

**A DYNAMIC ONLINE RECRUITMENT & MANAGEMENT SYSTEM
A CASE STUDY OF NFT CONSULTS LTD**

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**A GRADUATION REPORT SUBMITTED TO THE SCHOOL OF COMPUTER
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DECLARATION

I declare this research report with no any duplication or photocopy of it from any institution of higher learning either for the reward of a certificate, diploma, degree, or beyond in the field of computer studies.

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APPROVAL

This is my research report and is submitted to the School of Computer with the approval of my supervisor from the Department of Computer Studies of Kampala International University.

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DEDICATION

I wish to dedicate this research report to my mother Ms. Mary B. Semutooke, Sisters, Joseph and all my friends that have made this research project a success in one way or another.

ACKNOWLEDGMENT

I greatly thank the Almighty God for his love and protection throughout my studies and the entire project. I wish to acknowledge my supervisor Mr. Assimwe John Patrick for his guiding role through out this project.

Thanks.

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LIST OF ACRONYMS AND ABBREVIATIONS

HR	Human Resource
DBMS	Database Management System
GB	Giga Byte
ICT	Information Communication Technology
LAN	Local Area Network
LTD	Limited
MHz	Mega Hertz
NFT	NFT Consult LTD
RAM	Random Access Memory
SDLC	System Development Life Cycle
SPSS	Statistical Package for the Social Sciences

ABSTRACT

Online recruitment can offer significant cost savings for employers and reduces the time taken to fill vacancies. Traditional recruitment advertising is therefore set to retain an important role particularly when recruiting locally (or) for head-to-fill jobs. Many organizations have found a considered combination of both online and traditional approaches to maximize their chances of securing the best candidate.

An online recruitment presence shows organizations to be forward thinking and therefore more attractive to potential employees for candidates, online recruitment offers great flexibility and ease of access to job searches and provide recruitment services through internet for graduates.

This project generally deals with providing for job seekers through this system. The graduates can easily get contact with the organization. At the same time it makes it easy for the company to get an employee.

When graduates register online, they have to give their complete personal details and skills they possess. Thus a resume is generated by these details that are seen by companies. In the same way the companies have to give complete details of jobs they are providing. By this the employee and job seeker can communicate with each other.

Thus this project plays an important role for recruiting of employees. The companies can access even remote areas of the country. It also gives good opportunity for the freshly graduates to access the information about the organization. Thus this project satisfies both graduates and employees.

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CHAPTER ONE

INTRODUCTION

1.0 General Introduction

Most of the services we enjoy on the web are provided by web database applications one of which is job recruitment. Online Recruitment and management system is the comprehensive tool to manage the entire recruitment processes of an organization. It is one of the technological tools facilitated by the information management systems to the Human Resource (HR) of organizations. Just like performance management, payroll and other systems, Recruitment management system helps to contour the recruitment processes and effectively managing the tasks of recruitment.

HR management has become one of the essential functions in an organization. No organization can do without this department. HR is the function or department in an organization that has the task to recruit, train, motivate, reward, dismiss, terminate as well as look after the welfare of employees in an organization. (Human resource journal, August 2006, IPM (K) therefore the HR has to ensure that the welfare of employees are taken into consideration.

1.1 Background of the study

Computerization is a control system that manages processes in industrial workplace. It reduces human errors and processing time, thus it can boost productivity and resulted into high quality of product produce and service offering. In information systems, computerization is concerned with interrelating different but interdependent transactions. This can result in a system with well-integrated processes that can perform much faster and more accurate than a manual system. In the year 2000, management and administration of human resource information was done manually. This entailed gathering raw data to form a record base, sorting it to get relevant information, storing it in files and availing it when required. With the emerging computer technology, information in all sectors has been one of the most targeted areas to enhance the record keeping and also easy accessibility using a variety of computer programs that presents information in a desired format and by use of internet as a communication channel to

facilitate access and exchange of information. The online recruitment and management system the researcher proposed for NFT Consult Company would mend the manual recruitment system at the company that was restrained by a backlog of files, records and folders in addition to staff slowness handling large paper work.

1.2 Statement of the problem

Due to the increasing HR work density and uncertainty, the crucial task was to improve data storage (handling and managing large files, records and folders) and individual fulfillment by provision of high quality data and service in the most reliable way.

In addition to the above, there were reports of data redundancy, lack of data reliability, higher cost and rate of data maintenance and dependency, reduced data quality and deteriorating data management capability and this was the reason why the researcher carried out this study.

Based on the problems stated above, the purpose of the study was to design an effective dynamic computerized online recruitment and data management system for NFT Consults.

1.3 Objectives of the study

1.3.1 Main objectives

The main objective was to develop and implement a dynamic computerized online recruitment and data management system to enable data accessibility and sharing of resources in order to reduce the cost of operation for the consultancy company.

1.3.2 Specific objectives

- i. To assess the role of shared data management systems on data security at NFT Consults.
- ii. To design a dynamic online database application system.
- iii. To test and implement the system.

1.4 Research Questions

Below were the research questions that guided the researcher;

What would be the roles of shared data management systems on information/data integrity for NFT Consults?

What would be the roles of shared data management system on data security NFT Consults?

What would be the roles of shared data management systems on reduced data redundancy and cost of storage of data for NFT Consults?

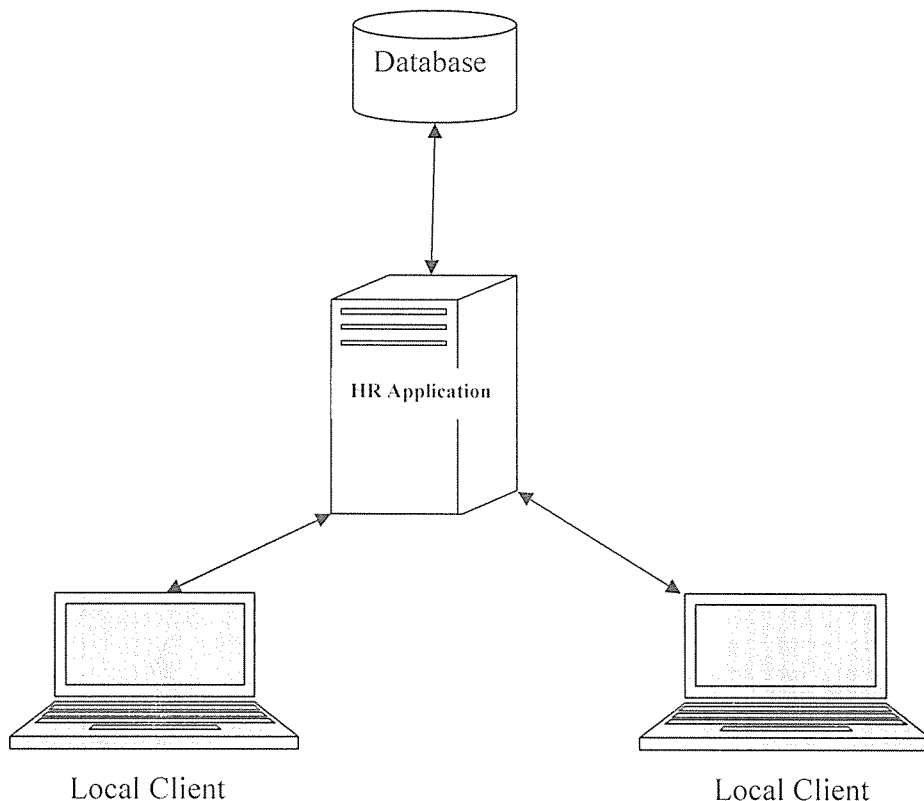
1.5 Scope of the study

NFT Consult is located in heart of Kampala city, plot 34 along Nakasero Road. The study will cover the HR department of NFT Consult mainly; the Administrators of the firm that is manager and director; 5 representative staff and clientele.

1.6 Justification of the study

The Online Recruitment System should be a more strategic and effective administration system for human resource procedures of NFT Consults. There would be flexibility in a fast-changing environment and access to adequate and timely information. An example of how such success could be achieved is clearly demonstrated by the fact that there would be less paper used in the process, when disseminating information to employees or stakeholders. The system would improve greatly the communication and organizational patterns between stakeholders and the human resource sector.

Figure 1: showing the Conceptual frame work for the proposed system



Perhaps the most important component in any organization is data and thus it has got to be used (handled) with care.

The figure above shows a graphical conceptual representation of the new system and the relations between its components. First of all the researcher would need a database, which would constitute the backbone of the system. The database would hold all the information needed for such a company to exist - job, employee upgrade and conduct and staff details. The design and implementation of a database for an online company was complex and time consuming but the researcher implemented it as efficient as possible. The database would serve the local clients that the system had. The HR Application would be operated by the HR managers who were able to post the application forms to the local clients and handle whatever information they feed into the system. The application forms would be containing all details of the desired persons and spaces from where the applicant could fill in the details and submit to the database.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The aim of this chapter was to explore the in depth of the concept of a shared computer based database system. The purpose was to find out and suggest procedures that were recommended to build and operate such a system. This information had been mainly extracted from published database system books, internet and previously published journals and dissertations for example (Long, 1989), Hutchinson et al, 2000) et al.

