COMPUTERIZED STOCK CONTROL SYSTEM OF A SUPERMARKET

THYWILL SUPERMARKET - CASE STUDY

A PROJECT SUBMMITED TO

THE

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CERTIFICATION

This is to certify that this project COMPUTERIZED STOCK CONTROL SYSTEM OF A SUPERMARKET was carried out by SHAAKAA C. SAAKU, Department of Mathematics and Computer Science, Federal University of Technology, Minna.

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D E D I C A T I O N

This work is dedicated to my Mum, "MADAM FAYUM CHIILA" for her love and infinite patience throughout the period pf my stay in the University, and my beloved, "Mmem" for her heart felt good wishes and enthusiastic encouragements.

A C K N O W L E D G E M E N T

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1992

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CHAPTER ONE

1.0. LITERATURE REVIEW:

1.1. PREAMBLE:

There is a general presumption that stock in large supermarkets like "THYWILL" here in Minna is a tedious taks which usually entails operations that are repetitive, of clerical nature and definitely simple enough for computations.

The more prevalant special purpose mechanical digital computers have been the supermarket's cash register, the office adding machine and the desk calculator.

1.2. ORIGIN OF SUPERMARKET MECHANIZED DEVICES:

The origin of these machines has been traced back to ancient Babylonia where the earliest most popular computations device "abacus" evolved. The development of numerical notations had an added impetus to the data processing. Many societies developed their own methods of representing numerical notations that could be used in computations. The Arabic denary numbering system was very popular.

By contrast modern computers utilized binary system in their operations.

Fra Luca Pacciola, in the 14th Century developed and applied the concepts of double-entry book-keeping, which

laid the foundation of modern accounting principles. These principles have been modified to facilitate the computerized accounting of financial data. The Frenchman, Blaise Pascal, invented a mechanical device in 1642, that functioned as an adding machine, known as the machine "Arithmetique" which was constituted of interlocking gears that represented the numbers 0 through 9 which was capable of performing arithmetic operations. Gattfried Von Leibnitz, a German mathematician, built on Pascal's machine to produce a calculating device capable of multiplication, division, addition and subtraction. In 1804, Joseph Marie Jacquard utilized the idea of the automated loom to control the weaving of fabrics.

The cards used in this manner were the forerunners of Hollerith's punched cards. In the early 1800's, the English inventor, Charles Babbage theorized the possibility of constructing an automatic mechanical calculator with the financial support of the British Government. He designed the Difference Engine and years later, the Analytical Engine. These concepts were eventually used by engineers in the development of the first computer prototypes. In 1880, Herman Hollerith produced the punched card, coding and tabulating equipment to process the punched cards. These were used to process the 1890 U.S. Census. In 1937, H.G. Aiken at the Harvard University produced a computer,

the Mark 1, which was a prototype of most computers in use today.

Each of these devices is widely replaced by electric devices which allows much greater logical decision-making and increased speed. The evolution of the eletronic computer traced back to World War II. In 1946, the first large-scale all-electronic computer, ENIAC (Electronic Numerical Integration and Calculator) was developed at the University of Pennsylvania. A mathematician, John Von Neumann put forward the store-program concept: the operating instructions and data to be processed should be stored inside the computer. Whenever necessary, the computer would have the capability to modify these program instructions during execution. In 1949, this concept was incorporated into the Computer EDSAC (Electoric Delay-Storage Automatic Computer), which was developed at Cambridge University. This Computer was capable of storing a sequence of instructions which were also called programs. In 1951, the UNIVAC 1 (Universal Automatic Computer 1) was introduced which was constructed of vaccum tubes and was the first commercially available computer. It also pioneered the magnetic tape system. The magnetic tape represented a great advance in computer technology that it permitted the sequencial storage of millions of characters on a medium that was compact, portable, and permitted the high-speed transfer of data to the computer.

From 1959 - 1965, the second generation of computers were built using transistors. This brought about a cast reduction in size and increased the amount of data that could be stored within a computer system. These computers had the higher processing speeds and could be used in a wider range of data processing jobs. High-speed magnetic disk was developed and marketted between 1959 and 1965. The disk enabled the random access of data, a problem related to sequencial access of data when tape was used. Magnetic disks revolutionized the computer field, in that, computer could go directly to a specific item of data and use it.

In the middle of the 1960's, the third generation of computers was introduced which marked the emergence of the computer as a major tool of business. These computers were made of the micro-miniaturized integrated circuits, which possessed greated input-output capabilities and vast internal storage. One of these computers was the IBM 360 Series. In 1970, IBM 370 Series was introduced which used Silicon chips only. In the early 1970's, a new form of computer, the micro-computer emerged which was followed by micro-computers. Micro-Computers were then small, highly-specialized computer systems with limited amount of data storage facility. They support specific business activities like Financial Planning, Auditing, Management

Planning, Stock Controls in Cupermarkets and other Departmental Stores.

1.3. APPLICATIONS OF MICRO COMPUTERS IN SUPERMARKETS:

In the 1960's, as business expanded and more stores were opened, there came a need for automated information systems for Store's Management in order to maintain its competitive positions. As the organisation expanded, it became difficult for the existing data processing system to provide the information of the management needed for immediate decision making. It was recognised by management that poor decisions were due to lack of accurate, timely and complete information which ultimately had a major impact on profitability. The nature of the retailing business requires quick response to consumer trends and to economic conditions affecting these trends.

An automated information system was then recommended and subsequently installed in stores and supermarkets. Duck Essick [1972] comments on the use of computers on supermarkets thus; automated information system increases efficiency on merchandising and inventory information; processing of customers credit accounts; and general Store/Supermarket Accounting. A Supermarket was equipped with cash-register terminals connected to a computer located within the shop. The cash register terminals were generally referred to as point-of-sale (POS) terminals. A

merchandising information that could collect sales data through the terminals was developed. The sales clerk entered a sale by pressing appropriate keys on the point-of-sale terminal for each transaction, the following data were collected; employee identification number; merchandise division, item identification number; quantity; unit price; type of transaction; and (for credit sales) customer credit card number. The POS terminal calculated the total sale, added any sales tax to determine a final total and printed a customer's receipt. The sales data from each terminal's transaction were recorded in the Store/Supermarket computer system, which was also used for producing sales report at any given interval of time. This allowed the management to obtain reports and informations needed for any decision making without too much labour.

The merchandising information system is able to provide a great deal of information for the management decision making in a timely manner.

CHAPTER TWO

2.0. INTRODUCTION:

2.1. PREAMBLE:

Stock Control System is aimed at keeping proper records of stock items in a Departmental Store. The stock taking on Supermarkets is the same with any other department. The automated stock control is an improvement on the manual one used in most supermarkets. However, many supermarkets do not keep stock of items sold, but it is adviceable to adopt stock taking in promising supermarkets like most found in Minna. Since it will enable the management of these stores to know whether they are running at a loss or otherwise.

A project to computerise stock control system involves plans for specification writing, system development, implementation and re-organization for the automation. The items supplied in the supermarkets are first given codes and are entered into the supply file. As these items are entered into the supply file, the inventory file is automatically opened and the items which are entered into the supply file are copied into it. The Inventory file keeps records of stock balances. And the items that are sold are entered into the sales file. As these items are entered into the sales file, the inventory file would be opened again. The system would locate for the identical

item codes in the inventory file and subtract the sales item from it and automatically up-date the balance.

The use of automated system for stocks information in supermarkets is aimed at keeping proper records on every item supplied and sold whereby promoting efficiency. The system uses in-situ file processing (up-dating) method and sorts records in appropriate order before producing any selected output. It ascertains stock balances after any transaction has taken place, warns when the stock reaches re-order level but allows transactions until items balances becomes zero, at which level, transaction is not possible. It also has the facility of adjusting receipts and issues on any stock item. This immediately updates the stock master file (Inventory file) thereby keeping it up-to-date. It has many types and forms of reports (i.e. screen output and printer output.)

The objectives of stock control system are:-

(i) To enable the most efficient handling of data and provide management with timely information.

(ii) To establish the most desirable distribution of data, services, and equipment throughout the organisation.

(iii) To provide responsive services to meet user and customer needs.

(iv) To minimize operating cost and maximize potential savings for the organization.

(v) To eliminate duplicated, conflicting, and unnecessary services in the organisation.

(vi) To define orderly methods of handling transaction activities, using sound organisational procedures.

(vii) To facilitate data interaction between and within various levels of management.

(viii) To increase the speed with which reliable data is accessed and available in the system.

This work is aimed at automating business information management of the "THYWILL" Supermarket in Minna, although facilities are also provided to enable its usage by any other Supermarket. The Fundamental business units in the "THYWILL" Supermarket include:- Accounts Management, Inventory Management, Cost Control, Sales Management (Control), and Personnel. The areas where problems are mostly encountered are: Inventory and Sales Management. At moment attention would be directed at these business Units.

2.1. CRITERIA FOR THE NEW SYSTEM DESIGN:

Repetitiveness: Processing Circles that repeat themselves several times are ideally suitable for the proposed system.

Volume: The proposed system can handle lerge amounts of data.

Complexity: The proposed system is designed such that it can handle very complex operations.

Flexibility: The system is designed such that it can operate in a dynamic rather then static environment,

Efficiency: The system is designed to ensure the best use of people and the equipments and to device the desired output within the most reasonable time.

User's Friendness: The system is menu driven simply to give the operators a choice of different transactions for implementation.

Security: The security of the system is taken into cognissance such that facilities are provided only for authorized users to have access to it.

2.3. PLANS FOR SPECIFICATION:- This involves system analysis/feasibility study of the methodical step-by-step transaction, pinpointing the problems prior to suggesting solutions to the problems.

SYSTEMS DEVELOPMENT:- Involves designing the system based on the outcome of the analysis and the recommendations made during the analysis. It will also involve testing and implementing the new system to ensure its functionality.

RE-ORGANISATION:- It involves documentation of the new system. It covers the final report documenting every aspect of the system's operations. The report contains:-

(i) Anoverview of the project, describing the general purpose of the information available.

(ii) Printer spacing charts, accompanied by detailed naratives which describe each of the systems outputs.

(iii) Systems flow charts which describe the procedures or series of steps used in the processing of data.

(iv) The financial analysis of both the old and new systems. Projected cost of both systems currently and in future, as well as the cost saving.

(v) A description of the computer system and the peripheral equipment supporting the system.

