AUTOMATION OF A SUPERMARKET TRANSACTION

A CASE STUDY OF AKANBI PACESETTER
SUPERMARKET BIDA

By

OLASOJI NIKE MORILI
PGD/MCS/98/99/832

DEPARTMENT OF MATHEMATICS/ COMPUTER SCIENCE
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

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TITLE PAGE

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A PROJECT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS/ COMPUTER SCIENCE, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF POST – GRADUATE DIPLOMA IN COMPUTER SCIENCE

SEPTEMBER, 2001

DEDICATION

Dedicated to my beloved Son AYODEJI MARTINS ADEAGBO

ABSTRACT

This project work carefully study the present Supermarket system in the Federal Polytechnic, Bida.

In addition to improving the existing system, it attempts to design a new Supermarket processing system whereby substantial and sensitive parts of the exercise will be done with the use of computer.

The supermarket program is developed as a complete package made up of six modules namely, Data entry, modification, Deletion, Viewing, Processing and Report generation.

The program Algorithm is the flow chart and the program codes are written in dbase IV Language.

Finally, the output (result) of the program is presented and discussed in here

CERTIFICATION

This project worked was supervised and approval as meeting the requirement for the award of Postgraduate Diploma in Computer Science of the Department of Mathematics and Computer Science, Federal University of Technology, Minna.

PROJECT SUPERVISOR DR. S. A. REJU	DATE
HEAD OF DEPARTMENT DR. S.A REJU	DATE
EXTERNAL EXAMINER	DATE

ACKNOWLEDGEMENT

I give glory to the Almighty God for giving me the privilege to undergo this course and complete it successfully.

My sincere gratitude goes to DR S. A. REJU my supervisor and the Head of Department of Mathematics and Computer Science, Federal University of Technology, Minna who took time to read all the manuscripts and make constructive criticisms and corrections despite his numerous academic involvement.

Moreso, the moral and intellectual support of all my lecturers during the course of my study is acknowledged.

I am indebted to the following people for their financial moral and support.

MR & MRS R. A. BELLO, MR IKUGHU ATSUA JONATH AND, MR ALADE Head of Department Computer Center Federal Polytechnic Bida, MR GIN Head of Marketing Department Federal Polytechnic Bida also to my lovely sister JOYCE, FATTY, BASIRAT, FUNKE and my brothers YAKUBU, MOHAMMED e.t.c. The history of this academic achievement will not be complete without then.

May the Almighty God reward then real good for all they have done.

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1.0 INTRODUCTION TO SUPERMARKET OPERATION

1.1 INTRODUCTION

People who work in commercial occupations are responsible for getting goods and services to the customers that wants, them, when they want them. For example, iron ore dug from the ground by a miner would be of little use unless it could be sold to somebody who could use it and make it into a finished articles. The iron articles, in turns is not much use unless it can be sold to a customer who wants it, and supermarket performs this commercial activity.

Supermarket are large retailing business units selling mainly foods Laundry and household maintenance products on the basis of low margin appeal, wide variety and assortments, self service and heavy emphasis on merchandise appeal.

Supermarket can also be referred to as a department stores since it aim to provide everything a customer could need under one roof; this is sometimes called 'One-Stop Shopping', these are large shops, the biggest may have over 2000 departments.

Department stores are divided into two:

1. Merchandise Departments.
2. Service Departments

A merchandise Department: Merchandise department are the one we see when we go into store. The head of the departments are called buyers because they are responsible for buying in all the goods we see on display. They also make decisions about running the department and its policy.

Service Department: Provide all the back-up facilities for the merchandise departments and are run by managers.

1.2 OBJECTIVES OF THE STUDY

The researcher has been motivated to study the activities of Akanbi supermarket and understand how the supermarket operates the business effectively in view of the high competitors and demand. This study is aimed at gathering all the useful information which will aid in developing an "Integrated software package on Akanbi supermarket, Federal Polytechnic Bida." It is aimed at developing a system that will stand the best of time and partially or totally eliminating the numerous problems associated with the existing operation of Akanbi supermarket.

The objectives of the design identify the primary expectations of the design as listed below:

i. Provide problem solving facilities

Some controversial decisions often arises in the process of calculating extra charge, discount charge, and stock taking, sometimes decision on what to add or what to eliminate or what to ignor often cause some problems, such problems are taken care of by standardizing the conditions under which any of the processing can be entertained so that only cases satisfying conditions are entertained.

ii. Improving the flow of Data

This entails making records or information available within a shortest possible time for various issues like inquiries updating and references

iii Back-up and security

The pile of up-dated file which could not be easily destroyed often become nuisance to the management, the entire information from the voluminous files could be stored on a magnetic storage medium (floppy diskettes) which is not more than that of a file and it can accommodate thousands of records, so such files could be stored on a diskette as long as it is required.

The security and integrity of data means data kept in a safe environment. It is of reasonable importance as concerned fraud and access by unauthorized users to maintain security on the files. With the use of password and various file security system, security of sensitive data can be assured.

iv The efficiency of the manual strategies used in dealing with customers should be studied

v. To determine the benefits and importance of computation of part or whole of supermarket activities

vi. To advance meaningful suggestions on how to solve problem emanating from the management of the supermarket

1.3 METHODS OF INVESTIGATION

In this phase, the existing operation is studied closely to discover the true nature of the problem which led to the request for an investigation. At the same time, the researcher will gain more understanding of the way Akanbi Pacesetter supermarket carries out its manual operations, there is a strong possibility that a recommendation from someone who knows the Akanbi Pacesetter Supermarket operations well will find a favour in carrying out the investigation:

1 Study Textbooks and Manual: The university Library and the management of the Akanbi Supermarket gave enough copies of textbooks and journals related to the subject. This method relly helped the researcher determining the serious needs of Akanbi Supermarket to be computerized.

2 Interview: The interview is one of the most valuable and versatile methods available to the researcher for learning about an existing operation. The following guidelines were followed, helping the success of interview.

- The right persons were chosen to interview. For example, manager was asked the capital they started with and some other related questions. On the other hand, clerks was asked about the exact details of how an order is filled.

- Authorization from management to conduct the interview was sought. This made the customer interviewed to be more co-operative.

- The researcher decided in advance, what the interview is to accomplish. That is, what exactly the researcher wished to find out from the persons interviewed.

- The point to be covered and relevant questions asked were written down.

(iii) Observe the existing: This gives the researcher a chance to obtain data first-hand. It enable her (the researcher) to verify whether the data obtained from interview is consistent with what he sees. From this she could determine which employees could give him reliable information. As seeing is believing as no one can doubt the data obtained from actual observation.

However, the research notes that this methods has some important drawbacks. It is generally true that people perform differently when they are being observed. Some may become self conscious, causing their productivity to fall. On the other hand, the presence of an observer may cause some to work harder than they normally do when no one is watching. Thus the data obtained may be a true reflection of the normal situation. Another disadvantage noted is that the researcher must be physically present in order to observe operations. This may be very inconvenient if the procedure to be observed takes place on abnormal situation, for example, the night shift.

1.4 LIMITATION OF THE STUDY

This study does not exhaustively study the supermarket operations and automation owing to the following constraints.

i Finance stood as one of the limiting factors. The conduct of this type of project actually involves much cost if the research has to be conducted effectively. The researcher was however handicapped due to inadequate finance in the process of carrying out this research work.

ii Time is an important factor in any research work. The time that was allocated for this study was not enough for an indepth and comprehensive work. Only three months was allocated for the project. This had to be use for other domestic works being a married woman hence little attention was paid to the writing of this project. If the time period had been further extended, a much better result could have been produced.

iii There was also a problem of non-respondence brought about due to the fact that the HOD of the department and the supermarket manager under study were not around to ensure some of the questions. This posed a lot of difficulty for the researcher in gathering information as the supermarket attendants refused to answer some questions they were asked .

iv The difficulty encountered in finding literature text was also another limiting factor. The researcher had a tough time moving from one place to another in search of literature that would provide the needed secondary data for this study.

1.5 JUSTIFICATION OF THE STUDY

It is the common knowledge that quantitative analysis has been enhanced through the use of electronic computers. Problems which were once textbook example cannot be solved using calculator which ranges from small wallet sizes to dest-top. In a complex setting like supermarket operations, several individual spent an endless hours in a matter of minutes, the system perform the computations display the result immediately in the graphic or any form of several standard media. The amount of

data to be processed is usually voluminous and transaction should be processed up to date if posting in several month behind schedule decision which should be made now postponed until future data loses necessary data is made available by such delay data loses its decision usefulness with the introduction of computers, one of the greatest problem confronting the supermarket operations which is timely accumulation of data is adequately taking care of.

Also with proper programming and use of identification codes, frauds are easily detected and, By and large, the problem associated with computerization and those associated with cost and dependence in the system are outweighed by the benefit.

CHAPTER TWO

SUPERMARKET OPERATIONS

AKANBI PACESETTER SUPERMARKET BRIEF HISTORY

The supermarket which commenced operation with a total capital of N500,000 in October, 1999 faced quite a number of problems like any other infant business. About N79,654 was used to erected the complex in order to meet-up with modern system habitable and safe for operation.