2.1 Scope of the literature review

The literature about the system developed would deal so much on information systems that make use of databases (Long, 1989,p.249), knowledge from books about how to set and operate networks and in particular Ethernet cabled LANs. The review put into consideration related systems that had previously been developed. It dug deep into how databases could be designed, how an interface could be created, and how such system could be put into use and maintained.

It also covered problems anticipated and how they could be troubleshoot.

It further looked at how the client /server network could be set up and the technology that could be used to share the different resources. It also covered the kind of computers and other devices that could be reliably used in setting up a network that would enable sharing of the database.

It suggested the different areas where such a system could be applied and the problems that such a system could be used to solve. The review further tackled the different techniques that could be used in collection of data, how to analyze the data, how to develop the system itself by suggesting various methodologies and tools that can be used (Laudon, 2002).

Finally it looked at different development tools such as different operating systems, programming languages and Database Management System (DBMS).

2.2 Data management system

According to Long (1989), Data management, encompasses the storage, retrieval, and manipulation of data. Many existing information systems were designed using traditional approaches to data management but the trend has shifted to the use of database approach to develop new information systems. The database is the resource for all computer based information systems. A database, “Is a collection of files that are in some way logically related so that data redundancy is minimized” (Long, 1989, p.249).

2.2.1 Benefits of database environment

Greater access to information, the structure of an integrated database provides enormous flexibility in the type of reports that can be generated and type of online inquiries that can be made.

Better control. A database management system allows data to be centralized for improved data security. By centralizing data, advanced data structures can be used to control redundancy. Data structures,” refers to the manner in which the data elements and records are related to each other” (Long, 1989, p.259).

More efficient software development and programming techniques are more readily available and data are independent of the application programs.

2.2.2 Approach to database management

According to Long (2002), there are three fundamental approaches to design database system namely;

- Hierarchical approach
- Network or CODASYL DBMS approach
- The Relational DBMS approach.

2.2.2.1 Hierarchical DBMS approach

Although network and relational DBMS technologies are considered superior to the hierarchical DBMS technology, the hierarchical approach remains the most commonly used.

This is more as a result of momentum than choice. Information management system a hierarchical product was by 1968 the game on shelves and this made it become more popular. It can be run on today's hardware.

It does not have the scope of features of more sophisticated network and relational DBMS'. Never the less, all new developments in the area of database management system use network or relational technologies.

Hierarchical DBMS is based on three data structures, actually an uprooted tree turned upside down. They are easy to understand and conceptualize.

2.2.2.2 Network or CODASYL DBMS

This approach to data management carries the hierarchical approach to the next level of sophistication by permitting children to have more than one parent. This approach minimizes redundancy and therefore allows for more queries to be made.

2.2.2.3 Relational DBMS

The relational approach to database management systems has been gaining momentum through the 1980's. In contrast, to the network DBMS, here data is accessed by content rather than by address. This approach uses the computer to search the database for the desired data rather than accessing data through a series of indices and physical addresses, as with both hierarchical and network DBMS.

Here the data structures are defined in logical rather than physical attempts until recently; relational DBMS have been slow to be effective in the real world, especially in transaction oriented environments.

However, for applications where the transaction value is low and the need for flexibility is high, relational DBMS out perform network DBMS because "relational structure provides greater flexibility in accessing information". And provide companies with greater opportunities to increase productivity.

2.3 Advantages of using computer based databases

Reduced data redundancy: In file management systems, some of the same data files are repeated in different files; in databases, by contrast the information appears just once but

information is made available to different users more over concurrently and this lowers down the expenses of space.

Improved data integrity: Reduced redundancy increases the chances of data integrity. Data that is accurate, consistent, and up to date because each updating change is made in only one place.

More programs independent: With a database, the program and file formats are the same, so that one programmer or even several of them can spent less time maintaining files.

Increased user productivity: Database management systems are fairly easy to use, so that users can get their requests for information answered without having to resort to technical manipulations.

Increased security: Although various departments may share data in common in, access to specific data information can be limited to selected users. Thus, through the use of passwords, a client financial, medical, and work information in a company is made available only to those who have a legitimate need to know.

Although there are clear advantages to having databases, there are still some disadvantages;

Cost issues: Installing and maintaining a database is expensive particularly in a large organization.

Data vulnerability issues: Although a database can be restricted access, it's always possible unauthorized users will get passed the safeguards.

Privacy issue: A database may hold unsanctioned information that may be used for unintended purposes this puts peoples lives at a risk. (Hutchinson and Sawyer, 2000)

2.4 Area of application

Database management systems are applied in all corners of development. It is mainly used in financial institutions for example banks, corporate institutions and educational institutions name it all.

2.4.1 Accuracy and completeness of data

Databases including public databases such as; Lexis, Dialog, and Dow Jones News/Retrieval can provide you with more facts and faster facts but not always better facts. Penny Williams, professor of broadcast journalist at Buffalo state College in New York and formerly a television anchor and reporter, suggests there are five limitations to bear in mind when databases for research. And these are;

You can't get the whole story. For some purposes, databases are only a foot in the door.

It's not the gospel: Just because you see some thing on the computer screen it doesn't mean all is accurate. Numbers, names, and facts may need to be verified in other ways.

Know the boundaries: One database service doesn't have it all.

Find the right words: you have to know which key words to use when searching a database for data.

History is limited: Most public databases, Davis says, have information going back to 1980, and a few into the 1970s, but have information earlier.

2.5 Development Methodology

System analysis and design is a six phase problem solving procedure for designing an information system and improving it. The six phases make up what is system development life cycle. The system development life cycle (SDLC) is defined as "The step by step process that many organizations follow during systems analysis and design" (Williams, et al, 1999, p.476).

The number of phases may vary from one company to another, and even the name of the process may differ (application development cycle, structured development life cycle, for instance). The six phases of systems analysis and design may be said to be as follows:

Preliminary investigation: Conduct preliminary analysis, propose alternative solutions, and describe the costs and benefits of each solution. Submit a preliminary plan with recommendations. If you are doing a systems analysis, and design, it's safe, even preferable to assume that you know nothing about the problem at hand. In the first phase, it's your job to mainly ask questions, do research and try to come up with a preliminary plan.

Systems analysis: Gather data; analyze the data using tools of written documents, interviews, questionnaire, observations, and sampling. Analyze the data using UML diagrams, data flow diagrams, systems flow charts, connectivity diagrams, grid charts, and decision tables and write a report.

Systems design: Make a preliminary design and then a detailed design using UML diagrams, prototyping tools and project management software among others. Do a detailed design, defining requirements for output, input, storage, and processing and system controls and backup, finally write a report.

Systems development: Acquire the hardware and software and test the system. In the make or buy decision, you decide whether you have to create a program or have it custom written or buy it meaning simply purchase a system software package. If you decide to create a new program, then the question is whether to use the organization's own staff programmers or higher outside contract programmers (Outsource it). Which ever way you go, the task could take many months. Having made a decision, the hardware to run it must be acquired or upgraded or buy new hardware.

Systems implementation: Convert the hardware, software, and files to the new system and train the users. Convert using any of the following conversions; parallel, phased or pilot. Compile final documentation and train the users.

Systems maintenance: Audit the system, request feedback from its users, and evaluate it periodically.

2.6 Literature Conclusion

Basing on the literature from other writers, the system would improve the firms' day to day activities easing its managerial status and outlining the usefulness of web based applications in recent business communities when implemented under correct principles that provide web security.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter provides the methodology that was used to develop a shared database system. It covered the following key areas of project development organization units that were studied, the population that was used, sample size, research instruments and fact finding methods that were used to establish the present set of users and system requirements, various techniques of data collection, design techniques and tools that were used.

3.1 The population study

Administration: the director of the firm and two managers were interviewed. Three of clientele (recruited) were interviewed.

From the HR department, the information collected included; Recruitment, selection and training of employees, job evaluation, conditions of employment and welfare of employees.

3.2 Sample selection

The researcher selected five respondents from the firm staff and three of clientele. However, for the directors and managers, it was by virtue of the positions that they held. In each of the departments, at least one respondent was taken and interviewing was the main data collection technique used.

Questionnaire approach helped to fact find relevant customers within the sample space.

3.3 Research procedure

Prior to the study, a letter was submitted to NFT Consults seeking permission to carry out the study. This was done in order to establish a good relationship with the company in addition to showing the urgency of the study. A week after the delivery of the letter the researcher was ready to know whether the request was granted.

3.4 Collection of Data

Data was gathered from the sample given above. The major techniques used included interviews with limited questionnaires. The choice of the method depended on the information needed and the time that was available for the various respondents.

From the director and manager, interviews were used exclusively, from the accountant, both interviews and document review were used, and from the rest of respondents, questionnaires were used exclusively. Interviews were conducted one on one where as for those that used questionnaires, they were given four days to complete the documents. After that period of time, the researcher collected the documents that were taken for analysis.

Data was collected using the following techniques:

3.4.1 Interview

An interview is an oral administration of a questionnaire or an interview schedule. Interviews are face to face encounters. To obtain accurate information through interviews, a researcher needs to obtain maximum cooperation from respondents. Thus, one must establish a friendly relationship prior to conducting an interview. Interviews, offer the following advantages:

- They provide in depth data which is not possible to get using a questionnaire.
- It is possible to obtain data required for specific objectives.
- The researcher can clarify on certain questions and thus they are more flexible compared to other methods.
- Unlike questionnaires, the interviewer can get more complete and honest information.
- High response since the respondents can refuse to answer completely.

