NEAR EAST UNIVERSITY

Faculty of Engineering

Department of Computer Engineering

CONTRADICTING MEDICINES DATABASE APPLICATION

Graduation Project
COM-400

Student: Shadi Jundi

Supervised by: Assist. Prof. Dr. Erdal Onurhan

Nicosia-2002
CONTRADICTING MEDICINES DATABASE APPLICATION
ACKNOWLEDGMENTS

First I would like to express my gratitude to Assist. Prof. Erdal Onurhan. Under his guidance and continues support, I overcame many difficulties and learned a lot about Access programming. In all discussions, he was there to give all the support he can.

Special thanks to Metin and Barish, with their kind help, I could work with Queries and VBA coding successfully to complete this project. Thanks to the faculty of Engineering for having such a good computational environment.

I also want to thank my friends in NEU: spoon and (poky) Mohammad, being with them made university life full of fun.

I want to thank my family, especially my parents. Without their endless Support and love, I would never be where I am today.
ABSTRACT

The rapid increase of computer’s influence in our daily life, has simplified and automated tasks, not a while ago were much time and effort consuming, yet this desire to get more out of computers has created a new demand and competition for better and new Technologies. Database development is one of the most areas that’s developing and demanded by every local and international firm and institution around the world.

The aim of this project is to develop a medicine’s database for general purpose Physician and pharmacist, this project is done to help creating a system that will keep Records about different medicines and their contradicting medicines. so that any doctor or Pharmacist could analyze the patient’s medicines and to avoid giving a medicine that clashes with the medicines a patent is currently taking.

Microsoft’s Access is used to solve the problem, the basic structure and functions of Access is also discussed in this project.
# TABLE OF CONTENTS

## ACKNOWLEDGEMENT

i

## ABSTRACT

ii

## TABLE OF CONTENTS

iii

## INTRODUCTION

1

## CHAPTER ONE: DATABASE DEVELOPMENT SYSTEMS AND ACCESS

2

1.1 Use of Computers in life

2

1.2 Database Management Systems (DBMS)

3

1.3 Relational Database

3

1.4 Introduction to MS Access Development

3

1.4.1. what is MS Access

3

1.4.2. Applications that can be developed by MS Access

4

1.4.3. Access development platform

4

## CHAPTER TWO: BUILDING THE RELATIONSHIP LOGIC

6

2.1. Case Study

6

2.2. Solution

6

2.2.1. Design Steps for Building the System

7

2.3. Tables Design

8

2.4. Relationship between the Tables

9

2.5. The Flowcharts

10

2.5.1. Flowcharts of the Processes

11

2.5.2. Flowcharts of the Processes

11
INTRODUCTION

Many excellent database systems are available to doctors all over the globe. Whether developed by MS Access or other database tools. But this database is talking about the medicines and its contradicting ones, i.e. if you are talking some medicine it may be give some minor or major side effects if you take a medicine that’s on its contradicting list, since the chemicals in both medicines clashes.

However, I have experienced that some pharmacists or even doctors are not fully aware of how serious this could be especially in the case of old people and infants. So I took this project to make it easy for doctors or any one who is interested in knowing about the medicines he/she is taking and what’s it contradict(s) and some other information about the proper dosage and over dosing symptoms. I also wanted to design a system that’s easy and straightforward, that any one interested in using it won’t have to go to the process of trail and error, and this system at the same time should provide what any complex powerful system can do. In the first chapter there is a brief history of databases and their need in any application containing big amount of records and MS Access can promise in the field of computer science as a database system provider.

The second chapter provides the case study of the application under construction “Contradicting medicines database” and the design of tables and their relationship followed by the program and its flowcharts.

In the third and fourth chapter, the design of the forms and reports are explained in detail, the menu forms with its properties, all topped with detailed explanation about the codes used by forms, search forms and reports and queries.
CHAPTER ONE

THE WORLD OF DATABASE DEVELOPMENT AND ACCESS

1.1 Need of Computers In Life

Computer software has become a driving force; it’s a powerful force that set
Decision-making and serves as a basis for modern investigation and problem solving.

Computers have become a key factor that gives products and services that
modern look, its embedded in systems of all kinds; medical, industrial,
military, entertainment, even office-based products.

Before the introduction of computers in medicines records and their
management, it was not so simple to recall all the medicines and their information
and the contradicting ones, also it was equally as hard to keep track of all the new
medicines that are newly introduced. There are huge books to store all
the information in a difficult way to pin point the medicine you want and to know its
contradicting medicines. Due to the chance of new medicines introduced errors may
occur during the look up for the contradicting medicines.

