# COMPUTERIZATION OF STOCK AUDITING SYSTEM

*BY*

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# APPROVAL SHEET

This is to certify that this project report was duly carried out under supervision, and found to be adequate and satisfactory both in scope and content as per its requirement in partial fulfillment for the award of Post Graduate Diploma in Computer Science by the authority of Federal University of Technology, Minna.

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# CERTIFICATION

This is to certify that this project was carried out by Mr. Adeleke Adenrele to meet the requirement for the award of Post-Graduate Diploma in Computer Science of Federal University of Technology, Minna.

# DEDICATION

To God be the glory. I dedicate this project to Almighty God, who has in his infinite mercy and guidance seen me through the course of study and to my beloved mother, Madam C. M. Adeleke who morally and spiritually supported me.

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# ABSTRACT

The Computerization of Stock Auditing System tends to show how Computerized Stock Control System can be audited.

The operation of auditing which is used to examine the stock control records (System) was performed manually before the advent of Electronic (Computer). A Comparison of Computerized and manual stock auditing system is attempted.

The result of the Comparison shows the reasons why the Computerization of Stock Auditing System is generally preferred to manual ones.

The study assists the auditors in accessing Computer system. To have a clear view of the security and control procedures in the system, and to enable the auditors write a report based on their opinions.

# CHAPTER ONE

# GENERAL OVERVIEW OF COMPUTER

## 1.1 INTRODUCTION

No single development within the past few decades has a greater effect on accounting and business systems than the advent of electronic data processing (EDP).

Technical developments in hardware may be seen in terms of "generation". the first generation was characterised by the use of vacuum tubes or thermonionic valves, with the development of electronic transistor in 1948, the vacuum tubes became obsolete, thereby giving birth to second generation machines. the third generation machines are computer or machine produced using the technology of the middle 1960's, this machine have become more intricate through the development of printed micro-circuits so small that their detailed 'wiring' is scarcely visible.

The unifying tread throughout this process has been a persistent desire to reduce the size of the machine and make them work faster. their processing speeds being measured in micro seconds or even what is called "nanoseconds", i.e. thousand millionths of a second.

The computer system undertakes four basic data operations. these are input, processing, storage and output. Input and Output mean putting something into a computer and getting results out of it respectively. the computer reads from input and storage devices, the computer unites to output and storage devices, Before

data can be processed they must be "read"from an input device or data storage device. once data have been processed, they are "written" to an output device such as a printer, or to a data storage device.

The computer is totally objective, that is any two computers instructed to perform the same operation will arrive at the same result. this is because the computer can perform only computation and logic operations. the computational capabilities of the computer include adding, substraction, multiplying and dividing. logic capability permits the computer to make comparisons between numbers and between words. the result of the comparison is used to perform appropriate functions

The computer has many capabilities, that makes it a special machine, the reason for which it has become very important for everyday use at home or in the office. The computer is faster and more efficient at doing lenghtly or complex analysis on data in a very short time. once the procedures are specifically defined, and appropriate data is fed, rapid processing and accurate output is guaranteed. it should be pointed out however, that the computer is incapable of doing anything that can not be done manually. It must also be acknowledged that errors do occur even when computers are used, but very few, if any can be blamed on the computer itself. the majority if not all can be traced to the software writer (programme logic error), a procedural error, or mistakes made at the time raw data was being entered. All these are human errors to the extent that we can almost conclude that the computer do not

make mistakes, once the user gives correct instructions and correct data.

Computer systems are particularly perfectly suited to repetitive tasks provided of-course that appropriate maintenance procedures are in place and the environment for instance in terms of power are quite optimal. there could be sick-off though, because computers also get sick and therefore sometimes require treatment.

Computer systems have total and instant recall of data no forgetfulness they also have virtually an unlimited capacity to store data. A typical mainframe computer system will have many billions of characters stored and available for instantaneous recall at the press of a key . Large amounts of information may be store on a computer (or a disks which can be inserted into the computer like a tape cartridge) in a manageable form. it is possible to change data store on a computer particularly easily in a similar fashion to reusing tapes on a tape-recorder, once information has been entered into a computer the user can ask for summaries and breakdowns of this information expressed in anyway the user like.

At a most simple level, a computer can provide data for other computers for instance, the transfer of price information in a digital (i.e. computer-held) format over telephone lines from a regional market to the central market information center may speed up the dissemination of that information to a significant degree and with greater accuracy.

A well designed computer system will allow untrained, but educated users to use an information system or access a database (a set of store data) with no more skill than is needed to operate a video recorder. it will be available all day (and night, if necessary) and will not get bored with repeating the same task over and over. of-course, the computer has to be given precise instructions (clear and detailed instructions) and will not cope with situations unforeseen by it's designers, so there is still a need for human supervision.

Auditors should simply settle for the fact that no alternative method of data processing is a match for computers whose operation is base upon impulses moving at a speed of light.

Despite the enormity of the transformation which electronic technology has wrought in data processing methods, the implication reluctance on the part of the profession to acknowledge that the presence of the computers does radically alter.

i. The way in which accounting data is recorded.

ii. The way in which such recording must be controlled and authenticated.

iii. The training needs and attitudes of the staff responding at both management and technical levels, and

iv. The way in which the process and it's results must be audited.

## 1.2 AIMS AND OBJECTIVES OF THE STUDY

The fact is that there are numerous aims and objectives derived from using the computer in auditing, such factors are|-

i. To assist auditors in accessing computer systems.

ii. To have a clear view of the security and control procedures in the system, and

iii. To enable the auditors write a report base on their opinions.

## 1.3 SCOPE OF THE STUDY

The scope of this study covers the activities of a computerised data processing. Auditors or Consultants with little knowledge on auditing systems may find it very useful, the study tends to show how a computerised Stock Control system can be audited.

## 1.4 LIMITATION OF STUDY

This study is actually limited to clients or offices that have computerised Stock Control system. It's only designed for the internal and external auditors who would like to access a system that is computerised. We are aware of the fact that most clients have not computerised their accounting system and this has limit the study to the nature and processes involved in auditing a computerised Stock Control system.

# CHAPTER TWO

# THE COMPUTER SYSTEM AND AUDITING

## 2.1 EVOLUTION AND DEVELOPMENT OF COMPUTER

Before the advent of computer, operation in auditing were performed manually. This lead to wastage and other inefficiencies.

Today computer technology has taken over these operations making it possible for a large volume of data to be processed within minimum time. Greater efficiency has therefore been achieved in all sectors of the economy due to this innovations.

The abacus computer was invented in China at about 200 Bc and was mostly used by merchants for arithmetic purposes.

This device was followed by Napier's Bone in 1617.in the 17th century. the device was used for multiplying and dividing numbers.

A French mathematician, Blaise Pascal devised the first true adding machine called Pascal arithmetic machine at the age of 19. His machine can only add and subtract numbers.

Between 1663 and 1666, Sir Samuel Morland an Englishman invented three calculating machines the first was used for simple addition and substraction while the remaining two were used for giving access to precalculated tables.

Von Lebnitz, a German mathematician invented a calculator in 1671 that could perform both multiplication and division.

A frenchman Joseph Marie Jacquard, a weaver in 1804 invented a technique for controlling the operation of weaving loom from

information punched into paper card.

The Babbage Analytical Engine came into being in 19th century. Babbage's idea was to develop a machine from a set of instructions coded on punched cards so that these information could be retrieved. Towards the later part of the 19th century, Harman Hollarith who worked for the U.S.A census office, devised an electrical calculating machine that was used in collating data for the 1890 census.

The first generation of computers namely the Electronic Numerical Integrator And Calculator (ENIAC), Electronic Discrete Variable Automatic Computer (EDVAC), Universal Automatic Computer (UNIVAC) were all computers which made use of vacuum tubes.

The second generation of computers came about with the invention of transistors to replace the tube. They were smaller in size, more reliable and faster than their predecessors. Between 1960 and 1965, Burroughs developed a fully transisterised computer for the U.S.A Airforce.

Third generation computers made use of the Integrated Circuit. These are actually tiny silicon chips which are mounted on a semi-conductor base. Electrons move through these circuits at a very fast pace there by causing a speedy processing of information.

They were also less expensive than those of the previous generation.

The fourth and fifth generation of computers have altogether, the capacity to process a variety of data simultaneously (i.e. They make use of parallel logic as against sequential logic ). Among

other features, they possess non procedural language structures, the ability to specify a V.D.U, screen verbal input of data, etc computer experts, are now visualising the beginning of artificial intelligence (that is computers that is capable of exhibiting the behaviour of an intelligent person) .

## 2.2 CLASSIFICATION OF COMPUTERS

computers can be classify by the following:-

### A. CLASSIFICATION BY TYPE OF DATA PROCESSED

Classification of computers by the type of data processed is broadly referred to as types of computers. statisticians generally classify data collected by counting as discrete data. Basically, computers are divided into three types.

1. **Digital computers:-** These operates on discrete signals or discontinuous manner using binary system.
2. **Analog computers:-** These operates on continuous signals using physical variables such as pressure, temperature etc.
3. **Hybrid computers:-** These combines the features of both digital and analog computers. There outputs could be in the form of discrete or continuous valve or a combination of both.

### B. CLASSIFICATION BY PURPOSE.

1. **Special Purpose Computers:-** these are designed to carry out specific task such as telling time, monitoring human temperature etc.
2. **General Purpose Computers:-** These are not specifically

designed or built for specific jobs. They solve various kinds of problems depending on the program or software loaded into them.

**C. CLASSIFICATION BY AGE OF TECHNOLOGY.**

The growth of computers can be divided into five distinct generations.

1. **First Generation Computers:-** This generation was characterized by the use of vacuum tubes or thermionic valves. This era is between the period of 1940 and 1959.
2. **Second Generation Computers:-** The computers of this generation used the electronic transistor. This era can be estimated roughly as the period from 1959 to 1964.
3. **Third Generation Computers:-** This generation computers used Integrated Circuits (IC). They are computers produced using the technology of the middle 1960's.
4. **Fourth Generation Computers:-** This generation is charaterised by the use of very large scale Integration (VLSI).
5. **Fifth Generation Computers:-** This generation is Influenced by the advent of Artificial Intelligence (AI), Speech, Processing, Parallel Architecture, Pattern Recognition and Expert System.

**D. CLASSIFICATION BY SIZE (Categories of Computers)**

1. **Micro Computers:-** These are smallest Machines and the latest development. The Micro Computer has a Single Micro Processor and a limited main storage. It usually has a single V.D.U. with low speed dot matrix printer. It also has small backing

storage devices in form of diskettes, cassettes, floppy discs, etc Micro Computers are usually designed to serve as personal computers.

2. **Mini Computers:-** These are small computer machines which have all of the main frame. There is no clear distinction technically between the two, except for the small size processor and main storage, up to twenty VDU's and a line printer (if used) of up to three hundred lines per minute can be supported by these systems.

3. **Main Frame Computers:-** These are large machines having very large processors and a massive amount of main storage. They have memory capacity of between 0.1 and 8 million characters and a large number of magnetic disk and tape units. They also have the ability to support more than a hundred Visual Display Units (V.D.U'S) and are capable of printing as many as 2,000 lines per minute.

4. **Super Computers:-** From the name, this implies the largest, fastest and the most expensive. Supercomputers can be seen as an improvement technologically on the main frame computers.

## 1.3 APPLICATION OF COMPUTERS

Computers have a wide range of applications. It is find Useful in science and Engineering Application, Banking, Industrial Application, Agriculture, Forestry, Education, Oil and Gas exploration, Travel and Tourism, Airlines, Hotels, Defence, Aerospace, Technology, Electronics, car assembly, Medical care etc

to mention but a few. Infact the list is endless as new inclusion to the list of computer uses, is the Introduction of the Computerised Communication System (an Innovation in Nigeria in this present decade) also Banks, Auditing Firm and Financial Houses, now use of Computerised Accounting System.

## 2.4 COMPARISM BETWEEN COMPUTERISED AND MANUAL AUDITING SYSTEM

After a careful research on this study, the following are the reasons advocated indicates why the computerised stock auditing system are generally preferred to manual ones .

1. **THE NATURE AND VOLUME OF DATA INVOLVED**

For small firms or companies where the number of data provided are small, the information required are usually not much. However, if the size of the company increased in terms of data, material and human resources, need the services of a computer. such Individual will find it extremely difficult to cope in such a case, there is the need to install a computer to handle it's large volume of data processing.