2.6. CONCLUSION:- The final summary of the whole possible, observations and the possible recommendations made. All these topics are treated chapter by chapter for simplicity and clarity.

CHAPTER THREE

3.0. SPECIFICATION PLANS:

3.1. PROBLEM DEFINITION

THE PROJECT: COMPUTERISED STOCK CONTROL SYSTEM
A SUPERMARKET CASE STUDY

OBJECTIVES:

(a) To enable the most efficient handling of large data and provide management with timely information.

(b) To establish the most desirable distribution of services, and equipment throughtout the organisation.

(c) To provide responsive service to meet customers needs.

(d) To minimize the operating cost and maximize potential savings for the organisation.

(e) To eliminate duplicated, conflicting and unnecessary services in the organisation.

(f) To define orderly methods of handling transaction activities using sound organisational procedures.

(g) To facilitate data interaction between and within various levels of management.

(h) To increase the speed with which reliable data is accessed and available in the system.

3.2. FEASIBILITY STUDY

The purpose of the feasibility study is to analyse the current manual transactions in the "THYWILL" Supermarket in order to determine whether it should be enhanced or an entirely new system be developed.

The study was conducted by the System Analyst, MR. SAAKU C. SHAAKAA with maximum co-operation from Mr. Edwin, The Chief Executive, General Manager/Proprietor of the "THYWILL" Supermarket, Minna.

3.2.1 METHODOLOGY

The techniques for the fact finding were:- Interviewing, Questionnaire, Observation and record inspecting.

3.3. FEASIBILITY REPORT:

The existing manual system is a very good source of information for the development of the proposed systems. Some of the basic functions performed by the manual transaction. (i.e. the movement of stock items) in the "THYWILL" Supermarket. The processes involved are billing, receiving, issuing and stock taking. The problems of the present system were identified as:-

1. (a) Expensive to maintain
   (b) Accessibility of the information
   (c) The manual system is tedious, tiring and uninteresting to use.
2. The manual system is ineffective
3. Too much paper work is involved with the consequential misplacement of some vital papers.
4. Human errors are maximum as a result of handling very large data.
5. There is no proper record keeping of sales made at a particular interval of time.

3.4. ORGANISATIONAL STRUCTURE OF THE EXISTING SYSTEM

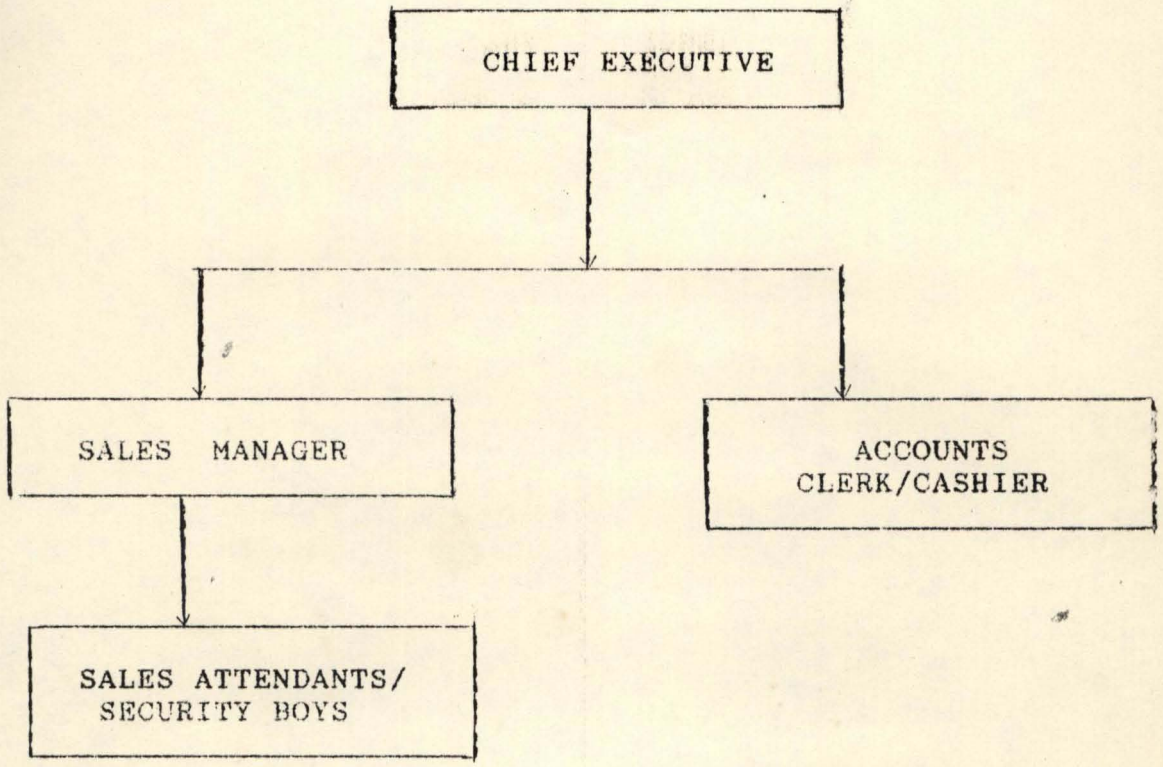


FIGURE 3.1.

Hierachical structure of "THYWILL" Supermarket.

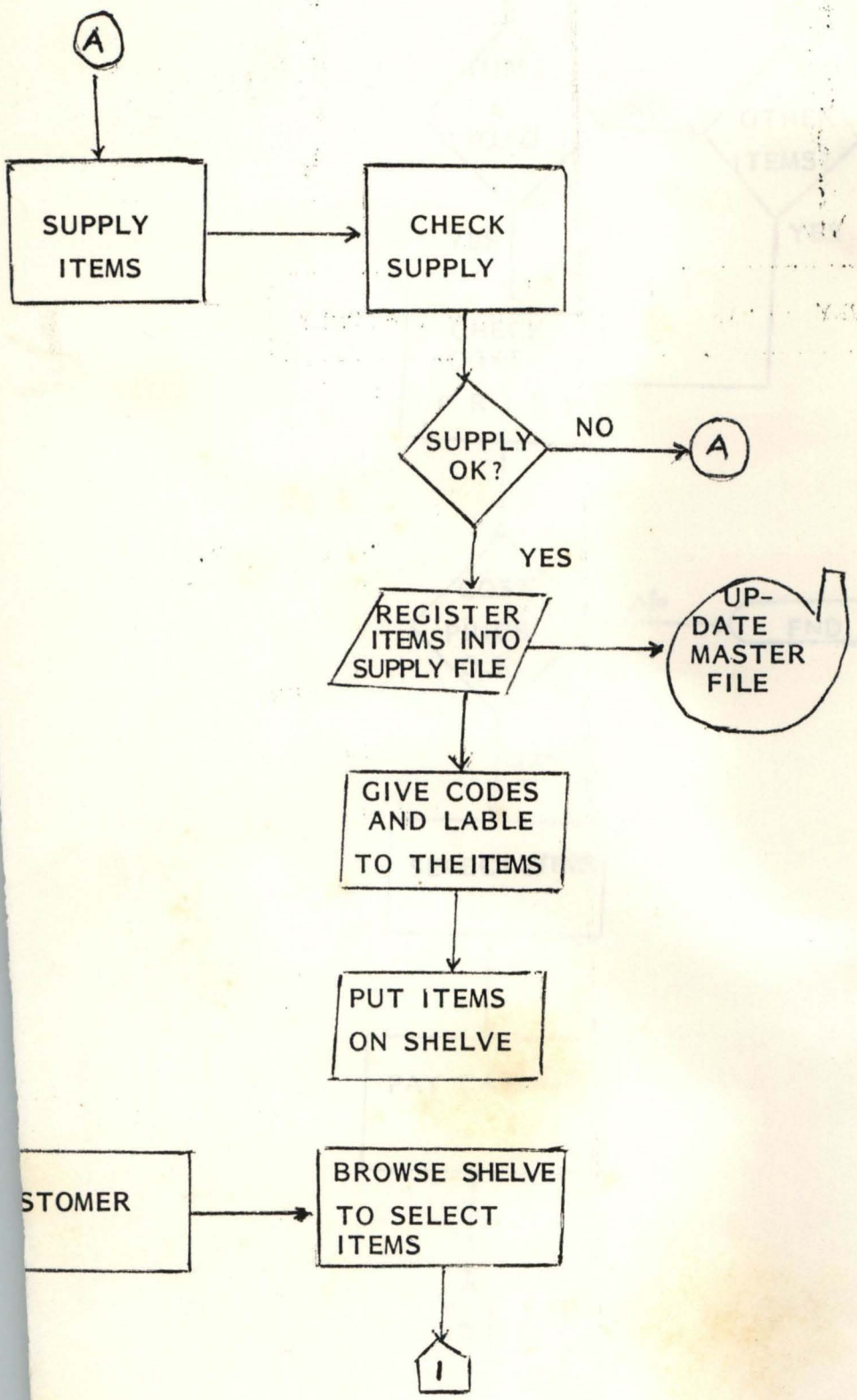
Figure 3.1. is the hierachical arrangement in the "THYWILL" Supermarket.

Managing Director (MD): He is the Proprietor of the Supermarket. He oversees the general management and monitors all transactions in the shop.

Sales Manager (SM): He is in-charge of sales and marketing of items in the shop.

Sales Attendants/Security There are 3 sales attendants who are also the security boys. Their functions are to attend to customers in need of assistance and ensure the security of items in the shop.

Accounts Clerk/Cashier: He gives proper accounts of items in the shop and he controls the inventory of items in the shop.


A
SUPPLY ITEMS
CHECK SUPPLY
SUPPLY OK?
NO
A
YES
REGISTER ITEMS INTO SUPPLY FILE
UP-DATE MASTER FILE
GIVE CODES AND LABLE TO THE ITEMS
PUT ITEMS ON SHELVE
STOMER
BROWSE SHELVE TO SELECT ITEMS
1

3.5. LOGICAL MODEL OF THE EXISTING SYSTEM

As the figure 3.5 shows, the logical model explains the general operations which start from the supply of items into the shop to the issuing of the items to the customer. When supply is made, the management checks whether supply is acceptable. If it is acceptable, they register it into the supply file with the necessary attributes. Else the items are returned back to the supplier. As the items are registered, they are then put on the shelves. A customer who comes into the shop to buy some items, browses the shelves to pick the items he wants to buy. If he does not find the particular item he has come for, he would look for an alternative item to buy. If he however, finds the particular item he has come for, he would check the price, if he can afford it. If he does not agree with the price, he leaves. But if he agrees with the item price, he picks it and then pays to the cashier. If he does not find the particular item he came to buy, but he has seen an alternative, he checks for the price to see if he can buy it. If the price is not suitable to him, he leaves and if the price is suitable, he then pays to the Cashier. If however, he did not find the alternative item, he leaves. As he pays the money to the Cashier, original receipt is issued to him and the duplicate is retained for record checking. Where there is no issue of receipt, a sale card

is filled. At the end of all transactions in the day, all sales are entered into the sales ledger and then stock is taken. Taking of stock involves balancing and updating inventory item which are received and issued out.

