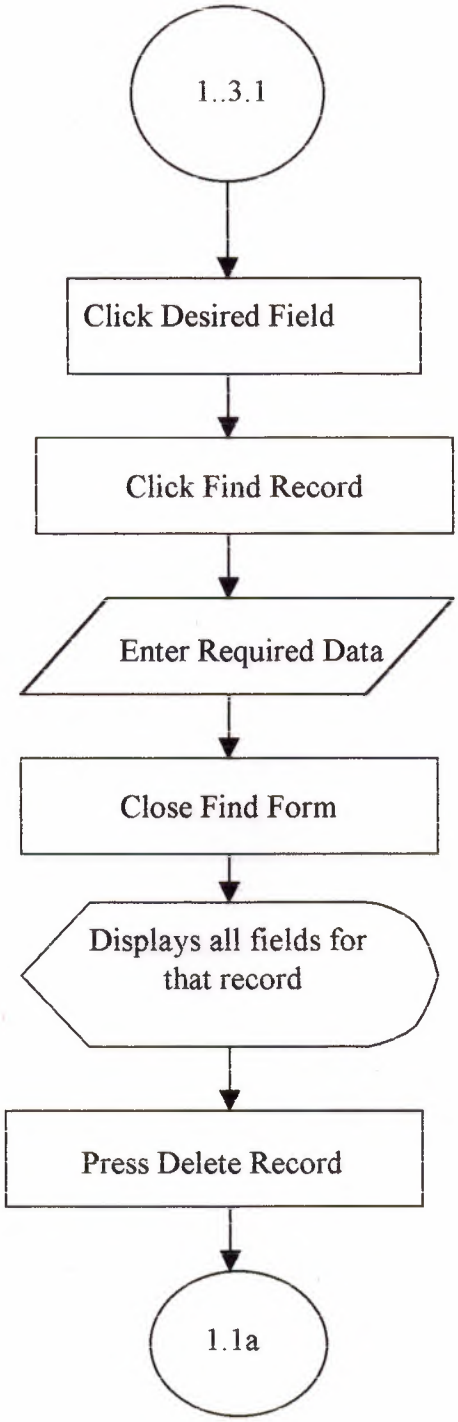
The following section describes how to use the program via User Flow charts

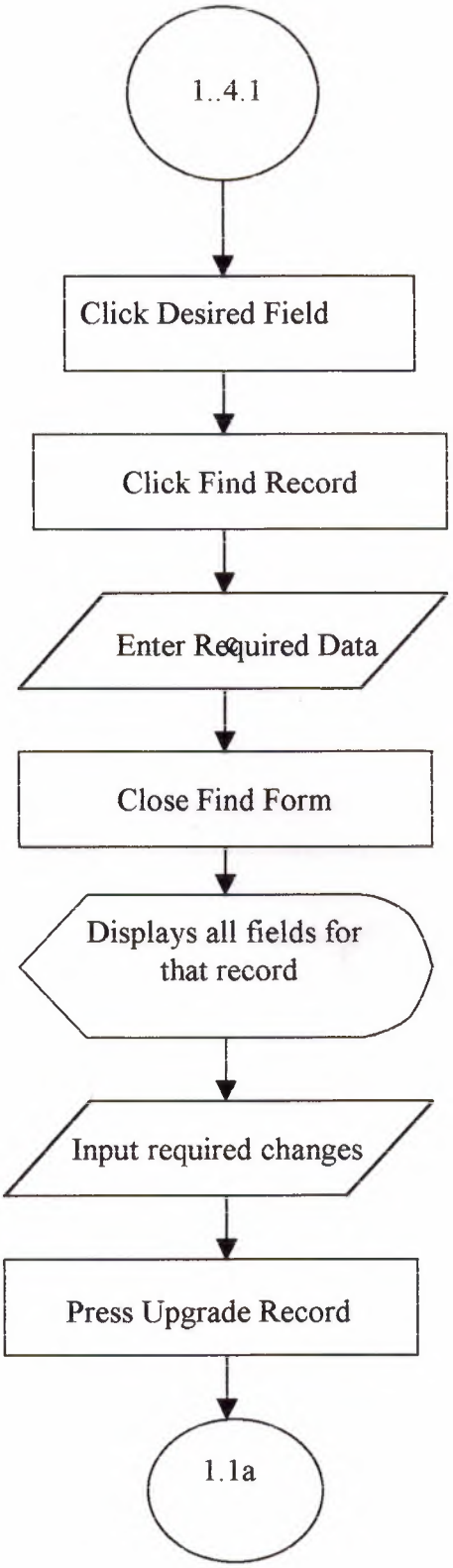

START
Click Estate Agency Program
Enter Correct Database Password
Password Correct if
Y
N
A
1. Enter Business Related Menu
2. Enter Map related Menu
3.Enter Transaction Menu
4.Print/Print Preview Reports
5.Exit Database
Choose
If cho.1
Y
1.1
N
If cho.2
Y
2.1
N
If cho.3
Y
.3.1
N
If cho.4
Y
4.1
N
If cho.5
Y
exit
N
A

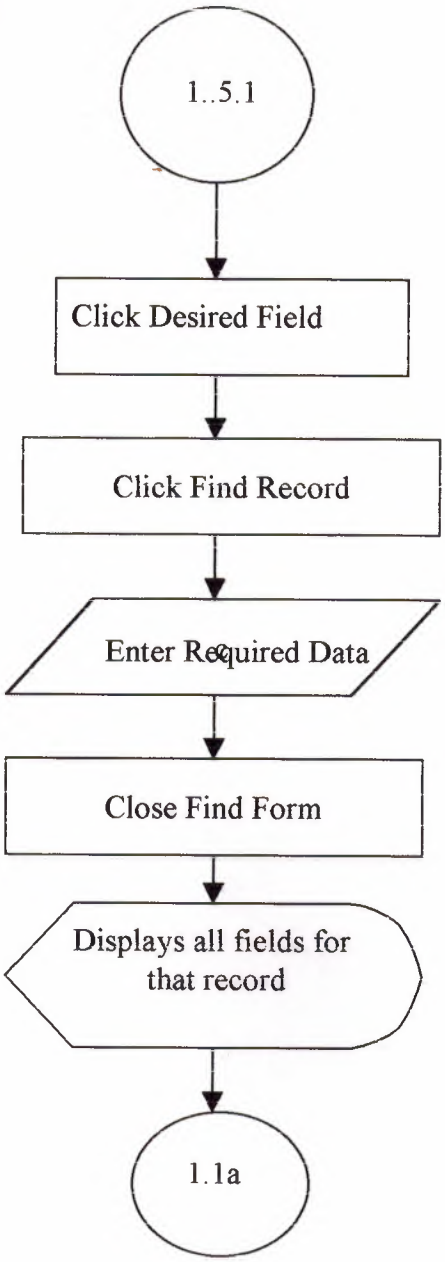

1.1
1. Enter New/Edit Business Type
2. Enter New/Edit Property
3.Enter New/Edit Location
4.Enter New/Edit Commission
5. Enter New/Edit Business Deal
6. Enter New/Edit Currency
7. Return to Main Menu
Choose
If cho.1
Y
1.1a
N
If cho.2
Y
1.2b
N
If cho.3
Y
1..3c
N
If cho.4
Y
1.4d
N
If cho.5
Y
1..5e
N
If cho. 6
1.6f
N
If cho.7
A
N
1.1

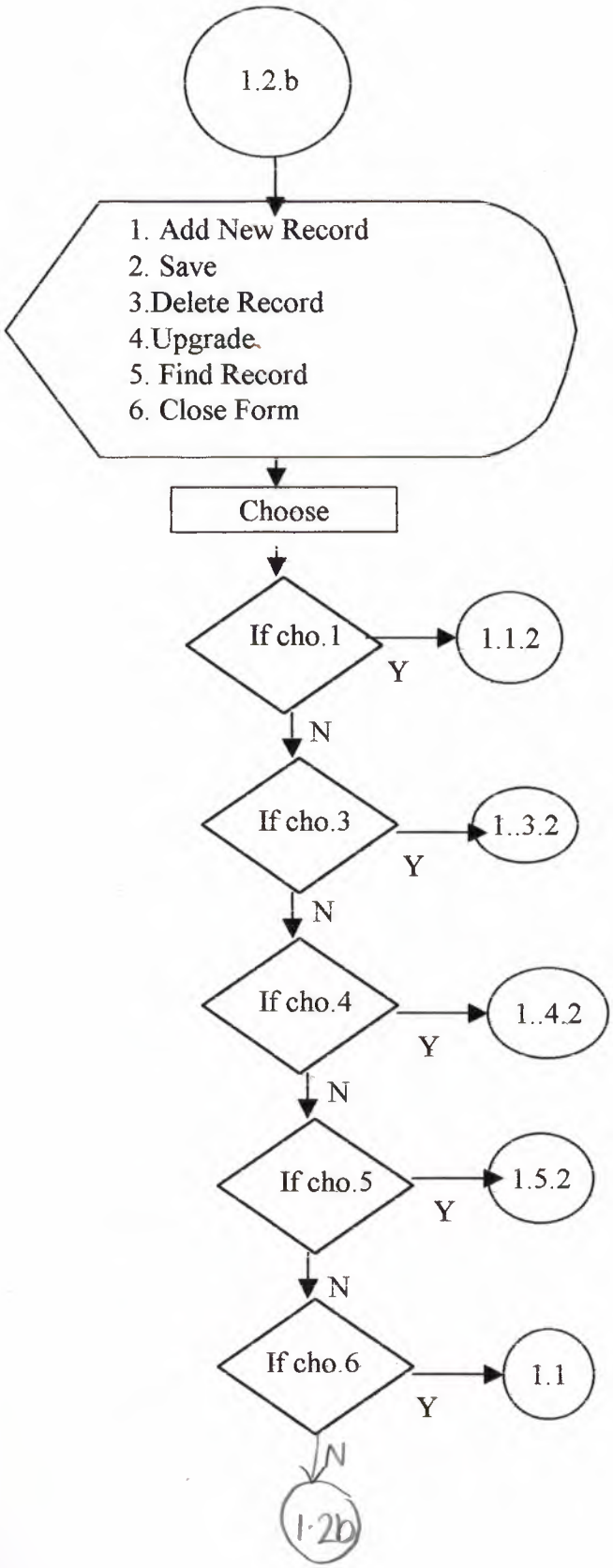

1.1a
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.1
N
If cho.3
Y
1.3.1
N
If cho.4
Y
1..4.1
N
If cho.5
Y
1.5.1
N
If cho.6
Y
1.1a
N
1.1a
correct
1.1

