COMPUTERIZATION OF NIGERIAN MUSEUM OBJECT

(A CASE STUDY OF NATIONAL COMMISSION FOR MUSEUM AND MONUMENT, MINNA)

BY

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PGB/MCS/2004/2005/1165

DEPARTMENT OF MATHS/COMPUTER SCIENCE

FEDERAL UNIVERSITY OF TECHNOLOGY

MINNA

APRIL, 2006

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**A PROJECT SUBMITTED TO THE DEPARTMENT OF
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CERTIFICATION

This is to certify that the investigation write – up and design of this project was carried out by VERONICA EZEH IFY of the Computer/Math's Department, Federal University of Technology, Minna under my guidance and supervisor.

Supervisor
(Mohammed Jiya)

Date

Head of Department
(Dr. L. N. Ezeako)

Date

DEDICATION

To my beloved brothers (The Eze'e Family) especial Ndubuisi Nwanneayi
Ezeh and my mentor, NZE (BARRISTER). J. A. OKORO.

ACKNOWLEDGEMENT

ABSTRACT

Documentation and Computerization of Nigerian Museum Artifacts, involves the making and keeping of accurate records/information about museum collections for effective management of object (artifacts), it requires that the objects manager sets out to record appropriate and accurate information about an object on its acquisition and comparative analysis. Object in collection have little or no use of significance at all if there are no accompanying used, who use them and their role in the value systems of their society.

TABLE OF CONTENT

CHAPTER TWO
LITERATURE REVIEW

CHAPTER THREE
SYSTEM ANALYSIS AND DESIGN

CHAPTER FOUR
SYSTEM IMPLEMENTATION

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATION

CHAPTER ONE

DOCUMENTATION AND COMPUTERIZATION OF NIGERIAN MUSEUMS OBJECTS

INTRODUCTION

Museums are repositories of the treasure of human race. The store and hold "In trust" the memory of this race which represent the world's peoples, their cultures, identity, aspirations, history and hopes in various forms including the material evidence. Museums are of various forms and shades and are classified by governing authorities, the area they serve, their audience, what they keep and how they present them. One thing every museum has in common with other museum is collection of artifacts.

Collections are assemblages of the collected materials evidence of man his environment and history of the past in the present engrossed in both cultures and natural expression in a museum acquired and preserved for the purpose their potential values. These materials evidences (objects, artifacts or relics) are the starting point of a museum, of its field and essential, of any activity of the museum. These collection of artifacts justify the museums as their kind and status are determined by these collections they of hole "in trust".

The right of holding or retentions of these collections in trust imposes on the museums a very long responsibility and challenges of managing these collections properly so as not to compare their quality, care, sustainable development and use. Custodians, administrators and manager necessary strategies by which thoughtful utilization and exploitation are put to these collections for the benefits of the generations unborn.

One of the basic vital needs for the care of collections in museums is the strategy for documentation, and of course the eventual computerization of the information structure documentation, that is to say that it should be a computerization – based documentation.

1.2   HISTORY OF COMPUTER

Computers are linked to a chain of calculation inventions that stretches backs to prehistoric times. Since the drawn of civilization, people have acquired information to aid them in their personal survival as well as their attempts to manage their organization.

Early forms of business records were recorded on a clay tablet. Notations were made in forms of wet clay and placed in the sun to dry. These were bulky but acceptable in the absence of anything else.

As the rate of data recording and information processing increased, there was also a corresponding increase in knowledge in the development of method of processing data and producing information, which apparently brings to mind first, the techniques for recording and communicating data. It was during this time that the first calculating device began to appear as a result of volumes of members represented in transactions. It is valuable to reconganize that that data processing functions were, and still remain basic, whether data are still processed manually or electronically as it is today.

One of the earliest calculating devices was the ABACUS. This was an ancient device used for 2000 years. ADDING MACHINE by Blaise Pascal a 19 year old French mathematician and philosopher in 1642 became used. In the 19th century Charles Babbage developed the ANALYTICAL ENGINE in 1833 that performed any type of computation automatically. In 1830's Herman Hollerinth a staff of the United State Bureau device electrical tabulating equipment which was used in gathering data for the 1890 Census called TABULATING MACHINE (Punched cards). In 1937 – 1944, Howard Aiken a professor of Harvard University used relays and

3

other electro machine anical device to produce the first computing machine that can be properly called digital because they provide digits of data. And also called MARK 1 digital computer.

3 JUSTIFICATION FOR COMPUTERIZATION

The Computerization of Museum collections (artifacts) has become necessary base on the following:

.1 **VOLUME:** Large volume of data as a result of constant collection of artifacts which takes time to process manually can now be processed within the shortness time with the aid of computer.

.2 **SPEED:** Computerization makes the documentation of objects (artifacts) easy and less cumbersome.

.3 **REPETIVENESS:** Objects in the Museum requires constant updating term as regards their condition, history of the object, names, numbers, acquisition etc with the aid of computer, these information's are made easy.

3.4 **SECURITY:** Computerization now make improved the security of Museum collections (artifacts or objects) objects are easily retrieved in case of thief.

3.5 **ECONOMICAL:** Economically computer has reduced the typing and printing in the case of documentation.

3.6 **RECORD KEEPING:** Accurate records and information about Museum collection as well as the management is easily access.

4

4 OBJECTIVE OF THIS STUDY

The objective of this study is to produce a systematic inventories and developing Museum activities (collection, research, exhibitions, education programmes etc) by facilitating exchange of information's on collections and sharing of professional practices. The main aim is to ensure a uniform standard system for all Museums in Nigeria and to keep accurate and proper records on their collection so as to ensure case of information exchange and retrieval on collections and sharing of professional ideas as well as practices between and among Museums.

Standards of system have been developed so as to:

1. Facilitate collections management by the increase Museums.

2. Ensure the security of objects by an inventory of all the collections. This guideline help to main information archive about the status of objects and provide necessary description and evidence of ownship in the event of loss by any various means.

3. Facilitate exchange between Museums as the guidelines provide an historic archive about the object. This maintains information and protect the long term value of data.

4. Prepare the computerization of inventories and the documentation of collection by the standardized organization of information.

5. Support physical and intellectual access to objects. That's helping to support access to objects themselves and necessary information about the object.

5 DOCUMENTATION PROCEDURES

At the point of entry of an object into the Museum, it is inventoried through accessioning by entering it into an accession register or day book. It is then assigned a permanent number and catalogued. It is this process that constitute documentations. Documentation, therefore involves basically inventorying and cataloguing.