3.6. RECOMMENDED COMPUTER SYSTEM:

Work station or Personal Computers are recommended. The personal computing requirements of the business profession are very demanding. There is now an urgent need for greater performance to run more sophisticated softwares at faster speeds, often at the same time, and for early access to the Corporate Mainframe, however remote, an on-line remote and on-line public information database.

Highly trained staff are not necessary in this system as the operator has only to learn a relatively simple sequence of keyboard operations since the processing operations are menu driven. A competent operator is essential; the output speed is determined by the speed and accuracy of the operator in the use of the keyboard.

3.7. SPECIFICATION OF THE PERSONAL WORKSTATION

Processor	Intel 80286 MHz
Memory Expansions	STANDARD
Controlled, Monochrone	Graphics or Enhanced Graphic adaptor
Expansion Slots	Two 8/16 bits slots
Mass Storage Options	1.2 MB 5¼ /3½ diskettes

Hard disk	30MB
Out put device	IBM Printer; Epson FX-1050
Operating Softwares	DOS 4.1 and Setup, DBase III Plus/DBase IV plus packages.

3.8. A COST BENEFIT ANALYSIS OF THE PROPOSED SYSTEM:

DEVELOPMENT COST	₦	K
Labour Cost (5months, 2500/month)	12,500	: 00
Inventory Control Package	5,000	: 00
System Analysis Cost	10,000	: 00
	27,500	: 00

OPERATING COST OF NEW SYSTEM	₦	K
Maintenance Cost	2,000	: 00
Labour Cost (800/month)	4,000	: 00
Personal Cost (1500/month)	7,500	: 00
	13,500	: 00

Total Cost of the System ₦41,000: 00

Note: ₦41,000.00 is the annual cost saving of the new System.

CHAPTER FOUR

SYSTEMS DESIGN

From the analysis of the "THYWILL" system, it is clearly convincing that the stock control of the "THYWILL" Supermarket needs a computerised system.

STOCK ITEMS IN THE THYWILL SUPERMARKET IN GROUPS"

I T E M S	GROUP/CLASS
BEDDINGS	A
CLOCKS	B
CLOTHES WEARS	C
COOKERIES	D
CONTAINERS	E
DRINKS	F
ELECTRONICS	G
ELECTRICAL EQUIPMENTS	H
FOODS	I
LUGGAGES	J
OILS	K
PROVISIONS	L
SHOE WEARS	M
TEXT BOOKS	N
TOILETERIES	O
TOOLS	P
WRITING MATERIALS	Q

The classification of items follow the products and their brands. And this classification is generally referred to as category.

4.2. INPUT OF DATA

In the data input process, the user works with a screen based image of a form. This has blanks in which data can be entered. This is similar to a paper form. It is for the user to enter data at any point on the form.

4.3. DATABASE

The proposed system is a complete database system. A database is a collection of data usually files, arranged in such a way that it is independent of any particular program or application. The arrangement is in a way that data redundancy is eliminated. Access to the files is not direct by application, but it is provided by a database management system.

A database management system (DBMS) consists of a collection of inter-related data and a set of programs to access that data. The aim of a database management system is to create an environment that is both convenient and efficient to the use retrieving information from stored database.

OBJECTIVES OF DATABASE SYSTEM:

1. Data Integrity - Consistently checks within stored data

2. Data Independence - Change in data structure dosen't involve reprogramming.

3. Security - Data must be protected from unauthorised users.

4. Data Integration - An integrated collection of records with any redundancy is eliminated.

BENEFITS OF A DATABASE:-

1. WORKING WITH MORE THAN ONE FILE:

   Database allows the transfer of one file to another file.

2. ACCESSING THE REQUIRED DATABASE:

   The existing database will be accessed so that record addition, deletion, modification etc., can be performed on the data.

3. INFORMATION RETRIEVAL:

   In the process of getting back information from a collection of data.

4. REPORT GENERATION:

   Information comes from a database in the form of reports. A report is a summary of information which appear in accordance on how you want it to be.

   The objective of the report is to prepare a daily transactions register and error transactions report for the transactions carried out.

5. MAINTAINABILITY:

   A major advantage of a database is its ability to impose centralized control over its operational data. Maintaining one database is far easier than maintaining two separate files that contain many similar field.

   Database software can protect data from access by unauthorised users.

4.2. DEVELOPING THE NEW SYSTEM DESIGN:

In the development phase, this project will consider the followings:-

1. Output, input and Processing requirements.
2. Data files.
3. System Control.

4.2.1. DATABASE FIELD DESCRIPTION

There are three database files in use, namely:- Supply Database File, Inventory Database File and the Sales Database File.

Supply and Inventory database are in the Masterfile while Sales database is in the Transaction files. All these constitute the whole system.

Supply Database File:- This is the file where items supplied newly into the shop are first recorded and as they are recorded, the Inventory balance is automatically updated by adding the new items to the already existing ones in the file.

Inventory Database File:- Keeps all records of the stock balance, Supply records and Sales records in the shop.

Sales Database File:- Keeps records of items issued out to the customers. And as the Sales records are recorded, the inventory is automatically updated by reducing the items sold from the already existing items in the Inventory file.

The identification (ID) key is the item code.

DATABASE STRUCTURE: SUPPLY.DBF:

FIELD NO.	FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH
1.	ITEM CODE	CODE	CHARACTER	4
2.	ITEM CATEGORY	CAT	CHARACTER	1
3.	COST PER ITEM	COST	NUMERIC	6
4.	QUANTITY IN STOCK	QSTOCK	NUMERIC	5
5.	QUANTITY RECEIVED	QREC.	NUMERIC	5
6.	DATE RECEIVED	SDATE	DATE	8
7.	ITEM DESCRIP.	DESCP.	CHARACTER	14

DATABASE STRUCTURE: SALES.DBF:

FIELD NO.	FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH
1.	ITEM CODE	CODE	CHARACTER	4
2.	ITEM CATEGORY	CAT	CHARACTER	1
3.	SELLING PRICE PER ITEM	SELPIC	NUMERIC	6
4.	QUANTITY IN STOCK	QSTOCK	NUMERIC	5
5.	QUANTITY ISSUER	QISSUED	NUMERIC	5
6.	DATE OF ISSUE	ISDATE	DATE	8
7.	DESCRIPTION	DESCRIP.	CHARACTER	14

DATABASE STRUCTURE: INVENTORY DBF:

FIELD NO.	FIELD DESCRIPTION	FIELD NAME	FIELD TYPE	FIELD WIDTH
1.	ITEM CODE	CODE	CHARACTER	4
2.	ITEM CATEGORY	CAT	CHARACTER	1
3.	ITEM DESCRIPTION	DESCRIP.	CHARACTER	14
4.	COST PER UNIT ITEM	COST	NUMERIC	6
5.	QUANTITY IN STOCK	QSTOCK	NUMERIC	5
6.	QUANTITY RECEIVED	QREC.	NUMERIC	5
7.	DATE RECEIVED	SDATE	DATE	8
8.	SELLING PER UNIT	SELPIC	NUMERIC	8
9.	QUANTITY ISSUED	QISSUED	NUMERIC	5
10.	DATE ISSUED	ISDATE	DATE	8
11.	STOCK BALANCE	STBAL	NUMERIC	6
12.	TOTAL COST PRICE	TOTCOST	NUMERIC	8
13.	TOTAL VALUE	TOTVAL	NUMERIC	8
14.	TOTAL SALE	TOTSALE	NUMERIC	8
15.	SALE BALANCE	SALEBAL.	NUMERIC	8

NOTE:-

STBAL = Q-STOCK + Q-REC

STBAL = STBAL - Q-ISSUED

Q-STOCK = STBAL

TOTCOST = STBAL * COST

TSELPRICTSALE = STBAK * SELPRIC

TOTSALE = Q-ISSUED * SELPRIC

SALEBAL. = TSELPRIC - TOTSALE

4.3. COMPLETED CTR LAYOUT FORM AND SCREEN INPUT

1. ITEM CODE NUMBER: _____

2. ITEM DESCRIPTION: _____

3. ITEM CATEGORY: _____

4. UNIT COST OF ITEM: _____

5. QUANTITY IN STOCK: _____

6. QUANTITY RECEIVED: _____

7. DATE RECEIVED: _____

8. QUANTITY ISSUED: _____

9. DATE ISSUED: _____

4.4. OUTPUT DESCRIPTION:

Computer print charts and information display system layout sheets are used as the output design aids for the computerised system. Computer print charts shows the content and location of all lines of character that are to be printed.