To improve the speed and efficiency of the hospital, computers are replacing
humans to eliminate the chance of errors, and at the same time search and update records
in a fast way, but in case the data in a non computerized work place may suffer the
chance of getting damaged or lost, in using computers all records can be backed up and
have all the data in a safe place to replace the damaged data in case if any.

A computer system in a hospital or clinic can promise better speed and
efficiency with almost no chance of errors.
1.2 Database Management System

Database is collection of related data items. Examples of records of products in a grocery store, customers records in a bank, medicines records in a pharmacy etc.

When it's needed to access a particular record in a given database, a database management system (DBMS) is used. The DBMS creates the database, provides easy access to users who want to view, update or add a new record.

Many large applications will require more than one database to store its records.

1.3 Relational Database

DBMS has established themselves as one of the primary means for data storage for information based systems ranging from large business applications to simple PC based programs. However a relational database management system (RDBMS) is the system used to work with data management operations for more than 15 years, and still improving, providing more sophisticated storage, retrieval systems. Relational database management systems provides organizations with ability to handle huge amount of data and changing it into meaningful information.

1.4 Introduction to Access Development

1.4.1 What is Access

Access is high powered database engine that enable technologies like client/server, data warehousing and online data processing, all composed in one of the best information management systems.
1.4.2 Applications that can be developed in MS Access

Microsoft Access can offer a variety of features for different database needs. An Access application is made up of the same elements as an Access database including tables, queries, forms, reports, macros and modules. What makes applications different from a database is that application are tied up in one system and all related tasks are organized in a way enables the user to focus on the job.

Microsoft Access can help in developing the following type of applications

1. Personal records
2. Applications used to run small businesses
3. Departmental applications
4. Corporation wide applications
5. Front end for enterprise wide-client/server applications

1.4.2 Access as a development tool

Applications in Access are made up of objects that the user sees and uses directly like forms, reports and objects that supports these ones like tables, queries, macros and modules.

Since Access might be best suited for departmental applications. It can also be used to produce applications that are used in almost any section of the organization, but still there is a limit of how many user may share an Access application and still working satisfactory, there is also a limit for the amounts of records that each table can handle without causing a decrease in performance, such cases depends on the following factors:

1. network traffic in the network
2. the amount of RAM and the speed and amount of processors being used.
3. tasks that the application is going to perform; reporting, entering data, querying.

4. whether MS Access and your application are in the place or the run will be from the server or the workstation.

5. the network operating system being used.

6. whether data will be shared on the internet with various branches of the same department in different locations.
CHAPTER TWO

BUILDING THE RELATIONSHIP LOGIC AND CASE STUDY

2.1 Case study

What we have here is a medicine database with all the information necessary about it, and another table which will have the contradicting part of a medicine, both tables must be linked in a way so that when a user ask to see the contradicting medicine or medicines of a particular medicine, the list of all possible contradicts will appear and in case the user wants to know the cure of some illness or medicine(s) the user will have to type the name of the medicine if he/she remembers it or the user can fill some fields with he/she already knows and the application will do the rest.

2.2 The solution

MS Access is being used as the development tool, and the application is going to be a single user application, which means its going to be installed on one machine, this application however may be used by more than one user on many computers sharing the same tables by using simple advancements.

2.2.1 Design steps for building the application

The design steps are the steps to be followed during the life cycle of creating the application, the following steps to be used are

1. designing the database structure that is going to hold the medicines data.

and make the relation ship between tables.

2. designing the stored procedures in the databases to perform basic functions like adding, updating and viewing the records.
3. designing the user interface of the application.

4. coding the user interface using macros and modules, while maintaining the macros use to minimum.

5. testing and debugging the system with a sample run.

6. deploying the system.

2.3 Tables Design

The first step is to design the table(s) required to store the data of the medicines in it. There are two basic tables being used

1. table1 for holding the medicine information and anything associated with it from its name to its dosage.

2. table2 for holding the contradict information about a particular medicine.

![Figure 2.1](image)

Figue 2.1 the first table structure.
Figure 2.2. Structure of the second table
2.4 Relationship Between Tables

The relationship between tables means how are the databases interact with each other, and how the data in one table is related with the data in another tables. In relationships it is always important to have one master table and other tables linked with it, here table1 is connected with table2, the primary key is Table1 is ID which is the same for Table2, the relationship is done using the same id for both tables.

