Evolving a Computerized Stock Control System In A Production Process

A Case Study Of Seven – Up Company, Kaduna Plant.

BY

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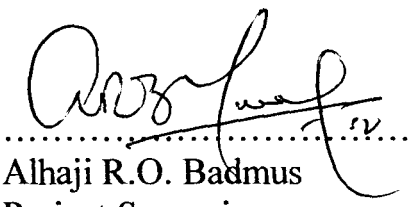
CERTIFICATION

We hereby certify that this research work was organised and written with the sole efforts of ILOUGA AGNES NKECHI under the supervision of Prince R.O BADMUS.



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APPROVAL

This project report had been read and approved as part of the requirements for the award of Post Graduate Diploma (PGD) in Computer Science in the Department of Maths/Computer Science, Federal University of Technology Minna.

ACKNOWLEDGEMENT

This project wouldn't have been possible if not for the love and grace of our Lord and Saviour, Jesus Christ, whom I trust and obey. I therefore say, Thank you Jesus, Thank you Father.

My sincere and unreserved gratitude goes to my able supervisor Prince R.O. Badmus for giving me the necessary backing in the course of this write –up.

My heart felt gratitude goes to the HOD Department of Maths/Computer Science, FUT Minna and the entire members of staff of Maths/Computer Science Department. May God bless them all. I use this opportunity to thank my entire family for their support and help in the course of this study. My profound greetings goes to my sweetheart, the wonderful man in my life Lt Col CO Ilouga for his immense support; financially and otherwise.

I thank my parents Sir$lady John Ezeala, Evangelist Emma, Bro Joseph for their help through prayers towards the success of this project.

ABTRACT

Production is an act of manufacturing especially in large quantity. Computerized stock control on which this study is all about, is the automation of stock taking in an organisation. Companies and establishments can operate effectively in this computer age by adopting computer approach to stock taking/accounting with the ultimate aim of achieving effective stock control at all times.

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 organisation. Current information is necessary for any business to succeed and this can only be realised by using modern technology and innovations.

The computerized stock control described in the study will be functional, efficient and reliable which will make work easier, faster and this brings abut increase in both quality and quantity of the productions.

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

DEDICATION

I dedicate this work to the birth of my twins whom I carried their pregnancy during the course of this study; to my darling daughter – Chinonye – Ilouga who is the first fruit of my womb; to my husband Lt Col C.O Ilouga who is the love of my life. Above all, to the Almighty God, (Jehovah) the great God of the Universe.

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CHAPTER ONE

INTRODUCTION

1.1 OVERVIEW

Stock control deals with the management of production materials i.e forecasting, procurement, storage maintenance and record keeping. It also involves addition, deduction and processing of stock during the manufacturing phase of production process inorder to achieve a satisfaction - oriented production. Stock control can not be discussed in isolation of production.

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

For the management to make effective decisions, 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 by using modern technological facilities and innovations.

Current developments in computer technology increasingly simplify human efforts in problem solving operations. The introduction of computer in

production routines and other activities has enabled man to solve problems, which were previously of insurmountable complexity. The speed of execution of programs by computer coupled with its accuracy, flexibility, adaptability, storage capacity and versatility makes it the most power tool for processing data.

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

The automated production system with emphasis on stock control as described in this study makes work easier, faster and this brings about increase in the quality and quantity of the output productions.

1.2 PROBLEM DEFINITION.

The present production process in Seven – UP Company is still controlled or handled manually. This method of handling the production process is accompanied by lots of set backs such as loss of data, low productivity, time comsuption, inefficiency, human errors amongst others. There is, therefore, the need to design, develop and implement a functional system that can handle stock control and other 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 stock control in a Seven –Up Bottling Company (7UP). In designing this computerised system however, the existing system showing the set backs and the problems of the manual syste 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 with the manual system.
3. To provide timely, accurate and reliable information for decision making in Seven – UP Bottling Company (7UP).
4. To prevent loss of valuable information associated with manual system in an organisation by storing such information in 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 Seven –UP Company because it is envisaged that at the end of this study, a functional, reliable and efficient system would have been developed which will assist immensely towards achieving better results in Seven – UP Company. When fully implemented, the new system will greatly reduce or minimize the problems associated with the manual system.

