

COMPUTERIZATION OF STOCK SYSTEM IN PHARMACEUTICAL INDUSTRY

(A CASE STUDY OF HALID PHARMACEUTICAL COMPANY LIMITED, KADUNA)

BY

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**A PROJECT SUBMITTED TO DEPARTMENT
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MINNA, NIGER STATE.**

MARCH, 2007.

DECLARATION

I solemnly declare that this research work was carried out by me under the supervision of Dr. U. Y Abubakar and that it has not been presented for the award of a postgraduate diploma elsewhere.

.....

Name

.....

Date

CERTIFICATION

This is to certify that this project is an original work undertaken by Isiaka Isah (PGD/MCS/2005/2006/1185) under the supervision of Dr. U. Y Abubakar and has been prepared with the regulations governing the preparation of projects in the department of Mathematics/Computer Science, Federal University of Technology, Minna, Niger State.

This project has been approved by:



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Dr. U. Y Abubakar
(Project supervisor)



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Date

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Dr. N. I Akinwande
(HOD)

.....
Date

.....
External Examiner

.....
Date

DEDICATION

I dedicate this project to my beloved parents, Alh. and Mrs. Hadizat Isiaka
for their support and concern.

ACKNOWLEDGEMENT

I am very grateful to God for his guidance and care during the programme. I need to acknowledge my project supervisor, Dr. U. Y Abubakar for his constructive criticism and support given to me during the course of this project.

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ABSTRACT

This project work “computerization of stock system in pharmaceutical industry” is aimed at exploring an insight into practical aspect of stock control activities in pharmaceutical industry.

This research has been divided into stages with the introduction to information technology and its aim in the society discussed first. Literature review is next. Then, system analysis and design followed by system implementation and summary, conclusion and recommendation respectively.

CHAPTER ONE

1.0 INTRODUCTION

Technology advancement is revolutionizing the world's information management, business and governance. In the world, information technology permits virtually every aspect of human endeavors to the extent that its effective use can easily make a difference between success and failure. To be successful in a competitive world, it is important to use information technology, I T effectively. Some of the greatest challenges facing most organizations include information and stock resources outfit, which is the effective use of information technology. Understanding the role it plays, the tremendous benefit it offers and how to make the best use of its system is an essential requirement for any manager in every field, from human resources to information must understand these implications and urgently learn how to benefit from it in order to make a valuable difference in this computer age.

1.1 BACKGROUND OF THE STUDY

Stock control is an expensive and complicated business. But stock are necessary to ensure continue operation in a business. Stock control is an attempt to balance the need for good reliable services in terms of constant supply of materials. The need to provide the services without committing vast resources of the organization thus reduces profit and risking cash flow problem. This is one of the reasons why stock control is such a different

task from store management especially in pharmaceutical industry.

Stock control in pharmaceutical industry has been facing serious problems ranging from stock misuse to improper stock taking. Various pharmaceutical industries have been faced with problems of using manual method of operation but yet to get rid of it. So, computerized system presents a great advantage over manually based system. The design should be able to bring together prompt and accurate information for the entire section into common databank.

1.2 STATEMENT OF THE PROBLEM

Some of the problems associated with the manual stock control in the pharmaceutical industry include the following:

- Improper keeping of transaction records as a result of keeping records in file jackets in cabinet, which are normally exposed to fire outbreak.
- Damage of document that may occur due to reckless handling.
- Increase volume of document in the organization also causes problems and errors are bound to occur because the manual system is not reliable.
- Missing of stocks and sales documents may occur.
- Cost of providing stationeries is high.
- The existing system in the organization is time consuming and decreasing the processing speed of recording medium.
- Delay in producing report and complexity of calculation is tedious with

manual operation.

1.3 SCOPE OF THE STUDY

As earlier mentioned, it is required that for any pharmaceutical industry to maintain balanced record of manufactured goods, the industry must be fully guaranteed. In view of this only stock record be delved into in this research work.

1.4 SIGNIFICANCE OF THE STUDY

The significances of this study are:

- To introduce some new techniques of modern stock control to the organization which will assist them in decision-making.
- To provide accurate stock of their good and generate balance report at both issuing and receiving and also data storage and retrieval of information are done at ease.
- To provide guide for subsequent student who may be interested in the type of the study of this field.

1.5 OBJECTIVE OF THE STUDY

The objectives of the study are:

- (i) To design a computerized stock control system to take accurate stock in the pharmaceutical industry.
- (ii) To ascertain the problems encounter by the organization in managing its

stock for profitable business.

(iii) To maintain and create database that will maintain the following:

- Generate stock balance report anytime.
- Generate a report on the output of stock record.
- Generate a report on all record of stock.
- To increase speed in the operation.
- To incorporate proper security on the data.
- To replace the manual work with electric machine and solve problems already designed in order to increase efficiency in the operation.

1.6 LIMITATION OF THE STUDY

Due to the equipment availability and time, this project work will not be limited to any particular pharmaceutical industry as a case study used, and will aim only on the following:

- Making the storing of good produced and data easier for future use.
- Informing the pharmaceutical industry to re-order level when it is due and to produce general production list.

More so, this research work will not delve into considering the effect of billing, expiry date as well as staff welfare in the organization.

CHAPTER TWO

2.0 LITERATURE REVIEW

Over the years, the pharmaceutical industries data collection remains unanalyzed and in places where these are done, the analysis does not go beyond field estimation and calculation of cost of goods. The reason for this development does not cover wider analysis of the stock record.

The aim of literature review in any project is to present as logically as possible the researcher trends and progress of the research in the field of the study to acknowledge the effort of the pioneer to create avenue for the review and objective. Hence attempt was made to see the views of various authors as constraint in the textbooks, extracts, articles (journals and magazines) etc.

Discussion will revolve around those variables that are considered very relevant to this project.

STOCK CONTROL:

CARTER (page 1973) defined stock control as “the process of ensuring that stock level held by organization is supplied to those part of the operation that require them (i.e. production, distribution, sales engineering etc).

BURTON (1975) says no single law describes the performance of stock control system but their related factors must be considered in assessing the effectiveness of a stock

control system.

MARRISON (1976) defined inventory control as “the planning, ordering and scheduling of material use in the manufacturing process”.

WESTIN and ZENG (1986) defined stock control as the activity to determine the range and quality of material, which should be stocked, and the regulations of receipt and issue of the materials.

This will be impossible without adequate finance. How to combat the enormous challenges faced by the pharmaceutical industries in the new decade. One can only hope that the banking sector, government and other source of financing the industry will be equal to the challenge of realizing the future prospect for the industry in Nigeria.

Furthermore, UDOK (1994) asserted that capital is the most limiting factor of the basic resources in Nigeria. This lack of capital is partly responsible for the low or poor performance of the sector especially in the area of using computers.

2.1 BRIEF HISTORY OF COMPUTER

The history of computer can be traced to the ancient Chinese abacus, the

JACQUARD LOON (1805) and CHARLES BABBAGE's “analytical engine” (1834).

It also includes components of mechanical, analog and digital computing architectures.

By late 1960's mechanical devices such as the merchant calculator was widely used in science and engineering. Analog computers were widely used to solve systems of finite difference equations arising in oil reservoir modeling.

At the end, digital computer was proved to have the capability to deal with large-scale computations. This makes digital computer to dominate the computing world in all areas ranging from the hand calculator to the supercomputer and are pervasive throughout society. Therefore, this brief sketch of the development of scientific computing is limited to the area of digital, electronic computers.

The evolution of digital computing is often divided into generations. Each generation is characterized by dramatic improvements over the previous generation in the technology used to build computer's internal organization of computer system, and programming language, which is not usually associated with computer generations. There have been steady improvements in the algorithms used in computational science. Because of time constraint, we shall be very brief with the history of computer technology. *alone* .

2.2 THE APPLICATION OF COMPUTER IN STOCK CONTROL KEEPING

The need for computer application in data processing and record keeping (stock inventory record) cannot be over emphasized.

It is in that vein that WISS (1979) affirmed "management must be involved so as to make commitment to the use of computer effectively".

Record keeping has taken thousand of years until it became necessary. The complexity of the tribal life requires that more details be remembered. Methods of counting based on biological fact that people have 10 fingers developed this way. However, this could not solve any problem. DONALD (1983) confirmed that by saying "the limited number of

fingers combined with the need to remember more facts posed problems”.

As tribes grew in nations, trade and commerce developed, stones and sticks used in counting no longer meet the need of only the traders. By 350 B.C, Ancient Babylonia merchants were keeping records on clay tablets.

Manual record keeping technique continues to develop through the centuries with many innovations. Machines were introduced in Europe around 300 years ago to improve the performance of a single data processing steps.

As the time goes on the volume of business and government records during this period was expanding rapidly and DONALD (1983) asserted “complete reliance on manual method resulted in information that was relatively inaccurate”.

In the period from 1054 to 1959, many organizations acquired computer for data processing purpose. Even though these first generation computers have been designed for scientific uses. Managers generally considered the computer to be an accounting tool, and the first applications were designed to process routine task such as payrolls. The pioneers in the use of new tool (computer) had to staff their computer installation with a new breed of workers, and they initially had to cope with the temerity of preparing programs in a tedious machine language in spite of their obstacle, the computer was found to be fast, accurate and reliable.

Finally, BERVIS ET AL (1988) elaborated on how the computer was used mainly as a communication device. He further explained that this was made possible through a number of co-operative effort in the industry and computer system designer.

These appropriate terminals were installed in the record keeping as well as the issuing and other areas.

2.3 FEELINGS OF OTHERS TOWARDS COMPUTER

It has been pointed out that the working of computer in this society includes speed, accuracy and mathematical capacity. The reason for this cannot be far fetch. These includes:

- High degree of conservation by many people.
- Haired for mathematics by so many people.

The nation can benefit immensely from this machine by training people for both professional and personal use.

Some other people however feel that computer have been used and are still being used by some for unwholesome purpose to steal funds, peep into other peoples records. The second alternative will be described as it makes on the job training easier for an existing workers, reducing cost of training and ensures that the resident trained stays to supervise the trainees on each data they had computed during the course of training.

2.4 ADVANTAGES OF USING COMPUTER

The following are some of the advantages of using computer in an organization:

2.4.1 SPEED: computer works at very high speed, this combines with the ability to access records directly and from remote location enables it to respond quickly to a

given situation.

2.4.2 COMPLEXITY: computer can perform most complex calculation as long as the application can be programmed. This makes computer to provide answer to numerous problems.

2.4.3 REPETITION: processing cycle that repeats themselves over and again is ideally suited to computers. Once, the computer is programmed, it can go over and over (automatically) to perform as many operations as possible.

2.4.4 ACCURACY: the need for high degree of accuracy is satisfied by the computer and is consistently suited to handle large amount of data.

2.4.5 VOLUME: the computer is particularly designed to handle large amount of data.

2.5 BENEFIT OF COMPUTERIZATION

- Staff cost (reduction in overall salaries)
- Displaced staff by computer can be re-trained in other fields or moved to another section.
- Stationery cost (reduction in the use of pens, papers, eraser, correction fluid) etc.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.0 INTRODUCTION

Just as we are aware that an intricate web of software surrounds the computer, so a large area of computing makes the procedure for computerization of a problem more complex, which is called Para computing, and of which systems analysis and design form the major part. One of the main functions is to convert existing manual system into a computerized system.

3.1 METHODOLOGY OF THE STUDY

The research is essentially a systematic and descriptive evaluation of the computerization of Halid Pharmaceuticals Company limited and it impacts on the stock. Through this method, the historic background of the subject under investigation is brought into focus and our problem put into proper perspectives.

It is important to note that the study is based on both conclusion drawn from my investigation conducted and research carried out.

The researchers attention was drawn to the study of computerization of Halid pharmaceuticals because of the interest I developed towards the problems associated with inefficiency using manual method of stock control.

The research methodology of this manual operation was done through collecting data and

the main sources of data collection for this research work have been from primary and secondary sources. These major sources are extensively used for the purpose of drawing an empirical analysis and conclusion of the study so as to come up with fairly objective findings.

3.2 REVIEW OF THE EXISTING SYSTEM

The manual existing system operation presently in use in Halid Pharmaceuticals has been observed to be very cumbersome in nature. A situation where all matter of error is encountered from the point information release. The present manual operation in use involves a lot of human energy and calculations. In fact, the existing operations can be said to be based largely on human manipulations and reasoning with minimum use of machines. For this reason, a lot of human hands and brain would therefore be needed in order to contend with the large and bulky nature of data usually involved in the entire stock handling operation. Hence, a good understanding of the manual operation will go a long way to suggesting what the new system of operation will be like the ultimate aim of making improvement remarkably.