The relationship is shown in table below:

![Figure 2.4 The relationship between tables](image)
2.5 The Flowcharts

Flowcharts are one of the best tools for software engineering modeling, they show how the data and information is flowing in the system, they are made easy for making applications of any kind, they are basically steps of how the program is going to be developed.

There are many types of flowcharts, like dataflow diagrams, simple flowcharts, structure charts etc. Here a mixture of structures and flowcharts are used to model the system.
Figure 2.6.
Figure 2.7.
Figure 2.8.
Figure 2.9.
Figure 2.10.
Figure 2.11.
Show Info Of Selected Medicine

Read Input

If Exit To View Menu

Figure 2.12.
Figure 2.14.
Figure 2.16.
Figure 2.19.
Figure 2.02.
Figure 2.21.
CHAPTER THREE
BUILDING USER INTERFACE

3.1 Building Forms

To make the user interface for any project means defining how the user will interact with the application and how the user interface must relate to the logic of application. There are many ways for building interfaces, we are using one main form as the main menu and other MDI forms linked with it to navigate the other menus. Also there are linked forms to enter or update the records.

3.1 The Splash Screen

The splash screen is going to appear when the application is loaded which is going to give some information about the program, it’s name and the name of it’s programmer.
3.1.2. The Main Menu

The main menu is going to navigate to the other menus, it contains five buttons (options), the user can go to any of the sub menus like view menu or the user can quit the database application, the program is going to ask the user whether to back up the data or not. The main menu design is in figure 3.2.
3.1.3 The Sub Menu

Figure 3.3 the view menu

The view menu is used for viewing data from simple medical tag up to a more complex and detailed contradicting information about some particular medicine.
The Update Menu is used to update records and data in both general info and the contradicting info section.
3.1.4 The Registration Form

This form is going to work when a new medicine is needed to be added, it will also be going to contain a link to a sub form called check or validate in which the user can see to whom a particular id is given, in case the new id entered is invalid. It also contains tab control on which there are 2 tabs for tag, medical tag and details.
Figure 3.5 general tag tabs

This contains information about the medicine in general for a user with no experience about medicines the user can see information like name of the medicine, when it's used, how to use it and how much dosage must be taken.
This tab contains more detailed information about the same medicine viewed in the first tab, information like proper use, side effects, storage, and run out date.
Figure 3.6 the validate/check situation
This occurs when only id number is entered twice since there should not be any two medicines to have the same id. Every medicine must have a unique id number, and therefore an error message will generate in this case.
3.1.5 The View Menu

The view menu contains five options; one of them is to go back to main menu. The view one-medicine general info option is going to show the general information entered at the registration time, but first it will ask the user to fill fields about it for example, if the user will enter the medicine id it will bring the information or the user might not be familiar with the id, the user can enter the name of it, still if the user still unable to locate the medicine there are other fields that can take a key word for example for cough medicine, you can write cough as a keyword, the program will search the data base and see the medicines associated with the keyword ‘cough’ and list them in another form.
Here is the search category used to locate any medicine in the database.

There is search by criteria and search by using a serial number.
Take this medicine only as directed. Do not take more of it and do not take it more often than recommended on the label, unless otherwise directed by your doctor. To do so may increase the chance of side effects.

**Dosing:**
For oral dosage forms (capsules, liquid, or tablets):
- For sinus pain and congestion:
  - Adults and children 12 years of age and older: 1 to 2 capsules or tablets every 4 to 6 hours.

**Missed dose:**
If you must take this medicine regularly and you miss a dose, take it as soon as possible. However, if it is almost time for your next dose, skip the missed dose and go back to your regular dosing schedule. Do not double doses.

**Storage:**
Store away from heat and direct light.

**Side effects:**
- Convulsions (seizures);
- Dizziness or lightheadedness (severe);
- Fast, slow, or irregular heartbeat;
- Hallucinations (seeing, hearing, or feeling things that are not there);
- Headache (continuing and severe).

**Runout date:**
12/12/2004

The previous, next and the rest of the button gives the user the ability to navigate to any desired record, but here the user cannot update any record at this form and all the fields will be read only fields.
Figure 3.10 the general info for one medicine

Figure 3.11 the general info for all medicines
The general info for all medicines does not select a particular medicine it simply displays all the medicines with its details. In case the user wants to see a contradicting medicine information the user have to click on the option 'view contradicting medicine at the view menu.'