The advantages that are 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 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 will focus briefly on system automation in the Production Department of Seven – UP Company. The scope is going to be limited to the ,manufacturing aspect which is divided into three:

- Production System: This shows that raw materials are required t 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 inventory. 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 such as informations, new trends, volumes, frequencies, competing variables etc upon which decisions are made. 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 an 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 importance of stock management and control in a production process can not be over – emphasised. 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 interested in the production system of items. The production system of the Seven – UP Bottling Company is an example of a mass production process.

A production system can be defined as an established order that leads to the manufacturing of certain products. In mass production system where large quantities of homogenous or identical products are made there is little waiting between the execution of one production and another. This type of mass production process therefore, needs some kind of automation in order to create uniformity. Mass production can not be effective without good stock management and control. This is the reason for the present study embarked upon.

2.2 MANUFACTURING PROCESS

Manufacturing is the organised 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 is also called a secondary industry. because this is the sector of a nations economy that is concerned with the processing of raw materials supplied by the primary industries into end products.

A manufacturing system usually employs a series of value – adding manufacturing process to convert raw materials into more useful form and eventually into finished products. For example, in the process of producing soft drink, raw materials such as water, sugar, flavours are assembled, each material are measured into the required quantity and then materials are added to produce the drinks after which product test and quality checks take place and finally products are then bottled.

The output from one manufacturing system may be utilized as the input into another. For example, the bottles from Sunglass - the bottle factory in Kaduna 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 SEVEN UP BOTTLING COMPANY.

7UP Bottling Company of Nigeria produces soft drinks. These are soft drinks that enjoy wide patronage locally and internationally. The product consist of Seven –UP, Pepsi-Cola, Mirinda, Teem Lemonade, Pepsi – Soda.

Millions of bottles of 7UP products (soft drink) are consumed everyday both in Nigeria and other countries of the world.

The Kaduna plant is the Northern Headquarters of Seven –UP bottling Company covering the affairs of the plants and depots situated in the northern part of the country. It has the capacity of producing more than ten thousand soft drinks per day for human consumption. Over 400 employees are involved in the production and administration.

Staff strength is about 6,000 workers nationwide. There are about 16 plants over the nation: Ijora plant, Ikeja plant, Ibadan plant, Aba plant, Kano plant, Kaduna plant, Benin plant, Asaba plant, Enugu plant, Onitsha plant etc.

The Kaduna plant operates with the following depots:- Minna depot, Abuja depot, Lokoja depot, Suleja depot, Makurdi depot and others in the north.

The manufacturing process for 7UP products involves the use of carefully measured substances, which are combination of sugar, water and flavours. Sugar and flavours are imported from overseas, water from neighbouring water Board while raw materials like bottle from sunglass Company owned by Seven – UP Bottling Company situated in Kaduna. Seven – UP Bottling Company is rising to become Nigerian number one bottler of soft drinks, selling more than 6 million bottles per day. This figure is growing with the continued expansion of the existing 16 plants and with opening new plants in the various parts of the federation.

Originally, the company (7UP) is being owed by a Lebanese called Mr l'Kali. The company formally entered the shores of Nigeria in 1960 and ever since, has been on sale nationwide.

2.4 PRODUCTION SYSTEM ELEMENT

The point has been reached where the components of a production system can be examined in details, taking as a 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 defined 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. This, financial capital, consumable materials and supplies, skills and knowledge (of product and processes), services from outside contract, e.c. can all be regarded as resources inputs.

Most analysis of production situation suggests that these 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 organisation (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 organisations 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 views that production just plays a supporting role to marketing.

