ONLINE BANK RECONCILATION SYSTEM

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A PROJECT WRITTEN AND SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A POST GRADUATE DIPLOMA (PGD)

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CHAPTER ONE

1.0 INTRODUCTION

Bank reconciliation is a process that explains the difference between the bank balance shown in an organization's bank statement, as supplied by the bank, and the corresponding amount shown in the organization's own [accounting] records at a particular point of time, this project examines how effective bank reconciliation could be achieved.

1.1 Background of the Study

Bank reconciliation software automates all steps in the bank reconciliation process. It imports data from both ERP or general ledger systems and bank files or statements. It then compares account balances and transactions details between these sources, and identifies any discrepancies so that they can be investigated by accounting staff. This removes the burden of manually matching transactions that is placed on accounting staff, and frees accountants to focus on analysis of discrepancies.

1.2 Statement of the Problem

The major problem of the present system of bank reconciliation is as follows:

a. It consumes time and wastes energy.

b. Misappropriation of ledger account

c. Involves high cost in reconciliation in that it involves many personnel's.

1.3 Objective of the Study

The major objective of the study is to develop an online bank reconciliation database that will:

a. Improve corporate image and profile.

b. Reduce bank reconciliation cost.

c. Reduce administrative burden.

d. Employ better tools for the bank team.

e. The ability to target a wider and more diverse pool of the banking sector

1.4 Scope of the Study

Since there is a steady rise in bank reconciliation during recent years, most global companies now use some form of online reconciliation. A research that was conducted shows that online banking is widely accepted across European civil service organization. Online bank reconciliation system enhances the rate of effectiveness, reduce the cost of operation.

1.5 Significance of the Study

The new system is designed to perform the following task:

a. It will enable banks to transaction of reconciliation over the internet.

b. It will enable banks to filter out unsuitable transactions at an early stage.

c. bank reconciliation enables organizations to improve early communication through management long before the reconciliation starts.

1.6 Definition of Terms

Definition of some of the basic terms and concepts used in this work are given for quick understanding of the entire work.

a. **DATA BASE**: it can be defined as a collection of data that are organized so that it can be accessed with ease, manage, retrieved and updated.

b. **BANK**: Business offering financial services**,** business that keeps money for individual people or companies, exchanges currencies, makes loans, and offers other financial services.

c. **RECONCILIATION:** the making of one or more confliting account compatible and consistent.

d. **APPLICANT**: One who applies for something; one that makes request.

e. **NETWORKING**: The inter-connection of computers.

CHAPTER TWO

2.0 REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

According to Edna A. (2004), the internet is a massive international network of computer networks. It can be define as one of the fastest growing network connecting millions of people to share ideas, do businesses together, sending information to people or even to distance and learning.

Online recruitment is a form of recruiting applicants or job seekers or that applied for job through a consultancy firm or the company or organization itself. Research shows that online applications are widely accepted in civil organizations. Online job posting and job searching is done with ease and at a reduced cost.

2.2 Conceptual Frame Work

Referring to Brian J. (1996), the web is a front end to much of the log of information found in the internet.

It is a global and seamless environment in which most information that is available on the internet can be accessed on a constant and easy way by using a standard set of naming conventions. It provides an entry point into the internet tools such as FTT (file transfer protocol), Telnet, Usenet and Gopher.

The World Wide Web is developed in CERN, the European laboratory for particle physics whose first primary purpose was to provide a common protocol for requesting human readable information stored at a remote system using networks. The objective was to give scientists ways to exchange any kinds of information or data (text, graphics, figures or data base) using a concept known as hypertext as a reason of advancing their research work. From this perspective, the implementation and response from the on-line community has exploded into most promising internet access method over.

The web can be accessed using these two primary methods via:

(i) Through a graphical browser, this takes full advantage of the web's capabilities.

(ii) Through a line browser, where only text is displayed with rudimentary formatting.

A study conducted by Berger & Ghei (1995) in his study on a facet of account reconciliation concluded that the success of the banking industry depends on the quality of its reconciliation skills and their effective management in order to assist the organization to achieve its objectives. Mencken & Winfield (1998) explored the advantages and disadvantages of informal and formal reconciliation practices

in external banking industry. The authors found that quality was a strong motivator than cost for informal reconciliation

2.3 MySQL:

This is a high-performance, multiuser relational database management system that is today the fact to standard for database-driven software applications, both online and off the Web. Designed around three fundamental principles which are speed, stability, and ease of use—and freely available under the GNU General Public License, MySQL has been dubbed “the world’s most popular open-source database” by its parent company, MySQL AB. and with good reason. Official statistics reveal over five million sites are created, using, and deploying MySQL-based applications, with more coming into the fold on a daily basis. You may even have heard of some of MySQL’s customers: do the names Yahoo!, Google, Cisco, NASA, and HP sound familiar?