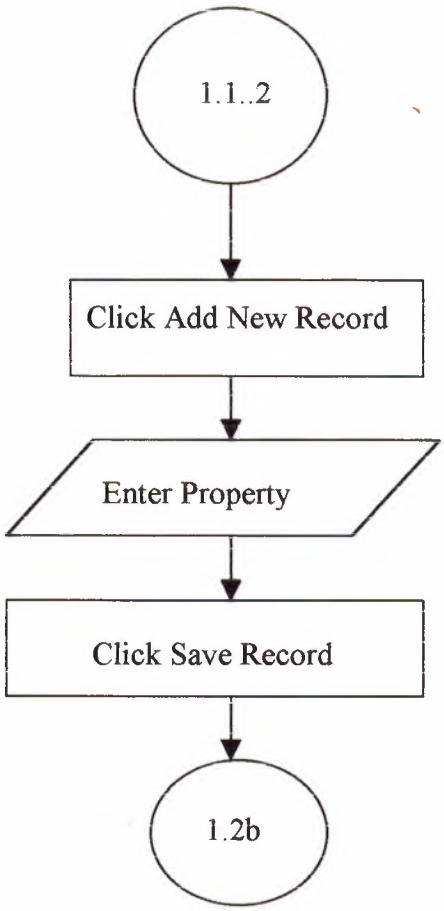

1.1.1
Click Add New Record
Enter Business
Click Save Record
1.1a

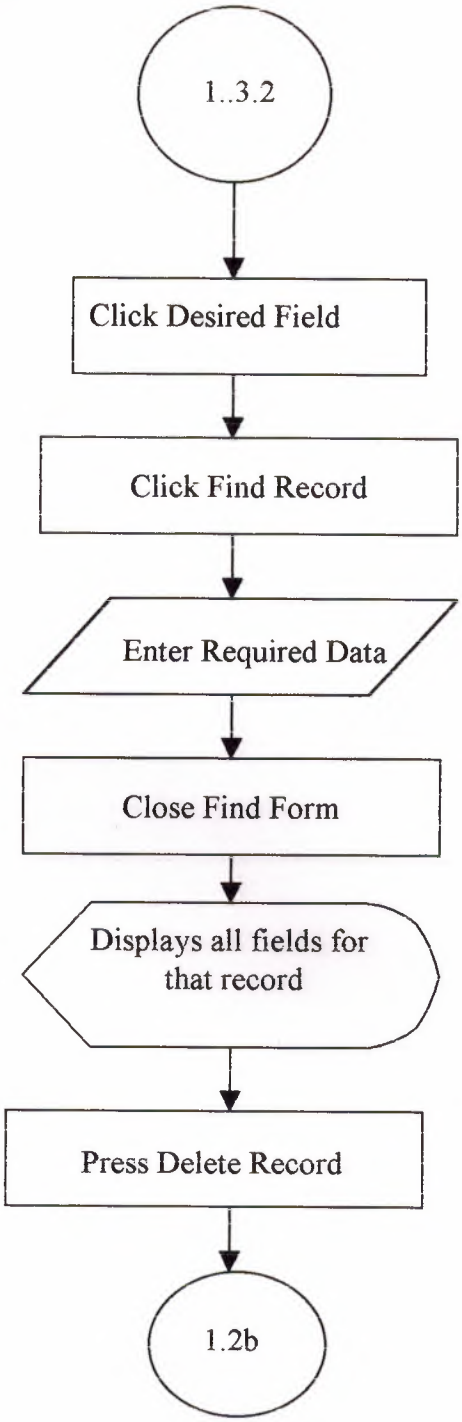

1..3.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.1a

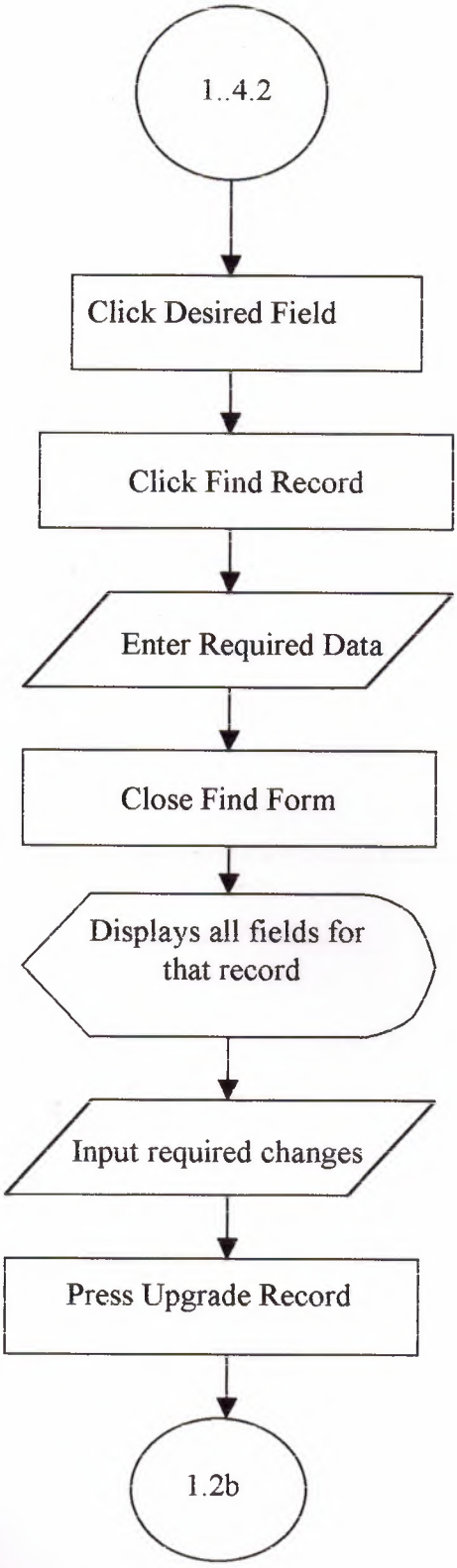

1..4.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.1a

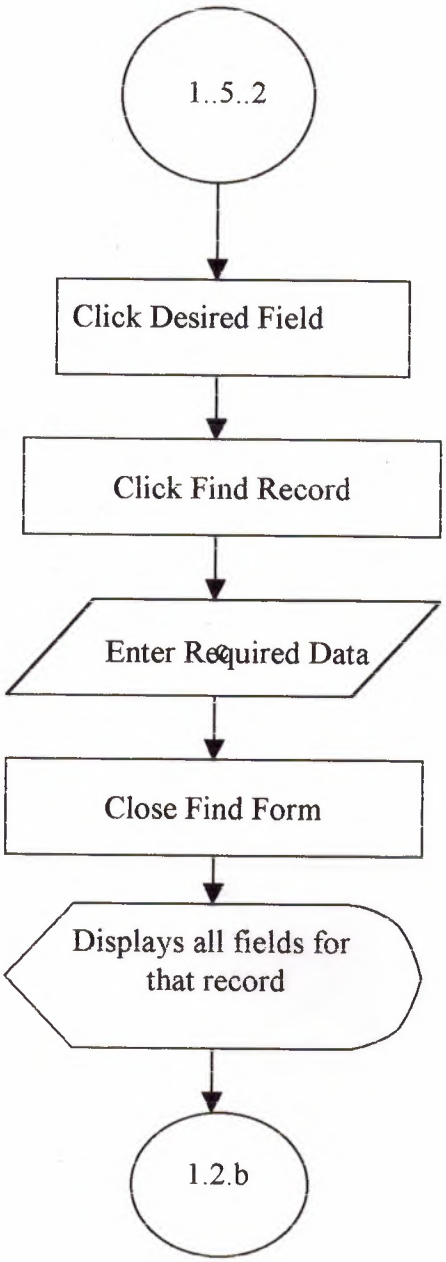

1..5.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1.1a

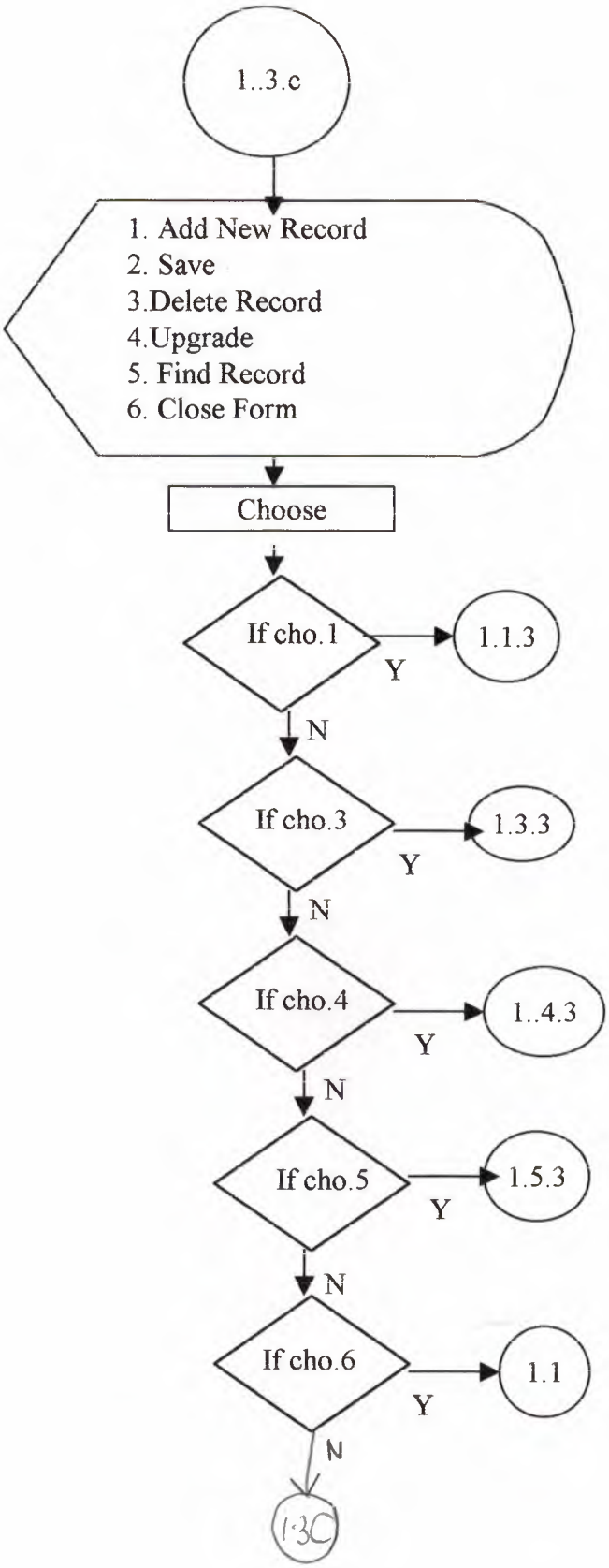

1.2.b
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.2
N
If cho.3
Y
1..3.2
N
If cho.4
Y
1..4.2
N
If cho.5
Y
1.5.2
N
If cho.6
Y
1.1
N
1·2b

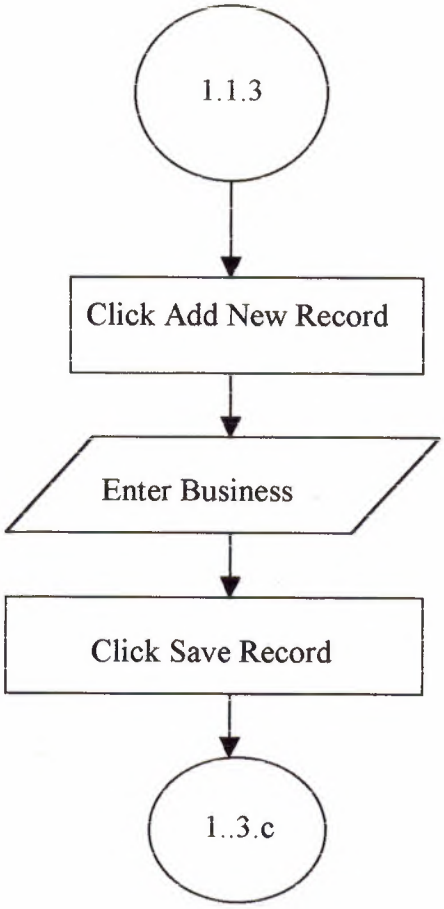

1.1..2
Click Add New Record
Enter Property
Click Save Record
1.2b

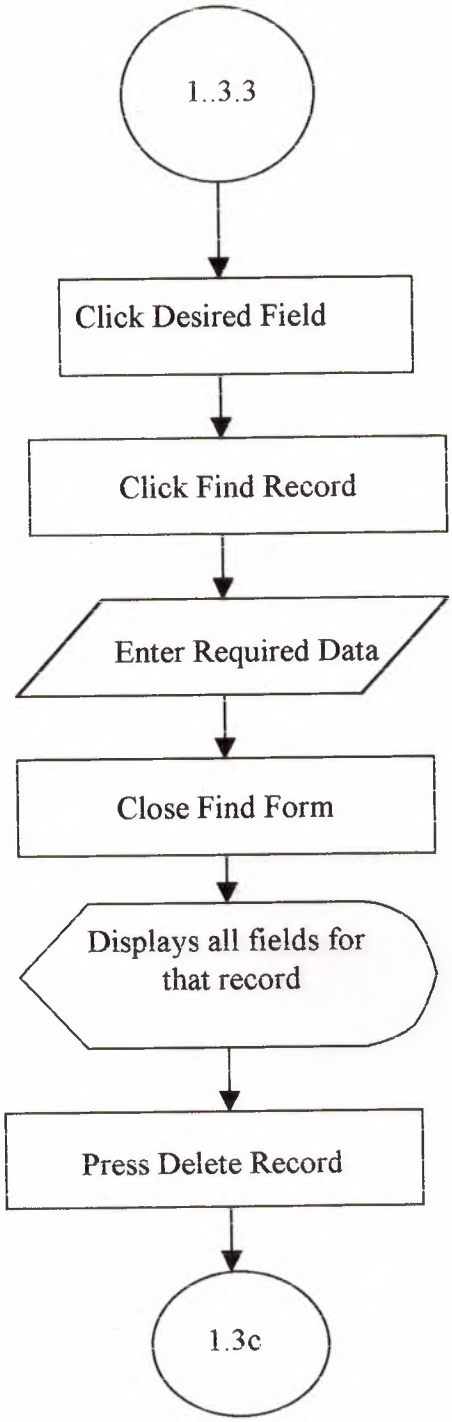

1..3.2
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.2b

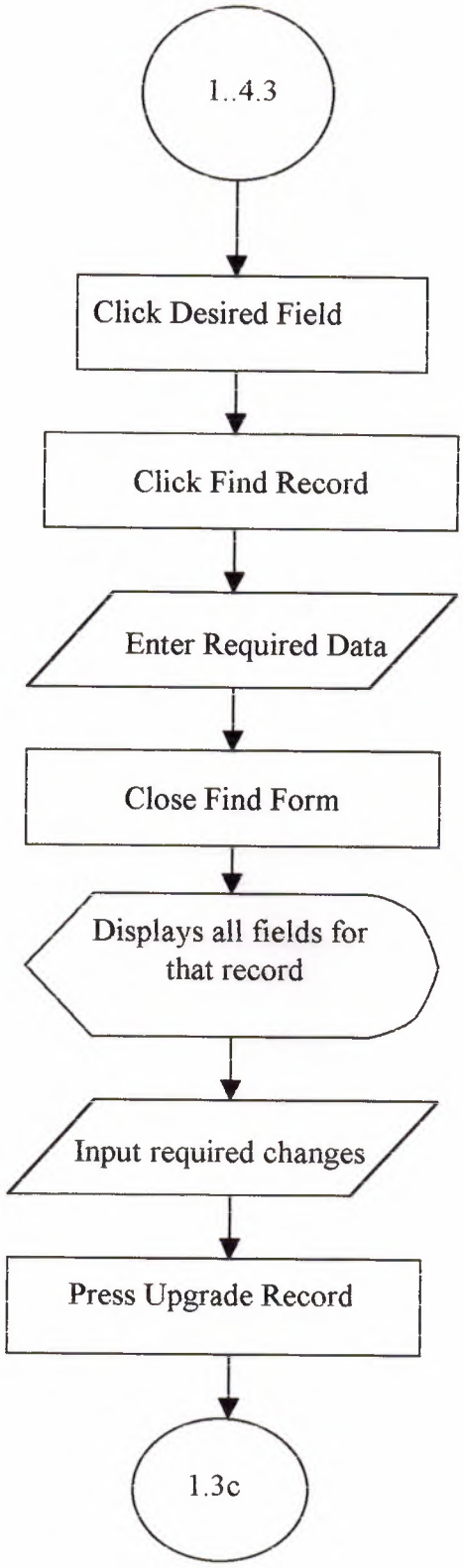

1..4.2
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.2b

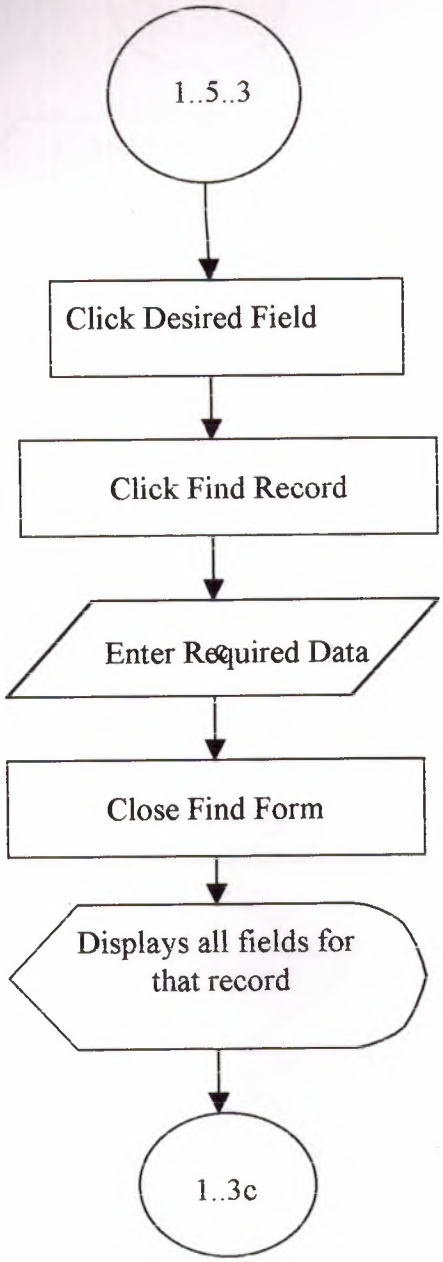

1..5..2
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1.2.b

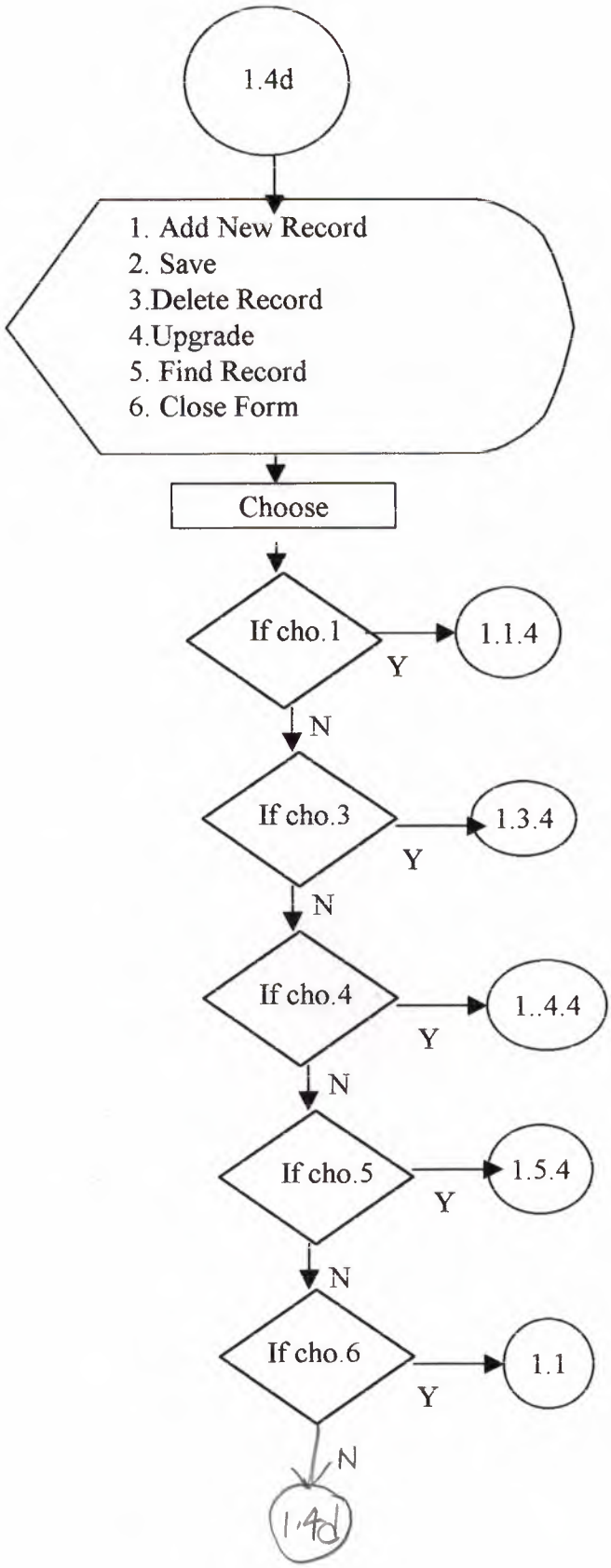

1..3.c
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.3
N
If cho.3
Y
1.3.3
N
If cho.4
Y
1..4.3
N
If cho.5
Y
1.5.3
N
If cho.6
Y
1.1
N
1·3C