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 performances and quality attributes as well as the best value for money.

Those attributes can only be satisfactorily derived by adopting a strategic view of production. Incorporating issues into the strategy of the organisation 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 consumers 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 parameter for production and must design the system in terms of its technical and physical characteristics, its human resources requirement and the organisation 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 designed 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 relating to quality of manufactured product in terms of these three functions of specification, production and inspection.

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

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

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

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 organisation is known as system analysis. The system has to work hand in hand with the uses of the system and assist to ensure that the needs of the users are met. In system 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 7UP Bottling Company, Kaduna Plant, it is clear that the manufacturing process of 7UP is based on a carefully measured combination of sugar, water and flavour. It was stated that the same standard is maintained throughout other branches of Seven – UP Company in Nigeria.

The water used in the production process is supplied from Kaduna State Water Board. 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 Aluminium Sulphate. These chemicals are added in certain order and stirred for an hour. It would be allowed to cool for almost two hours, after which it undergoes another set of different treatment in two different tanks.

The first tank bearing the sand filter 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 absorb all the traces of chlorine remaining in the water. After the carbonation of the water, the water technician collects some quantity to the laboratory for test after which the water is certified 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 flavour takes place. It is noted that at this point the flavour is 8 units (1 unit = 226 cases). In case of production of Mirinda, the flavour is 236 cases that is added to the mixture of sugar and water.

After mixture, 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 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 sparkling bottles are passed to the filter after being carefully inspected. The inspection is done by the inspector light used in detecting any left dirt of particles in the bottles. The cleaned bottles are then filled with the prepared solution of flavour, sugar and water. These are immediately passed through filled carbondioxide ($C0_2$) so as to enable the content to stay for a long time before being crowned. At this point, they pass through another inspection light, but this time searching for the level of the contents and any subsequent left over dirt. The bottles that do not reach the

required level are then passed 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 involve both manual labour and dedication which often lead to fatigue of workers. 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 onwards. 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 item 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 requests for replenishing order. For the day to day activities, a card is used for keeping necessary entries in order to ensure a proper up to date record of raw materials. This card is known as stock report cart. It is used

for what goes into production and what comes into stock so as to know what raw materials needed to be re ordered.

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 simple 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 back in step 1.
13. Rinse out the both container with the water that was held back in step 1.
14. Add rising to finished syrup through 30 mesh strainer.

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 bruise, adjust syrup if necessary.

18. Take sample from finished syrup and carbonated water and test taste.

19. Switch off agitator and stared 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 filter.

21. Add carbondioxide.

22. Pass into accumulate table and place in cases ready for leading 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 an efficient automatic system production with emphasis on stock control.

The problems of the current system are thus:-

(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 requirement. This slackens the pace of decision making in the organisation.

(iv) Communication gap often develops in the manual procedures in the dissemination of information to the various personnel concerned.

It is considered that the current system be reorganised and an efficient automatic production system can be stored in the memory of the computer. Computerized processing eliminates the high volumes of paper works and large number of 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 test accessing and retrieval of information for the prompt dissemination of various sub head for action.

3.5 **ANALYSIS OF THE PROPOSED SYSTEM:-** This is discussed under design approach and Hardware requirements.

DESIGN APPROACH

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

(i) The high capacity disk drives.

(ii) Laser Jet Printer.

(iii) Four Video display units for interaction interface with the computer.

HARDWARE REQUIREMENTS

This relates to the physical and electronics devices used to carry out the project work. It consists 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 (Pentium Processor). Suggestion 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 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 Laser Jet 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 1930

characters of 24 lines by 80 characters. The keyboard possess the typewriter layout and additional keys for different function.

3.6 COST & BENEFITS 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.

BENEFITS

(i) The proposed system will 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.

(v) It will bring about standardization of products.

