

# **COMPUTERISATION OF PRODUCTION SYSTEM**

**(A CASE STUDY OF NIGERIAN BOTTLING COMPANY - ILORIN PLANT)**

*BY*

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## CERTIFICATION

This project report had been read and approved as meeting part of the requirement for the award of post graduate Diploma (PGD) in Computer Science in the department of Maths/Computer Science, Federal University of Technology, Minna.

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## **DEDICATION**

- (1) To the memory of my late sister Olaitan Alabi. May her soul rest in peace (Amin)
  
- (2) To my Mother, Alhaja Rafat Alabi.

## ACKNOWLEDGEMENT

BISIMILAH! RAHAMAN RAHEEM. This project wouldn't have been possible if not for the love that Almighty Allah bestowed on me by sparing my life, guiding and granting me the strength and wisdom to continue my education up to this level. I therefore say ALHAMDUL LILAH! And again I renew my faith in him by saying ASHADU ANLALLAHA ILALLAHU.

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## **ABSTRACT**

Production is an act of manufacturing especially in large quantities. Computerization of production system which study is all about, is the automation of the production system in an organization. Companies and establishment can operate effectively in this computer age by implementing an appropriate computer application system.

Timely, reliable and accurate information is needed for a management to make effective decision. This is necessary in view of the high increase in competitions existing among business organizations. Current information is necessary for any business to succeed and this can only be realised by using modern technology and innovations.

The computerized production system described in the study will be functional, efficient and reliable which will make work easier, faster and thus brings about increase in quality and quantity of the products.

The major aspects specified in the program modules include stock control, quality control and production.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 OVERVIEW

Production is an aspect of the general enterprise organisation. Companies and other establishment can only operate effectively in today's complex environment by implementing an appropriate computer application system.

For the management to make effective decision, they need timely, reliable and accurate information. This is imperative in view of the high increase in competitions existing among business organisation. For any business to succeed, current information is vital and this can only be achieved using modern technological facilities and innovations.

Current development in computer technology is increasingly simplifying human efforts in problem solving operations. The introduction of computer in production routines and other activities has enable man to solve problems, which were previously of insurmountable complexity. The speed of execution of programs by the computer coupled with its accuracy, flexibility, adaptability, storage capacity and versatility makes it the most power tool for processing data.

The system automation should along with adequate maintenance, security and staffing to avoid unexpected cost and failure to the planned automated system.

The automated production system described in this study makes work easier, faster, and this brings about increase in the quality and quantity of the output products.

### 1.2 PROBLEM DEFINITION.

The present production process in NBC is still controlled or handled manually. This method of handling the production process is accompanied by lots of set backs such as lost of data, low productivity, time consumption, inefficiency, human errors amongst other. There is



therefore the need to design, develop and implement a functional system that can handle the production activities of the company.

### **1.3 AIM AND OBJECTIVES OF THE STUDY.**

The basic aim of this project is to design a computerised system which is an alternative to the existing manual system of production in NBC. In the designing this computerised system however, the existing system showing the set backs and the problems of the manual system could be minimized if not totally eliminated.

The main objectives involved in this study are as follows:

1. Designing a system that will accurately keep an update record of production entries.
2. To eliminate or minimize the errors associated the manual system.
3. To provide timely, accurate and reliable information for decision making in NBC.
4. Lost of valuable information associated with manual system in an organisation will be prevented by storing such information on a disk (being a very reliable storage medium).
5. And to demonstrate the computer's capability of solving problems.

### **1.4 RELEVANCE OF THE STUDY**

The study will be of great importance to N.B.C because it is envisage that at the end of this study, a functional, reliable and efficient system would have been developed which will assist immensely towards achieving better result in N.B.C . When fully implemented, the new system will greatly reduce or minimize the problem associated with the manual system.

The advantages that is going to be derived from the study also include the following:

- The number of manual procedures will be greatly reduced.
- The rate of operation will be faster, effective, accurate and large complex procedures would be carried out within the shortest period of time.

- Establishment of accurate production system.
- Better Management Control.
- There is going to be enough accommodation for growth.
- The acquisition of an intelligent terminal that aids time-sharing utility.
- Improved profitability.

### 1.5 SCOPE

The study is mainly concern about the automation of production system of the production department of N.B.C. The scope is going to be limited to the manufacturing aspect, which is divided into three:

- Production system: This shows what raw materials are required to produce the various soft drinks
- Inventory control system: Refers to stock taking of all material used within the production system. It involves the replacing and giving out raw materials necessary for production.
- Quality Control System: This ensures a high standard of soft drinks being bottled.

### 1.6 STUDY METHODOLOGY

There are several methods of gathering information, they include observation, record searching, questionnaire, and interviewing. The analysis approach to the investigation will influence the use of the various methods; it is important that the approach is appropriated to the situation under consideration. In essence, the method to be employed in any study depends on the nature or the title of the study.

The approach employed in this study includes information gathering through the method of record searching. The main purpose of record searching is to establish qualitative

information, volumes, frequencies, trends and ration. It also helps to establish how much reliance can be put on the estimates given by the staff or the management of the department.

Other methods employed include interview and observation.

Interview are by far the most common and satisfactory way of obtaining information particularly to obtain information about objectives, constraints, allocation of duties and problems and failures of existing system.

Observation: It involves watching and operation for a period to see for oneself exactly what happens.

Furthermore, program writing, testing, debugging and development are parts of the study. A careful consultation to textbooks, journals and programs has been another approach employed in accomplishing this study.

# **CHAPTER TWO**

## **LITERATURE REVIEW**

### **2.1 OVERVIEW**

The question as to how things are produced has often engaged the mind of many people. This type of question arises from those who have been interest in the production system of items. The production system of the Nigerian Bottling Company is an example of a mass production process.

A production system can be define as an establish order that leads to the manufacturing of certain products. In mass production system where large quantity of homogenous or identical product are made, there is little waiting between the execution of one production level and another. This type of mass production process therefore, need some kind of automation in order to create uniformity. This is the reason for the present study embarked upon.

### **2.2 MANUFACTURING PROCESS**

Manufacturing is the organized activity devoted to the transformation of raw materials into marketable goods in the terminology of economics, these marketable goods are known as economics goods, they cannot be obtained without expenditure. Manufacturing industry is also called a secondary industry, because this is the sector of a nation's economy that is concerned with the processing of raw materials supplied by the primary industry into end product.

A manufacturing system usually employs a series of value – adding manufacturing process to convert raw materials into more useful form and eventually into finish products. For example, in the process of producing soft drink. Raw materials such as Water, Sugar, Concentrate are assembled, each materials are measured into the required quantity and then

materials are added to produce the drinks after which product test and quality checks takes place and finally product are then bottled.

The output from one manufacturing system may be utilized as the input into another. For example, the bottles from Ugelli, Delta State are used as part of the materials for the production of soft drinks. A manufacturing system is therefore, a typical input – output system which produces output through activities of transformation from input.

### **2.3 HISTORICAL BACKGROUND OF COCA – COLA BOTTLING COMPANY**

Coca – cola Bottling Company of Nigeria produces soft drinks. These are world leading source soft drinks sold in more than 145 countries. The production consists of Coca – cola, Fanta – orange, Krest, Sprite, Ginger – Ale, Fanta – lemon, Tonic fanta and Soda – water. A total of 250million bottles are consumed everyday in all part of the globe. From Canada, in the North to Argentina in the New Zealand south from Alaska to China and from Mexico to Nigeria.

The Ilorin plant is situated along Coca – cola road in the heart of Ilorin township. It has the capacity of producing more than ten thousands soft drinks per day for human consumption over 400 employees are involved in the production and administration.

Staff strength is about 7000 workers nationwide. There are 19 plants over the nation. Ilorin plant operates with nine depots namely: Oshogbo, Minna, Oyo, Ogbomosho, Offa, Saki, Bida, Jebba, Kontogora, which cuts across about five states.