INVENTORY

Inventory involves development and keeping a list of objects which consists of the basic collections management information about each object in a collection, including the detail that are essential for accountability and security while a "catalogue" is a fuller record with additional details about the descriptive and historic significance of the object.

CATALOGUING

In cataloguing procedure of this standardized system, a group of documentation records (material-manual or computerized) of the object are created. The documentation record includes a series of different kinds of information about the objects. These district type of information are called "Fields". These selected fields are grouped according to their customary use in the Museums.

1. **OBJECT MANAGEMENT:** This groups data necessary for the identification of the objects, their inventorying (registration), their localization and their control.

2. **OBJECT DESCRIPTION:** This involves a deducted but consisted physical description of the object.

3. **HISTORY OF THE OBJECT:** This groups all the information enabling the object to be placed in it socio – cultural, geographical and chronological context and

4. **DOCUMENTATION:** Contains the references to the bibliographic or other source contributing to further and greater knowledge of the object.

6 TERMINOLOGY LISTS

In the standardized system, for better use of the documentation, a standard vocabulary based on the terminology commonly used by the Museum expert have been created for use. The proposed terminology lists are of two kinds, the in-exhaustive and the closed lists:

1. The first are not exhaustive and can be developed for each Museum or updated even if the creation of lists common to all Museum is the ultimate goal.

2. The closed lists contain the only vocabulary that can be used for recording and are very vital in the framework of exchanges.

6 ADOPTING THE STANDARDS

1. The standards can be adopted in different ways depending on the size of the Museum collections and according to whether these collections are previously existing or are new acquisitions.

2. New standards must be adopted where there are previously existing collections. This involves the transfer of the information registered on the former record to the new one in the proper fields in the appropriate group heading. This exercise allows for an updating of the previous information available and its integration into the global organizational policy of the Museum through a unified and structural classification.

3. For new collection, an inventory data is created. This requires that each object or group of objects newly acquired be assigned minimal data in order to guarantee its security, enabling its control and identification thus help Museum in their legal and official acquisition.

4. Each new acquisition must be given an inventory number which will be replaced by the object itself. The photograph of the object must be made also.

5. The documentation analysis of the new and old collection should be carry out in the presence of the object (artifacts). Documentation must be controlled and supervised by a specialist.

6. The standards adopted in this way in the manual form can be gabaged in a computer-based documentation system, which in itself is a complex subject matter to be treated separately as it was its own objective and merits within the framework of information technology.

1.7 OBJECT MANAGEMENT PROCEDURE

1.DEFINITION OF MANAGEMEMT FIELD

There are twelve fields under management of objects.

1. Name of the field

2. Definition of the content of the field

3. Details of the content of the field

4. Details on the manner of recording the information.

2. First in the catalogue card/form is the name of the institution documenting the object. The full name of the institution is entered at the top of the form. This field is repeated automatically in each record.

3. Then, there is a space for the image/photograph which is neatly fixed.

4. OBJECT MANAGEMENT

This is one of the four groups earlier mentioned and consists twelve (12) fields. This series of field will allow you to specify the status and the location of the object. These are as follows:

1. **COUNTRY:** This is the country where the object is located. Enter the full name and not the abbreviation.

2. **INSTITUTION WHERE THE OBJECT IS LOCATION:** The name of the institution where the object or the specimen is currently located if the object is on loan to this institution, the name of the source should be recorded in the next field (i.e. 1.3 Owner Institution Name) if the object is borrowed by another institution, the name of the borrower should be recorded here also.

3. **OWNERS INSTITUTION NAME:** This is the central body of the institution. The full name of the institution and the name of the country where this institution is located. In Nigeria, the owner institution name is National Commission for Museums and Monuments.

4. **DEPARTMENT OF THE MUSEM:** The name of the directorate where the objects belong should be indicated since there are other departments like the Museums, Monuments and Research e.t.c.

5. **ACCESSION NUMBER:** This is unique identification number of the object or specimen assigned by the owner. These numbers is fashioned or design by the institution to identify the object available in the field for easy documentation. The number is marked or attached to the object or specimen. E.g. MN.96.1.1 this number is only obtainable and also peculiar with National Museums Minna only for the purpose of documentation as well as identification. These numbers follows a serial pattern (serial)-e.g.- object No.1 MN.96.1.1, object No.2 MN.96.1.2 e.t.c. In the case of the object with more than one elements. It is object No.1A MN.96.1.1, objects No.1B MN.96.1.1.

6. **TYPE OF COLLECTION:** State the type of collection, whether the object is from an ethnographic, archaeological, research, educational program collections e.t.c.

7. **OLD ACCESSION NUMBER:** This is the number of any previous accessioning with relevant data that will help in the inventorying (documenting) of this new accessioning.

8. **ACQUISITION OR ACCESSION METHOD:** Is the method by which an object entered the Museum whether as a permanent acquisition or as a long term loan if its purchased or donated by an individual.

9. **PRICE OF PURCHASE:** If the method of acquisition is by purchase, enter the amount or price of purchase.

10. **ACQUISITION OR ACCESSION DATE:** The date of acquisition or the date of accession is the date which the object was collected from the field. If there is no date given during acquisition, enter the date of which the object entered the Museum.

11. **SOURCE OF ACQUISITION** (who did you get it from): How the object entered the institution, if it was by donation state the name of donor. If the object is on loan state it also.

12. **PERMANENT LOCATION OF OBJECT:** The precise location inside or outside the Museum where object is normally located such as shelf in a showroom or a showcase within the gallery. This is in the case of large Museums where you have much numbers of object, to make research easy. The permanent location of the object is National Museum Minna.

13. **OBJECT DESCRIPTION:** The various field under object description serves to describe the physical characteristic of the object. The roll of description in facilitating easy recovery in case of seizure and loss cannot be over emphasized. The accurate and detailed description of an object is not only essential but vital.

11

14. **IMAGE:** Image can be used to identify the objects one or more can be procured depending on the complexity of the object. Record the reference number of the images, which may be a photograph, a drawing, or a digitalized image. Images are very important in identification and recovery of stolen or sized object.

15. **OBJECT CATEGORY BY FORM OR FUNCTION:** This is the physical form or function of the object. It states the use age of the object whether the object is for cult, furniture, personnel ornament or musical.

16. **OBJECT CATEGORY BY TECHNIQUE:** This refer to the technique or method use in the production of object. This classification is intended to facilitate the grouping and research object such as basketry, ceramic, carpentry, waving e.t.c. In the method of processing these objects, in the case of iron the method of production is by metallurgy –e.g. Spear.