COST ANALYSIS

3 New computer system @	N100,000.00	N300,000.00
Air conditioner (2 ½ HP)		N75,000.00
Software		N50,000.00
Staff training for 4 wks		N80,000.00
Printer (Laser Jet) 6C model		N65,000.00
Maintenance		N80,000.00
Stabilizer/1000 KVA		N25,000.00
U.P.S (1000 K.V.A)		N30,000.00
Miscellaneous Expenses		N50,000.00
Consumables		N100,000.00
Utilities		N65,000.00
		N920,000.00

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 seven – UP 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 of the language assist the programmer to trace and debug errors even before program 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 cola syrup. The materials listed above has got its own production capability and capacity.

Item Name	Assigned Variable Name	Variable Type Assigned	Initial Val Assigned
Empty crate stock Capacity Production Capacity	 EPC EPC	 Numeric Numeric	300 180
Cork Stock Capacity Production Capacity	CPC CPC	Numeric Numeric	7,500 680
Water Stock Capacity Production Capacity	WSC WPC	Numeric Numeric	15,000 5,000
Lemon/Orange Stock capacity Production capacity	 LSC LPC	 Numeric Numeric	 1,682 120
Sugar Stock capacity Production capacity	SSC SPC	Numeric Numeric	3,000 950
Cola syrup stock capacity Production Capacity	 KSC KPC	 Numeric Numeric	 1,100 105

4.2.2 INPUT TO QUALITY SYSTEM PROGRAM

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

1. PRODUCTION NAME - PN
2. QUANTITY OF WATER - QW

3. QUANTITY OF CARBONDIOXIDE - QC

4. QUANTITYOF SUGAR - QS

QUANTITY SYSTEM PROGRAM INPUT

Item Input	Assigned Variable Name	Variable Type Assigned
Production Name	PN	String
Quantity of water	QW	Numeric
Quantity of Co_2	QC	Numeric
Quantity of Sugar	QS	Numeric

4.2.2 INPUT TO PRODUCTION SYSTEM

The input to production system program are the following:

1. PRODUCTION NAME

2. PRODUCTION CAPACITY ON WEEKLY BASIS

3. MONTHLY TOTAL PRODUCTION FOR THE PERIOD OF A YEAR

ITEM NAME	ASSIGNED VARIABLE	VARIABLE TYPE ASSIGNED
Production Name	PRN	String
Week 1	WK 1	Numeric
Week 2	WK 2	Numeric
Week 3	WK 3	Numeric
Week 4	WK 4	Numeric
Month	MN	Numeric

4.3 OUTPUT SPECIFICATION

4.3.1 OUTPUT FOR PRODUCTION SYSTEM

Seven – UP Bottling Company Limited, Kaduna.

PRODUCTION SYSTEM REPORT

PN	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	CT
XX	222	222	222	222	222	222	222	222	222	222	222	222	222
XX	222	222	222	222	222	222	222	222	222	222	222	222	222
XX	222	222	222	222	222	222	222	222	222	222	222	222	222
XX	222	222	222	222	222	222	222	222	222	222	222	222	222

4.3.2 OUTPUT FOR STOCK SYSTEM

SEVEN – UP BOTTLING COMPANY LIMITED, KADUNA.

PRODUCTION MATERIALS

Item Name	Stock Capacity	Quantity Stock	Production Capacity	Remark
Empty Crate	300	222	180	1
Cork	7,500	2222	680	1
Water	15,000	22222	5,000	1
Lemon/Orange	1,682	22222	120	1
Sugar	3,000	2222	950	1
Cola Syrup	1,100	22222	105	1

1= Enough or sufficient

2= Sufficient, but re-order materials before next production.

3= Not sufficient, a maximum of 2222 quantity required more to meet the required production capacity.