Figure 3.12 general information form
<table>
<thead>
<tr>
<th>Brand name</th>
<th>Brand name</th>
<th>Allergies</th>
<th>Allergies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial number</td>
<td>Serial number</td>
<td>Older adults</td>
<td>Older adults</td>
</tr>
<tr>
<td>Other side effects</td>
<td>Other side effects</td>
<td>Other medicines</td>
<td>Other medicines</td>
</tr>
<tr>
<td>Children</td>
<td>Children</td>
<td>Other medical problems</td>
<td>Other medical problems</td>
</tr>
<tr>
<td>Precautions</td>
<td>Precautions</td>
<td>Pregnancy</td>
<td>Breast-feeding</td>
</tr>
</tbody>
</table>

Figure 3.15 contradicting medicine information form
3.1.6 The Update Menu

The structures and design of the forms are the same as the update menu, the only difference is that the user can update the records or the information about the medicines. This is the last menu which deals with the forms, the next menu will deal with the reports.

3.17 The Report Menu

In this menu only six forms are used if the user wants a report about one particular medicine, the user may select the medicine id or might choose other criteria as will.
Figure 3.15 select medicine id or the criteria section to preview general info of one medicine.
<table>
<thead>
<tr>
<th><strong>brandname</strong>:</th>
<th>brandname</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>serial number</strong>:</td>
<td>serial number</td>
</tr>
<tr>
<td><strong>other brand names</strong>:</td>
<td>other brand names</td>
</tr>
<tr>
<td><strong>category</strong>:</td>
<td>category</td>
</tr>
<tr>
<td><strong>description</strong>:</td>
<td>Description</td>
</tr>
<tr>
<td><strong>proper use</strong>:</td>
<td>Proper use</td>
</tr>
<tr>
<td><strong>dosing</strong>:</td>
<td>Dosing</td>
</tr>
<tr>
<td><strong>missed dose</strong>:</td>
<td>Missed dose</td>
</tr>
<tr>
<td><strong>storage</strong>:</td>
<td>Storage</td>
</tr>
</tbody>
</table>

**Figure 3.16** selecting medicine id or any other criteria to preview contradicting info of one medicine.
3.2 Building Reports

As seeing information in writing is the most traditional and most convincing method of reporting. That’s why it’s important to be able to get results on paper. In the fields of medicine it’s considered useful to have medicine description both in detail and in brief handy.

Here are the reports that are designed are as following:

1. the first report gives brief description for all medicines in general info.
2. the second reports give detailed description for all medicines in general info.
3. the third report gives description for one medicine in general info using an id number or criteria.
4. the forth report gives description for one medicine in contradicting info using id number or some other criteria.
5. the first report gives brief description for all medicines in contradicting info.
6. the second reports gives detailed description for all medicines in contradicting info.
Figure 3.16 all medicine brief description report.
Figure 3.17 information of all medicines
Details on All medicines for contradicting use

| brand name: | aspirin |
| serial number: | 00001 |
| other side effects: | Do not give aspirin or other salicylates to a teenager with a fever or other symptoms of a virus infection, especially flu or chickenpox, without first discussing its use with your child's doctor. This is very important because salicylates may cause a serious illness called Reye's syndrome in these individuals. |

Allergies: If this medicine contains aspirin, salicylamide, or ibuprofen, before taking it check with your doctor if you have ever had any unusual or allergic

Figure 3.17a. report on all contradicting medicines
Details on one medicine for contradicting use

brand name: asprin
serial number: 00001
other side effects: Do not give aspirin or other salicylates to a teenager with a fever or other symptoms of a viral infection, especially flu or chickenpox, without first discussing its use with your child's doctor. This is very important because salicylates may cause a serious illness called Reye's syndrome in these individuals.

Allergen: This medicine contains aspirin, salicylamide, or ibupron, before taking it, check with your doctor if you have ever had any unusual or allergic

Figure 3.18 contradicting info of one medicine.
Figure 3.19 The reporting a record menu
4.1 The Macros

The macros are one of the most powerful tools of MS Access. Macros can perform many useful functions like updating, deleting, and closing/opening the forms within different situations.

There are 15 basic macros used in this application to do simple jobs in less time. The macros are as under:

![Figure 4.1](image-url)
Figure 4.4

Figure 4.5

52
4.2. Building Modules

Figure 4.8. The VBA (visual basic for application) environment

The are no separate modules used in this application to perform any particular function, how over the code used behind the forms and reports for performing functions like searching, populating the combo boxes, validating the input etc.
4.2.1 Code Behind The Forms

First let us see the important code behind the menus. The code behind the main menu.