The money was used for installing burglary proofs, construction and mounting of sign posts, tours to contact suppliers, purchase of a musical set, printing of stationary among others.

As at 1999 the stock rose to N600,000 with profit after tax of N150,000 sales revenue worth N376,926 was also realised. As at close of business on 31st December, 1999, the supermarket had stock worth N125,000 that was carried over. Items worth N4,725 were lost partly due to damage in transit, but mainly through attacks by termites in the store in October. Funigation has been carried out at different periods to guard against reoccurrence.

(A) PRODUCTS

The products range stocked is of limited varieties due to insufficient funds to buy more. In a bid to offer customers as many choices as possible, the supermarket has restored to buying some items in half packs or pieces and from several different suppliers. This does not give room for possible quantity discounts. The assorted brands however form the basis of the records being kept by the supermarket management. Products in stock are normally household, low priced items which are

within the reach of the students and low income staffers. Some products itemised there are:

	NAMES OF ITEM	PRICE
1	Cream crackers	N130
2	Cornflakes	N115
3	Fourre (biscuits)	145
4	Milk pops (sweet)	305
5	Hob-nobs (biscuits)	140
6	Cabin biscuits	75
7	Tropcal fruit	145
8	Mango biscuits	30
9	Don-simon fruit	145
10	Tiger head	25
11	T.C.B. (hair treatment)	235
12	Revlon hair treatment	335
13	Venus haircare	170
14	Afro (hair treatment)	125
15	Venues (hair treatment)	125
16	Palmoline	125
17	Sunshine & drummer	30
18	Black noir (kiwi)	55
19	Klin & ariel	10, 20
20	Apple hair treatment	50
21	Goul mate treatment	50
22	Apple hair treatment	70
23	Milkcose	90
24	Tom – tom	80
25	Top tea (big sack)	150
26	Close-up	105
27	Florish gel	100
28	Maclean (small)	50
29	Lipton	50
30	Cowbell sacket	95
31	Baygon	130
32	Raid	140
33	Capel win	220
34	Eva win	220
35	Gungle oats	110
36	Custard	60
37	Glucose	125
38	Joy soap	20
39	Imperial leather	20
40	Robb	6
41	Delta soap	38
42	Dudu – osun	65
43	Pears baby lotion	90

44	Tura lotion cream	140
45	Vaseline intensive lotion	140
46	Perfumes (Best club)	300
47	Perfumes (cohiba)	370
48	Silver rose	80
49	Lipstick	30
50	Parker hail polish	30
51	Tura soap	50
52	Zarina	50
53	Crusader	50
54	IKB	50
55	TCP	50
56	Mercury	50
57	Tetmosol	50
58	Toothbrush	20
59	Premier soap	20
60	Glucose	125
61	Movate	40
62	Soul mate	75
63	Vaseline baby jelly	50
64	Lemon plus	53
65	Éclairs	95
66	Buttermint	75
67	Riddy cream	10
68	Indomie noodles	20
69	Curry powder	30
70	Butter	120
71	Peak milk sacket (small)	100
72	Miliki (small)	10
73	Lahda	180
74	Borunvita	180
75	Oilet tissues	10
76	Nescafe	10
77	Cerelac	155
78	Milo	200
79	Peak milk (Tin)	240
80	Cowbell (Tin)	185
81	Miliki (Tin)	185
82	De-rice Tin	20
83	De-rice big	55
84	Baked beans	75
85	Maiki spaghettis	50
86	Sadinines titus	45
87	Geisha	35
88	Maggi Royco	135
89	Maggi Knor	160
90	Three crowns	30
91	Peak milk	38

(b) PRICES

While profit is not the main objective of establishing the supermarket, a reasonable make up is added to the cost of items. As a deliberates marketing policy management insists on selling below competition to generate sales and hence the data to be used by the students of marketing department.

The supermarket management looks forward to when it will be able to buy large enough quantities direct from manufactures so that it can establish a pricing policy that will yield some reasonable profit.

© PROMOTION

The supermarket management adopted various techniques to inform prospective customers about the existence of the supermarket, and the range of products it carries. These technique include the use of sign posts, advertisements in the polytechnic monitor, Jacee magazine, handbills and ward-off-mouth.

Some limited sales promotion was carried out inform of gifts to early callers when the supermarket opened for business. In December 1999, credit sales of staff numbers of the polytechnic was organized. It yielded a positive response of evidenced from increased patronage and numerous request for additional items to be stocked.

(d) BUSINESS ATMOSPHERE

Business for the supermarket started on a very good note. However, the situation changed in the second month if its operation. Business became dull as students left the campus following a strike action embarked upon by the Academic Staff Union of Polytechnic in Nov. 19991 sales started declining sharply as the reality than the strike will not be called off within a short period of time. Student who formed the bulk of customers started learning the campus.

This informed the credit sales exercise organized in December to dear available stocks.

(e) FUTURE PLAN

(i) To involve students in practical selling.

(ii) To relocate to more accessible, more spacious area that will accommodate more items.

(iii) To invite independent vendors to supply items for sale in the supermarket.

(iv) To invite interested partiners to subscribe for shares in the venture.

(v) To increase promotional activities with the intention of capturing the patronage of at least 70% of the polytechnic community by the end of the first year of its operation.

2.2 THE EXISTING OPERATIONS

The operation of the stores function and the control of stocks can not be performed in an efficient manner without some means of capturing and storing information, and a facility for the analysis and use of this information.

Where goods are of low value and are for moving it may be preferable to dispense with the ideal of an orthodox stock record altogether. If the number of movements is several hundred a week, the cost of records entered daily will be worth the money spent on it. Some other form of control such as periodic physical check might be more appropriate computers are generally employed for the purpose of maintaining and manipulating records. Indeed stock control is perharps an ideal area for the application of electronic data processing involving as it does, the storage of large amounts of information, and the performance of a variety of producers and processes using this information.

Stock records are expected to maintain particulars of receipt, issues and balances remaining in stock for each individual item held in the storehouse from day to day. Because a system of records of this kind indicates at any time the quantity of goods on hand, it is some time described as a perpetual inventory.

Stock record cards are usually kept together in one place it is difficult to generalize on this point, but there is much to be said for holding the records, or very near to, the storehouse building. If this is done, contact between the clerk keeping the records and the storehouse staff responsible for receipts, issues and stocktaking is easy and mistakes can be settled quickly without the riced for telephone calls or written inquiries and explanations. At the sametime, the transit of the various document used is limited to the minimum and there is, therefore, a better opportunity of keeping the records up to date, less need for registration.

2.3 THE PROBLEMS INVOLVED IN THE EXISTING OPERATION

The existing manual operation combines a large number of disadvantages which are listed below.

(i) Provisions are being lost to their customers

(ii) In the manual operation the filling operation involves a large amount of paper work and as such, it is easy for important information to be destroyed or misplaced after a period of time due to frequent handling.

(iii) Document could be removed or altered without any ones knowledge.

(iv) A lot of materials is involved in the manual operation and replacement always cause a delay in the activities.

2.4 SOLUTION TO THE PROBLEMS

The purpose of this project work therefore is to address the listed problems above with a view to eliminating them and to make the hamfas operation more efficient easy to manage and result oriented.

Knowing that the subject matters is it is also evidence that the purpose of the subject matter is to design a software package that will solve the problem of manual operation carried out by club. Hence the following are the useful solution .

i. Customers should deposit some amount of money aside from the one paid for the rentage so as to serve as a collateral, In case if there's any loss of provisions.

ii. The management needs to computerize the whole activity so as to reduce the job done manually.

iii. A pass word should be used for the database so that only authorized personnel would have an access to the database.

CHAPTER THREE

3.0 SYSTEM ANALSIS AND DESIGN

3.1 INTRODUCTION

System analysis is part of data processing which is concerned with the investigation of the business need for information and for the design of a system to supply that information.

It is also concerned with "the development of clerical system was the information is processed manually as well as linking business operations and data processing

Thus, computerization of a system entail more than just the automation of part of the existing system by mean of computer. Analysis of an organization information requirement may show that the requirement will be better served by a newly designed and implemented system with the virtues of both the manual and computerized elements.

This research uses the below premises in the analysis and design of the supermarket system of the Akanbi Supermarket Federal Polytechnic, Bida.

3.2 PROBLEM IDENTIFICATION

This includes the following:

(i) The number of stock cards raised for each product and amount of wastage as a result of pairing of forms

(ii) The present supermarket processing method crates a kind of decentralization.

(iii) The time taken for processing is longer

(iv) The quality of the output is not uniform and sometimes poor.

(v) There is wastage of resources

These problems makes the present system quite expensive and inefficient.

3.3 DECRSIPTION OF THE NEW SYSTEM

(i) Relevant information about each of the product will be extracted by an assigned officer trained for the task.

(ii) All extracted data are to be inputted into the computer immediately, irrespective of the order.

(iii) The computer sorts the data according to the specified order or fields (such as name of the items, Date supplier, invoice no, unit cost and quantity e.t.c.)

(iv) Computer performs the manipulation of data

3.4 KINDS OF OUTPUT

There shall be two kinds of output namely, the intermediate and the find output.

(i) Intermediate output will print out the list of all candidates according to some specified order to consideration by the board.