However, demerits such as high cost, need for high level of interpersonal skill, bias, small sample size, responses being influenced are always expected.

Like questionnaires, interviews are also of two types that is structured interview and unstructured interview where, structured questions usually categories and the interviewer

simply checks the respondent's response while unstructured questions, the interviewer asks questions or makes comments intended to lead the respondent towards giving data to meet the study objectives.

3.4.2 Questionnaires

Questionnaires are commonly used to obtain important information about the population. Each item in the questionnaire is developed to address specific objective. And therefore, a questionnaire must be well thought of so as to avoid cases such as;

Confusing respondents as to the nature of information required.

Also a bad questionnaire discourages respondents to the extent of discarding the questionnaire and this may leave out important information required in the study.

Questionnaires can be of two types that are; open ended and closed ended questionnaires.

Closed ended questionnaires carry with them the following advantages:

- They are easier to analyze since they are in an immediate usable form.
- They are easier to administer since each question is followed by possible answers and they are economical in terms of space, time, and money.

However, they are more difficult to construct and normally responses are limited and respondents compelled to answer according to the researcher's choice.

Open ended questionnaires on the other hand give the respondent complete freedom to answer the way he/she wants, permit greater depth of response, and it is easy to formulate compared to closed ended questionnaire, and really gives one's feelings about a given study.

However, there's a tendency of respondents giving information that does not answer the questions at hand and responses are difficult to analyze and can be time consuming and expensive compared to closed ended questionnaires.

Due to the fact that the researcher was interested in specific data from respondents than closed ended questionnaires were used to ease data analysis.

3.5 Development methodology (Systems development life cycle)

The following steps were used to develop the system under study.

Preliminary investigation: this phase conducted for the purpose of determining the cost of operation on the old systems and the cost expected for the new system. The problems with the old system were identified through interviews and questionnaires. Finally, a suggestion to develop the computerized system was made and a report submitted to management.

Systems analysis: the data gathered from the above phase was arranged and prioritized. From the findings of the study, a system's specification was made stating what the system should do to meet the company goals.

Systems design: Defining of the architecture, components, modules, interfaces, and data for the system to satisfy specified requirements were fulfilled.

Logical design: This took an abstract representation of the system's data flows, inputs and outputs of the system.

Physical design: Shown were the actual input and output processes relating to the system proposed.

3.6 Conclusion

The system developed structured on a constructive well defined system methodology and reliable fact finding techniques.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, DESIGN AND IMPLEMENTATION

4.0 Introduction

This chapter focused on the presentations of the data generated during the course of the field study. The field results were achieved by descriptive statistics and presented using computer based Statistical Package for the Social Sciences (SPSS)

4.1 Data presentation

Most significant data presented and illustrated below was analyzed from 15 respondents' questionnaires gathered from the survey at company.

4.1.1 Scope regarding occupation of respondents

The respondent's scope comprised of 8 employees, 3 of clientele, a manager and other personnel as illustrated in the table below

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manager	1	6.7	6.7	6.7
	Employee	8	53.3	53.3	60.0
	Clientele	3	20.0	20.0	80.0
	Others	3	20.0	20.0	100.0
	Total	15	100.0	100.0	

Table 1: showing the respondents' occupation

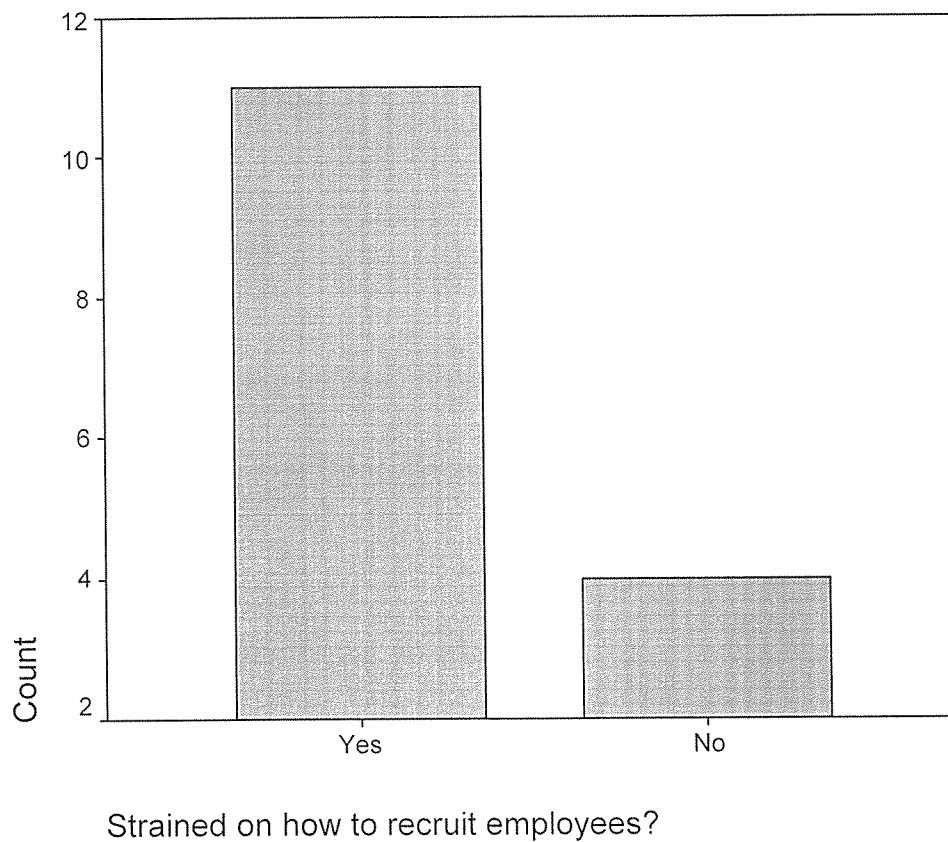
Source of primary data used: refer to appendix A showing questionnaire

From the table above, the sample selection covered respondents who interfaced the manual system and were critical in accelerating the design and implementation of the proposed system.

4.1.2 Respondents' strained on how to recruit employees

The figure below represents respondents and their strains on how NFT Consult recruits their employees.

Figure 2: Showing Respondents' strained on how to recruit employees



Source of primary data used: refer to appendix A showing questionnaire

According to the research conducted, majority accepted that the company was strained on how to recruit employees, a cause that more so resulted from the existing system of work.

4.2.1.1 Hardware requirements

General hardware requirements to the system

Hardware	Minimum System requirement
Processor	Intel Pentium III 900Mhz or higher for desktops.
Random Access Memory	256 MB of RAM or higher.
Hard Disk space	20 GB and above for desktop, 80 GB and above for server.
Display	A resolution of 1024 x 768 High colors- 32 bit.

Table 4: Showing hardware requirements for the system

4.2.1.2 Software requirements

Software requirements of the new system

Software	Minimum requirements
Operating system for the server	Windows 2003
Operating system for normal user	Windows XP
Database management system	Microsoft Access 2003

Table 5: showing software requirements for the proposed system

4.3 Project implementation

Here, parts of the new system were brought in gradually. Experts were involved and issues arose were dealt with at the time; it's an exercise that took a period of two weeks to develop the recommended system. At this point, maximum cooperation with the authorities was considered so that implementation was done appropriately; it was a task of the researcher.

4.3.1 Cost

Cost or economic feasibility was put in place to determine whether the management of NFT Consult had the ability to fund the project.

4.3.2 Technical

Technical feasibility was aimed at finding out whether the company had technical equipments to house the proposed system in coupled to whether users know how to use and integrate with the system. It was found out that the users needed further training and sensitization on how to use the system and further more some of the technical equipments were available for implementation of the new system.

4.3.3 Operation

Operational feasibility was aimed at studying the environment where the current system works. This was important to ensure that the non functional requirements of the system would be applicable these included; availability of space, electricity and safety of the system equipments.