The manufacturing process for Coca – cola involves the use of carefully measured substances, which are combination of Sugar, Water and concentrates. Sugar being imported from overseas, water from neighbouring water corporation while concentrate and other raw materials like bottles from Ughelli are manufactured by Delta glass company, Ughelli and crown cork from Ijebu ode.

Nigerian Bottling Company is today Nigerian's number one bottler of soft drinks, selling more than 6million bottles per day. This figure is growing with the continued expansion of the existing 19 plants and with opening new plants in various parts of the federation. The latest market products of the company are the 25cl bottles of Coca -cola, Fanta - orange and Fanta lemon. Other include 50cl and the 1litre Coca-cola. These are improvement on the canned drinks first introduction in the early eighties.

## 2.4 PRODUCTION SYSTEM ELEMENT

The point has been reached where the components of a production system can be examined in detail, taking as a starting point the definition of the system being "a facility, which manufactures physical goods from raw materials using machinery and Labour". This idea may be further refined by taking into account the whole range of input, both tangible and intangible, apart from just raw material, which are required by the transformation process. Thus financial capital, consumable materials and supplies, skill and knowledge (of product and processes) , services from outside contractor, e.t.c can all be regard as resources inputs.

Most analysis of production situation suggests that there are three key tangible resources employed, namely Labour, physical facilities and materials. It is more appropriate, however to consider the last item - i.e. materials - separately since their dynamic nature makes their subsequent control, rather than system design, the most significant activity.

If this argument is accepted, then the essential components of the system, which converts input, are Labour and physical facilities. It is the choice of these, together with their organization (including motivation with remuneration) that determines the system's ability to process materials and produce the desired output efficiently.

## **2.5 THE ROLE OF PRODUCTION IN MODERN BUSINESS ENVIRONMENT**

Today many organizations are realizing that production is an important factor, which must be taken into account when formulating a corporate strategy. This realization presents a reversal of the more traditional view that production just plays a supporting role to marketing.

Although it is true that marketing must establish what is produced, such view is partly based on further attitude that profit is more dependent on an item's selling price than on its manufacturing cost. Within a very less competitive environment this attitude might go unquestioned. However, the modern consumer is now extremely sophisticated, expecting from the product a range of performance and quality attributes as well as the best value for money.

These attributes can only be satisfactorily derived by adopting a strategic view of production. Incorporating issues into the strategy of the organization greatly improves the chance of providing customers with products which have the features they want.

A further consideration which must be taken into account when formulating a strategy for production is the fact that delivery and availability have become increasingly important features of a product because customers insist on constant supply of standard products. To meet the demand for better delivery and high availability, a completely new approach must be taken towards the design of production system. Not only is there a need to raise process output, but inventories must be lowered, delays minimized and materials movement reduced. The system must also be responsive to changes in product design and demand pattern.

In order to meet such complex and demanding set of objective, managers have to define the parameters for production and must design the system in terms of its technical and physical characteristics, its human resources requirement and the organization of work. They

then have to control the flow of materials, and in many cases some of the other resources, through the system.

## **2.6 STATISTICAL QUALITY CONTROL ANALYSIS**

Before production starts, a decision is necessary as to what is to be design and produced. Next comes the actual manufacturing of the product. Finally it must be determined whether the product manufactured is what is intended. It is convenient to think of all matters related to quality of manufactured product in terms of these three functions of specification, production and inspection.

Statistical quality control should be view as a kit to tools, which may influence decision, related to the function of specification, production or inspection.

The quality control is carried out to assess the standard of product being produced from the transformation of raw materials to finished products.

The quality of transformation is continuously monitored by tests and comparison. In the end those that passed the final test, a standard remark is passed to certify that the product the product meets up with the required standard.



## **CHAPTER THREE**

### **(SYSTEM ANALYSIS AND DESIGN)**

#### **3.1 AN OVERVIEW**

The method of determining how best to use computers with other resources to produce results which meet the information needs of an organization is known as system analysis. The system analyst has to work hand in hand with the users of the system and assist to ensure that the needs of the users are met. In system analysis and design, the actual problem has to be considered. If the wrong issues are addressed, the result will be a total failure. System analysis and design comprises a number of aspects such as problem definition, preliminary study, system analysis, system design, program acquisition, implementation and maintenance.

#### **3.2 PRODUCTION ANALYSIS**

With regard to the information gathered from the production manager of NBC, Ilorin plant, it is clear that the manufacturing process of Coca-Cola is based on a carefully measured combination of sugar, water and concentrate. It was stated that the same standard is maintained throughout other branches of Nigeria Bottling Company of Nigeria.

The water used in the production process is supplied from Kwara State Water Corporation. It is stored in the reservoir in large quantities after which it is transferred to the treatment tank by the use of electric pumps. It is inside this tank that the water undergoes some treatment with three different types of chemicals. These are hydrated lime, chloride lime and ferrous of aluminum sulphate. These chemicals are added in certain order and stirred for an hour. It would be allowed to cool down for almost two hours, after which it undergo another set of different treatment in two different tanks.

The first tank bearing the sand fitter is used in removing all traces of sand particles and at the same time destroying all germs. In the second tank is the purifier which absorbed all the traces of chlorine remaining in the water. After the carbonation of the water, the water technician collects some quantity to the laboratory to be tested and certify the water good enough for production.

Simultaneously, in the sugar room, the sugar is weighed to determine the percentage of sugar needed. It is observed that granulated sugar is used. After weighing, the sugar leaves for simple syrup room where it is added to the tested portion of the water. The mixture passes through filter press, which filter all the impurities before going to the final syrup tank where the addition of concentrate takes place. It is noted that at this point the concentrate is 8units (1 unit =226 cases). In case of production of fanta, the concentrate is 236 cases that is added to the mixture of sugar and water.

After mixing, the agitator stirs for a specified period of time after which it goes to the laboratory for a test. After testing, the inspection light searches for further dirt and unlevelled bottles are then passed to the accumulation table. Some quantity of the treated water is reserved for washing the bottles, caustic soda is added to the tank containing the water and the solution is mixed thoroughly.

Empty bottles returning from the market passes through the machine at a high temperature in the caustic soda solution and are rinsed several times. A steady line of clean sparkly bottles are passed to the filter after being carefully inspected. The inspection is done by the inspection light used in detecting any left dirt or particles in the bottles. The cleaned bottles are then filled with the prepared solution of concentrate, sugar and water are immediately passed through filled carbon dioxide ( $\text{CO}_2$ ) so as to enable the content to stay for a long time before being crowned. At this point, they passed through another inspection light, but this time searching for the level of the content and any subsequent left over dirt.

The bottles that does reach the required level are then passed to the accumulation table back for refilling while the satisfactory ones are passed to the accumulation table where they are placed in cases, ready for loading into the delivery truck.

All these involves both manual labour and dedicated machine equipment. At the end of each production process, a report is generated.

First, the production process is classified into three aspects; the production system which shows what raw materials are required for production. Its mode of production control report card is filled and filed onward. The supervisor checks the report and authenticate it by signing. Finally the production manager signs and files the report.

Inventory control system is also in operation. This refers to stock of any items used within the production system. The process connotes the replenishing orders and giving out of raw materials necessary for production. Before the production process begins, the stock controller inspect and ascertain that enough raw materials are available for production. If not, the stock controller request for replenishing order. For the day to day activities, a card is used for keeping the necessary entries in order to ensure a proper up to date record of raw materials. This card is known as stock report card. It is used for what goes into production and what comes into stock so as to know what raw materials needed to be reordered.

Quality control system is also in operation. This ensures a high standard of soft drinks being bottled.

### **3.3 ALGORITHM OF THE CURRENT SYSTEM**

1. Measure specific quality of water and hold some back
2. Weigh bag of sugar
3. Switch on the agitator
4. Open sugar bags, empty sugar into tanks
5. Weigh empty bags and take the weight away from the weight in step 2.