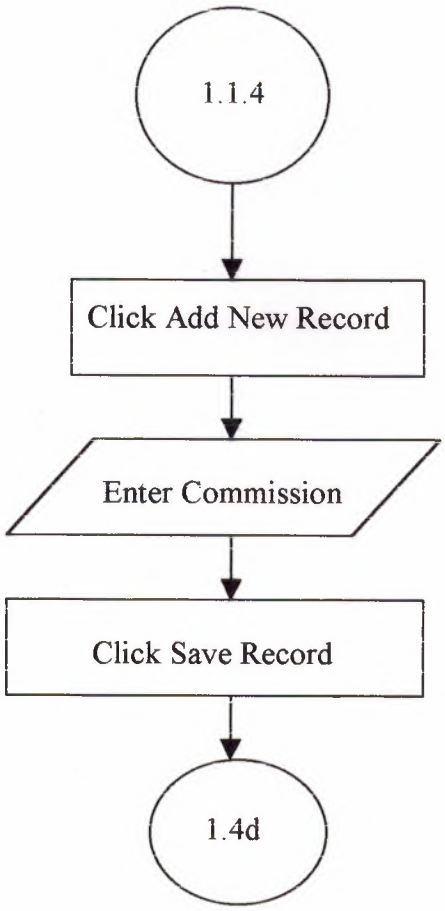

1.1.3
Click Add New Record
Enter Business
Click Save Record
1..3.c

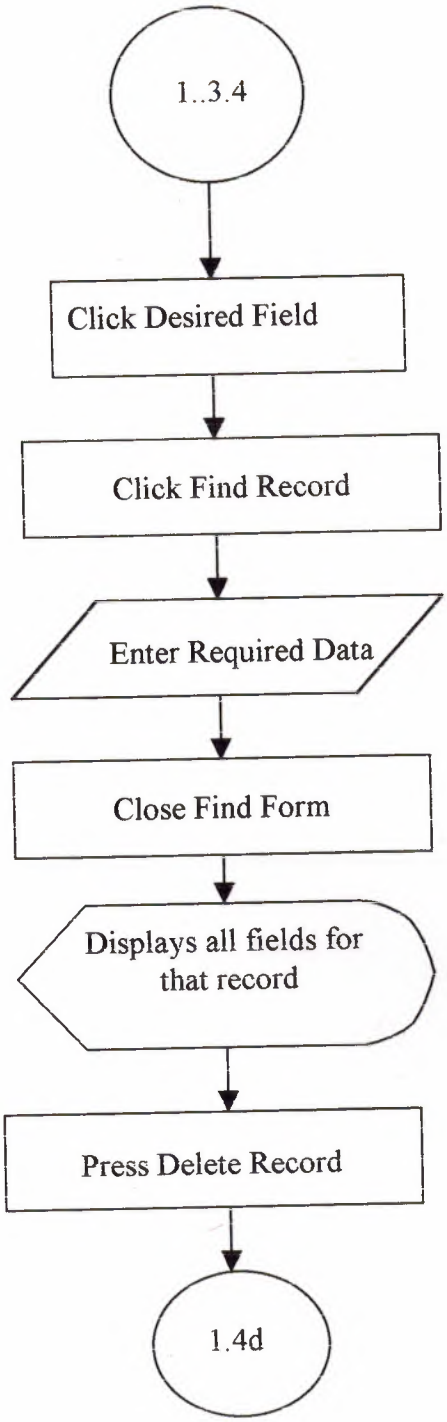


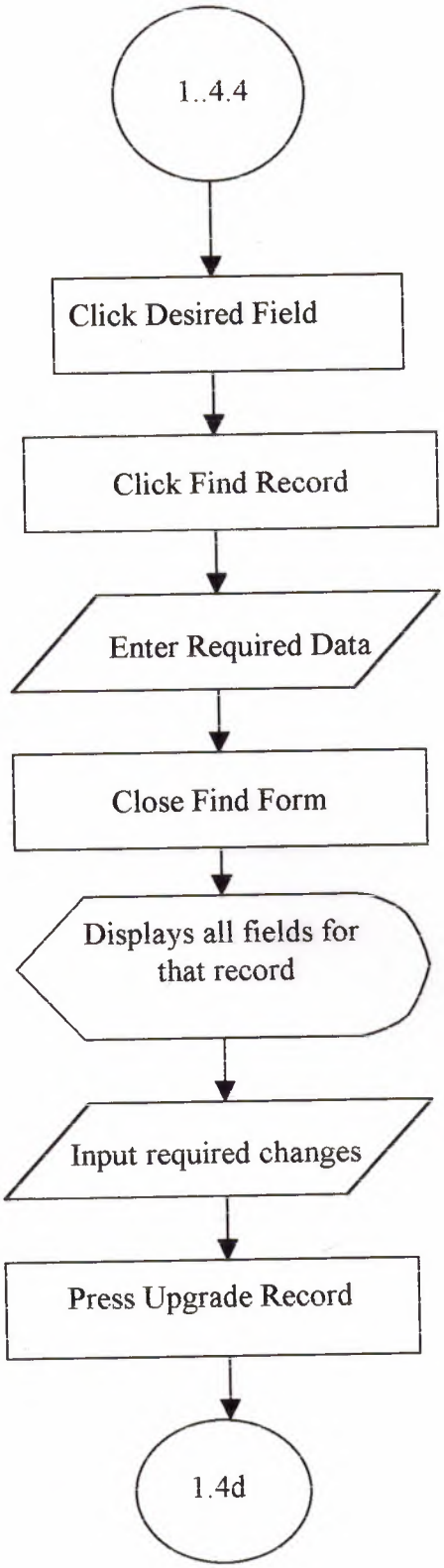

1..4.3
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.3c

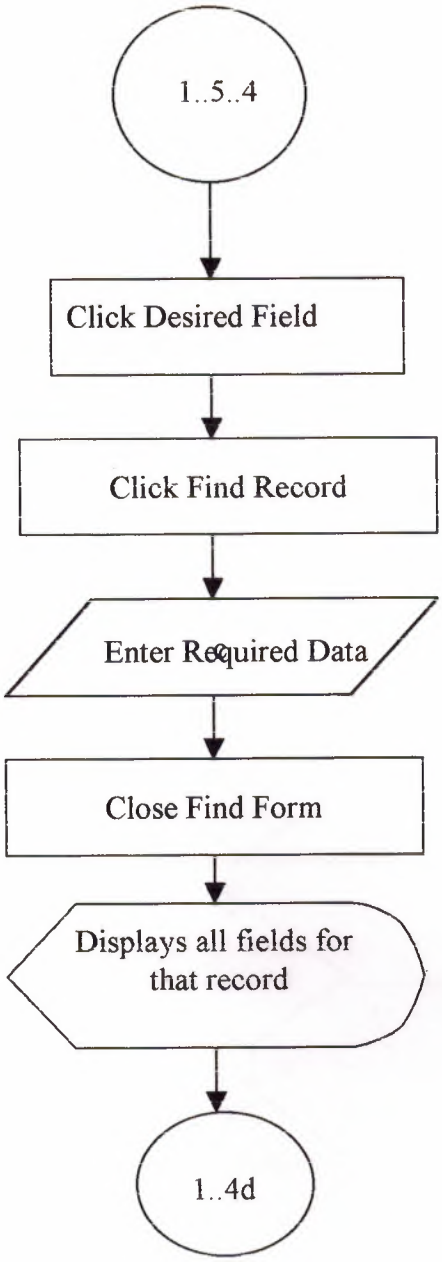

1..5..3
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1..3c

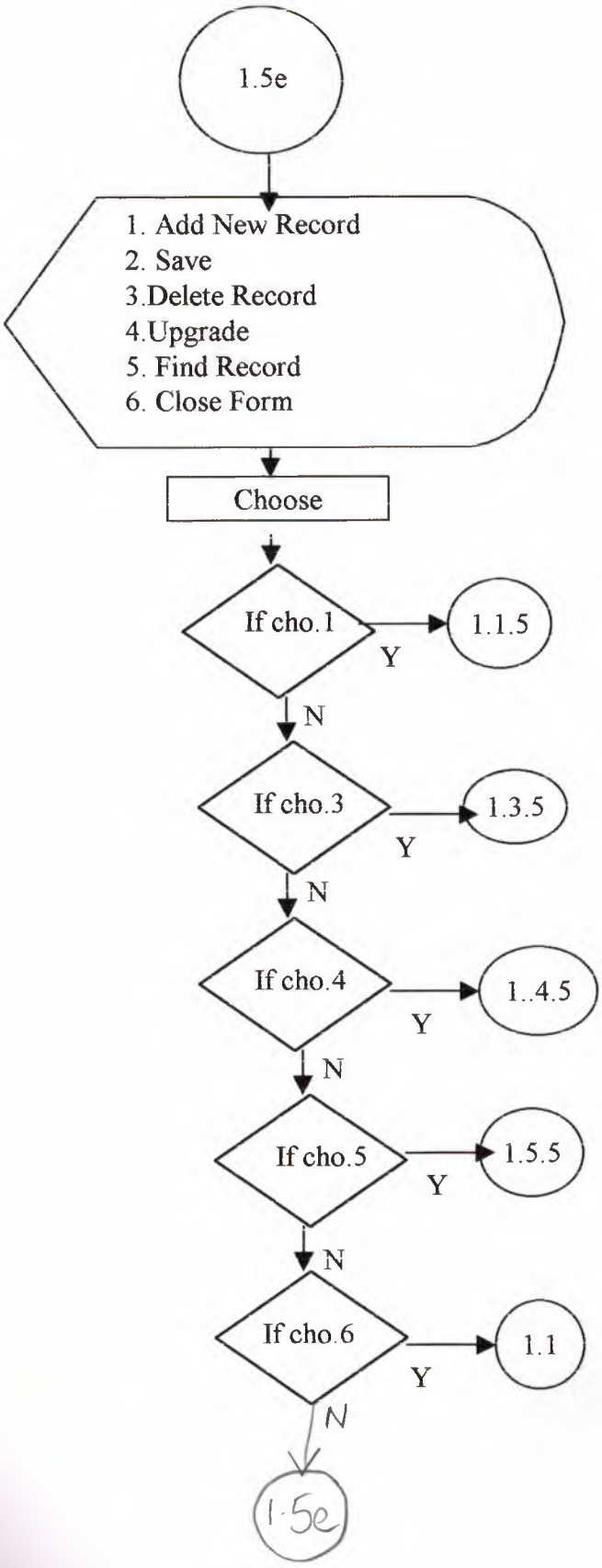

1.4d
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.4
N
If cho.3
Y
1.3.4
N
If cho.4
Y
1..4.4
N
If cho.5
Y
1.5.4
N
If cho.6
Y
1.1
N
1.4d

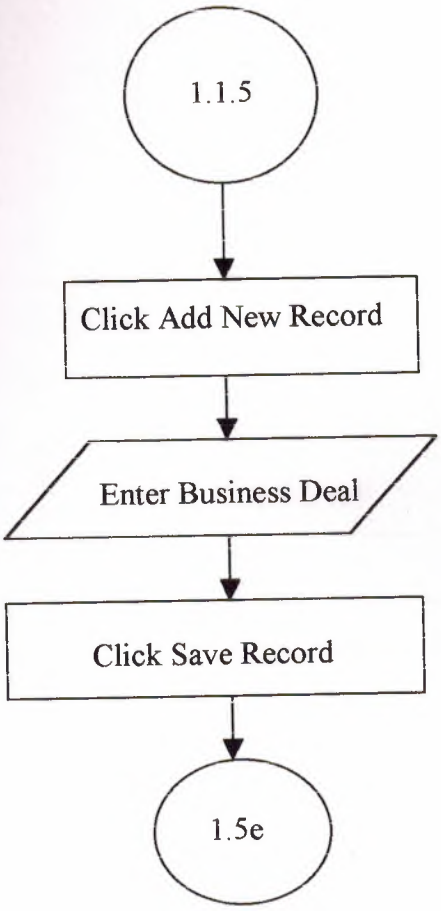

1.1.4
Click Add New Record
Enter Commission
Click Save Record
1.4d

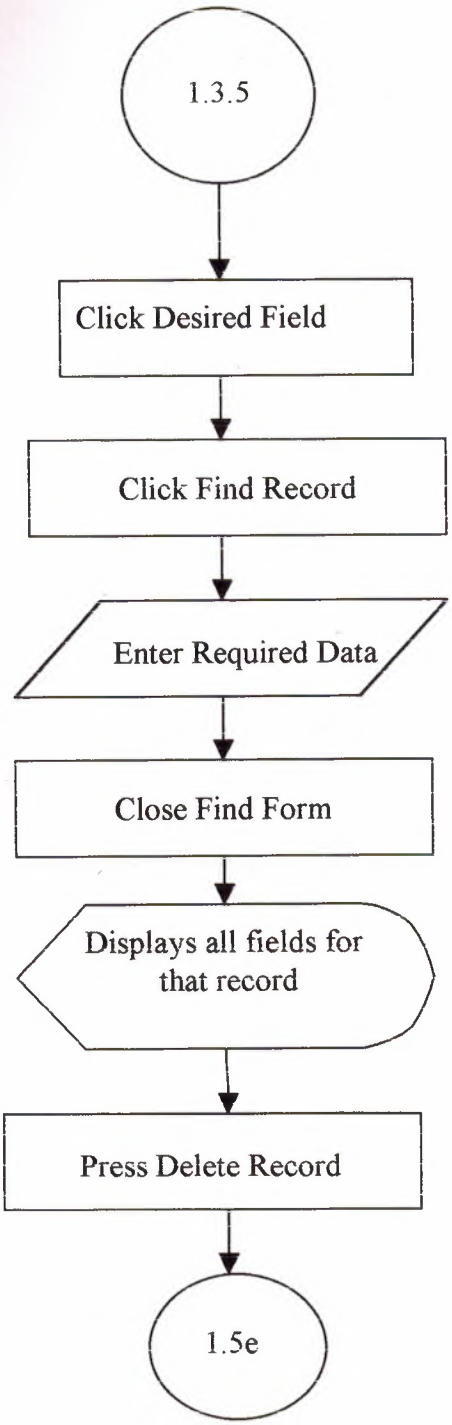

1..3.4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.4d

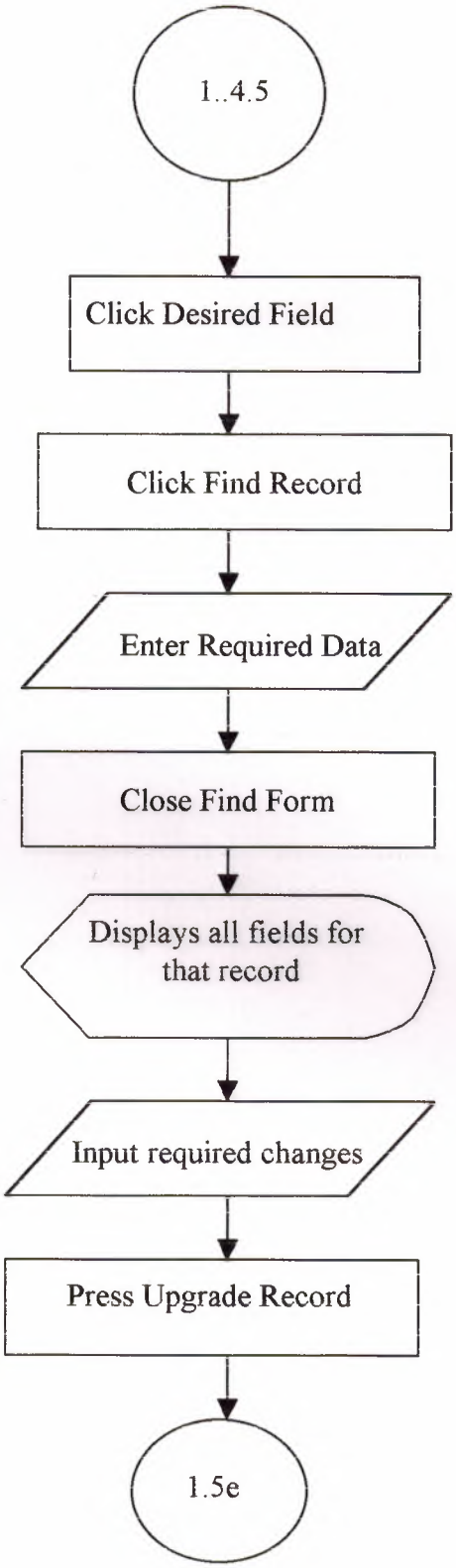

1..4.4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.4d

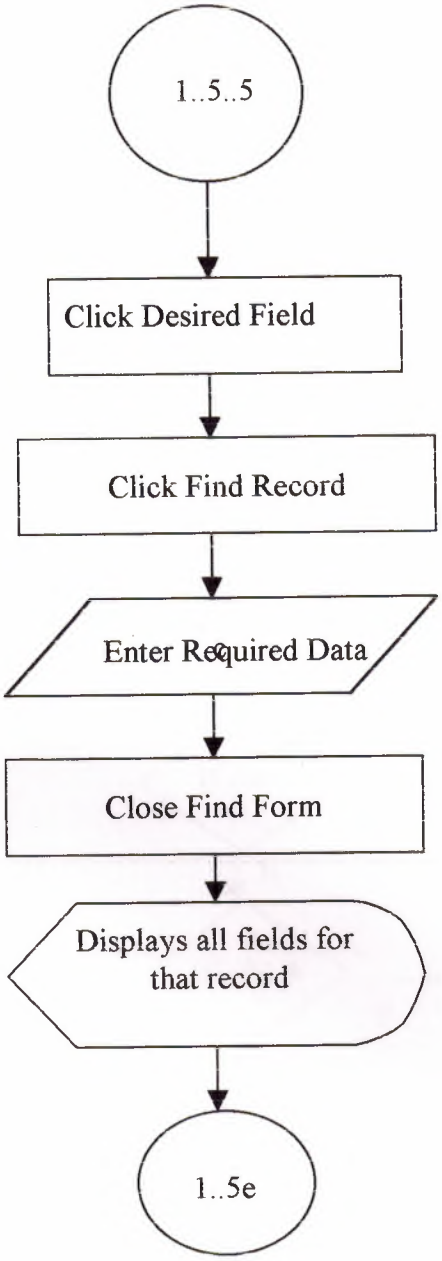

1..5..4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1..4d

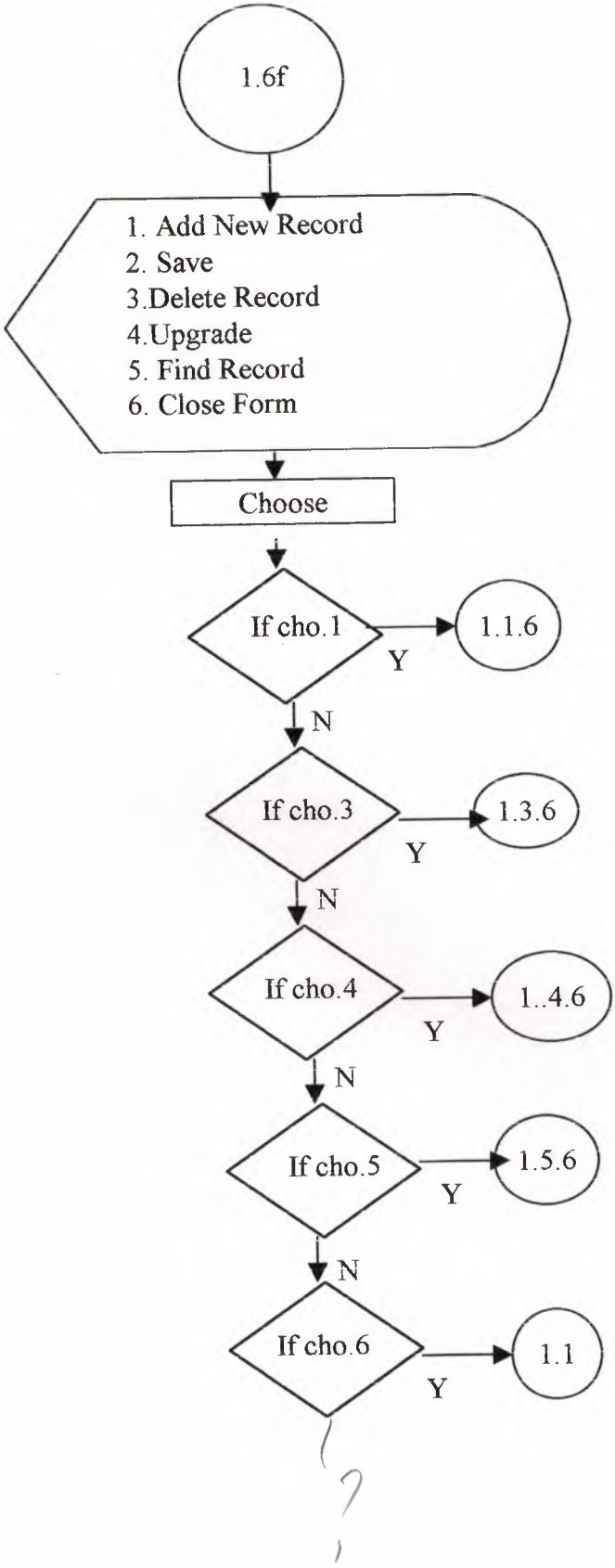

1.5e
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.5
N
If cho.3
Y
1.3.5
N
If cho.4
Y
1..4.5
N
If cho.5
Y
1.5.5
N
If cho.6
Y
1.1
N
1.5e