4.3.4 Security

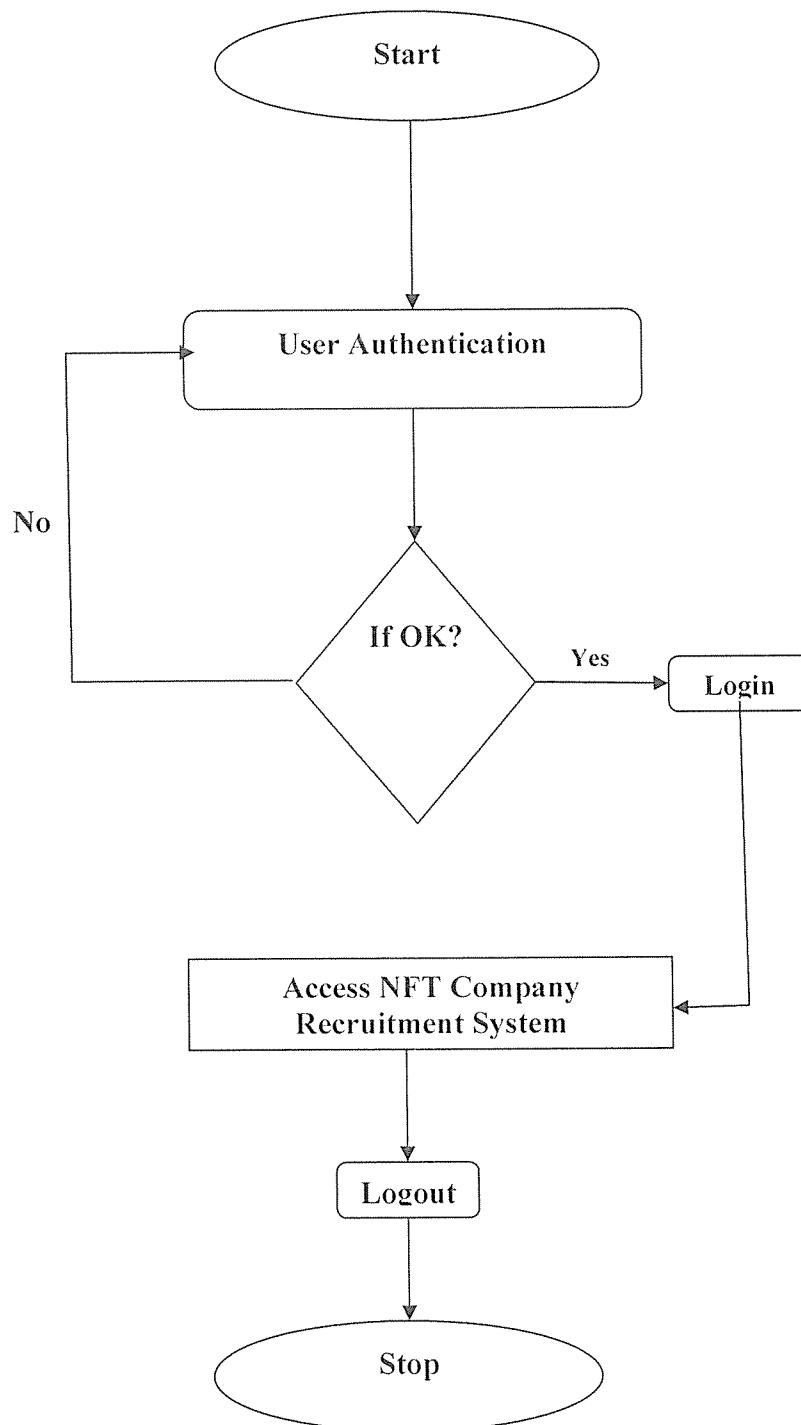
It was made possible that only those users with legitimate access rights are allowed to use the system. It means that authentication was defined through use of user names and passwords; also addition of more users and elimination of users especially those who left the company were defined to be performed explicitly by the administrator.

4.4 System design

The system design exhibited the flow of the proposed system of NFT Consult Company. The researcher concentrated on system program flow and architectural design.

4.4.1 System program flow

Figure 3: showing the program flow of the entire system



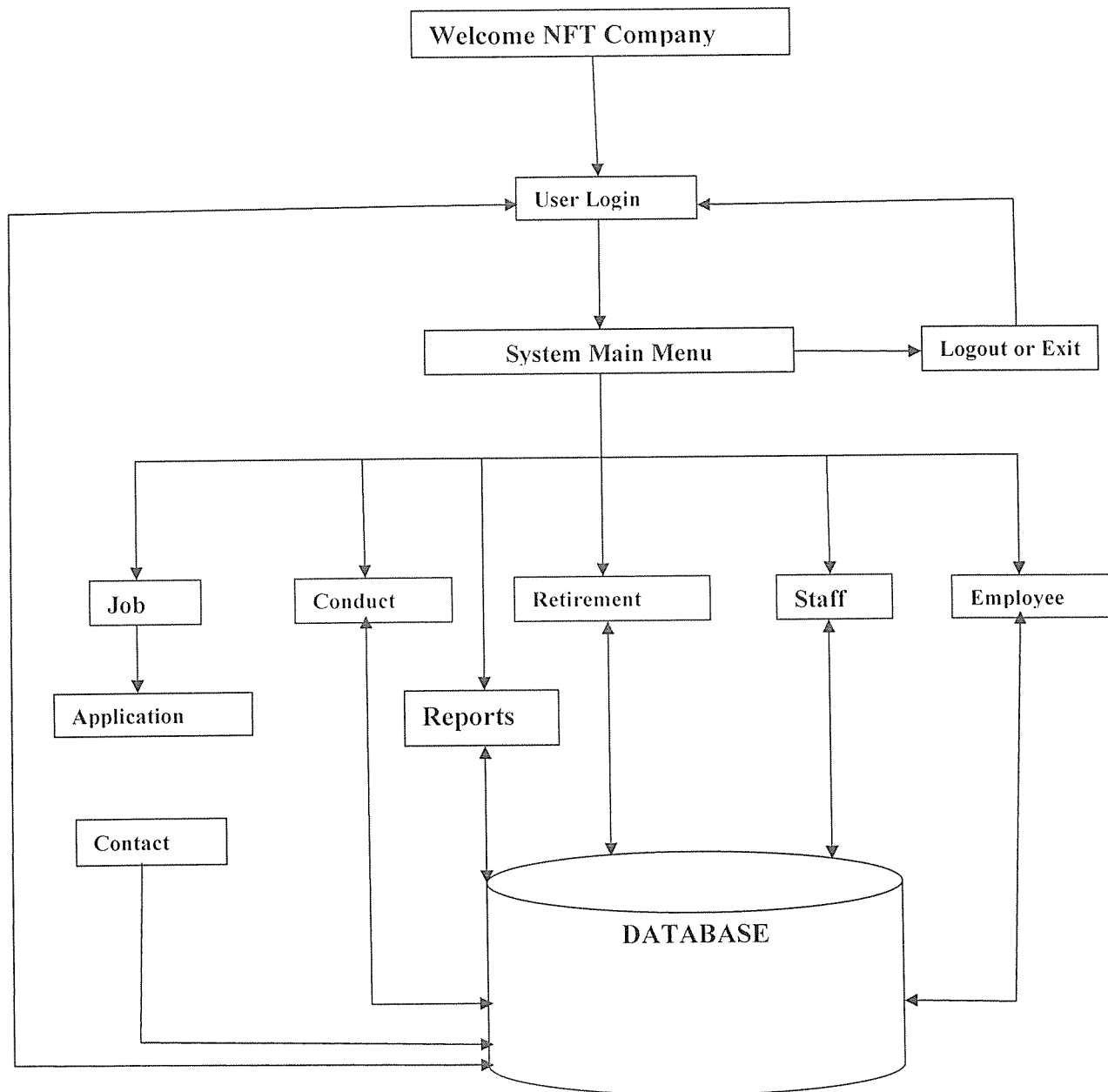
From the figure, when users start the system program, they are first checked for authentication in order for them to login to the system menu where one can browse through required user interfaces. If successful with work, the users logout of the system.

4.4.2 Architectural design

This gave a high level review of the system with the main system and services they provide and how they communicate within the system.

At this stage of the system development, the focus was put on the definition of central architecture of the system. One of the major interests was the identified with their respective interface. The product at this stage is the architectural model identifying the different components of the system. The figure below shows the architectural design of the system to be designed.

Figure 4: showing the architectural Context design of proposed system



From the figure above, system users first access a welcome screen where by they can log into the system provided the authentication is accepted. Within the system, various tasks can be done such as Job specifications and application, managing of employee conducts and retirement information. The system allows the administrator to update the database and manage staff records and delete where necessary.

4.4.3 Conceptual design

4.4.3.1 Conceptual data model

The conceptual data model provides for developing a structure from the top to down to the low level. In this section various entities, their attributes and relationship are identified as well as the relationship among entities. These help the researcher build the data model for each user.

4.4.3.2 Overview of the database entities

The database is based on the following tables/entities which were produced indicating the description, data type and size of the field of the data to be used in the program.

4.4.3.3 Conduct entity

FIELD NAME	DATA TYPE	DESCRIPTION
StaffId	Text/character	Staff Identification number
Name	Text/character	Name of Staff
Conduct	Text/character	Conduct at hand
Comment	Text/character	Any other comment
Action	Text/character	Action taken on staff

Table 6: showing conduct entity particulars

This stores all employee/staff conduct information. NFT Consult Company data entered from the conduct interface form is logically stored in the database table Conduct.

4.4.3.4 Employee Upgrade entity

FIELD NAME	DATA TYPE	DESCRIPTION
StaffId	Text	Staff identification number
Name	Text	Name of staff
Department	Text	Surname
Designation	Text	Designation
Salary	Currency	Salary
New Department	Text	New department assigned
New Designation	Text	New designation
NewSalary	Currency	New salary
AllowanceType	Text	Type of allowance
Amount	Currency	Amount to be received
Deductions	Currency	Deductions
Total Salary	Currency	Total salary

Table 7: showing Employee Upgrade entity particulars

NFT Consult Company data entered from the Employee Upgrade interface form is logically stored in the database table Employee Upgrade. This stores data about the employees and their respective upgraded information.