3.3 DESIGN OF THE NEW SYSTEM

The new system involves the use of an artificial intelligent electronic machine such as a computer to perform the operation that was previously carried out by direct human manipulation. This implies employing high creativity, imagination and innovation of both the system analyst and programmer in order to achieve the aim of the system.

The success of the computerized new system depends largely on the complete understanding of the existing manual system. This is true because the comprehensive knowledge or understanding of the existing system form the basis for the requirement of the user and the basic function of the new system. In more clear terms, a full understanding of the method of data collection shall go a long way to help the new system achieve its projected goals or objectives.

Therefore, in summarizing this, an effective computerization system would no doubt lead to very high speed, accuracy and efficiency in the entire stock control. Certainly by this standard, some of the basic problems that are normally associated with the manual or existing system would have been a thing of the past.

3.4 TECHNIQUES OF DATA COLLECTION

This section consists of data collection method and problems associated in collecting data. The statistical tools used in this project methodology are powerful weapon in the appraisal of research designing and as such there are basically two sources of data. The various methods of data collection are associated with these two sources of data viz:

- Primary sources of data
- Secondary sources of data.

3.4.1 PRIMARY SOURCE OF DATA

Primary data refers to data collected either by or under the direct supervision and

instruction of the researcher. The control of the data collection process is directly under the researcher. The methods involved in primary data collection are:

- Direct personal observation
- Direct personal literature
- Questionnaire to be filled by enumerator.

3.4.2 SECONDARY SOURCE OF DATA COLLECTION

Secondary data refers to that statistical material which the researcher, ~~he~~ does not organize but ~~which he~~ obtained from someone else's record.

According to this method the information is obtained from the record of institution that collect and publish statistics as part of their routine duties.

3.5 SAMPLING

This is a fraction of population from which information is collected. In this research, interview and documentation were used as sampling techniques and they all served as sources of data collection. No questionnaire was given out and also, during this research work, different data were obtained and amongst which are:

- Total number of workers in the department
- Nature of their work.
- Problem encountered in their office
- Way they carryout their various duties and problems encountered with manual operation

- Items needed for work in the office.

3.6 PROCESSING REQUIREMENT OF THE PROPOSE SYSTEM

Processing of the input is done in the following areas to reflect the current status of Halid Pharmaccuticals Company limited.

-Processing of re-order level of stock.

-Processing of stock issued.

-Processing of stock received.

PROCESSING OF RE-ORDER LEVEL OF STOCK

When stocks are received, an addition is made in the stock's record to reflect the number of stock after it is supplied.

PROCESSING OF STOCK ISSUED

As store attendant (staff) issues out stock to clients, the clients' card is updated to indicate stocks have been issued out.

PROCESSING STOCK RECEIVED

This has to do with the receiving of new stock into the warehouse. It is either that new stocks are brought into the store or the once in the store have expired and need to be replenished.

3.6.1 INPUT DESIGN

The raw data to be processed are classified as follows:

- Stock_id: stock identification
- Batchcode: code used to arrange stock in batches
- Unitprice: price per unit item
- Re-orderlev: level which stock has to be re-ordered.
- Mdate: manufacturing date of the item
- Exdate: expiry date of item
- Itemname: name of item
- Surname: surname of user
- Firstname: first name of user
- Lastname: last name of user
- User_id: user identification
- Vendor_id: vendor identification
- Password: password of the user
- Qtyissued: quantity of item issued out
- Qtyordered: quantity of item ordered
- Datedel: delivery date of item

The tables below show clearly the input design:

STOCK TABLE:

FIELD NAME	DATA TYPE	FIELD WIDTH	FIELD DESCRIPTION	INDEXED
Stock_id	Number	Long integer		Yes
Unitprice	Number	Long integer		No
Quantity	Number	Long integer		No
Reorderlev	Number	Long integer		No
Mdate	Date/Time	8		No
Exdate	Date/Time	8		No
Vendor_id	Number	Long integer		No

USER TABLE:

FIELD NAME	DATA TYPE	FIELD WIDTH	FIELD DESCRIPTION	INDEXED
Surname	Text	50		No
Firstname	Text	50		No
Middlename	Text	50		No
User_id	Number	Long integer		Yes
Username	Text	50		No
Password	Text	50		No

VENDOR TABLE:

FIELDNAME	DATA TYPE	FIELD WIDTH	FIELD DESCRIPTION	INDEXED
Vendor_id	Number	Long integer		Yes
Surname	Text	50		No
Firstname	Text	50		No
Middlename	Text	50		No
Company	Text	50		No
Prod-supp	Text	50		No
Batchno	Number	Long integer		No

CLIENT TABLE:

FIELD NAME	DATA TYPE	FIELD WIDTH	FIELD DESCRIPTION	INDEXED
Client_id	Number	Long integer		Yes
Date_ordered	Date/Time	8		No
Quantity_ordered	Number	Long integer		No
Stock_id	Number	Long integer		No
Cfname	Text	50		No
Chname	Text	50		NO

ISSUE TABLE:

FIELD NAME	DATA TYPE	FIELD WIDTH	FIELD DESCRIPTION	INDEXED
Delivery_id	Number	Long integer		Yes
Quantity_issued	Number	Long integer		No
Date_issued	Date/Time	8		No
User_id	Number	Long integer		No
Stock_id	Number	Long integer		No

3.6.2 OUTPUT DESIGN

The output is believed to state in concrete terms the end product of all the processing made from the input.

The output from the above processing is therefore expected to provide the following:

-Number of stocks issued out to clients on daily basis.

-Total number of stocks in the warehouse.

-Number of stocks received into the store (warehouse).

3.6.3 HARDWARE REQUIREMENT

The hardware requirement of the computer system include the following:

- A visual Display Unit (VDU)
- Central processing Unit (CPU)
- Windows XP Operating system of useful information.
- A mouse with pad.
- At least a Pentium (iv) 1.8
- CD ROM

3.6.4 SOFTWARE REQUIREMENT

This refers to a set of instructions that were developed, tested and documented to accomplish a task or series of tasks. They were needed to make the hardware do useful work. This software requirement includes the Microsoft disk operating system (MS-DOS), Windows operating system and of course, VBASIC 6.0 compiler software packages fully installed.

3.7 CHOICE OF PROGRAMMING LANGUAGE

Essentially, programs are made up of a series of instructions that are made used to direct and control the effective operation of the computer so as to accomplish a particular task. In the set of electronic computer development, programs were written

in binary code or machine language. But these days, how ever these programs have a single way known as the master menu where all other program modules written here are to be executed from. Hence the programming language used in this research is VBASIC due to its modular and object oriented programming features. The modules used in this program are registration of stock and user modules. The modify module, transaction module and the report module. In the main menu, all the various program modules will be displayed and each of them have different functions to perform. This program actually uses the object-oriented features of visual basic. Hence in each of the menu options there are add and drop features and objects, which run independently of the main menu.

The register menu registers all new stock noting the item code, batch code, unit price, re-order level, date, expiry date and item name. It also registers the receiving staff or user information and vendors name, company and product supplied.

The menu to modify stock, user and vendor edits or makes changes to the information given in the register menu option. While the transaction menu option performs and documents all necessary transactions. This transaction involves requisition of stock from Halid pharmaceuticals. Also sales transactions are carried out with this option.

The report to printer program concentrate on VBASIC programming techniques used to create printed output based on the information given to the master file in the access database. This option outputs all reports of stock, users, transactions and vendors to the printer.

Lastly, visual Basic was chosen as the programming language because of its simplicity and ease of use.

3.7.1 FEATURES OF VISUAL BASIC PROGRAMMING LANGUAGE.

- It has variety of commands that are close to natural languages.
- Its Active X control feature makes it easy to manipulate data and perform complex function.
- Its window based and hence support graphical user interface.
- It has database interconnectivity e.g. MS Access.
- It is user friendly.
- Visual BASIC Programming is flexible.
- The VBASIC software is affordable.
- It provides data security for the program and user (programmer).

CHAPTER FOUR

SYSTEM IMPLEMENTATION

4.0 INTRODUCTION

System implementation involves fundamental techniques required for the establishment of the system logic. These techniques must conform adequately to the existing system design for effective and efficient system implementation. The following are equally necessary to be discussed during implementation. These are: algorithms of the program, program listings/ codes, documentation, software interface and result.

4.1 ALGORITHMS OF THE PROGRAM

An algorithm is the step-by-step sequence involved in solving a particular task. It involves the design or appreciation of an appropriate step-by-step procedure for carrying out results established from a good problem definition and analysis by a programmer. However, this research uses system and program flowcharts as its algorithmic method. Flowcharts are the pictorial or diagrammatic display of an algorithm. The flowcharts used in this program are depicted in appendix A.

4.2 PROGRAM CODES/ IMPLEMENTATION

Visual Basic 6.0 was decided as our language of implementation. Hence, our next step was the actual translation of the information and instructions contained in our flowcharts into appropriate Visual Basic syntax. These source codes in Visual Basic were then

compiled and debugged using the Visual Basic compiler. The source code for this research was much and as such has been placed in Appendix B for easy reference.

4.3 DOCUMENTATION AND INTERFACE

The program is divided into five menu options namely:

Register, Modify, Transaction, Report and Windows. Once the program is loaded into memory, the splash screen “Automated Stock Control” appears with the name of the author “ISIAKA ISAH.” Therefore, the user is prompted to login by entering a user name and password. If the user login is accepted, the software opens displaying the menu options above. The software for easy usage and accessibility is made on executable file. Hence, the software can be accessed or run without Visual Basic 6.0 being installed in the system.

The register menu enables new stock, staff and vendors to be registered immediately a new stock is supplied. The module or menu checks and updates the stock re-order level, enters the item code, batch code, unit price, expiry date and item name of the new stock supplied.

The modify menu basically edits the stock supplied under the register menu. Mistakes, errors, omissions, are rectified under this menu option.

Transaction menu performs all salient computations on the stock such as sales and stock requisition.

Lastly, report menu displays report of all transactions and registration performed on the

stock.

This could be viewed on the screen or sent to the printer as hard copy.

4.2 RESULTS/ PROGRAM OUTPUT

Results from the central processing unit or system unit are usually displayed via the printer. The results of our program can easily be accessed through any default printer connected to the system. The outputs from this software however are displayed in appendix C.

CHAPTER FIVE

SUMMARY, RECOMMENDATION AND CONCLUSION.

5.0 SUMMARY

The use of computer based technique in data recording in pharmaceutical is still slow, this research work has a solution in ensuring proper computerization of data to ease its from manual and associated problems. Indeed, computers have been qualified as the best information system to be used in pharmaceutical industry. This is because it provides high level of accuracy, efficiency and data security. With these, there is no doubt, ^{it} speeds up productivity.

5.1 PROBLEMS ENCOUNTERED

Below are some of the problems encountered while carrying out this research work:

- Financial constraints: I was faced with financial difficulties for ^{had} I to travel up and down to get materials.
- Restriction to computer laboratory: do to lack of abundant computer systems in the laboratory, I was restricted from gaining access to the laboratory as some students could be busy using them. This had serious effect on me as it costs me extra money to run my program elsewhere.
- Power fluctuation: the power supply was erratic and as such my project suffered a lot at any sudden power interruption.

- **Technical problem:** this was due to effect of virus in my program at the initial stage but however this was later effected.
- **Debugging:** syntax and logical error posed threat to the completion of the program.

5.2 RECOMMENDATION

All activities in the pharmaceutical industries should be fully computerized to enable future research to be carried out in details.

Management of the pharmaceutical industries should also make sure that ideal system available are put to optimum utilization to ensure smooth flow of information.

I strongly recommend the Department of Mathematics/ Computer Science of this institution, Federal University of Technology, Minna to allow its students to have their project topics during the first semester as this will enable them write a standard and well structured project.

Finally, the Mathematics/ Computer Science Department of Federal University of Technology, Minna should give Post Graduate Diploma (PGD) students priority to the computer laboratory so that they would have enough time to run their program.

5.3 CONCLUSION

Base on the foregoing, the benefits brought into pharmaceutical industry by computer cannot be overemphasized.