17. **OBJECT NAME:** This is the common name of the object. This is different from the title of the object. In some cases the name of an object common name may be the same with the vernacular and title.

18. **VENACULAR NAME:** This is the name indentiting the origin of an object. Vernacular name tells you whether an object is of Igbo origin, Igala or Adamawa origin. In case of seizure vernacular name helps in retrieving such object.

19. **NAMES IN OTHER NIGERIA LANGUAGES:** There are three major languages in Nigeria. The Igbo, Yoruba, Hausa. You can enter names of an object in these three languages. Example of object name like "stool". Vernacular:- Igbo- Och-ekwu, Yoruba- Ijoko, Hausa- Kujera.

20. TITLE: This refers to the title given to the object by the producer as distinct from the name.

21. MATERIAL: This refers to the materials which the object is made of. The materials may be one or two, or even above two. E.g. A brass pipe. Kanuri from Bronu State was made of Brass and wood. So the materials in this case is 2.

22. TECHNIQUE: This is the develop process. The formation to create the object and its decorative elements if any. E.g. the process in the production of a spear from iron material is referred or called hammered e.t.c.

23. DIMENSIONS: This involves the measurement of an object. The measurement ranges from Height, ʹLength, Width, Thickness, Diameter, Weight.

24. PHYSICAL DESCRIPTION: This is the descriptive information of an object, what the object represent, the material and technique of the object. If the object is compose of several components. Any inscription or design on the object? This field is very important in the object management in the case of stolen object. The description together with the image (photograph) should enable someone to recognize the object.

25. CONTENT: Agreement, expression, message. E.g. a standing man with arms raised. Instead of a man making gesture of adoration.

26. INSCRIPTION: This involves any mark made on the object by producer or owner for the purpose of identification or any inscription or mark recorded according to the internal practices of the object.

27. CONDITION OR STATE: This is assessment of object. It is the last in the field of object description, and it gives evaluation of the physical condition of object. It can indicate either the original condition of the object on entry the Museum or its present condition. The condition is usual described as good, fair or poor.

CHAPTER TWO

LITERATURE REVIEW

2.1 DOCUMENTATION

Documentation involves the making and keeping of accurate records/information about Museum collections for effective management of an object (artifact), it requires that the object manager sets out to record appropriate and accurate information about an object on its acquisition and thereafter through research and comparative analysis. Object in collection have little or no use or significance at all if there are no accompanying information as no where they come from, how they were made and used, and who used them and their role in society. Museum is expected to gather this and other information accurately about their entire collections and properly keep them.

2.2 ARTIFACTS, WORKS, AND AUTHORS

Aristolle divided things into those that "exist by nature" and "products of art" or "artificial products" (Physics, Book II, 1926). Artifacts are contrasted to natural object; they are product of human actions. Consequently an artifact has necessary a maker or an author. Using

the word 'author' in a somewhat generalized sense, we may thus adopt the principle.

(AI) if an object is an artifact it has an author.

It may be suggested that the maker of an artifact need not be a human being. For example, in a recent experiment a New Caledonian crow called Betty bent a pieces of straight wire into a hook and used it to lift a bucket containing food from a vertical pipe (Weir at el, 2002) Betty's hook many be regarded as a simple artifact made for the purpose of gaining access to the food bucket.

Experimental artifacts are unintended products of the experimenter's plans and action, but otherwise the word is usually applied only to intended products not to a new objects whose existence is a result of an agents productive activity are artifacts. If we may restrict the application of the expression 'author' and 'authorship' in a similar way, we may strength (A1) to (A2). An object is an artifact if and only if it has an author.

According to (A2) an artifact and author are correlative concepts (Hipinen 1993, 150 - 157). It should be observed that (A2) allows the possibility that an artifact has more than one author, such object may be termed, "collective artifact". (A2) makes the concept of artifact

equivalent to that of work (as a product as opposed to activity) for example, according to (A2) all works of art, including musical and literary works, should be call "artifacts" in so far as they have authors. In aesthelics, the expression artifact has been used in this wide sense when it has been argued, as some philosophers have done that works of art are necessarily artifacts (Davies 1991, 120 - 141). Ontologically an artifact can be a concrete particular object such as the Eiffel Tower, a type (a type object) which has or can have many instances (for example, a paper chip or Nikolai Gogol's Dead souls) an instance of a type (a particular paper chip), or an abstract object. An artifact kind identified by a common description or concept can include several subtypes or species, for example, there are different paper chip types for which their authors (that is their inventors) obtained separate patents these fall under the more general artifact kind of 'paper chip'. Commonly used artifact used kind (pens, paper chip, computers e.t.c.) evolve over time as different authors and designers try to improve over time as different authors an earlier artifact types or adopt them to new condition and purposes..(Petroski 1992a, 1992b)

An object which is an artifact in a narrow sense is usually made from some pre-existing object or objects by successive intentional

17

modifications. This activity is called work. This feature of artifacts is reflected in the dictionary definition of an artifact as an object made by a human art and workshop an artifact product. The production of artifact can take different form in the simplest cases, for example in the case of Betty's hook, an artifact is made by modifying a natural object or another artifact example, (apiece of metal wire) whereas complex artifacts are usually made by constructing them from parts which may be another artifacts or natural objects.

When a person intends to make an object, his productive mention has to which determines the identify of the object and the criteria by which it can be distinguished from other objects (cf. Hilpinen 1992, 61) for example, 'painting' and 'chair' are sorter descriptions re (or red thing) is not. It is possible to give a definite answer to a question of how many chairs are there in a given room, but not to the question of how many red things are there in the room of as Gottlob Frege (1884/1953, 66) pointed out, the description 'red things does not identify objects in a determinate manner. Artifact kinds can be identify by count nouns (such as chair) or by mass terms (e.g. paper or whisky). Many "natural" language, especially their written forms, can be regarded as artifact. For example, the creation of new Norwegian

18

(Landsmal or Nynorsk) in the mid – 19th century was mainly due to the effort of the Norwegian poet Iran Aasen, who presented it as an alternative to official Norwegian's language of the time (Riksmal, Dano-Norwegian). According to condition (DEP), a person is an author of artifact only if the existence and the character of the artifact depend on that person's productive intention.

WORKS

If we distinguish the concept of work from that of an artifact, and say, for example, that an author can crest a work only by making some artifact (for example, to write a novel an author has to produce a manuscript).

An object is an artifact in a narrow sense is usually made from some pre-existing object or objects by successive intentional modifications. This activity is called Work. The feature of artifacts is reflected in the dictionary definition of an artifact as an object "made by human art and workshop, an artificial product".