Option Compare Database

Private Sub form0zform1_Click()
    DoCmd.Close
    DoCmd.OpenForm "form1"
End Sub

Private Sub form0zform2_Click()
    DoCmd.Close
    DoCmd.OpenForm "form2"
End Sub

Private Sub form0zform3_Click()
    DoCmd.Close
    DoCmd.OpenForm "form3"
End Sub

Private Sub form0zform4_Click()
    DoCmd.Close
    DoCmd.OpenForm "form4"
End Sub

Private Sub exit_Click()
    DoCmd.Close
Private Sub form0zform001_Click()
    DoCmd.Close
    DoCmd.OpenForm "form001"
End Sub

Private Sub Command10_Click()
    Screen.PreviousControl.SetFocus
    DoCmd.FindNext
End Sub

Private Sub form0zform6_Click()
    DoCmd.Close
    DoCmd.OpenForm "form5"
End Sub

Private Sub Image15_Click()
    DoCmd.Close
    DoCmd.OpenForm "formres"
End Sub

Now the code behind each button on the main menu

Private Sub form001close_Click()
    DoCmd.Close
End Sub

Private Sub form001find_Click()
    Screen.PreviousControl.SetFocus
    DoCmd.DoMenuItem acFormBar, acEditMenu, 10, , acMenuVer70
End Sub

Private Sub Command19_Click()
    Screen.PreviousControl.SetFocus
    DoCmd.DoMenuItem acFormBar, acEditMenu, 10, , acMenuVer70
End Sub

Private Sub form001close2_Click()
    DoCmd.Close
End Sub

Private Sub form001print2_Click()
    DoCmd.DoMenuItem acFormBar, acEditMenu, 8, , acMenuVer70
    DoCmd.PrintOut acSelection
End Sub

Private Sub form001next_Click()
    DoCmd.GoToRecord , , acNext
End Sub

Private Sub form001prev_Click()
    DoCmd.GoToRecord , , acPrevious
End Sub

Private Sub form001first_Click()
DoCmd.GoToRecord , , acFirst
End Sub

Private Sub form001last_Click()
DoCmd.GoToRecord , , acLast
End Sub

Private Sub form001print_Click()
DoCmd.DoMenuitem acFormBar, acEditMenu, 8, , acMenuVer70
DoCmd.PrintOut acSelection
End Sub

Private Sub form001back_Click()
DoCmd.Close
DoCmd.OpenForm "form0z"
End Sub

Private Sub Form_Load()
DoCmd.Beep
End Sub

Option Compare Database

Private Sub Command1_Click()
DoCmd.OpenReport "Report3a", acViewPreview
End Sub

Private Sub Command2_Click()
DoCmd.OpenReport "Report3b", acViewPreview
End Sub

Private Sub Command3_Click()
    DoCmd.OpenReport "Report3d", acViewPreview
End Sub

Private Sub Command4_Click()
    DoCmd.Close
    DoCmd.OpenForm "form0z"
End Sub

Option Compare Database

Private Sub Detail_Click()
End Sub

Private Sub Form_Load()
    MsgBox "welcome to data base...load splash screen?", 4 + 32, "Entry"
End Sub

Private Sub Form_Open(Cancel As Integer)
    Me.TimerInterval = 9000
End Sub

Private Sub Form_Timer()
    DoCmd.Close acForm, "form0"
End Sub

Private Sub Form_Unload(Cancel As Integer)
    DoCmd.OpenForm "form0z"
End Sub
Option Compare Database

Private Sub Command1_Click()
 On Error GoTo Err_Command1_Click

 DoCmd.Close
 DoCmd.OpenForm "form1a", acNormal, , acFormReadOnly
 Exit_Command1_Click:
  Exit Sub

 Err_Command1_Click:
  MsgBox Err.description
  Resume Exit_Command1_Click

 End Sub

Private Sub Command3_Click()
 On Error GoTo Err_Command2_Click

 DoCmd.Close
 DoCmd.OpenForm "form1c", acNormal, , acFormReadOnly
 Exit_Command2_Click:
  Exit Sub