2. **ACCURACY**

The need for accuracy in the computed results (weather manual or electronic) of any Auditing System can not be over emphasised. consider the adverse effect on the financial statement of a small surviving company who as a result of poor manual recording system computes its monthly sales as ₦245000 instead of ₦24500. This has

brought a great support for computerization of the stock auditing system. such error would have been detected if the control procedures for input variables, processing and output were taken into consideration in a computerised system. it should be noted that once data are correctly programmed, the computer can be relied upon for considerable accurate results.

3. **TIMING CONSIDERATIONS**

Some system are more time-critical than others. At a time were data's for profit or loss figures are required at Irregular and unpredictable intervals. The manual system has to make reference to it's filling system this actually takes time. if we consider the computerised system where all inputs are already inputed into the computer, we can easily go to the computer by the aid of such in built functions request for such information and get them without much delay.

4. **REPETITIVENESS**

As financial statements i.e. profit and loss account and balance sheet are produced for clients or companies daily, weekly and monthly, doing it manually can be pure drudgery and unpleasant boredom which can inturn lead to ill-prepared financial statements. The computer can however be relied upon to repeat a processing cycle as many times as required without the fear of tiredness. computer do not go on break like human beings.

5. **SPEED**

Computer process data at a very fast speed. The larger computer actually process millions of instructions per second which

of course is an incredible speed compared to a manual approach.

## 2.5 DEFINITION OF TERMS

### 2.5.1 **AUDITING**

This is the independent examination of records and draft accounts produced by clients. for auditing to exist there need to be an accounting records in operation.

### 2.5.2 **VOUCHERS**

This is a document that contains records of items of expenditure (payment) or receipt (income) on it. The expenditure voucher is called payment voucher while the income voucher is called Receipt Voucher. Vouchers are source documents in auditing.

### 2.5.3 **CASH BOOK**

A cash book is a book that records both Income and Expenditure. Income are recorded on the debit side (left side) and expenditure on the credit side (right side). They are normally divided into two columns the debit and credit sides. They are extracted from the vouchers.

### 2.5.4 **LEDGER ACCOUNT**

A ledger account is a book that records the subsidiary entries of all other accounts . it is the principal books of accounts. the ledger accounts are extracted from the cash book .

### 2.5.5 **TRIAL BALANCE**

A trial balance is used to test the arithmetical accuracy of the ledger. A trial balance has two columns, the debit and credit

side. The debit takes record of the expenses while the credit side keeps record of the income . They are normally extracted from the ledger accounts.

2.5.6 **TRADING, PROFIT AND LOSS ACCOUNT**

The trading account keeps record of the trading activities. it keeps tracts of purchases and sales while the profit and loss account keep records of expenses and other income.

2.5.7 **BALANCE SHEET**

The balance sheet is a statement that contains assets and liabilities of a company. it is not an account. it merely records assets i.e. Motor, Vehicle, Land, Cash, etc and liabilities i.e. Creditors, Capital, etc

2.5.8 **COMPLIANCE TEST**

It is defined as a test an auditor caries out in order to determine the effectiveness of internal control in operation as a basis for the preparation of the accounts. The computerised auditing system adopts the compliance test in evaluating the effectiveness of the systems.

# CHAPTER THREE

# AUDITING SYSTEMS AND CONTROL

## 3.1 ANALYSIS OF THE AUDITING SYSTEM

The computerized auditing system is a unique auditing system that made use of the electronic data processing. it should be noted that certain programs are tailor made to meet users requirements and these may be written by the company's own programmers or by a specialist "software house".

The auditor who knows what he wants from the system will have much to do and to say, in a positive sense.

In most cases a system notes or systems flow chart are normally drawned up and an auditor is expected to do his work according to the laid down instructions in the systems note or flow chart.

In view of the defect on the manual auditing system such as|-

i. Less accuracy in manual system due to poor recording system.

ii. Low speed processing in manual auditing system.

iii. Poor repetitiveness in manual auditing system. as financial statements such as profit, loss account and balance sheet are produce for client daily, weekly, and monthly.

iv. Poor timing in manual system in a situation were data's for profit or loss figures are required at irregular and unpredictable intervals. the manual system have to make reference to it's filling system which takes some time.

v. Poor handling of large volume of data in manual system.

Therefore there is need for the computerized auditing system to be develop. The computerized auditing system have to it's credit

i. High accuracy of computation, once the right or correct data have been inputed computer will processed the data according to the instruction and produce accurate result.

ii. Computer processed data at a very fast speed.

iii. Computerized auditing system can be relied upon for repetitiveness of processing cycle as many times as required without the fear of tiredness.

iv. Computerized auditing system do not take time were data for financial statement are required at irregular or unpredictable intervals.

v. Computerized auditing system is needed in handling a large volume of data processing.

## 3.2 CONTROLS OVER INPUT

Effective input control begins "at home", in the originating department although certain controls operate in the Electronic Data Processing section, and in the programs themselves, there is no substitute for the imposition of clerical controls over (a) the accuracy, and (b) the completeness of data transmitted for processing, the importance of the "GIGO" (Garbage in, Garbage out) principle can not be emphasised too strongly.

The extent of the users department is it self involved with data conversion (i.e. punching into machine-sensible form) or able to transmit input directly via user-based terminals. Almost all

controls will seek to ensure that the input,

(a) represents a valid record of actual transactions,

(b) is authorized by the appropriate official

(c) is correctly classified (coded) for the purpose of the accounting or statistical exercise whose results are sorted,

(d) is accurately translated into machine-sensible form.

It should be noted with some type of input preparation equipment that provides printed lists of all items included in the input, thus providing a visible record against which the original documents may be checked by auditors.

## 3.3 CONTROL OVER PROCESSING

Program controls should be an important role the auditor must do by ensuring that, advising and testing at the preliminary stages of the system development is done and also, a suitable range of control procedures are included.

The commonest of these controls in most systems will ensure,

(i) That only the data relating to a particular application is processed and reading the header labels will ensure that out of data input tapes, or those relating to other applications, are not read in accidentally,

(ii) Completeness and accuracy of processing, i.e. that all input is in fact deal with the use of intermediate print outs of sub-totals created for control purposes against which control totals created for control purposes against which control totals created at the input stage may be checked, is one

method of achieving this.

## 3.4 CONTROL OVER OUTPUT

Controls over output can be achieved by comparing output with input this is to ensure that

(i) Output relates precisely to the original input,

(ii) It represents the outcome of a valid and thoroughly listed program of instructions.

(iii) It fully meets the requirements of the management in all user departments, and at all levels.

## 3.5 FLOW CHART

A flow chart is a schematic (diagrammatic) representation of an algorithm to solve a specific problem. A systems flow chart tends to give a set of logical order in which a given task is expected to be achieved. Auditor's who audits a system are normally expected to refer to the system flow charts and programs when difficulty arises.

### 3.5.1 FLOW CHART SYMBOLS

The standardized symbols for flow charting as stipulated by the International Standard Organisation (ISO), the American National Standard Institute (ANSI)and International Business Machine (IBM) amongst others in 1970, some useful for auditing purposes are given below:-

The normal flow charting convention is that the flow chart flows from top to bottom and from left to right. This rule of thumb can however be altered by using arrows to indicate the direction of flow, and circled labels to infer explicit links in the flow.

## 3.6 INTERNAL CONTROL

The internal control is defined by the operational standard (guide lines) as being the whole system of controls, financial and otherwise, established by the management in order to carry on the business of the enterprise in an orderly and efficient manner, ensure adherence to management policies, safeguard the assets and secure as far as possible the completeness and accuracy of the records.

The internal control however has more to do with the system based audit. This is done by recording, assessment and evaluation of the systems by aids of established controls by management.

### 3.6.1 TYPES OF INTERNAL CONTROLS

The following is a description of some of the types of controls which the auditor may find in many enterprises and on some or a combination of which he may seek to place some degree of reliance.

**Organisation**

Enterprises should have a plan of their organisation, defining and allocating responsibilities and identifying lines of reporting for all aspects of the enterprises operations, including the

controls. The delegation of authority and responsibility should be clearly specified.

**Segregation of duties**

One of the prime means of control is the separation of those responsibilities or duties which would, it combined, enable an individual to record and process a complete transaction. Segregation of duties reduces the risk of intentional manipulation or error and increases the element of checking. Functions which need to be separated include those of authorisation, execution, custody, recording, systems development and daily operations.

**Arithmetic and Accounting**

These controls within the recording function which check that the transactions to be recorded and processed have been authorised, that they are all included and accurately processed. such controls include checking the arithmetical accuracy of records by the use of check digits, parity checks, reasonableness checks, sequence check, hash totals and accounting for documents.

3.6.2 **INTERNAL CONTROL QUESTIONNAIRE (I.C.Q)**

The questionnaire is a standardized pre-printed documents, designed by the audit firm using it, and comprises a series of questions, each of which raises an enquiry on internal control. it is divided into sections which roughly correspond with the client organisation's natural divisions.

The I.C.Q may differ substantially between one auditing firm and another, although the purpose is the same. The Internal Control Questionnaire in an computerized auditing system is almost drawn

the same way the manual system is operated. The computerized auditing system makes use of the following components i.e. Yes, indicates compliance, No, indicates problems, Not Applicable (N/A) indicates that the question does not applies(fit in).

A specimen form of I.C.Q in an computerized auditing system is given below:

| ICQ Reviewed | | | Initials | | |
|---|---|---|---|---|---|
| | | | Date | | |
| Tick As Appropriate | | | | | |
| Yes | No | Not Appli-cable | Ref. to I/C(No Answers) | Ref. to system note/Flow-chart | Date of answer |

Fig.1

## 3.7 AUDITING ROUND AND THROUGH THE COMPUTER

Despite the very significant changes in recording systems brought about by the Electronic Data Processing, their effect upon the auditor's work would be minimal, if it were still possible to relate on a "one to one" basis, the original input with the final output or putting it another way, if the audit trial were always preserved intact.

The execution of normal audit test on records which are produced by computer, but which are nevertheless as complete as

indicated below is usually described as audit testing **round the machine**. The normal audit test could be as shown below|-

(i) The output itself is as complete and as detailed as in any manual system.

(ii) The trial from beginning to end, is complete so that all documents may be identified and located for purposes of vouching, totalling and cross referencing.

The auditing round the machine can mostly be described as a detailed manual approach in a conventional system. Documents are trailed from it's initial source to the balance sheet and profit and loss account.

Auditing **through the computer** or machine is a process that the auditor engages in testing the invisible processes which purport to embody the controls and produce the output with the use of the computer by providing the accuracy of the input data then through examines (by applying tests) the processing procedures with a view to establishing that

(i) All input is actually introduced into the computer.

(ii) Unusual conditions in the input do not cause mis-processing.

(iii) Neither the computer nor the operators can cause undetected irregularities in the final reports,

(iv) The programs appear, on the evidence of rejection and exception routines, to be functioning correctly.

(v) All operator intervention during processing is printed out on the console log, which is at all times under the custody of the EDP manager.

It should be noted that loss of audit trial could occur in auditing through the computer in this case the loss is not total. The trial can be reconstructed, it would mean returning to source documents possibly having to re-sort them into their original batches.

The auditor when auditing through the computer usually relies on the use of test packs. The test packs are used for ascertaining weather the controls residing in the hardware and in the programs are operating correctly. The auditor should be capable of ascertaining whether the 'edit" checks are operating as intended, and of interpreting the error reports arising from the deliberate input of invalid data.

After processing, the printed results will be compared with his expected solutions, already determined and scheduled as part of the working papers on his file.

## 3.8 THE FILE CONTROL

In auditing an Electronic Data Processing System, it will be formal that much reliance is normally placed within the system, upon standard forms and documentation. However strict adherence is placed on procedures laid down. it is important that the auditor should ensure that an audit control file be built up as part of the working papers.

The followings should be included in the audit control file |-

i. Copies of all forms of source documents, details of checking carried out to ensure their accuracy should be part of the working papers.

ii. Full description of how the source documents are to be converted into input media, the checking and control procedures.

iii. A detailed flow diagram of what takes place during each routine processing run.

iv. Details of all tapes and discs in use. including their Labelling Layout, Storage and Retention arrangements, and

v. The auditor's own comments on the effectiveness of the controls.

# CHAPTER FOUR

# AUDITING PROCESSES

## 4.1 THE FORM OF THE INTERNAL CONTROL QUESTIONNAIRE

The form of the ICQ may differ substantially between one auditing firm and another, although the purpose in each case is the same. The ICQ used in practice is slightly modified for instructional purposes and only a section of questions in the key areas of the ICQ are included. The sub-divisions selected are:-

i. Purchases and Trade Creditors

ii. Sales and Trade Debtors

iii. Stocks and Work in Progress

iv. Industrial Wages

v. Payments.

The following important factors should be taken into consideration when designing an Internal Control Questionnaires.