6. Weigh balance of sugar and add to tank
7. Continue mixing until all the sugar dissolved.
8. Filter sample syrup into final syrup tank
9. Chase through with some of the water that was held back in step 1
10. Switch on agitator of finished syrup tank
11. Add the first half of the water into the tank through 30 mesh strainer.
12. Add into tank through 30 mesh strainer the reserved water held back in step 1
13. Rinse out both container with the water that was held back in step 1
14. Add rising to finished syrup through 30 mesh strainers
15. Continue mixing for an hour
16. Draw up a bucket full of syrup from bottom of tank and pour back into top of tank while mixing.
17. Take finished syrup sample and check brise, adjust syrup if necessary.
18. Take sample from finished syrup and carbonated water and test taste.
19. Switch of agitator and stand finished syrup for a minimum of 2 hours to allow air to escape before use.
20. Wash bottles with caustic soda solution, after washing then pass to filler
21. Add carbondioxide.
22. Passed into accumulation table and placed in cases ready for loading into the delivery truck.
23. Some quantities are stored in the stock control room and others distributed to customers.
24. Stop.

### **3.4 LIMITATION OF THE CURRENT SYSTEM**

The existing manual system of production is extremely strenuous. The main aim of this project is to find solution to the problem discovered by developing and an efficient automatic system production.

The problems of the current system are listed below:

- (i). There is the problem of lengthy paper work processing cycles. Too many clerical officers are involved in carrying out some repetitive job daily.
- (ii). These jobs are prone to human errors.
- (iii). The information speed rate of the management is slow in meeting the management requirement. This slackens the pace of decision making in the organization.
- (iv) Communication gap often develops in the manual procedures used in the dissemination of information to the various personnel concerned.

It is considered that the current system be reorganized and an efficient automatic production system be developed to overcome the above problems. Any information on the production system can be stored in the memory of the computer. Computerized processing eliminates the high volumes of paper works and large number to those personnel needed. The dishes can be used to store, access and process information fast and efficiently. This redundancy among various clerical staff will be reduced through the automated system. The automation of the system will clearly give adequate security to information stored. Besides, there will be no loss of data or information.

Finally, automated system surely brings about fast accessing and retrieval of information for the prompt dissemination of various sub head for action.

### **3.5 ANALYSIS OF THE PROPOSED SYSTEM**

#### **3.5.1 DESIGN APPROACH**

The microcomputer system proposed is IBM. The system needs are listed below.

- (i) Two high capacity disk drives
- (ii) LaserJet printer
- (iii) Four video display units for interaction interface with the computer

#### **3.5.2 SOFTWARE SUPPORT**

The software used in the implementation of this project for the system being developed consists of Microsoft disk operating system (MSDOS). Antivirus to protect the system against infection.

#### **3.5.3 HARD WARE REQUIREMENT**

This relates to the physical and electronics devices used to carry out the project work.

It consist of the following:-

- (i) Central processing unit (CPU)
- (ii) Printer
- (iii) Magnetic Disks
- (iv) Visual display unit

**CPU:-** The Eclipse CPU is a powerful sophisticated machine with main frame capability. It has a built in floating point processor and a microprocessor (Pentium processor) subsystem that runs diagnostic routine on the whole system. It supports four megabytes of main memory, a separate input / output processor. The 32 bits machine has an addressing capacity of over 9 kilobytes and the library system programs and file can be as large as 52 megabytes.

**PRINTER:-** The printer is used for printing documents and it also serves the purpose of providing hard copy of production system information. There are different types of printer but the type used for this project is the LaserJet printer.

**SECONDARY STORAGE:-** The magnetic disk is used to store large information on the system. The magnetic disk should be an industry compatible model. The secondary storage devices are useful for storing data, programs and information permanently.

**VISUAL DISPLAY UNIT:-** The visual display unit is used to display information on the screen. Each terminal consists of a television like video display unit and a keyboard. The screen capacity of the display unit is 1920 characters of 24 lines by 80 characters. The keyboard possesses the typewriter layout and additional keys for different function.

### **3.6 COST BENEFIT ANALYSIS**

From time to time, several decision criteria have been proposed to work out the best operating condition.

Within the scope of this project, the model is to replace the existing manual production system with automated one, hence the need to discuss the comparative cost advantage of the proposed system over the existing manual system are as follows.

- (i) The proposed system help to reduce the time used in the decision making.
- (ii) Help to reduce the number of manual procedure
- (iii) The rate of operation will be faster hence improve profitability
- (iv) There will be better management control.

The expected cost of the proposed system is as follows

3 New computer system @ ₦60,000	₦180, 000
3 Ups (650v) @ ₦ 10, 000	₦ 30, 000
Air condition	₦40, 000
Software	₦ 50,000

Staff training ₦ 80, 000

Printer (LaserJet) ₦ 54,000

Annual maintenance ₦ 80, 000

Stabilizer / power surge ₦ 10, 000

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₦ 524, 000

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# CHAPTER FOUR

## SYSTEM DESIGN AND IMPLEMENTATION

### 4.1 INTRODUCTION

The design, development and implementation of a functional system requires a high level of dedication and effort. However the resultant benefit to be derived from the system supercedes the effort utilized considerably.

The system proposed in this study has the potential benefits of enabling better productivity within Nigerian Bottling Company when finally implemented.

#### 4.1.1 PROGRAMMING LANGUAGE USED

The programming language employed in developing the system here is QBASIC. QBASIC is a programming language which was initially developed for business application but has been modified to handle both business and scientific problems. The interactive features of the programming language assists the programmer to trace and debug errors even before programme execution.

### 4.2 INPUT SPECIFICATIONS

Three stages are involved in the programming of the automation of production system.

These three stages that are focused by this project work include stock system program, quality system program and production system program.

#### 4.2.1 INPUT TO STOCK SYSTEM PROGRAM

The input to stock system program are the following materials: Empty crates, cork, water, lemon /orange, sugar and coke syrup. The materials listed above has got it own production capability and capacity.

ITEM NAME	ASSIGNED VARIABLE NAME	VARIABLE TYPE ASSIGNED	INITIAL VAL ASSIGNED
EMPTY CRATE STOCK CAPACITY	EPC	NUMERIC	300
PRODUCTION CAPACITY	EPC	NUMERIC	180
CORK STOCK CAPACITY	CPC	NUMERIC	7,500
PRODUCTION CAPACITY	CPC	NUMERIC	680
WATER STOCK CAPACITY	WSC	NUMERIC	15,000
PRODUCTION CAPACITY	WPC	NUMERIC	5,000
LEMON/ORANGE STOCK CAPACITY	LSC	NUMERIC	1,682
PRODUCTION CAPACITY	LPC	NUMERIC	120
SUGAR STOCK CAPACITY	SSC	NUMERIC	3,000
PRODUCTION CAPACITY	SPC	NUMERIC	950
COKE SYRUP STOCK CAPACITY	KSC	NUMERIC	1,100
PRODUCTION CAPACITY	KPC	NUMERIC	105

#### 4.22 INPUT TO QUALITY SYSTEM PROGRAM

The input to the quality system program are the following things listed below with their assigned variable name.

1. PRODUCT NAME - PN
2. QUANTITY OF WATER - QW
3. QUANTITY OF CARBONDIOXIDE - QC
4. QUANTITY OF SUGAR - QS

#### QUALITY SYSTEM PROGRAM INPUT

ITEM INPUT	ASSIGNED VARIABLE NAME	VARIABLE TYPE ASSIGNED
PRODUCT NAME	PN	STRING
QUANTITY OF WATER	QW	NUMERIC
QUANTITY OF CO <sub>2</sub>	QC	NUMERIC
QUANTITY OF SUGAR	QS	NUMERIC

#### 4.2.3 INPUT TO PRODUCTION SYSTEM

The input to production system program are the following:

1. PRODUCT NAME
2. PRODUCTION CAPACITY ON WEEKLY BASIS
3. MONTHLY TOTAL PRODUCTION FOR THE PERIOD OF A YEAR

## **4.5 SYSTEM IMPLEMENTATION**

The process of making a system fully operational (putting of into use) is known as system implementation and this requires careful and wise decision making. There are ways of implementing a particular system and the type of conversion to be used depends on the type of system developed and the organization.

The various approaches or methods are as follows.