Data Definition Language

Data definition language (DDL) statements are SQL statements that support the definition or declaration of database objects; for example, CREATE TABLE, DROP

TABLE and ALTER TABLE.

Only the members of the system admin, db creator, db owner, or db ddl admin role can execute DDL Statements by default. If multiple user accounts create objects, the system admin and db owner roles can use the SETUSER function to impersonate another user or the sp_ change object owner system procedure to change the owner of an object.

Data Manipulation Language

DML Statements are used to change data or retrieve information. DML statements Includes:

1. **SELECT**
2. **INSERT**
3. **UPDATE**
4. **DELETE**

By default, only the members of the system admin, db creator, db owner or db data writer role can execute DML statements.

2.4 Php Supplements

According to its official web site at http://www.php.net/, PHP is a widely used general-purpose scripting language that is especially suited for web development and can be embedded into HTML. The main goal of the language is to allow

web developers to write dynamically generated web pages quickly. In English, what this means is that PHP is a programming language that makes it possible to incorporate sophisticated business logic into otherwise static web sites. The language is rapidly becoming the popular choice for data-driven web applications because of its wide support for different database systems. Typically, PHP code is “embedded” inside a regular HTML document, and is recognized and executed by the web server when the document is requested through a browser. Because PHP is a full-featured programming language, you can code all manner of complex things into your web pages using this technique; the server will execute your code and return the output to the browser in the format you specify. Because PHP code is executed on the server and not on the client, developers don’t have to worry about browser-specific quirks that could cause the code to break (as commonly happens with JavaScript); PHP code works independently of the user’s web browser.

2.5 Features Of PHP Component

As a programming language for the Web, PHP is hard to ignore. Clean syntax, object-oriented fundamentals, an extensible architecture that encourages innovation, support for both current and upcoming technologies and protocols,

and excellent database integration are just some of the reasons for the popularity it currently enjoys in the developer community.

(i) Simplicity

Because PHP uses a consistent and logical syntax, and because it comes with a clearly written manual, even novices find it easy to learn. In fact, the quickest way to learn PHP is to step through the manual's introductory tutorial, and then start looking at code samples off the Web. Within a few hours, you'll have learned the basics and will be confident enough to begin writing your own scripts. This adherence to the KISS (Keep It Simple, Stupid) principle has made PHP popular as a prototyping and rapid application development tool for web applications. PHP can even access *C* libraries and take advantage of program code written for this language, and the language is renowned for the tremendous flexibility it allows programmers in accomplishing specific tasks.

(ii) Speed

Out of the box, PHP scripts run faster than most other scripting languages, with numerous independent benchmarks putting the language ahead of competing alternatives like JSP, ASP.NET, and Perl. When PHP 4.0 was first released, it raised the performance bar with its completely new parsing engine. PHP 5.0

improves performance even further through the use of an optimized memory manager, and the use of object handles that reduce memory consumption and help applications run faster.

In addition, one in 10 FTSE 100 — companies that have dedicated recruitment sites are outsourcing the process to the third parties — to develop online adverts, post jobs, filter candidates and conduct pre-screening tests.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.1 INTRODUCTION

The chapter tends to talk about the methodology of the study. The term 'Methodology' can be seen as a set of methods and principles used to perform a particular activity. When such an activity follows scientific procedures, the term 'scientific methodology' is employed. In this study, the methodology proposes in details, the system analysis and design; bringing to bare the various design considerations made in developing the study.

3.2 System Analysis

Systems analysis and design refers to the process of examining a current situation with the intent of improving it through better procedures and methods. Systems analysis specifically involves gathering and interpreting facts, diagnosing problems and using the information gathered to recommend improvements to the system.

3.2.1 Detailed Definition of the Problem

The system currently used in Doku Nig Ltd. is a manual system, which had led to so many irregularities in accounts. However, the manual system is very tedious and

prone to mistake. The proposed system provides interfaces to enhance account reconciliation result in Doku Nig Ltd, and also provide a platform for organized account keeping.

3.2.2 Feasibility Study

The preliminary investigations examined the project's feasibility;"Bank Reconciliation System" that is, the likelihood that the system will be useful to the business organizations. Three important tests of feasibility were carried out:

Operational feasibility: the proposed system will meet the operational requirements of Doku Nig Ltd. in that it has maintainability, supportability, usability, disposability, sustainability, affordability and others.