(ii) The final output will comprise of all the items provided by the supermarket

3.5 FEASIBILITY STUDY

3.5.1 Technical feasibility:- At present, the supermarket has up to 2 micro computers and the personnels needed. The technical support needed are already in place.

3.5.2 Operational feasibility:- With trained staff and workable systems, it is expected that the project will operationally feasible.

3.5.3 Economic feasibility:- The cost of conducting a detailed system investigation would be eliminated by this study. The cost of developing a new system will also be minimum. Most equipments needed are already available. Such

include, Micro computers, printers, air conditioners, good office space, uninterruptible power supply (UPS), chairs, tables, stabilizers, diskettes, the database management system (DBMS) and so on.

3.6 REQUIREMENT SPECIFICATION FOR THE PROPOSED SYSTEM

(i) Comprehensive list of goods on the shelve and their data

(ii) Routine for data entry, modification, deletion, viewing.

(iii) Report generation on the screen, and sent to the printer for hard copies.

(iv) Data to be stored on magnetic storage medium

(v) Formation of organizing committee to coordinate the task

3.7 OUTPUT SPECIFICATION

(i) The intermediate output has the following fields:-

DATE

SUPPLIER

INVOICE NO

UNIT COST

QUANTITY

3.8 INPUT SPECIFICATION

This consists of the following

DATE

SUPPLIER

INVOICE NO

UNIT COST

QUANTITY

BALANCE

SIGN

3.9 FILE AND PROCEDURE

A database file is to be created called SUPERMARKET DBF which is the master file. Processed data is stored in eligible file from which customers lettered credit facilities are selected into award file.

The procedure here are the steps which unify the whole processes together to produce the desired result. It involves both the manual and the computer.

The manual aspects requires that the clerks collects and enter data into the data entry format, the computer performs the manipulation requires to give the output in the manner so desired. Enquiries can be made as data viewing, deletion, modification and reports generation routines are made available by the program.

Here records in the database can be viewed and user only has to move the cursor to the Record or Field to view its content.

4.5 PROGRAM ALGORITHM

The algorithm use for the design of the program is the Flow chart. It provides a means of designing a computer program independent of any make of computer or computer language by the use of "symbols that represent specific activities the direction of flow usually from the top to the bottom of the page.

It also indicates the ingredient of structured programming the sequence, selection, repetition and producers or subroutine as the case may be.

CHAPTER FIVE

SUMMARY, FINDINGS, CONCLUSION, AND RECOMMENDATION

5.1 SUMMARY

The Akanbi pacesetter supermarket Federal Polytechnic Bida which is a case study of this research, presently uses the conventional method in processing their transactions. This gives rise to several problems as discussed in the previous chapters. In trying to accomplish the aim of this research, that is to provide alternative method that will replace the old one, a method that is most suitable an analysis of the old and the new system was made such that the new system is favored. This is further collaborated by the feasibility study which indicates that the new project will be technically, economically and operationally feasible and hence, the research recommended a computerized supermarket system.

It is based on this background the supermarket criteria were quantified and a program is designed, coded, tested and is found workable. The package or software developed here uses the database management system which is very efficient in record processing. The program consist of several modules and it performs the task of data entry, modification, deletion, viewing and report generation. The output of the program can be seen in appendices.

5.2 FINDINGS

The findings of this research work are listed below

(i).The old system is unsuitable owing to the several disadvantages, consequently the new method is preferable

ii. It will cost only small amount to put the new system in place.

iii. The new system will be centralized in which case, it will reduce several costs, in terms of money, materials, manpower and time. It will also prevent unnecessary human interference in the supermarket exercise.

iv. It will take lesser time to process records. For instance processing 30 records through the processing routine takes less than 2 seconds

v. It uses lesser memory space.

5.3 PROGRAM TESTING

Here, the basic element are necessary and are provided in the package developed for the new system.

These are:-

(i) The routines for the data entry modification, deletion and resort generation.

(ii) The data used for testing the package:- This is obtained from the previous records.

(iii) The intermediate output generated by the program can be seen an appendix I.

(iv) The final output can be seen

The program structure which summarizes the entire program can be seen

5.4 STAFF TRAINING

The operational staff concerned with the use of the software are expected to be given at least one week of intensive training on the use of the package.

5.5 CHANGE OVER

The change from the old system to the new one is expected to be a direct change over all the elements of the old system are replaced with the new one. The data for