- (a) Direct Change over:- Is a drastic and immediate conversion of the old system to the new one.
- (b) Pilot Conversion:- It involves converting only some part of the organization into new system. It is a selective approach.
- (c) Parallel Conversion:- It involves running both the old and new system side by side for a period of time.
- (d) Staged Change Over:- Requires a gradual retirement of the old system and replacing it with new one.

The method recommended for NBC is that of pilot change over. This is due to the peculiarity of the proposed system, which is most suitable to the production department of NBC.

## **4.6 PROGRAM MODULES**

The system proposed in this study has three program modules in addition to the main menu program. These includes:

- The stock program module
- The quality control program module
- The production program module

On execution prompt, the program menu shows the program modules available on the computer screen.

On display, a number of options are given requesting the user to select or choose among the options displayed on the screen, depending on the one he wants to access. Sufficient steps have been made so that the program options are within the range. He then calls the program name selected for necessary operations, after then link up with the calling program.

If there is no further inquiry, the exit option is selected which serve as the end of the program execution. However the whole process is repeated before termination. In a nutshell, the main program serves as the linkage through which access to exit and execution of program is possible.

#### **4.6.1 STOCK SYSTEM**

In production stock system, stock system has been distinctively classified into three area of program namely ADDITION, REDUCTION and PROCESS. The addition involves adding materials into stock, deduction involves removing materials from the stock and process prints out the output required.

##### **i. ADDITION**

This involves the process where productive materials are added to stock thus increasing the number of that item in the stock for production purposes.

On program execution, quantity of material to be added to stock is demanded and this quantity supplied is compared with stock material capacity (i.e. warehouse total capacity). If greater then the stock material capacity, a message showing maximum number required will be displayed on the screen and request the user to reenter another quantity to specification. This same procedure goes for all other materials until all has been entered and store into file. After the whole process, it links up the menu program for onward processing.

## ii. DEDUCTION

This involves the process whereby materials needed for production are deducted from stock for production purposes.

On program execution, quantity of a particular material to be deducted from the stock is entered, the quantity entered is again compared with the stock capacity in order to know if an over drawn as been made or not. If overdrawn is made, the program give a signal to inform the user of the necessary number or amount to be withdrawn and a re-entry is done.

The same procedure is repeated for all other production material until the end. The stock file stores everything and the program terminates by linking with the main menu for next processing.

## iii. PROCESS

Here, the stock system report is generated, depending on either addition, subtraction or both. Appropriate information is given to the user against the next production time through validation process.

This is achieved by comparing quantity in stock with production capacity. Comparison is shown below.

If quantity in stock is equal to production capacity, then re-order before next production else

If quantity in stock is greater or equal to twice of production capacity, then adequate, if otherwise not adequate.

This process is performed on every material in stock and report is generated and linked back with the main menu.

The calculation process is done by adding all weekly production to get monthly production and adding all monthly production to get yearly production. At the end, a report on production system is generated. Management makes decision on this report as to whether to improve production or not.

After the whole operation, the program links up with the main menu program.

#### **4.7 PROGRAM MAINTENANCE**

A system requires constant maintenance for it to be functional at all times. Failure to keep the system operational and effective can lead to inefficiency and many other problems.

- The program should be kept virus free.
- Back up copies should be made and kept secured
- The system and disk used should be properly handled
- Modification should be made when the need arises.

# CHAPTER FIVE

## SUMMARY, CONCLUSION AND RECOMMENDATION

### 5.1 LIMITATIONS

The notable limitation or constraints encountered in the course of the study are as follows:

- Inadequate funds (financial constraints)
- Difficulty in gathering facts about N.B.C
- The dearth of study materials
- Program debugging

### 5.2 SUMMARY

The computational implementation of the production system is designed in a way that involves the use of the computer in the production of soft drinks in Coca-Cola Bottling Company, Ilorin plant.

The production processes is analysed and designed critically. This project focuses on the nature and purpose of the existing system, its setbacks, scope for improvement, preferred solution and recommended design approach, its merits and limitations.

The programming work was carried out, the expected result has been obtained and the desired report produced.

### 5.3 CONCLUSION

Having examined the existing procedure and established an automated system in the production system, the usual forthcoming associated with the manual system i.e. error prone, loss of data and slow speed of operation among others have been minimized or not totally eradicated.

#### **5.4 RECOMMENDATION**

For better improvement, computer application is necessary in an organization. The following are recommend to interest the users.

- (i) Do make sure that your computing function is correctly organized and sensibly managed.
- (ii) If there is adequate software package available, the user should avoid investing on major applications development programs.
- (iii) The user must not be carried away by new technology and software. The user must allow error detection.
- (iv) There must be patience in terms of pay back time because investment in computer is not something from which one can realize profit or gain overnight.



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# APPENDIX

```

DECLARE SUB HEAD ()
CLS : REM
'GOTO 1
LOCATE 12, 30: PRINT "YOU ARE WELCOME TO "
LOCATE 14, 25: PRINT "COCA COLA BOTTLING COMPANY"
LOCATE 16, 34: PRINT "ILORIN PLANT"
SLEEP 2: CLS
LOCATE 11, 30: PRINT "A PROJECT WRITTEN BY "
LOCATE 12, 25: PRINT " ALABI FOLAKE M. - PGD/MCS/97/98/511  "
SLEEP 2
CLS
LOCATE 14, 25: PRINT "UNDER THE SUPERVISION OF"
LOCATE 16, 32: PRINT "MR. AUDU ISAH"
'***** PASS.PROG.*****
SLEEP 2
I = 0
CLS

COLOR 10, 8, 4
2 LOCATE 12, 28: PRINT "   ENTER PASSWORG....."
P$ = INPUT$(2)
IF UCASE$(P$) <> "1E" THEN 5 ELSE 1
5 I = I + 1
PRINT CHR$(7)
GOTO 2
CLS
IF I = 3 THEN 20
IF I = 1 THEN
  LOCATE 10, 10: PRINT " TWO MORE TRIALS . . ."
  ELSE
  LOCATE 10, 10: PRINT "LAST TRIAL . . ."
  END IF
  SLEEP 1
  GOTO 2
20 LOCATE 12, 26: PRINT "YOU ARE AN UNAUTHORIZED USER"
GOTO 1111
1 CLS
HEAD
LOCATE 6, 27: PRINT CHR$(201) + STRING$(26, CHR$(205)) + CHR$(187)
LOCATE 7, 27: PRINT CHR$(186); TAB(54); CHR$(186)
LOCATE 8, 27: PRINT CHR$(204) + STRING$(26, CHR$(205)) + CHR$(185)
FOR I = 9 TO 15
LOCATE I, 27: PRINT CHR$(186); TAB(54); CHR$(186)
NEXT
LOCATE 16, 27: PRINT CHR$(204) + STRING$(26, CHR$(205)) + CHR$(185)
LOCATE 17, 27: PRINT CHR$(186); TAB(54); CHR$(186)
LOCATE 18, 27: PRINT CHR$(200) + STRING$(26, CHR$(205)) + CHR$(188)
LOCATE 7, 35: PRINT "MAIN MENU"
LOCATE 9, 32: PRINT "1. STOCK SYSTEM"
LOCATE 11, 32: PRINT "2. QUALITY SYSTEM"
LOCATE 13, 32: PRINT "3. PRODUCTION SYSTEM"
LOCATE 15, 32: PRINT "4. QUIT"
4 LOCATE 17, 29: PRINT "INPUT YOUR CHOICE [1...4]"
A$ = INPUT$(1)
A = VAL(A$)
IF A < 1 OR A > 4 THEN
GOSUB 750