AUTHOR

According to condition (DEP), a person is an author of an artifact only if the existence and the character of the artifact depend on that person's

productive intention. Such dependence admits of degree, thus it is possible to distinguish degree of authorship.

2.3   **THE CHARACTERIZATION OF ARTIFACT**

Artificial things can be characterized in terms of function and goal (Simon 1996, 5) and artifacts are often identify by sortal descriptions which refer to their intended function (e.g. 'hammer'). This is not in case of 'painting' artifact sortal which is not derived from the purpose or function of the object, but from the way in which it has been produced. An object which has been made for a purpose F may be termed 'an F-object'. The properties of an object can be divided into two classes

1. Those relevant to the functioning of the object as an F-object and

2. The properties irrelevant to the purpose F.

The former properties may be termed the significant properties of the object (or its F-significant properties); they may also be called the "good making properties" of the object. For example the weight of a hammer is one of its significant features, but its colour usually not.

In addition to an identifying (sortal) description F. The content of an author's productive intention includes the properties he regards as

20

significant for the purpose F. The intended character of an artifact is not simply a collection of predicated, but as a hierarchical structure. If an artifact as evaluated on the basis of its suitability for a certain purpose, its goodness is a form of what G.H. Von Idright (1963,19-22) has called instrumental goodness.

Many artifact are characterized by means of their intended function and use, and some part of complete artifact are artifacts (we might call the "sub artifacts") which have been designed to serve a certain function in a give principle artifact. Simons and Dement (1996,264) have called such parts the functional components of an artifact. An author's productive intention is often expressed by the cognitive artifacts which show the character of the intended artifact and the way it should by constructed, example, a drawing, a diagram or a model of the artifact, together with a list of parts and material and a set of constructions (a precept) for the production process. Such representations are especially important in the case of collectively produced complex artifacts. They are necessary for successful communication among the authors of artifact and for the coordination of the productive actions. (Simon's and Dement 1996, 266 - 75)

2.4 THE EVALUATION OF ARTIFACT

An author's productive activity may be evaluated on the basis of the relationship among the intended character of an artifact, its actual character, and a purpose F (Hilpinen 1995, 140)

(E1) The degree of fit or agreement between the intended character and the actual character of an object

(E2) The degree of fit between the intended character of an object and the purpose F, in other words, the suitability of an object of the intended kind for the purpose F.

(E3) The degree of fit between the actual character of an object and the purpose F that is the suitability of an artifact for F.

(E1) determines whether an artifact is a success embodiment of the author's intentions,

(E2) determines whether the character that the author intends to give to an artifact is suitable for the purpose F. and (E3) tells whether the author has successes in making an object that is infact suitable for the purpose F. The study of artifact (qua artifacts) is intrinsically evaluative, since viewing an object as artifact means viewing it in the light of intention and purposes.

22

If the author's productive activity is successful, the character of a completed artifact both depends on and degrees with his productive intentions so that the it can be regarded as an embodiment of these intentions. The actual character of an object does not agree with its intended character, it is unsatisfactory from the author's point of view, and if the author's conception of an object does not agree with its intended character, the artifact is subjectively unsatisfactory from the author's point of view. An object is an artifact made by an author only if satisfies some sortal description included in his productive intention.

If an artifact has several authors, the Acceptance condition should be hold for at least one of them. According to the Acceptance condition, an object is an artifact only if its maker regards it as such. The success condition concerns the fit between the actual and the intended character of an object the Acceptance condition the fit between the authors conception of an object and its intended character.

In some cases the satisfaction of the Acceptance condition is sufficient for the satisfaction of the success condition in the sense that if an author has produced an object with an intention to make an

object of kind K and has accepted it as K – object, it can not fail to a K – object.

Randall Dipert's theory of artifacts includes the condition that an artifact should be intended by its author to be recognized as having been intentional modified for a certain purpose (Dipert 1993, 29- 31) An F – object can presumably be a good F – object only if its potential users recognize it as such. General recognizing a mechanical shark used in making an adventure film is an artifact, but its authors do not wish the audience to recognized it as such.

2.5 <u>**WORKS OF ART**</u>

Artifactuality is often regarded as a defining characteristic of works of art (Stephen Davies 1991, 120 - 141). This is an essential condition in George Dickie's (1984, 63) analysis, according to which a work of arts is an "artifact of a kind creaked to be presented to an art world public". The condition of artfactuality is plausible only if the concept of the artifact is understood in a wide sense in which intentionally created events and processes (e.g. performance) and works which have instances (for example, musical and literary works) are regarded as artifacts. According to condition (A2) the

condition of artifactuality in the sense is equivalent to the requirement that a work of art should have an author if the expression 'artifact' is used in a sufficient wide sense, the condition of artifactuality clearly holds for art works, but if is equally obvious that not all the works of art artifacts in the narrow sense of the word.

CHAPTER THREE

SYSTEMS ANALYSIS AND DESIGN

3.1 What is a System? A system form a general stance can be defined as collection of related components that interact to form a task in order to accomplish a goal it is built on individual element or building blocks each contributing to for an organized integrating entity.

On the other hand, a system can be regarded as anything involving a collection of people, organization, hardware and software, user as well as communication setups. The all work together to provide solution to a problem. The features of good computer based system are:-

i.   Component work together towards solving a particular problem which is the primary objective of the system as a whole.

ii.   Every system, no matter how small contains sub systems. Each system is likely to be part of another large system just as it is likely to be divided into many sub-systems.

iii. Systems are made up of different component part that are related and have definite interaction or interdependence.

iv.   A change in one component produces change in other components. In all a good system must be correct, reliable, flexible, simple and clear and must be efficient.

3.2   SYSTEM ANALYSIS

System analysis involves detailed study of a proposed or existing system top determine the information requirements of the system. In other to make changes in any system. It is necessary to preview the system so as to ascertain among other things:

a. What part(s) of the system is still performing to expected level.

b. What part of the system needs to be maintained or re-organized so as to ensure improved performance.

c. What part(s) needs to be completely removed and replaced by a better system.

3.3   SYSTEM ANALYSIS AND DESIGN

This is concerned with the conversion of the objective of the management, as far as information and data are concerned, into a method that is amenable to processing by the computer. It is a link between management and software/hardware of computing. It is the

term used to describe the process of collecting and analyzing facts in respect of existing operations or procedures and systems in order to obtain full application of the prevailing situation, so that an effective computerized system is designed and implemented if proved feasible. It implies examination of each component part of a system both as separated entity and in relation to the whole. Hence system analysis and design can be define as the method of determining how best to use computer with other resources to perform task which meet the information need of an organization.