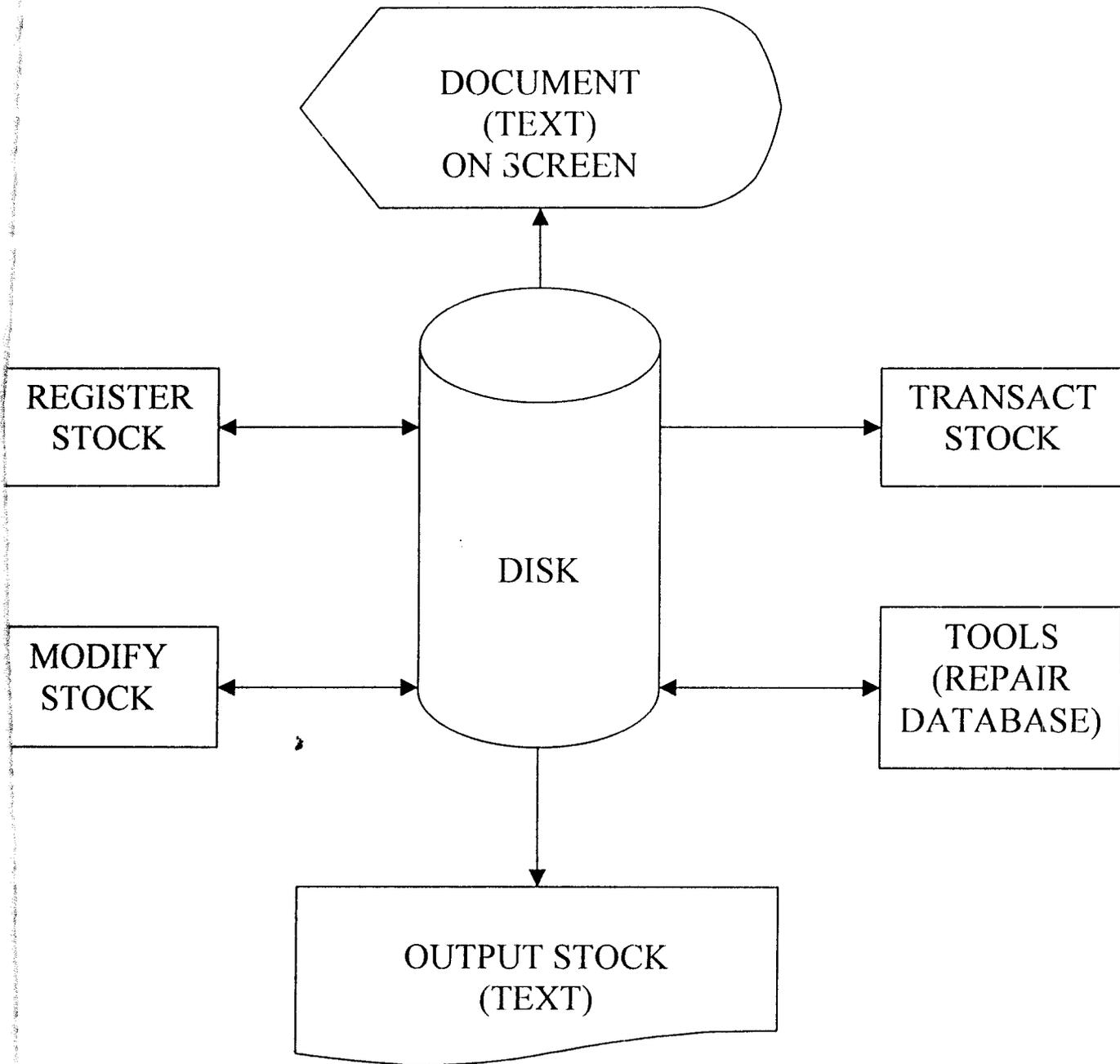
Thus, the application of computer to the operation of this area of study will go a long way in enhancing and improving the quality of the industry. Managers and administrators can conveniently and effectively turn over repetitive and boring tasks to computer processing and concentrate on the more challenging aspect of their work. More so, the capability of computer in industrial administration as evidenced by similar researchers of occupying a prominent place as a factory.

REFERENCE

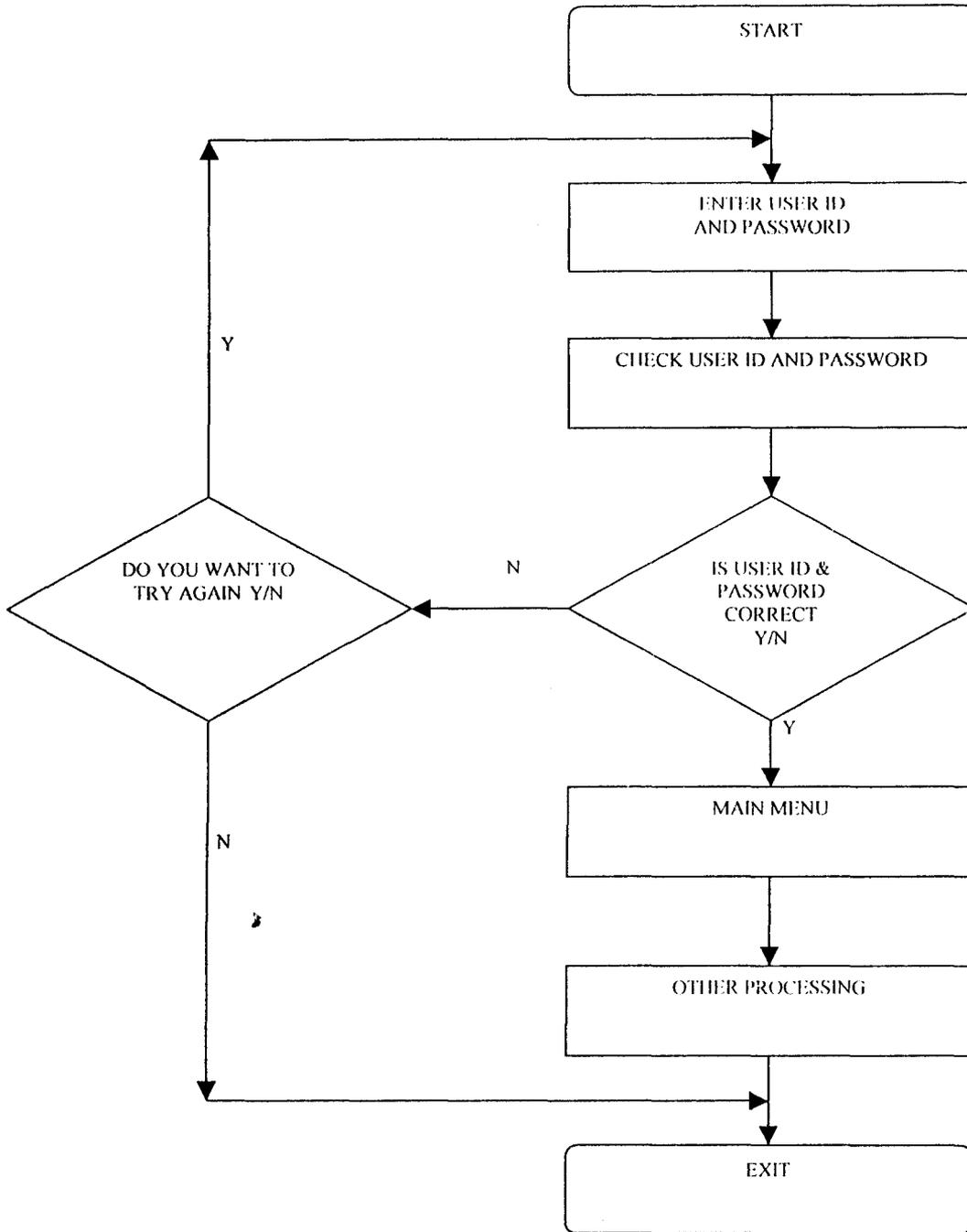
1. Anderson. R. G (1990), Data Processing Principles, 5th Edition, Pitman Publication, London.
2. Nigerian Pharmaceutical Association Journals, (1996)
3. Ashton Tale (1990), Programming with Visual Basic, 1st Edition, Callings Professional And Technical Book, London
4. Abinmaje Akpa & Paul Angarchar (1999), Essential of Research Methodology, Aboki Publication, Nigeria.
5. Donald H. Sander (1983), Computer Today, McGraw-Hill Book Company, New York.
6. Prince O. R Badmus (2006), System Analysis and Design, FUT, Minna, Nigeria.