4.5. ALGORITHMS FOR THE MODULAR PROGRAM:

```
BEGIN
Switch on the System
      Display Main Menu
      Select Option
      Case Option = 'M'
      Execute Master Menu

 Endcase
      Case Option = 'T'
      Execute Transaction
Endcase
      Case Option = 'R'
      Display Report Menu
Endcase
Endselect
End.

Display Master Menu
        Select Option
        Case Options = 'S'
        Display Supply Menu
        Endcase
        Case Options = 'I'
```

```
Display Inventory Menu
Endcase
Endselect
End
Display Supply Menu
        Select Options
        Case Options = 'A'
        Execute  Supply
        Endcase
        Case Option = 'M'
        Execute Modify Supply
        Endcase
        Case Option = 'D'
Execute Delete Supply
Endcase
Case Option = 'L'
End Select
End.
Display Inventory Menu
        Select Option
        Case Option = 'A'
        Execute Add Records
Endcase
Case Options = 'M'
Execute Modify Records
```

```
        Endcase
        Case Options = 'D'
        Execute Delete Records
        Endcase
        Case Options = 'L'
 Execute Inventory Listings
   Endcase
   End Select
   End.
 Display Transaction Menu
        Display Sales Menu
        Select Options
        Case Options = 'A'
        Execute Add Sales
 Endcase
 Case Options  = 'M'
 Execute Modify Sales
 Endcase
 Case Options  = 'D'
 Execute Delete Sales
 Endcase
 Case Options  = 'L'
 Execute List Sales
 Endcase
 End Select
```

```
End.
Display Report Menu
        Select Options
        Case Options  = 'S'
Execute Supply report
        If Option  = 'P'
        Execute Printer report
        Else
Execute Screen Report
Endif
Endcase
End.
Case Options  = 'I'
Execute Inventory Report
        If Option  =  'P'
        Execute Printer Report
        Else
Execute Screen Report
Endif
Endcase
End.
        Case Option  = 'A'
        Execute Sales Report
        If Option  = 'P'
```

```
Execute Printer Report
        Else
        Execute Screen Report
Endif
Endcase
End Select
End.
```

```
STOCK SYSTEM MAIN MENU

M ..........   MASTER MENU

T ..........   TRANSACTION MENU

R ..........   REPORT MENU

E ..........   EXIT

     ENTER A CHOICE
```

```
MASTER SYSTEM MENU

S ..........   SUPPLY MENU

I ..........   INVENTORY MENU

E ..........   EXIT

     ENTER A CHOICE
```

```
TRANSACTION MENU

S ..........   SALES  MENU

E ..........   EXIT

     ENTER A CHOICE
```

SUPPLY MENU

A ..... ADD SUPPLY

M ..... MODIFY SUPPLY

D ..... DELETE SUPPLY

L ..... LIST SUPPLY

E ..... EXIT

ENTER A CHOICE

INVENTORY MENU

A ..... ADD INVENTORY

M ..... MODIFY INVENTORY

D ..... DELETE INVENTORY

L ..... LIST INVENTORY

E ..... EXIT

ENTER A CHOICE

SALES MENU

A ..... ADD SALES

M ..... MODIFY SALES

D ..... DELETE SALES

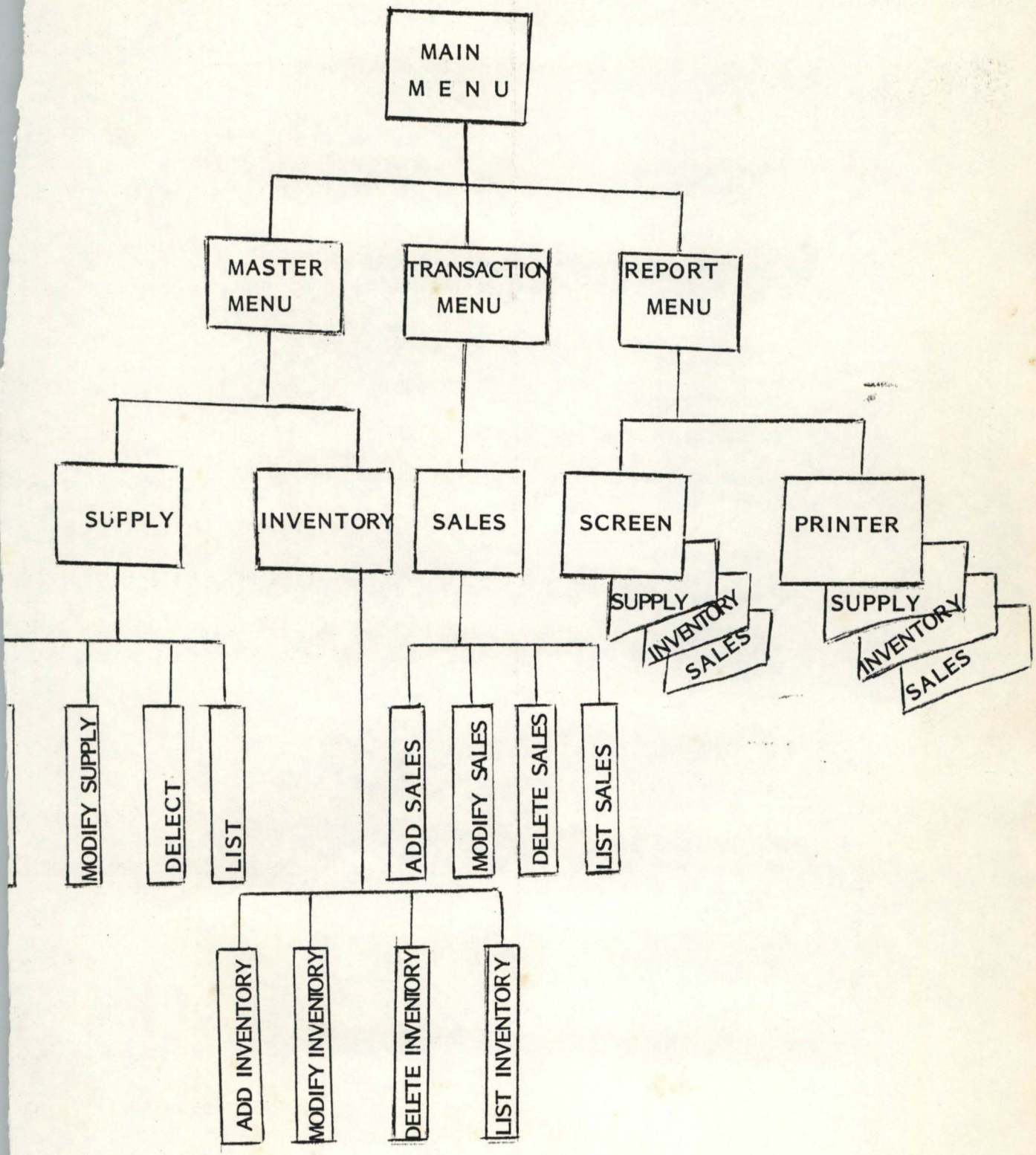
L ..... LIST SALES

L ..... LIST SALES

ENTER A CHOICE

```
REPORTS MENU

S .........   SUPPLY REPORT

I .........   INVENTORY REPORT

A .........   SALES REPORT

E .........   EXIT

      ENTER A CHOICE
```

:6 MODULAR PROGRAM STRUCTURE OF THE PROSED SYSTEM



4.7. NARRATIVE PROCEDURE (MODULAR PROGRAM STRUCTURE)

MAIN MENU:

Is the main program that displays the main menu of the system. It displays different sub programs for implementation.

MASTER MENU:

Is a sub program that displays the menu for the master file. It displays the sub programs for implementation under the master file.

TRANSACTION MENU:

Is a sub program that displays the menu for the transaction file. It displays the sub program for implementation under the transaction file.

REPORT MENU:

Is a sub program that displays the menu for the kinds of output reports.

SUPPLY MENU:

Is a sub program that displays the menu for the transaction under supply.

INVENTORY MENU:

Is a sub program that displays the menu for the processing for the inventory taking.

SALES MENU:

Is a sub program that displays the menu for the Sales transaction.

ADD DATA:

Is a sub program that allows the addition of records into the stock.

MODIFY MENU:

This allows the modification of data as the module may leads.

DELETE MENU:

This allows the deleting and packing of the data in the data entry functions.

LISTING MENU:

This allows the display of data in the data entry module.

4.8 PROGRAM CODING

```
*PROGRAM:STOCK.PRG

*AUTHUR:SHAAKAA CHIILA SAAKU

*DATE 24/04/92

***** THIS PROGRAM IS DESIGNED TO KEEP RECORDS  OF STOCK IN

*         THE THYWILL SUPER MARKET

SET COLO TO GR+,GB+/GR+,GB+

CLOSE DATA

SET ECHO OFF

SET STATUS OFF

SET BELL OFF

SET CONSOLE OFF

SET SCORE OFF

SET HELP OFF

SET PROCEDURE TO PROCEFILE

CLEAR

ET COLOR TO W/B

O WHILE .T.

 2,24 SAY "THY-WILL SUPER MARKET,MINNA"

T COLO TO R+/B+

,3 TO 23,70 DOUBLE

,4 CLEAR TO 4,70

3,3 TO 23,70 DOUBLE

4,29 SAY "STOCK CONTROL SYSTEM"

5,5 TO 10,68 DOUBLE

 COLOR TO W/B

 ,17 SAY "PROJECT TITLE: COMPUTERISED STOCK MANAGEMENT"
```

```
@ 8,18 SAY "SYSTEM FOR THE THYWILL SUPER MARKET,MINNA."
SET COLOR TO W/B
@ 15,5 TO 21,68 DOUBLE
@ 16,17 SAY "THIS PROGRAM INVESTIGATES THE POTENTIALS"
@ 18,19 SAY "OF COMPUTERISED STOCK CONTROL"
@ 20,20 SAY "DESIGNED BY S.C.SHAAKAA"
SET COLO TO N/W
SET INTEN OFF
SET CONSOL OFF
MES=" "
@22,22 SAY "PRESS ANY KEY TO CONTINUE...."
@22,52 GET MES
READ
RELE
CLEAR
SET COLOR TO RG+
@ 2,26 SAY "THYWILL SUPER MARKET,MINNA"
@ 3,28 say " STOCK CONTROL SYSTEM"
@ 3,3 TO 22,68 DOUBLE
@ 5,26 SAY "THIS SYSTEM TAKES INVENTORY"
@10,28 SAY "          OF                "
@14,23 SAY "STOCK ITEMS IN THYWILL SUPERMARKET"
@16,20 SAY "SHAAKAA ADAGBA SOFTWARE MANAGEMENT"
@17,25 SAY "        1 9 9 2          "
@ 20,23 SAY "PRESS ANY KEY TO CONTINUE...."
WAIT ""
CLEAR
SET ESCAPE OFF
```

```
SET TALK OFF
SET ECHO OFF
SET STATUS OFF
DO WHILE .T.
CLEAR
SET COLOR TO W/R
@3,35 SAY "THYWILL SUPERMARKET"
@ 4,30 SAY "STOCK CONTROL SYSTEM MAIN MENU"
@ 5,20 TO 23,70 DOUBLE
STORE SPACE(1) TO OPT
SET COLO TO B/W
@8,24 CLEAR TO 18,64
SET COLOR TO W/B
@ 10,22 clear to 21,60
@ 12,30 SAY "[M].....MASTER MENU"
@ 14,30 SAY "[T].....TRANSACTION MENU"
@ 16,30 SAY "[R].....REPORTS MENU"
@ 18,30 SAY "[E].....EXIT"
@ 20,35 SAY "PLEASE ENTER A CHOICE..."
@ 20,60 GET OPT PICT "@!"
READ
  DO CASE
CASE OPT="M"
SET COLO TO N
DO MASTER
LOOP
CASE OPT="T"
```

```
ET COLOR TO N
O TRANSACT
OOP
ASE OPT="R"
ET COLOR TO N
O REPORT
OOP
ASE OPT="E"

LEAR ALL
LEAR
ETURN
 ENDCASE
NDDO
```

```
PROCEDURE MASTER
DO WHILE .T.
CLEAR
SET COLOR TO BW/R
@ 4,30 SAY 'M A S T E R  F I L E  M E N U'
@ 5,10 TO 23,70 DOUBLE
STORE SPACE(1) TO OPT
@10,15 TO 20,65 DOUBLE
SET COLOR TO RG+
@ 14,30 SAY "[S].....SUPPLY"
@ 16,30 SAY "[I].....INVENTORY CONTROL"
@ 18,30 SAY "[E].....EXIT"
@ 20,25 SAY "ENTER A CHOICE TO SELECT OPTION"
@ 20,58 GET OPT PICTURE "!"
READ
DO CASE
CASE OPT='S'
DO SUPPLY
LOOP
ASE OPT='I'
O INVENT
OOP
SE OPT='E'
OSE DATA
IT
OCASE
ODO
```

```
URN
CEDURE TRANSACT
WHILE .T.
AR
 COLOR TO br
,30 SAY "T R A N S A C T I O N  F I L E"
,10 TO 23,70 DOUBLE
RE SPACE(1) TO OPT
14 to 20,66 double
 color to RG+
4,30 SAY "[S].....SALES"
6,30 SAY "[E].....EXIT"
0,25 SAY "PLEASE ENTER A CHOICE....."
20,51 GET OPT PICTURE "!"
AD
 CASE
E OPT='S'
 SALES
P
E OPT='E'
SE DATA
ASE
RN
EDURE REPORT
R
 COLOR  TO BR/G
30 SAY "REPORTS"
```