 Err_Command2_Click:
  MsgBox Err.description
  Resume Exit_Command2_Click

 End Sub
Private Sub Command2_Click()
    On Error GoTo Err_Command3_Click
    DoCmd.Close
    DoCmd.OpenForm "form1b", acNormal, , acFormReadOnly
    Exit Command3_Click:
        Exit Sub
    Err_Command3_Click:
        MsgBox Err.description
        Resume Exit_Command3_Click
End Sub

Private Sub form1form0z_Click()
    DoCmd.Close
    DoCmd.OpenForm "form0z"
End Sub

Option Compare Database

Private Sub Command1_Click()
    On Error GoTo Err_Command1_Click
    DoCmd.Close
    DoCmd.OpenForm "form2a", acNormal, , acFormEdit
    Exit_Command1_Click:
Exit Sub

Err_Command1_Click:

MsgBox Err.description

Resume Exit_Command1_Click

End Sub

Private Sub Command2_Click()

On Error GoTo Err_Command2_Click

DoCmd.Close

DoCmd.OpenForm "form2e", acNormal, , , acFormEdit

Exit_Command2_Click:

Exit Sub

Err_Command2_Click:

MsgBox Err.description

Resume Exit_Command2_Click

End Sub

Private Sub form2form0z_Click()

DoCmd.Close

DoCmd.OpenForm "form0z"

End Sub

Option Compare Database

Private Sub Command1_Click()

DoCmd.OpenReport "Report3a", acViewPreview
End Sub

Private Sub Command2_Click()
    DoCmd.OpenReport "Report3b", acViewPreview
End Sub

Private Sub Command3_Click()
    DoCmd.OpenReport "Report3d", acViewPreview
End Sub

Private Sub Command4_Click()
    DoCmd.Close
    DoCmd.OpenForm "formOz"
End Sub

Option Compare Database

Private Sub Command2_Click()
    On Error GoTo Err_Command2_Click
    DoCmd.Close
    DoCmd.OpenForm "form4a", acNormal, , acFormAdd
Exit_Command2_Click:
    Exit Sub
Err_Command2_Click:
    MsgBox Err.description
    Resume Exit_Command2_Click
End Sub
Private Sub Command3_Click()

On Error GoTo Err_Command3_Click

DoCmd.Close

DoCmd.OpenForm "form4c", acNormal, , acFormAdd

Exit_Command3_Click:

    Exit Sub

Err_Command3_Click:

    MsgBox Err.description

    Resume Exit_Command3_Click

End Sub

Private Sub Command4_Click()

DoCmd.Close

DoCmd.OpenForm "form0z"

End Sub
4.3 Queries

This application contains four queries to output reports for a particular medicine, getting information from a criteria search menu and sending to the report criteria to get the report of the selected medicine.
Figure 4.9.
SELECT TableI.brandname, TableI.[other brand names], TableI.category, TableI.description, TableI.[proper use], TableI.[dosing], TableI.[missed dose], TableI.[storage], TableI.[side effects], TableI.[runout date], TableI.[serial number]
FROM TableI
WHERE (TableI.[serial number])=(Forms.[FormCombo].[Combo1]);

Figure 4.13 the SQL view of queries
CONCLUSION

Computers has become a vital and important part in daily life. And solutions provided by the advances by the advancement of it, is helpful and makes life easier.

This program can not promises the perfect solution for a medicine database system, however it can help many doctors and pharmacists to keep track of the medicines. Many Extras can be included in this application, it can be developed in visual basic as front end and access as back end data base system which will provide more stability in user interface design.

Access 2000 has emerged as an exciting new version of Microsoft’s office data base component. The new features in Access 2000 gives Access developers a common development environment wither its with excel ,word or power point.
It will now be easier than ever for access developers to build cross-component applications that draw on the best of two or more office components.
The object browser can help access developers learn and apply the object models from these other applications.

With VBA, there is still familiar procedures, modules, and debugging tools
There is the new ADO modules and new database formats in Access 2000 which has an advantage on how Access works.

A Microsoft Access table can contain up to 32 indexes, very complex tables that are part of many relationships may exceed the index limit, and you want be able to convert the database that contains these tables. Versions 3.5 of the Microsoft jet database engine creates indexes on both sides of relationships between tables.
This application can be made a multi user, for servers like MS SQL server, because Access loses its power (speed) with more than 10 users, on the other hand SQL server supports an unlimited amount of users at the same time.

Still this application can be used in the clinic by any doctor with no or little change, and that’s what’s makes this program ready to use, its simple and basic design.
REFERENCES