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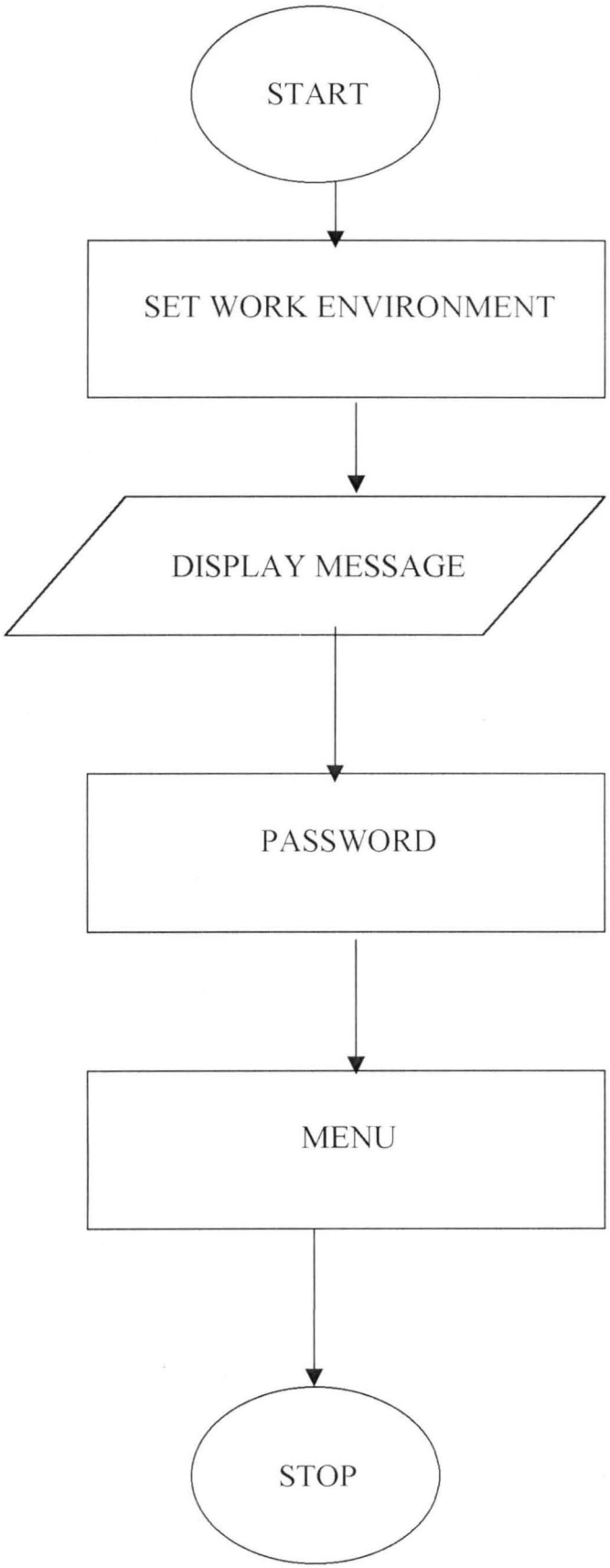
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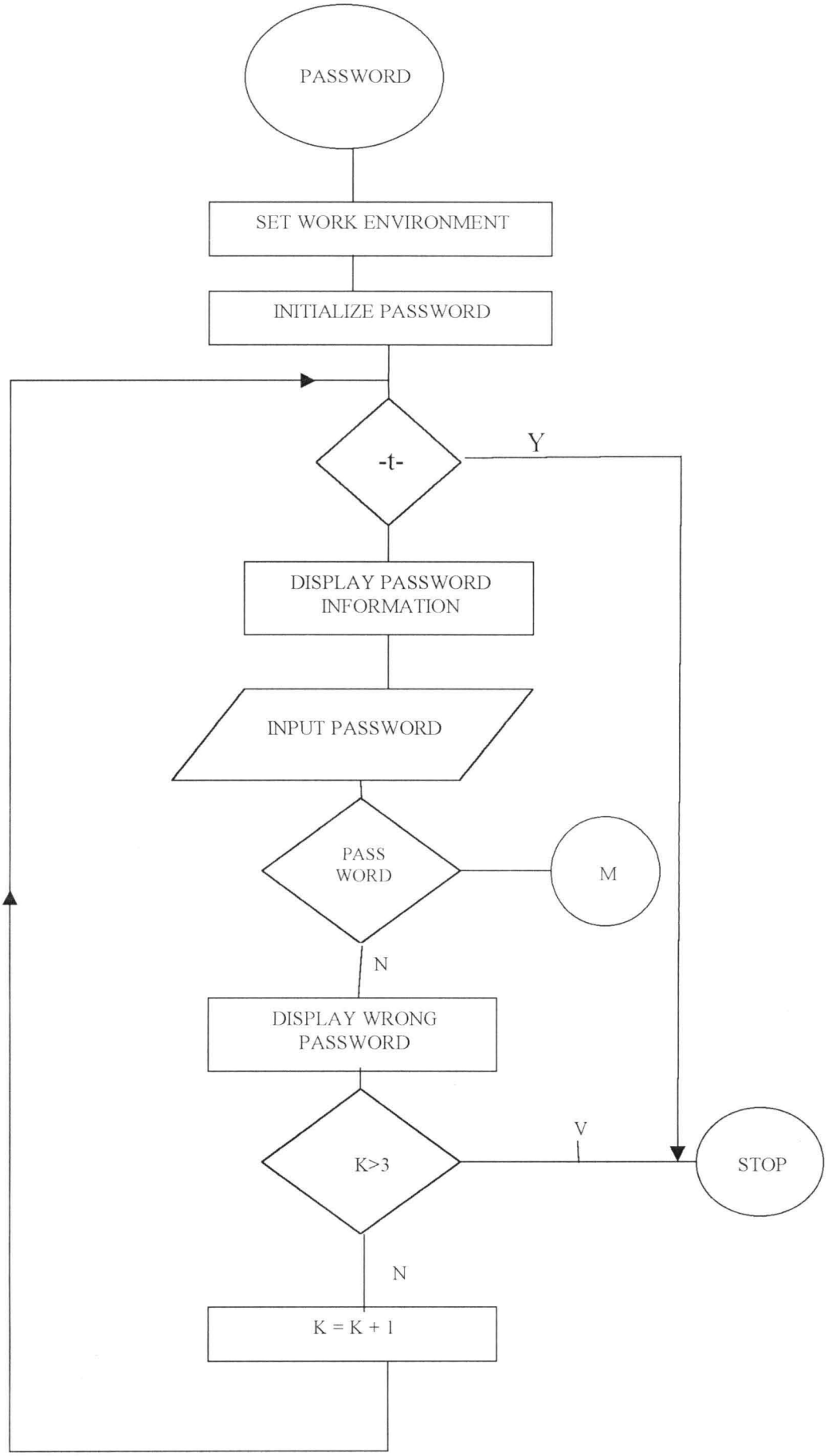
SET WORK ENVIRONMENT
DISPLAY MESSAGE
PASSWORD
MENU
STOP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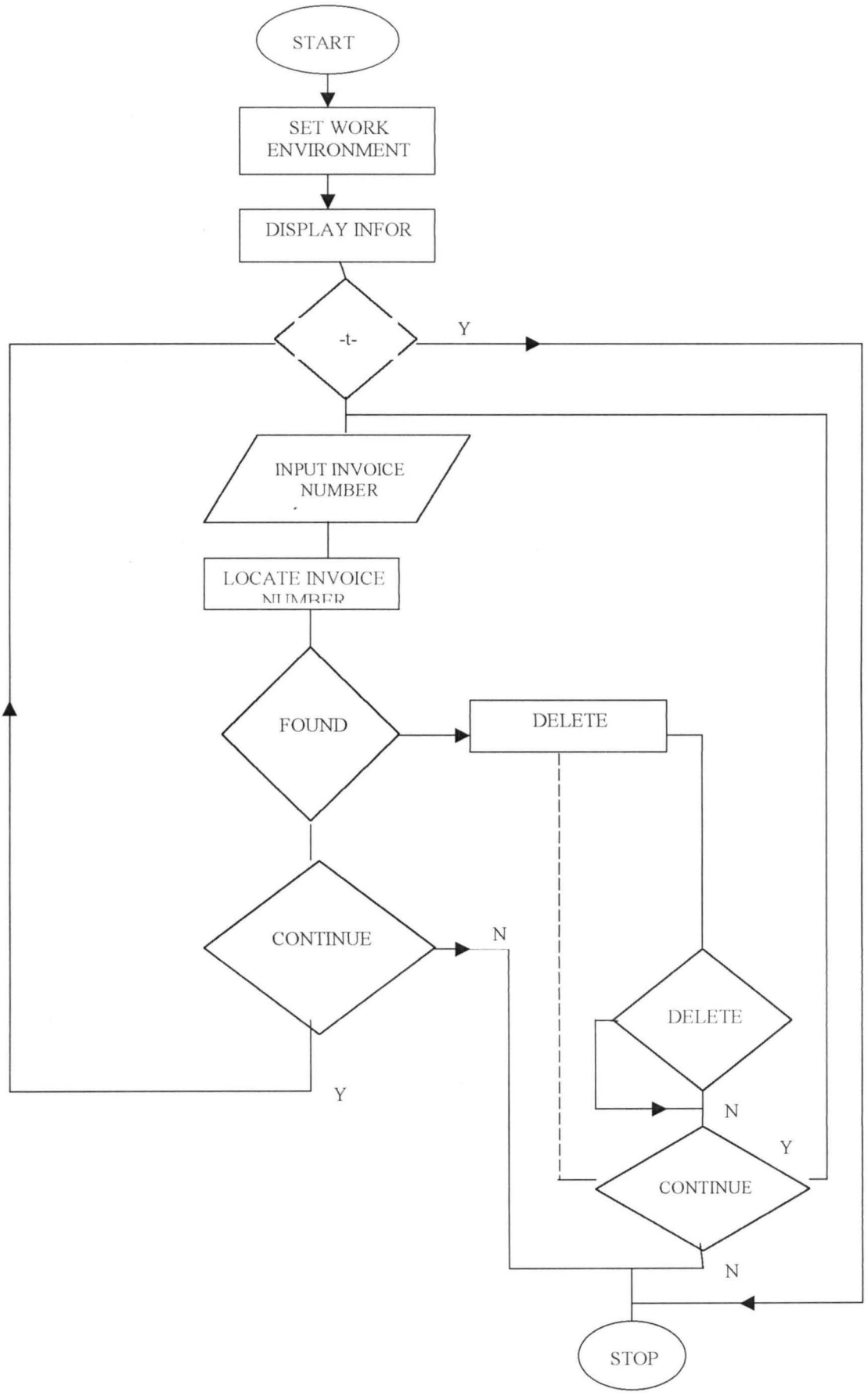
SET WORK ENVIRONMENT
INITIALIZE PASSWORD
-t-
Y
DISPLAY PASSWORD INFORMATION
INPUT PASSWORD
PASS WORD