APPENDIX A

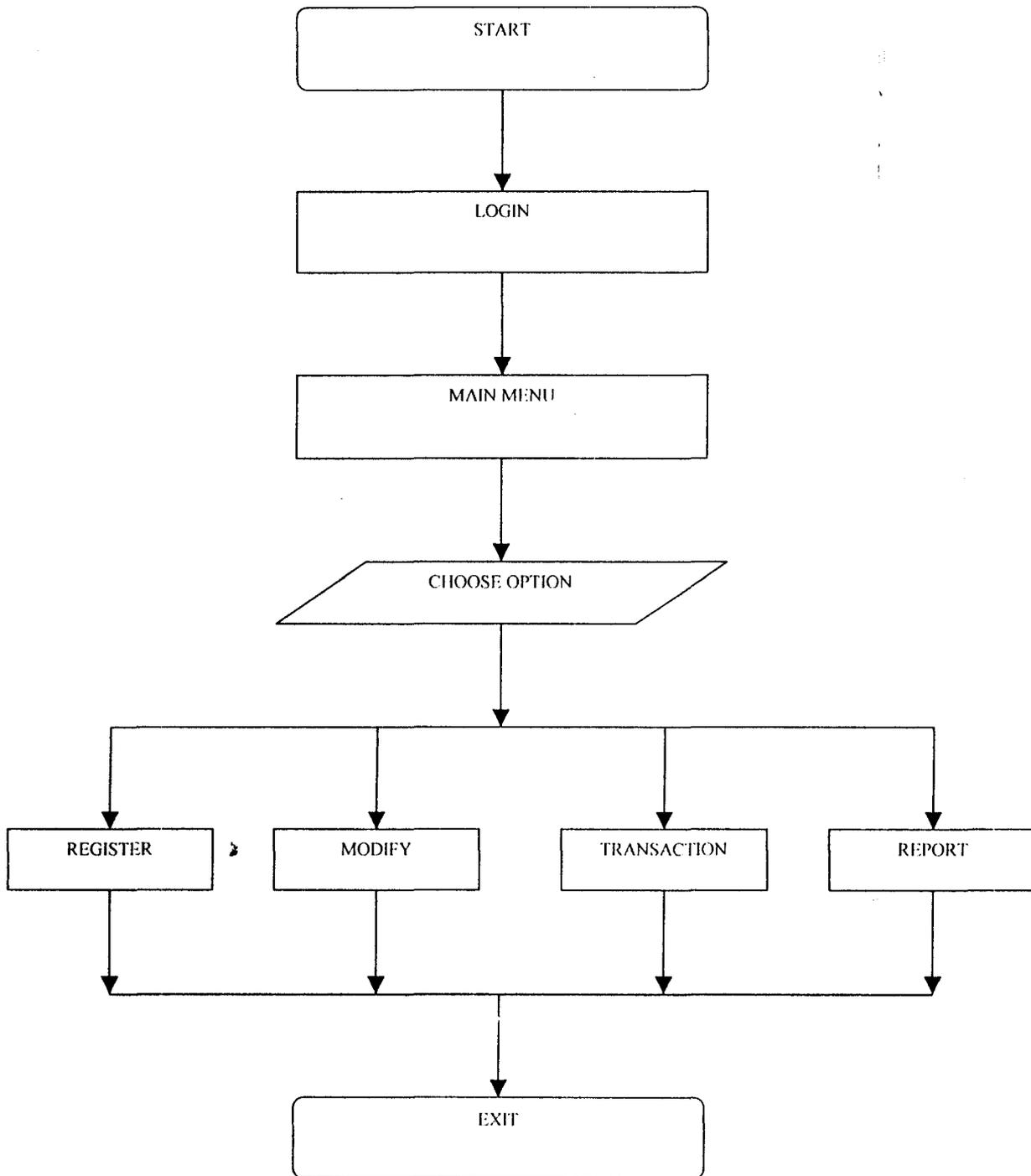
SYSTEM FLOWCHART



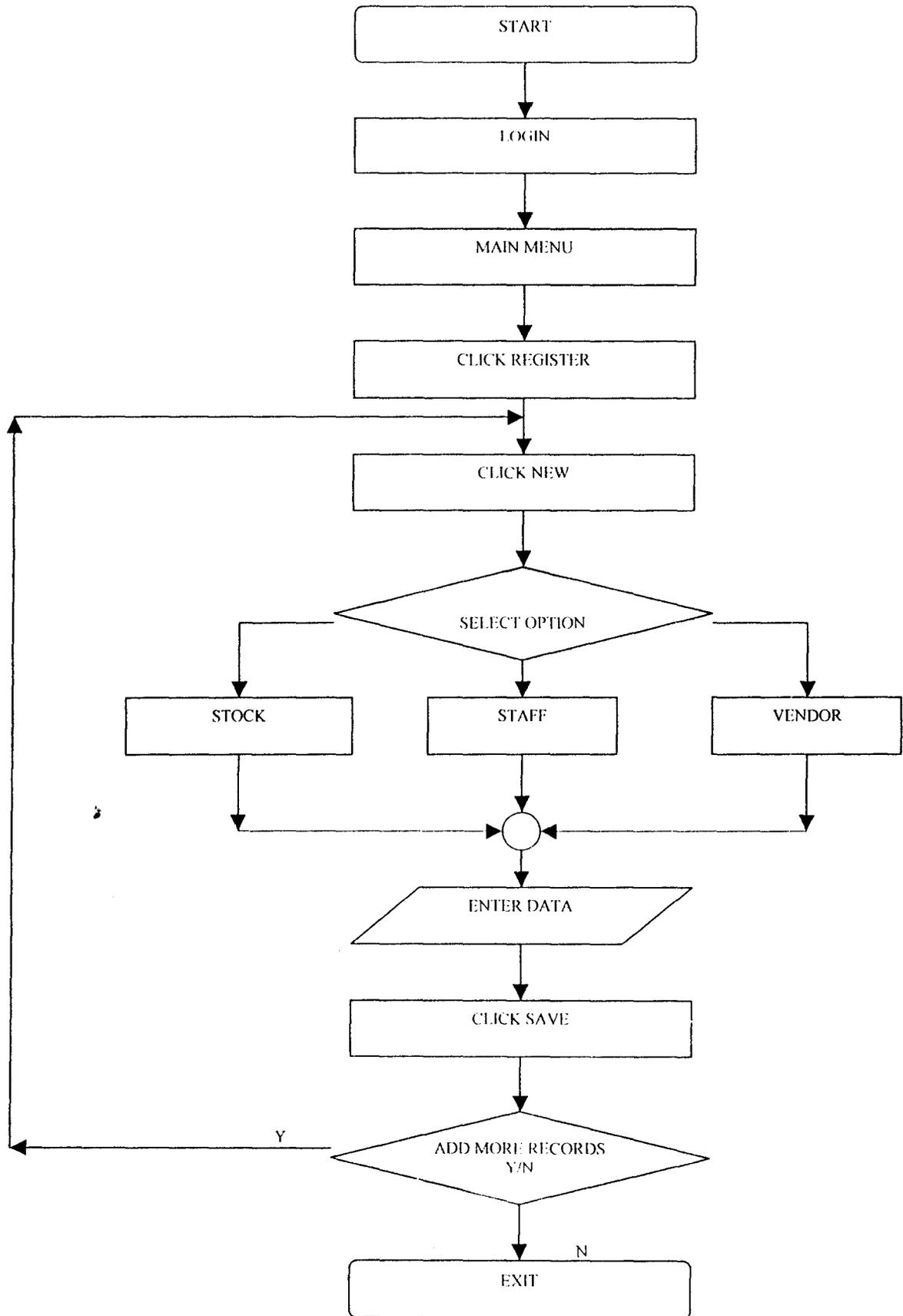
PROGRAM FLOWCHART



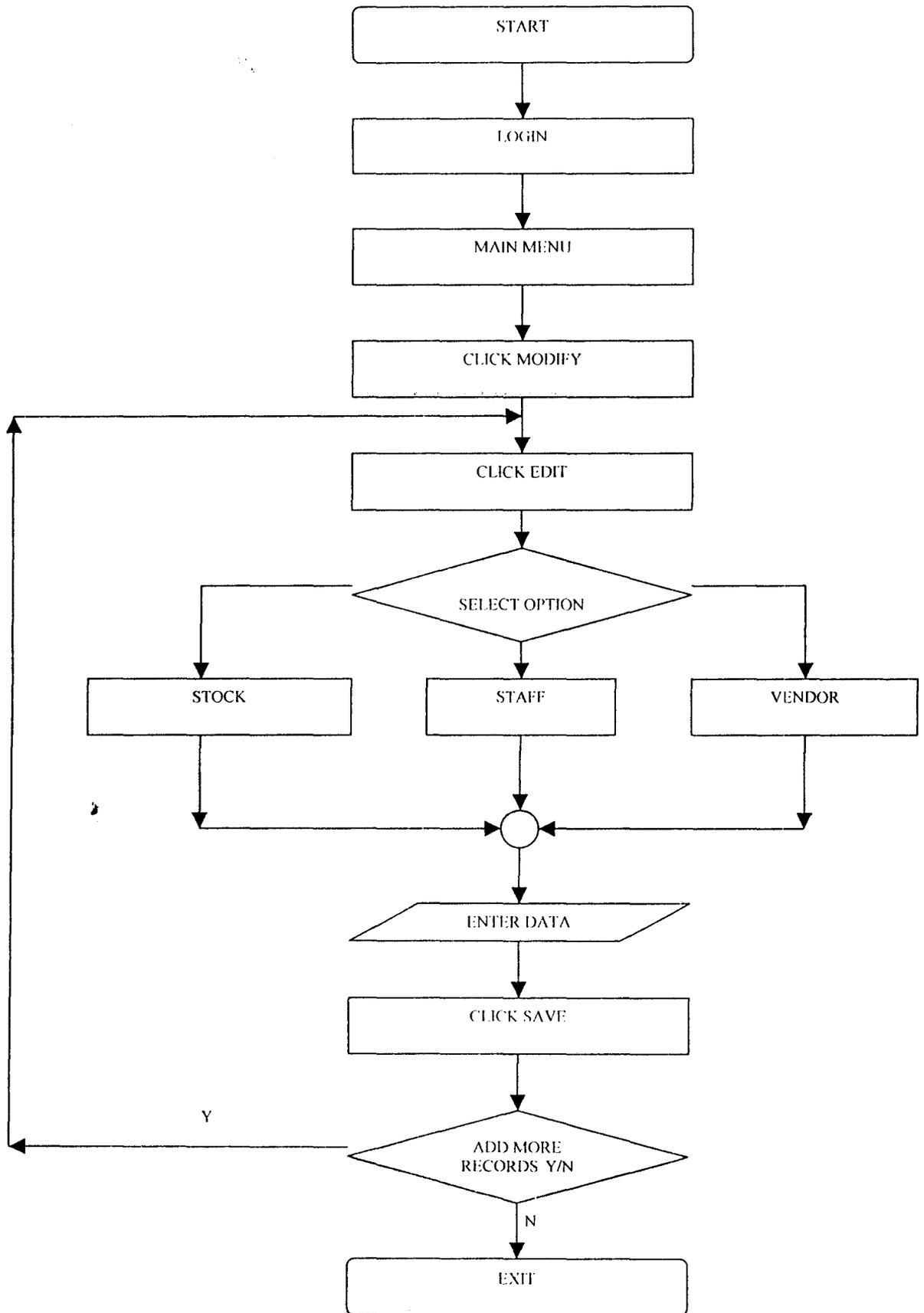
MAIN MENU



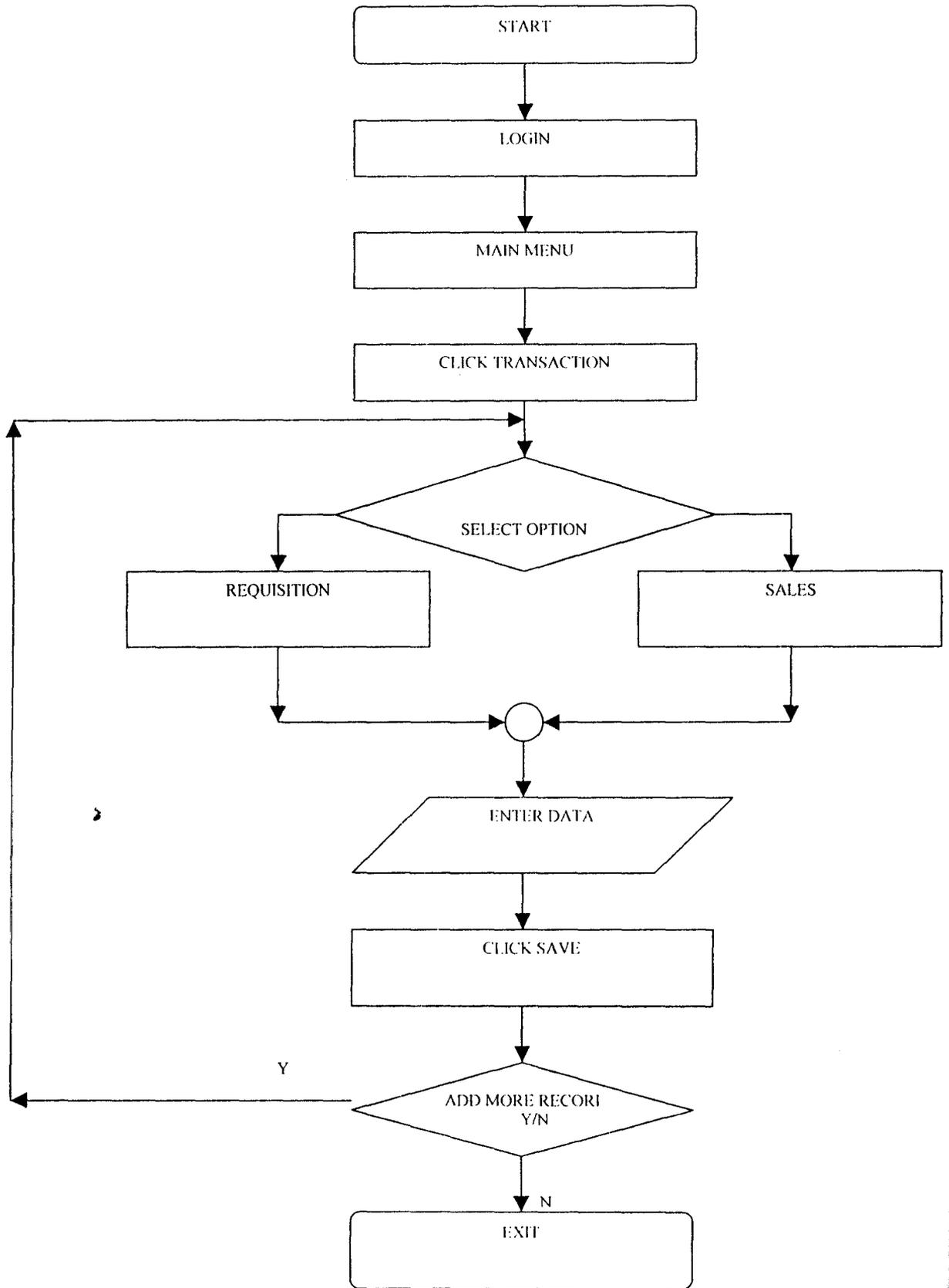
REGISTER MENU



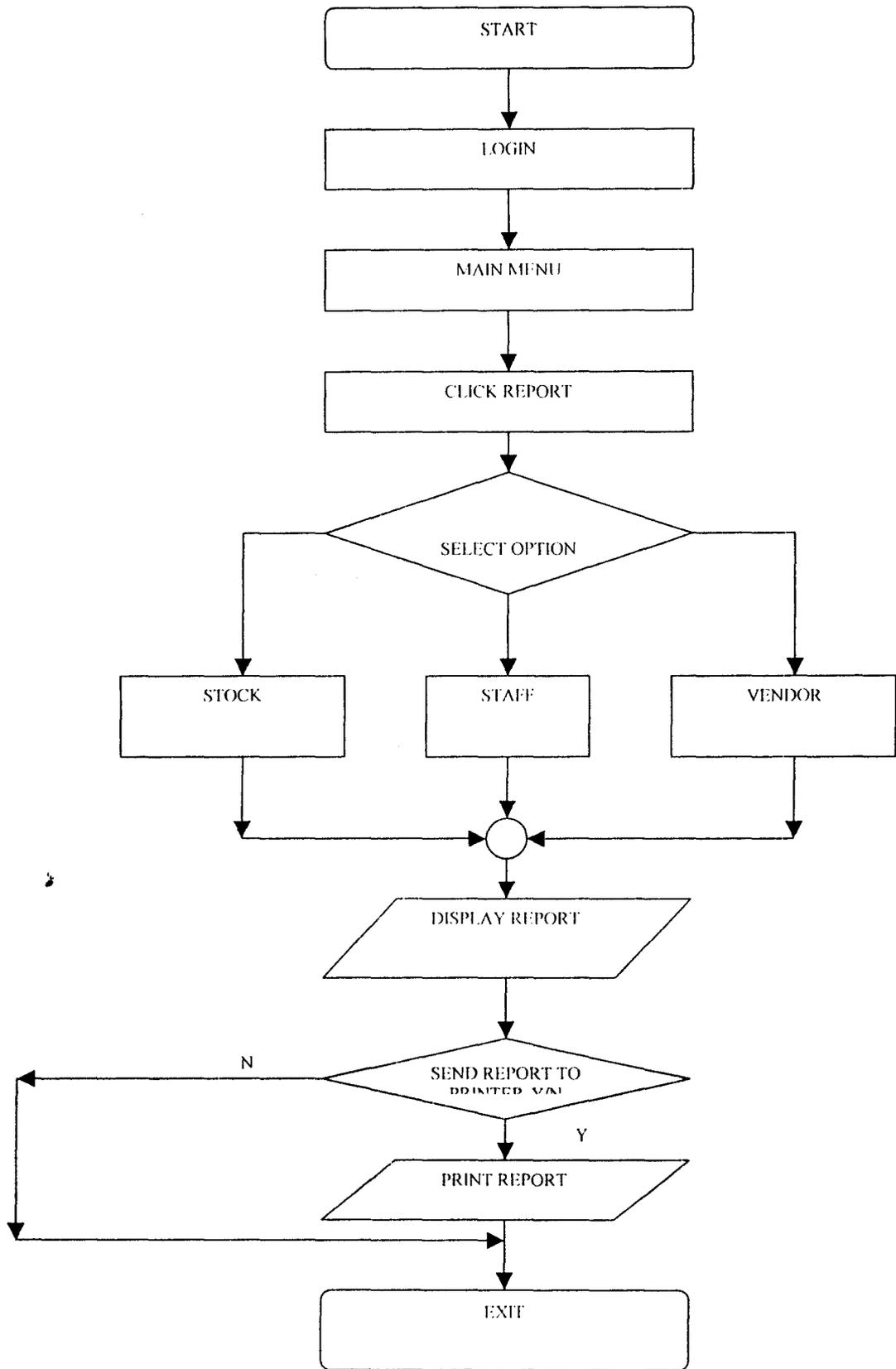
MODIFY MENU



TRANSACTION MENU



REPORT MENU



APPENDIX B

Entire Report
Option Explicit

```
Const DB_CONNECT_PARAM As String = _  
    "PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _  
    "c:\sah\inventory.mdb"  
Const DB_QUERY_NAMES As String = _  
    "SELECT * FROM stockball"
```

```
Private RC As ADODB.Recordset
```

```
Private Sub cmdClose_Click()  
Unload Me  
End Sub
```

```
Private Sub cmdPrint_Click()  
cmdClose.Visible = False  
cmdPrint.Visible = False  
Me.PrintForm  
End Sub
```

```
Private Sub Form_Activate()  
Static blnHasInitialized As Boolean
```

```
    If Not blnHasInitialized Then  
        FormLoad  
    End If  
End Sub
```

```
Private Sub FormLoad()  
Set RC = New ADODB.Recordset  
With RC  
    .ActiveConnection = DB_CONNECT_PARAM  
    .Source = DB_QUERY_NAMES  
    .CursorLocation = adUseClient  
    .Open
```

```
RC.MoveFirst  
Do Until RC.EOF
```

```
    ListView1.ListItems.Add , , RC!batchno  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!prod_sup  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!stockbal  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!unitprice  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!reordlev  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!company  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!supplier
```

```
    RC.MoveNext
```

```
If RC.EOF = True Then
    RC.MoveLast
    Exit Do
    Exit Sub
End If
```

```
Loop
End With
```

```
End Sub
```

```
Private Sub Form_Resize()
    ListView1.Left = Me.Left + 120
    ListView1.Width = Me.Width - 360
End Sub
```

```
Private Sub Form_Unload(Cancel As Integer)
    'Set cc = Nothing
    Set RC = Nothing
    'frmMain.Enabled = True
End Sub
```

Edit Stock Record

```
Option Explicit
Dim WithEvents cnNWind As ADODB.Connection
Dim WithEvents rstph As ADODB.Recordset
Dim cmstaff As ADODB.Command
Public gblnaddmode As Boolean
```

```
Private Sub cmdback_Click()
    On Error Resume Next
    rstph.MovePrevious
End Sub
```

```
Private Sub cmdClose_Click()
    cnNWind.Close
    Set cnNWind = Nothing
    gblnaddmode = False
    Unload Me
End Sub
```

```
Private Sub cmdnext_Click()
    On Error Resume Next
    rstph.MoveNext
End Sub
```

```
Private Sub cmdopen_click()
    Set cnNWind = New ADODB.Connection
    Set rstph = New ADODB.Recordset
```

```
Dim sConnect As String
sConnect = "Provider=Microsoft.Jet.OLEDB.4.0;" & _
"Data Source= c:\Isah\inventory.mdb"
cnNWind.Open sConnect
rstph.CursorType = adOpenStatic
rstph.CursorLocation = adUseClient
rstph.LockType = adLockPessimistic
rstph.Source = "Select * From stocktable"
Set rstph.ActiveConnection = cnNWind
rstph.Open
End Sub
```

```
Private Sub cmdCloseConnection_Click()
```

```
cnNWind.Close
```

```
Set cnNWind = Nothing
```

```
gblnaddmode = False
```

```
End Sub
```

```
Private Sub showdata()
```

```
If rstph.BOF And rstph.EOF Then
```

```
Exit Sub
```

```
End If
```

```
On Error Resume Next
```

```
txtsup = rstph("supplier") & ""
```

```
txtro = rstph("reordlev") & ""
```

```
txtpr = rstph("unitprice") & ""
```

```
txtcomp = rstph("company") & ""
```

```
txtprod = rstph("prod_sup") & ""
```

```
txtqty = rstph("quantity") & ""
```

```
txtbn = rstph("batchno") & ""
```

```
txtmd = rstph("mdate") & ""
```

```
txted = rstph("exdate") & ""
```

```
If Err.Number <> 0 Then MsgBox "Back"
```

```
End Sub
```

```
Private Sub cmdupdate_Click()
```

```
rstph!quantity = txtqty.Text
```

```
rstph!supplier = txtsup.Text
```

```
rstph!unitprice = txtpr.Text
```

```
rstph!company = txtcomp.Text
```

```
rstph!batchno = txtbn.Text
```

```
rstph!prod_sup = txtprod.Text
```

```
rstph!reordlev = txtro.Text
```

```
rstph!mdate = txtmd.Text
```

```
rstph!exdate = txted.Text
```

```
rstph.Update
```

End Sub

```
Private Sub rstph_MoveComplete(ByVal adReason As ADODB.EventReasonEnum,  
ByVal pError As ADODB.Error, adStatus As ADODB.EventStatusEnum, ByVal  
pRecordset As ADODB.Recordset)  
If Not gblnaddmode Then  
showdata  
End If  
End Sub
```

Transaction Form 1

```
Option Explicit  
Dim WithEvents cnNWind As ADODB.Connection  
Dim WithEvents rstph As ADODB.Recordset  
Dim cmstaff As ADODB.Command  
Public gblnaddmode As Boolean
```

```
Private Sub cmdback_Click()  
On Error Resume Next  
rstph.MovePrevious  
End Sub
```

```
Private Sub cmdClose_Click()  
cnNWind.Close  
Set cnNWind = Nothing  
gblnaddmode = False  
Unload Me  
End Sub
```

```
Private Sub cmdnext_Click()  