4.8 PROGRAM CODING

```
*PROGRAM:STOCK.PRG
*AUTHUR:SHAAKAA CHIILA SAAKU
*DATE 24/04/92
***** THIS PROGRAM IS DESIGNED TO KEEP RECORDS OF STOCK IN
*       THE THYWILL SUPER MARKET
SET COLO TO GR+,GB+/GR+,GB+
CLOSE DATA
SET ECHO OFF
SET STATUS OFF
SET BELL OFF
SET CONSOLE OFF
SET SCORE OFF
SET HELP OFF
SET PROCEDURE TO PROCEFILE
CLEAR
SET COLOR TO W/B
DO WHILE .T.
@ 2,24 SAY "THY-WILL SUPER MARKET,MINNA"
ET COLO TO R+/B+
3,3 TO 23,70 DOUBLE
4,4 CLEAR TO 4,70
 3,3 TO 23,70 DOUBLE
 4,29 SAY "STOCK CONTROL SYSTEM"
 5,5 TO 10,68 DOUBLE
T COLOR TO W/B
7,17 SAY "PROJECT TITLE: COMPUTERISED STOCK MANAGEMENT"
```

```
@ 5,15 TO 22,70 DOUBLE
STORE SPACE(1) TO OPT
@ 14,30 SAY "[S].....SUPPLY REPORT"
@ 16,30 SAY "[I].....INENTORY REPORT"
@ 18,30 SAY "[A].....SALES REPORT"
@ 20,30 SAY "[E].....EXIT"
@ 22,25 SAY "PLEASE ENTER YOUR CHOICE CORRECTLY..."
@ 22,64 GET OPT PICTURE "!"
READ
DO CASE
 CASE OPT='S'
DO SUPPREP
LOOP
 CASE OPT='I'
DO INVENREP
LOOP
 CASE OPT='A'
DO SALESREP
LOOP
 CASE OPT='E'
CLOSE DATA
EXIT
ENDCASE
ENDDO
RETURN
PROCEDURE SUPPLY
DO WHILE .T.
```

```
CLEAR
SET COLOR TO BR
@ 3,30 SAY "S U P P L Y  O F  I T E M S"
@ 5,15 TO 23,70 DOUBLE
OPT=SPACE(1)
@4,31 TO 20,64 DOUBLE
SET COLOR TO BW/BR
@ 5,30 SAY "[A]........A D D  S U P P L Y"
@ 8,30 SAY "[M]........M O D I F Y  S U P P L Y"
@ 11,30 SAY "[D]........D E L E T E  S U P P L Y"
@ 14,30 SAY "[L]........L I S T  S U P P L Y"
@ 17,30 SAY "[E]........ E X I T"
@ 21,25 SAY "PLEASE ENTER A CHOICE....."
@ 21,50 GET OPT PICTURE "@!"
 READ
DO CASE
CASE OPT="A"
 DO ASUPPLY
LOOP
CASE OPT="M"
 DO MOSUPPLY
LOOP
CASE OPT="D"
 DO DESUPPLY
LOOP
CASE OPT="L"
 DO LISUPPLY
LOOP
```

```
CASE OPT="E"

CLOSE DATA

EXIT

ENDCASE

ENDDO

RETURN

PROCEDURE INVENT

DO WHILE .T.

CLEAR

SET COLOR TO RG+

@ 3,30 SAY "I N V E N T O R Y  S Y S T E M"

@ 5,15 TO 23,68 DOUBLE
STORE SPACE(1) TO OPT

@ 10,30 SAY '[A].....ADD INVENTORY'

@ 12,30 SAY '[M].....MODIFY INVENTORY'

@ 14,30 SAY '[D].....DELETE RECORDS'

@ 16,30 SAY '[L].....LIST INVENTORY'

@ 18,30 SAY '[X].....EXIT INVENTORY'

@ 20,30 SAY 'ENTER A CHOICE,PLEASE.....'

@ 20,54 GET OPT PICTURE "!"

READ
DO CASE


CASE OPT='A'


 DO ADINVENT

LOOP

CASE OPT='M'

DO MOINVENT

LOOP
```

```
 CASE OPT='D'
DO DEINVENT
LOOP
 CASE OPT='L'
DO LIINVENT
LOOP
 CASE OPT='X'
CLOSE DATA
EXIT
ENDCASE
ENDDO
RETURN
PROCEDURE SALES
DO WHILE .T.
CLEAR
SET COLOR TO WG/B
@ 3,25 SAY 'S A L E S   M A I N T E N A N C E'
@ 5,15 TO 23,68 DOUBLE
STORE SPACE(1) TO OPT
@ 10,30 SAY '[A].........ADD SALES'
@ 12,30 SAY '[D].........DELETE SALES'
@ 14,30 SAY '[E].........LIST SALES'
@ 16,30 SAY '[X].........EXIT'
@ 22,25 SAY 'ENTER YOUR CHOICE,PLEASE.....'
@ 22,54 GET OPT PICTURE "!"
 READ
DO CASE
```

```
 CASE OPT='A'
DO ADSALES
LOOP
 CASE OPT='D'
DO DESALES
LOOP
 CASE OPT='L'
DO LISALES
LOOP
 CASE OPT='X'
CLOSE DATA
EXIT
ENDCASE
ENDDO
RETURN
PROCEDURE ASUPPLY
***PROGRAM NAME:ADD SUPPLY
DO WHILE .T.
CLEAR
SET DATE BRITISH
CLOSE DATA
USE SUPPLY
 CLEAR
STORE SPACE(8) TO MCODE
MCAT=SPACE(1)
MDESCRIP=SPACE(18)
STORE 0 TO MQ_STOCK,MQ_REC
STORE 0.00 TO  MCOST
```

```
MSDATE=CTOD("  /  /  ")
DO WHILE .T.
CLEAR
@ 10,10 SAY 'ENTER ITEM CODE NUMBER OR XX TO EXIT.....'
@ 10,65 GET MCODE PICT "@!"
  READ
 IF MCODE="XX"
  CLEAR
  return
 ENDIF
CLEAR
@ 3,10 SAY 'THYWILL SUPER MARKET,BOSSO-MINNA'
@ 4,4 TO 24,70 DOUBLE
@ 6,10 SAY 'S U P P L Y   E N T R Y  I N  P R O G R E S S'
@ 7,10 SAY REPLIC("=",46)
SET COLOR TO RG+/B
@ 3,60 SAY DATE()
@ 10,6 SAY 'ITEM CODE NUMBER:'
@ 12,6 SAY 'ITEM CATEGORY:'
@ 14,6 SAY 'ITEM DESCRIPTION:'
@ 16,6 SAY 'QUANTITY IN STOCK:'
@ 18,6 SAY 'QUANTITY RECEIVED:'
@ 20,6 SAY 'COST PER_UNIT:'
@ 22,6 SAY 'DATE RECEIVED:'
@ 10,24 SAY MCODE PICT "@!"
@ 12,24 GET MCAT PICT "!"
@ 14,24 GET MDESCRIP PICT "@!"
@ 16,24 GET MQ_STOCK PICT "999999"
```

```
@ 18,24 GET MQ_REC PICT "999999"
@ 20,24 GET MCOST PICT "99999.99"
@ 22,24 GET MSDATE PICT "99/99/99"
read
set escape on
STORE SPACE(1) TO RP

@23,35 SAY "COMFIRM DATA ?(Y/N)"
@23,56 GET RP PICTURE "!"
READ
IF upper(RP)= "N"
  EXIT
ENDIF
IF upper(RP)="Y"
APPEND BLANK
REPLACE CODE WITH MCODE
REPLACE CAT WITH MCAT
REPLACE DESCRIP WITH MDESCRIP
REPLACE Q_STOCK WITH MQ_STOCK
REPLACE Q_REC WITH MQ_REC
REPLACE COST WITH MCOST
REPLACE SDATE WITH MSDATE
clear
USE INVENTOR
LOCATE FOR MCODE=CODE
 IF .NOT. EOF()
MSTBAL=MQ_STOCK+MQ_REC
MTOTCOST=MCOST*MSTBAL
```

```
*MTSELPRIC=MSTBAL*MSELPRIC
REPLACE CODE WITH MCODE
REPLACE CAT WITH MCAT
REPLACE DESCRIP WITH MDESCRIP
REPLACE  Q_STOCK WITH MQ_STOCK
REPLACE Q_REC WITH MQ_REC
REPLACE COST WITH MCOST
*UPDATE ON CODE FROM SUPPLY
REPLACE STBAL WITH MSTBAL
REPLACE TOTCOST WITH MTOTCOST
*REPLACE SELPRIC WITH MSELPRIC
*REPLACE TSELPRIC WITH MTSELPRIC
ENDIF
endif
EXIT
ENDDO
ENDDO
RETURN
PROCEDURE MOSUPPLY
* PROGRAM TO MODIFY STOCK SUPPLY
USE SUPPLY
DO WHILE .T.
CLEAR
MCODE=SPACE(8)
SET COLOR TO G+
@11,8 TO 13,70
@12,10 SAY 'ENTER THE ITEM CODE TO MODIFY OR XX EXIT.....'
```

```
@12,64 GET MCODE PICT "@!"
READ
IF MCODE="XX"
CLEAR
  WAIT
RETURN
ENDIF
GO TOP
  LOCATE FOR CODE=MCODE
   IF .NOT. FOUND()
      CLEAR
SET COLOR TO B
@10,20 SAY "INVALID NUMBER, TRY ANOTHER PLEASE....."
@13,20 SAY ""
WAIT
CLEAR
LOOP
ENDIF
************ CHECK TO SEE IF THE RECORD EXISTS
IF FOUND()
STORE CODE TO MCODE
STORE CAT TO MCAT
STORE DESCRIP TO MDESCRIP
STORE Q_STOCK TO MQ_STOCK
STORE Q_REC TO MQ_REC
STORE COST TO MCOST
STORE SDATE TO MSDATE
*STORE SELPRIC TO MSELPRIC
```

```
*STORE TSELPRIC TO MTSELPRIC
ENDIF
CLEAR
CODE=MCODE
CAT=MCAT
DESCRIP =MDESCRIP
Q_STOCK=MQ_STOCK
Q_REC=MQ_REC
COST=MCOST
SDATE=SDATE
*MSELPRIC=SELPRIC
SET COLOR TO GR+/B,W/R,GB+
@1,1 TO 23,75 DOUBLE
@2,17 SAY "THYWILL SUPER MARKET,MINNA"
@3,3 TO 22,72 DOUBLE
@4,19 SAY "S T O C K  C O N T R O L  S Y S T E M"
@5,5 TO 21,70 DOUBLE
@6,17 SAY "SUPPLY MODIFICATION"
@10,6 SAY "CODE NUMBER:"
@12,6 SAY "ITEM CATEGORY:"
@14,6 SAY "DESCRIPTION:"
@16,6 SAY "QUANTITY IN STOCK:"
@18,6 SAY "QUANTITY RECEIVED:"
@20,6 SAY "COST PER ITEM:"
@22,6 SAY "DATE OF SUPPLY:"
*@9,35 SAY "SELLING PRICE:"
*@9,35 SAY "TOTAL SELLING COST:"
```

```
@10,35 GET MCODE
@12,35 GET MCAT PICTURE "!"
@14,35 GET MDESCRIP PICTURE "@!"
@16,35 GET MQ_STOCK PICTURE "999999"
@18,35 GET MQ_REC PICTURE "999999"
@20,35 GET MCOST PICTURE "999999.99"
@22,35 GET MSDATE PICTURE "99/99/99"
*@9,60 GET MSELPRIC PICTURE "999999.99"
*@9,60 GET MSELPRIC PICTURE "9999999.99"
READ
REPLACE CODE WITH MCODE
REPLACE CAT WITH MCAT
REPLACE DESCRIP WITH MDESCRIP
REPLACE Q_STOCK WITH MQ_STOCK
REPLACE Q_REC WITH MQ_REC
REPLACE COST WITH MCOST
REPLACE SDATE WITH MSDATE
*REPLACE SELPRIC WITH MSELPRIC
*REPLACE TSELPRIC WITH MTSELPRIC
APPEND BLANK
CLEAR
CHOICE=SPACE(1)
@20,0 CLEAR TO 21,78
@15,1 SAY ""
   WAIT "DO YOU WANT TO MODIFY MORE RECORDS?(Y/N)" TO CHOICE
*@16,10 SAY "PLEASE ENTER Y OR N"
IF .NOT. UPPER(CHOICE) $"YN"
  * CLEAR
```

```
*@15,14 SAY ""
* WAIT
ENDIF
IF UPPER(CHOICE)="N"
    CLEAR
EXIT
ENDIF