M
N
DISPLAY WRONG PASSWORD
K>3
V
STOP
N
K = K + 1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SET WORK ENVIRONMENT
DISPLAY INFOR
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FOUND
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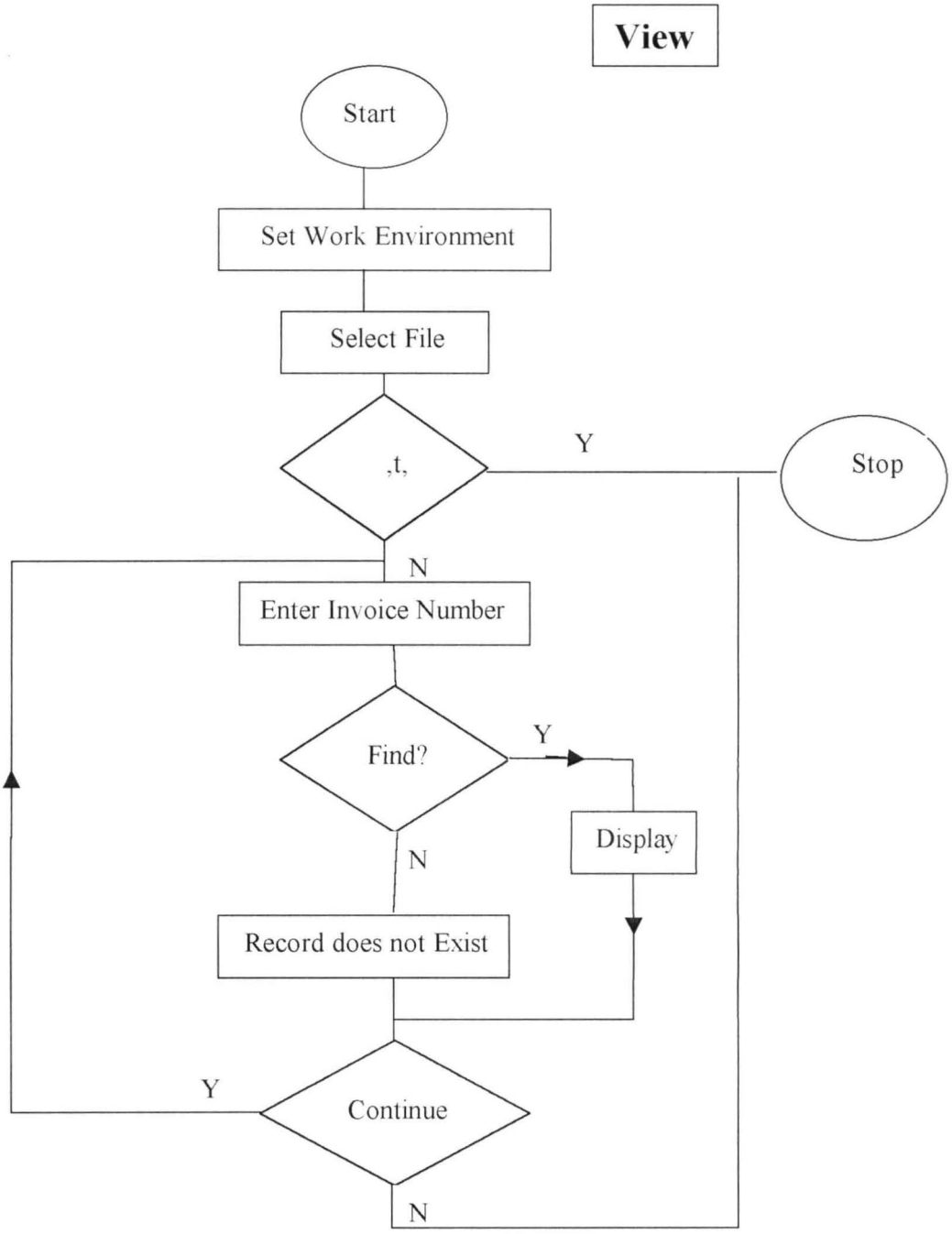
CONTINUE
N
Y
DELETE
N
Y
CONTINUE
N
STOP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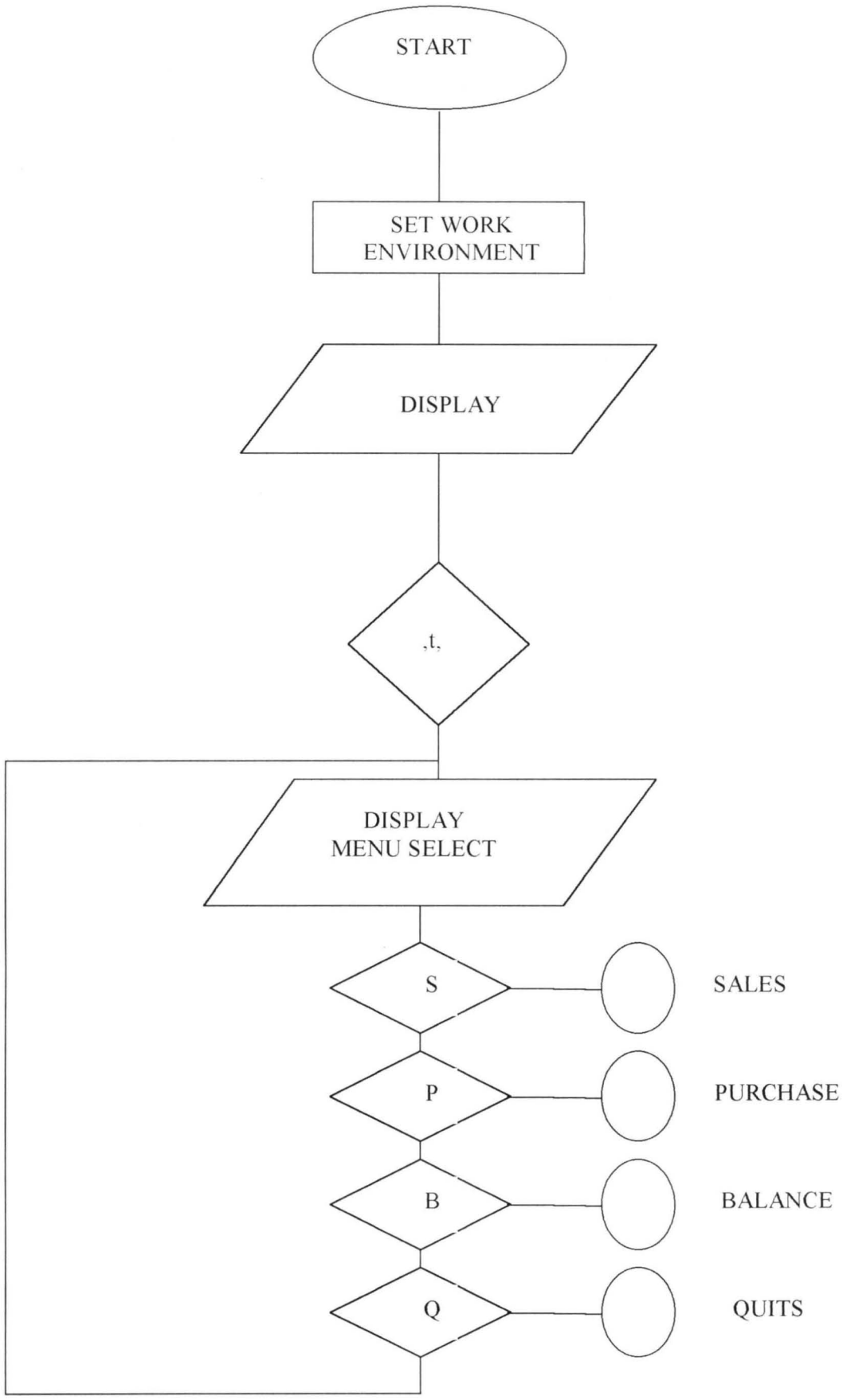
Start