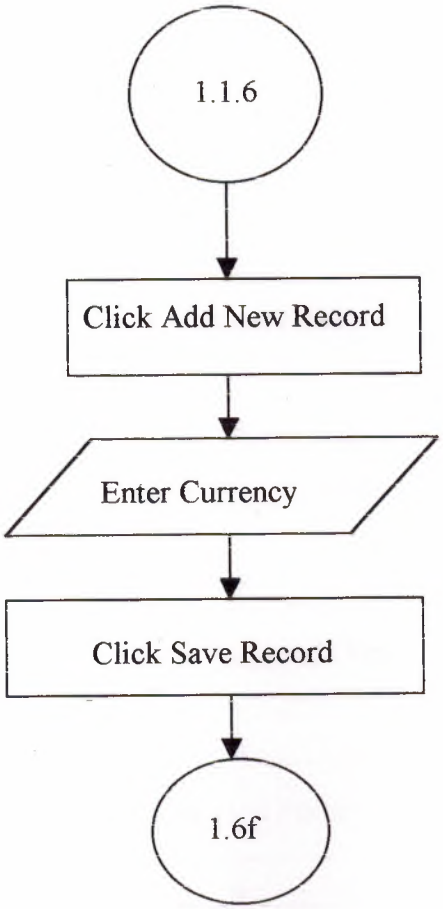

1.1.5
Click Add New Record
Enter Business Deal
Click Save Record
1.5e

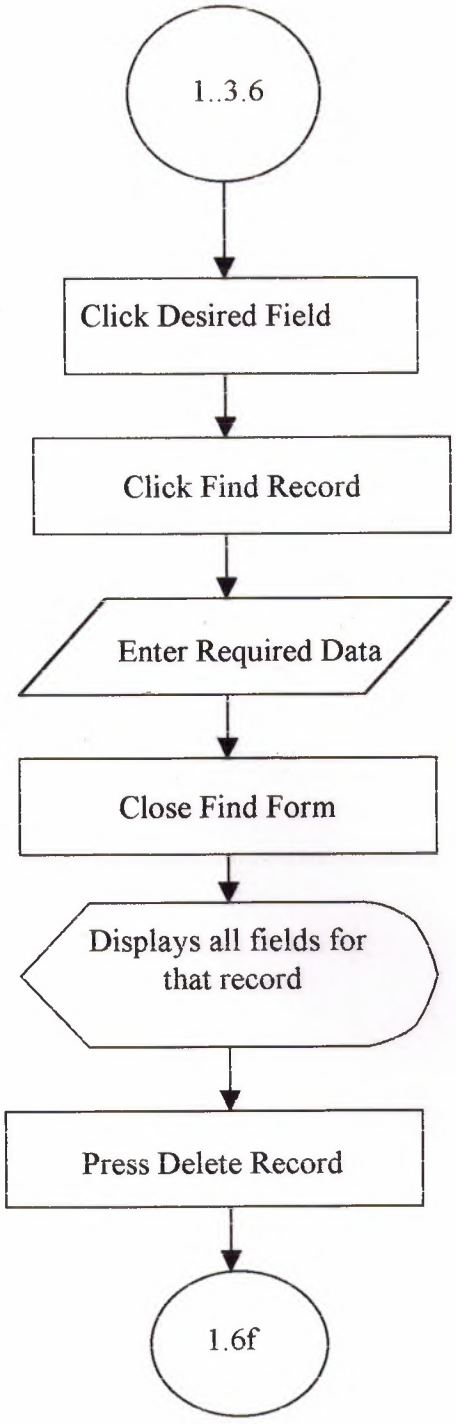

1.3.5
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.5e

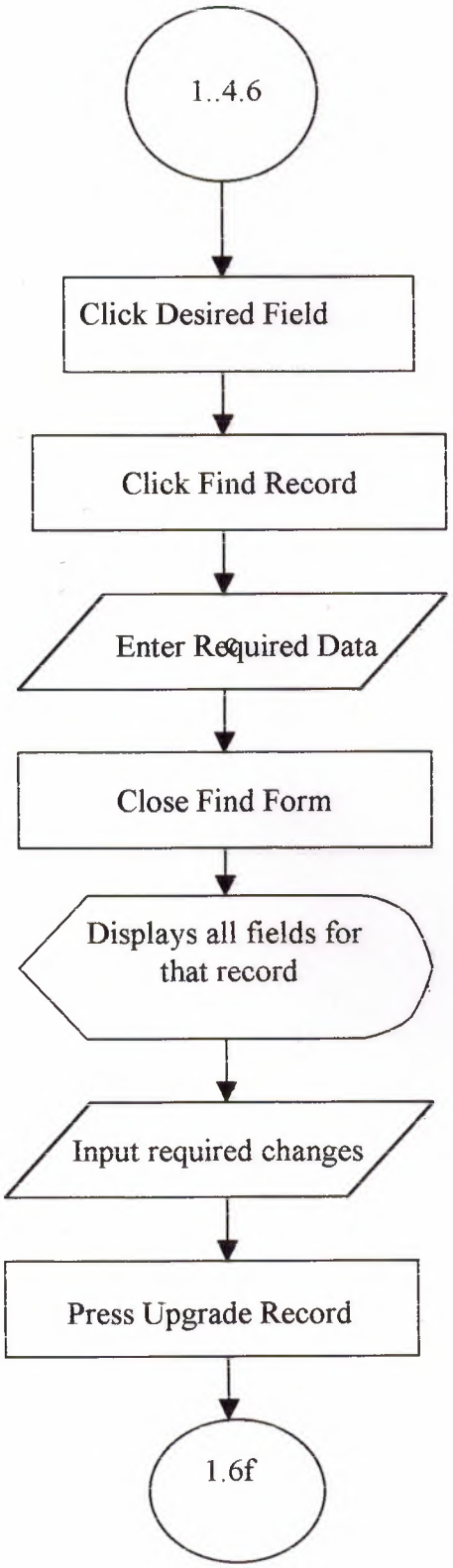

1..4.5
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.5e

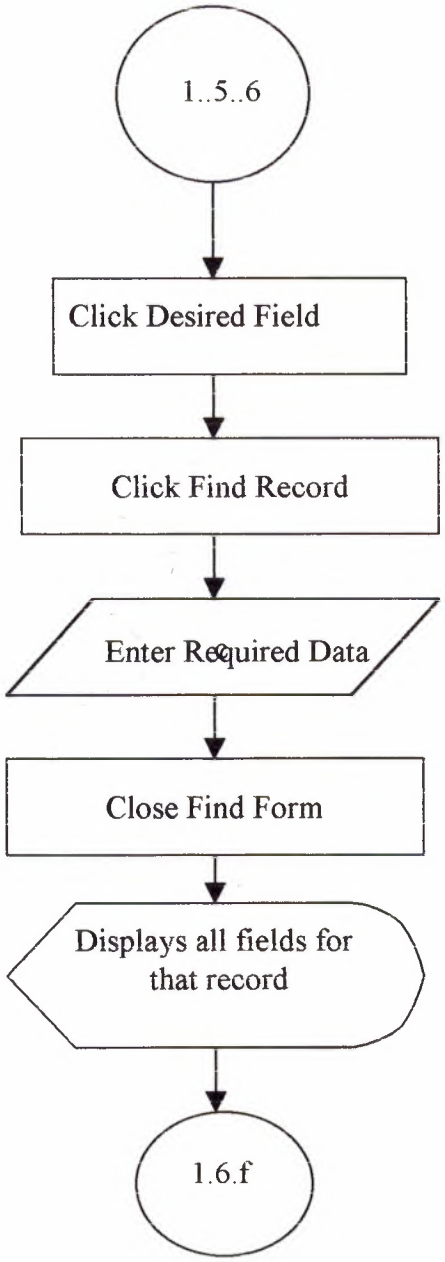

1..5..5
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1..5e

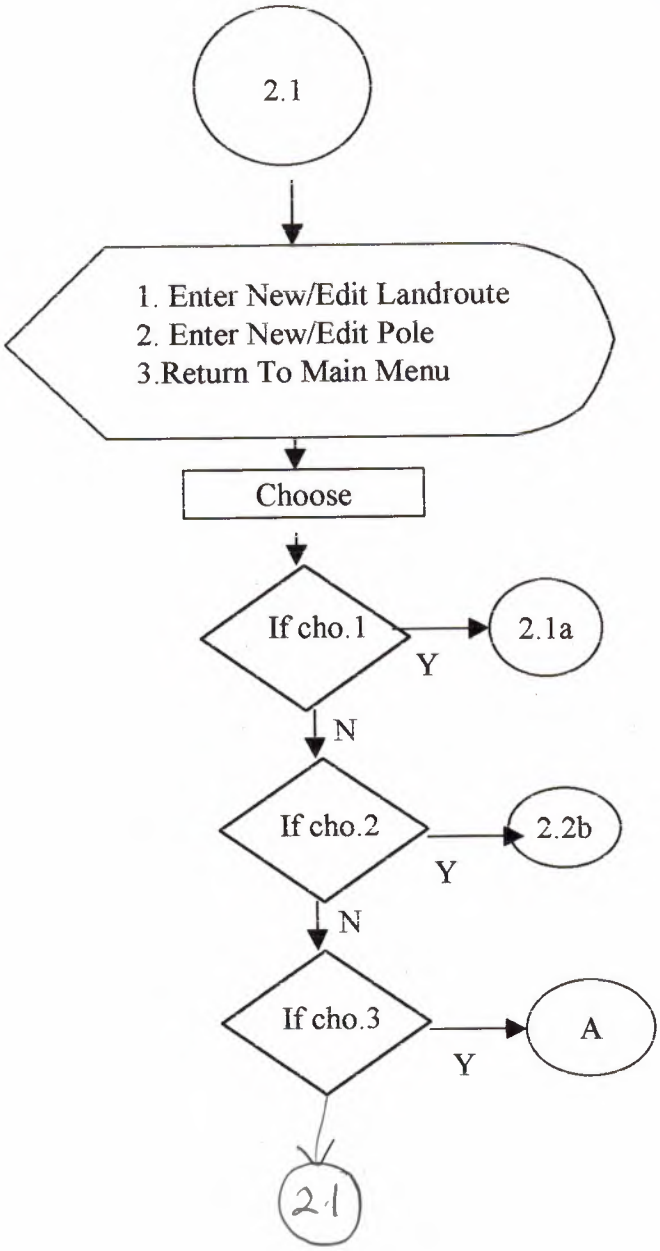

1.6f
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
1.1.6
N
If cho.3
Y
1.3.6
N
If cho.4
Y
1..4.6
N
If cho.5
Y
1.5.6
N
If cho.6
Y
1.1