IF UPPER(CHOICE)="Y"
CLEAR
 LOOP
ENDIF
  CLOSE ALL DATABASES
ENDDO
RETURN
PROCEDURE DESUPPLY
*THIS MODULE DELETES A RECORD FROM THE SUPPLY DATABASE FILE
SET TALK OFF
SET ECHO OFF
PUBLIC MCODE
USE SUPPLY
DO WHILE .T.
CODE=MCODE
MCODE=SPACE(8)
SET COLOR TO G
CLEAR
@11,8 TO 14,74 DOUBLE

@13,11 SAY "ENTER CODE NUMBER OF ITEM TO DELETE OR XX TO QUIT....."
```

```
@13,67 GET MCODE PICT "@!"
READ
************ CHECK   TO VERIFY  THE CORRECT CODE
IF MCODE="XX"
CLEAR
EXIT
*DO ASUPPLY
ENDIF
***********FIND CODE NUMBER IN SUPPLY.DBF
LOCATE FOR CODE=MCODE
** IF SUCH RECORD *********
IF EOF()
  CLEAR
 @9,13 TO 11,70
@10,20 SAY "THERE IS NO SUCH RECORD IN FILE..."
@15,20 SAY ""
   WAIT
LOOP
ENDIF
**********IF RECORD IS FOUND BEFORE THE END OF FILE
***** THEN STORE IT
IF .NOT. EOF()
******START PERFORMING REPLACEMENT************
DO WHILE .T.
@18,0 CLEAR TO 20,78
@18,1 SAY ""
WAIT "ARE SURE SURE YOU WANT TO DELETE?(Y/N)..."TO CHOICE
DO CASE
```

```
   CASE CHOICE="N"
CLEAR
EXIT
 CASE CHOICE="Y"
  CLEAR
SET COLOR TO RG+
@6,22 SAY "S U P P L Y  D E L E T I O M "
SET COLOR TO G
DELETE
PACK
 SET COLOR TO R
@9,14 TO 11,45 DOUBLE
@10,16 SAY "THE RECORD HAS BEEN DELETED!!"
@11,16 SAY ""
WAIT
CLEAR
EXIT
OTHERWISE
?CHR(7)
  LOOP
ENDCASE
ENDDO
LOOP
CLOSE ALL
ENDDO
RETURN
PROCEDURE LISUPPLY
*PROGRAM FOR LISTING ITEMS SUPPLIED
```

```
USE SUPPLY
CLEAR
C=0
S=SPACE(2)
HEAD1="CODE  "+ "CATEGORY  "+"DESCRIPTION  "+ "QUANT-IN-STOCK  ";
+ "QUANT-RECEIVED  "+ "UNIT-COST  "+" SU-DATE  "
?HEAD1
@ 2,1 SAY ""
GO TOP
L=2
DO WHILE .NOT. EOF()
*? LTRIM(CODE),S,CAT,S,TRIM(DESCRIP),S,Q_STOCK ,S,Q_REC ,S,COST ,SDATE
@ L,2 SAY LTRIM(CODE)
@ L,7 SAY CAT
@ L,16 SAY DESCRIP
@ L,28 SAY Q_STOCK
@ L,45 SAY Q_REC
@ L,58 SAY COST
@ L,73 SAY SDATE
L=L+1
SKIP
C=C+1
IF C=5
IF .NOT. EOF()
@23,23 SAY "PRESS ANY KEY FOR THE REST....."
@ 2,60 CLEAR TO 20,60
L=2
I=0
```

```
DO WHILE I=0
 I=INKEY()
ENDDO
ENDIF
@2,1 CLEAR TO 23,78
 @2,1 SAY ""
C=0
LOOP
ENDIF
ENDDO
 @23,1 CLEAR TO 23,79
@ 23,18 SAY " PRESS ANY KEY TO RETURN TO THE PREVIOUS MENU"
I=0
DO WHILE I=0
I=INKEY()
ENDDO
RETURN
PROCEDURE ADINVENT
***PROGRAM NAME:INVENTORY ENTRY
DO WHILE .T.
CLEAR
SET DATE BRITISH
CLOSE DATA
USE INVENTOR
 CLEAR
STORE SPACE(8) TO MCODE
MCAT=SPACE(1)
```

```
MDESCRIP=SPACE(18)
STORE 0 TO MQ_STOCK,MQ_REC
STORE 0.00 TO  MCOST,MSELPRIC
MSDATE=CTOD("  /  /  ")
DO WHILE .T.
CLEAR
@ 10,10 SAY 'ENTER ITEM CODE NUMBER OR XX TO EXIT.....'
@ 10,65 GET MCODE PICT "@!"
  READ
 IF MCODE="XX"
  CLEAR
  return
 ENDIF
CLEAR
@ 3,10 SAY 'THYWILL SUPER MARKET,BOSSO-MINNA'
@ 4,4 TO 24,70 DOUBLE
@ 6,10 SAY 'I N V E N T O R Y  A D D I T I O N'
@ 7,10 SAY REPLIC("=",46)
SET COLOR TO RG+/B
@ 3,60 SAY DATE()
@ 10,6 SAY 'ITEM CODE NUMBER:'
@ 12,6 SAY 'ITEM CATEGORY:'
@ 14,6 SAY 'ITEM DESCRIPTION:'
@ 16,6 SAY 'QUANTITY IN STOCK:'
@ 18,6 SAY 'QUANTITY RECEIVED:'
@ 20,6 SAY 'COST PER_UNIT:'
@ 22,6 SAY 'DATE RECEIVED:'
@12,28 SAY 'SELLING PRICE:'
```

```
@ 10,24 SAY MCODE PICT "@!"
@ 12,24 GET MCAT PICT "!"
@ 14,24 GET MDESCRIP PICT "@!"
@ 16,24 GET MQ_STOCK PICT "999999"
@ 18,24 GET MQ_REC PICT "999999"
@ 20,24 GET MCOST PICT "99999.99"
@ 22,24 GET MSDATE PICT "99/99/99"
@12,48 GET MSELPRIC PICT "999999.99"
read
set escape on
STORE SPACE(1) TO RP
@23,35 SAY "COMFIRM DATA ?(Y/N)"
@23,56 GET RP PICTURE "!"
READ
IF upper(RP)= "N"
  EXIT
ENDIF
IF upper(RP)="Y"
APPEND BLANK
REPLACE CODE WITH MCODE
REPLACE CAT WITH MCAT
REPLACE DESCRIP WITH MDESCRIP
REPLACE Q_STOCK WITH MQ_STOCK
REPLACE Q_REC WITH MQ_REC
REPLACE COST WITH MCOST
REPLACE SDATE WITH MSDATE
REPLACE SELPRIC WITH MSELPRIC
```

```
MSELPRIC=0.00
MCODE=SPACE(8)
CLEAR
ENDIF
ENDDO
ENDDO
EXIT
RETURN
PROCEDURE MOINVENT
* PROGRAM TO MODIFY STOCK INVENTORY
USE INVENTOR
DO WHILE .T.
CLEAR
MCODE=SPACE(8)
SET COLOR TO G+
@11,8 TO 13,70
@12,10 SAY 'ENTER THE ITEM CODE TO MODIFY OR XX TO EXIT.....'
@12,64 GET MCODE PICT "@!"
READ
IF MCODE="XX"
CLEAR
*  DO ASUPPLY
  WAIT
RETURN
ENDIF
GO TOP
  LOCATE FOR CODE=MCODE
   IF .NOT. FOUND()
```

```
      CLEAR
SET COLOR TO B
@10,20 SAY "INVALID NUMBER, TRY ANOTHER PLEASE....."
@13,20 SAY ""
WAIT
CLEAR
LOOP
ENDIF
************ CHECK TO SEE IF THE RECORD EXISTS
IF FOUND()
STORE CODE TO MCODE
STORE CAT TO MCAT
STORE DESCRIP TO MDESCRIP
STORE Q_STOCK TO MQ_STOCK
STORE Q_REC TO MQ_REC
STORE COST TO MCOST
STORE SDATE TO MSDATE
STORE SELPRIC TO MSELPRIC
*STORE TSELPRIC TO MTSELPRIC
ENDIF
CLEAR
CODE=MCODE
MCAT=CAT
MDESCRIP =DESCRIP
MQ_STOCK=Q_STOCK
MQ_REC=Q_REC
MCOST=COST
```

```
MSDATE=SDATE
MSELPRIC=SELPRIC
SET COLOR TO GR+/B,W/R,GB+
@1,1 TO 23,75 DOUBLE
@2,17 SAY "THYWILL SUPER MARKET,MINNA"
@3,3 TO 22,72 DOUBLE
@4,19 SAY "STOCK CONTROL SYSTEM"
@5,5 TO 21,70 DOUBLE
@6,17 SAY "I N V E N T O R Y  M O D I F I C A T I O N"
@10,6 SAY "CODE NUMBER:"
@12,6 SAY "ITEM CATEGORY:"
@14,6 SAY "DESCRIPTION:"
@16,6 SAY "QUANTITY IN STOCK:"
@18,6 SAY "QUANTITY RECEIVED:"
@20,6 SAY "COST PER ITEM:"
@22,6 SAY "DATE OF SUPPLY:"
*@9,35 SAY "SELLING PRICE:"
*@9,35 SAY "TOTAL SELLING COST:"
@10,35 GET MCODE
@12,35 GET MCAT PICTURE "!"
@14,35 GET MDESCRIP PICTURE "@!"
@16,35 GET MQ_STOCK PICTURE "999999"
@18,35 GET MQ_REC PICTURE "999999"
@20,35 GET MCOST PICTURE "999999.99"
@22,35 GET MSDATE PICTURE "99/99/99"
@9,60 GET MSELPRIC PICTURE "999999.99"
READ
REPLACE CODE WITH MCODE
```

```
REPLACE CAT WITH MCAT
REPLACE DESCRIP WITH MDESCRIP
REPLACE Q_STOCK WITH MQ_STOCK
REPLACE Q_REC WITH MQ_REC
REPLACE COST WITH MCOST
REPLACE SDATE WITH MSDATE
REPLACE SELPRIC WITH MSELPRIC
 APPEND BLANK
     CLEAR
  CHOICE=SPACE(1)
 @20,0 CLEAR TO 21,78
@15,1 SAY ""
    WAIT "DO YOU TO MODIFY MORE RECORDS?(Y/N)" TO CHOICE
*@14,10 SAY "PLEASE ENTER Y OR N"
IF .NOT. UPPER(CHOICE) $"YN"
*    CLEAR
*@15,14 SAY ""
 *WAIT
ENDIF
IF UPPER(CHOICE)="N"
    CLEAR
EXIT
ENDIF
IF UPPER(CHOICE)="Y"
CLEAR
 LOOP
ENDIF
```

```
  CLOSE ALL DATABASES
ENDDO
RETURN
PROCEDURE DEINVENT
*THIS MODULE DELETES A RECORD FROM THE SUPPLY DATABASE FILE
SET TALK OFF
SET ECHO OFF
PUBLIC MCODE
USE INVENTOR
DO WHILE .T.
CODE=MCODE
MCODE=SPACE(8)
SET COLOR TO G
CLEAR
@11,8 TO 14,74 DOUBLE
@13,11 SAY "ENTER CODE NUMBER OF ITEM TO DELETE OR XX TO QUIT......"
@13,67 GET MCODE PICT "@!"
READ
********** CHECK   TO VERIFY  THE CORRECT CODE
IF MCODE="XX"
CLEAR
EXIT
ENDIF
**********FIND CODE NUMBER IN SUPPLY.DBF
LOCATE FOR CODE=MCODE
** IF SUCH RECORD *********
IF EOF()
  CLEAR
```

```
 @9,13 TO 11,70
@10,20 SAY "THERE IS NO SUCH RECORD IN FILE..."
@15,20 SAY ""
   WAIT
LOOP
ENDIF
**********IF RECORD IS FOUND BEFORE THE END OF FILE
***** THEN STORE IT
IF .NOT. EOF()
******START PERFORMING REPLACEMENT***********
DO WHILE .T.
@18,0 CLEAR TO 20,78
@18,1 SAY ""
WAIT "ARE SURE SURE YOU WANT TO DELETE?(Y/N)..."TO CHOICE
DO CASE
   CASE CHOICE="N"
CLEAR
EXIT
 CASE CHOICE="Y"
  CLEAR
SET COLOR TO RG+
@6,22 SAY "I N V E N T O R Y  D E L E T I O M "
SET COLOR TO G
DELETE
PACK
 SET COLOR TO R
@9,14 TO 11,45 DOUBLE
```

```