Set Work Environment
Select File
,t,
Y
Stop
N
Enter Invoice Number
Find?
Y
Display
N
Record does not Exist
Continue
Y
N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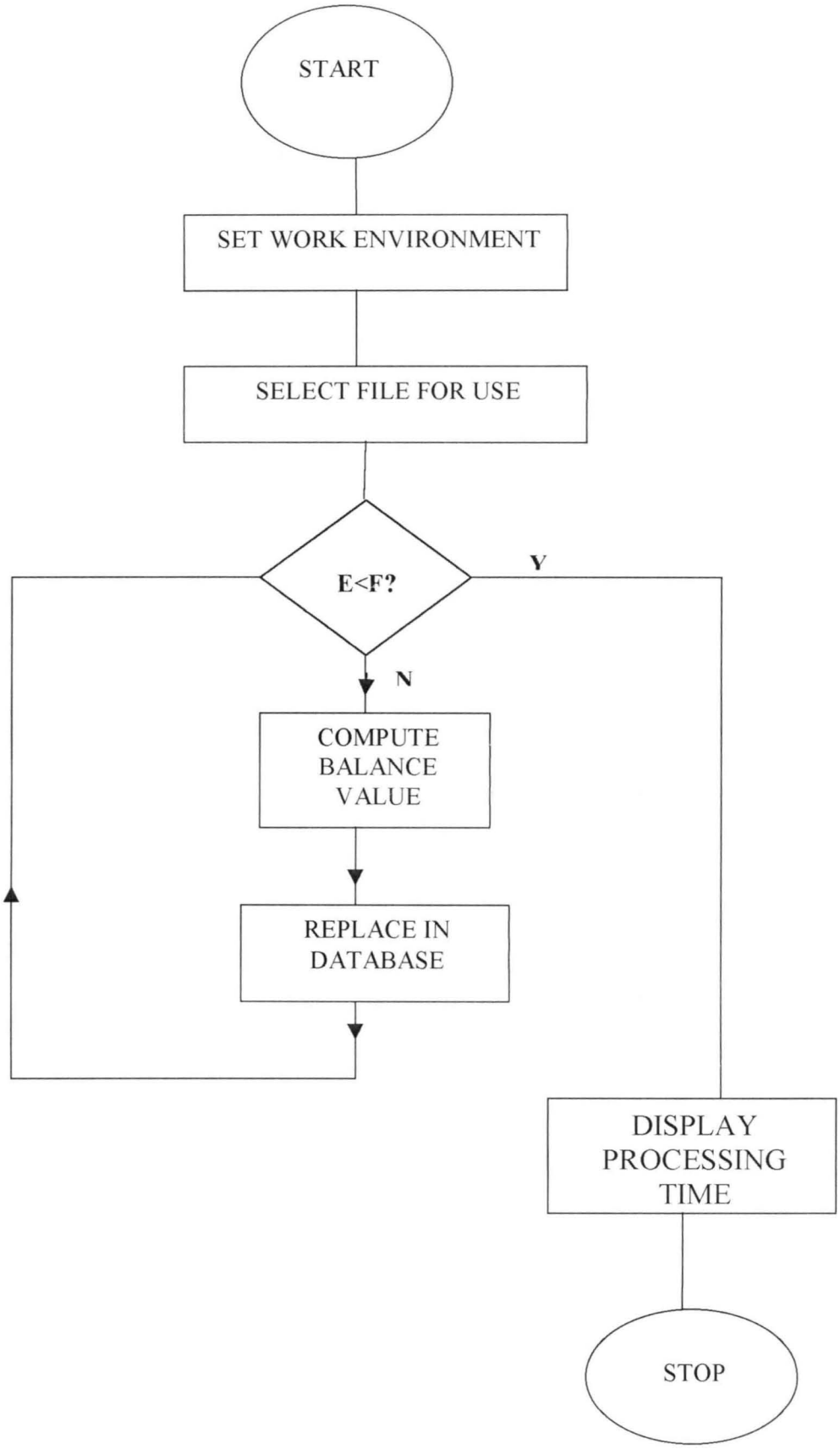
SALES
P
PURCHASE
B
BALANCE
Q
QUITS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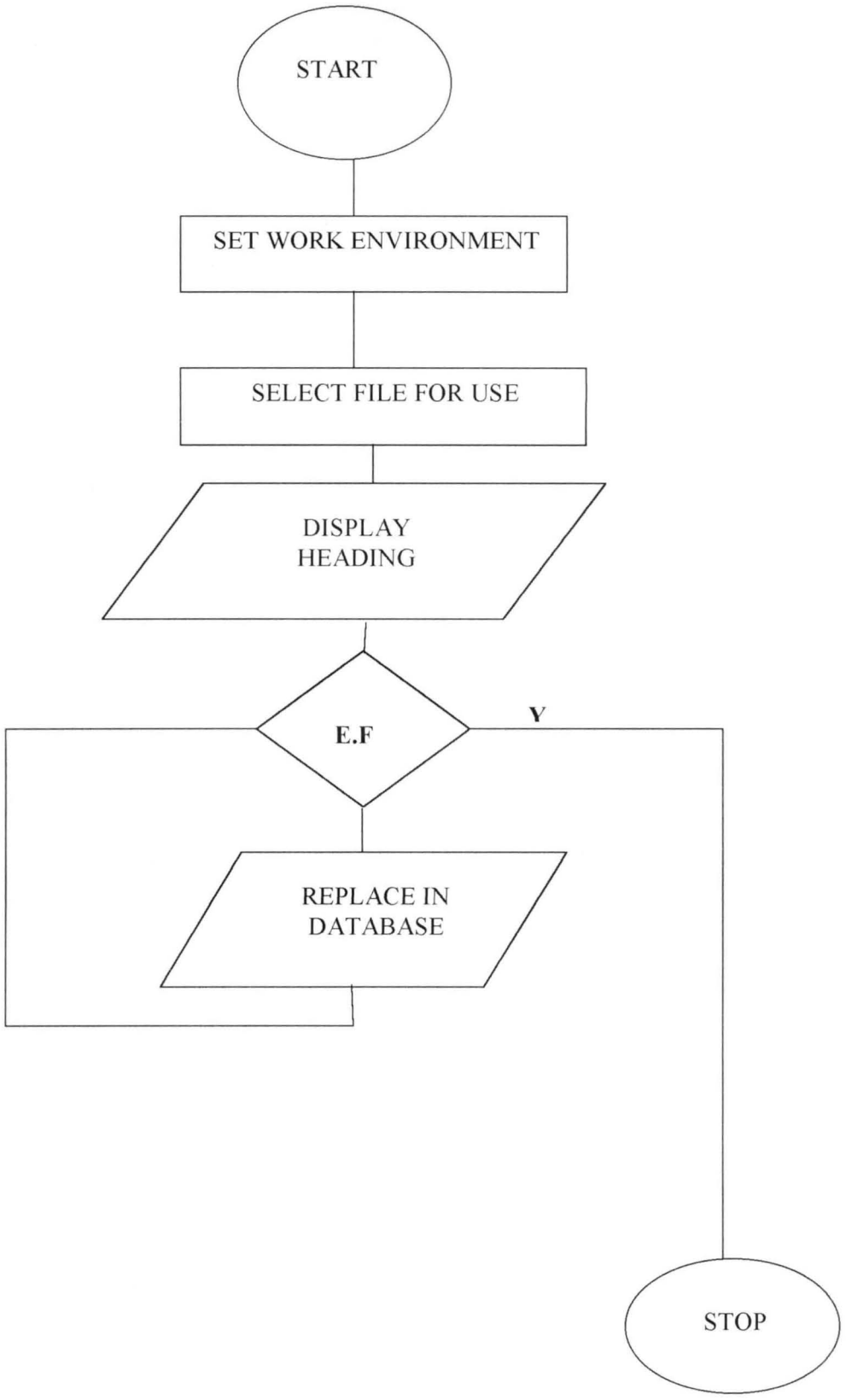
SELECT FILE FOR USE
E<F?
Y
N
COMPUTE BALANCE VALUE
REPLACE IN DATABASE
DISPLAY PROCESSING TIME
STOP