(1) Answers should be based on replies given by senior client personnel as well as on one's own tests and observations.

(2) Whenever the "NO" column is ticked an explanatory note should be added to the "weakness' section of the current working paper file. References are made in the working paper file. The "NO" indicates give reasons why?

(3) At the completion of the final audit the ICQ should be carefully reviewed to ensure its continued accuracy in the light of the audit experience just again.

(4) All controls indicated should be subject to compliance tests to ensure their operation at all times.

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| **section (i) Purchase and Trade Creditors** | Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of answer |
| i,Are official orders Issued showing names,suppliers,quantity ordered and prices? | | | | | | |
| ii,Are copies of orders retained on file? | | | | | | |
| iii,Who authorises orders and what are their authority limits?<br>Specify :-<br>Name-------<br>Position---<br>Authority--<br>limit------ | | | | | | |
| iv,Are the above persons independent of those who | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| issue requisitions? | | | | | | |
| v, Is a record kept of order place but not executeed? | | | | | | |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of Answer |
| vi, If the answer to (v) is'Yes', how is this compiled? specify. | | | | | | |
| vii, Are goods from suppliers inspected on arrival as quantity and quality? | | | | | | |
| viii, Are all invoices received<br>- Compare with copy order?<br>- Compare with goods inward records? | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| - Checked prices?<br>- Checked calculations, extensions and additions?<br><br>ix, Are the above functions carried out by | | | | | | |

| I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|
| Tick as Appropriate | | | | | |
| Yes | No | Not Applicable (N/A) | Ref to I/C letter ("NO" answers) | Ref to flow chart/ system notes | Date of Answer |
| | | | | | |
| a person independent of those responsible for<br>- Ordring functions?<br>- Receipt and control of goods?<br><br>x, Are bought personnel independent of those responsible for<br>- Approving invoices and credit note?<br>- Cheque and | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| cash payment functions? | | | | | | |
| xi, Is the control account function independent of bought ledger personnel? | | | | | | |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| **SECTION(ii) Sales and trade Debtors** | Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of Answer |
| i, How are sales order recorded, including those received other than by post? specify. | | | | | | |
| ii, Are orders from customers approved before acceptance by the sales department? | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| iii, If answer to (ii) is "Yes" how is approval evidenced? | | | | | | | |
| iv, Are customers' credit limit checked against their balances before orders are accepted? | | | | | | | |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable (N/A) | Ref to I/C letter ("NO" answers) | Ref to flow chart/ system notes | Date of Answer |
| v, Is this function carried out by a person independent of the sales department? | | | | | | |
| vi, Are sales Invoices compared with :- | | | | | | |
| - Sales order? | | | | | | |
| - Goods despatched notes? | | | | | | |
| - Receipt advice/delivery notes? | | | | | | |

| I C Q Reviewed | | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable (N/A) | Ref to I/C letter ("NO" answers) | Ref to flow chart/ system notes | Date of Answer |
| vii, Is the function carried out by a person independent of those who<br>- Record despatches?<br>- Prepare invoices?<br>- Accepting orders?<br>- Cash receipt functions? | | | | | | |
| viii, Are statements of accounts regularly sent to customers (e.g Monthly)? | | | | | | |
| ix, Are statements checked before despatched to customers by persons independent of<br>- The sales | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| ledger personnel?<br>- Cash receipt functions ? | | | | | | |
| **SECTION (iii) Stock and Work in progress** | | | | | | |
| i,Is the storage accommondation adequate to pr- | | | | | | |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of Answer |
| vide protecion against<br>- Deterioration?<br>- Access by unauthorised persons?<br>- Any local hazards? | | | | | | |
| ii,Are requisitions made by the users department properly Authorised? | | | | | | |
| iii,Who are authorized | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| to sign for requisitions? | | | | | | |
| iv,Are binacards maintained at store locations ? | | | | | | |
| v,Are continuous stock records maintained for\| - Raw materials ? | | | | | | |

| I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|
| Tick as Appropriate | | | | | |
| Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of Answer |
| | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| - Bought out components? - Consumable stores ? - Finished goods? - Stocks held on behalf of third parties? | | | | | | |
| vi,Are these records maintained - In quantity only ? - In value only ? | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| - In both quantity and value ? | | | | | | |
| vii, Are stores records maintained by a person independent of<br>- The stores keepers ?<br>- Those responsible for physical counting or checking | | | | | | |

| I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|
| Tick as Appropriate | | | | | |
| Yes | No | Not Applicable (N/A) | Ref to I/C letter ("NO" answers) | Ref to flow chart/ system notes | Date of Answer |
| stocks ? | | | | | |
| viii, Is the costing system fully integrated with the financial authorised ? | | | | | |
| ix, How are wo-orders authorised ? specify | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| x,On what basis are materials, labour and direct costs charged to work in progress accounts? specify? | | | | | | |
| xi,Are overheads clearly divided into fixed and variable overheads ? | | | | | | |
| xii,Does the | | | | | | |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of Answer |
| system ensure that excess or abortive costs are written off and not carried foward in work in progress ? | | | | | | |
| **SECTION (iv) Industrial Wages** | | | | | | |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable (N/A) | Ref to I/C letter ("NO" answers) | Ref to flow chart/ system notes | Date of Answer |
| i, Are the duties of the wages staff rotated periodically ? | | | | | | |
| ii, Are personnel files kept for each member of staff, independently of the wages department ? | | | | | | |
| iii, What are the normal working hours ? specify\|- | | | | | | |
| iv, On what basis is overtime paid? specify\|- | | | | | | |
| v, Who authorizes overtime and how is it evidenced? specify\| | | | | | | |
| vi, Does the | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | system provide for independent periodic checking with personnel records of<br>- Names of payroll ?<br>- Rates of pay and deductions ?<br><br>vii, Is the wages cheque compared by the cheque signatory with | | | | | | |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable (N/A) | Ref to I/C letter ("NO" answers) | Ref to flow chart/ system notes | Date of Answer |
| the payroll summary ?<br><br>viii, Are persons responsible for wages pay out independent of the preparation of the payroll ? | | | | | | |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of Answer |
| ix,What records are maintained for unclaimed wages? specify\|- | | | | | | |
| x,Is an authority required before an employee can collect unclaimed wages ? | | | | | | |
| **SECTION (V) Payments** | | | | | | |
| **A.By cheque** | | | | | | |
| i,Is the signing of blank cheques prohibited ? | | | | | | |
| ii,Is the signing of cheques restricted to directors/ secretary/ other senior official (specify tittle) ? | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| iii, Are authorities to sign cheques stratified on the basis of amount so as to require;<br>- One signatories ?<br>- Two signatories ?<br>- More signatories ? | | | | | | |
| iv, Is a duly auithorised invoice, statement or other | | | | | | |

| I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|
| Tick as Appropriate | | | | | |
| Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of Answer |
| | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| voucher produced in respect of each payment for which a cheque is been signed ?<br><br>v, Are all cheques(other than those | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| for cash) suitably crossed ? | | | | | | |
| vi,Are these cheques filled in the order on which they appear in cash book ? | | | | | | |
| **B.By Cash** | | | | | | |
| i,Are supporting vouchers required before making cash payments ? | | | | | | |
| ii,Are supporting vouchers examined and properly authorised ? | | | | | | |
| iii,Are the vouchers file in order of payment ? | | | | | | |

| I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|
| Tick as Appropriate | | | | | |
| Yes | No | Not Applicable(N/A) | Ref to I/C letter ("NO"answers) | Ref to flow chart/ system notes | Date of Answer |

| | I C Q Reviewed | | | Initials Date | | |
|---|---|---|---|---|---|---|
| | Tick as Appropriate | | | | | |
| | Yes | No | Not Applicable (N/A) | Ref to I/C letter ("NO" answers) | Ref to flow chart/ system notes | Date of Answer |
| iv, Is the expenditure properly analysed and coded into the computer ? | | | | | | |
| v, Does the system disallow<br>- The cashing of cheques ?<br>- Cash payments unsupported by vouchers ?<br>- I.OUS ? | | | | | | |
| VI, Are checks made on the balance of cash in hand random intervals by an independent official ? | | | | | | |
| vii, How are such checks evidenced ? | | | | | | |

## 4.2 PROCEDURAL CONTROL QUESTIONNAIRE

The procedural control questionnaire are set of instructions that relate to input controls, processing controls, output controls and master file controls. The questionnaire is designed taking into consideration the operational system.

| | TICK AS APPROPRIATE | | |
|---|---|---|---|
| **A. INPUT CONTROLS** | YES | NO | N/A |
| a, Establishments of control | | | |
| 1, Is control for complete and accurate processing first established:- | | | |
| (a) Before the documents are batched by use of:- | | | |
| i, Controls from prior procedures? (describe) | | | |
| ii, Clerical sequence checks ? | | | |
| iii, Retention of copies ? | | | |
| iv, Any other method ? (describe) | | | |
| (b) Clerically after batching by use of:- | | | |
| i, Control totals ? (describe) | | | |
| ii, Any other method ? (describe) | | | |
| (c) By the computer by use of\|- | | | |
| i, Control totals ? (describe) | | | |
| ii, Sequence checks ? | | | |
| iii, Any other method ? (describe) | | | |
| 2, (a) What controls are established over data fields that contain significant reference data (e.g. check digit verification and matching with master file records)? (describe) | | | |
| (b) Verification of conversion | | | |
| i, Is the conversion of data independently verified ? | | | |
| ii, How does the system ensure that all errors are corrected ? (describe) | | | |
| (c) Authorization of input | | | |
| i, Is all input data adequately authorised ? | | | |
| ii, Is the computer programmed to carry-out significant authorizing functions( e.g. limit and reasonableness checks)? | | | |

| | TICK AS APPROPRIATE | | |
|---|---|---|---|
| | YES | NO | N/A |
| **B. PROCESSING CONTROLS** | | | |
| (a) Rejections | | | |
| i, Is there a list of the reasons for which data can be rejected ? | | | |
| ii, What are the procedures for investigating, correcting and re-submitting the rejected data and recording the action taken ? (describe) | | | |
| (b) Intermediate print out of control data during processing | | | |
| i, If control is established prior to processing, is the control used to verify all(or some) accounting data on final output ? (describe) | | | |
| ii, If not, is it used to verify processing to certain stage by checking intermediate output (e.g. input totals printed and checked on edit list)? (describe) | | | |
| **C. OUTPUT CONTROLS** | | | |
| (a) General | | | |
| i, What is the print out used for (e.g. to originate or support entries in the books for control purposes)? (describe) | | | |
| ii, Does the print out contain sufficient information to\|- | | | |
| a, Trace source documents to it ?, | | | |
| b, Verify computer generated calculations and totals ? | | | |
| (b) Output directly related to input | | | |
| i, Are the totals and details checked clerically with controls established prior to processing?, or obtained from intermediate print out? | | | |
| ii, If not are there adequate program controls to ensure the completeness and accuracy of the data printed out?(describe) | | | |

**D. MASTER FILE CONTROL**

(a) Amendments to outstanding date|-

i, How are amendments authorised?(describe)

ii, Is this authorization adequate?

iii, Are processing amendment checked in details?

| | | |
|---|---|---|
| | | |

| TICK AS APPROPRIATE | | |
|---|---|---|
| YES | NO | N/A |
| | | |

(b) Maintenance of standing data and transaction data|-

i, How often are standing data verified|-

- Is it by print outs of individual items?
- Is it by print outs of totals for reconciliation or computer established record of totals?

# CHAPTER FIVE

## 5.1 RECOMMENDATION AND CONCLUSION

Despite the technical innovations in Computerization of Stock Auditing system.

The external and internal auditors still have to work both through the computer and round the computer. This is done to ensure that both internal controls are maintained both manually and through the computer before relying on the results (output) produced to the auditor to prepare the financial statements.

The auditor is faced with the consequence of some problems which limits the extent in which the auditor can audit the system. These factors are knowledge and experienced, audit documentation in most cases rely mainly on the output produced by the clients. It is only after checking and ensuring that the system is operating with established controls which the auditor is expected to comply with.

It should be noted that the auditor in executing his duties will have to give due consideration to the elements of any weakness discovered, as well as to the possible existence of compensating controls which may offset their effect in practice.

It will be appreciated that the audit of smaller concerns will rarely require the use of sophisticated audit techniques and in cases where there is no Computerized Stock Control System, the approach of round the computer should be adopted as a way out.