Technical feasibility: The technical feasibility established that the proposed system provides some technical guarantees of accuracy, reliability, ease of access and data security. Also it established a better view of the hardware and software requirement if it meets the expectation of the design or not.

Economic feasibility*:* the economic feasibility established that the system will reduce the operational cost of the firm in that there will be no need of bulk production of balance sheet and ledgers.

3.3 METHOD OF DATA COLLECTION

A thorough investigation of the current system was made in order to obtain detailed fact about the application area to be re-designed. Investigation also covered looking at the functional requirement of the present system and finding out whether the requirements and objective of the present system are being achieved. In the investigation proper, several methods of data collection were employed which includes interviewing of office representatives, evaluation/inspection of forms and direct observation. These methods were adopted to ensure the validity of data collected and relevance of the result after processing the data.

3.3.1 INTERVIEWING

In view to investigation, office representatives were interviewed such as the management staff, non management staff and others. Among management staff that I interviewed were the director of and the manager of the firm both complained on the problems they faced with the existing system and will be grateful if the proposed system will be implemented within the shortest period of time. This method yields the most profitable result as it is obtained by physical contacts; hence a firsthand knowledge of the various processes involved is obtained by speaking to those that are concerned. Also some other administrative

staff was interviewed as well, who gave me necessary document for data collection, and were optimistic that the new system will ease result processing and reduce the stress staff goes through to get account reconciled. The essential element of the interview is obtained directly and in a short time than when other methods are employed since the interviewer "Abai Pereyemi Randy" is with the interviewed. This immediate feedback gives the opportunity to ask ambiguous questions and hence, obtain detailed responses.

3.3.2 OBSERVATION

The method of data collection enables the researchers to witness a firsthand operation of the old system or manual system. Direct observation is the surest method of learning as a scientist and this method was richly employed. During the observation, I had a feel of:

i. The volume of work carried out by staff.

ii. The reconciliation process, which is how accounts books are allocated.

Also during the observation period I was able to get an overview of the reconciliation system of Doku Nigeria Limited.

3.3.3 EVALUATION AND INSPECTION OF DOCUMENTS

Close examination of some documents was carried out, like evaluation of the ledger, evaluation of the cash books, and it proved to be an important method in the course of the investigation. Through the inspection, some deductions and inference which are of immense benefit to this research were drawn.

3.4 PROBLEM OF EXISTING SYSTEM

The existing system is a manual process and it is therefore not an integral part for financial accounting (FA) leading to the following disadvantages.

(a) **Inaccuracy**: The transactions produced by the manual system may not be accurate due to calculations which involve ordinary calculator and human reasoning.

(b) **Lack of security of data**: The transaction processed is stored in files. These files are sometimes attacked by insects such as termites or other pest.

(c) **Late processing of results**: The short period of time available for the transactions, makes the staffs involve in a period of very though work, As a result of this most of the times the reconciliation are done late.

3.5 DATA PREPARATION

Data used in the application were gotten from the original ledger and cash books; I was able to gather the data from the manual default books and was able to segment them into labels and fields.

3.6 USER PREPARATION

While designing this project the user was put under consideration, in that the software was designed with a good graphic user interface (GUI) to make the application user friendly, such that anybody with little knowledge of the computer should be able to operate the application.

3.7 SYSTEM CONTROLS

This application has an authorization process. That is an unauthorized user can't get access to the system, it is designed with high security measure, and only those given access by the administrator can be able to use the system.

3.8 SYSTEM REQUIREMENT

For the application to be able to run effectively without any malfunctioning, it has to meet the specifications and requirement which are stated below.

3.8.1 SOFTWARE REQUIREMENT

The following softwares are required for the implementation of the proposed application:

(i) An Operating System (OS): Windows XP, Windows Vista, or any of the versions of Windows 7 and Windows 8.1

(ii). An Antivirus Software

(iii) A web server preferably Wamp Server

3.8.2 HARDWARE REQUIREMENT

These include all the electronic and mechanical elements of the computer, together with those devices used with the computer to ensure the proper utilization of the proposed system. They are as follows:

(i) A RAM size of 1GB and above

(ii) Hard Disk Drive of 20GB and Above

(iii) A Processor with minimum speed of 1.50 GHz (intel Preferably)

3.8.3 PEOPLE

The users of the system will be authorized personnel of the company and banks.

3.9 FILE MAINTENANCE MODULE

In this case modules where put in place to allow periodic maintenance of the system to avoid data loss while running the program.