On Error Resume Next  
rstph.MoveNext  
End Sub
```

```
Private Sub cmdopen_click()  
Set cnNWind = New ADODB.Connection  
Set rstph = New ADODB.Recordset  
Dim sConnect As String  
sConnect = "Provider=Microsoft.Jet.OLEDB.4.0;" & _  
"Data Source= c:\Isah\inventory.mdb"  
cnNWind.Open sConnect  
rstph.CursorType = adOpenStatic  
rstph.CursorLocation = adUseClient  
rstph.LockType = adLockPessimistic  
rstph.Source = "Select * From usertable"  
Set rstph.ActiveConnection = cnNWind  
rstph.Open  
showdata
```

End Sub

Private Sub cmdCloseConnection_Click()

cnNWind.Close

Set cnNWind = Nothing

gblnaddmode = False

End Sub

Private Sub showdata()

If rstph.EOF And rstph.BOF Then

Exit Sub

End If

On Error Resume Next

txtfn = rstph("firstname") & ""

txtmn = rstph("middlename") & ""

txtln = rstph("surname") & ""

txtun = rstph("username") & ""

txtpw = rstph("password") & ""

If Err.Number <> 0 Then MsgBox "End of Record"

End Sub

Private Sub cmdupdate_Click()

rstph!firstname = txtfn.Text

rstph!middlename = txtmn.Text

rstph!surname = txtln.Text

rstph!Password = txtpw.Text

rstph!UserName = txtun.Text

rstph.Update

End Sub

Private Sub rstph_MoveComplete(ByVal adReason As ADODB.EventReasonEnum,

ByVal pError As ADODB.Error, adStatus As ADODB.EventStatusEnum, ByVal

pRecordset As ADODB.Recordset)

If Not gblnaddmode Then

showdata

End If

End Sub

Login

Private Declare Function GetUserName Lib "advapi32.dll" Alias "GetUserNameA"

(ByVal lpbuffer As String, nSize As Long) As Long

```

Public OK As Boolean
Private Sub Form_Load()
    Dim sBuffer As String
    Dim lSize As Long

    'sBuffer = Space$(255)
    'lSize = Len(sBuffer)
    'Call GetUserName(sBuffer, lSize)
    'If lSize > 0 Then
    '    txtUserName.Text = Left$(sBuffer, lSize)
    ' Else
    '    txtUserName.Text = vbNullString
    ' End If
End Sub

```

```

Private Sub cmdCancel_Click()
    OK = False
    Me.Hide
End Sub

```

```

Private Sub cmdOK_Click()
    'ToDo: create test for correct password
    'check for correct password
    If txtPassword.Text = "isiaka" Then
        OK = True
        Me.Hide
    Else
        MsgBox "Invalid Password, try again!", , "Login"
        txtPassword.SetFocus
        txtPassword.SelStart = 0
        txtPassword.SelLength = Len(txtPassword.Text)
    End If
End Sub

```

Automated Stock Control Form

```

Private Declare Function OSWinHelp% Lib "user32" Alias "WinHelpA" (ByVal hwnd&,
ByVal HelpFile$, ByVal wCommand%, dwData As Any)

```

```

Private Sub MDIForm_Load()
    Me.Left = GetSetting(App.title, "Settings", "MainLeft", 1000)
    Me.Top = GetSetting(App.title, "Settings", "MainTop", 1000)
    Me.Width = GetSetting(App.title, "Settings", "MainWidth", 6500)

```

```
Me.Height = GetSetting(App.title, "Settings", "MainHeight", 6500)
```

```
End Sub
```

```
Private Sub MDIForm_Unload(Cancel As Integer)
```

```
    If Me.WindowState <> vbMinimized Then
```

```
        SaveSetting App.title, "Settings", "MainLeft", Me.Left
```

```
        SaveSetting App.title, "Settings", "MainTop", Me.Top
```

```
        SaveSetting App.title, "Settings", "MainWidth", Me.Width
```

```
        SaveSetting App.title, "Settings", "MainHeight", Me.Height
```

```
    End If
```

```
End Sub
```

```
Private Sub mnulclpAbout_Click()
```

```
    MsgBox "Version " & App.Major & "." & App.Minor & "." & App.Revision
```

```
End Sub
```

```
Private Sub mnuHelpSearchForHelpOn_Click()
```

```
    Dim nRet As Integer
```

```
    'if there is no helpfile for this project display a message to the user
```

```
    'you can set the HelpFile for your application in the
```

```
    'Project Properties dialog
```

```
    If Len(App.HelpFile) = 0 Then
```

```
        MsgBox "Unable to display Help Contents. There is no Help associated with this  
project.", vbInformation, Me.Caption
```

```
    Else
```

```
        On Error Resume Next
```

```
        nRet = OSWinHelp(Me.hwnd, App.HelpFile, 261, 0)
```

```
        If Err Then
```

```
            MsgBox Err.Description
```

```
        End If
```

```
    End If
```

```
End Sub
```

```
Private Sub mnuHelpContents_Click()
```

```
    Dim nRet As Integer
```

```
    'if there is no helpfile for this project display a message to the user
```

```
    'you can set the HelpFile for your application in the
```

```
    'Project Properties dialog
```

```
    If Len(App.HelpFile) = 0 Then
```

```
        MsgBox "Unable to display Help Contents. There is no Help associated with this  
project.", vbInformation, Me.Caption
```

```
    Else
```

```
        On Error Resume Next
```

```
        nRet = OSWinHelp(Me.hwnd, App.HelpFile, 3, 0)
```

```
        If Err Then
```

```
            MsgBox Err.Description
```

```
        End If
```

```
    End If
```