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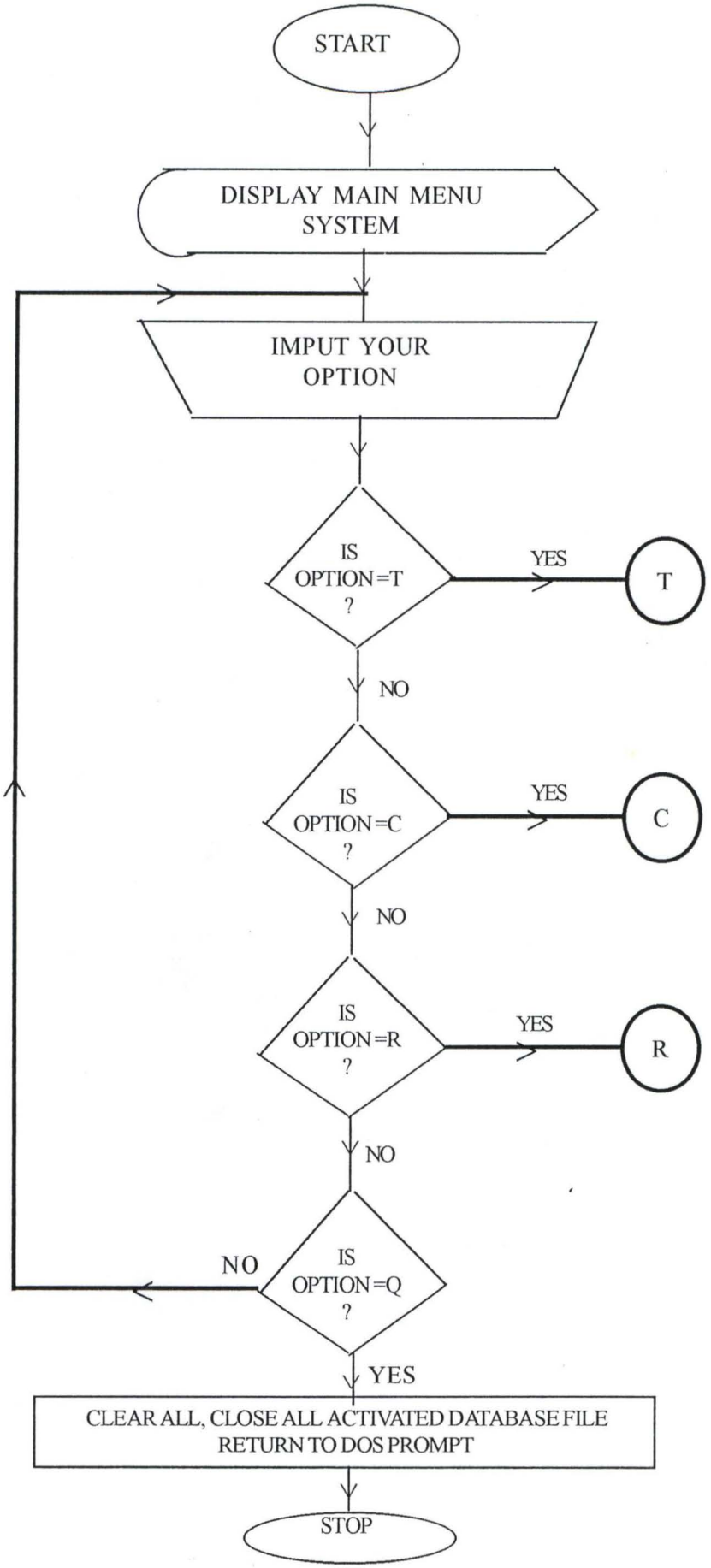
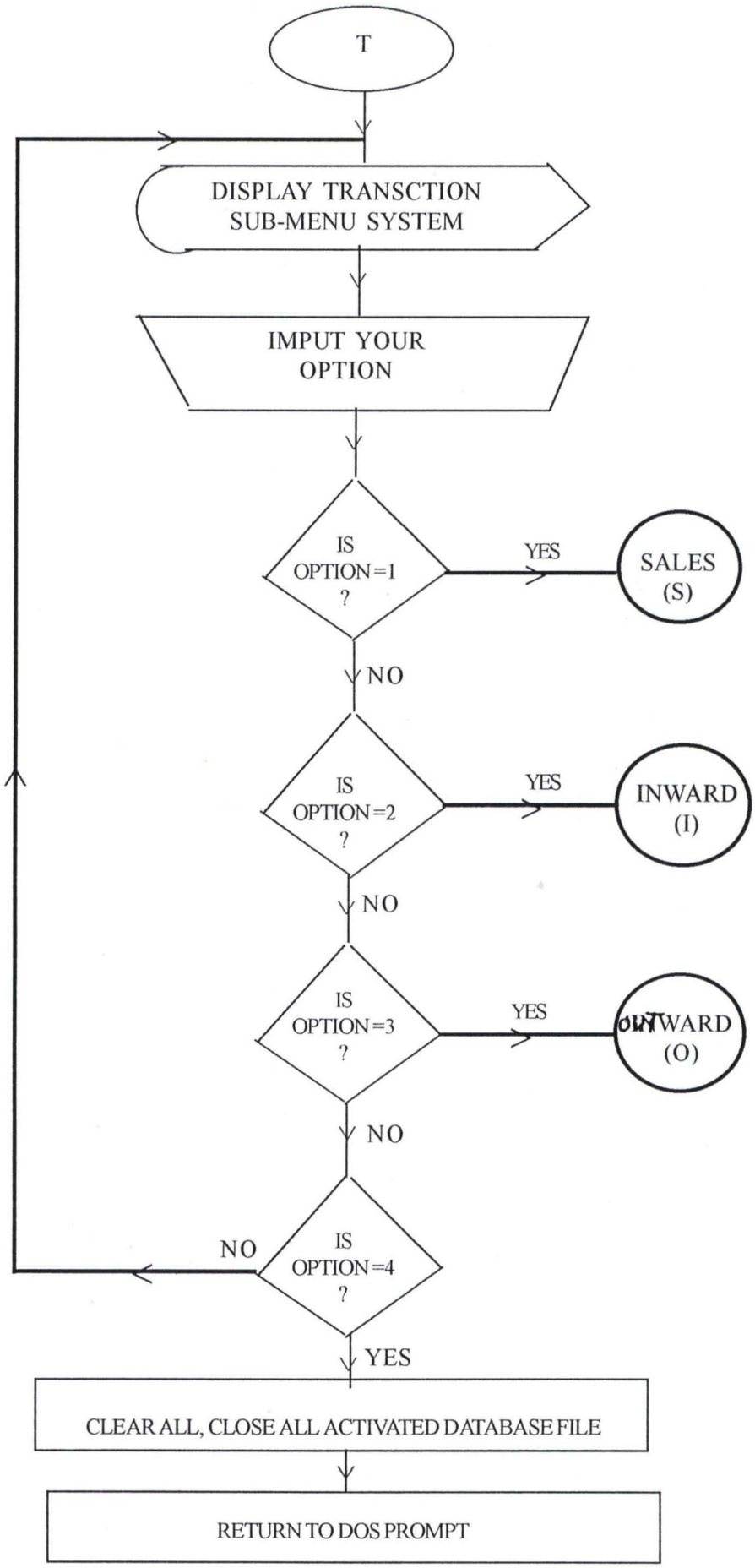
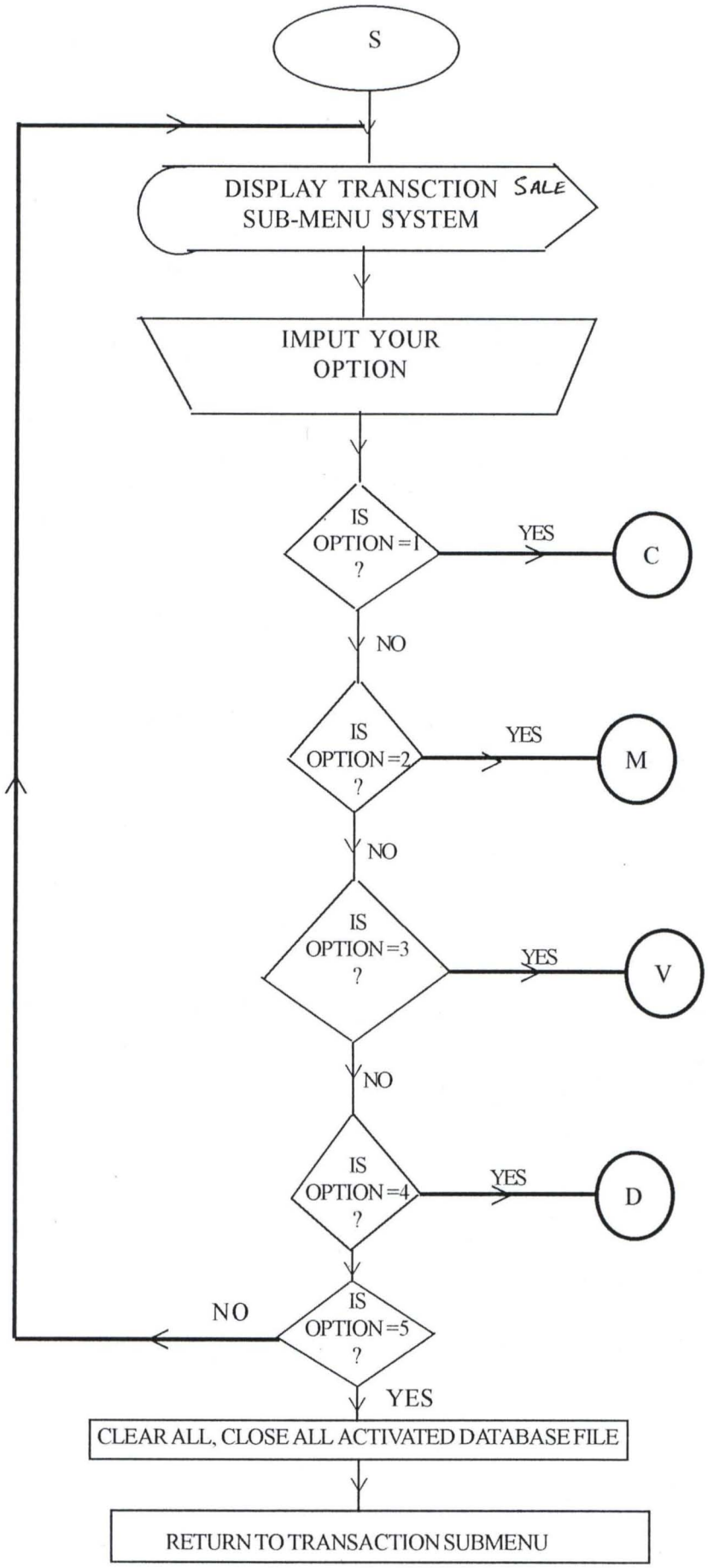
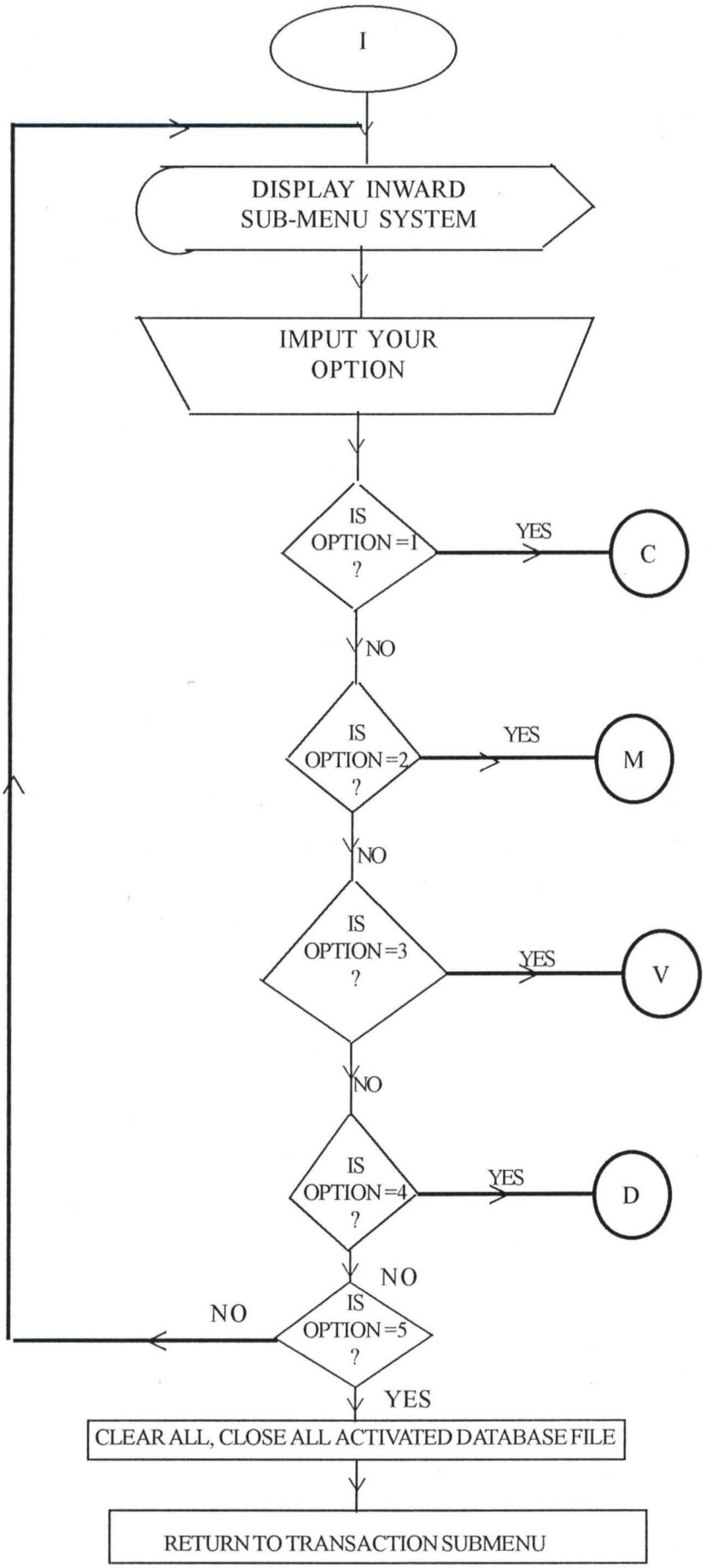
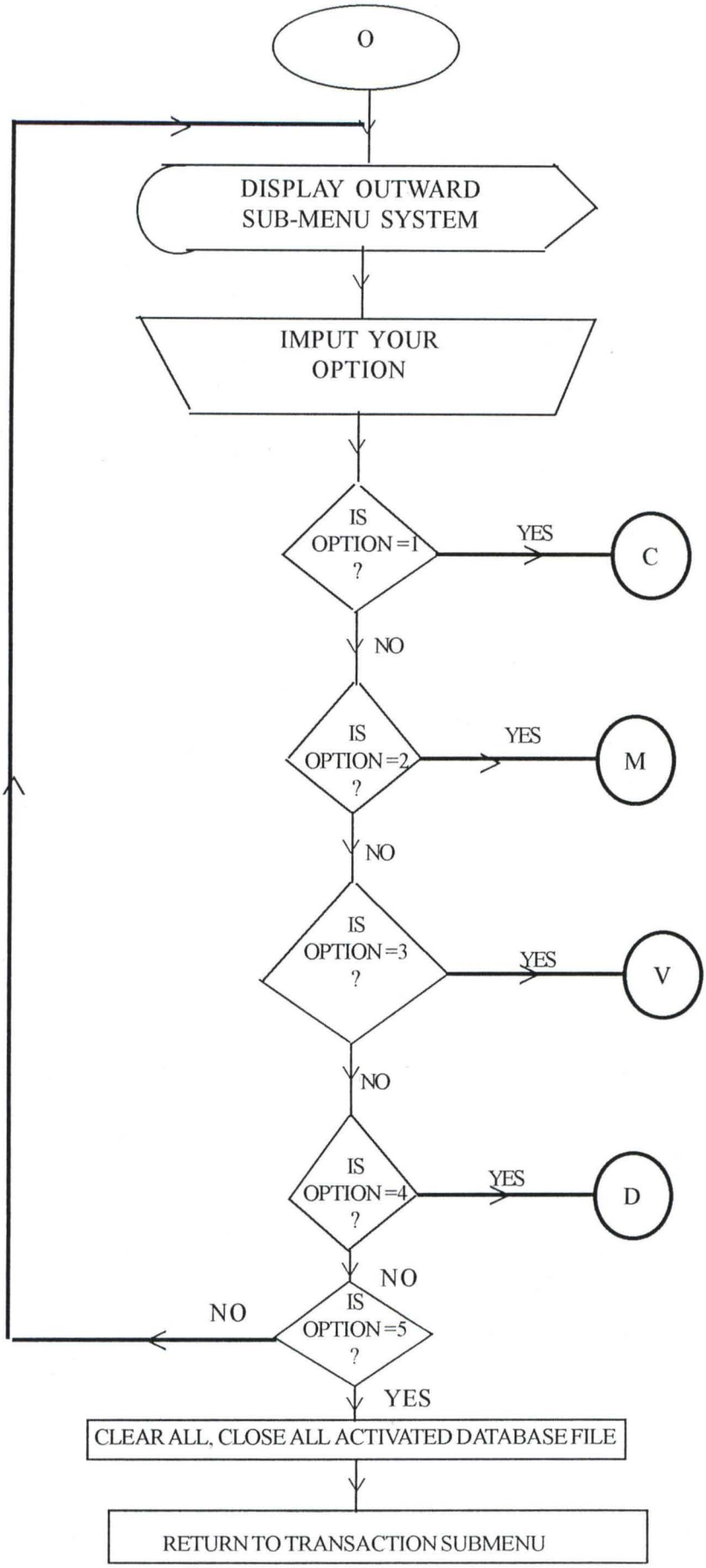