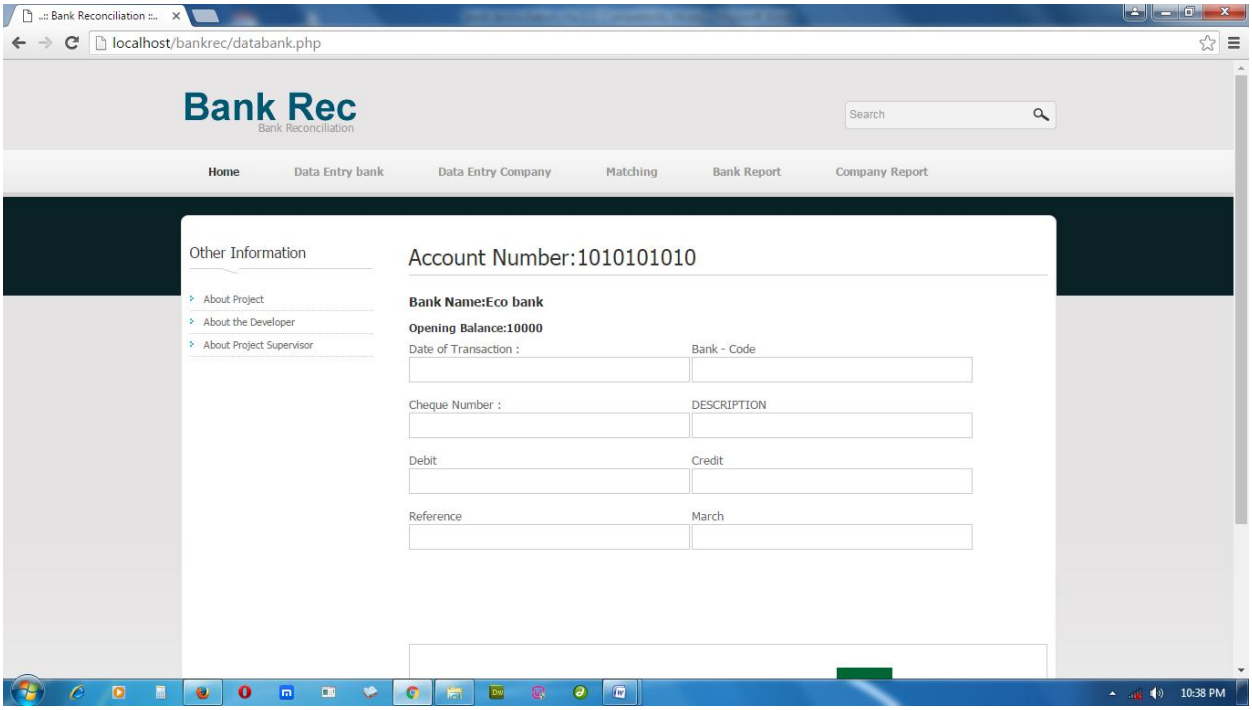
3.10 MAIN MENU SPECIFICATION

Main Menu specification

The main menu only displays the menu items and the caption of the system. The menu items are used to navigate to the other screens.