End Sub

Private Sub mnuent_Click()

entstRprt.Show

End Sub

Private Sub mnues_Click()

frmeditst.Show

End Sub

Private Sub mnueu_Click()

frmeditusr.Show

End Sub

Private Sub mnuFitem_Click()

frmstock.Show

End Sub

Private Sub mnufnuser_Click()

frmuser.Show

End Sub

Private Sub mnunv_Click()

'frmVendor.Show

End Sub

Private Sub mnuloff_Click()

menu_logoff

End Sub

Sub menu_logoff()

Dim i As Form, prompt, buttons, title, response

prompt = "Are You Sure you want to Logoff? "

buttons = vbYesNo + vbDefaultButton2 + vbExclamation

title = "Logoff"

response = MsgBox(prompt, buttons, title)

If response = vbYes Then

logonstatus = False

'menu_disable

Unload Me

'end menu

For Each i In Forms

If i.Name <> fMainForm.Name Then

Unload i

End If

Next i

End If

End Sub

Private Sub mnulof_Click()

```
menu_logoff  
End Sub
```

```
Private Sub mnurp_Click()
```

```
Dim dbsNorthwind As Database
```

```
Set dbsNorthwind = OpenDatabase("c:\sah\inventory.mdb")
```

```
' Show the properties of the original database.
```

```
With dbsNorthwind
```

```
Debug.Print .Name & ", version " & .Version
```

```
Debug.Print " CollatingOrder = " & .CollatingOrder
```

```
.Close
```

```
End With
```

```
' Make sure there isn't already a file with the
```

```
' name of the compacted database.
```

```
If Dir("inventory1.mdb") <> "" Then _
```

```
Kill "inventory1.mdb"
```

```
' This statement creates a compact version of the
```

```
' Northwind database that uses a Korean language
```

```
' collating order.
```

```
DBEngine.CompactDatabase ("inventory.mdb")
```

```
End Sub
```

```
Private Sub mnurstaff_Click()
```

```
frmRstaff.Show
```

```
End Sub
```

```
Private Sub mnusearch_Click()
```

```
frmsrch.Show
```

```
End Sub
```

```
Private Sub mnustrp_Click()
```

```
stockreport.Show
```

```
End Sub
```

```
Private Sub mnust_Click()
```

```
frmusr.Show
```

```
End Sub
```

```
Private Sub mnustock_Click()
```

```
stockreport.Show
```

```
End Sub
```

```
Private Sub mnutr_Click()  
frmorder.Show  
End Sub
```

```
Private Sub mnutsup_Click()  
frmsupply.Show  
End Sub
```

```
Private Sub mnuWindowArrangeIcons_Click()  
Me.Arrange vbArrangeIcons  
End Sub
```

```
Private Sub mnuWindowTileVertical_Click()  
Me.Arrange vbTileVertical  
End Sub
```

```
Private Sub mnuWindowTileHorizontal_Click()  
Me.Arrange vbTileHorizontal  
End Sub
```

```
Private Sub mnuWindowCascade_Click()  
Me.Arrange vbCascade  
End Sub
```

```
Private Sub mnuFileExit_Click()  
'unload the form  
Unload Me  
End Sub
```

Order form

Option Explicit

```
Const DB_CONNECT_PARAM As String = _  
"PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _  
"c:\sah\inventory.mdb"  
Const DB_QUERY_NAMES As String = _  
"SELECT * FROM client"  
Const DB_QUERY_NAMES2 As String = _  
"SELECT * FROM StockTable"
```

```
Private rstph As ADODB.Recordset  
Public gblnaddmode As Boolean  
Function enable() As Boolean  
enable = (Len(txtqo.Text) >= 1) And (Len(txtdo.Text) >= 1) And (Len(txtpr.Text) >= 1)  
And (Len(txtcln.Text) >= 1) And (Len(txtsid.Text) >= 1)
```

End Function

Private Sub cmdclear_Click()

blanks

End Sub

Private Sub cmdq_Click()

Me.Hide

End Sub

'trials from here

Private Sub Form_Activate()

Static blnHasInitialized As Boolean

If Not blnHasInitialized Then

LoadClientNames

End If

End Sub

Private Sub LoadClientNames()

Dim strName As String

On Error GoTo LOAD_NAMES_ERROR

lstnames.clear

Set rstph = New ADODB.Recordset

With rstph

.ActiveConnection = DB_CONNECT_PARAM

.Source = DB_QUERY_NAMES2

.Open

If Not (.EOF And .BOF) Then

Do

strName = If(IsNull(.Fields("prod_sup")), "", _
.Fields("prod_sup"))

lstnames.AddItem (strName)

.MoveNext

DoEvents

Loop While Not .EOF

End If

.Close

End With

LOAD_NAMES_EXIT:

Set rstph = Nothing

Exit Sub

LOAD_NAMES_ERROR:

MsgBox Err.Description

```
GoTo LOAD_NAMES_EXIT
End Sub
```

```
Private Sub bufferdata()
    If rstph.BOF Or rstph.EOF Then
        Exit Sub
    End If
    On Error Resume Next
    rstph("stock_id").Value = txtsid
    rstph("quantity_ordered").Value = txtqo
    rstph("date_ordered").Value = txtdo
    rstph("cfname").Value = txtcfn
    rstph("cname").Value = txtcln
    If Err.Number <> 0 Then MsgBox Err.Description
End Sub
```

```
Private Sub cmdCancel_Click()
    blanks
End Sub
```

```
Private Sub cmdexit_Click()
    Unload Me
End Sub
```

```
Private Sub cmdOK_Click()
    MsgBox "ok"
    On Error GoTo SAVE_DATA_ERROR
        MsgBox "ok"

        Set rstph = New ADODB.Recordset
        With rstph
            MsgBox "ok"
            .ActiveConnection = DB_CONNECT_PARAM
            .LockType = adLockOptimistic
            .Open "client", , , adCmdTable

            .AddNew
            bufferdata
            .Update
            gblnaddmode = False
            blanks
        End With
    ' End If
SAVE_DATA_EXIT:
    Set rstph = Nothing
    Exit Sub
```

```
SAVE_DATA_ERROR:
    MsgBox Err.Description
```

```
GoTo SAVE_DATA_EXIT
End Sub
```

```
Private Sub blanks()
```

```
txtqo.Text = ""
```

```
txtdo.Text = ""
```

```
txtcfm.Text = ""
```

```
txtcln.Text = ""
```

```
txtsid.Text = ""
```

```
txtpr.Text = ""
```

```
End Sub
```

```
Private Sub Form_Load()
```

```
cmdOK.Enabled = False
```

```
End Sub
```

```
Private Sub lstnames_Click()
```

```
Dim strName As String
```

```
With lstnames
```

```
If .ListIndex >= 0 Then
```

```
strName = .List(.ListIndex)
```

```
LoadClientDetails strName
```

```
txtdo.Text = Date
```

```
End If
```

```
End With
```

```
End Sub
```

```
'test2
```

```
Private Function LoadClientDetails(st As String, _  
Optional SearchByName As Boolean = True) _  
As Boolean
```

```
Dim strQuery As String
```

```
On Error GoTo LOAD_DTAIL_ERROR
```

```
strQuery = "SELECT * " + _  
"FROM StockTable " + _  
"WHERE " + IIf(SearchByName, "prod_sup", "") + _  
" = " + st + ""
```

```
LoadClientDetails = False
```

```
Set rstph = New ADODB.Recordset
```

```
With rstph
```

```
.ActiveConnection = DB_CONNECT_PARAM
```

```
.Source = strQuery
```

```
.Open
```

```
If Not (.EOF And .BOF) Then
  If SearchByName Then
    txtsid = IIf(IsNull(.Fields("stock_id")), "", _
                .Fields("stock_id"))
    txtpr = IIf(IsNull(.Fields("unitprice")), "", _
                .Fields("unitprice"))
```

```
    End If
  End If
.Close
```

```
End With
LOAD_DTAIL_EXIT:
  Set rstph = Nothing
Exit Function
```

```
LOAD_DTAIL_ERROR:
  MsgBox Err.Description
  GoTo LOAD_DTAIL_EXIT
End Function
```

```
Private Sub txtdes_Change()
  cmdOK.Enabled = enable
End Sub
```

```
Private Sub txtcln_Change()
  cmdOK.Enabled = enable
End Sub
```

```
Private Sub txtdo_Change()
  cmdOK.Enabled = enable
End Sub
```

```
Private Sub txtpr_Change()
  cmdOK.Enabled = enable
End Sub
```

```
Private Sub txtqo_Change()
  cmdOK.Enabled = enable
End Sub
```

```
Private Sub txtsid_Change()
  cmdOK.Enabled = enable
End Sub
```

Entire Staff Report
Option Explicit

```
Const DB_CONNECT_PARAM As String = _
```

```
"PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _  
"c:\Isah\inventory.mdb"  
Const DB_QUERY_NAMES As String = _  
"SELECT * FROM UserTable"
```

```
Private RC As ADODB.Recordset  
Private Sub cmdClose_Click()  
Unload Me  
End Sub
```

```
Private Sub cmdPrint_Click()  
cmdClose.Visible = False  
cmdPrint.Visible = False  
Me.PrintForm  
End Sub
```

```
Private Sub Form_Load()  
Set RC = New ADODB.Recordset  
With RC  
    .ActiveConnection = DB_CONNECT_PARAM  
    .Source = DB_QUERY_NAMES  
    .CursorLocation = adUseClient  
    .Open
```

```
RC.MoveFirst  
Do Until RC.EOF  
    ListView1.ListItems.Add , , RC!user_id  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!surname  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!firstname  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , ,  
RC!middlename  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!UserName  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!Password
```

```
RC.MoveNext  
If RC.EOF = True Then  
    RC.MoveLast  
    Exit Do  
    Exit Sub  
End If
```

```
Loop  
End With  
End Sub
```

```
Private Sub Form_Resize()  
ListView1.Left = Me.Left + 120  
ListView1.Width = Me.Width - 360  
End Sub
```

```
Private Sub Form_Unload(Cancel As Integer)
Set RC = Nothing
End Sub
```

```
Form 1: Search form
Option Explicit
```

```
Const DB_CONNECT_PARAM As String = _
    "PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _
    "c:\Isah\Inventory.mdb"
Const DB_QUERY_NAMES As String = _
    "SELECT * FROM StockTable"
```

```
Private rstClient As ADODB.Recordset
```

```
Private Sub cmdadd_Click()
blankcontrols
gblnaddmode = True
End Sub
```

```
Private Sub cmdsave_Click()
saverecords
LoadClientNames
End Sub
```

```
Private Sub Command1_Click()
txtbal.Text = ""
txted.Text = ""
txtmd.Text = ""
txtcomp.Text = ""
txtsup.Text = ""
txtup.Text = ""
End Sub
```

```
Private Sub Command2_Click()
Unload Me
End Sub
```

```
Private Sub Command3_Click()

End Sub
```

```
Private Sub Form_Activate()
Static blnHasInitialized As Boolean
If Not blnHasInitialized Then
LoadClientNames
```

```
End If
End Sub
```

```
Private Sub lstnames_Click()
    Dim strName As String
```

```
    With lstnames
        If .ListIndex >= 0 Then
            strName = .List(.ListIndex)
            LoadClientDetails strName
        End If
    End With
```

```
End Sub
```

```
Private Sub lstNames_KeyPress(KeyAscii As Integer)
    If KeyAscii = 13 Then lstNames_DblClick
End Sub
```

```
Private Sub Text1_Change()

End Sub
```

```
Private Sub txtNumber_Change()
    LoadClientDetails txtNumber, False
End Sub
```

```
Private Sub LoadClientNames()
    Dim strName As String
```

```
    On Error GoTo LQAD_NAMES_ERROR
    lstnames.clear
```

```
    Set rstClient = New ADODB.Recordset
    With rstClient
        .ActiveConnection = DB_CONNECT_PARAM
        .Source = DB_QUERY_NAMES
        .Open
```

```
    If Not (.EOF And .BOF) Then
        Do
            strName = If(IsNull(.Fields("prod_sup")), "", _
                .Fields("prod_sup"))
            lstnames.AddItem (strName)
```

```
        .MoveNext
        DoEvents
    Loop While Not .EOF
End If
```

```
.Close
End With
LOAD_NAMES_EXIT:
Set rstClient = Nothing
Exit Sub

LOAD_NAMES_ERROR:
MsgBox Err.Description
GoTo LOAD_NAMES_EXIT
```