4.4.3.5 StaffData entity

FIELD NAME	DATA TYPE	DESCRIPTION
StaffId	Text	Staff identification number
Name	Text	Name of staff
Sex	Text	Sex
Marital Status	Text	Marital status
DateOfBirth	Date/Time	Date of birth
DateOfEmployment	Date/Time	Date employed
Qualification	Text	Qualification at hand
Department	Text	Department assigned
YearsInService	Number	Years of service
Designation	Text	Job designation
Level	Number	Job level
Category	Text	Job Category
Salary	Currency	Salary
Country	Text	Country of origin
District	Text	District of origin
Village	Text	Village
Address	Text	Staff address
Phone	Number	Phone number

Table 8: showing StaffData entity particulars

This database table stores data regarding staff details for the company. The primary key is StaffId representing a specific staff. Other fields are illustrated in the table below.

4.4.3.6 Retirement entity

FIELD NAME	DATA TYPE	DESCRIPTION
StaffId	Text	Staff identification number
Name	Text	Name of staff
Age	Number	Age
CurrentSalary	Currency	Current salary
YearOfRetirement	Date/Time	Date of retirement
YearsInService	Number	Years in service
RetirementPackage	Text	Retirement package

Table 9: showing retirement entity particulars

This database table stores information regarding staff retirement details entered from the retirement interface form for the company. The primary key is StaffId representing a specific staff. Other fields are illustrated in the table below.

4.4.3.7 Submit entity

Figure 5: showing Submit entity particulars

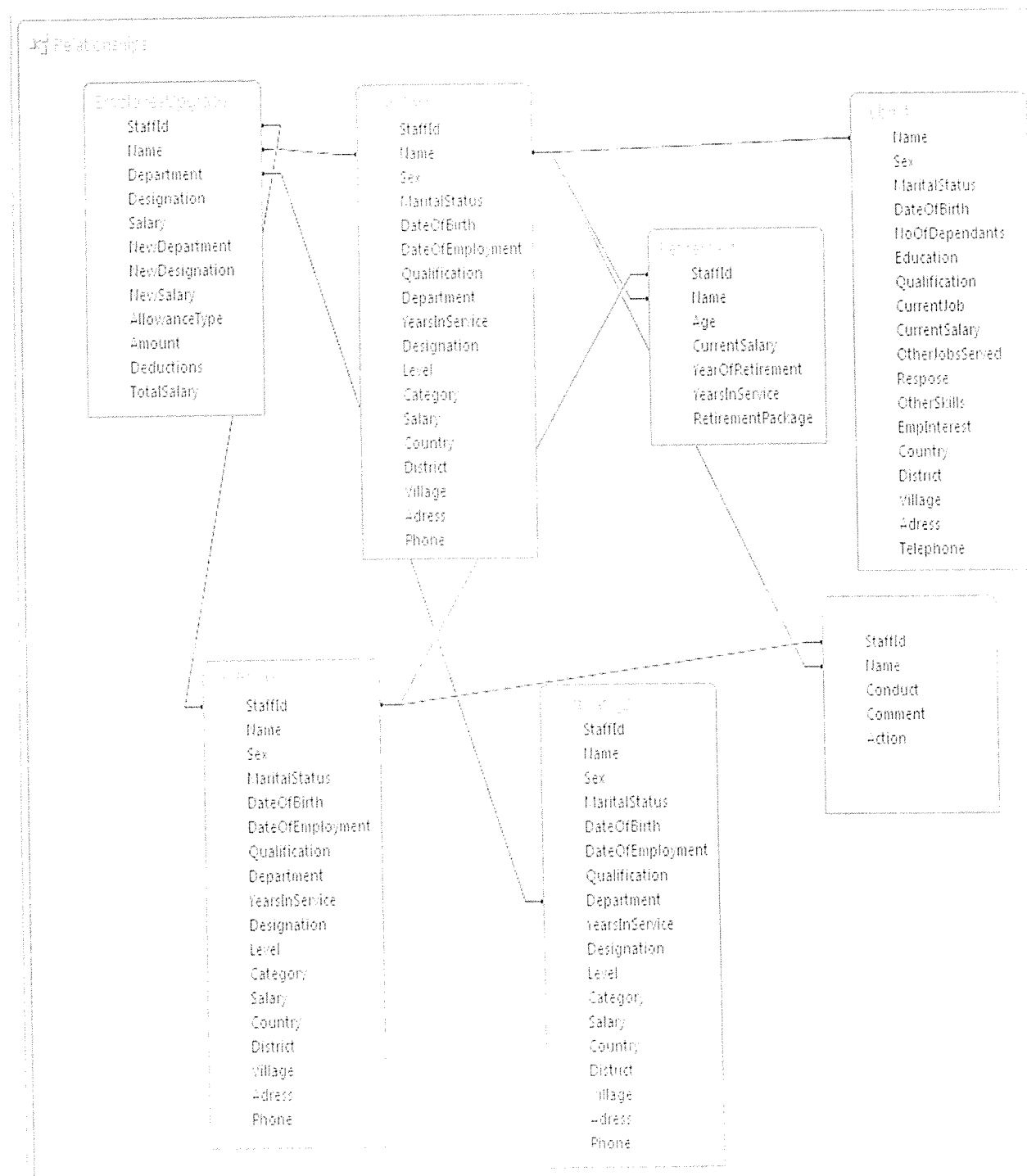
Field Name	Data Type	Description
Name	Text	employee name
Sex	Text	sex status
MaritalStatus	Text	marital status
DateOfBirth	Date/Time	date of birth
NoOfDependants	Number	number of dependants
Education	Text	education information
Qualification	Text	qualification
CurrentJob	Text	current job status
CurrentSalary	Currency	current salary status
OtherJobsServed	Text	other jobs served
Respose	Text	response
OtherSkills	Text	other skills
EmolInterest	Text	employee interest
Country	Text	country
District	Text	district
Village	Text	village
Adress	Text	address

Figure 5 above refers to the database table that stores information regarding employee applications for a specific job required entered from the submit user interface. All necessary data required from a new person seeking recruitment in a company is stored in this entity.

4.4.3.8 Relationships

To properly maintain the integrity of data and facilitate the process of working with other objects in the database, relationships among the table were created. This was accomplished using the relationship windows as shown below.

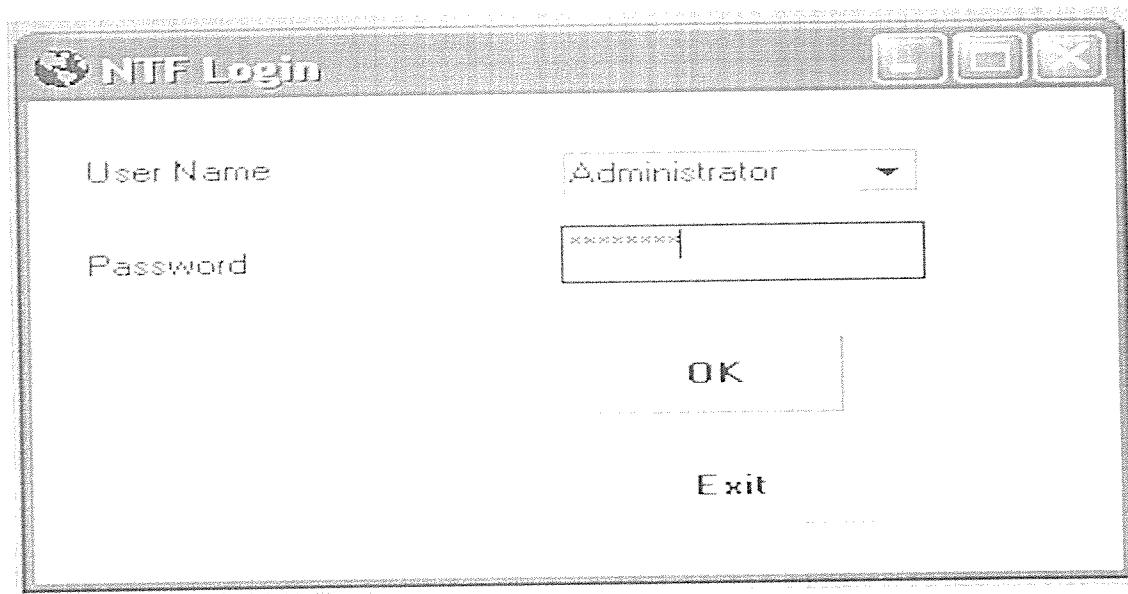
Figure 6: showing the Entity Relationship Diagram for the database



4.4.4 User Interfaces

This part of the system development lifecycle was concerned with the actual construction of the proposed designed system. The system was designed using Visual basic and connected to a Microsoft Access 2003 database. After the system has loaded, it provides the login interface where an authorized user accesses other interfaces provided the user was authenticated.

Figure 7: showing a login form for system authentication



The image shows a screenshot of a Windows-style application window titled "NTF Login". The window has a standard title bar with minimize, maximize, and close buttons. Inside the window, there is a login form. The form has two input fields: "User Name" and "Password". The "User Name" field contains the text "Administrator" and has a dropdown arrow on the right. The "Password" field is empty and has a small icon on the right. Below the input fields, there are two buttons: "OK" and "Exit".

The Administrator in this case logs in as the system user with a username and password to access the system menu.