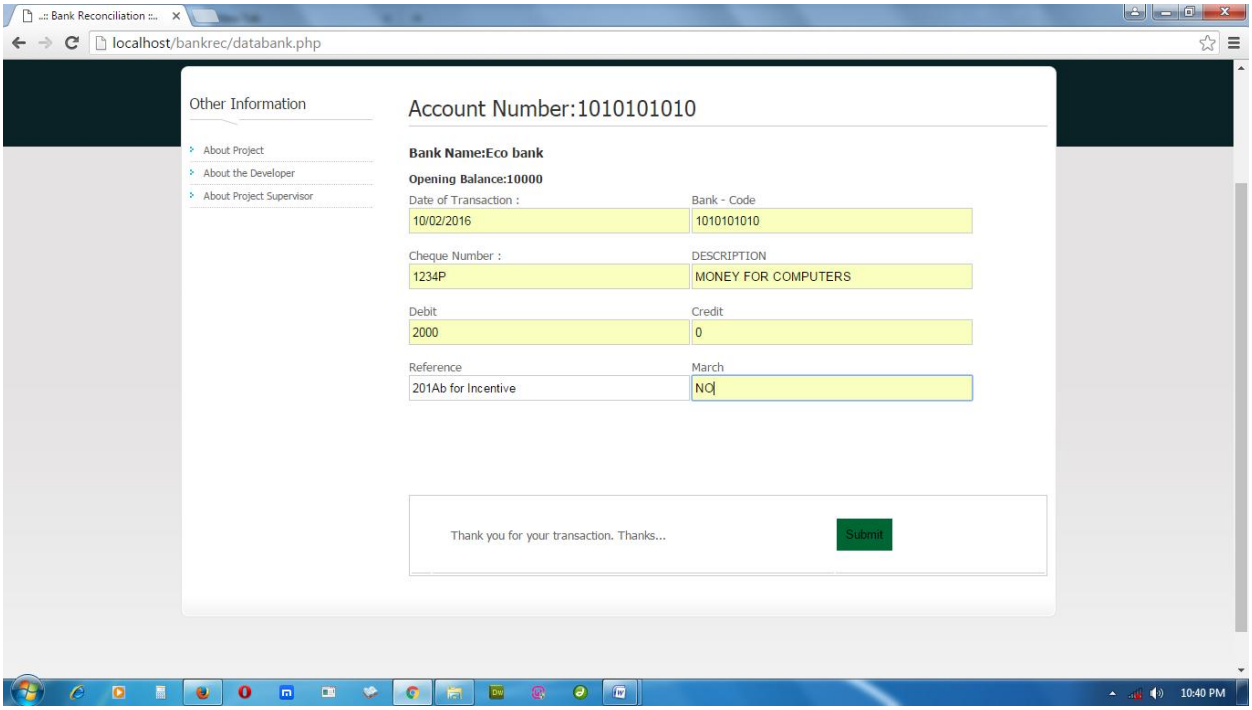
3.10.1 Input Specification

This comprises of all the fields that will be imputed in the input form used in result computation as seen below.



3.10.2 Output Specification

The output window is simply the window where the result will be printed, as shown below.