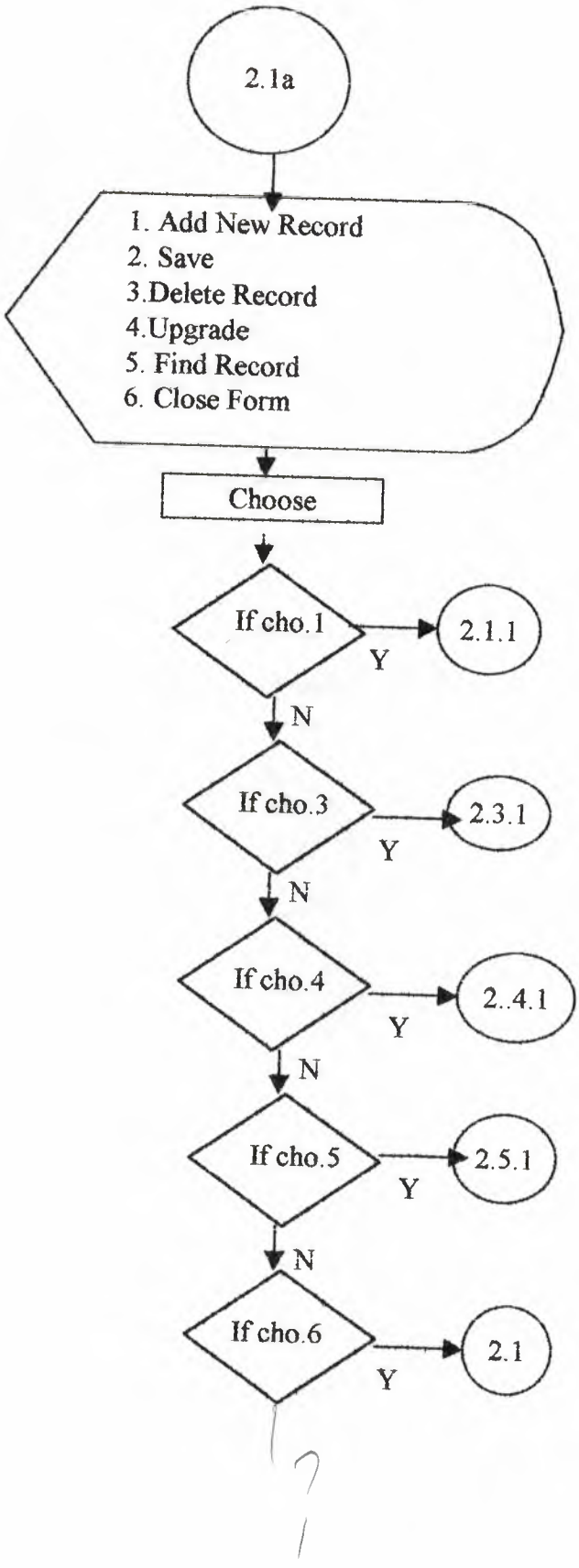

1.1.6
Click Add New Record
Enter Currency
Click Save Record
1.6f

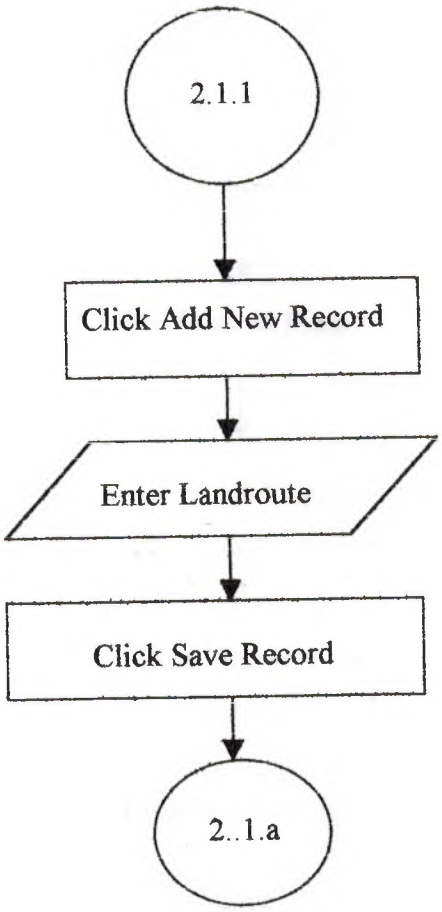

1..3.6
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
1.6f

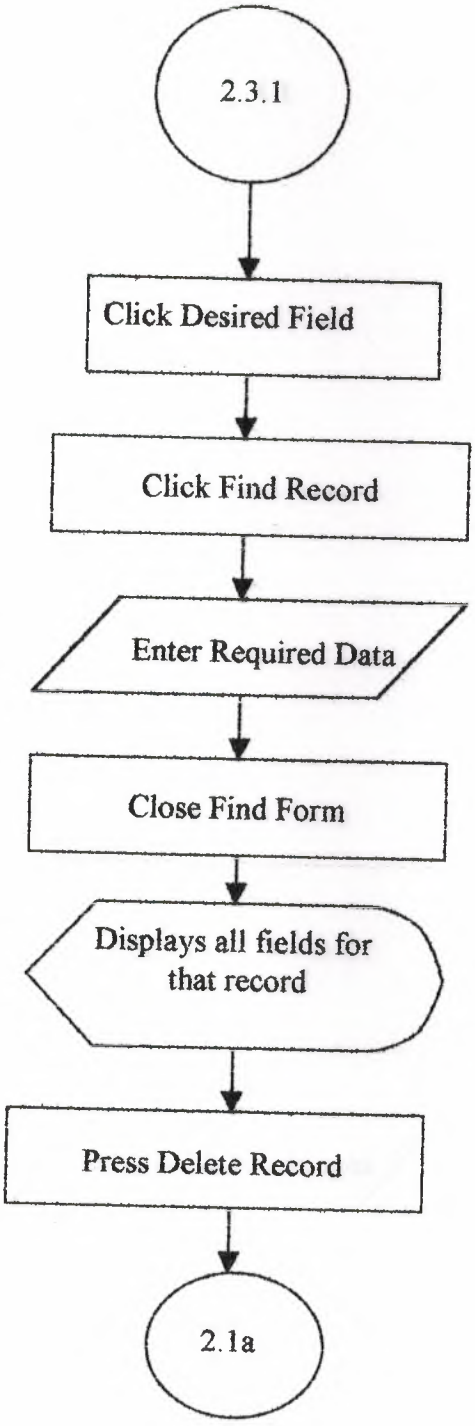

1..4.6
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
1.6f

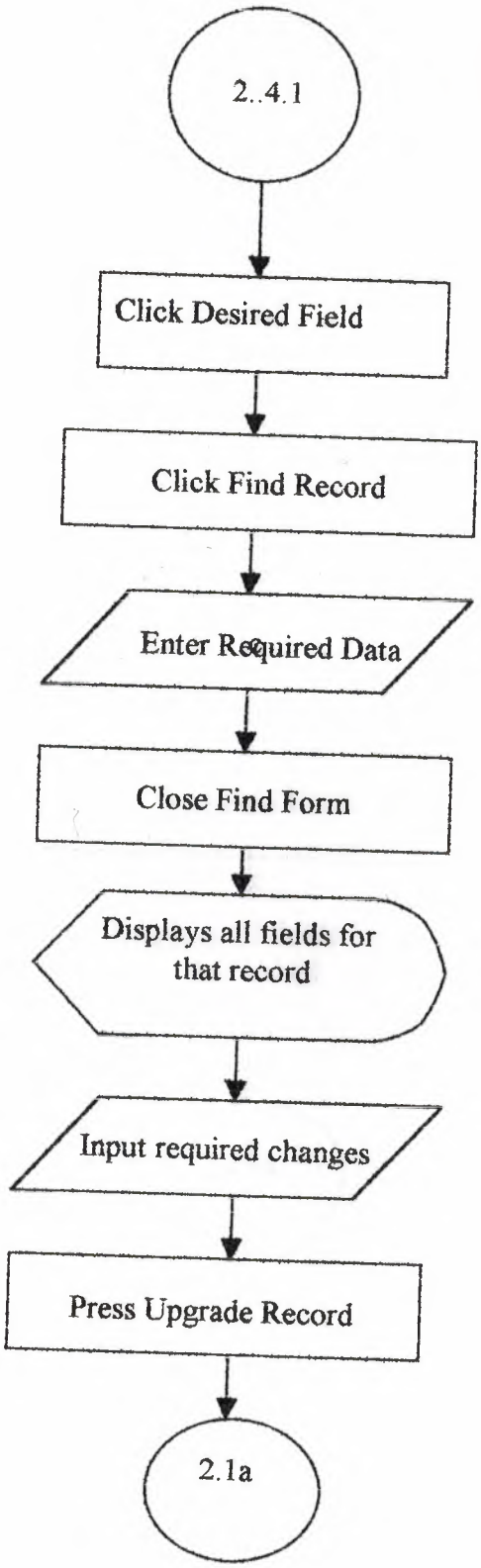

1..5..6
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
1.6.f

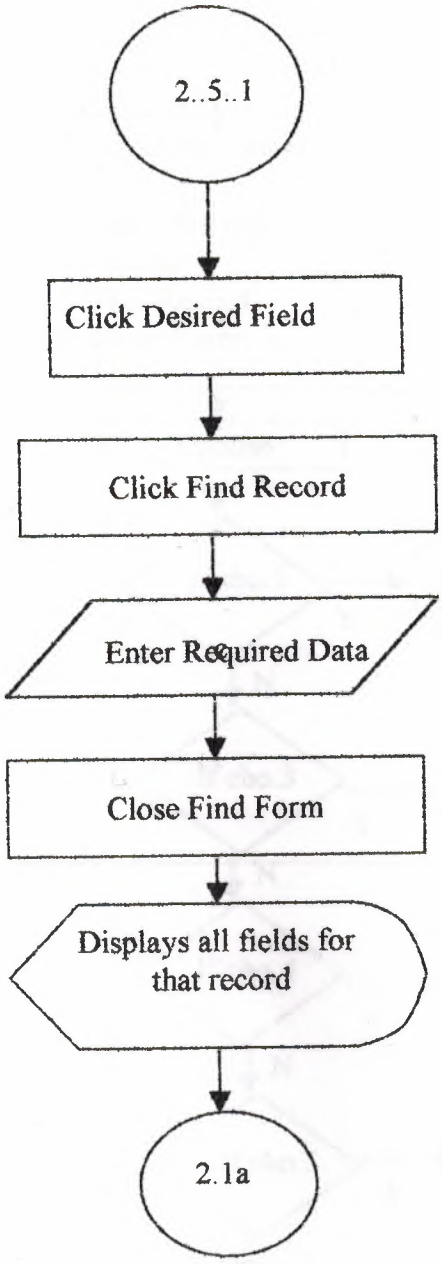

2.1
1. Enter New/Edit Landroute
2. Enter New/Edit Pole
3.Return To Main Menu
Choose
If cho.1
Y
2.1a
N
If cho.2
Y
2.2b
N
If cho.3
Y
A
2.1

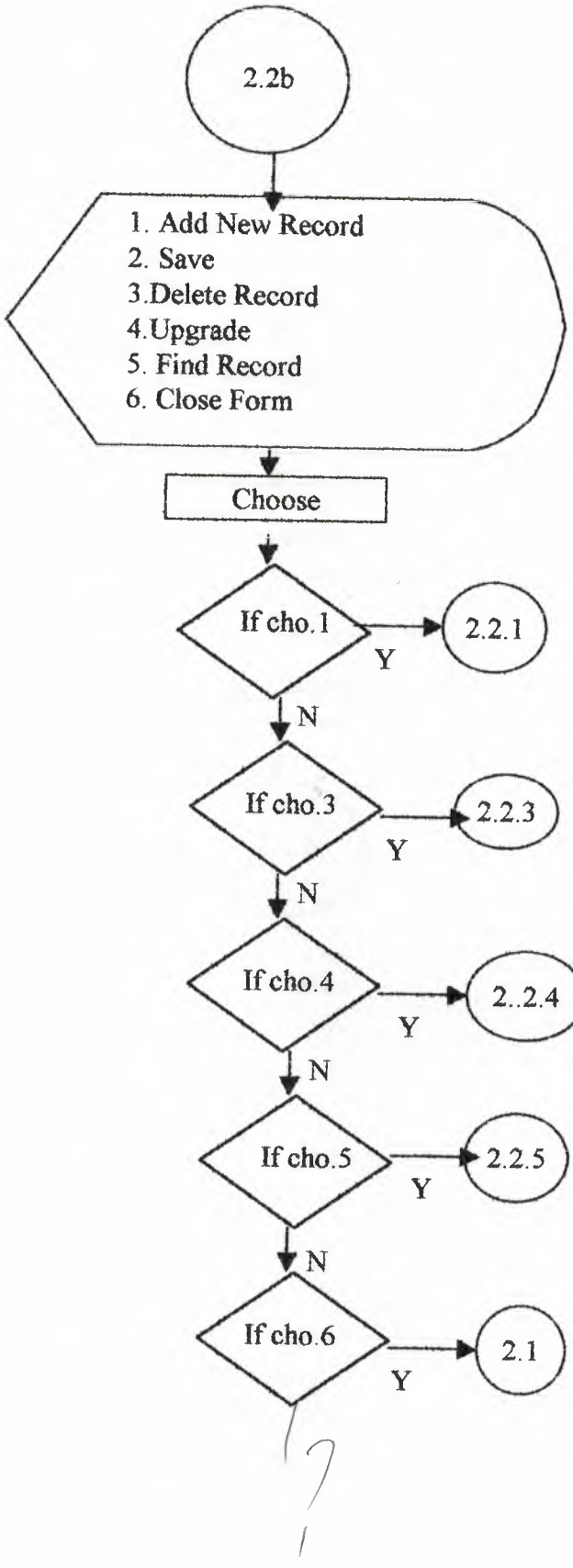

2.1a
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
2.1.1
N
If cho.3
Y
2.3.1
N
If cho.4
Y
2..4.1
N
If cho.5
Y
2.5.1
N
If cho.6
Y
2.1

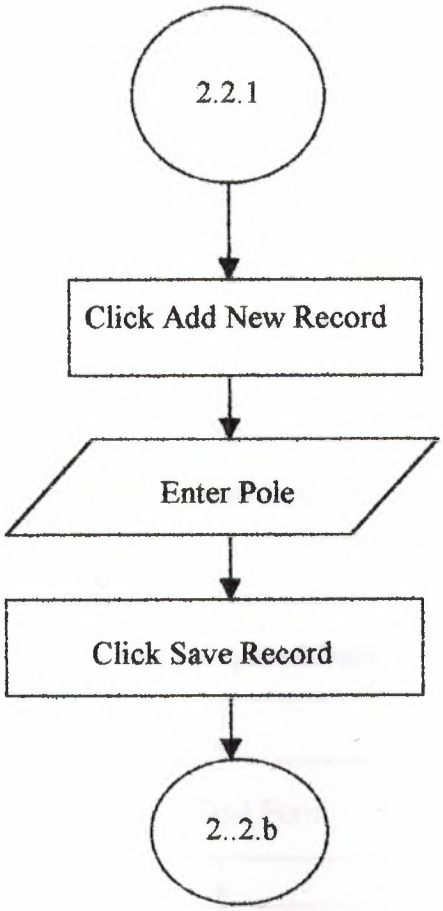

2.1.1
Click Add New Record
Enter Landroute
Click Save Record
2..1.a

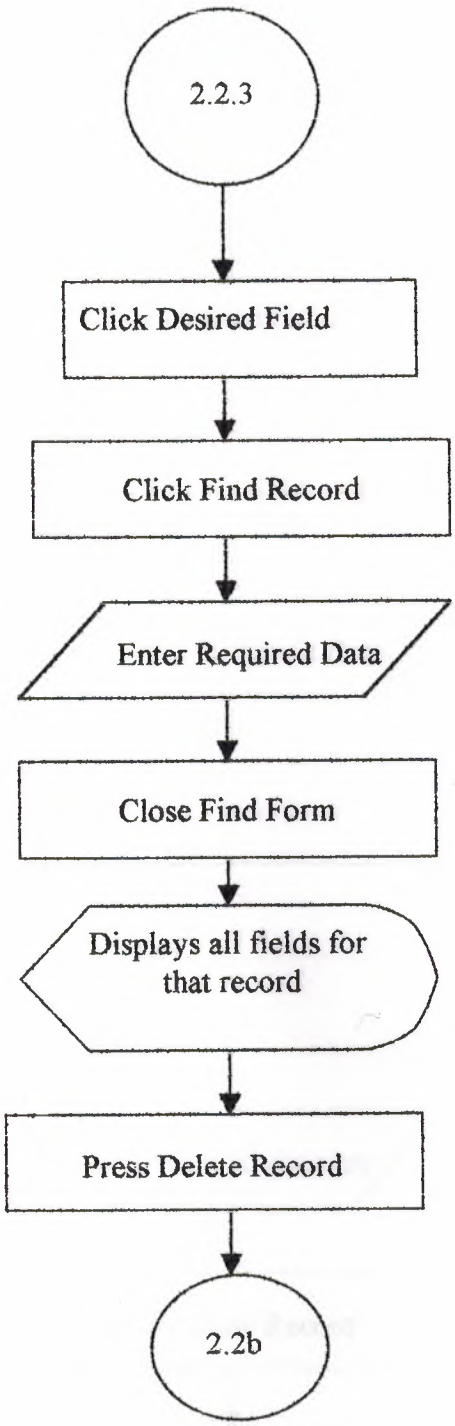

2.3.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
2.1a

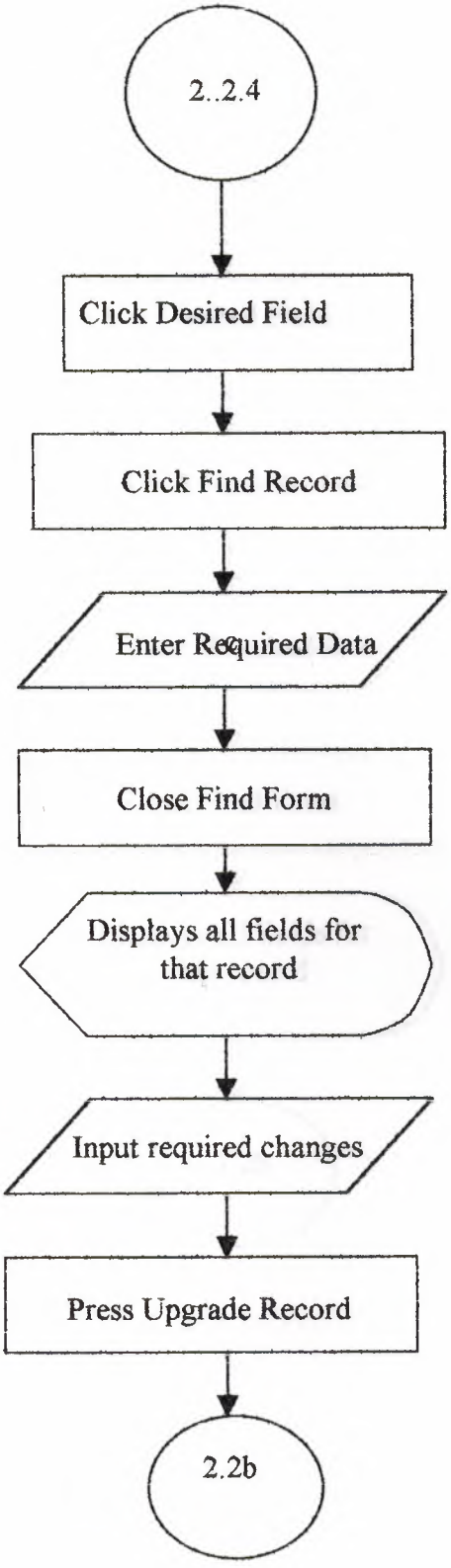

2..4.1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
2.1a

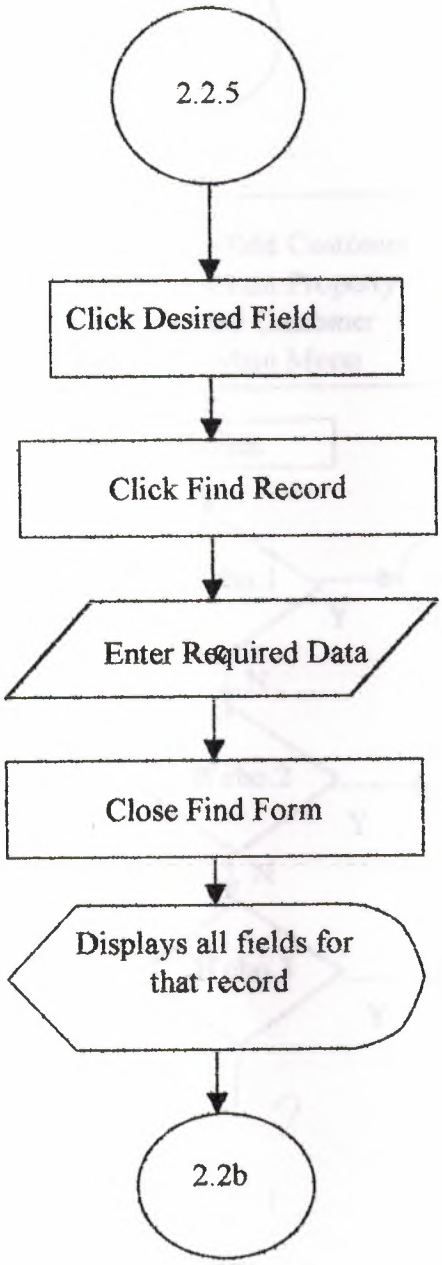

2..5..1
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
2.1a

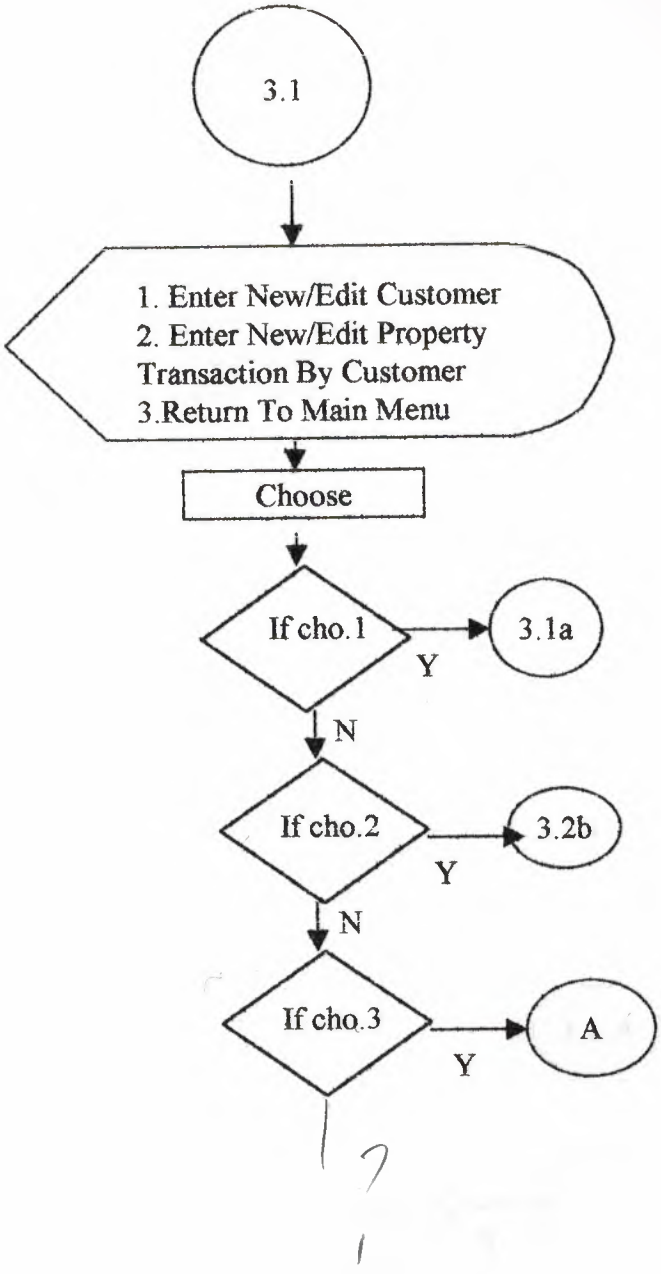

2.2b
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
2.2.1
N
If cho.3
Y
2.2.3
N
If cho.4
Y
2..2.4
N
If cho.5
Y
2.2.5
N
If cho.6
Y
2.1