START
DISPLAY MAIN MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION=T ?
YES
T
NO
IS OPTION=C ?
YES
C
NO
IS OPTION=R ?
YES
R
NO
IS OPTION=Q ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO DOS PROMPT
STOP

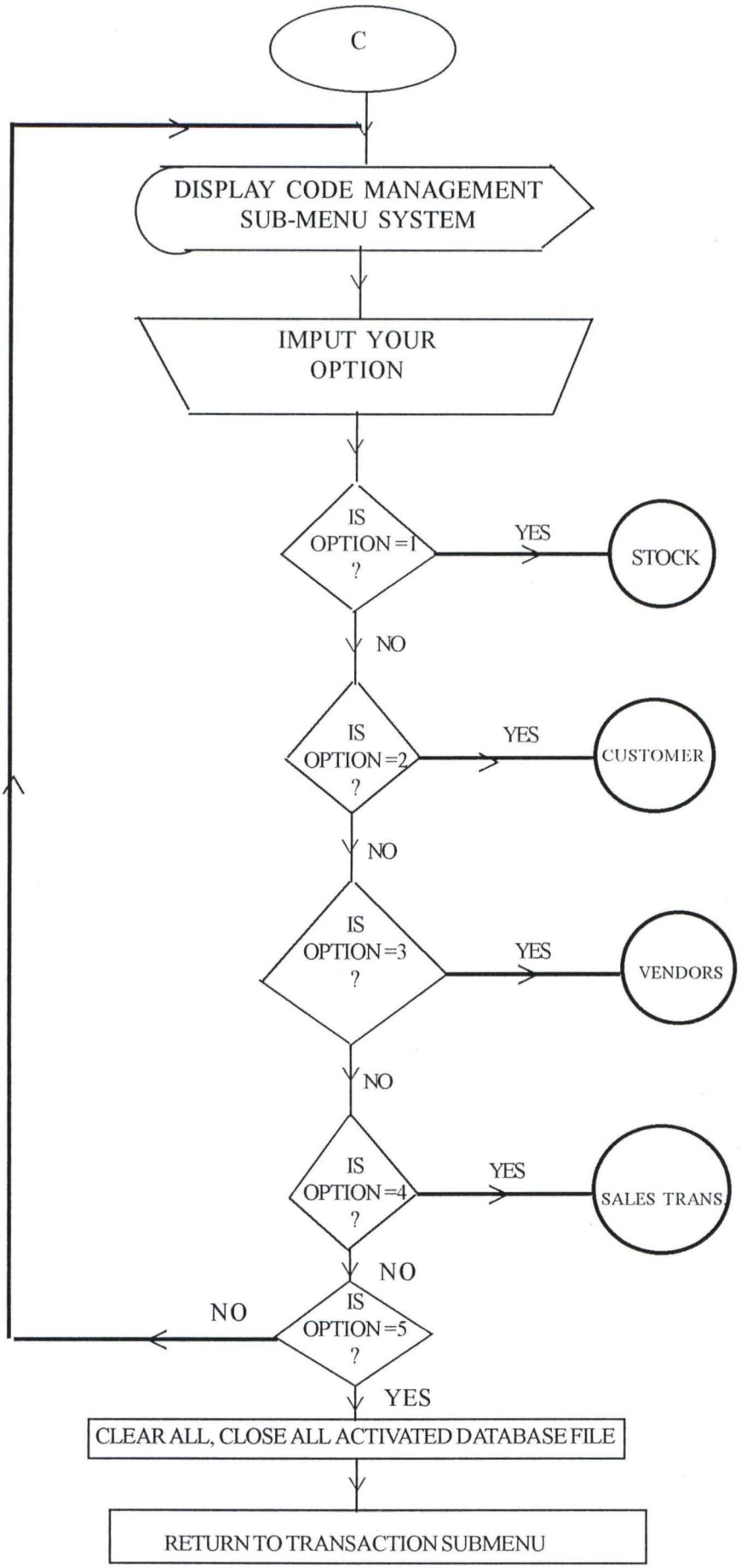

T
DISPLAY TRANSCTION SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION=1 ?
YES
SALES (S)
NO
IS OPTION=2 ?
YES
INWARD (I)
NO
IS OPTION=3 ?
YES
OUTWARD (O)
NO
IS OPTION=4 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO DOS PROMPT


S
DISPLAY TRANSCTION SALE SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
C
NO
IS OPTION =2 ?
YES
M
NO
IS OPTION =3 ?
YES
V
NO
IS OPTION =4 ?
YES
D
NO
IS OPTION =5 ?
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO TRANSACTION SUBMENU

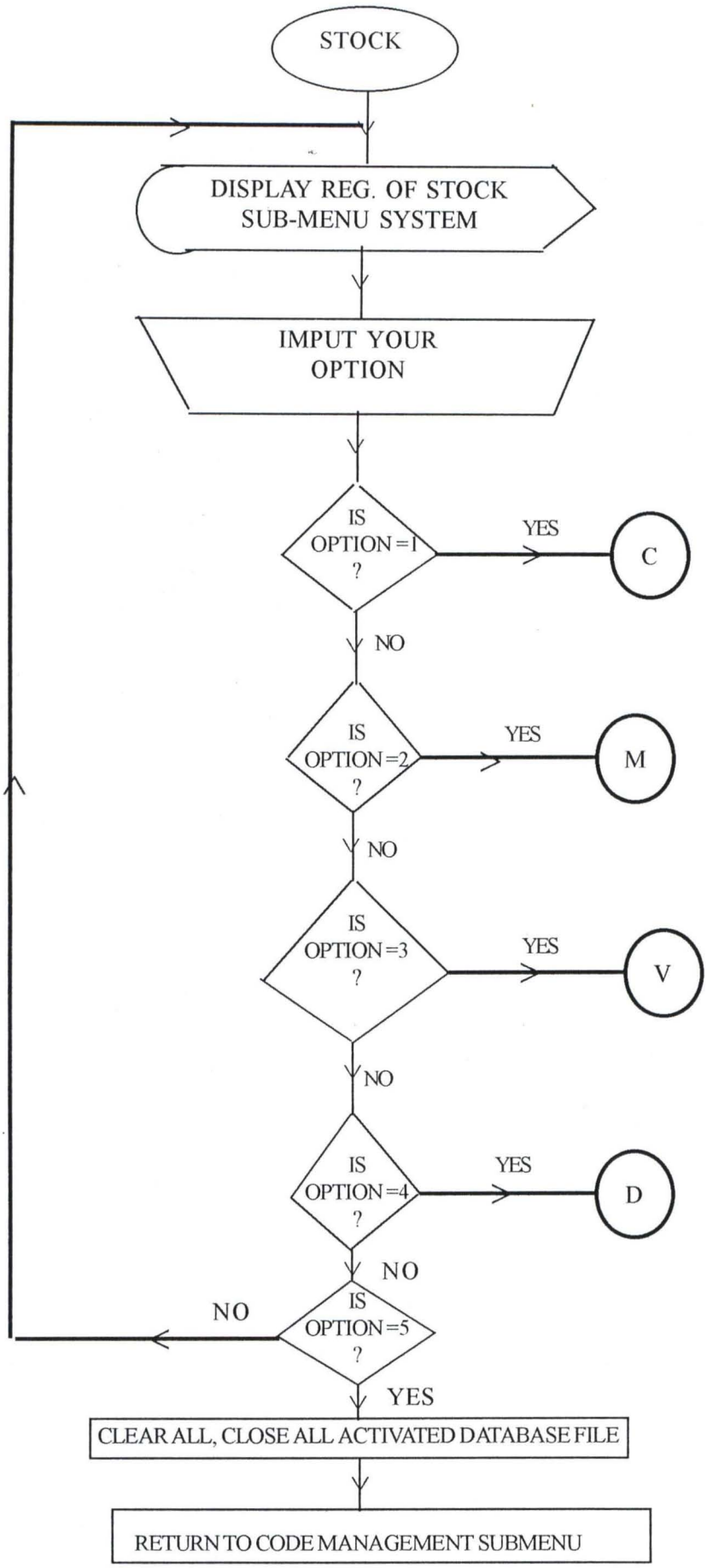

I
DISPLAY INWARD SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
C
NO
IS OPTION =2 ?
YES
M
NO
IS OPTION =3 ?
YES
V
NO
IS OPTION =4 ?
YES
D
NO
IS OPTION =5 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO TRANSACTION SUBMENU