3.4 <u>SYSTEM ANALYSIS AND DESIGN CYCLE</u>

System analysis and design is a six-phase problem solving procedure for examining a system with a view to improving it. The six phases make up what is called the system development life cycle. The system development life cycle is defined as the step by step process that many organization follow during system analysis and design. The number of phases may vary, however, form one company to another, and even the name of the process may be disparate (e.g. application development cycle system development cycle, structure development life cycle).

Still the general objective remain the same.
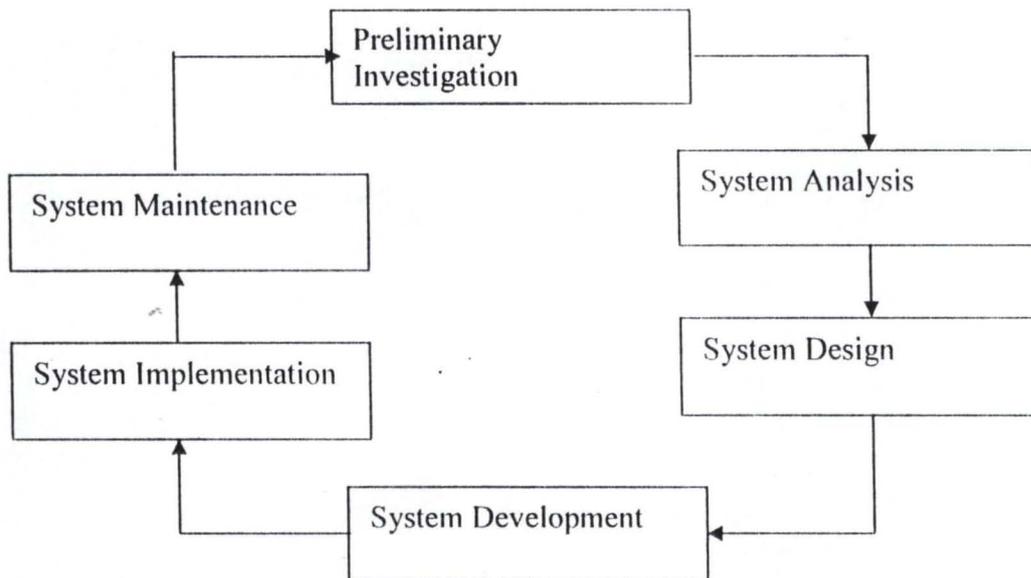
a. **PRELIMINARY INVESTIGATION:-** Conduct preliminary analysis, purpose alternative solution, and describe the cost benefit of each solution. Submit a preliminary plan with recommendation.

b. **SYSTEM ANALYSIS:-** Gather data, analyze the data, and make written report.

c. **SYSTEM DESIGN:-** Make a preliminary design and then developed design, and train users.

d. **SYSTEM DEVELOPMENT:-** Acquire the hardware and software and test the systems.

e. **SYSTEMS IMPLEMENTATION:-** Convert the hardware/software and files to the new system and train the users.

29

f.   **SYSTEM MAINTANCE:-** Audit the system request feedback for its users, and evaluate it periodically it should be noted that phases may often overlap; new one may start before the old one is finished. After the first four phases, management must decide whether to proceed to the next phase. User input and review is a critical part of each phase.

3.5   <u>SYSTEM DESIGN</u>

System design is the study of the documentation prepared during system analysis, which determines the relationship in the proposed system.

In designing a Documentation and Computerization of Nigerian Museums Artifacts is concerned with providing a store of information from that store when presented with a question.

The proposed new system for Museum is a system that will use an ON-LINE processing method. The method is briefly explained below:-

ON-LINE PROCESSING

Here the peripheral devices are indirect communication with the CPU (Central Processing Unit) and information reflecting current activities

and introduced into the system as soon as it occurs invariably, in the mode, the user is hooked directly to the CPU hence; he/she can interact with the computer at the control of the CPU.

3.6 **PROGRAM LANGUAGE**

The generally accepted dictionary definition of a language in that it is a notational system for communication. A programming language is thus a notational system for communication with the computer. The program languages consist of High Level Language (HLL) which example are BASIC, VISUAL BASIC(VB), COBOL, PASCAL, DBASE IV, JAVA, C++, e.t.c., Low Level Language (LLL) which example is Assembly language and Machine Language (ML).

3.6.1 CHOICE OF PROGRAMMING LANGUAGE

My choice of programming language for the design of the package is Visual Basic (VB). Visual Basic is object oriented (that's it revolves around ready-made objects, it is event driving and user interface in the jargon).

3.7   **INPUT DESIGN**

Input design is the process whereby the raw data are subjected into a series of processing in order to produce information. Therefore, input design was posted into it. The input design was sub-divided into three (3) modules which are:

a. **OBJECT MANAGEMENT (OM):-** This module consist of the country where the object belong to, the institution name, department of the Museum, Accession number, type of collection, old accession number, acquisition method, price of purchase, acquisition date, source of acquisition and permanent location of object.

b. **DESCRIPTION OF OBJECT (DO):-** This module consist of object category by function, object category by technique, object name, vernacular name, name in other Nigeria language, title, materials, technique, dimension(heights, width, weight, diameter, thickness and depth), number of element making the object, physical description, contents, inscription and condition of object.

c. **HISTORY OF OBJECT (OH):-** This module consist the production, place in production, group of production, period of production, date of production, function, use, user, place of use.

32

3.7.1 OUTPUT DESIGN

Output design is the process whereby data are been subjected into series of processing while by the end-product in it is refer to as output.

The output design was design was design in such a way that all the input data in input module are produce as a report for the management.

The expected output design are the same module as input module, the only different is that it will be inform of report.