3.11 OVERVIEW OF PROPOSED SYSTEM FLOWCHART

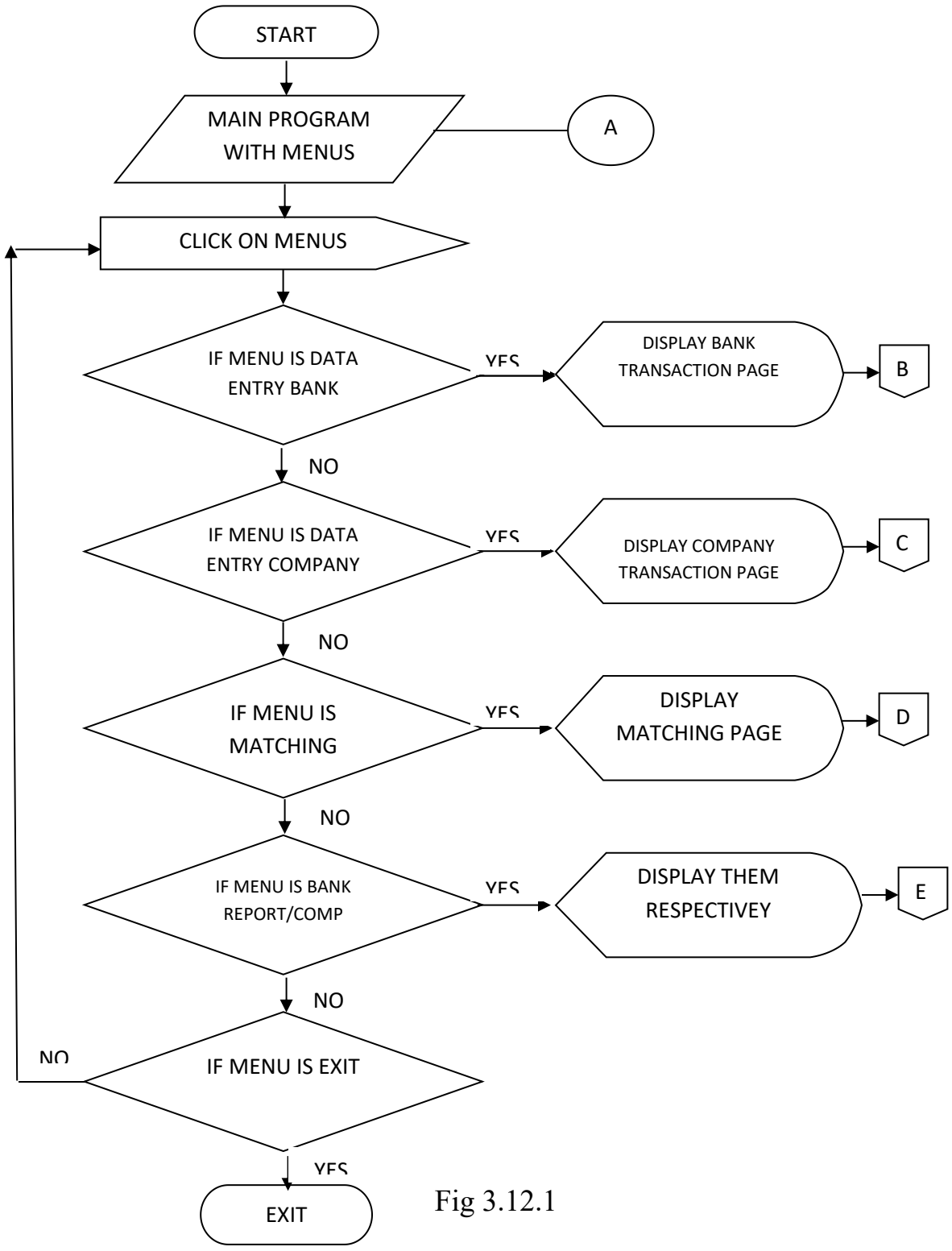


Fig 3.12.1

SYSTEM FLOWCHART

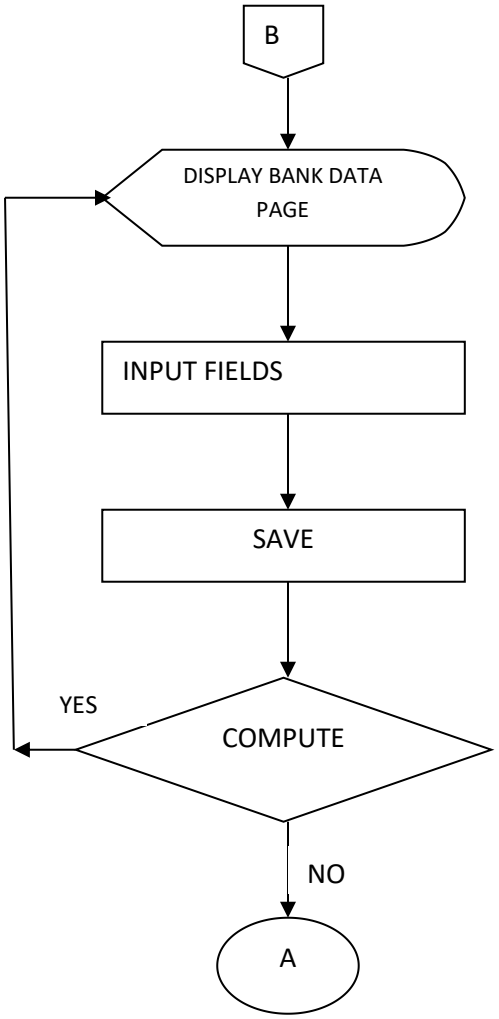


Fig 3.12.2

SYSTEM FLOWCHART

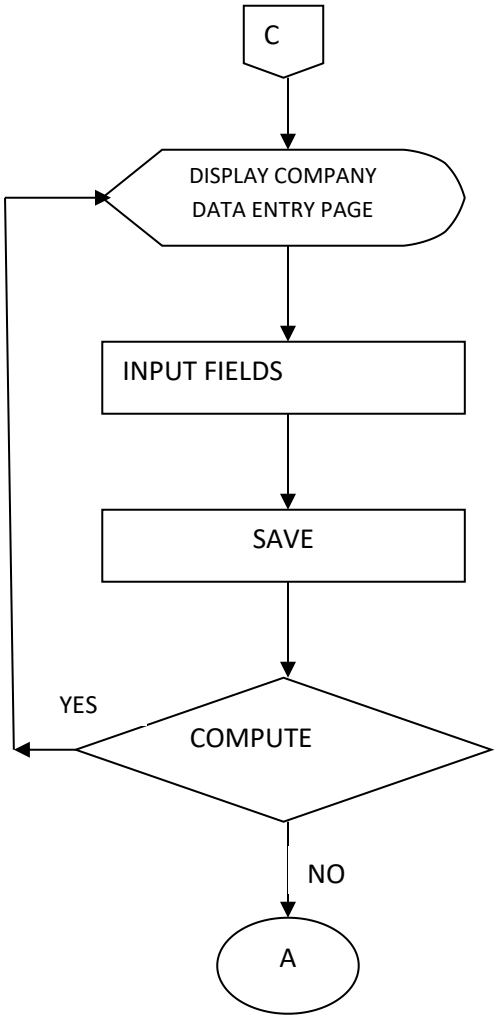


Fig 3.12.3

SYSTEM FLOWCHART

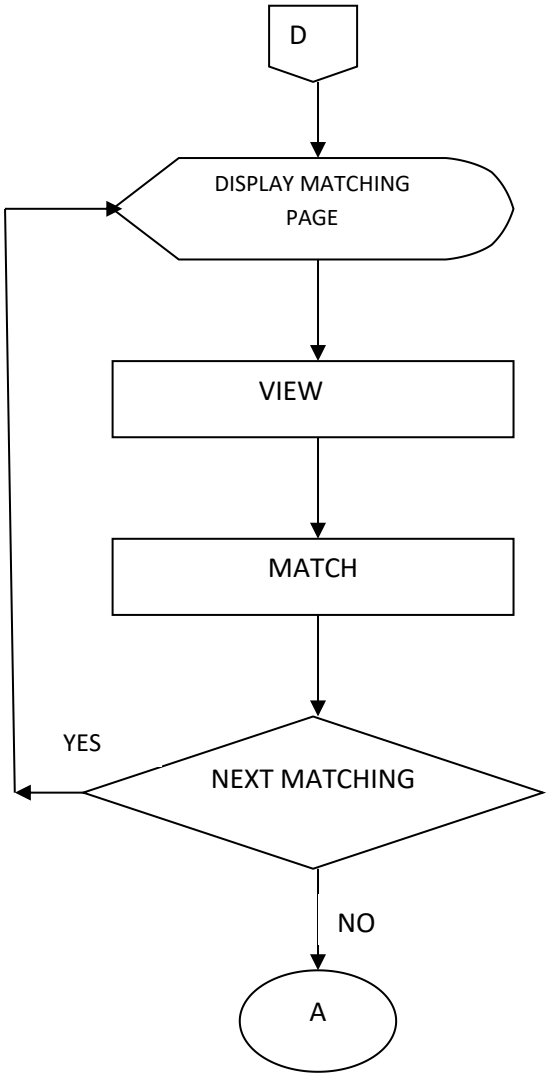


Fig 3.12.4

SYSTEM FLOWCHART

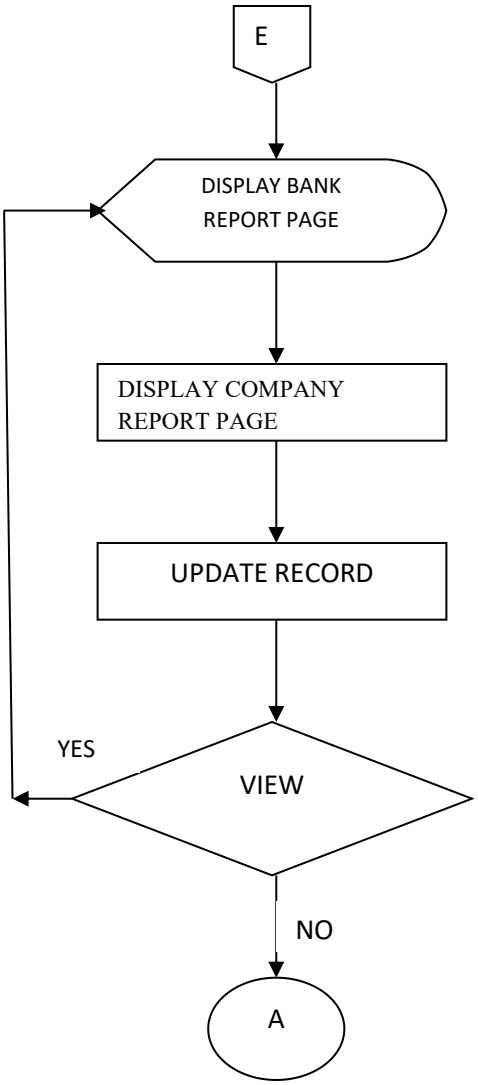


Fig 3.12.5

CHAPTER FOUR

SYSTEM IMPLEMENTATION

4.1 INTRODUCTION

This chapter has to do with the implementation of the new system. The system is put into operation and users trained on how to operate the system effectively and efficiently. The implementation process includes program development, testing and debugging and user training.

4.2 JUSTIFICATION OF PROGRAM M1NG LANGUAGE

The bank reconciliation system is a large and complex structured application. The system is a three—tier architecture application that combines three major disciplines in computer science, which are networking (internet application), database management and programming. Due to these facts there are many programming languages and application packages that have been used to develop this system, each with its reason for implementation. However, below is the list of tools that has being used to build the application and their characteristics that lead to their use.

4.3 PROGRAM STRUCTURE

Hypertext Markup Language (HTML) was chosen because of its easy nature or simplest form of developing web pages. It is the standard language used in creating web pages (static), which users execute with any of the internet navigator application installed in the system.