```

```

GOTO 4
END IF
ON A GOSUB STOCK, QUAL, PROD, EXT
EXT:
1111 CLS
LOCATE 12, 30: PRINT "THIS OPTION WILL END THE PROGRAM"
SLEEP 2: CLS
LOCATE 12, 29: PRINT "ARE YOU SURE YOU WANT TO EXIT [Y/N]"
A$ = INPUT$(1)
IF UCASE$(A$) <> "Y" THEN 1
END
STOCK:
101 CLS
HEAD
LOCATE 6, 26: PRINT CHR$(201) + STRING$(27, CHR$(205)) + CHR$(187)
LOCATE 7, 26: PRINT CHR$(186); TAB(54); CHR$(186)
LOCATE 8, 26: PRINT CHR$(204) + STRING$(27, CHR$(205)) + CHR$(185)
FOR I = 9 TO 17
LOCATE I, 26: PRINT CHR$(186); TAB(54); CHR$(186)
NEXT
LOCATE 18, 26: PRINT CHR$(204) + STRING$(27, CHR$(205)) + CHR$(185)
LOCATE 19, 26: PRINT CHR$(186); TAB(54); CHR$(186)
LOCATE 20, 26: PRINT CHR$(200) + STRING$(27, CHR$(205)) + CHR$(188)
LOCATE 7, 30: PRINT "STOCK MAIN MENU"
LOCATE 9, 32: PRINT "1. CREATION"
LOCATE 11, 32: PRINT "2. ADDITION"
LOCATE 13, 32: PRINT "3. DEDUCTION"
LOCATE 15, 32: PRINT "4. PROCESSING"
LOCATE 17, 32: PRINT "5. EXIT"
104 LOCATE 19, 28: PRINT "INPUT YOUR CHIOCE [1...5]"
K$ = INPUT$(1)
K = VAL(K$)
IF K < 1 OR K > 5 THEN
GOSUB 750
GOTO 104
END IF
ON K GOSUB CRE, ADD, DED, PRO, EX
EX:
RETURN 1
CRE:
OPEN "CREATE.FOL" FOR OUTPUT AS #1
113 CLS
HEAD
LOCATE 6, 29: PRINT "CREATTION OF STOCK FILE"
LOCATE 7, 28: PRINT STRING$(24, "-")
LOCATE 9, 32: INPUT "ITEM NAME ", ITN$
LOCATE 11, 32: INPUT "STOCK CAPACITY"; STC
LOCATE 13, 32: INPUT "AMOUNT IN STOCK"; STQ
LOCATE 15, 32: INPUT "PRODUCTION CAPACITY ", PRC
114 LOCATE 19, 23: PRINT "ARE THE YOU INPUT DATA CORRECT [Y/N]"
CA$ = INPUT$(1)
IF UCASE$(CA$) <> "Y" AND UCASE$(CA$) <> "N" THEN
GOSUB 750
GOTO 115
END IF
IF UCASE$(CA$) = "N" THEN 113
WRITE #1, ITN$, STC, STQ, PRC

```

```

115 LOCATE 20, 27: PRINT "ANY MORE RECORD(S) [Y/N]"
CB$ = INPUT$(1)
IF UCASE$(CB$) <> "Y" AND UCASE$(CB$) <> "N" THEN
GOSUB 750
GOTO 115
END IF
IF UCASE$(CB$) = "Y" THEN 113
CLOSE #1
RETURN 101
ADD:
118 OPEN "CREATE.FOL" FOR INPUT AS #1
OPEN "SHOOD" FOR OUTPUT AS #4
CLS
HEAD
LOCATE 6, 26: PRINT "ADDING TO THE EXISTING STOCK"
LOCATE 7, 25: PRINT STRING$(30, "-")
LOCATE 10, 32: INPUT "ITEM NAME"; ATN$
KK = 0
WHILE NOT EOF(1)
T = 0
INPUT #1, ITN$, STC, STQ, PRC
    IF ATN$ = ITN$ THEN
105 LOCATE 12, 32: INPUT "QUANTITY TO BE ADDED"; QTY
NEW = STQ + QTY
T = 1: KK = 1
IF NEW > STC THEN
GOSUB 750
EXTRA = STC - STQ
LOCATE 14, 35: PRINT "STOCK OVERLOAD"
LOCATE 15, 30: PRINT "YOU CAN ONLY SUPPLY"; EXTRA; "QUANTITY MORE!"
LOCATE 21, 16: PRINT "PRESS ANY KEY TO RE SUPPLY"
F$ = INPUT$(1)
END IF
FOR KK = 12 TO 21
LOCATE KK, 1: PRINT SPC(75);
NEXT KK
'GOTO 105
'END IF
LOCATE 14, 32: PRINT "PRESENT QUANTITY IN STOCK IS "; NEW
STQ = NEW
WRITE #4, ITN$, STC, STQ, PRC
END IF

IF T = 1 AND KK = 1 THEN 604
'WRITE #4, ITN$, STC, STQ, PRC
604 WEND
IF T = 0 AND KK = 0 THEN
GOSUB 750
PRINT "ITEM RECORD DOES NOT EXIST"
END IF
CLOSE #1, #4
KILL "CREATE.FOL"
NAME "SHOOD" AS "CREATE.FOL"
117 LOCATE 17, 27: PRINT "ANY MORE RECORD(S) [Y/N]"
CD$ = INPUT$(1)
IF UCASE$(CD$) <> "Y" AND UCASE$(CD$) <> "N" THEN
GOSUB 750

```

```

GOTO 117
3 END IF
IF UCASE$(CD$) = "Y" THEN 118
' comment PART 1 COMENT
RETURN 101
DED:
127
OPEN "CREATE.FOL" FOR INPUT AS #1
OPEN "SHOOD" FOR INPUT AS #4
CLS
HEAD
LOCATE 6, 24: PRINT "DEDUCTING FROM THE EXISTING STOCK"
LOCATE 7, 23: PRINT STRING$(35, "-")
LOCATE 10, 32: INPUT "ITEM NAME"; BTN$
UU = 0
WHILE NOT EOF(1)
U = 0
INPUT #1, ITN$, STC, STQ, PRC
IF BTN$ = ITN$ THEN
120 LOCATE 12, 32: INPUT "QUANTITY TO BE DEDUCED"; QTY
U = 1: UU = 1
IF QTY > STQ THEN
GOSUB 750
LOCATE 14, 30: PRINT "STOCK OVERDRAWN"
LOCATE 15, 16: PRINT "YOU CAN ONLY DEDUCT"; STQ; "QUANTITY FROM THE STOCK"
LOCATE 18, 25: PRINT "press any key to re deduct"
F$ = INPUT$(1)
FOR KK = 12 TO 21
LOCATE KK, 1: PRINT SPC(75);
NEXT KK
GOTO 120
END IF
NEWSTQ = STQ - QTY
LOCATE 14, 32: PRINT "YOU HAVE"; NEWSTQ; "QUANTITY LEFT IN STOCK"
STQ = NEWSTQ
WRITE #5, ITN$, STC, STQ, PRC
END IF
IF U = 1 AND UU = 1 THEN 5000
WRITE #5, ITN$, STC, STQ, PRC
5000 WEND
IF U = 0 AND UU = 0 THEN
GOSUB 750
LOCATE 19, 32: PRINT "ITEM RECORD DOES NOT EXIST"
END IF
CLOSE #1, #4
KILL "CREATE.FOL"
NAME "SHOOD" AS "CREATE.FOL"
124 LOCATE 17, 27: PRINT "ANY MORE RECORD (S) [Y/]"
CE$ = INPUT$(1)
IF UCASE$(CE$) <> "Y" AND UCASE$(CE$) <> "N" THEN
GOSUB 750
GOTO 124
END IF
IF UCASE$(CE$) = "Y" THEN 127 ELSE RETURN 101

PRO:
GOSUB 1010: IF UCASE$(G$) = "P" THEN GOSUB PTR