4.4.5 Input implementation

Other interfaces that enable day today tasks to be run are shown as follows:

4.4.5.1 Conduct form

Figure 8: showing students form

The screenshot shows a window titled "NTF CONDUCT" with a globe icon on the left and standard window control buttons (minimize, maximize, close) on the right. The form contains several input fields and buttons:

Staff Id	s44
Name	milly
Conduct	ver promp,hhh nhhh
Comment	verage user and work
Action	taker{

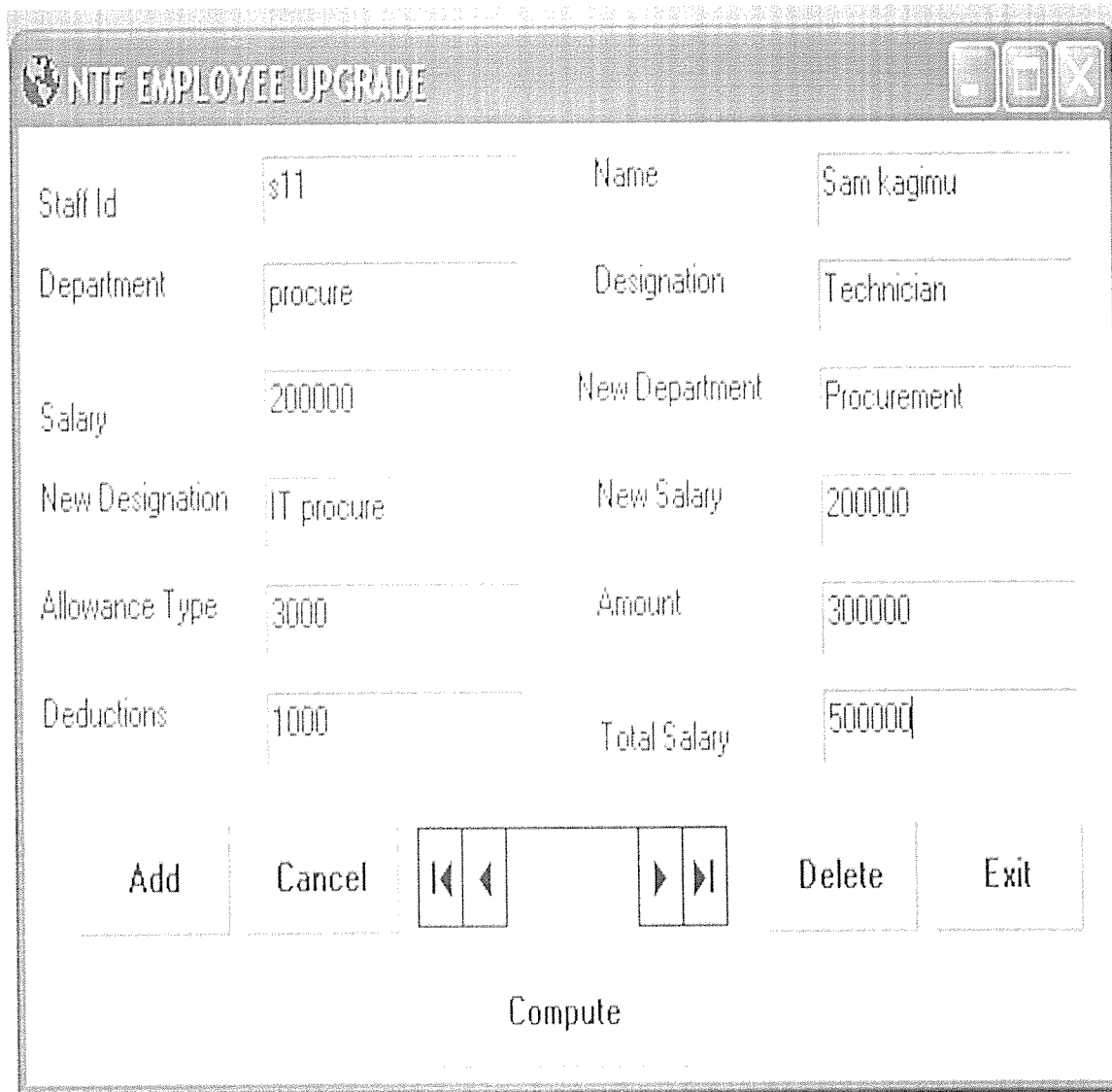
At the bottom of the form, there are two rows of buttons:

- Row 1: A "Save" button, a set of navigation buttons (first, previous, "NTF", next, last), and an "Exit" button.
- Row 2: A "Cancel" button and a "Delete" button.

This interface allows users to input staff conducts information that is stored in the database.

4.4.5.2 Employee Upgrade form

Figure 9: showing Employee Upgrade form



The image shows a software window titled "NTF EMPLOYEE UPGRADE". It contains a form with two columns of input fields. The first column includes fields for Staff Id, Department, Salary, New Designation, Allowance Type, and Deductions. The second column includes fields for Name, Designation, New Department, New Salary, Amount, and Total Salary. At the bottom of the form, there are buttons for "Add", "Cancel", navigation arrows, "Delete", and "Exit". A "Compute" button is located below the navigation arrows.

Staff Id	s11	Name	Sam kagimu
Department	procure	Designation	Technician
Salary	200000	New Department	Procurement
New Designation	IT procure	New Salary	200000
Allowance Type	3000	Amount	300000
Deductions	1000	Total Salary	500000

Buttons: Add, Cancel, Navigation (Left, Right), Delete, Exit

Compute

This interface allows users to input employee upgrade information that is stored in the database.

4.4.5.3 Staff Data form

Figure 10: showing payment form

The screenshot shows a software window titled "NTF STAFF DATA". It contains a form with two columns of input fields. The first column includes fields for Staff Id, Sex, Date Of Birth, Qualification, Years In Service, Level, Salary, District, and Address. The second column includes fields for Name, Marital Status, Date Of Employment, Department, Designation, Speciality, Country, Village, and Telephone. At the bottom, there are buttons for "New Record", "Cancel", "Delete", and "Exit", along with a "Close" button. A navigation bar in the center of the bottom section contains left and right arrow buttons and the text "NTF".

Staff Id	NTF/1	Name	NOAH
Sex		Marital Status	
Date Of Birth	2/2/1986	Date Of Employment	2/2/2010
Qualification	PHD	Department	ICT
Years In Service		Designation	System Analyst
Level	5	Speciality	Information Syatem
Salary	500000	Country	uganda
District	Bushnyi	Village	Ishaka
Adress	12320909	Telephone	779887887

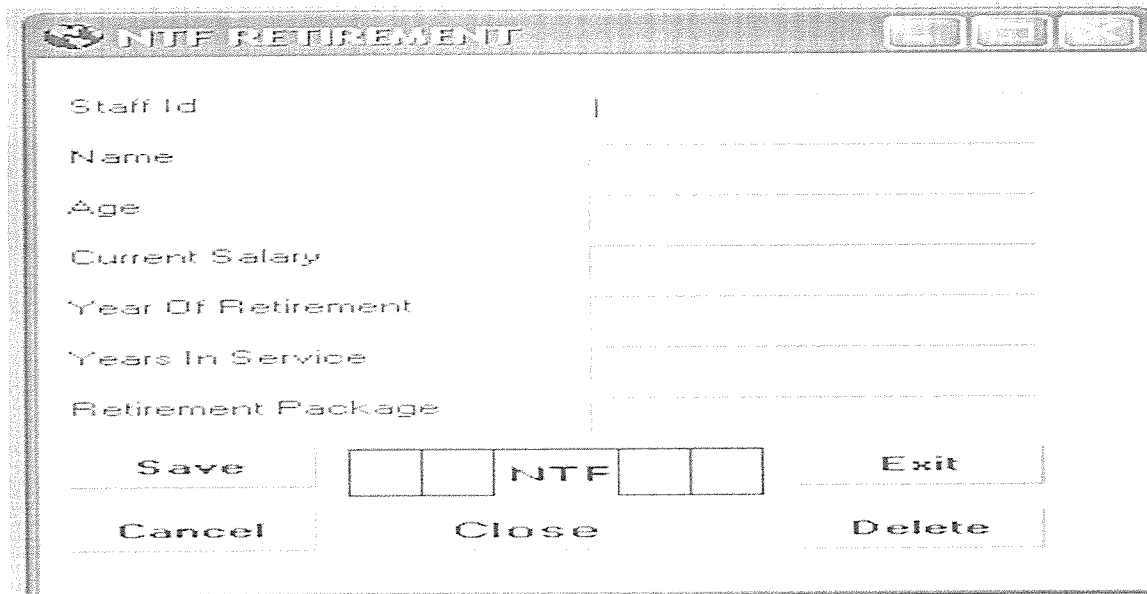
Navigation: [Left Arrow] [Right Arrow] NTF [Left Arrow] [Right Arrow]

Buttons: New Record, Cancel, Delete, Exit, Close

This interface allows users to manipulate staff information that is stored in the database.

4.4.5.4 Retirement form

Figure 11: showing Retirement form



The screenshot shows a window titled "NTF RETIREMENT" with a standard Windows-style title bar (minimize, maximize, close buttons). The form contains several input fields for data entry:

- Staff Id
- Name
- Age
- Current Salary
- Year Of Retirement
- Years In Service
- Retirement Package

At the bottom of the form, there are several buttons and a central label:

- Buttons: Save, Cancel, Close, Exit, Delete.
- Central Label: NTF (flanked by two empty square boxes).