4.3.3 OUTPUT FOR QUALITY SYSTEM 7UP BOTTLING COMPANY

KADUNA QUALITY SYSTEM REPORT

Production Name	Quantity QW/SQW/DOW	Standard QS/SQS	Difference QC/SQC/DQC	Total Quantity	Remark
7UP	22/22/22	22/22/22	22/22/22	22/22/22	X
Pepsi Cola	22/22/22	22/22/22	22/22/22	22/22/22	X
Mirinda	22/22/22	22/22/22	22/22/22	22/22/22	X
Teem	22/22/22	22/22/22	22/22/22	22/22/22	X
Pepsi Soda	22/22/22	22/22/22	22/22/22	22/22/22	X

4.4 USER DOCUMENTATION

User documentation shows a stepwise guide to enable any user of particular program to run it successfully.

For a successful run of the program for this study, the user should use the procedure described below.

a. Switch on the Computer

b. Change directory to that of QBASIC by typing the following command at the DOS Prompt:-

CD/QBASIC and press enter key

c. Type QBASIC and press the enter key

NB: If the QBASIC software is not installed in a directory especially in DOS version 6.0 and above skip step (b) specified above.

d. Type in the program within the QBASIC environment if the program has not been stored in the computer to be used.

e. Press F5 to run the program.

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 new system side by side for a period of time.

d. Stage Change Over:- Requires a gradual retirement of the old system and replacing it with new one. The method recommended for Seven – UP Company 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 Seven – UP Company.

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. Sufficiently 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 services 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 areas 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 which increases the number of that item in the stock for production purposes.

On program execution, quantity of materials to be added to stock is demanded and this quantity supplied is compared with stock material capacity (i.e ware house total capacity). If greater than 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 stored into file. After the whole process, its links up the menu program for award 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 in entered, the quantity again compared with the stock capacity in order to know if an order drawn as been made or not. If overdrawn in made, the program gives 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.

4.6.2 QUALITY SYSTEM

During each production stage, test samples of soft drinks produced are taken from the parent production to test whether the required production standard is met. This is achieved by putting the required quality and the experiment to determine the quantity through a process known as measuring unit and observation recorded. The quantity of material used for a particular soft drink is supplied and the difference is found by subtracting quality supplied from the standard quantity required. This process goes for all component (sugar, Carbondioxide, Water) required for the production of that type of soft drink and their differences added together to give a final standard quality. If the test is within the range of (80-100), a standard remark is passed and a remark not standard is passed if otherwise.

Files consisting of quantity of each component used (CO_2, Water, Sugar) for each material required against the standard quantity are created. The difference is arrived at, by subtracting quantity used from their standard quantity and the total quantity is got by adding their difference together and tested against the standard beverage base to see if it is within the appropriate remark range. This process goes for all other mineral being produced and after this, report is generated which will consist of information that the management can use to make their final decision on the quantity of the product. After the operation h as come to an end, it is linked up with the main menu.

4.6.3 PRODUCTION SYSTEM

This involves the process whereby the analysis of report of quantity of soft drinks produced weekly, monthly and yearly (i.e grand total) are produced. This system helps in comparing the production output of each month of the year as the need arise.

In the program, the input data are the product name, weekly production and monthly.

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 weather to improve production or not.

After the whole operation, the program linked up with the menu program.

4.7 PROGRAM MAINTENANCE

A program 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

SUMAMRY, CONCLUSION AND RECOMMENDATIONS

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 the company.
- The dearth of study materials.
- Program debugging.

5.2 SUMMARY

The computerized stock control as part of implementation of production process is designed in a way that involves the use of the computer in the production of soft drinks in 7UP Bottling Company, Kaduna plant or any other plant as the case may be.

The production process is analysed and designed critically. This project focused on the nature and purpose of the existing system, its setback, scope for improvement, preferred solution and recommended designed approach including 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 : : lishe a computerized stock control system in the production system, th: forth)ming associated with the usual system i.e error prone, loss of da)w : eed of operation among others have been minimized if not totally er

5.4 RECOMMENDATIONS.

For better improvement, computer ap: is :cessary in an organisation. The following are recommended:

(i) Installation of hardware and software.

(ii) Intensive training of staff in hand and .ani .lation.