O
DISPLAY OUTWARD SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
C
NO
IS OPTION =2 ?
YES
M
NO
IS OPTION =3 ?
YES
V
NO
IS OPTION =4 ?
YES
D
NO
IS OPTION =5 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO TRANSACTION SUBMENU

E

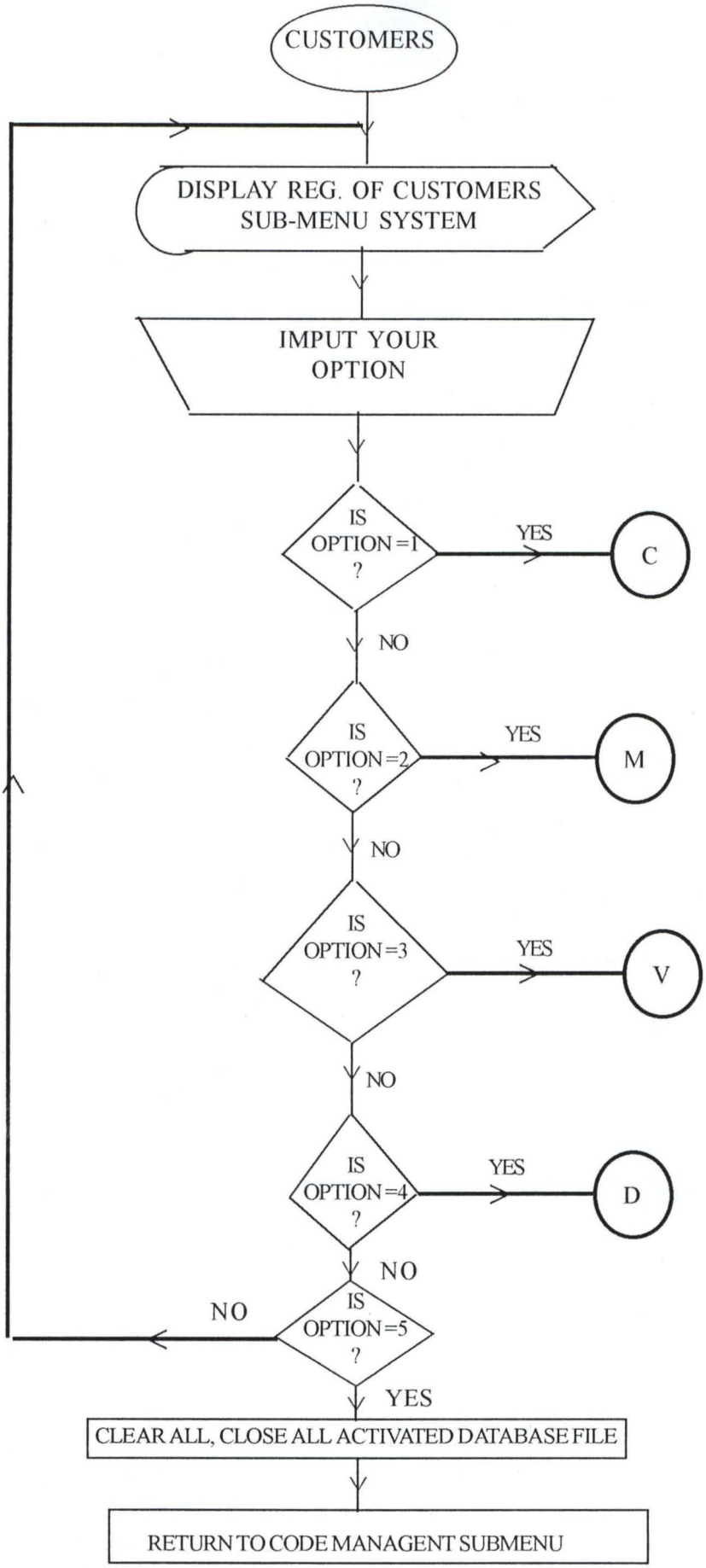

C
DISPLAY CODE MANAGEMENT SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
STOCK
NO
IS OPTION =2 ?
YES
CUSTOMER
NO
IS OPTION =3 ?
YES
VENDORS
NO
IS OPTION =4 ?
YES
SALES TRANS
NO
IS OPTION =5 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO TRANSACTION SUBMENU

F

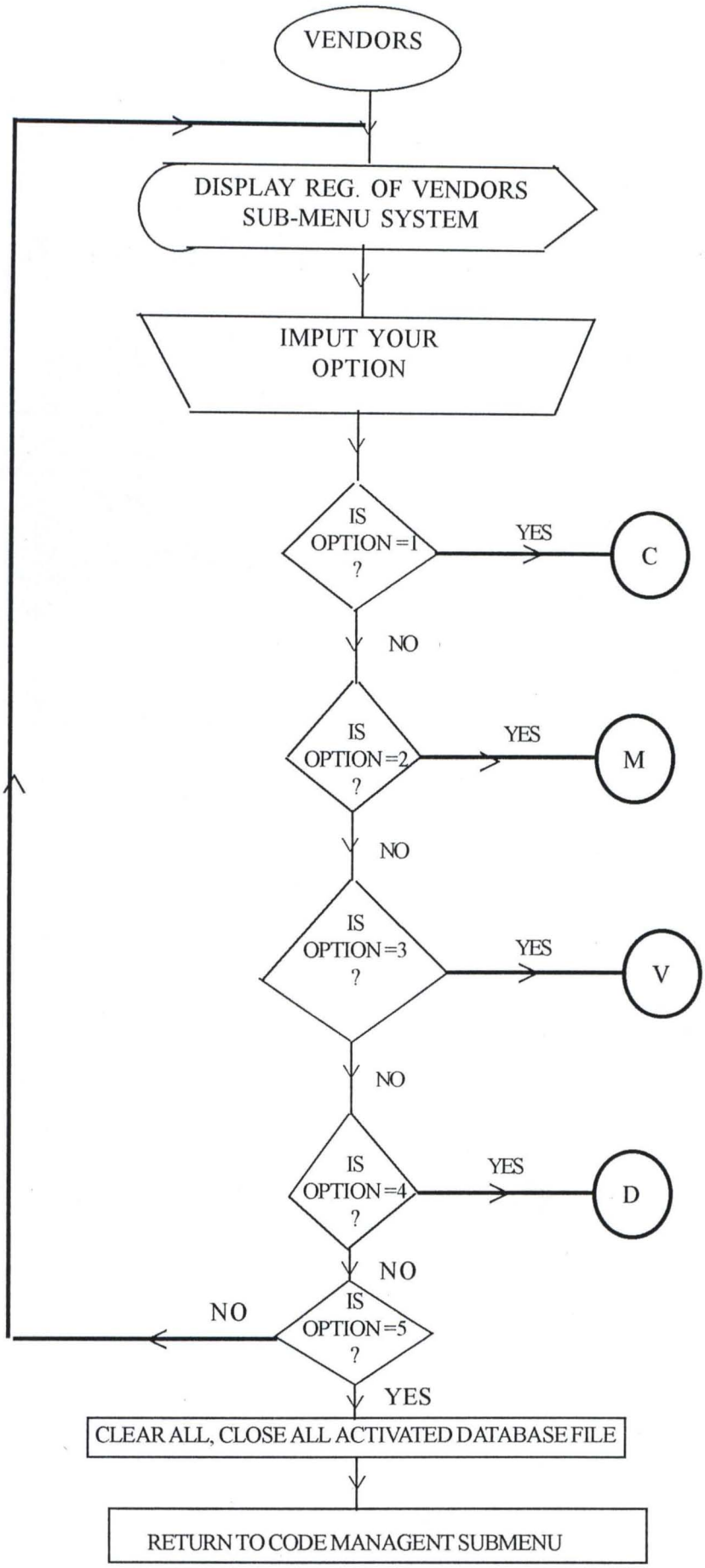

STOCK
DISPLAY REG. OF STOCK SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
C
NO
IS OPTION =2 ?
YES
M
NO
IS OPTION =3 ?
YES
V
NO
IS OPTION =4 ?
YES
D
NO
IS OPTION =5 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO CODE MANAGEMENT SUBMENU



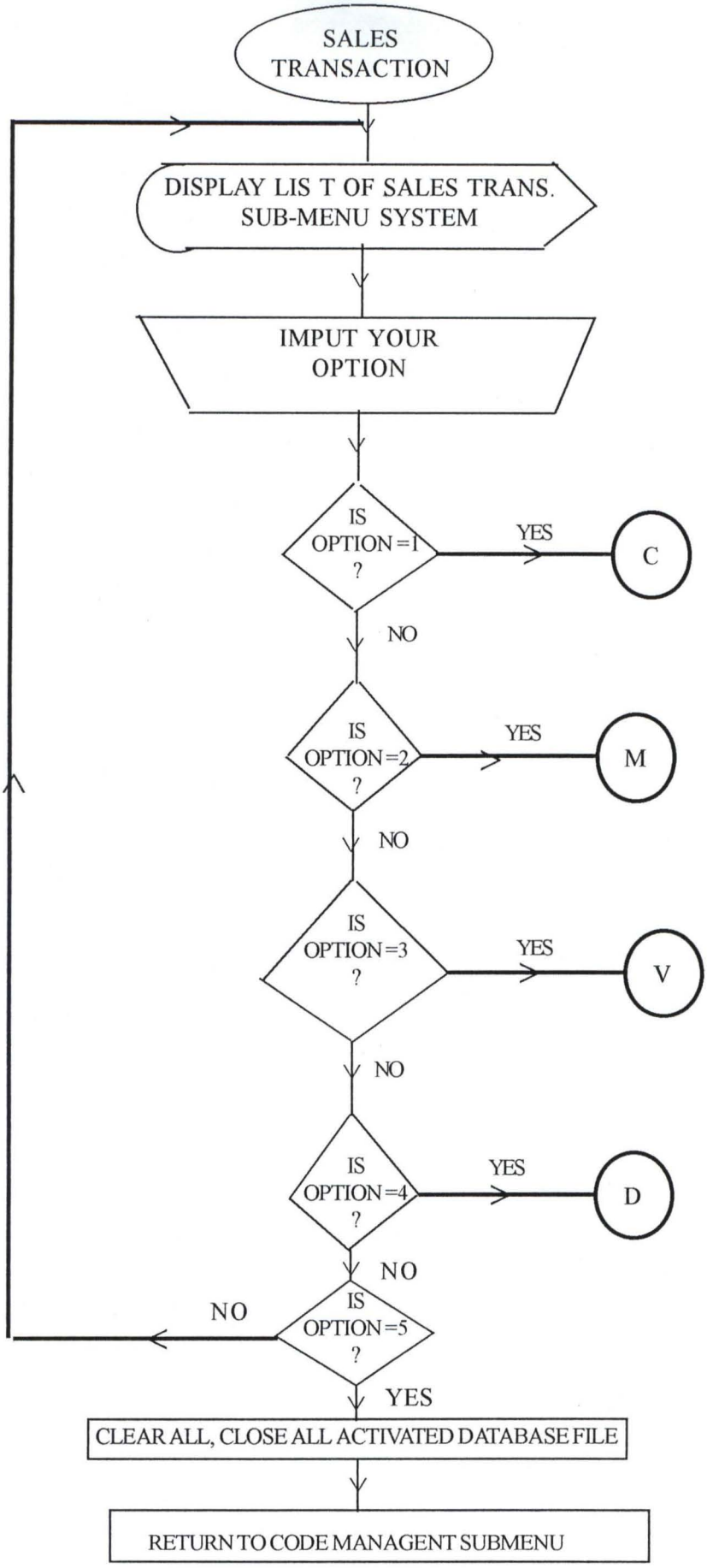
G


CUSTOMERS
DISPLAY REG. OF CUSTOMERS SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
C
NO
IS OPTION =2 ?
YES
M
NO
IS OPTION =3 ?
YES
V
NO
IS OPTION =4 ?
YES
D
NO
IS OPTION =5 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO CODE MANAGENT SUBMENU