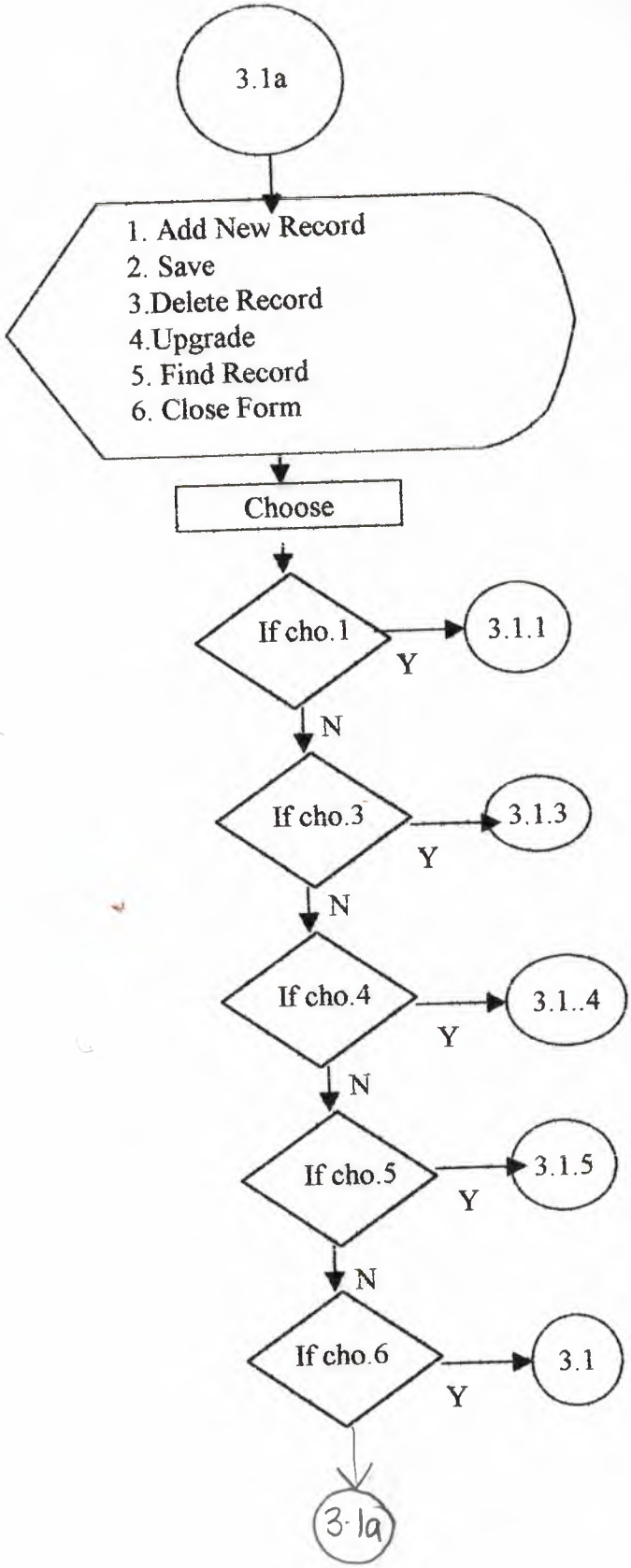

2.2.1
Click Add New Record
Enter Pole
Click Save Record
2..2.b

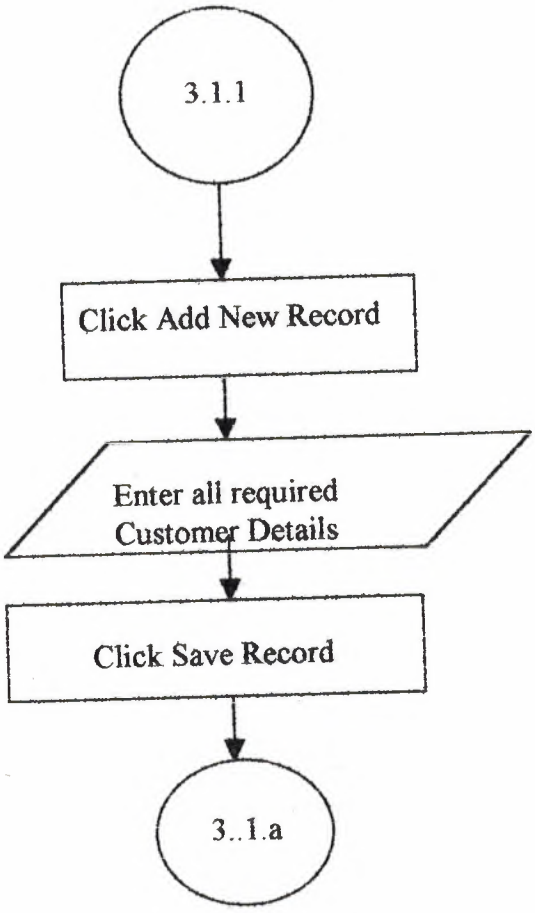

2.2.3
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
2.2b

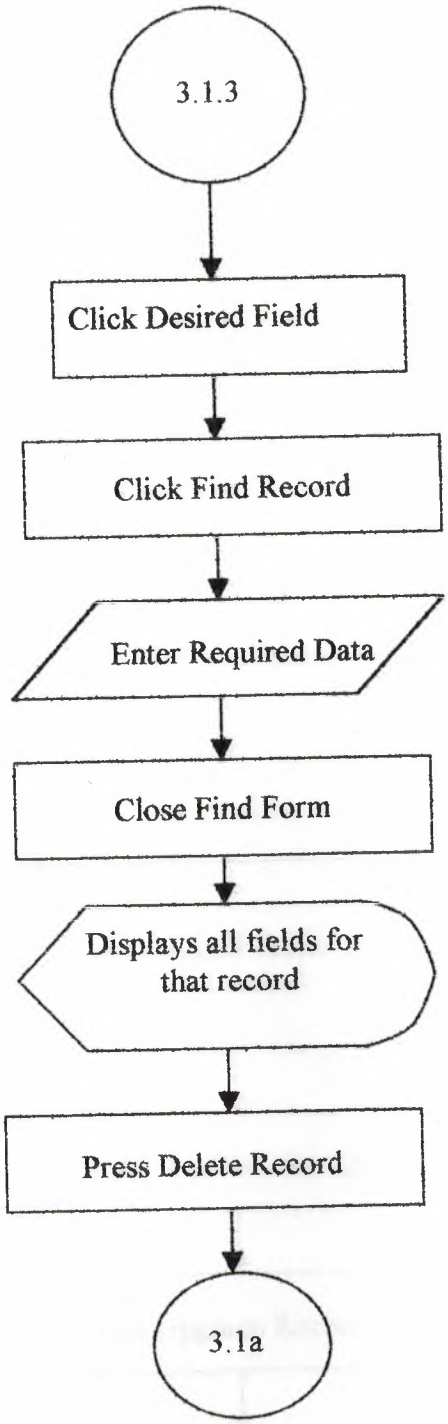

2..2.4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
2.2b

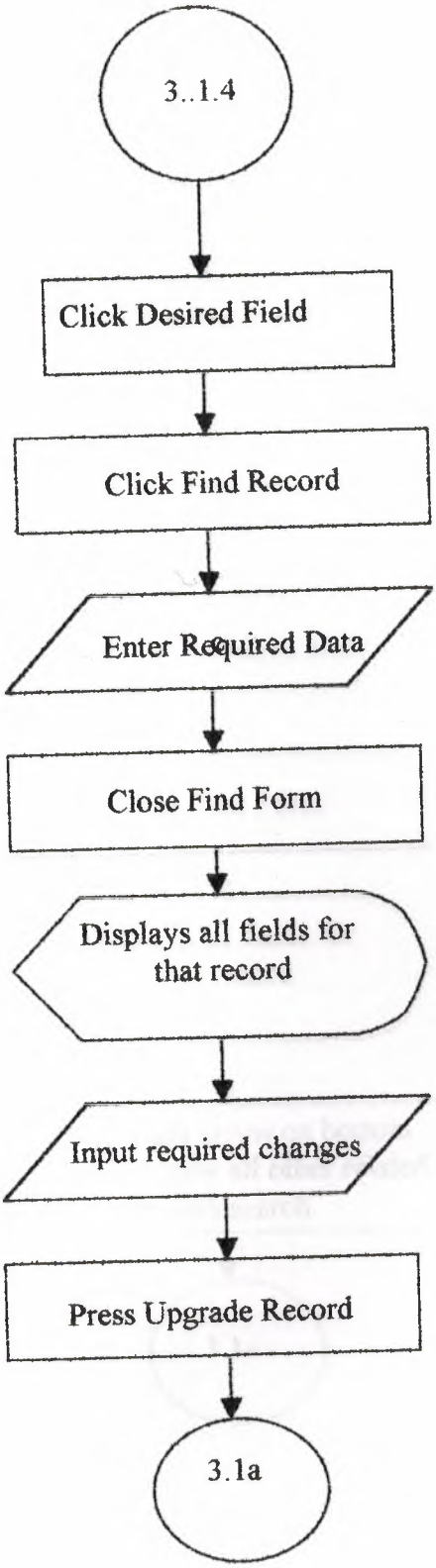

2.2.5
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
2.2b

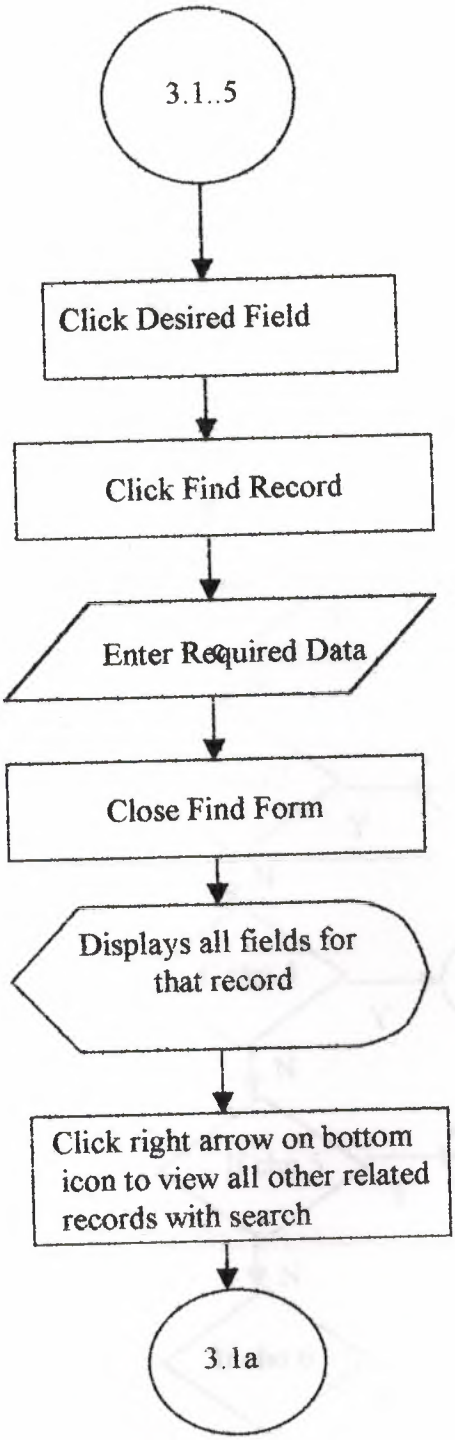

3.1
1. Enter New/Edit Customer
2. Enter New/Edit Property
Transaction By Customer
3.Return To Main Menu
Choose
If cho.1
Y
3.1a
N
If cho.2
Y
3.2b
N
If cho.3
Y
A

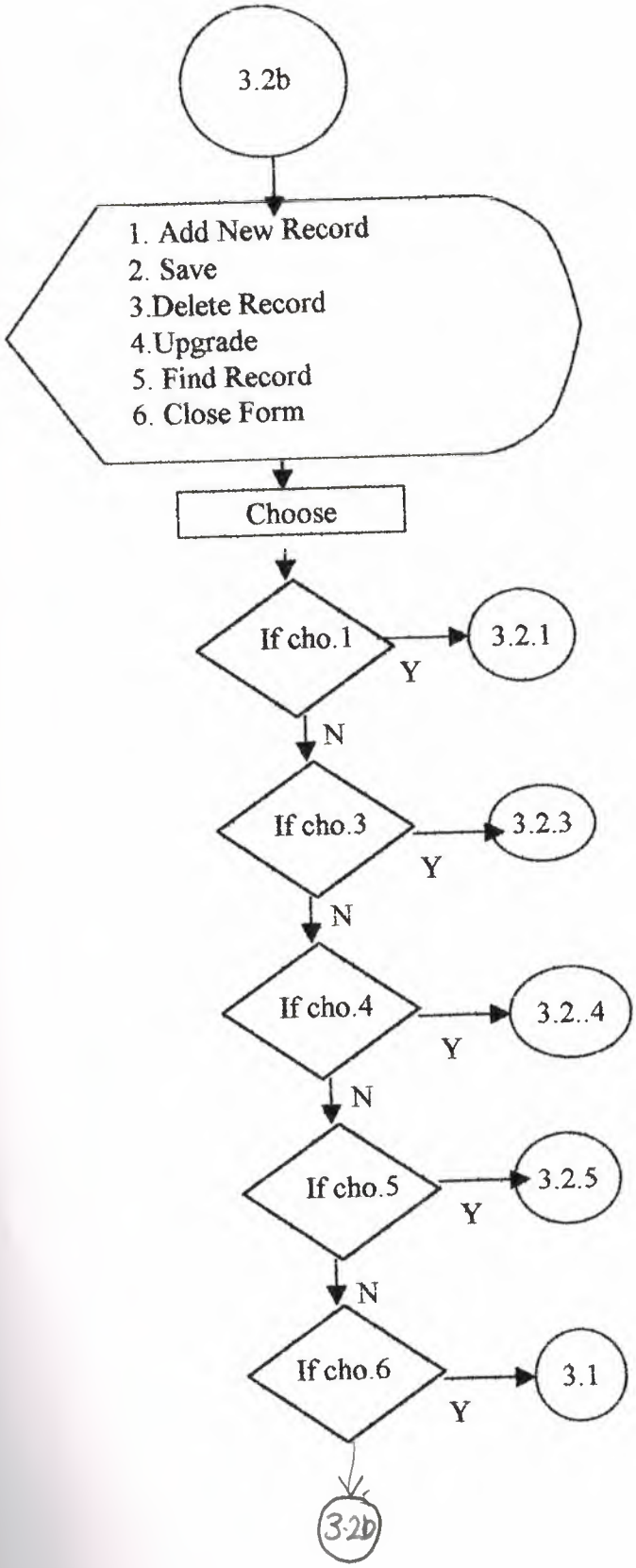

3.1a
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
3.1.1
N
If cho.3
Y
3.1.3
N
If cho.4
Y
3.1..4
N
If cho.5
Y
3.1.5
N
If cho.6
Y
3.1
3-1a