(iii) Reduction of unskilled labour

(iv) Increase in percentage of monetary al pro :tion.

(v) Enhancement of electric power supply

APPENDIX

```
DECLARE SUB HEAD <>
CLS : REM
' GOTO 1
LOCATE 12, 30: PRINT  " YOU ARE WELCOME TO "
LOCATE 14, 25: PRINT  "7UP BOTTLING COMPANY "
LOCATE 16, 34: PRINT  "KADUNA PLANT"
SLEEP 2: CLS
LOCATE 11, 30: PRINT "A PROJECT WRITTEN BY"
LOCATE 12, 25 PRINT " ILOUGA NKECHI A – PGD/MCS/2000/1052
SLEEP 2
CLS
LOCATE 14, 25: PRINT "UNDER THE SUPERVISION OF"
LOCATE 16,32: PRINT – PRINCE R.O BADMUS
'********************* PASS. PROG ************************
SLEEP 2
I = 0
CLS

COLOR 10, 8, 4
2 LOCATE 12, 28: PRINT " ENTER PASSWORD....."
P $ = INPUT $ (2)
IF UCASE $ (P$) <>"IE" 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)) + CHE $ (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); CHRS (186)
NEXT
LOCATE 16, 27: PRINT CHR$  (204) + STRIG$ (26, CHR$ (205)) + (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 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$)) + CHR$ (187)
LOCATE 7, 26: PRINT CHR$ (186); TAB (54); CHR$ (186)
FOR I = 9 TO 17
LOCATE I, 26: PRINT CHR$ (186); TAB (54); CHR$ (186)
NEXT
LOCATE 18, 26: PRINT CHR$ (204) + SRING$ (27, CHR$ (205)) + CHR$ (185)
LOCATE 19, 26: PRINT CHR$ (186); 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 CHOICE [1...5]"
K$ = INPUT$ (1)
K = VAL (K$)
IF K { 1 OR k } 5 THEN
GOSUB 750
GOTO 104
END IF
ON K GOSUB CRE, ADD, DED, PRO, EX
EX:
RETURN 1
CRE:
OPEN "CREATE. FOL " OUTPUT AS #1
113 CLS
HEAD
LOCATE 6, 29: PRINT " CREATION OF STOCK FILE"
LOCATE 7, 28: PRINT STRING$ (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, PRS
115 LOCATE 20, 27: PRINT "ANY MORE RECORD (S) [Y/N]"
CB$ = INPUT$ (1)
IF UCASE$ (CB$) <> "Y" AND (CB$) <> "N" THEN
GOSUB 750
GOTO 115
END IF
IF UCASE$ (CB$) = "Y" THEN 113
CLOSE #1
```

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3. B.WU (1994) Manufacturing System Designed and Analysis. Chapman Hall 2-6 Boundry Row London.

4. Bryron S.G (1986) Programming with Basic MCGraw –Hill Inc.

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6. Kola A (1998) Computer programming made easy – F.U.T Minna.