@10,16 SAY "THE RECORD HAS BEEN DELETED!!"
@11,16 SAY ""
WAIT
CLEAR
EXIT
OTHERWISE
?CHR(7)
  LOOP
ENDCASE
ENDDO
LOOP
CLOSE ALL
ENDDO
RETURN
PROCEDURE LIINVENT
*PROGRAM FOR LISTING INVENTORY ITEMS
USE INVENTOR
CLEAR
C=0
S=SPACE(2)
HEAD1="CODE  "+ "CATEGORY  "+"DESCRIPTION  "+ "QUANT-IN-STOCK  ";
+ "QUANT-RECEIVED  "+ "UNIT-COST  "+" SU-DATE  "
?HEAD1
@ 2,1 SAY ""
GO TOP
L=2
DO WHILE .NOT. EOF()
*? LTRIM(CODE),S,CAT,S,TRIM(DESCRIP),S,Q_STOCK ,S,Q_REC ,S,COST ,SDATE
```

```
@ L,2 SAY LTRIM(CODE)
@ L,7 SAY CAT
@ L,16 SAY DESCRIP
@ L,28 SAY Q_STOCK
@ L,45 SAY Q_REC
@ L,58 SAY COST
@ L,73 SAY SDATE
L=L+1
SKIP
C=C+1
IF C=5
IF .NOT. EOF()
@23,23 SAY "PRESS ANY KEY FOR THE REST....."
@ 2,60 CLEAR TO 20,60
L=2
I=0
DO WHILE I=0
 I=INKEY()
ENDDO
ENDIF
@2,1 CLEAR TO 23,78
 @2,1 SAY ""
C=0
LOOP
ENDIF
ENDDO
 @23,1 CLEAR TO 23,79
```

```
@ 23,18 SAY " PRESS ANY KEY TO RETURN TO THE PREVIOUS MENU"
I=0
DO WHILE I=0
I=INKEY()
ENDDO
RETURN
PROCEDURE ADSALES
***PROGRAM NAME:ADD SALES
DO WHILE .T.
CLEAR
SET DATE BRITISH
CLOSE DATA
USE SALES
 CLEAR
STORE SPACE(8) TO MCODE
MCAT=SPACE(1)
MDESCRIP=SPACE(18)
STORE 0 TO MQ_STOCK,MQ_ISSUED
STORE 0.00 TO  MSELPRIC
MISDATE=CTOD("  /  /  ")
DO WHILE .T.
CLEAR
@ 10,10 SAY 'ENTER ITEM CODE NUMBER OR XX TO EXIT.....'
@ 10,65 GET MCODE PICT "@!"
  READ
 IF MCODE="XX"
  CLEAR
  return
```

```
 ENDIF
CLEAR
@ 3,10 SAY 'THYWILL SUPER MARKET,BOSSO-MINNA'
@ 4,4 TO 24,70 DOUBLE
@ 6,10 SAY 'S A L E S    E N T R Y '
@ 7,10 SAY REPLIC("=",46)
SET COLOR TO RG+/B
@ 3,60 SAY DATE()
@ 10,6 SAY 'ITEM CODE NUMBER:'
@ 12,6 SAY 'ITEM CATEGORY:'
@ 14,6 SAY 'ITEM DESCRIPTION:'
@ 16,6 SAY 'QUANTITY IN STOCK:'
@ 18,6 SAY 'QUANTITY ISSUED:'
@ 20,6 SAY 'SELLING PRICE PER_UNIT:'
@ 22,6 SAY 'DATE ISSUED:'
@ 10,24 SAY MCODE PICT "@!"
@ 12,24 GET MCAT PICT "!"
@ 14,24 GET MDESCRIP PICT "@!"
@ 16,24 GET MQ_STOCK PICT "999999"
@ 18,24 GET MQ_ISSUED PICT "999999"
@ 20,24 GET MSELPRIC PICT "99999.99"
@ 22,24 GET MISDATE PICT "99/99/99"
read
set escape on
STORE SPACE(1) TO RP
@23,35 SAY "COMFIRM DATA ?(Y/N)"
@23,56 GET RP PICTURE "!"
```

```
READ
IF upper(RP)= "N"
  EXIT
ENDIF
IF upper(RP)="Y"
APPEND BLANK
REPLACE CODE WITH MCODE
REPLACE CAT WITH MCAT
REPLACE DESCRIP WITH MDESCRIP
REPLACE Q_STOCK WITH MQ_STOCK
REPLACE Q_ISSUED WITH MQ_ISSUED
REPLACE SELPRIC WITH MSELPRIC
REPLACE ISDATE WITH MISDATE
clear
USE INVENTOR
LOCATE FOR MCODE=CODE
 IF .NOT. EOF()
MSTBAL=MQ_STOCK-MQ_ISSUED
MTOTSALE=MQ_ISSUED*MSELPRIC
MTSELPRIC=MSTBAL*MSELPRIC
MSALEBAL=MTSELPRIC-MTOTSALE
  REPLACE CODE WITH MCODE
  REPLACE CAT WITH MCAT
  REPLACE DESCRIP WITH MDESCRIP
  REPLACE  Q_STOCK WITH MQ_STOCK
  REPLACE Q_ISSUED WITH MQ_ISSUED
  REPLACE SELPRIC WITH MSELPRIC
  REPLACE ISDATE WITH MISDATE
```

```
  REPLACE STBAL WITH MSTBAL
  REPLACE TOTSALE WITH MTOTSALE
  REPLACE TSELPRIC WITH MTSELPRIC
  REPLACE SALEBAL WITH MSALEBAL
MCODE=SPACE(8)
ENDIF
ENDIF
EXIT
ENDDO
ENDDO
RETURN
PROCEDURE MODISALES
* PROGRAM TO MODIFY STOCK SALES
USE SUPPLY
DO WHILE .T.
CLEAR
MCODE=0
SET COLOR TO G+
@11,8 TO 13,70
@12,10 SAY 'ENTER THE ITEM CODE TO MODIFY OR 0 EXIT.....'
@12,64 GET MCODE PICTURE "999999"
READ
IF MCODE=0
CLEAR
  DO ASUPPLY
  WAIT
ENDIF
```

```
GO TOP
  LOCATE FOR CODE=MCODE
   IF .NOT. FOUND()
      CLEAR
SET COLOR TO B
@10,20 SAY "INVALID NUMBER, TRY ANOTHER PLEASE....."
@13,20 SAY ""
WAIT
CLEAR
ENDIF
************ CHECK TO SEE IF THE RECORD EXISTS
IF FOUND()
STORE CODE TO MCODE
STORE CAT TO MCAT
STORE DESCRIP TO MDESCRIP
STORE Q_STOCK TO MQ_STOCK
STORE Q_REC TO MQ_REC
STORE COST TO MCOST
STORE SDATE TO MSDATE
STORE SELPRIC TO MSELPRIC
*STORE TSELPRIC TO MTSELPRIC
ENDIF
CLEAR
MCODE=CODE
MCAT=CAT
MDESCRIP = DESCRIP
MQ_STOCK=Q_STOCK
MQ_REC=Q_REC
```

```
MCOST=COST
MSDATE=SDATE
MSELPRIC=SELPRIC
SET COLOR TO GR+/B,W/R,GB+
@1,1 TO 23,75 DOUBLE
@2,17 SAY "THYWILL SUPER MARKET,MINNA"
@3,3 TO 22,72 DOUBLE
@4,19 SAY "STOCK CONTROL SYSTEM"
@5,5 TO 21,70 DOUBLE
@6,17 SAY "RECORDS MODIFICATION"
@10,6 SAY "CODE NUMBER:"
@12,6 SAY "ITEM CATEGORY:"
@14,6 SAY "DESCRIPTION:"
@16,6 SAY "QUANTITY IN STOCK:"
@18,6 SAY "QUANTITY RECEIVED:"
@20,6 SAY "COST PER ITEM:"
@22,6 SAY "DATE OF SUPPLY:"
@9,35 SAY "SELLING PRICE:"
*@9,35 SAY "TOTAL SELLING COST:"
@10,35 GET MCODE PICTURE "999999"
@12,35 GET MCAT PICTURE "!"
@14,35 GET MDESCRIP PICTURE "@!"
@16,35 GET MQ_STOCK PICTURE "999999"
@18,35 GET MQ_REC PICTURE "999999"
@20,35 GET MCOST PICTURE "999999.99"
@22,35 GET MSDATE PICTURE "99/99/99"
@9,60 GET MSELPRIC PICTURE "999999.99"
```

```
*@9,60 GET MSELPRIC PICTURE "9999999.99"
READ
REPLACE CODE WITH MCODE
REPLACE CAT WITH MCAT
REPLACE DESCRIP WITH MDESCRIP
REPLACE Q_STOCK WITH MQ_STOCK
REPLACE Q_REC WITH MQ_REC
REPLACE COST WITH MCOST
REPLACE SDATE WITH MSDATE
REPLACE SELPRIC WITH MSELPRIC
*REPLACE TSELPRIC WITH MTSELPRIC
APPEND BLANK
CLEAR
CHOICE=SPACE(1)
@20,0 CLEAR TO 21,78
@15,1 SAY ""
   WAIT "DO YOU TO MODIFY MORE RECORDS?(Y/N)" TO CHOICE
IF .NOT. UPPER(CHOICE) $"YN"
   CLEAR
@14,10 SAY "PLEASE ENTER Y OR N"
@15,14 SAY
 WAIT
ENDIF
IF UPPER(CHOICE)="N"
    CLEAR
EXIT
ENDIF
IF UPPER(CHOICE)="Y"
```

```
CLEAR
 LOOP
ENDIF
  CLOSE ALL DATABASES
ENDDO
RETURN
PROCEDURE DESALES
*THIS MODULE DELETES A RECORD FROM THE SUPPLY DATABASE FILE
SET TALK OFF
SET ECHO OFF
PUBLIC MCODE
USE SUPPLY
DO WHILE .T.
CODE=MCODE
MCODE=0
SET COLOR TO G
CLEAR
@11,8 TO 14,74 DOUBLE
@13,11 SAY "ENTER CODE NUMBER OF ITEM TO DELETE OR 0 TO QUIT....."
@13,67 GET MCODE PICT "999999"
READ
********** CHECK   TO VERIFY  THE CORRECT CODE
IF MCODE=0
CLEAR
EXIT
*DO ASUPPLY
ENDIF
```

```
**********FIND CODE NUMBER IN SUPPLY.DBF
LOCATE FOR CODE=MCODE
** IF SUCH RECORD *********
IF EOF()
  CLEAR
 @9,13 TO 11,70
@10,20 SAY "THERE IS NO SUCH RECORD IN FILE..."
@15,20 SAY ""
   WAIT
LOOP
ENDIF
**********IF RECORD IS FOUND BEFORE THE END OF FILE
***** THEN STORE IT
IF .NOT. EOF()
******START PERFORMING REPLACEMENT***********
DO WHILE .T.
@18,0 CLEAR TO 20,78
@18,1 SAY ""
WAIT "ARE SURE SURE YOU WANT TO DELETE?(Y/N)..."TO CHOICE
DO CASE
   CASE CHOICE="N"
CLEAR
EXIT
 CASE CHOICE="Y"
  CLEAR
SET COLOR TO RG+
@6,22 SAY "D E L E T I N G  R E C O R D S"
SET COLOR TO G
```

```
DELETE
PACK
 SET COLOR TO R
@9,14 TO 11,45 DOUBLE
@10,16 SAY "THE RECORD HAS BEEN DELETED!!"
@11,16 SAY ""
WAIT
CLEAR
EXIT
OTHERWISE
?CHR(7)
  LOOP
ENDCASE
ENDDO
LOOP
CLOSE ALL
ENDDO
RETURN
PROCEDURE LISALES
*PROGRAM FOR LISTING ITEMS SUPPLIED
USE SUPPLY
CLEAR
C=0
HEAD1="CODE   "+ "CAT   "+ "DESCRIP          "+ "Q_STOCK "+ "Q_REC   " ;
+ " COST    " + "SDATE"
?HEAD1
@ 2,1 SAY ""
```

```
GO TOP
DO WHILE .NOT. EOF()
?CODE    ,CAT,TRIM(DESCRIP)          ,Q_STOCK ,Q_REC ,COST ,SDATE
SKIP
C=C+1
IF C=5 .AND. .NOT. EOF()
@23,23 SAY "PRESS ANY KEY FOR THE REST....."
DO WHILE I=0
 I=INKEY()
ENDDO
*NDIF
@2,1 CLEAR TO 23,78
 @2,1 SAY ""
C=0
LOOP
ENDIF
ENDDO
 @23,1 CLEAR TO 23,79
@ 23,18 SAY " PRESS ANY KEY TO RETURN TO THE PREVIOUS MENU"
I=0
DO WHILE I=0
I=INKEY()
ENDDO
RETURN
```