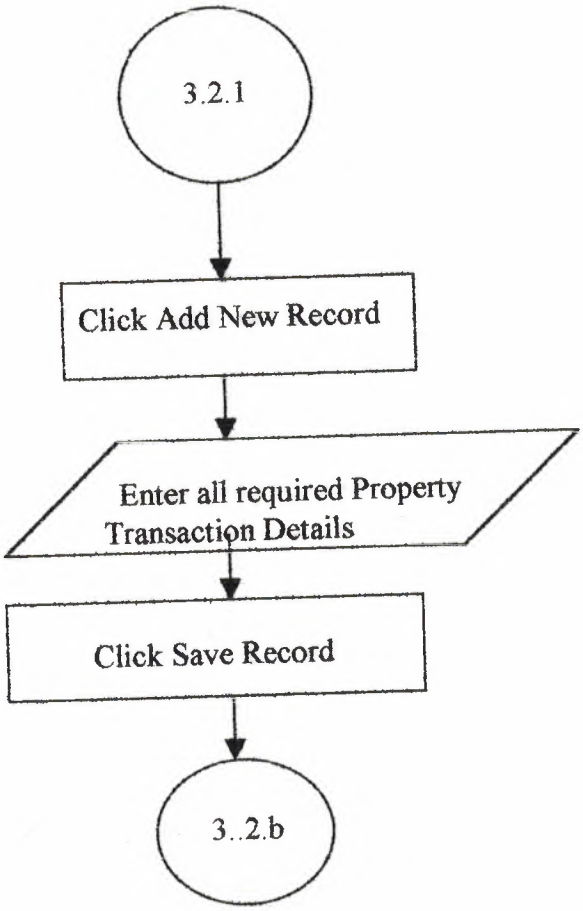

3.1.1
Click Add New Record
Enter all required
Customer Details
Click Save Record
3..1.a

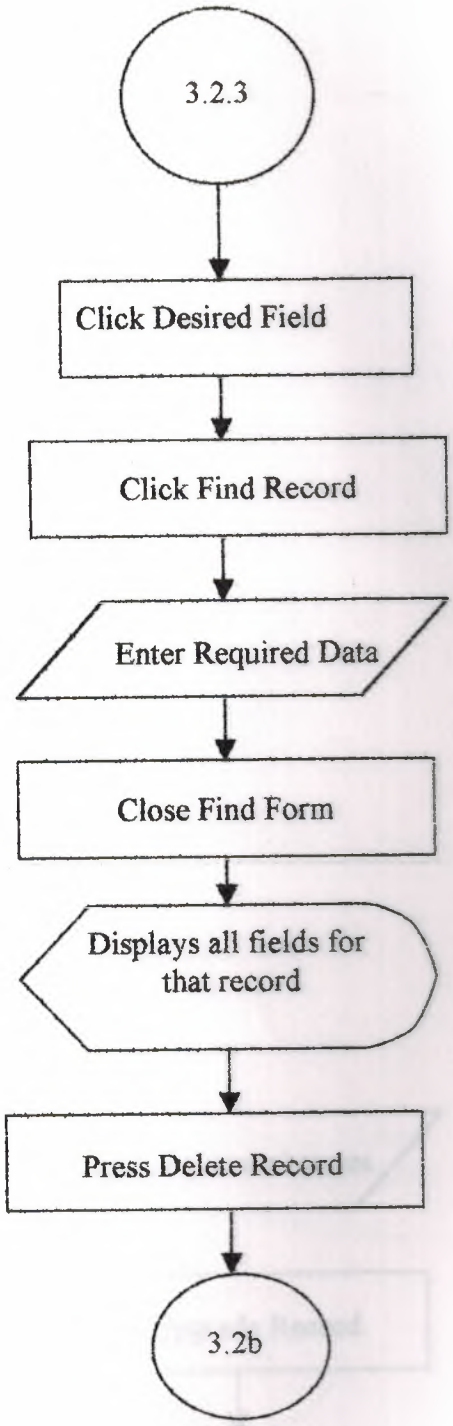

3.1.3
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
3.1a

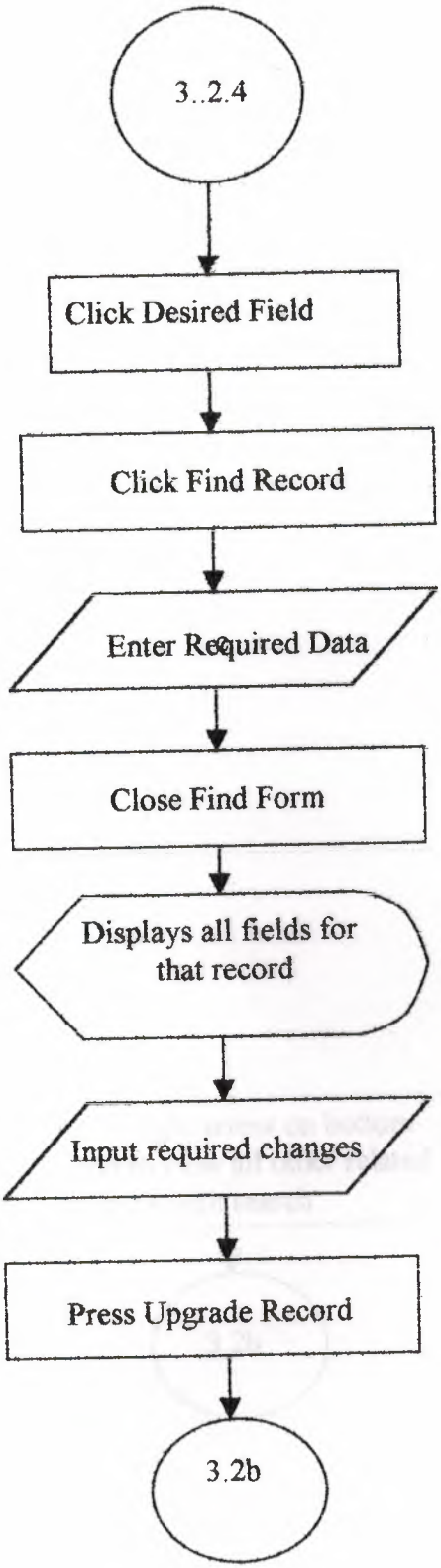

3..1.4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
3.1a

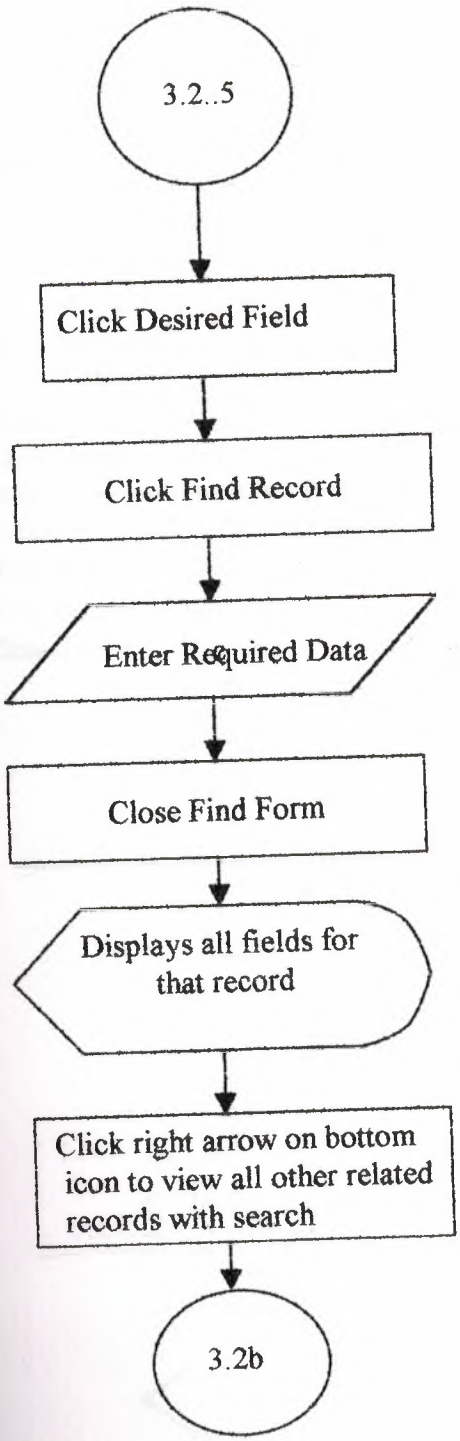

3.1..5
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Click right arrow on bottom icon to view all other related records with search
3.1a

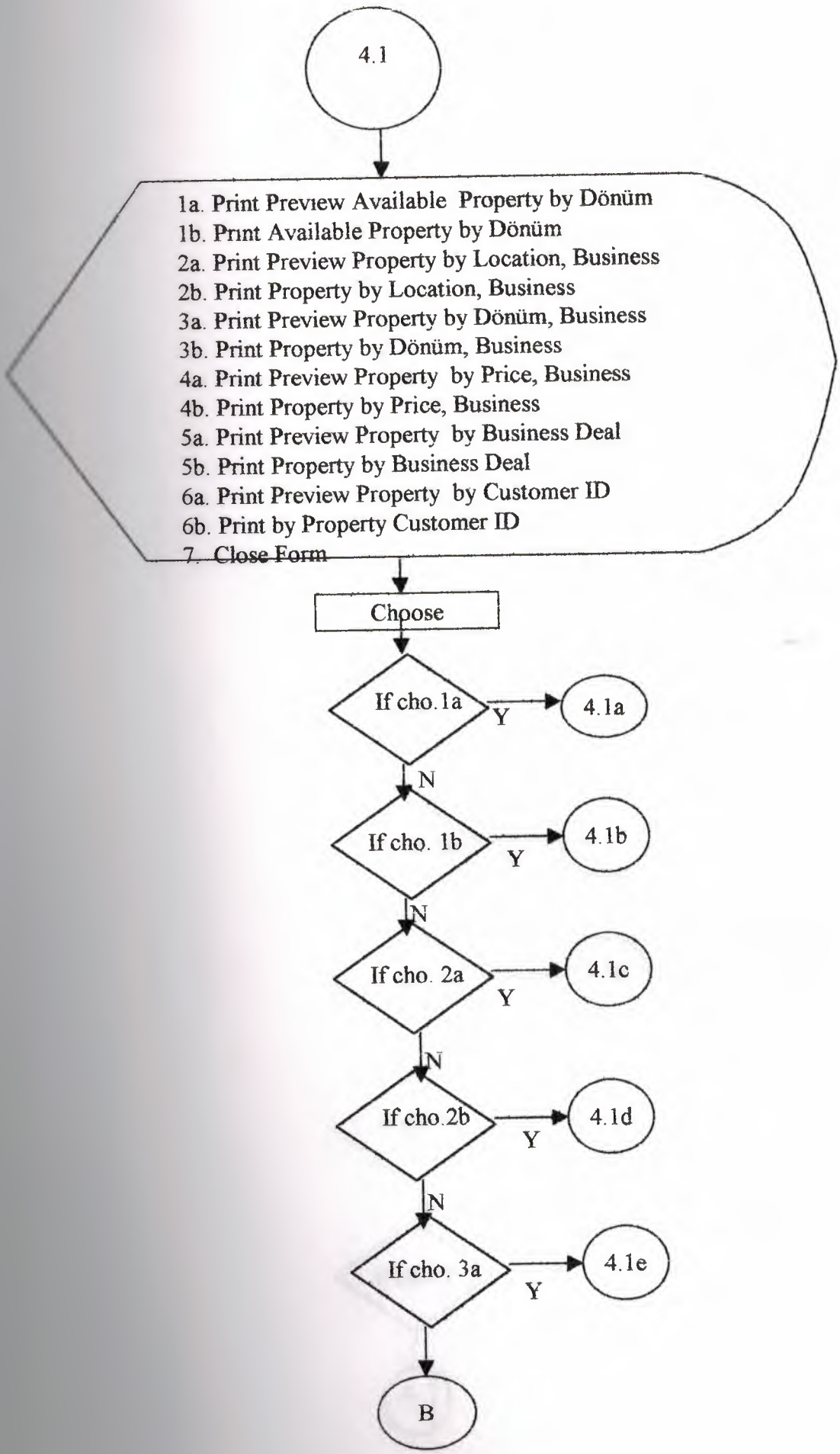

3.2b
1. Add New Record
2. Save
3.Delete Record
4.Upgrade
5. Find Record
6. Close Form
Choose
If cho.1
Y
3.2.1
N
If cho.3
Y
3.2.3
N
If cho.4
Y
3.2..4
N
If cho.5
Y
3.2.5
N
If cho.6
Y
3.1
3.2b

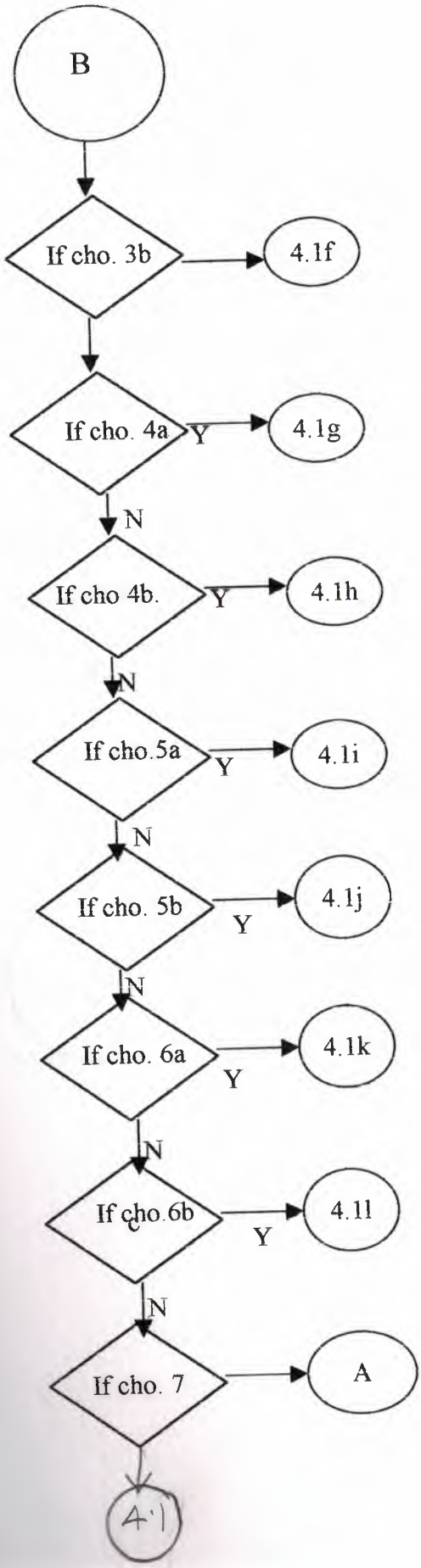

3.2.1
Click Add New Record
Enter all required Property Transaction Details
Click Save Record
3..2.b

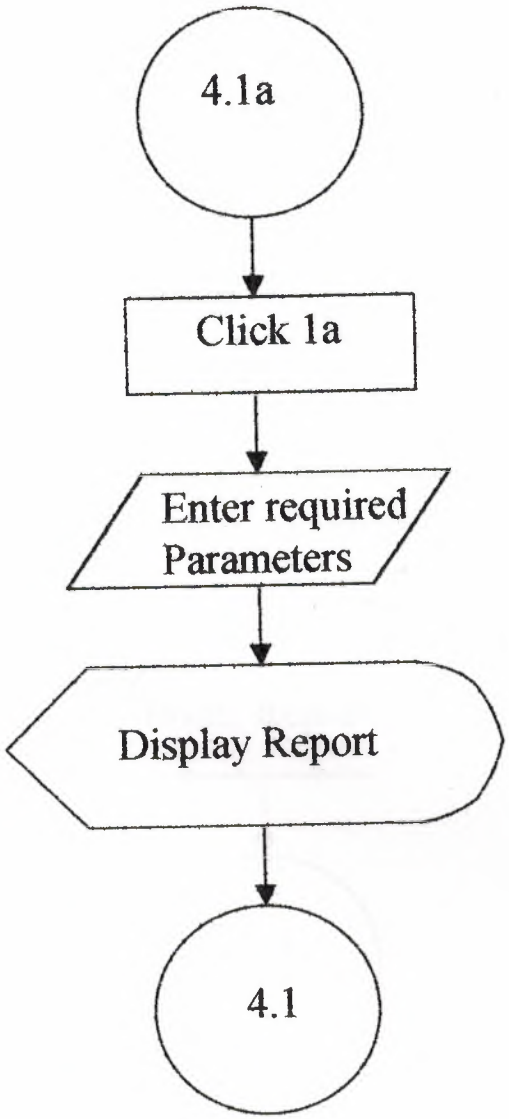

3.2.3
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Press Delete Record
3.2b

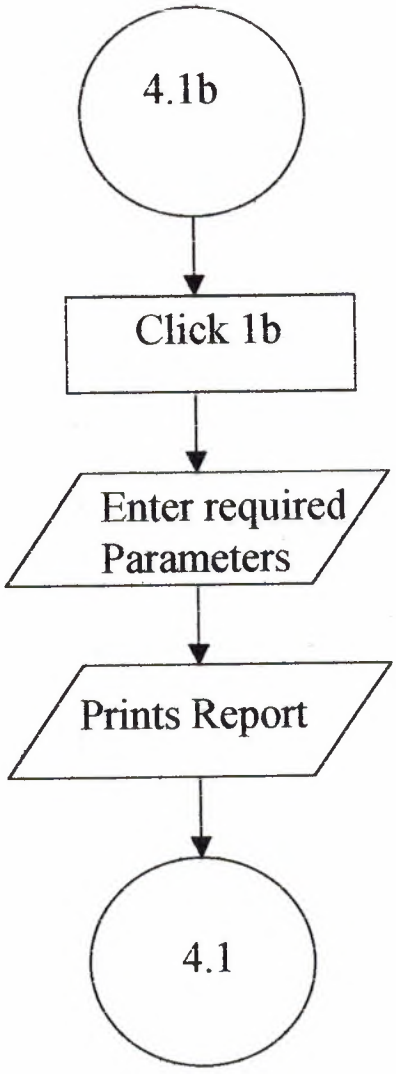

3..2.4
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Input required changes
Press Upgrade Record
3.2b


3.2..5
Click Desired Field
Click Find Record
Enter Required Data
Close Find Form
Displays all fields for that record
Click right arrow on bottom icon to view all other related records with search
3.2b


4.1
1a. Print Preview Available Property by Dönüm
1b. Print Available Property by Dönüm
2a. Print Preview Property by Location, Business
2b. Print Property by Location, Business
3a. Print Preview Property by Dönüm, Business
3b. Print Property by Dönüm, Business
4a. Print Preview Property by Price, Business
4b. Print Property by Price, Business
5a. Print Preview Property by Business Deal
5b. Print Property by Business Deal
6a. Print Preview Property by Customer ID
6b. Print by Property Customer ID
7. Close Form
Choose
If cho.1a
Y
4.1a
N
If cho. 1b
Y
4.1b
N
If cho. 2a
Y
4.1c
N
If cho.2b
Y
4.1d
N
If cho. 3a
Y
4.1e
B


B
If cho. 3b
4.1f
If cho. 4a
Y
4.1g
N
If cho 4b.
Y
4.1h
N
If cho.5a
Y
4.1i
N
If cho. 5b
Y
4.1j
N
If cho. 6a
Y
4.1k
N
If cho.6b
Y
4.1l
N
If cho. 7
A
4·1