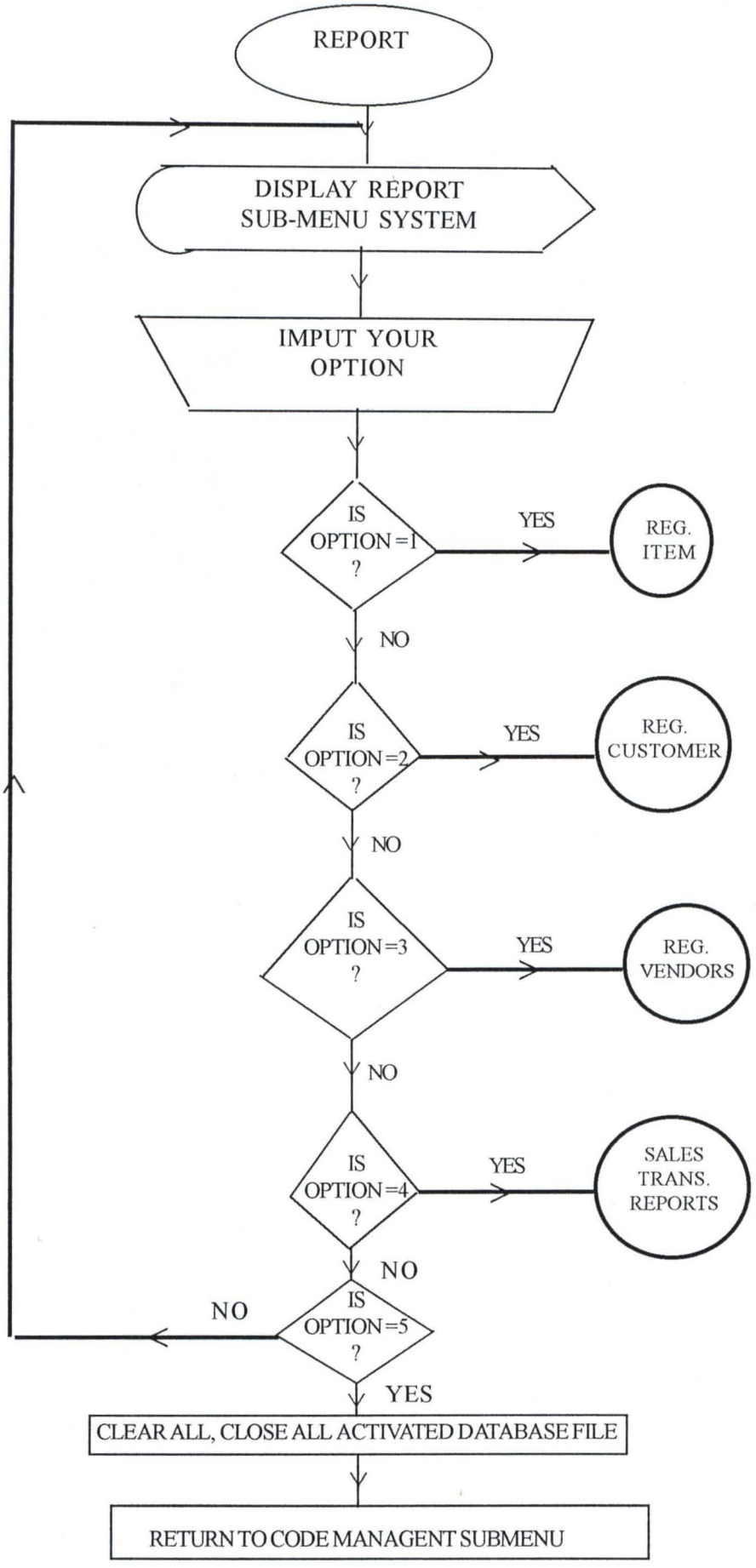
H


VENDORS
DISPLAY REG. OF VENDORS SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
C
NO
IS OPTION =2 ?
YES
M
NO
IS OPTION =3 ?
YES
V
NO
IS OPTION =4 ?
YES
D
NO
IS OPTION =5 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO CODE MANAGENT SUBMENU

I


SALES TRANSACTION
DISPLAY LIS T OF SALES TRANS. SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
C
NO
IS OPTION =2 ?
YES
M
NO
IS OPTION =3 ?
YES
V
NO
IS OPTION =4 ?
YES
D
NO
IS OPTION =5 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO CODE MANAGENT SUBMENU

J


REPORT
DISPLAY REPORT SUB-MENU SYSTEM
IMPUT YOUR OPTION
IS OPTION =1 ?
YES
REG. ITEM
NO
IS OPTION =2 ?
YES
REG. CUSTOMER
NO
IS OPTION =3 ?
YES
REG. VENDORS
NO
IS OPTION =4 ?
YES
SALES TRANS. REPORTS
NO
IS OPTION =5 ?
NO
YES
CLEAR ALL, CLOSE ALL ACTIVATED DATABASE FILE
RETURN TO CODE MANAGENT SUBMENU

# NOTE THE FOLLOWING KEYS

| | | |
|---|---|---|
| C | - | Create New Record |
| M | - | Modify Record |
| V | - | View Record |
| D | - | Delete Record |
| MM | - | Main Menu |
| T | - | Transaction Menu |
| C | - | Code Management Menu |
| R | - | Report Menu |
| (S) | - | Sales Sub-Menu |
| (I) | - | Return Inward Menu |
| (O) | - | Return Outward Menu |
| Stock | - | Stock Item Registration Menu |
| Customers | - | Registration of Customers |
| Salesmen | - | Registration of Sales |
| Vendors | - | Registration of Vendors |
| Reg. Item | - | Report on Registered Stock Items |
| Reg.Customers | - | Report on Registered Customers |
| Reg. Vendors | - | Report on Registered Vendors |
| Sales Transaction | - | Report on Sales Transaction |