3.8 SYSTEM FLOWCHART

System flowchart is the chart that show how the system execute the programming language inform of instruction one after the order. It is the computation process of the program. In this package, the execution would start from the input module and end in output module and the entire execution will be show better in the program flowchart. But for small explanation on this:

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│ Source       │      │ Translator   │      │ Object       │
│ Program (as  │─────▶│ (CPU)        │─────▶│ program      │
│ input)       │      │              │      │              │
└──────────────┘      └──────────────┘      └──────────────┘
                                                    │
                                                    ▼
                                             ┌──────────────┐
                                             │ Monitor      │
                                             │              │
                                             │              │
                                             └──────────────┘
                                                    │
                                                    ▼
                                             ┌──────────────┐
                                             │ Result       │
                                             │ (Output)     │
                                             │              │
                                             └──────────────┘
```
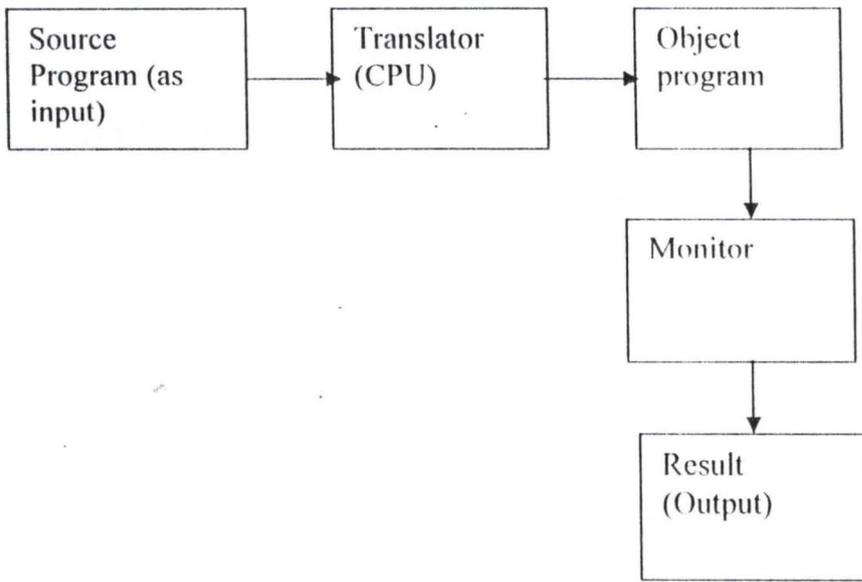
2. To ensure continuity of the development even if there is a change of programmers designing the system.

3. To allow for future amendment at a later stage in the system development.

The programme is divided into three(3) major menu of which each menu consist series of options. The three(3) major menus are:

(a). **INPUT MENUL:-** The input menus contains three(3) sub-menus and these are:

i. **OBJECT MANAGEMENT SUB-MENU**, which is for accepting the new object entry into the system for management decision.

ii. **DESCRIPTION OF OBJECT SUB-MENU**, which is for accepting the new description object entry into the system.

iii. **HISTORY OF THE OBJECT SUB-MENU**, is accepting the history of the object entry into the system.

(b). **VIEW MENU:-** This is where record are view on the screen. Under this menu, it consist Edit menu, that allows for necessary corrections that you wants to make to a database and click on to save after correction.

(c). **REPORTS MENU:-** This contains all the necessary information about the documentation. This is applicable to management only. It has the following sub-menu:-

   i. **OBJECT MANAGEMENT SUB-MENU:-** This is use to display management information about the object one by one.

   ii. **OBJECT DESCRIPTION SUB-MENU:-** This is use to display the information concerning the description of an object one by one.

   iii. **OBJECT HISTORY SUB-MENU:-** It display all the information regarding the history of the object inform of report on the screen.

4.3 HARDWARE REQUIREMEN|

Hardware refers to the physical components of computer system that can be seen and touched. Hardware required to ensure proper running of the package are outline below:-

❖ Window XP professional

❖ Pentium V processor with memory capacity of not less than 40GB and hard-disk capacity of 20GB.

❖ A SVGB colour monitor.

37

❖ A voltage stabilizer at not less than 2000 watt.

❖ An interrupted power supply (UPS) unit.

❖ Hardware/software package laser-jet printer.

❖ A split Air-conditioning unit.

4.4   <u>SOFTWARE REQUIREMENT</u>

Though, most of the software needed to run the newly designed package are included in the installation diskette, it is still advisable that provision should be made for the following easily obtainable software:-

➢ Microsoft's Dos (version 6.0)

➢ Microsoft's Visual Basic 6.0 interpreter

➢ Microsoft's word 2000

4.5   <u>SYSTEM IMPLEMENTATION</u>

System implementation comprises the steps necessary to keep the new system in operation whereby system failure will be alleviated or prevented.

▪ **USER TRAINING:-** Despite the fact that there will be need to have the service of the expert outside the organization. There is

also need to train the existing personnel within the organization who will be directly involved in the use of the system.

- **FILE CONVERSION:-** This is the conversion of manual files to system files

- **DATA PREPARATION:-** The "test data" is then prepared to allow for the system testing and evaluation in order to check whether the system will perform according to specification

- **POST IMPLEMENTATION:-** The post implementation also has to be done. This includes evaluation of the system which consist of a careful analysis to determine if the system is performing as it was designed to do.

- **SYSTEM TESTING:-** The system is tested evaluated to as certain the advantage over the existing system.

To implement a new system, there are four basic approaches, DIRECT IMPLEMENTATION, PARALLES IMPLEMENTATION, PHASE and most suitable one for this new system is PILOT IMPLEMENTATION. It is usually applied in an organization with many widely dispersed branches. Since Museums is a wide organization with many branches all over the nation. The system is first implemented at one location especially

Headquarter and its works, it is implemented in all the other branches.

4.6   <u>SYSTEM SECURITY</u>

Due to problem occur during the manual processing and object documentation which affected accurate result. The new system aimed to eliminating those problem. Introduction of user's restriction (password) into program, this will give access to the authorize personnel only.

Input Edit Delete Report Exit

OBJECTS

OBJECT MANAGEMENT

Object Code :-

Country :-

Institution where object is located :-

Owners Institution name :-

Department of Museum :-

Accession Number :-

Type of Collection :-

Old Accession number :-

Aquisition Or Accession method :-

Price of Purchase

Aquisition Or Accession date :-

Source of Aquisition :-

Permanent Location of object :-

SAVE

BACK

OBJECT DESCRIPTION

Image :-

Object Category by form or function :-

Object Category by Technique :-

Object Name :-

Vanecular Name :-

Name in other Nigeria Languages :-

Title :-

Materials :-

Technique :-

Dimension :-

Physical Description :-

Content :-

Inscription :-

Condition or State :-

| SAVE | BACK |

HISTORY OF THE OBJECT

Production :-