CHAPTER FIVE

CONCLUSION:

The Society is more computerised than may be imagined. The implication is the importance of people being aware of the potentialities that might influence future use of the system.

Most operating systems warrant con-current processing of on-line, and real-time system. Applications, such as stock inventory, data entry into the system are on-line, real-time environments.

When data is entered, immediate response is available and vetting is made before the data is processed. Availability of files or database for all applications is another requirement. These files are property maintained and backup for the system's effectiveness. In the proposed system, efficiency and accuracy are guaranteed.

The system is designed to provide management with timely information, and to ensure proper accountability in Thywill Supermarket. The system enhances timely report generated for all transactions in the shop as the management might deem fit.

The implementation of the system is an implication that improvement in Thywill Supermarket stock control in terms of reliability, security, effectiveness and privacy.

RECOMMENDATIONS

The project has been tested and found to work effectively under the circumstances it was tested. But with time, when the database becomes so large in the shop, it will become necessary to change the IBM XT with 20 MB hard disk on which the system was tested. This is because, apart from its speed, the hard disk is too small to handle the large database in the store.

Furthermore, any subsequent person working on this project should concentrate mostly on maintainance and expansion of the system.

There is also a need for the shop to own a printer to facilitate the implementation of the stated objectives and the Inventory reports should be generated on daily basis so as to know the daily balances of the stock items.

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