```

```

OPEN "I", #1, "CREATE.FOL"
CLS
PRINT TAB(19); "NIGERIA BOTTLING COMPANY LIMITED, ILORIN."
PRINT TAB(18); STRING$(43, "-")
PRINT TAB(15); "PRODUCTION MATERIAL STOCK POSITION AS AT";
PRINT MID$(DATE$, 4, 2); "/"; LEFT$(DATE$, 2); "/"; RIGHT$(DATE$, 2)
PRINT TAB(14); STRING$(50, "-")
PRINT : PRINT TAB(12); "ITEM NAMES"; SPC(3); "STOCK"; SPC(6); "QUANTITY
IN"; SPC(3);
PRINT "PRODUCTION"; SPC(5); "REMARK"
PRINT TAB(24); "CAPACITY"; SPC(6); "STOCK"; SPC(7); "CAPACITY"
PRINT TAB(12); STRING$(62, "-")
WHILE NOT EOF(1)
INPUT #1, ITN$, STC, STQ, PRC
IF STQ >= (2 * PRC) THEN R = 1
IF (STQ < (2 * PRC)) AND (STQ >= PRC) THEN R = 2
IF STQ < PRC THEN R = 3
PRINT TAB(12); ITN$; TAB(24); STC; TAB(37); STQ; TAB(51); PRC; TAB(65); R
WEND
PRINT TAB(12); STRING$(62, "-")

PRINT : PRINT TAB(12); "1= ENOUGH OR SUFFICIENT"
PRINT TAB(12); "2= SUFFICIENT BUT RE-ORDER MATERIAL, BEFORE NEXT
PRODUCTION"
PRINT TAB(12); "3= NOT SUFFICIENT FOR PRODUCTION"
PRINT "press any key to continue..."
TT$ = INPUT$(1)
CLOSE #1
RETURN 101:

```

QUAL:

400 CLS

HEAD

LOCATE 6, 27: PRINT CHR\$(201) + STRING\$(26, CHR\$(205)) + CHR\$(187)

LOCATE 7, 27: PRINT CHR\$(186); TAB(54); CHR\$(186)

LOCATE 8, 27: PRINT CHR\$(204) + STRING\$(26, CHR\$(205)) + CHR\$(185)

FOR I = 9 TO 13

LOCATE I, 27: PRINT CHR\$(186); TAB(54); CHR\$(186)

NEXT I

LOCATE 14, 27: PRINT CHR\$(204) + STRING\$(26, CHR\$(205)) + CHR\$(185)

LOCATE 15, 27: PRINT CHR\$(186); TAB(54); CHR\$(186)

LOCATE 16, 27: PRINT CHR\$(200) + STRING\$(26, CHR\$(205)) + CHR\$(188)

LOCATE 7, 31: PRINT "QUALITY SYSTEM MENU"

LOCATE 9, 34: PRINT "1. CREATE"

LOCATE 11, 34: PRINT "2. PROCESS"

LOCATE 13, 34: PRINT "3. EXIT"

401 LOCATE 15, 29: PRINT "INPUT YOUR CHOICE [1..3]"

T\$ = INPUT\$(1)

T = VAL(T\$)

IF T < 1 OR T > 3 THEN

GOSUB 750

GOTO 401

END IF

ON T GOSUB QUALC, QUALP, QUALE

QUALE:

RETURN 1

QUALC:

```

OPEN "QUASYS" FOR OUTPUT AS #2
412 CLS
HEAD
LOCATE 6, 29: PRINT "QUALITY SPECIFICATION"
LOCATE 7, 28: PRINT STRING$(24, "-")
LOCATE 9, 32: INPUT "PRODUCT NAME"; PRN$
LOCATE 11, 32: INPUT "QUANTITY OF WATER"; QW
LOCATE 13, 32: INPUT "QUANTITY OF SUGAR"; QS
LOCATE 15, 32: INPUT "QUANTITY OF CARBONDIOXIDE"; QC
411 LOCATE 17, 32: PRINT "ARE THE INPUT DATA CORRECT [Y/N]"
QA$ = INPUT$(1)
IF UCASE$(QA$) <> "Y" AND UCASE$(QA$) <> "N" THEN
GOSUB 750
GOTO 411
END IF
IF UCASE$(QA$) = "N" THEN 412
LOCATE 5, 5: WRITE #2, PRN$, QW, QS, QC
413 LOCATE 19, 32: PRINT "ANY MORE RECORD(s) [Y/N]"
QB$ = INPUT$(1)
IF UCASE$(QB$) <> "Y" AND UCASE$(QB$) <> "N" THEN
GOSUB 750
GOTO 413
END IF
IF UCASE$(QB$) = "Y" THEN 412
CLOSE #2
RETURN 400
QUALP:
GOSUB 1010
IF UCASE$(G$) = "P" THEN GOSUB PTR2
OPEN "QUASYS" FOR INPUT AS #2
CLS
PRINT TAB(23); "NIGERIAN BOTTLING COMPANY, ILORIN."
PRINT TAB(22); STRING$(36, "-")
PRINT TAB(29); "QUALITY SYSTEM REPORT"
PRINT TAB(28); STRING$(24, "-")
PRINT TAB(60); "DATE:"; MID$(DATE$, 4, 2); "/" ; LEFT$(DATE$, 2); "/" ;
RIGHT$(DATE$, 2)
PRINT TAB(60); "PRODUCTION"
PRINT TAB(5); "BEVERAGE BRIX"; TAB(60); "STANDARD BRIU:999"
PRINT TAB(60); "TARGET BRIX:99"
PRINT : PRINT TAB(4); "PRODUCTION"; TAB(20); "WATER"; TAB(32); "SUGAR";
TAB(46); "CO2";
PRINT TAB(58); "TOTAL"; TAB(69); "REMARKS"
PRINT TAB(7); "NAME"; TAB(17); "QW/SQW/DQW"; TAB(30); "QS/SQS/DQS";
TAB(43);
PRINT "QC/SQC/DQC"; TAB(57); "QUANTITY"
PRINT TAB(3); STRING$(74, "-")
WHILE NOT EOF(2)
INPUT #2, PRN$, QW, QS, QC
DQW = 80 - QW
DQS = 100 - QS
DQC = 100 - QC
TNQ = DQW + DQS + DQC
IF TNQ >= 80 AND TNQ <= 188 THEN
RM$ = "STANDARD"
ELSE
RM$ = "NOT STANDARD"

```



```

        END IF
    PRINT TAB(4); PRN$; TAB(16); QW; "/"; "80"; "/"; DQW; TAB(29); QS; "/";
"100"; "/"; DQS;
    PRINT TAB(42); QC; "/"; "100"; "/"; DQC; TAB(58); TNQ; TAB(69); RMS
    WEND
    PRINT TAB(3); STRING$(74, "/")
PRINT "PRESS ANY KEY TO CONTINUE..."
    TT$ = INPUT$(1)
    CLOSE #2
    RETURN 400