The retirement form interface is used to manipulate staff retirement information that is stored in the database.

4.5 Software testing

This stage was carried out to check whether what was done worked efficiently and effectively as it was planned. It took the forms below;

4.5.1 Unit testing

Here the components were realized as programs (test plans) and prepared test data, the path has a number of test runs like valid paths through out the programs. A list of conditions is tested for each program to determine their correctness, the forms observed in the system were checked against these test plans and conditions as well as the data base subject to the enforced rules.

4.5.2 System testing

This is a testing of the whole system by integrating all the modules. It involves:

Graphical user interface testing – Throughout the system design, interfaces were designed and they met written specifications of the system. The product's graphical user interfaces were tested by allowing company administrators to move through the run graphical user interfaces in form of clicking various interface objects like combo boxes.

Performance testing - that is how long the system takes to respond to a user's request. The system application was run on company computers and generally the rate at which it loads was tested (speed) in addition to system data validation and user security authentication.

Volume testing - Involved checking whether the system can handle the expected load. Sample NFT Consult Company users were allowed to feed in test data in the system. The system uses a Microsoft access database that can handle up to maximum 2 GB size per access database which is good for the company.

Acceptance testing – The operational users checked if the system met what was stated in the specification document, the test data was replaced with actual data provided by the clientele. Fatal errors were discovered for example when users entered unsupported operators and data of different types in sections where they weren't needed. Here the system should be worked on to accept valid data in respective data fields. The system should return system errors in case the wrong type of data is entered warning the user. Generally, the system met customer expectation.

CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSIONS

5.0 Introduction

This chapter concludes the report and it outlined recommendations on how to use the system in addition to conclusion of the project report.

5.1 Recommendations

In future user requirements should take a more central consideration. Users should be trained on how to use and customize the system proposed by the researcher in order to facilitate the company's recruitment procedures.

It was also recommended that incase the company needs to further upgrade the system to fully optimize it to the company satisfaction and enhance more functionality, redevelopment using other robust programming tools would be used.

5.2 Conclusions

Finally, the study has not been easy at all. The researcher has acquired skills in project management and at least can make claims of having a minimal experience designing database systems and graphical user interfaces. This system is fully recruitment based and thus customized for all users within human resource departments of companies.

APPENDICES

APPENDIX A

A questionnaire answered by recruitment promoters

Dear respondent,

I kindly request you to fill this questionnaire below to facilitate the research study to a success and helpful to the company.

Please feel free and give the important information as required to make the project feasible.

Your information will be treated and kept with a lot of confidentiality, great care and will be highly appreciated.

Much regards: (please tick where appropriate)

1) Your occupation

Director ☐

Manager ☐

Employee ☐

Clientele ☐

Others ☐

2) Age bracket

15 – 20 ☐ , 20 – 25 ☐ , 25 – 30 ☐ , 30 and above ☐

Gender

Male ☐

Female ☐

3) Have you ever been strained on how to recruit employees before?

Yes ☐

No ☐

If yes, which specific

area?.....

4) Is your recruitment running as planned?

Yes ☐ No ☐

5) Are there reasons for poor recruitment specification?

Strongly agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

6) Are there reasons for unrealistic timescales?

Strongly agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

7) Are there reasons for poor condition of activities?

Strongly agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

8) Are there technological problems in the company regarding recruitment?

Strongly agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

Please state any if they

exist:.....

9) What are the problems related to the handling of your recruitment?

Failure to handle user expectations ☐

Failure to handle the change required ☐

Inappropriate staff ☐

Failure to handle people's relationship in the recruitment ☐

10) Are the recruitment conditions too hard for your company?

Yes ☐ No ☐

If yes, how?

.....

11) Is your recruitment paying the requirement as agreed?

Always ☐

Frequently ☐

Sometimes ☐

Never ☐

12) Is need from a consultancy firm required?

Yes ☐ No ☐

If yes, what kind of assistance?

.....

13) Is there need to integrate a computerized recruitment system other than the existing system?

Strongly agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

Your support is highly appreciated.

Thanks.

APPENDIX B

A sample NFT Consult interview questions for director and manager

Interview Guide for knowledge acquisition

- Establishing whether NFT Consult would be comfortable with change of old to new system or needs no change of system.
- Determine the minds of employees towards the new system to be implemented.
- Determine the skill of computer use among the employees in the recruitment sector.
- Establish the security of records provided by the system currently used by the company.
- Is communication a key while recruitment procedures are handled?
- How does the management carry out its management activities regarding employee recruitment?
- How many employees does the company have and how does it maintain their records?
- Isn't there a route of hiring the wrong personnel within the company?

Thanks.

APPENDIX C

Sample screenshots

Welcome screen

This is the form where that welcomes users to the NFT Consult System linking them to different tasks of the system.

Figure 12: showing the welcome screen to NFT Consult system

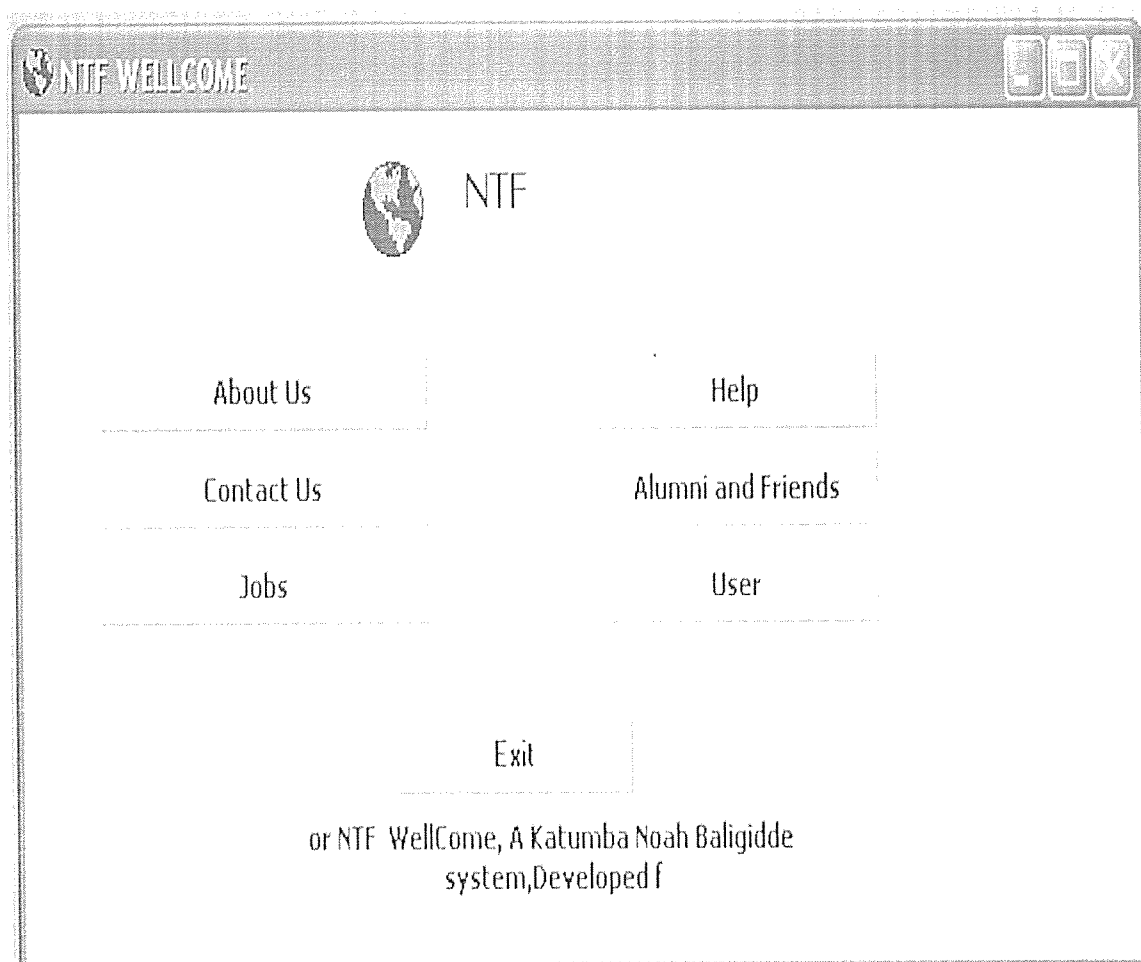
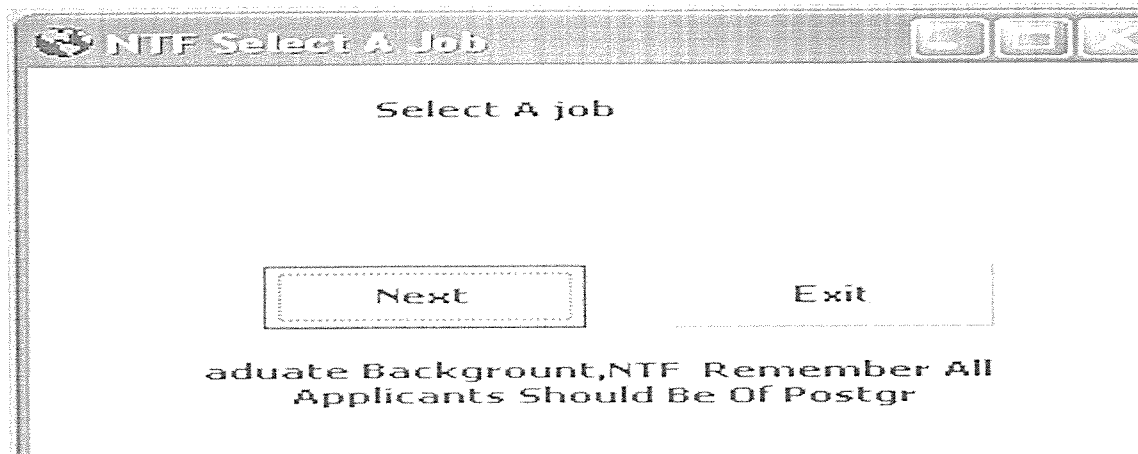
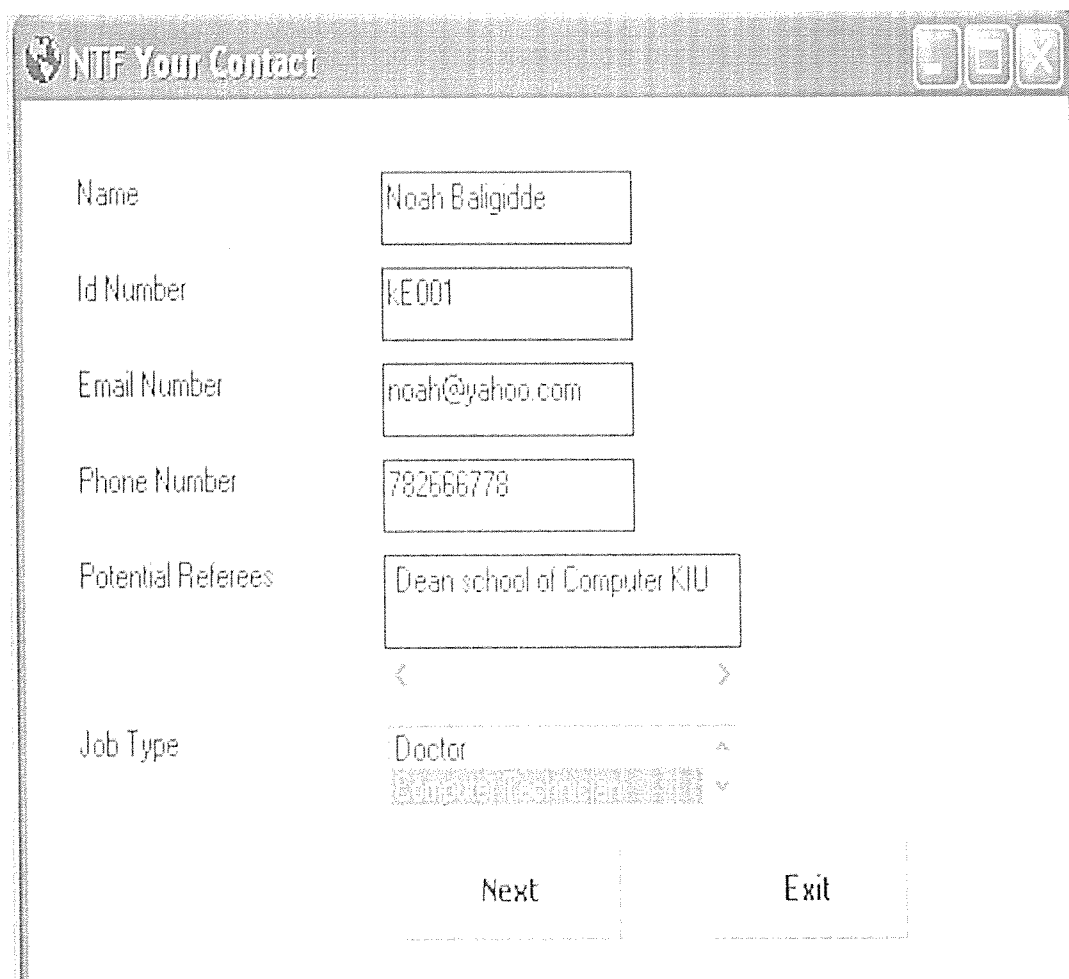