Place of Production :-

Group of Production :-

Period of Production :-

Date of Production :-

Function :-

Use :-

User :-

Place of use :-

Group of use :-

SAVE

BACK

ROLE

Date of use :-

Collection or Escavation Locality :-

SAVE

BACK

ROLE

Date of use :-

Collection or Escavation Locality :-

SAVE

BACK

SEIZURES

The Person from which the object was seized :-

Place of the seizure :-

Date of seizure :-

Person whom did the seizure :-

Reason for the seizu **Take Note** ☒

Seizure receipt numb   (i) Thank: GOD.
                            You have successfully save one record

Other comments :-

[OK]

[SAVE]   [BACK]

OBJECT MANAGEMENT

Object Code :-	AA 123
Country :-	Nigeria
Institution where object is located :-	State Ministry
Owners Institution name :-	Finance
Department of Museum :-	Account
Accession Number :-	1245
Type of Collection :-	Vehicle
Old Accession number :-	2365
Aquisition Or Accession method :-	Purchase
Price of Purchase	600,000.00
Aquisition Or Accession date :-	22/12/1998
Source of Aquisition :-	Inpotation
Permanent Location of object :-	Port

FIND   **UPDATE**   **BACK**

OBJECT DESCRIPTION

Image :-	View
Object Category by form or function :-	2
Object Category by Technique :-	3
Object Name :-	Toyota
Vanecular Name :-	Crecket
Name in other Nigeria Languages :-	Toyota
Title :-	Motor
Materials :-	Metal
Technique :-	Construct
Dimension :-	24mm - 35mm
Physical Description :-	Toyota product
Content :-	Car
Inscription :-	xxxx
Condition or State :-	Ok

UPDATE   **BACK**

OBJECT'S REPORT

28	Production :-	Making
29	Place of Production :-	Gerpan
30	Group of Production :-	Cotractors
31	Period of Production :-	By Making
32	Date of Production :-	25/06/1995
33	Function :-	Privat
34	Use :-	Driving
35	User :-	Jiya
36	Place of use :-	Minna
37	Group of use :-	3
38	Date of use :-	12/03/1999
39	Collection or Escavation Locality :-	5
40	The Person from which the object was seized :-	Jiya
41	Place of the seizure :-	Lagos
42	Date of seizure :-	14/01/1998
43	Person whom did the seizure :-	John
44	Reason for the seizure :-	Over age
45	Seizure receipt number :-	2341
46	Other comments :-	Nil

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

Chapter one of this project introduced Museum as repositories of the treasure of human race, history of computer, the objective of this study as to produce a systematic inventories and developing Museum activities in Nigeria. These involve documentation of objects, object management, object description, history of the object.

Chapter two is all about artifacts, works and authors. That artifact are contrasted to natural objects in other words they are products of human action. That object is an artifact when it has an author and saying that work is the creation of an author.

Chapter three contains the system analysis and design, system analysis and design cycle with the cycle table, program language, input design, output design and system flowchart.

Chapter four involves system documentation, the program documentation generally encompasses the statement of function of individual program that make up the entire system.

5.2   CONCLUSION

The aim of this project is to effectively design and computerized the objects in all the Nigerian Museums (National Commission for Museums and Monuments). The computerization allows easy access to information in all the objects in the Museums, this information includes the history of the object, the country, the institution where the is located, owner institution name, accession number, type of collection, old accession number, acquisition or accession method, price of purchase, e.t.c., as well as the object description.

5.3   RECOMMENDATION

First and foremost the staff must all be computer literate that's they should be trained to be computer literate. It will go a long way to improve the efficiency of the organization. It is necessary to study as to know the usefulness in computerizing the Museum artifacts in Nigeria (National Commission for Museums and Monuments).

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```vb
Private Sub mnudelete_Click()
Dim OCode1 As String

    On Error Resume Next

    Mass = MsgBox("You are deleting a record." & vbCrLf & "Do you whant to cotinue
?", vbInformation + vbYesNo, "Take Note")
    If Mass = vbNo Then
       Exit Sub
    Else

       OCode1 = InputBox("Please enter the object's code")
       OCode = UCase(OCode1)

       With Adodc1

          .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
          .RecordSource = "select * from management WHERE Objcode='" + OCode + "'"
          .Refresh

       End With
       With Adodc1.Recordset
          .Delete
          .Requery

       End With

       With Adodc1

          .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
          .RecordSource = "select * from Description WHERE Objcode='" + OCode + "'"
          .Refresh

       End With
       With Adodc1.Recordset
          .Delete
          .Requery

       End With

       With Adodc1
```

```vb
        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from History WHERE Objcode='" + OCode + "'"
        .Refresh

    End With
    With Adodc1.Recordset
        .Delete
        .Requery

    End With

    With Adodc1

        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from Role WHERE Objcode='" + OCode + "'"
        .Refresh

    End With
    With Adodc1.Recordset
        .Delete
        .Requery

    End With

    With Adodc1

        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from seizures WHERE Objcode='" + OCode + "'"
        .Refresh

    End With
    With Adodc1.Recordset
        .Delete
        .Requery

    End With

    MsgBox "Record deleted", vbCritical + vbOKOnly, "Delete"
    End If
End Sub

Private Sub mnuedit_Click()
    Load frmObjectMgtE
```

```vb
frmObjectMgtE.Show
End Sub

Private Sub mnuexit_Click()
    Unload Me
End Sub

Private Sub mnuinput_Click()
    Load frmobjectmgt
    frmobjectmgt.Show
End Sub

Private Sub mnureport_Click()
    Dim OCode1 As String

    OCode1 = InputBox("Please enter the object's code")
    OCode = UCase(OCode1)

    Load frmReport
    frmReport.Show
End Sub

Private Sub cmdback_Click()
    Unload Me
End Sub

Private Sub cmdsave_Click()

    On Error Resume Next

    With Adodc1

        .ConnectionString = "provider = microsoft.oledb.4.0;data
        =C:\objects\objectdata.mdb;persist secuinfo=false"
        .RecordSource = "select * from descripti
        .Refresh

    End With