7. Larry L (1984) Introduction to computer $ information processing prentice Hall Inc.

```
RETURN 101
ADD:
118 OPEN "CRATE. 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 "QUALITY 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 EVERLOAD"
LOCATE 15, 30: PRINT 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$) = "Y" THEN 118
' COMENT PART 1 COMENT
RETURN 101
DED:
127
OPEN "CREAT. FOL" FOR INPUT AS #1
OPEN " SHOOD" FOR INPUT AS #4
CLS
HEAD
LOCATE 6, 24: PRINT 'DEDUCTING FROM THE EXISTING STOCK"
LOCATE 7, 23: PRINT STRING$ 935, '-">
LOCATE 10, 32: INPUT "ITEM NAME'; BTN$
        UU = 0
        WHILE NOT EOF (1)
                U =0
                IPUT #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$, STC, STQ, PRC
        END IF
        IF U = 1 THEN 5000
        WRITE #5, ITN$, STC, STQ, PRC
5000 WEND
IF U = 0 AND UU = 0 THEN
        GOSUB
LOCATE 19, 32: PRINT "ITEM RECORD DOES 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$) = "P" THEN GOSUB PTR
        OPEN "I", #1, "CREATE. FOL
        CLS
        PRINT TAB (19); "NIGERIA BOTTLING COMPANY LIMITED, KADUNA."
        PRINT TAB (18); STRING$ (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); "ITM 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$)) + CHR$ (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); TAB (54); CHR$ (186)
 LOCATE 16, 27: PRINT CHR$ (200) + STRING$ (26, CHR$ (205)) + CHR$ (188)
LOCATE 7, 31: PRINT "QUANTITY 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 3 > 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$
LOPCATE 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$) <> "Y" UCASE$ (QB$) <> "N" THEN
        GOSUB 750
        GOTO 413
        END IF
        IF UCASE$ 9QB$ = "Y" THEN 412
        CLOSE #2
        RETURN 400
QUALP:
        GOSUB 1010
        IF UCASE$ (G$) = "P" THEN GOSUB PTR2
        OPEN "QUASYS" FOR INPUT AS #2
        CLS
        PRINT TAB (23); "7UP BOTTLING COMPANY, KADUNA."
        PRINT TAB (22); STRING$ (36, "-")
        PRINT TAB (29); QUALITY SYSTEM REPORT"
        PRINT TAB (28); STRING$ 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"; "WATER"; TAB (32); "SUGAR";
TAB (46); "CO2";
        PRINT TAB (58); TOTAL"; TAB (69); "REMARKS"
        PRINT TAB (7) "NAME:; TAB (17); "QW/SQW"; TAB (30); "QS/SQS/DQS";
TAB (43);
        PRINT "QC/SQC/DQC"; TAB (57); "QUANTITY"
        PRINT TAB (3); STRING$ (73,"-")
        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); RM$
        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 "PROSYS 1 "FOR OUTPUT AS #4
        DIM QS (12)
        QS (1) = "JANUARY": Q$ (2) = "FEBRUARY": Q$ (3) = "MARCH": Q$
(4) = "APRIL" Q$ (5) = "MAY": Q$ (6) = "JUN": 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 "PRINT INPUT OF WEEKLY PRODUCTION"
        LOCATE7, 26: PRINT STRING$ (28, CHR$ 205))
        INPUT "PRODUCT NAME:"; PD$
        WRITE #3, PD$
        FOR I=I TO 12
LOCATE 9, 15: PRINT "ENTER WEEKLY PRODUCTION FOR :, Q$ (1)
        MON =0
        513 YY =11
        FOR J = 1 TO 4
        LOCATE YY, 15: PRINT PRODUCTION FOR WEEK ";J
```

```
        LOCATE YY, 44: INPUT WK
        YY = YY +2
        NEXT J
        512 LOCATE 19, 25: PRINT "ARE THE INPUT DATA CORRACT [Y/N]"
        F$ = INPUT$ (1)
        IF UCASE$ (F$) <> "Y" AND UCASE$ (F$) <> "N" THEN
              GOSUB 750GOTO 512
        END IF
IF UCASE$ (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 950);
        NEXT G
RETURN