MYSQL (QUERY LANGUAGE)

MYSQL is a database management system (DBMS) that provides the mechanisms for storing, organizing, retrieving and modifying data in a database. MYSQL server allows for the access and storage of data without the concerns for the internal representation of data. MYSQL, is the standard query language for interacting with databases, MYSQL is an open source, SQL database server that is more or less free and extremely fast MYSQL is also cross plat Form.

MYSQL (Query Language), MYSQL is the database construct that enables PHP and Apache to work together to access and display data in a readable format It is a browser and a structure Query language server designed for heavy loads and processing of complex queries.

HYPERTEXT PREPROCESSOR (PHP)

PHP is an open source scripting language used with HTML documents to execute server-side interactive functions. PHP applications are useful in wide area of application ranging from numerical, scientific, commercial, business applications for stand-alone systems and web based applications.

4.4 DOCUMENTATION

The source code and the program interface is documented by using comments at the beginning of every module and every function within the modules, we also used a Data Flow Diagram to describe the logic of the system.

4.5 IMPLEMENTATION DETAILS

The application is easy to run; the following are the various procedures that will be taken in the usage of the proposed application.

4.5.1 CODING

While writing the codes of the program so many things where put into consideration to get the desired results, in some cases while coding places where do not need new code were replaced with former codes, that is there are repetition of codes when necessary.

4.5.2 PROGRAM TESTING

In the real sense, during implementation, this part of validation process is carried out. Program reliability should be considered in specifying and producing the correct output and the input needed to arrive at this output. For this reason, the program was tested by running it with real data. Errors were found and were immediately debugged. Program testing is necessary to ensure that the program is error free.

4.5.3 TRAINING AND RE-TRAINING OF STAFF

The users of the new system will be trained on how to interact with the interfaces of the new system to optimize operational activities in bank reconciliation system within the company.

4.5.4 FILE CONVERSION

The conversion process will be done with the pilot change-over system, where the manual system is changed to computerized system.

4.5.5 CHANGE OVER PROCEDURE

This involves the change over procedure, changing over to a new system can be done in various ways, which are parallel conversion, direct conversion, pilot conversion and phase conversion.

These major types of change-over are explained below:

i. Direct change-over: this involves' the continuity of the old manual system and the commencement of the' new system.

ii. Pilot change-over: in this part, the old manual system is changed to a computerized one and the output is compared. If it works properly, then it is fully changed to a parallel change -over,

Iii Parallel change-over: this type does not allow the discontinuity of the old manual system but allows both the old and the new system to be run concurrently.

4.5.6 USER MANUALS

The user guide/tutorial program is incorporated into the software. Which serve as a guide for both user and developers. It helps to make use of programs efficiently and effectively. The user guide includes documentation and a guide on the main menu, input, screen, reports, edits and backups.

4.5.7 MAINTENANCE DETAILS

Periodic maintenance and upgrades will be carried out to ensure system reliability is intact.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

It is generally accepted that computerization of operation is imperative for the overall performance of any establishment as well as the business sector which is crucial to the overall well being of the society. The business sector has had a way of keeping records and preparation of balance sheet, but it is agreed that the computerization of reconciliation system is vital to enhancing performance and business operation. To this end we deemed it fit and proper to carryout a research in this directive using the Doku Nigeria Limited as our case study.

The manual system employed in bank reconciliation system meant that a lot of paper work had to be copied with which required reasonable space, capital and responsibility of securing them both from human hazard, form of malpractice and non human hazard like those from insects.

The new automated system will reduce the work load of staff and management, also help in fast transactions, and securing of company data, also the automated system will reduce the paper work.

5.2 CONCLUSION

This work was inspired by the zeal to develop a system that can eliminate inadequacy of the existing system such boredom and delays encountered in bank reconciliation system, the system attempt to successfully eliminate these inadequacy and problems.

The new system employed the use of interactive mode to design a system that is able to accept data and make them transactions. These put together has made the software valuable both in terms of efficiency and reliability.

Finally, if well utilized, the system will go further to reducing the manual work previously done in the system.

5.3 RECOMMENDATION

Computerization of bank reconciliation system is of no doubt, a must for every organization, it is to be stressed that computerization of Doku Nigeria limited system is tailored towards the quick processing of reconciliation and transaction .

Ideally, one cannot fully exploit the benefit associated with computerization of bank reconciliation system; I will want to recommend the followings:

i. That the needed machinery be put in place to see that the project is smoothly implemented.

ii. That the software (program) has to be reviewed periodically.

iii. That the computerization of bank reconciliation system should be implemented in Nigeria to enable organizations have more time to devote on better activities than waste resources and time in reconciling transctions.

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