    With Adodc1.Recordset
        .AddNew
        .Fields(0) = OCode
        .Fields(1) = txtimage.Text
        .Fields(2) = txtOCFF.Text
        .Fields(3) = txtOCT.Text
        .Fields(4) = txtON.Text
        .Fields(5) = txtVN.Text
```

```vb
        .Fields(6) = txtNONL.Text
        .Fields(7) = txttitle.Text
        .Fields(8) = txtmaterial.Text
        .Fields(9) = txttechnique.Text
        .Fields(10) = txtdimension.Text
        .Fields(11) = txtPD.Text
        .Fields(12) = txtcontent.Text
        .Fields(13) = txtinscription.Text
        .Fields(14) = txtCS.Text
        .Update
        .Requery


End With


    oad frmObjectHist
    mObjectHist.Show
    Sub
   te Sub cmdback_Click()
    load Me
   Sub


  e Sub cmdUpdate_Click()


  Error Resume Next


   n Adode1


   onnectionString = "provider = microsoft.j  b.4.0;data
   =C:\objects\objectdata.mdb;persist security  alse"
    ecordSource = "select * from description W
    efresh                                          Objcode='" + OCode + "'"


  With
    Adode1.Recordset


  elds(0) = OCode
  elds(1) = txtimage.Text
  elds(2) = txtOCFF.Text
  elds(3) = txtOCT.Text
  elds(4) = txtON.Text
  elds(5) = txtVN.Text
  elds(6) = txtNONL.Text
  elds(7) = txttitle.Text
  elds(8) = txtmaterial.Text
  ields(9) = txttechnique.Text
```

```vb
        .Fields(6) = txtNONL.Text
        .Fields(7) = txttitle.Text
        .Fields(8) = txtmaterial.Text
        .Fields(9) = txttechnique.Text
        .Fields(10) = txtdimension.Text
        .Fields(11) = txtPD.Text
        .Fields(12) = txtcontent.Text
        .Fields(13) = txtinscription.Text
        .Fields(14) = txtCS.Text
        .Update
        .Requery


End With

    Load frmObjectHist
    frmObjectHist.Show
End Sub
Private Sub cmdback_Click()
    Unload Me
End Sub

Private Sub cmdUpdate_Click()

    On Error Resume Next

    With Adodc1

        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from description WHERE Objcode='" + OCode + "'"
        .Refresh

    End With
    With Adodc1.Recordset

        .Fields(0) = OCode
        .Fields(1) = txtimage.Text
        .Fields(2) = txtOCFF.Text
        .Fields(3) = txtOCT.Text
        .Fields(4) = txtON.Text
        .Fields(5) = txtVN.Text
        .Fields(6) = txtNONL.Text
        .Fields(7) = txttitle.Text
        .Fields(8) = txtmaterial.Text
        .Fields(9) = txttechnique.Text
```

```vb
        .Fields(10) = txtdimension.Text
        .Fields(11) = txtPD.Text
        .Fields(12) = txtcontent.Text
        .Fields(13) = txtinscription.Text
        .Fields(14) = txtCS.Text
        .Update
        .Requery


    End With
    Load frmObjectHistE
    frmObjectHistE.Show


End Sub

Private Sub Form_Load()
    With Adodc1

        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from description WHERE ObjCode='" + OCode + "'"
        .Refresh

    End With
    With Adodc1.Recordset

        OCode = .Fields(0)
        txtimage.Text = .Fields(1)
        txtOCFF.Text = .Fields(2)
        txtOCT.Text = .Fields(3)
        txtON.Text = .Fields(4)
        txtVN.Text = .Fields(5)
        txtNONL.Text = .Fields(6)
        txttitle.Text = .Fields(7)
        txtmaterial.Text = .Fields(8)
        txttechnique.Text = .Fields(9)
        txtdimension.Text = .Fields(10)
        txtPD.Text = .Fields(11)
        txtcontent.Text = .Fields(12)
        txtinscription.Text = .Fields(13)
        txtCS.Text = .Fields(14)


    End With
End Sub
Private Sub cmdback_Click()
```

```vb
    Unload Me
End Sub

Private Sub cmdsave_Click()

    On Error Resume Next

    With Adodc1

        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from History"
        .Refresh

    End With
    With Adodc1.Recordset
        .AddNew
        .Fields(0) = OCode
        .Fields(1) = txtproduction.Text
        .Fields(2) = txtPLP.Text
        .Fields(3) = txtGP.Text
        .Fields(4) = txtPP.Text
        .Fields(5) = txtDP.Text
        .Fields(6) = txtfunction.Text
        .Fields(7) = txtuse.Text
        .Fields(8) = txtuser.Text
        .Fields(9) = txtPuse.Text
        .Fields(10) = txtGuse.Text

        .Update
        .Requery

    End With

    Load frmrole
    frmrole.Show
End Sub
Private Sub cmdback_Click()
    Unload Me
End Sub

Private Sub cmdUpdate_Click()

    On Error Resume Next
```

```vb
    With Adodc1

        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from History WHERE Objcode='" + OCode + "'"
        .Refresh

    End With
    With Adodc1.Recordset

        .Fields(0) = OCode
        .Fields(1) = txtproduction.Text
        .Fields(2) = txtPLP.Text
        .Fields(3) = txtGP.Text
        .Fields(4) = txtPP.Text
        .Fields(5) = txtDP.Text
        .Fields(6) = txtfunction.Text
        .Fields(7) = txtuse.Text
        .Fields(8) = txtuser.Text
        .Fields(9) = txtPuse.Text
        .Fields(10) = txtGuse.Text

        .Update
        .Requery


    End With

    Load frmRoleE
    frmRoleE.Show

End Sub

Private Sub Form_Load()

    With Adodc1

        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from History WHERE Objcode='" + OCode + "'"
        .Refresh

    End With
    With Adodc1.Recordset
```

```vb
        OCode = .Fields(0)
        txtproduction.Text = .Fields(1)
        txtPLP.Text = .Fields(2)
        txtGP.Text = .Fields(3)
        txtPP.Text = .Fields(4)
        txtDP.Text = .Fields(5)
        txtfunction.Text = .Fields(6)
        txtuse.Text = .Fields(7)
        txtuser.Text = .Fields(8)
        txtPuse.Text = .Fields(9)
        txtGuse.Text = .Fields(10)


    End With

End Sub
Private Sub cmdback_Click()
    Unload Me
End Sub

Private Sub cmdsave_Click()

    On Error Resume Next

    OCode = UCase(txtOCode.Text)

    With Adodc1

        .ConnectionString = "provider = microsoft.jet.oledb.4.0;data
source=C:\objects\objectdata.mdb;persist security info=false"
        .RecordSource = "select * from management"
        .Refresh

    End With
    With Adodc1.Recordset
        .AddNew
        .Fields(0) = OCode
        .Fields(1) = txtcountry.Text
        .Fields(2) = txtOloc.Text
        .Fields(3) = txtOIN.Text
        .Fields(4) = txtDeM.Text
        .Fields(5) = txtAno.Text
        .Fields(6) = txtTCol.Text
        .Fields(7) = txtOAn.Text
        .Fields(8) = txtAAM.Text
```

```
        .Fields(9) = txtPP.Text
        .Fields(10) = txtAAD.Text
        .Fields(11) = txtSA.Text
        .Fields(12) = txtPLO.Text
        .Update
        .Requery


    End With


    Load frmobjectDes
    frmobjectDes.Show
End Sub
```