TWO:
GOSUB 1010
IF UCASE$ (G$) = "P" THEN GOSUB PTR 3
OPEN "PROSYS" FOR INPUT AS #3
OPEN "PROSYS1 " FOR INPUT AS 34
```

```
        CLS
        PRINT TAB (19); 7UP BOTTILING COMPANY LIMITED, KADUNA,"
        PRINT TAB (18); STRING$ (44, "-")
        PRINT TAB (28); "PRODUCTION SYSTEM REPORT"
        PRINT TAB (27); STRING$ (26, "-")
        PRINT TAB (3); "PRODUCT:; TAB (150; 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
        PTR 2:
        GOSUB 1020
        OPEN "QUASYS" FOR INPUT AS #2
        LPRINT TAB (23); 7UP BOTTLING COMPANY' KADUNA"
        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 BRI 9"
        LPRINT: LPRINT TAB (4); "PRODUCTION"; 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$, QW,QS,QC
        DQW = 80 – QW
        DQS = 100 – QS
        DQS = 100 – QC
        TNQ = DQW + DQS + DQC
        IF TNQ > = 80 AND TNQ< = 100 THEN RM$ = " 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..."
        IT$ = INPUT$ (1)
        CLOSE #3, #4
        RETURN 505
        750
              PRINT CHR$ (7)
RETURN

PTR:
        OPEN "CREATE. FOL" FOR INPUT AS #1
        GOSUB 1020
        LPRINT TAB 919); "7UP BOTTLING COMPANY LIMITED, KADUNA"
        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 (120; "ITEM NAMES"; SPC (3); "STOCK"; SPC
(6); "QUANTITY IN"; SPC 3;
        LPRINT PRODUCTION "PRODUCTION;; SPC (5): "REMARK"
        LPRINT TAB (24); "CAPACITY"; SPC (6); "STOCK"; SPC (7);
"CAPACITY"
        LPRINT TAB (12); STRING$ (62, "-")
        WHILE NOT EOF (1)
        INPUT 31, 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 BU RE – OREDER 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
        PTR 3:
        GOSUB 1020
        OPEN "PROSYS" FOR INPUT AS #3
        LPRINT TAB (19); 7UP BOTTLING COMPANY LIMITED, KADUNA."
        LPRINT TAB (18); STRING$ (44,"-")
        LPRINT TAB 928); "PRODUCTION SYSTEM REPORT"
        LPRINT TAB (27); STRING$ (26, "-")
        LPRINT : LPRINT TAB (3); "PRODUCTION"; 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"
        WHILE NOT EOF (3)
        INPUT #3, PDR$
        B = 14
        LPRINT TAB (3); PDR$; TAB (B):
        GT = 0
        FOR K = 1 TO 12
        B = B + 5
        INPUT #3, MON
        GT = GT + MON
        LPRINT MON; TAB (B);
        NEXT
        LPRINT TAB (75); GT
        WEND
        PRINT "press any key to con't..."
        I$ = INPUT$ (1)
        CLOSE #3
        RETURN 505
```

```
SUB HEAD
LOCATE 2, 16: PRINT 7UP BOTTLING COMPANY PLC, KADUNA"
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 (7UP), COMPANY KADUNA
COMPUTERISED STOCK CONTROL SYSTEM

MAIN MENU

1. STOCK SYSTEM

2. QUALITY SYSTEM

3. PRODUCTION SYSTEM

4. QUIT
INPUT YOUR CHOICE [1...4]

STOCK MAIN MENU

1. CREATION

2. ADDITION

3. DEDUCTION

4. PROCESSING

5. EXIT

INPUT YOUR CHOICE [1...5]

PRODUCTION SYSTEM MENU

1. CREATION

2. PROCESS

3. EXIT

INPUT YOUR CHOICE [1...3]

QUALITY SYSTEM MENU

1. CREATE

2. PROCESS

3. EXIT

INPUT YOUR CHOICE [1...3]

NIGERIAN BOTTLING COMPANY PLC (7UP), COMPANY KADUNA
COMPUTERISED STOCK CONTROL SYSTEM

PRODUCTION SYSTEM REPORT

PRODUCT NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SEVEN-UP	20	30	200	500	289	10	10	45	45	76	70	100
PEPSI-COLA	10	100	70	35	56	24	45	78	45	33	78	103
MIRINDA	23	89	45	90	200	24	34	200	10	38	60	49
TEEM	40	50	60	65	90	67	67	47	78	78	39	300
PEPSI-SODA	61	67	89	89	90	87	76	27	67	45	63	200
	154	336	464	779	725	212	232	397	245	270	310	752