4.1a
Click 1a
Enter required Parameters
Display Report
4.1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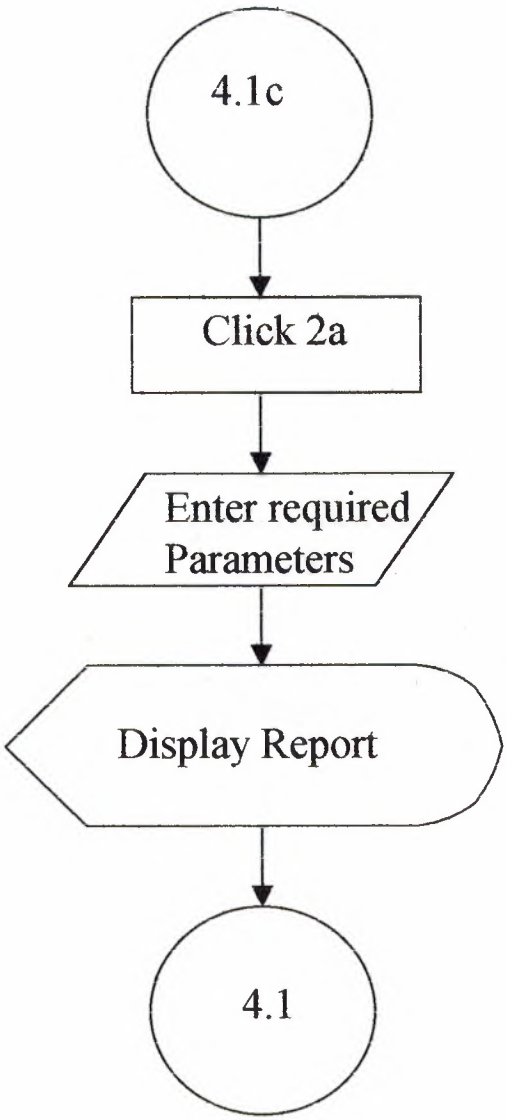
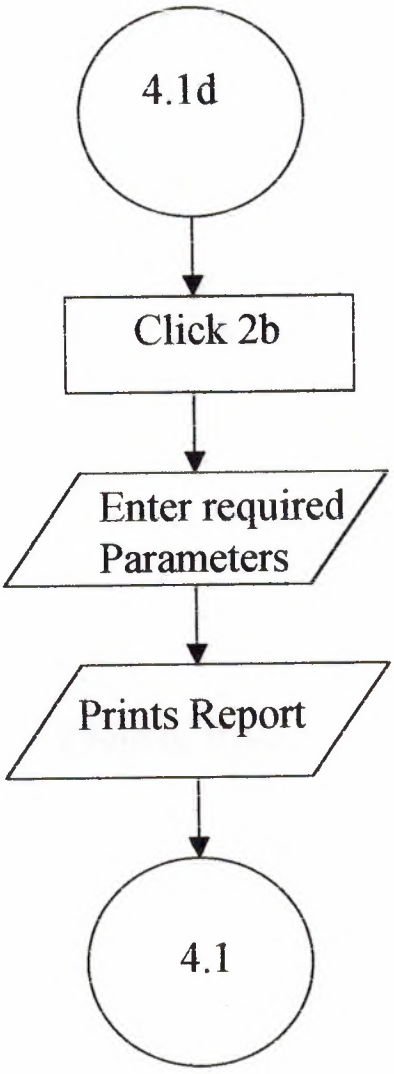
Click 1b
Enter required Parameters
Prints Report
4.1


4.1c
Click 2a
Enter required Parameters
Display Report
4.1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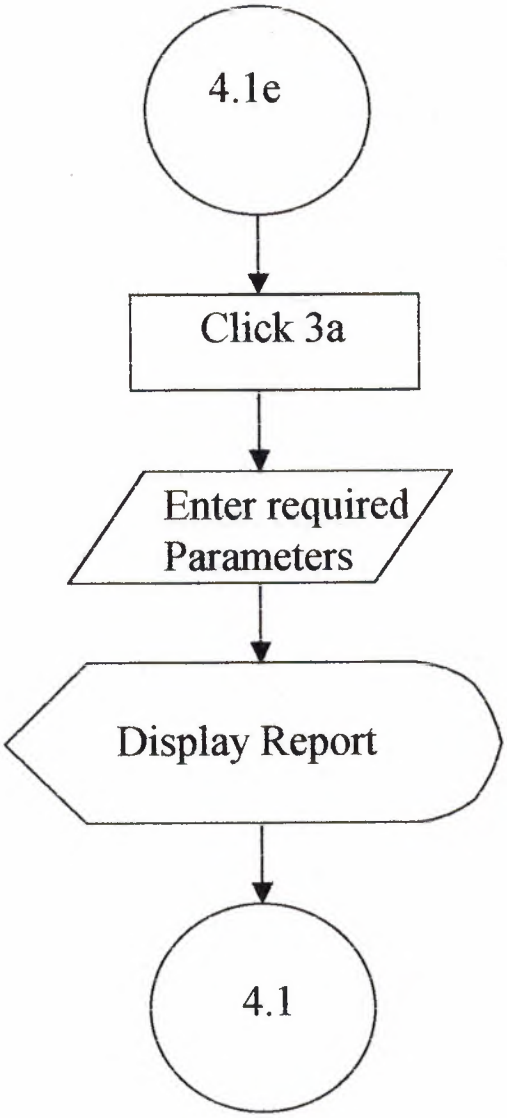
Click 2b
Enter required Parameters
Prints Report
4.1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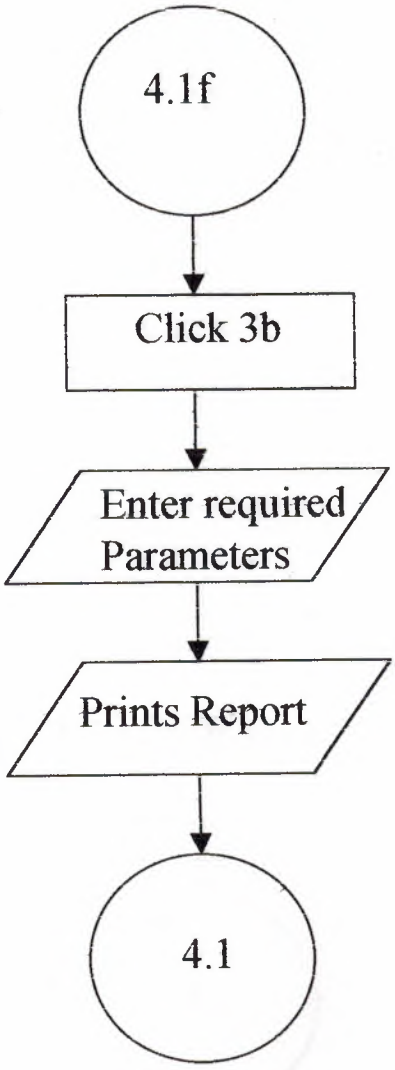
Click 3a
Enter required Parameters
Display Report
4.1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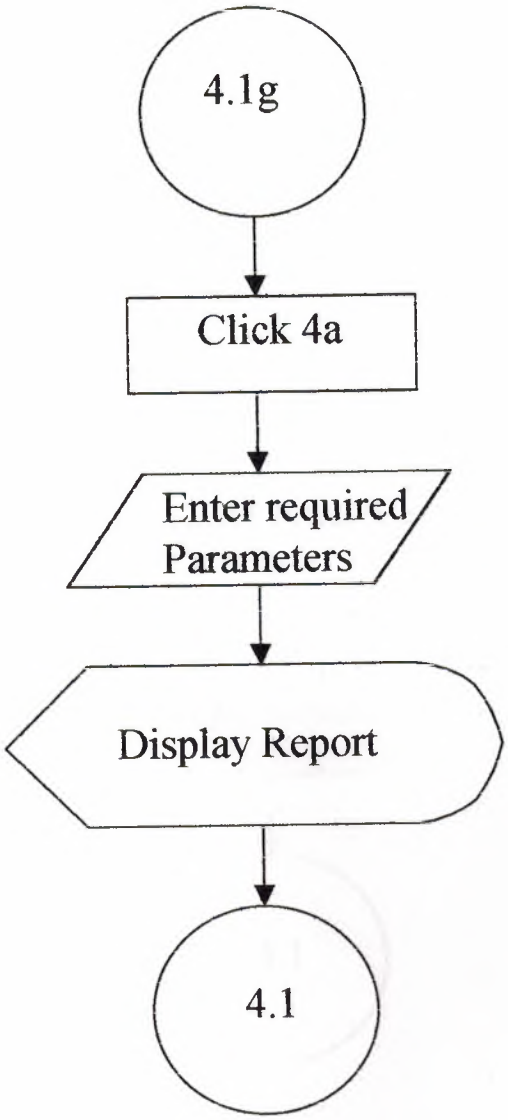
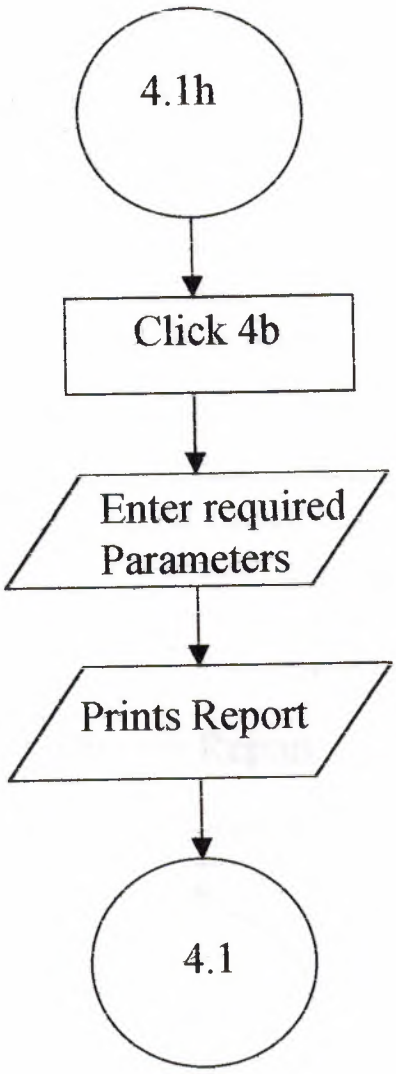
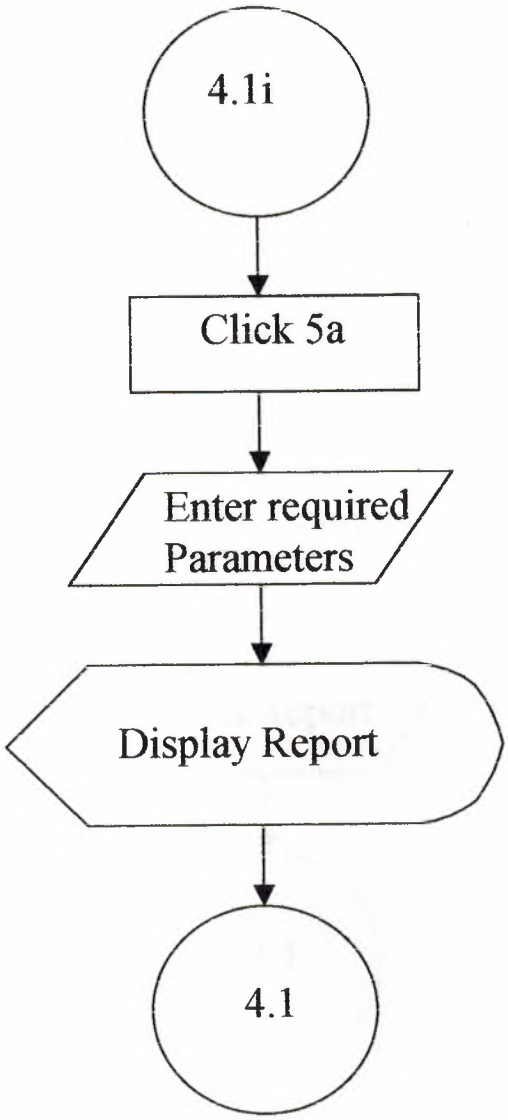
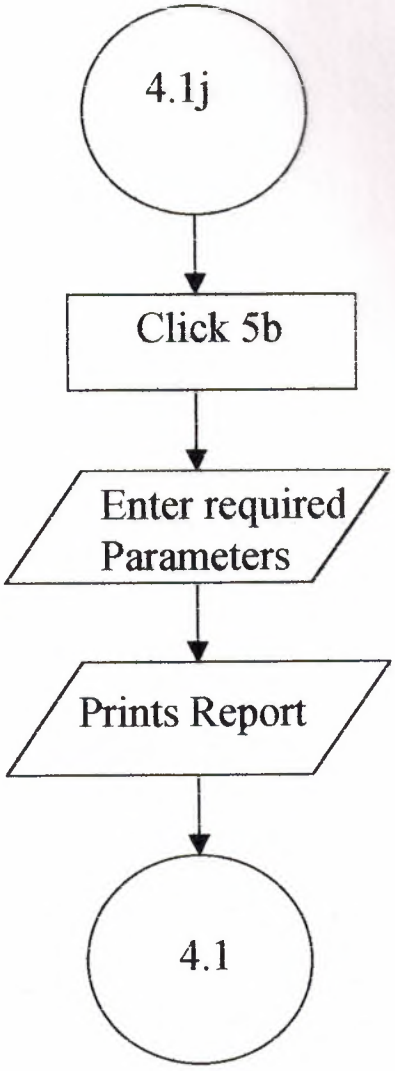
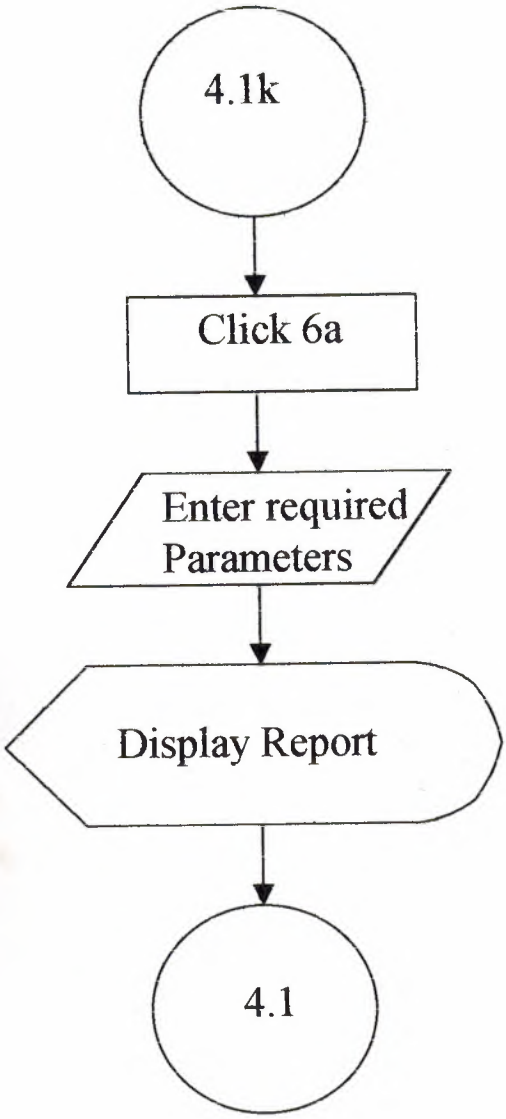
Enter required Parameters
Prints Report
4.1


4.1g
Click 4a
Enter required Parameters
Display Report
4.1


4.1h
Click 4b
Enter required Parameters
Prints Report
4.1


4.1i
Click 5a
Enter required Parameters
Display Report
4.1


4.1j
Click 5b
Enter required Parameters
Prints Report
4.1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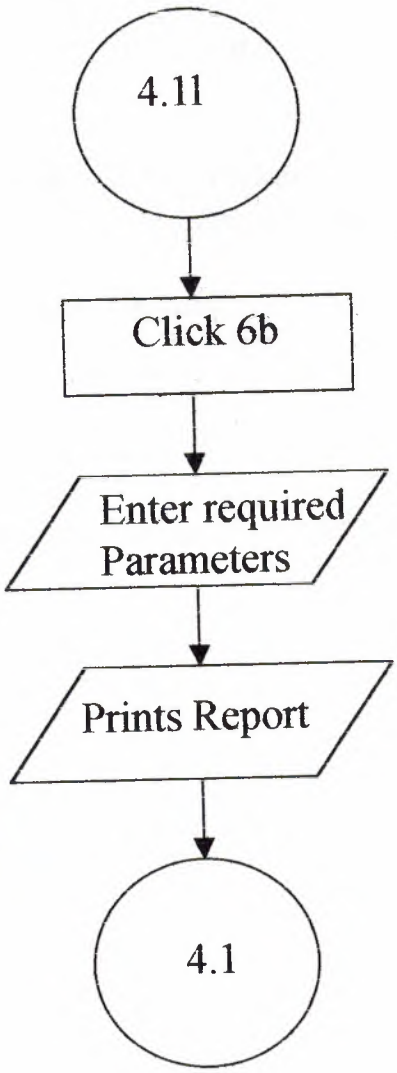
Click 6a
Enter required Parameters
Display Report
4.1


4.11
Click 6b
Enter required Parameters
Prints Report
4.1

7.0 References

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   Authors: Abraham Silberchatz, Henry F. Korth
   S.Sudarson

2. Software Package: Tour Tracker
   http://www.toursoftware.com/tracker.htm

3. Software Package: Ground Tour Tracker
   http://www.toursoftware.com/ground.htm

8. Conclusion

In a real world environment most of the Estate Agencies are working with software package programs designed generally for the Estate Agency needs. Our designed system has been tested at the Estate Agency and has proved to be efficient in maintaining the property records and producing a variety of reports, based on the organization needs. However to implement the long term benefits of the organization we will need to observe the company work for a minimum of six weeks.

A summary control of knowledge is very important. In this project the importance of accuracy and efficiency was maximised in my practice as working with MS Access 2000 requires a lot of care and attention. The application program needs a sensitive approach to designing the relationships and this means careful system analysis. A good and sound basis is needed in the core design of the system as this reduces flaws in the proceeding time.

In order to further expand the system we could have introduced more SQL Queries, however with the proposed organization in question the queries are enough to analyse current business conditions. I as the student and database designer still believe that the managers expectations are quite high regarding the program, but it is always known that a developed system should be tested for a period of time to eradicate any shortcomings in order to satisfy the manager at the Estate Agency. According to my experience on a programming background, is that designer clothes are more suited and better fitted for the body, rather than the clothes designed for the sizes.