# APPENDIX

```
set talk off
set echo off
set scor off
set bell off
set esca off
set stat off
set conf off
set safe off
set date to brit
set proc to heading
set color to "w+/b"
do while .t.
clear
@00,02 to 02,17 doubl
@01,04 say "C    A    S"
@00,19 to 02,60 doubl
DO HEAD
@00,63 to 02,79 doubl
@01,64 say "DATE :" +DTOC(DATE())
@03,00 to 20,79 doubl
@21,15 to 23,65 doubl

@05,05 to 07,19 doubl
@05,23 to 07,43 doubl
@05,46 to 07,55 doubl
@05,58 to 07,73 doubt
@06,07 say "TRANSACTION"
@06,26 say "CODE MANAGEMENT"
@06,48 say "REPORT"
@06,60 say "QUIT TO DOS"
   do choice
   x=0
 do while x=0
   x=inkey()
   if upper(chr(x)) $ "TCRQ"
      exit
   endif
   x=0
 enddo
    do case
        case upper(chr(x)) $ "T"
           do trans1
        case upper(chr(x)) $ "C"
           do trans2
        case upper(chr(x)) $ "R"
           do trans3
        case upper(chr(x)) $ "Q"
          clear
          !del *.ntx,*.obj,*.dbk,*.bak
          clear
          exit
     other
          loop
```

```
   endc
   rest scre
enddo
clea all
clea
@23,03 say "CAS - Undergoes Normal Shut down"
return
*---------------- END OF MAIN MENU SYSTEM ----------------------

proc trans1
do while .t.
clear
@00,02 to 02,17 doubt
@01,04 say "C    A    S"
@00,19 to 02,60 doubt
DO HEAD
@00,63 to 02,79 doubt
@01,64 say "DATE :" +DTOC(DATE())
@03,00 to 20,79 doubt
@21,15 to 23,65 doubt

@05,05 to 07,19 doubt
@05,23 to 07,43 doubt
@05,46 to 07,55 doubt
@05,58 to 07,73 doubt
@06,07 say "TRANSACTION"
@06,26 say "CODE MANAGEMENT"
@06,48 say "REPORT"
@06,60 say "QUIT TO DOS"
            @08,05 clea to 16,77
            @08,05 to 16,40 doubt
            @09,07 say "[1].   SALES TO CUSTOMERS"
            @11,07 say "[2].   RETURN INWARDS (GOODS)"
            @13,07 say "[3].   RETURN OUTWARDS (GOODS)"
            @15,07 say "[0].   RETURN TO MAIN MENU"
            thead="ENTER YOUR OPTION RANGE {0 - 3}"
            @22,16 clea to 22,64
            @22,(80-len(thead))/2 say thead
            x=0
            do while x=0
               x=inkey()
               if chr(x) $ "0123"
                  exit
               endif
                  x=0
             enddo
             do case
                case chr(x) $ "1"
                     do sale
                case chr(x) $ "2"
                     do inward
                case chr(x) $ "3"
```

```
                    do outward
                case chr(x) $ "0"
                    exit
             endc
             clea
          enddo
          return
*------------------ create sale---------------------------------

proc sale
do while .t.
             @10,45 clea to 16,77
             @09,50 say "SALES TRANSACTION"
             @10,45 to 16,70 doubt
             @11,46 say "[C]reate Transaction"
             @12,46 say "[M]odify Transaction"
             @13,46 say "[V]iew Transaction"
             @14,46 say "[D]elete Transaction"
             @15,46 say "[E]xit"
             thead1="PRESS LETTER [C, M, V, D, E] AS YOUR OPTION"
             @22,16 clea to 22,64
             @22,(80-len(thead1))/2 say thead1
             x=0
             do while x=0
                x=inkey()
                if upper(chr(x)) $ "CMVDE"
                   exit
                endif
                   x=0
              enddo
              do case
                 case upper(chr(x)) $ "C"
                      do csales
                 case upper(chr(x)) $ "M"
                      do msales
                 case upper(chr(x)) $ "V"
                      do vsales
                 case upper(chr(x)) $ "D"
                      do dsales
                 case upper(chr(x)) $ "E"
                      exit
              endc
          enddo
          return
*--------------- create inward ---------------------------------


proc inward
do while .t.
             @10,45 clea to 16,77
             @09,45 say "RETURN IN-WARD TRANSACTION"
```

```
            @10,45 to 16,70 doubt
            @11,46 say "[C]reate Transaction"
            @12,46 say "[M]odify Transaction"
            @13,46 say "[V]iew Transaction"
            @14,46 say "[D]elete Transaction"
            @15,46 say "[E]xit"
            thead1="PRESS LETTER [C, M, V, D, E] AS YOUR OPTION"
            @22,16 clea to 22,64
            @22,(80-len(thead1))/2 say thead1
            x=0
            do while x=0
               x=inkey()
               if upper(chr(x)) $ "CMVDE"
                  exit
               endif
                  x=0
             enddo
             do case
                case upper(chr(x)) $ "C"
                     do cinward
                case upper(chr(x)) $ "M"
                     do minward
                case upper(chr(x)) $ "V"
                     do vinward
                case upper(chr(x)) $ "D"
                     do dinward
                case upper(chr(x)) $ "E"
                     exit
             endc
         enddo
         return

*--------------- create outward ---------------------------------


proc outward
do while .t.
            @10,45 clea to 16,77
            @09,45 say "RETURN OUTWARD TRANSACTION"
            @10,45 to 16,70 doubt
            @11,46 say "[C]reate Transaction"
            @12,46 say "[M]odify Transaction"
            @13,46 say "[V]iew Transaction"
            @14,46 say "[D]elete Transaction"
            @15,46 say "[E]xit"
            thead1="PRESS LETTER [C, M, V, D, E] AS YOUR OPTION"
            @22,16 clea to 22,64
            @22,(80-len(thead1))/2 say thead1
            x=0
            do while x=0
               x=inkey()
               if upper(chr(x)) $ "CMVDE"
```

```
                exit
              endif
                x=0
            enddo
            do case
               case upper(chr(x)) $ "C"
                    do coutward
               case upper(chr(x)) $ "M"
                    do moutward
               case upper(chr(x)) $ "V"
                    do voutward
               case upper(chr(x)) $ "D"
                    do doutward
               case upper(chr(x)) $ "E"
                    exit
            endc
         enddo
         return
*----------------- PROCEDURE TRANS2------------------------------


proc trans2
do while .t.
clear
@00,02 to 02,17 doubt
@01,04 say "C    A     S"
@00,19 to 02,60 doubt
DO HEAD
@00,63 to 02,79 doubt
@01,64 say "DATE :" +DTOC(DATE())
@03,00 to 20,79 doubt
@21,15 to 23,65 doubt
@05,05 to 07,19 doubt
@05,23 to 07,43 doubt
@05,46 to 07,55 doubt
@05,58 to 07,73 doubt
@06,07 say "TRANSACTION"
@06,26 say "CODE MANAGEMENT"
@06,48 say "REPORT"
@06,60 say "QUIT TO DOS"
            @08,23 clea to 18,77.
            @08,23 to 18,58 doubt
            @09,24 say "[1].   STOCK ITEM REGISTRATION"
            @11,24 say "[2].   CUSTOMERS REGISTRATION"
            @13,24 say "[3].   SALESMEN REGISTRATION"
            @15,24 say "[4].   VENDOR REGISTRATION"
            @17,24 say "[0].   RETURN TO MAIN MENU SYSTEM"
            thead2="ENTER YOUR OPTION RANGE {0 - 4}"
            @22,16 clea to 22,64
            @22,(80-len(thead2))/2 say thead2
            x=0
            do while x=0
```

```
            x=inkey()
            if chr(x) $ "01234"
               exit
            endif
               x=0
          enddo
          do case
             case chr(x) $ "1"
                  do stock
             case chr(x) $ "2"
                  do customer
             case chr(x) $ "3"
                  do salesmen
             case chr(x) $ "4"
                  do vendor
             case chr(x) $ "0"
                  exit
          endc
          clea
       enddo
       return
*----------------- create sale-----------------------------------

proc stock
do while .t.
          @10,60 clea to 16,78
          @09,61 say "STOCK REGISTRATION"
          @10,61 to 16,78 doubt
          @11,62 say "[C]reate Code"
          @12,62 say "[M]odify Code"
          @13,62 say "[V]iew Code"
          @14,62 say "[D]elete Code"
          @15,62 say "[E]xit"
          thead1="PRESS LETTER [C, M, V, D, E] AS YOUR OPTION"
          @22,16 clea to 22,64
          @22,(80-len(thead1))/2 say thead1
          x=0
          do while x=0
             x=inkey()
             if upper(chr(x)) $ "CMVDE"
                exit
             endif
                x=0
          enddo
          do case
             case upper(chr(x)) $ "C"
                  do cstock
             case upper(chr(x)) $ "M"
                  do mstock
             case upper(chr(x)) $ "V"
                  do vstock
             case upper(chr(x)) $ "D"
```

```
                    do dstock
                case upper(chr(x)) $ "E"
                    exit
             endc
          enddo
          return
*---------------- create inward ---------------------------------

proc customer
do while .t.
             @10,60 clea to 16,78
             @08,65 say "CUSTOMER'S"
             @09,61 say "REGISTRATION"
             @10,61 to 16,78 doubt
             @11,62 say "[C]reate Code"
             @12,62 say "[M]odify Code"
             @13,62 say "[V]iew Code"
             @14,62 say "[D]elete Code"
             @15,62 say "[E]xit"
             thead1="PRESS LETTER [C, M, V, D, E] AS YOUR OPTION"
             @22,16 clea to 22,64
             @22,(80-len(thead1))/2 say thead1
             x=0
             do while x=0
                x=inkey()
                if upper(chr(x)) $ "CMVDE"
                   exit
                endif
                   x=0
              enddo
              do case
                 case upper(chr(x)) $ "C"
                      do ccust
                 case upper(chr(x)) $ "M"
                      do mcust
                 case upper(chr(x)) $ "V"
                      do vcust
                 case upper(chr(x)) $ "D"
                      do dcust
                 case upper(chr(x)) $ "E"
                      exit
             endc
          enddo
          return
*-----------------------------------------------------------



proc salesmen
do while .t.
             @10,60 clea to 16,78
             @08,65 say "SALESMEN"
```

```
            @09,61 say "REGISTRATION"
            @10,61 to 16,78 doubl
            @11,62 say "[C]reate Code"
            @12,62 say "[M]odify Code"
            @13,62 say "[V]iew Code"
            @14,62 say "[D]elete Code"
            @15,62 say "[E]xit"
            thead1="PRESS LETTER [C, M, V, D, E] AS YOUR OPTION"
            @22,16 clea to 22,64
            @22,(80-len(thead1))/2 say thead1
            x=0
            do while x=0
               x=inkey()
               if upper(chr(x)) $ "CMVDE"
                  exit
               endif
                  x=0
             enddo
             do case
                case upper(chr(x)) $ "C"
                     do csmen
                case upper(chr(x)) $ "M"
                     do msmen
                case upper(chr(x)) $ "V"
                     do vsmen
                case upper(chr(x)) $ "D"
                     do dsmen
                case upper(chr(x)) $ "E"
                     exit
             endc
         enddo
         return
*-----------------------------------------------------------------

proc vendor
do while .t.
            @10,60 clea to 16,78
            @08,65 say "VENDOR'S"
            @09,61 say "REGISTRATION"
            @10,61 to 16,78 doubl
            @11,62 say "[C]reate Code"
            @12,62 say "[M]odify Code"
            @13,62 say "[V]iew Code"
            @14,62 say "[D]elete Code"
            @15,62 say "[E]xit"
            thead1="PRESS LETTER [C, M, V, D, E] AS YOUR OPTION"
            @22,16 clea to 22,64
            @22,(80-len(thead1))/2 say thead1
            x=0
            do while x=0
               x=inkey()
               if upper(chr(x)) $ "CMVDE"
```

```
                exit
              endif
                x=0
            enddo
            do case
               case upper(chr(x)) $ "C"
                    do cvendor
               case upper(chr(x)) $ "M"
                    do mvendor
               case upper(chr(x)) $ "V"
                    do vvendor
               case upper(chr(x)) $ "D"
                    do dvendor
               case upper(chr(x)) $ "E"
                    exit
            endc
         enddo
         return

*----------------- PROCEDURE TRANS3-------------------------------

proc trans3
do while .t.
clear
@00,02 to 02,17 doubl
@01,04 say "C     A     S"
@00,19 to 02,60 doubl
DO HEAD
@00,63 to 02,79 doubl
@01,64 say "DATE :" +DTOC(DATE())
@03,00 to 20,79 doubl
@21,15 to 23,65 doubl
@05,05 to 07,19 doubl
@05,23 to 07,43 doubl
@05,46 to 07,55 doubl
@05,58 to 07,73 doubl
@06,07 say "TRANSACTION"
@06,26 say "CODE MANAGEMENT"
@06,48 say "REPORT"
@06,60 say "QUIT TO DOS"
            @08,33 clea to 15,77
            @08,33 to 15,77 doubl
            @09,35 say "[1].   LIST OF REGISTERED STOCK ITEMS"
            @10,35 say "[2].   LIST OF REGISTERED CUSTOMERS"
            @11,35 say "[3].   LIST OF REGISTERED VENDORS"
            @12,35 say "[4].   LIST OF SALES TRANSACTION"
            @13,35 say "[5].   LIST OF MONTHLY SALES TRANSACTION"
            @14,35 say "[0].   RETURN TO MAIN MENU SYSTEM"
            thead2="ENTER YOUR OPTION RANGE {0 - 5}"
            @22,16 clea to 22,64
            @22,(80-len(thead2))/2 say thead2
            x=0
```

```
            do while x=0
               x=inkey()
               if chr(x) $ "012345"
                  exit
               endif
                  x=0
             enddo
             do case
                case chr(x) $ "1"
                     do s_rep
                case chr(x) $ "2"
                     do c_rep
                case chr(x) $ "3"
                     do v_rep
                case chr(x) $ "4"
                     do sales
                case chr(x) $ "5"
                     do ms_rep
                case chr(x) $ "0"
                     exit
             endc
             clea
          enddo
          return

PROC S_REP
set color to "w+/b"
clear
  use stock
  index on str(p_voucher)+(v_code)+dtoc(p_date)+str(serial_no) to
p_vou
  outer="[P]rinting   [C]ancel"
  @11,(80-len(outer))/2 say outer
  x=0
  do while x=0
     x=inkey()
     if upper (chr(x)) $ "PC"
        exit
      endif
        x=0
   enddo
     if upper (chr(x)) $ "C"
        clear
        close all
        return
     endif
     clear
     set device to screen
     outer1="PLEASE DO NOT DISTURB PRINTING IN PROGRESS...!!!"
     @11,(80-len(outer1))/2 say outer1
     X=INKEY(5)
     go top
```

```
      row=6
      mrow=72
      xno=1
      mpage=1
   set device to print
   set proc to heading
   @00,00 say chr(15)
   DO rstk
   DO rstk
      @04,01 say "No."
      @04,04 say "P_No."
      @04,10 say "V_CODE"
      @04,18 say "SNo."
      @04,23 say "STK_No."
      @04,38 say "STK_NAME"
      @04,55 say "P_DATE"
      @04,65 say "QTY."
      @04,70 say "RATE"
      @05,00 say repl ("-",79)
   do while .not. eof()
    if row>mrow
     eject
      WAIT " "
      DO rstk
      DO rstk
      row=6
      mpage=mpage+1
      @04,02 say "No."
      @04,04 say "P_No."
      @04,10 say "V_CODE"
      @04,18 say "SNo."
      @04,23 say "STK_No."
      @04,38 say "STK_NAME"
      @04,55 say "P_DATE"
      @04,65 say "QTY."
      @04,70 say "RATE"
      @05,00 say repl("-",79)
    endif
    xp_voucher=p_voucher
    xv_code=v_code
    xserial_no=serial_no
    xstock_no=stock_no
    xstock_name=stock_name
    xp_date=p_date
    xqty=qty_supply
    xrate=rate
    xamount=amount
   set filter to xp_voucher=p_voucher .and. xv_code=v_code .and.
xp_date=p_date
   go top
   locate for xserial_no=serial_no
```

```
  @row,01 say xno pict "99"
  @row,02 say xp_voucher pict "99999"
  @row,10 say xv_code pict "99VD999"
  @row,18 say xserial_no pict "999"
  @row,23 say xstock_no pict "99SC999"
  @row,32 say xstock_name pict "@!S25"
  @row,55 say xp_date pict "99/99/99"
  @row,65 say xqty pict "999"
  @row,67 say xrate pict "9,999,999.99"
   row=row+2
   xno=xno+1
   skip
enddo
  row=row+3
   @ row,1 say 'CHECKED BY: _____'
  row=row+3
   @ row,1 say 'APPROVED BY: _____'
   eject
   SET DEVICE TO SCREEN
   clear
   outer2="PRINTING JOB COMPLETED, press any key to continue...!!!"
   @12,(80-len(outer2))/2 say outer2
   wait " "
   @00,00 say chr(18)
   use
   return


PROC C_REP
set color to "w+/b"
clear
  use customer
  index on creditcode to creditcode
  outer="[P]rinting   [C]ancel"
  @11,(80-len(outer))/2 say outer
  x=0
  do while x=0
     x=inkey()
     if upper (chr(x)) $ "PC"
        exit
      endif
        x=0
   enddo
     if upper (chr(x)) $ "C"
        clear
        close all
        return
     endif
     clear
     set device to screen
     outer1="PLEASE DO NOT DISTURB PRINTING IN PROGRESS...!!!"
     @11,(80-len(outer1))/2 say outer1
```

```
    X=INKEY(5)
    go top
    row=6
    mrow=72
    xno=1
    mpage=1
  set device to print
  set proc to heading
  @00,00 say chr(15)
  DO RCUST
  DO RCUST
    @04,02 say "No."
    @04,06 say "CREDIT CODE"
    @04,20 say "CREDIT NAME"
    @04,45 say "CREDIT ADDRESS"
    @04,65 say "REG. DATE"
    @05,00 say repl ("-",79)
  do while .not. eof()
   if row>mrow
    eject
    WAIT " "
    CLEAR
    DO RCUST
    DO RCUST
    row=6
    mpage=mpage+1
    @04,02 say "No."
    @04,06 say "CREDIT CODE"
    @04,20 say "CREDIT NAME"
    @04,45 say "CREDIT ADDRESS"
    @04,65 say "REG. DATE"
    @05,00 say repl("-",79)
   endif
   xcreditcode=creditcode
   xcreditname=creditname
   xcreditsite=creditsite
   xregdate=regdate
  @row,02 say xno pict "99"
  @row,06 say xcreditcode pict "99CC999"
  @row,16 say xcreditname pict "@!S25"
  @row,45 say xcreditsite pict "@!S25"
  @row,65 say xregdate pict "99/99/99"
   row=row+2
   xno=xno+1
   skip
enddo
  row=row+3
   @ row,1 say 'CHECKED BY: _____'
  row=row+3
   @ row,1 say 'APPROVED BY: _____'
   eject
   SET DEVICE TO SCREEN
```