```

```
' comment PART 2 COMENT
```

```
PROD:
```

```
505 CLS
```

```
HEAD
```

```
LOCATE 6, 27: PRINT CHR$(201) + STRING$(26, CHR$(205)) + CHR$(187)
```

```
LOCATE 7, 27: PRINT CHR$(186); TAB(54); CHR$(186)
```

```
LOCATE 8, 27: PRINT CHR$(204) + STRING$(26, CHR$(205)) + CHR$(185)
```

```
FOR I = 9 TO 13
```

```
LOCATE I, 27: PRINT CHR$(186); TAB(54); CHR$(186)
```

```
NEXT
```

```
LOCATE 14, 27: PRINT CHR$(204) + STRING$(26, CHR$(205)) + CHR$(185)
```

```
LOCATE 15, 27: PRINT CHR$(186); TAB(54); CHR$(186)
```

```
LOCATE 16, 27: PRINT CHR$(200) + STRING$(26, CHR$(205)) + CHR$(188)
```

```
LOCATE 7, 30: PRINT "PRODUCTION SYSTEM MENU"
```

```
LOCATE 9, 34: PRINT "1. CREATION"
```

```
LOCATE 11, 34: PRINT "2. PROCESS"
```

```
LOCATE 13, 34: PRINT "3. EXIT"
```

```
501 LOCATE 15, 29: PRINT "INPUT YOUR CHOICE [1..3]"
```

```
Z$ = INPUT$(1)
```

```
Z = VAL(Z$)
```

```
IF Z < 1 OR Z > 3 THEN
```

```
    GOSUB 750
```

```
    GOTO 501
```

```
END IF
```

```
ON Z GOSUB ONE, TWO, THREE
```

```
THREE:
```

```
    RETURN 1
```

```
ONE:
```

```
OPEN "PROSYS" FOR OUTPUT AS #3
```

```
OPEN "PROSYS1" FOR OUTPUT AS #4
```

```
DIM Q$(12)
```

```
Q$(1) = "JANUARY": Q$(2) = "FEBRUARY": Q$(3) = "MARCH": Q$(4) = "APRIL"
```

```
Q$(5) = "MAY": Q$(6) = "JUNE": Q$(7) = "JULY": Q$(8) = "AUGUST"
```

```
Q$(9) = "SEPTEMBER": Q$(10) = "OCTOBER": Q$(11) = "NOVEMBER": Q$(12) =
```

```
"DECEMBER"
```

```
515 CLS
```

```
HEAD
```

```
LOCATE 6, 27: PRINT "INPUT OF WEEKLY PRODUCTION"
```

```
LOCATE 7, 26: PRINT STRING$(28, CHR$(205))
```

```
INPUT "PRODUCT NAME :", PD$
```

```
WRITE #3, PD$
```

```

        END IF
        PRINT TAB(4); PRN$; TAB(16); QW; "/"; "80"; "/"; DQW; TAB(29); QS; "/";
"100"; "/"; DQS;
        PRINT TAB(42); QC; "/"; "100"; "/"; DQC; TAB(58); TNQ; TAB(69); RMS
        WEND
        PRINT TAB(3); STRING$(74, "/")
PRINT "PRESS ANY KEY TO CONTINUE..."
        TT$ = INPUT$(1)
        CLOSE #2
        RETURN 400

```

```
' comment PART 2 COMENT
```

```
PROD:
```

```
505 CLS
```

```
HEAD
```

```
LOCATE 6, 27: PRINT CHR$(201) + STRING$(26, CHR$(205)) + CHR$(187)
```

```
LOCATE 7, 27: PRINT CHR$(186); TAB(54); CHR$(186)
```

```
LOCATE 8, 27: PRINT CHR$(204) + STRING$(26, CHR$(205)) + CHR$(185)
```

```
FOR I = 9 TO 13
```

```
LOCATE I, 27: PRINT CHR$(186); TAB(54); CHR$(186)
```

```
NEXT
```

```
LOCATE 14, 27: PRINT CHR$(204) + STRING$(26, CHR$(205)) + CHR$(185)
```

```
LOCATE 15, 27: PRINT CHR$(186); TAB(54); CHR$(186)
```

```
LOCATE 16, 27: PRINT CHR$(200) + STRING$(26, CHR$(205)) + CHR$(188)
```

```
LOCATE 7, 30: PRINT "PRODUCTION SYSTEM MENU"
```

```
LOCATE 9, 34: PRINT "1. CREATION"
```

```
LOCATE 11, 34: PRINT "2. PROCESS"
```

```
LOCATE 13, 34: PRINT "3. EXIT"
```

```
501 LOCATE 15, 29: PRINT "INPUT YOUR CHOICE [1..3]"
```

```
Z$ = INPUT$(1)
```

```
Z = VAL(Z$)
```

```
IF Z < 1 OR Z > 3 THEN
```

```
    GOSUB 750
```

```
    GOTO 501
```

```
END IF
```

```
ON Z GOSUB ONE, TWO, THREE
```

```
THREE:
```

```
    RETURN 1
```

```
ONE:
```

```
    OPEN "PROSYS" FOR OUTPUT AS #3
```

```
    OPEN "PROSYS1" FOR OUTPUT AS #4
```

```
    DIM Q$(12)
```

```
    Q$(1) = "JANUARY": Q$(2) = "FEBRUARY": Q$(3) = "MARCH": Q$(4) = "APRIL"
```

```
    Q$(5) = "MAY": Q$(6) = "JUNE": Q$(7) = "JULY": Q$(8) = "AUGUST"
```

```
    Q$(9) = "SEPTEMBER": Q$(10) = "OCTOBER": Q$(11) = "NOVEMBER": Q$(12) =
```

```
    "DECEMBER"
```

```
515 CLS
```

```
HEAD
```

```
LOCATE 6, 27: PRINT "INPUT OF WEEKLY PRODUCTION"
```

```
LOCATE 7, 26: PRINT STRING$(28, CHR$(205))
```

```
INPUT "PRODUCT NAME :", PD$
```

```
WRITE #3, PD$
```

```

FOR I = 1 TO 12
LOCATE 9, 15: PRINT "ENTER WEELY PRODUCTION FOR ", Q$(1)
MON = 0
513 YY = 11
FOR J = 1 TO 4
LOCATE YY, 15: PRINT "ENTER PRODUCTION FOR WEEK "; J
LOCATE YY, 44: INPUT WK
YY = YY + 2
NEXT J
512 LOCATE 19, 25: PRINT "ARE THE INPUT DATA CORRECT [Y/N]"
F$ = INPUT$(1)
IF UCASE$(F$) <> "Y" AND UCASE$(F$) <> "N" THEN
    GOSUB 750
    GOTO 512
END IF
IF UCASE$(F$) = "N" THEN
    GOSUB 810
    GOTO 513
END IF
WRITE #4, MON
GOSUB 810
LOCATE 6, 42: PRINT SPC(20);

NEXT
CLS
514 LOCATE 13, 26: PRINT "ANY MORE RECORD(S) [Y/N]"
X$ = INPUT$(1)
IF UCASE$(X$) <> "Y" AND UCASE$(X$) <> "N" THEN
    GOSUB 750
    GOTO 514
END IF

IF UCASE$(X$) = "Y" THEN 515
CLOSE #3, #4
RETURN 505

810
    FOR G = 7 TO 20
        LOCATE G, 14: PRINT SPC(50);
    NEXT G
RETURN

TWO:
GOSUB 1010
IF UCASE$(G$) = "P" THEN GOSUB PTR3
OPEN "PROSYS" FOR INPUT AS #3
OPEN "PROSYS1" FOR INPUT AS #4
CLS
PRINT TAB(19); "NIGERIAN BOTTLING COMPANY LIMITED, ILORIN."
PRINT TAB(18); STRING$(44, " ")
PRINT TAB(28); "PRODUCTION SYSTEM REPORT"
PRINT TAB(27); STRING$(26, " ")
PRINT TAB(3); "PRODUCT"; TAB(15); "JAN"; TAB(20); "FEB"; TAB(25); "MAR"
PRINT TAB(30); "APRIL"; TAB(35); "MAY"; TAB(40); "JUN"; TAB(45); "JUL"; TAB(50);
PRINT "AUG"; TAB(55); "SEP"; TAB(60); "OCT"; TAB(65); "NOV"; TAB(70); "DEC";
PRINT TAB(75); "GRAND"
PRINT TAB(5); "NAME"; TAB(75); "TOTAL"