START
SET WORK ENVIRONMENT
SELECT FILE FOR USE
DISPLAY
HEADING
E.F
Y
REPLACE IN
DATABASE
STOP

AUTOMATION OF A SUPERMARKET TRANSACTION PROGRAM

*****sbal

```
set talk off
set score off
set status off
set devi to screen
clea

select 1
      use purchase
select 2
      use sales
select 3
      use balance
store space(8) to  mdate
store space(25) to msup,minv
store 0 to mucost, mqty1, mqty2
store space(25) to mrno,muprice
store 0 to mbal, mval
@ 12,12 say "processing begins"
@ 12,30 say time()
c =8
do while .not. eof()
      c= c+1
      @ 14,c say "_+_"
      select 1
      mqty1= quantity
      muprice1= unit_price
      msup= supplier
      select 2
      mqty2 = quantity
      mucost = unit_cost
      mdate = date

      mbal =mqty2 -mqty1
      mval = mbal*muprice1
      select 3
      append blank
      repl supplier with msup
        repl date with mdate
        repl balance with mbal, value with mval
      skip
      loop
endd
@ 16,10 say "processing ends"

@ 16,26 say time()
clea
```

```
                endif
 endif
endi
set color to
if upper(re) = "s"
receipt_no = "      "
sele 1
@ 12,12 say "enter receipt number:" get receipt_no
read
clea
loca for receipt_no  = receipt_no
if found()
sele 1
set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
        @ 6,16 say "        sales data modification routine      "
        set color to w/b+
        @ 8,5 say "date:"
        @ 10,5 say "receipt number:"
        @ 12,5 say "unit price n:"
        @ 16,5 say "quantity:"
        dt = date()
        set color to r+
        @ 8,12 get date
        set color to gr+
        @ 10,28 get receipt_no
        @ 12,19 get unit_price
        @ 16,19 get quantity
        read
        resp = " "
        set color to  r+
        @ 23,5 say "to modify the record (y/n)?   " get resp
        read
        if upper(resp) = "y"
                append blank
                repl quantity with quantity, unit_price with unit_price
                repl date with date, receipt_no with receipt_no
                ans = " "
                set color to g*
                @ 23,5 say "              to modify  another record (y/n)?    " get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
```

```
 if k >= 11
   wait
  @ 7,1 clea to 7,78
  r = 7
endif
@ 10,1 clea to 14,77
@ 12,12 say bal1 colo r+
*set devi to print
skip
*set devi to prin
*endprint
enddo
set talk on
set score on
set stat on
close databases
close all
retu


□********supadd2
set echo off
set safety off
set confirm off
set talk off
set stat off
set score off
set color to w/rg+, w/rg+, g
clea
qty = 0
cost = 0
dt = space(8)
invno = space(6)
store space(18) to sup
use sales.dbf
do while .t.
set color to
set color to w+/rg+, w+/rg+, g+
@ 2,3 to 18,77 doub
set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
        @ 6,16 say "         purchases entry routine      "
        set color to w/b+
        @ 8,5 say "date:"
        @ 10,5 say "supplier:"
        @ 12,5 say "invoice number:"
        @ 14,5 say "unit cost n:"
```

```
@ 16,5 say "quantity:"
dt = date()
set color to r+
@ 8,12 get dt
set color to gr+
@ 10,28 get sup
@ 12,24 get invno
@ 14,19 get cost
@ 16,19 get qty
read
quantity = qty
unit_cost = cost
invoice_no = invno
dt = date()
supplier = sup
resp = " "
set color to  r+
@ 23,5 say "to enter into the database (y/n)?   " get resp
read
if upper(resp) = "y"
        append blank
        repl quantity with qty, unit_cost with cost
        repl date with dt, invoice_no with invno, supplier with sup
        ans = " "
        set color to g*
        @ 23,5 say "              to make another entry (y/n)?    " get ans
        read
        set colo to
        if upper(ans) = "y"
                clea
                loop
        else
                clea
                exit
        endi
        set color to
else
        ans = " "
        set color to g*
        @ 23,5 say "            to continue (y/n)              "  get ans
        read
        set colo to
        if upper(ans) = "y"
                clea
                loop
        else
                clea
                exit
        endif
endif
```

```
        set color to
endd
retu

********supadd2
set echo off
set safety off
set confirm off
set talk off
set stat off
set score off
set color to w/rg+, w/rg+, g
clea
qty = 0
cost = 0
dt = space(8)
invno = space(6)
store space(28) to sup
use purchase.dbf
do while .t.
set color to
set color to w+/rg+, w+/rg+, g+
@ 2,3 to 18,77 doub
set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
        @ 6,16 say "         purchases entry routine      "
        set color to w/b+
        @ 8,5 say "date:"
        @ 10,5 say "supplier:"
        @ 12,5 say "invoice number:"
        @ 14,5 say "unit cost n:"
        @ 16,5 say "quantity:"
        dt = date()
        set color to r+
        @ 8,12 get dt
        set color to gr+
        @ 10,28 get sup
        @ 12,24 get invno
        @ 14,19 get cost
        @ 16,19 get qty
        read
        quantity = qty
        unit_cost = cost
        invoice_no = invno
        dt = date()
        supplier = sup
        resp = " "
```

```
        set color to  r+
        @ 23,5 say "to enter into the database (y/n)?   " get resp
        read
        if upper(resp) = "y"
                append blank
                repl quantity with qty, unit_cost with cost
                repl date with dt, invoice_no with invno, supplier with sup
                ans = " "
                set color to g*
                @ 23,5 say "              to make another entry (y/n)?    " get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endi
                set color to
        else
                ans = " "
                set color to g*
                @ 23,5 say "            to continue (y/n)              " get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endif
        endif
        set color to
endd
retu

        *****supass*****
set consol off
set status off
set score off
uname = space(15)
k = "nike"
store(k) to rpasswd
paswd = space(4)
kount = 0
set color to w+/rb+, g+/rb+, g+
do while .t.
  set colo to rg+
```

```
   @ 7,25 say "access validation gate"
   @ 8,5 to 18,75 double
   @ 11,8 say "users' name:"
   @ 10,20 to 12,60
   @ 15,8 say "users' password:"
   @ 14,30 to 16,60
   @ 11,24 say "enter your name:" get uname
   read
   @ 15,25 say "enter password:"
   set colo to n/n
   accept to paswd
   set colo to w+
   if paswd = rpasswd
         clea
         exit
   else
     kount = kount + 1
     if kount > 2
           clea
           cancel
         retu
     else
         set color to w/rg+
         @ 19,5 to 21,75 doub
         set color to r*
         @ 20,18 say "wrong password.....please wait!"
         *@ 19,4 clea to 21,76
         set color to
         @ 22,20 say "press any key to continue"
         wait
         *@ 22,20 say " press any key to continue"
         @ 19,4 clea to 23,76
         set color to
         set color to w+/rb+, w+/rg+, g+
          loop
     endif
   endif
   enddo
clea
set consol on
set status on
set score on
return

********supdel
set echo off
set safety off
set confirm off
set talk off
set stat off
```

```
set score off
set color to w/rg+, w/rg+, g
clea
select 1
        use sales.dbf
select 2
        use purchase.dbf
clea
set color to rg*
@ 12,12 say "you are deleting record(s) from your datbase... ok!"
set colo to
set colo to g+
@ 20,10 say ""
wait
clea
do while .t.
        set color to
        set color to w+/rg+, w+/rg+, g+
        @ 2,3 to 18,77 doub
        @ 5,10 to 10,67
        re = " "
        @ 7,15 say "to delete record(s) of purchase(s) or sales? (p/s) " get re
        read
        clea
        invoice = "      "
        if upper(re) = "p"
                @ 12,12 say "enter invoice number:" get invoice
                read
                sele 2
                loca for invoice_no = invoice
                clea
        if found()
        set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
        @ 6,16 say "         purchase data deletion routine      "
        set color to w/b+
        @ 8,5 say "date:" get date
        @ 10,5 say "supplier:" get supplier
        @ 12,5 say "invoice number:" get invoice_no
        @ 14,5 say "unit cost n:" get unit_cost
        @ 16,5 say "quantity:" get quantity
        read
        resp = " "
        set color to  r+
        @ 23,5 say "to delete the record (y/n)?   " get resp
        read
        if upper(resp) = "y"
```

```
                select 2
                clear gets
                delete
                pack
                ans = " "
                set color to g*
                @ 23,5 say "              to  delete another record (y/n)?    " get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endi
                set color to
        else
                ans = " "
                *@ 10,12 say "   this record does not exist"
                set color to g*
                @ 23,5 say "            to continue (y/n)              "  get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endif
        endif
        set color to
 else
                @ 12,12 say "this record does not exist"
                ans = " "
                set color to g*
                @ 23,5 say "            to continue (y/n)              "  get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endif
 endif
endi
set color to
```

```
if upper(re) = "s"
receipt = "      "
sele 1
@ 12,12 say "enter receipt number:" get receipt
read
clea
loca for receipt_no  = receipt
if found()
sele 1
set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
        @ 6,16 say "        sales data deletion routine      "
        set color to w/b+
        @ 8,5 say "date:"get date
        @ 10,5 say "receipt number:" get receipt_no
        @ 12,5 say "unit price n:" get unit_price
        @ 16,5 say "quantity:" get quantity
        set color to r+
        read
        resp = " "
        set color to  r+
        @ 23,5 say "to  delete the record (y/n)?   " get resp
        read
        if upper(resp) = "y"
                select 1
                clear gets
                delete
                ans = " "
                set color to g*
                @ 23,5 say "              to delete another record (y/n)?    " get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endi
                set color to
        else
                ans = " "
                set color to g*
                @ 23,5 say "            to continue (y/n)              "  get ans
                read
                set colo to
                if upper(ans) = "y"
```

```
                clea
                loop
        else
                clea
                exit
        endif
endif
set color to
else
@ 12,12 say "this record does not exist"
        ans = " "
        set color to g*
        @ 23,5 say "          to continue (y/n)          " get ans
        read
        clea
        set colo to
        if upper(ans) = "y"
                clea
                loop
        else
                clea
                exit
        endif
endif
endi
set color to

endd
retu

********supdel
set echo off
set safety off
set confirm off
set talk off
set stat off
set score off
set color to w/rg+, w/rg+, g
clea
select 1
        use sales.dbf
select 2
        use purchase.dbf
clea
set color to rg*
@ 12,12 say "you are deleting record(s) from your datbase... ok!"
set colo to
set colo to g+
@ 20,10 say ""
wait
```

```
clea
do while .t.
        set color to
        set color to w+/rg+, w+/rg+, g+
        @ 2,3 to 18,77 doub
        @ 5,10 to 10,67
        re = " "
        @ 7,15 say "to delete record(s) of purchase(s) or sales? (p/s) " get re
        read
        clea
        invoice = "       "
        if upper(re) = "p"
                @ 12,12 say "enter invoice number:" get invoice
                read
                sele 2
                loca for invoice_no = invoice
                clea
        if found()
        set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
        @ 6,16 say "          purchase data deletion routine      "
        set color to w/b+
        @ 8,5 say "date:" get date
        @ 10,5 say "supplier:" get supplier
        @ 12,5 say "invoice number:" get invoice_no
        @ 14,5 say "unit cost n:" get unit_cost
        @ 16,5 say "quantity:" get quantity
        read
        resp = " "
        set color to  r+
        @ 23,5 say "to delete the record (y/n)?   " get resp
        read
        if upper(resp) = "y"
                select 2
                clear gets
                delete
                pack
                ans = " "
                set color to g*
                @ 23,5 say "              to  delete another record (y/n)?    " get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
```

```
                exit
            endi
            set color to
        else
            ans = " "
            *@ 10,12 say "   this record does not exist"
            set color to g*
            @ 23,5 say "          to continue (y/n)          " get ans
            read
            set colo to
            if upper(ans) = "y"
                clea
                loop
            else
                clea
                exit
            endif
        endif
        set color to
 else
            @ 12,12 say "this record does not exist"
            ans = " "
            set color to g*
            @ 23,5 say "          to continue (y/n)          " get ans
            read
            set colo to
            if upper(ans) = "y"
                clea
                loop
            else
                clea
                exit
            endif
 endif
endi
set color to
if upper(re) = "s"
receipt = "     "
sele 1
@ 12,12 say "enter receipt number:" get receipt
read
clea
loca for receipt_no  = receipt
if found()
sele 1
set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
```

```
        @ 6,16 say "        sales data deletion routine      "
        set color to w/b+
        @ 8,5 say "date:"get date
        @ 10,5 say "receipt number:" get receipt_no
        @ 12,5 say "unit price n:" get unit_price
        @ 16,5 say "quantity:" get quantity
        set color to r+
        read
        resp = " "
        set color to  r+
        @ 23,5 say "to  delete the record (y/n)?   " get resp
        read
        if upper(resp) = "y"
                select 1
                clear gets
                delete
                ans = " "
                set color to g*
                @ 23,5 say "              to delete another record (y/n)?    " get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endi
                set color to
        else
                ans = " "
                set color to g*
                @ 23,5 say "            to continue (y/n)              "  get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endif
        endif
        set color to
else
        @ 12,12 say "this record does not exist"
                ans = " "
                set color to g*
                @ 23,5 say "            to continue (y/n)              "  get ans
                read
```

```
                clea
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endif
 endif
endi
        set color to

endd
retu

*****************supgen.prg
set talk off
set score off
set stat off
set echo off
set color to w/rb+, b+, r+
opti = " "
do while .t.
        @ 5,26 say "sales/purchase data entry submenu" color r+
        @ 9,10 to 19,70 doub
        set color to w/rg+
        @ 13,11 say "    s.....sales"
        @ 15,11 say "    p.....purchase"
        @ 17,11 say "    q.....quit"
        set colo to g*
        @ 21,10 say "enter your choice s/p/q" get opti
        read
        set colo to
        if upper(opti) = "s"
                clea
                do supadd2
        endif
        if upper(opti) = "p"
                clea
                do supadd1
        endif
        if upper(opti) = "q"
                clea
                exit
        endif
endd
clea
retu
```

```
        use purchase.dbf
clea
set color to rg*
@ 12,12 say "you are viewing record(s) from your datbase... ok!"
set colo to
set colo to g+
@ 20,10 say ""
wait
clea
do while .t.
clea
        set color to
        set color to w+/rg+, w+/rg+, g+
        @ 2,3 to 18,77 doub
        @ 5,10 to 10,67
        re = " "
        @ 7,15 say "to viewing record(s) of purchase(s) or sales? (p/s) " get re
        read
        clea
        invoice = "       "
        if upper(re) = "p"
                @ 12,12 say "enter invoice number:" get invoice
                read
                sele 2
        loca for invoice_no = invoice
        clea
        if found()
        set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
        @ 6,16 say "          purchase data deletion routine      "
        set color to w/b+
        @ 8,5 say "date:" get date
        @ 10,5 say "supplier:" get supplier
        @ 12,5 say "invoice number:" get invoice_no
        @ 14,5 say "unit cost n:" get unit_cost
        @ 16,5 say "quantity:" get quantity
        read
        resp = " "
        set color to  r+
        @ 23,5 say "to view another record (y/n)?   " get resp
        read
        if upper(resp) = "y"
                select 2
                loop
        else
                clea
                exit
```

```
        endif
        set color to
  else
                @ 12,12 say "this record does not exist"
                ans = " "
                set color to g*
                @ 23,5 say "            to continue (y/n)              " get ans
                read
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endif
  endif
endi
set color to
if upper(re) = "s"
receipt = "     "
sele 1
@ 12,12 say "enter receipt number:" get receipt
read
clea
loca for receipt_no  = receipt
if found()
sele 1
set color to w/rb+
        set color to w+/b+
        @ 4,28 say " federal polytechnic bida"
        @ 5,28 say " akanbi pacesetter supermarket"
        set color to w/r+
        @ 6,16 say "        sales data deletion routine      "
        set color to w/b+
        @ 8,5 say "date:"get date
        @ 10,5 say "receipt number:" get receipt_no
        @ 12,5 say "unit price n:" get unit_price
        @ 16,5 say "quantity:" get quantity
        set color to r+
        read
        resp = " "
        set color to  r+
        @ 23,5 say "to view another record (y/n) " get resp
        read
        if upper(resp) = "y"
                select 1
                loop
        else
                clea
```

```
                exit
        endi
 else
        @ 12,12 say "this record does not exist"
                ans = " "
                set color to g*
                @ 23,5 say "            to continue (y/n)               " get ans
                read
                clea
                set colo to
                if upper(ans) = "y"
                        clea
                        loop
                else
                        clea
                        exit
                endif
 endif
endi
        set color to

endd
retu

*************welocomepro.prg
set score off
set stat off
set consol off
clear
set colo to  w/rg+
@ 5,2 to 21,75 double
set colo to g+
@ 7,10 say "          automation of a supermarket transaction"
@ 9,5 say "case study of akanbi pacesetter supermarket federal polytechnic bida"
@ 13,10 say "              developed by c.o adeagbo (mrs), pgd/mcs/98/99/832"
@ 15,10 say "         (department of mathematics and computer science)"
@ 16,10 say "          federal university of technology, minna"
@ 17,3 to 17,74
set colo to r/b+
@ 19,20 say "   supervised by reju s.a (dr)" colo rb+
set colo to
@ 23,3 say "press any key to continue"
wait" "
clear
set colo to w/rg
do supass
clear
do nike
close all
clear
```