End Sub

```
Private Function LoadClientDetails(st As String, _
Optional SearchByName As Boolean = True) _
As Boolean
```

```
Dim strQuery As String
```

```
On Error GoTo LOAD_DTAIL_ERROR
```

```
strQuery = "SELECT * " + _
"FROM StockTable " + _
"WHERE " + IIf(SearchByName, "prod_sup", "batchno") + _
" = " + st + ""
```

```
LoadClientDetails = False
```

```
Set rstClient = New ADODB.Recordset
```

```
With rstClient
```

```
.ActiveConnection = DB_CONNECT_PARAM
```

```
.Source = strQuery
```

```
.Open
```

```
If Not (.EOF And .BOF) Then
```

```
If SearchByName Then
```

```
txtnum = IIf(IsNull(.Fields("batchno")), "", _
.Fields("batchno"))
```

```
Else
```

```
lstnames = IIf(IsNull(.Fields("prod_sup")), "", _
.Fields("prod_sup"))
```

```
End If
```

```
txtbal = IIf(IsNull(.Fields("quantity")), "", .Fields("quantity"))
```

```
txtcomp = IIf(IsNull(.Fields("company")), "", .Fields("company"))
```

```
txtup = IIf(IsNull(.Fields("unitprice")), "", .Fields("unitprice"))
```

```
txtmd = IIf(IsNull(.Fields("mdae")), "", .Fields("mdate"))
```

```
txted = IIf(IsNull(.Fields("exdate")), "", .Fields("exdate"))
```

```
txtsup = IIf(IsNull(.Fields("supplier")), "", .Fields("supplier"))
```

```
End If
```

```
.Close
```

```
End With
LOAD_DTAIL_EXIT:
Set rstClient = Nothing
Exit Function
```

```
LOAD_DTAIL_ERROR:
MsgBox Err.Description
GoTo LOAD_DTAIL_EXIT
End Function
```

```
Private Sub blankcontrols()
txtName.Text = ""
txtaddress.Text = ""
```

```
txtNumber.Text = ""
txtdate.Text = ""
```

```
End Sub
```

```
Private Sub saverecords()
```

```
On Error GoTo SAVE_DATA_ERROR
```

```
If gblnaddmode Then
```

```
Set rstClient = New ADODB.Recordset
```

```
With rstClient
```

```
.ActiveConnection = DB_CONNECT_PARAM
```

```
.LockType = adLockOptimistic
```

```
.Open "pdata", , , , adCmdTable
```

```
.AddNew
```

```
bufferdata
```

```
.Update
```

```
gblnaddmode = False
```

```
End With
```

```
End If
```

```
SAVE_DATA_EXIT:
```

```
Set rstClient = Nothing
```

```
Exit Sub
```

```
SAVE_DATA_ERROR:
```

```
MsgBox Err.Description
```

```
GoTo SAVE_DATA_EXIT
```

```
End Sub
```

```
Private Sub bufferdata()
```

```
If rstClient.BOF Or rstClient.EOF Then
```

```
Exit Sub
```

```
End If
```

On Error Resume Next

```
rstClient("name").Value = txtName  
rstClient("number").Value = txtNumber  
rstClient("date").Value = txtdate  
rstClient("address").Value = txtaddress  
rstClient("counter").Value = txtcount
```

If Err.Number <> 0 Then MsgBox Err.Description

End Sub

```
Private Sub txtnum_Change()  
LoadClientDetails txtnum, False  
End Sub
```

Stock Description Form

Option Explicit

```
Const DB_CONNECT_PARAM As String = _  
    "PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _  
    "c:\Isah\inventory.mdb"  
Const DB_QUERY_NAMES As String = _  
    "SELECT * FROM StockTable"
```

```
Private rstph As ADODB.Recordset  
Public gblnaddmode As Boolean  
Function enable() As Boolean  
enable = (Len(txtprod.Text) >= 1) And (Len(txtmd.Text) >= 1) And (Len(txtpr.Text) >= 1)  
And (Len(txtro.Text) >= 1) And (Len(txtqty.Text) >= 1) And (Len(txted.Text) >= 1)  
And (Len(txtcomp.Text) >= 1) And (Len(txtsup.Text) >= 1)  
End Function
```

Private Sub bufferdata()

```
If rstph.BOF Or rstph.EOF Then  
Exit Sub  
End If
```

```
On Error Resume Next  
rstph("supplier").Value = txtsup  
rstph("unitprice").Value = txtpr
```

```
rstph("quantity").Value = txtqty
rstph("reordlev").Value = txtro
rstph("mdate").Value = txtmd
rstph("exdate").Value = txted
rstph("prod_sup").Value = txtprod
rstph("batchno").Value = txtbn
rstph("company").Value = txtcomp
```

```
If Err.Number <> 0 Then MsgBox Err.Description
```

```
End Sub
```

```
Private Sub cmdCancel_Click()
blanks
End Sub
```

```
Private Sub cmdexit_Click()
Unload Me
End Sub
```

```
Private Sub cmdOK_Click()
```

```
On Error GoTo SAVE_DATA_ERROR
```

```
Set rstph = New ADODB.Recordset
With rstph
```

```
.ActiveConnection = DB_CONNECT_PARAM
.LockType = adLockOptimistic
.Open "StockTable", , , , adCmdTable
```

```
.AddNew
bufferdata
.Update
gblnaddmode = False
blanks
End With
```

```
SAVE_DATA_EXIT:
Set rstph = Nothing
Exit Sub
```

```
SAVE_DATA_ERROR:
MsgBox "Stock Already Exist"
GoTo SAVE_DATA_EXIT
End Sub
```

Private Sub blanks()

txtro.Text = ""

txtqty.Text = ""

txtprod.Text = ""

txtpr.Text = ""

txtmd.Text = ""

txted.Text = ""

txtcomp.Text = ""

txtsup.Text = ""

txtbn.Text = ""

End Sub

Private Sub Form_Load()

cmdok.Enabled = False

End Sub

Private Sub txted_Change()

cmdok.Enabled = enable

End Sub

Private Sub txtmd_Change()

cmdok.Enabled = enable

End Sub

Private Sub txtpr_Change()

cmdok.Enabled = enable

End Sub

Private Sub Txtqty_Change()

cmdok.Enabled = enable

End Sub

Private Sub Txtro_Change()

cmdok.Enabled = enable

End Sub

Private Sub txtsup_Change()

cmdok.Enabled = enable

End Sub

Issue form

Option Explicit

Const DB_CONNECT_PARAM As String = _

"PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _

"c:\sah\inventory.mdb"

Const DB_QUERY_NAMES As String = _

"SELECT * FROM issue"

Const DB_QUERY_NAMES2 As String = _

```
        "SELECT * FROM stockq"  
Const DB_QUERY_NAMES3 As String = _  
        "SELECT * FROM UserTable"
```

```
Private rstph As ADODB.Recordset  
Public gblnaddmode As Boolean  
Function enable() As Boolean  
enable = (Len(txttdi.Text) >= 1) And (Len(txtqi.Text) >= 1) And (Len(txtam.Text) >= 1)  
And (Len(lstnames.Text) >= 1) And (Len(cmbnames.Text) >= 1)  
End Function
```

```
Private Sub cmdclear_Click()  
blanks  
End Sub
```

```
Private Sub cmbnames_Change()  
cmdok.Enabled = enable  
End Sub
```

'trials from here

```
Private Sub Form_Activate()  
    Static blnHasInitialized As Boolean  
    If Not blnHasInitialized Then  
        LoadClientNames  
        userNames  
    End If  
End Sub
```

```
Private Sub LoadClientNames()  
    Dim strName As String  
  
    On Error GoTo LOAD_NAMES_ERROR  
    lstnames.clear  
  
    Set rstph = New ADODB.Recordset  
    With rstph  
        .ActiveConnection = DB_CONNECT_PARAM  
        .Source = DB_QUERY_NAMES2  
        .Open  
  
        If Not (.EOF And .BOF) Then  
            Do  
                strName = IIf(IsNull(.Fields("prod_sup")), "", _  
                    .Fields("prod_sup"))  
                lstnames.AddItem (strName)  
  
                .MoveNext
```

```

        DoEvents
    Loop While Not .EOF
End If
.Close
End With
LOAD_NAMES_EXIT:
Set rstph = Nothing
Exit Sub

LOAD_NAMES_ERROR:
MsgBox Err.Description
GoTo LOAD_NAMES_EXIT
End Sub
Private Sub userNames()
Dim strName As String, strName2 As String

On Error GoTo LOAD_NAMES_ERROR
cmbnames.clear

Set rstph = New ADODB.Recordset
With rstph
.ActiveConnection = DB_CONNECT_PARAM
.Source = DB_QUERY_NAMES3
.Open

If Not (.EOF And .BOF) Then
Do
strName = IIf(IsNull(.Fields("username")), "", _
.Fields("username"))
strName2 = IIf(IsNull(.Fields("user_id")), "", _
.Fields("user_id"))

cmbnames.AddItem (strName)
lstid.AddItem (strName2)
.MoveNext
DoEvents
Loop While Not .EOF
End If
.Close
End With
LOAD_NAMES_EXIT:
Set rstph = Nothing
Exit Sub

LOAD_NAMES_ERROR:
MsgBox Err.Description
GoTo LOAD_NAMES_EXIT
End Sub

```

```
Private Sub bufferdata()  
  If rstph.BOF Or rstph.EOF Then  
    Exit Sub  
  End If  
  On Error Resume Next  
  rstph("user_id").Value = txtsid  
  rstph("stock_id").Value = CLng(lstid.Text)  
  rstph("quantity_issued").Value = txtqi  
  rstph("date_issued").Value = txttdi  
  
  If Err.Number <> 0 Then MsgBox Err.Description  
End Sub
```

```
Private Sub cmdCancel_Click()  
  blanks  
End Sub
```

```
Private Sub cmdexit_Click()  
  Unload Me  
End Sub
```

```
Private Sub cmdOK_Click()
```

```
  On Error GoTo SAVE_DATA_ERROR
```

```
  Set rstph = New ADODB.Recordset  
  With rstph
```

```
    .ActiveConnection = DB_CONNECT_PARAM  
    .LockType = adLockOptimistic  
    .Open "issue", , , adCmdTable
```

```
    .AddNew  
    bufferdata  
    .Update  
    gblnaddmode = False  
    blanks
```

```
  End With
```

```
' End If
```

```
SAVE_DATA_EXIT:
```

```
  Set rstph = Nothing  
  Exit Sub
```

```
SAVE_DATA_ERROR:
```

```
  MsgBox Err.Description  
  GoTo SAVE_DATA_EXIT
```

End Sub

Private Sub blanks()

txtsid.Text = ""

txtdi.Text = ""

txtqi.Text = ""

cmbnames.Text = ""

txtam.Text = ""

txtqty.Text = ""

txtpr.Text = ""

End Sub

Private Sub Form_Load()

cmdok.Enabled = False

End Sub

Private Sub lstnames_Click()

Dim strName As String

With lstnames

If .ListIndex >= 0 Then

strName = .List(.ListIndex)

LoadClientDetails strName

txtdi.Text = Date

End If

End With

End Sub

'test2

Private Function LoadClientDetails(st As String, _
Optional SearchByName As Boolean = True) _
As Boolean

Dim strQuery As String

On Error GoTo LOAD_DTAIL_ERROR

strQuery = "SELECT * " + _
"FROM stockball " + _
"WHERE " + IIf(SearchByName, "prod_sup", "stock_id") + _
" = " + st + ""