```

```

1010 CLS
77  LOCATE 10, 20:  PRINT "PRINTER OR SCREEN [PRESS P for printer or s for
screen]"
    G$ = INPUT$(1)
    IF UCASE$(G$) <> "S" THEN
        GOSUB 750
        GOTO 77
    END IF
RETURN
1020
CLS
333 LOCATE 10, 20: PRINT "press ENTER key when the printer is ready "
I$ = INPUT$(1)
IF I$ <> CHR$(13) THEN
    GOSUB 750
    GOTO 333
END IF
RETURN
PTR2:
GOSUB 1020
OPEN "QUASYS" FOR INPUT AS #2
LPRINT TAB(23); "NIGERIAN BOTTLING COMPANY'ILORIN"
LPRINT TAB(22); STRING$(36, "-")
LPRINT TAB(29); "QUALIT SYSTEM REPORT"
LPRINT TAB(28); STRING$(24, "-")
LPRINT TAB(60); "DATE"; MID$(DATE$, 4, 2); "/"; LEFT$(DATE$, 2); "/";
RIGHT$(DATE$, 2)
LPRINT TAB(60); "PRODUCTION"
LPRINT TAB(5); "BEVERAGE BRIX"; TAB(60); "STANDARD BRIU: 999"
LPRINT TAB(60); "TARGET BRI9"
LPRINT : LPRINT TAB(4); "PRODUCTON"; TAB(20); "WATER"; TAB(32); "SUGAR";
TAB(46); "CO2";
LPRINT TAB(58); "TOTAL"; TAB(69); "REMARKS"
LPRINT TAB(7); "NAME"; TAB(17); "QW/SQW/DQW"; TAB(30); "QS/SQS/DQS"; TAB(57);
"QUALITY"
LPRINT TAB(43);
LPRINT "QC/SQC/DQC"; TAB(57); "QUANTITY"
LPRINT TAB(3); STRING$(74, "-")
WHILE NOT EOF(2)
INPUT #2, PRN$, QW, QS, QC
DQW = 80 - QW
DQS = 100 - QS
DQC = 100 - QC
TNQ = DQW + DQS + DQC
IF TNQ >= 80 AND TNQ <= 100 THEN
    RM$ = "STANDARD"
ELSE
    RM$ = "NOT STANDARD"
END IF
LPRINT TAB(4); PRN$; TAB(16); QW; "/"; "80"; "/"; DQW; TAB(29); QS; "/"; "100";
"/"; DQC; TAB(58); TNQ; TAB(69); RM$
WEND
PRINT "Press any key to continue . . ."
TT$ = INPUT$(1)
CLOSE #2
RETURN 400

```

```

        PRINT STRING$(80, "-")
WHILE NOT EOF(3)
WHILE NOT EOF(4)
    INPUT #3, PD$
    B2 = 14
    PRINT TAB(3); TAB(B2);
    GT = 0
    FOR K = 1 TO 12
        B2 = B2 + 5
        INPUT #4, MON
        GT = GT + MON
        PRINT MON; TAB(B2);
    NEXT K
    PRINT TAB(75); GT
WEND
WEND
    PRINT "Press any key to continue..."
    TT$ = INPUT$(1)
CLOSE #3, #4
RETURN 505
750
    PRINT CHR$(7)
RETURN

PTR:
    OPEN "CREATE.FOL" FOR INPUT AS #1
    GOSUB 1020
    LPRINT TAB(19); "NIGERIA BOTTLING COMPANY LIMITED, ILORIN"
    LPRINT TAB(18); STRING$(43, "-")

'COMMENT          PART 3 COMENT

LPRINT TAB(15); "PRODUCTION MATERIAL STOCK POSITION AS AT ";
LPRINT MID$(DATE$, 4, 2); "/"; LEFT$(DATE$, 2); "/"; RIGHT$(DATE$, 2)
LPRINT TAB(14); STRING$(50, "-")
LPRINT : LPRINT TAB(12); "ITEM NAMES"; SPC(3); "STOCK"; SPC(6); "QUANTITY IN";
SPC(3);
LPRINT "PRODUCTION"; SPC(5); "REMARK"
LPRINT TAB(24); "CAPACITY"; SPC(6); "STOCK"; SPC(7); "CAPACITY"
LPRINT TAB(12); STRING$(62, "-")
WHILE NOT EOF(1)
INPUT #1, ITN$, STC, STQ, PRC
IF STQ >= (2 * PRC) THEN R = 1
IF (STQ < (2 * PRC)) AND (STQ >= PRC) THEN R = 2
IF STQ < PRC THEN R = 3
LPRINT TAB(12); ITN$; TAB(24); STC; TAB(37); STQ; TAB(51); PRC; TAB(65); R
WEND
    LPRINT TAB(12); STRING$(62, "-")

    LPRINT TAB(12); "1 = ENOUGH OR SUFFICIENT"
    LPRINT TAB(12); "2 =SUFFICIENT BUT RE-ORDER MATERIAL BEFORE NEXT
PRODUCTION"
    LPRINT TAB(12); "3 = NOT SUFFICIENT FOR PRODUCTION"
    PRINT "PRESS any key to continue..."
    TT$ = INPUT$(1)
    CLOSE #1
    RETURN 101

```

PTR3:

```
GOSUB 1020
OPEN "PROSYS" FOR INPUT AS #3
LPRINT TAB(19); "NIGERIAN BOTTLING COMPANY LIMITED, ILORIN."
LPRINT TAB(18); STRING$(44, "-")
LPRINT TAB(28); "PRODUCTION SYSTEM REPORT"
LPRINT TAB(27); STRING$(26, "-")
LPRINT : LPRINT TAB(3); "PRODUCT"; TAB(15); "JAN"; TAB(20); "FEB"; TAB(25);
"MAR"; TAB(30); "APR"; TAB(35); "MAY"; TAB(40); "JUN"; TAB(45); "JUL"; TAB(50);
"AUG"; TAB(55); "SEP"; TAB(60); "OCT"; TAB(65); "NOV"; TAB(70); "DEC"
LPRINT TAB(75); "GRAND"
LPRINT TAB(5); "NAME"; TAB(75); "TOTAL"
LPRINT STRING$(80, "-")
WHILE NOT EOF(3)
  INPUT #3, PDR$
  B = 14
  LPRINT TAB(3); PDR$; TAB(B);
  GT = 0
  FOR K = 1 TO 12
    B = B + 5
    INPUT #3, MON
    GT = GT + MON
    LPRINT MON; TAB(B);
  NEXT
  LPRINT TAB(75); GT
WEND
PRINT "Press any key con't . . ."
I$ = INPUT$(1)
CLOSE #3
RETURN 505
```

SUB HEAD

```
LOCATE 2, 16: PRINT "NIGERIAN BOTTLING COMPANY PLC [COCA COLA], ILORIN"
LOCATE 3, 15: PRINT STRING$(51, "*")
LOCATE 4, 22: PRINT "COMPUTERISATION OF PRODUCTION SYSTEM"
LOCATE 5, 21: PRINT STRING$(38, "*")
END SUB
```

NIGERIAN BOTTLING COMPANY PLC [COCA COLA], ILORIN  
\*\*\*\*\*  
COMPUTERISATION OF PRODUCTION SYSTEM  
\*\*\*\*\*

MAIN MENU
1. STOCK SYSTEM
2. QUALITY SYSTEM
3. PRODUCTION SYSTEM
4. QUIT
INPUT YOUR CHOICE [1...4]

NIGERIAN BOTTLING COMPANY PLC [COCA COLA], ILORIN  
\*\*\*\*\*  
COMPUTERISATION OF PRODUCTION SYSTEM  
\*\*\*\*\*

STOCK MAIN MENU

1. CREATION
2. ADDITION
3. DEDUCTION
4. PROCESSING
5. EXIT

INPUT YOUR CHIOCE [1...5]



NIGERIAN BOTTLING COMPANY PLC [COCA COLA], ILORIN  
\*\*\*\*\*  
COMPUTERISATION OF PRODUCTION SYSTEM  
\*\*\*\*\*

QUALITY SYSTEM MENU
1. CREATE 2. PROCESS 3. EXIT
INPUT YOUR CHOICE [1..3]

NIGERIAN BOTTLING COMPANY PLC [COCA COLA], ILORIN  
\*\*\*\*\*  
COMPUTERISATION OF PRODUCTION SYSTEM  
\*\*\*\*\*

PRODUCTION SYSTEM MENU
1. CREATION 2. PROCESS 3. EXIT
INPUT YOUR CHOICE [1..3]

NIGERIA BOTTLING COMPANY LIMITED, ILORIN.

-----  
PRODUCTION MATERIAL STOCK POSITION AS AT 28/03/00  
-----

ITEM NAMES	STOCK CAPACITY	QUANTITY IN STOCK	PRODUCTION CAPACITY	REMARK
cork	400	150	300	3
bottles	300	150	120	2
empty crate	400	150	100	2

1= ENOUGH OR SUFFICIENT

2= SUFFICIENT BUT RE-ORDER MATERIAL, BEFORE NEXT PRODUCTION

3= NOT SUFFICIENT FOR PRODUCTION

any key to continue...