ppendix A

AUTOMATION OF A SUPERMARKET TRANSACTION

CASE STUDY OF AKANBI PACESETTER SUPERMARKET FEDERAL POLYTECHNIC BIDA

Developed by C.O. Adeagbo, P.G.D/MCS/98/99/832

Department of Mathematics and Computer science

Federal university of Technology Minna

Supervised by Reju S.A. (Dr.)

Press any key to continue

ppendix B

ACCESS VALIDATION GATE

User's Name: Nike User's Password: enter password

ppendix C

FEDERAL POLYTECHNIC BIDA

AKANBI PACESETTER SUPERMARKET

PROGRAM MAIN MENU

A	.....	**Add Record**
M	.....	**Modify Record**
D	.....	**Delete Record**
V	.....	**View Reord**
P	.....	**Process Record**
G	.....	**Generate Report**
Q	.....	**Quit/Exit**

Select any of the options (A/M/D/V/P/G/Q): A

ppendix D(ii)

FEDERAL POLYTECHNIC BIDA

AKANBI PACESETTER SUPERMARKET

PURCHASES ENTRY ROUTINE

Date: 25/2/2000

Supplier: Bello R.A

Invoice Number: A2441

Unit Price: 500.00

Quantity: 100

To enter into database(y/n):y

ppendix E

FEDERAL POLYTECHNIC BIDA

AKANBI PACESETTER SUPERMARKET

SALES ENTRY ROUTINE

Date: 25/2/2000

Supplier: Bello R.A

Invoice Number: A2441

Unit Price: 500.00

Quantity: 100

To make another entry (y/n): y

ppendix F

ENTER INVOICE NUMBER: A23345

This record does not exist

ENTER INVOICE NUMBER: A2441

FEDERAL POLYTECHNIC BIDA

AKANBI PACESETTER SUPERMARKET

PURCHASES DATA DELETION ROUTINE

Date: 25/2/2000

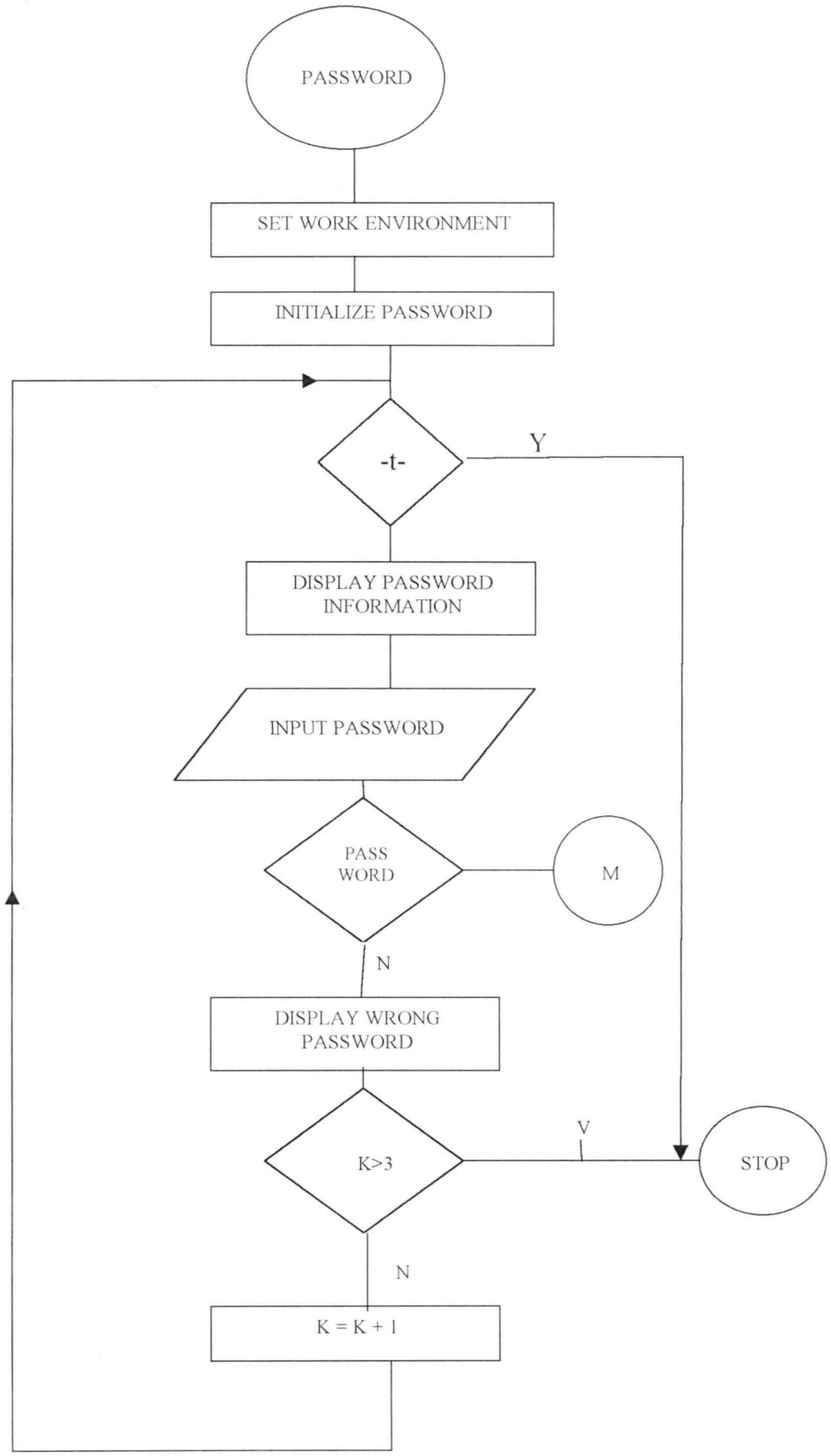
Supplier: Bello R.A

Invoice Number: A2441

Unit Price: 500.00

Quantity: 100

To DELETE another (y/n): y


PASSWORD
SET WORK ENVIRONMENT
INITIALIZE PASSWORD
-t-
Y
DISPLAY PASSWORD INFORMATION
INPUT PASSWORD
PASS WORD
M
N
DISPLAY WRONG PASSWORD
K>3
V
STOP
N
K = K + 1