LoadClientDetails = False

Set rstph = New ADODB.Recordset

With rstph

.ActiveConnection = DB_CONNECT_PARAM

.Source = strQuery

.Open

If Not (.EOF And .BOF) Then

 If SearchByName Then

 txtsid = Iif(IsNull(.Fields("stock_id")), "", _
 .Fields("stock_id"))

 Else

 lstnames = Iif(IsNull(.Fields("prod_sup")), "", _
 .Fields("prod_sup"))

 End If

 txtqty = Iif(IsNull(.Fields("stockbal")), "", _
 .Fields("stockbal"))

 txtpr = Iif(IsNull(.Fields("unitprice")), "", _
 .Fields("unitprice"))

 txtusid = Iif(IsNull(.Fields("user_id")), "", _
 .Fields("user_id"))

End If

.Close

End With

LOAD_DTAIL_EXIT:

 Set rstph = Nothing

 Exit Function

LOAD_DTAIL_ERROR:

 MsgBox Err.Description

 GoTo LOAD_DTAIL_EXIT

End Function

Private Sub txtdes_Change()

 cmdok.Enabled = enable

End Sub

Private Sub txtcln_Change()

 cmdok.Enabled = enable

End Sub

Private Sub txtdo_Change()

 cmdok.Enabled = enable

End Sub

Private Sub txtam_Change()

 cmdok.Enabled = enable

End Sub

Private Sub txtdi_Change()

```
cmdok.Enabled = enable
End Sub
```

```
Private Sub txtpr_Change()
cmdok.Enabled = enable
End Sub
```

```
Private Sub txtqo_Change()
cmdok.Enabled = enable
End Sub
```

```
Private Sub txtsid_Change()
LoadClientDetails txtsid, False
End Sub
```

```
Private Sub txtqi_Change()
cmdok.Enabled = enable
If txtqi <> "" And IsNumeric(txtqi) Then
txtam = CLng(txtqi) * CLng(txtpr)
Else
txtam = ""
End If
End Sub
```

Register New User

Option Explicit

```
Const DB_CONNECT_PARAM As String = _
    "PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _
    "c:\sah\inventory.mdb"
Const DB_QUERY_NAMES As String = _
    "SELECT * FROM UserTable"
```

```
Private rstph As ADODB.Recordset
Public gblnaddmode As Boolean
Function enable() As Boolean
enable = (Len(txtfn.Text) >= 1) And (Len(txtln.Text) >= 1) And (Len(txtpwd.Text) >= 1)
And (Len(txtun.Text) >= 1)
End Function
```

Private Sub bufferdata()

```
If rstph.BOF Or rstph.EOF Then
Exit Sub
End If
```

```
On Error Resume Next
```

```
rstph("surname").Value = txtln
rstph("firstname").Value = txtfn
rstph("middlename").Value = txtmn
rstph("username").Value = txtun
rstph("password").Value = txtpwd
```

```
If Err.Number <> 0 Then MsgBox Err.Description
```

```
End Sub
```

```
Private Sub cmdCancel_Click()
```

```
blanks
```

```
End Sub
```

```
Private Sub clear()
```

```
txtfn.Text = ""
```

```
txtln.Text = ""
```

```
txtpwd.Text = ""
```

```
txtmn.Text = ""
```

```
txtun.Text = ""
```

```
End Sub
```

```
Private Sub cmdclear_Click()
```

```
clear
```

```
End Sub
```

```
Private Sub cmdOK_Click()
```

```
On Error GoTo SAVE_DATA_ERROR
```

```
Set rstph = New ADODB.Recordset
```

```
With rstph
```

```
.ActiveConnection = DB_CONNECT_PARAM
```

```
.LockType = adLockOptimistic
```

```
.Open "UserTable", , , , adCmdTable
```

```
.AddNew
```

```
bufferdata
```

```
.Update
```

```
gblnaddmode = False
```

```
clear
```

```
End With
```

```
' End If
```

```
SAVE_DATA_EXIT:
```

```
Set rstph = Nothing
```

```
Exit Sub
```

```
SAVE_DATA_ERROR:
```

```
MsgBox "User Already Exist"  
GoTo SAVE_DATA_EXIT  
End Sub
```

```
Private Sub cmdq_Click()  
Unload Me  
End Sub
```

```
Private Sub Form_Load()  
cmdok.Enabled = False  
End Sub
```

```
Private Sub txtfn_Change()  
cmdok.Enabled = enable  
End Sub
```

```
Private Sub Txtln_Change()  
cmdok.Enabled = enable  
End Sub
```

```
Private Sub Txtun_Change()  
cmdok.Enabled = enable  
End Sub
```

```
Private Sub Txtpwd_Change()  
cmdok.Enabled = enable  
End Sub
```

```
Register New Vendor  
Option Explicit
```

```
Const DB_CONNECT_PARAM As String = _  
"PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _  
"c:\sah\inventory.mdb"  
Const DB_QUERY_NAMES As String = _  
"SELECT * FROM vendorTable"
```

```
Private rstph As ADODB.Recordset  
Public gblnaddmode As Boolean  
Function enable() As Boolean  
enable = (Len(txtfn.Text) >= 1) And (Len(txtln.Text) >= 1) And (Len(txtcomp.Text) >=  
1) And (Len(txtmn.Text) >= 1)  
End Function
```

```
Private Sub bufferdata()  
  
If rstph.BOF Or rstph.EOF Then  
Exit Sub  
End If
```

```
On Error Resume Next
rstph("surname").Value = txtln
rstph("firstname").Value = txtfn
rstph("middlename").Value = txtmn
rstph("prod_sup").Value = txtprod
rstph("company").Value = txtcomp
rstph("batchno").Value = txtbn
```

```
If Err.Number <> 0 Then MsgBox Err.Description
```

```
End Sub
```

```
Private Sub cmdCancel_Click()
blanks
End Sub
```

```
Private Sub cmdexit_Click()
Unload Me
End Sub
```

```
Private Sub cmdOK_Click()
MsgBox "ok"
On Error GoTo SAVE_DATA_ERROR
MsgBox "ok"

Set rstph = New ADODB.Recordset
With rstph
MsgBox "ok"
.ActiveConnection = DB_CONNECT_PARAM
.LockType = adLockOptimistic
.Open "vendorTable", , , , adCmdTable

.AddNew
bufferdata
.Update
gblnaddmode = False
blanks
End With
' End If
SAVE_DATA_EXIT:
Set rstph = Nothing
Exit Sub
```

```
SAVE_DATA_ERROR:
MsgBox Err.Description
GoTo SAVE_DATA_EXIT
End Sub
```

Private Sub blanks()

txtfn.Text = ""

txtln.Text = ""

txtprod.Text = ""

txtcomp.Text = ""

txtmn.Text = ""

txtbn.Text = ""

End Sub

Private Sub Form_Load()

cmdok.Enabled = False

End Sub

Private Sub txtfn_Change()

cmdok.Enabled = enable

End Sub

Private Sub Txtln_Change()

cmdok.Enabled = enable

End Sub

Private Sub Txtmn_Change()

cmdok.Enabled = enable

End Sub

Private Sub Txtprod_Change()

cmdok.Enabled = enable

End Sub

Stock Report

Option Explicit

Const DB_CONNECT_PARAM As String = _
"PROVIDER=Microsoft.Jet.OLEDB.4.0;DATA SOURCE=" + _
"c:\sah\inventory.mdb"

Const DB_QUERY_NAMES As String = _
"SELECT * FROM rordq1"

Private RC As ADODB.Recordset

Private Sub cmdClose_Click()

Unload Me

End Sub

Private Sub cmdPrint_Click()

cmdClose.Visible = False

cmdPrint.Visible = False

Me.PrintForm

End Sub

```
Private Sub Form_Activate()  
Static blnHasInitialized As Boolean
```

```
    If Not blnHasInitialized Then  
        FormLoad  
    End If  
End Sub
```

```
Private Sub FormLoad()  
Set RC = New ADODB.Recordset  
With RC  
    .ActiveConnection = DB_CONNECT_PARAM  
    .Source = DB_QUERY_NAMES  
    .CursorLocation = adUseClient  
    .Open
```

```
RC.MoveFirst  
Do Until RC.EOF
```

```
    ListView1.ListItems.Add , , RC!batchno  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!prod_sup  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!quantity  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!mdate  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!exdate  
    ListView1.ListItems(ListView1.ListItems.Count).ListSubItems.Add , , RC!company
```

```
    RC.MoveNext  
    If RC.EOF = True Then  
        RC.MoveLast  
        Exit Do  
    Exit Sub  
End If
```

```
Loop  
End With
```

```
End Sub
```

```
Private Sub Form_Resize()  
ListView1.Left = Me.Left + 120  
ListView1.Width = Me.Width - 360  
End Sub
```

```
Private Sub Form_Unload(Cancel As Integer)  
'Set cc = Nothing  
Set RC = Nothing  
'frmMain.Enabled = True  
End Sub
```

APPENDIX C

Login [X]

User Name:

Password:

Stock Control System



In Pharmaceutical Industry

Isiaka Isah

PGD/MCS/05/06/1185

Stock Description

Item Description:	Alagbin	Batchno	015
Quantity in Stock:	250	Unit Price:	10
Manufact. Date	12/01/2001	Exp Date:	12/12/2009
Company	Emzor	Reorder Level:	50
		Supplier	Carlos

Ok Clear Exit

Register New User

First Name	Joe
Middle Name	M
Last Name	Isaiah
Username	markhenry
Password	

Ok Clear Quit

Modify User Form

First Name	luwem	Change	Close
Middle Name	dino		
Last Name	edet		
Username	luce		
Password	-----		

Next Back

Edit Stock Record

Item Description:	codine	Batchno	1100
Quantity in Stock:	500	Unit Price:	4
Manufact. Date	1/8/1999	Exp Date:	5/31/1999
Company	fidson	Reorder Level:	20
		Supplier	boo

Next Back Change Close

Search Form

By Name	By Number
Code	
In Stock	Supplier
Company	Man date
Exp. Date	Unit Price

Clear Close

Issue Form

Code	
Item Description:	Date Issue
	/69
Unit Price:	Quantity ordered
276	Abraham
Amount	Issued by

Ok Clear Exit

Automated Stock Control System

Register Modify Transaction Report Window

Order Form

Product Name	pheno	Unit Price(naira)
Date Ordered		Stock Id
Quantity Ordered	100	
First Name	Greg	
Last Name	Kalu	

Ok Clear Quit

Status

3/7/2007

12:54 PM

Automated Stock Control System - [Form1]

Register Modify Transaction Report Window

ENTIRE STAFF REPORT

Close Print

STAFF ID	SURNAME	FIRST NAME	MIDDLE NAME	USER NAME	PASSWORD
1	edet	uwem	dino	lee	xico
2	josh	sam	jeff	isi	zaria
3	Mohammed	Isah	M	mohd	1234

Status

3/7/2007

12:33 PM

Stock Report

TOTAL STOCK BALANCES

Close Print

BATCH NO	PROD. NAME	UNIT PRICE	TOTAL IN STO.	REORDER LE
012	vagra	10	4912	41
101	ceveler	6	1400	10
103	iodna	50	292	290
133	forema	40	59452	20
223	zobit	3	358	9

Detailed Stock report

Print

STOCK ID	PROD. NAME	BATCH NUM	UNIT PRICE	IN STOCK	REORDER LEV	MAN DATE	EXP DATE	SUPPLIER	COMPANY
1	lorazem	133	40	5000	20	1/8/1999	5/3/1999	harc & co	hdson
2	cerebra	101	6	400	10	2/7/200	4/6/2000	lier	hdson
3	viagra	012	10	500	50	5/7/2001	8/6/2005	hck	ndb
4	iodine	103	50	150	299	5/7/1999	8/6/2000	hgm	rhema
5	zoloft	223	3	74	9	5/3/200	5/2/2005	mom	benbo
6	Paradol	123	20	500	100	12/5/2007	12/12/2009	Jopegan	Hald
7	Vicce	128	30	560	100	12/12/2002	12/12/2010	Fred Joe	Emzor
8	fluc	001	500	2000	50	1/1/2000	1/1/2001	mm & co	glaxo
9	ipitor	204	50	8000	40	1/3/1990	1/3/1991	deo & co	gsk
10	vitamin c	222	10	2000	20	10/10/2000	10/10/2001	shitu & co	hovid
11	alagbin	404	100	9000	20	12/19/2007	12/19/2008	shitu & co	hovid
12	phonic	444	10	24000	100	12/12/2006	12/12/2008	Mustafa & co	may & Baker