Figure 13: showing a form for job selection



The screenshot shows a window titled "NTF Select A Job". Inside the window, the text "Select A job" is centered at the top. Below this, there are two buttons: "Next" and "Exit". At the bottom of the window, there is a line of text: "aduate Background,NTF Remember All Applicants Should Be Of Postgr".

Figure 14: showing a form for contacts collection

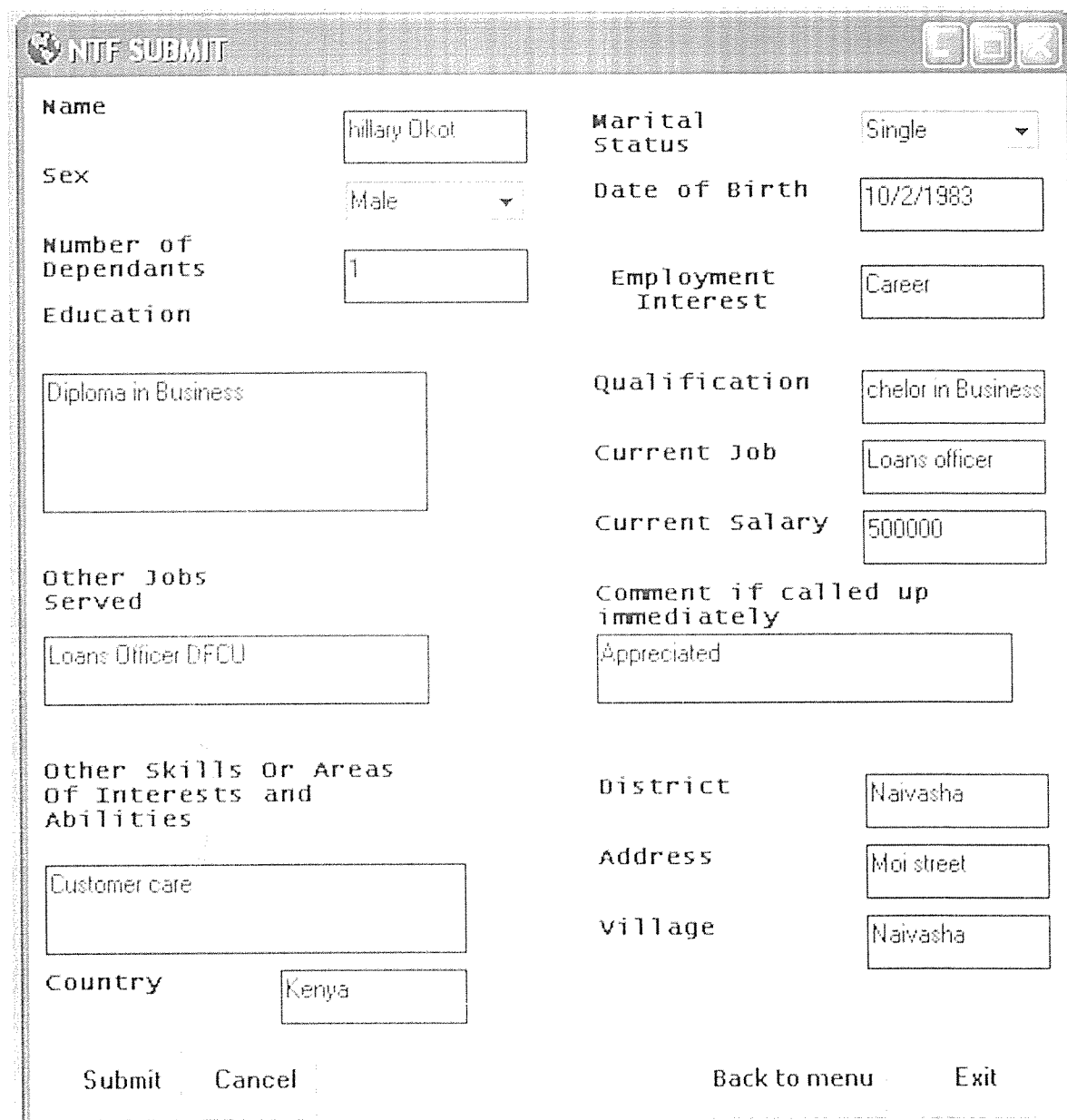


The screenshot shows a window titled "NTF Your Contact". Inside the window, there are several input fields for contact information:

- Name: Noah Baligidde
- Id Number: KE001
- Email Number: noah@yahoo.com
- Phone Number: 782666778
- Potential Referees: Dean school of Computer KIU
- Job Type: Doctor (with a dropdown arrow next to it)

Below the input fields, there are two buttons: "Next" and "Exit".

Figure 15: showing a form for submitting job specific information



The image shows a screenshot of a software application window titled "NTF SUBMIT". The window contains a form for submitting job-specific information. The form is organized into two columns. The left column contains fields for Name, Sex, Number of Dependants, Education, Other Jobs Served, Other Skills Or Areas Of Interests and Abilities, and Country. The right column contains fields for Marital Status, Date of Birth, Employment Interest, Qualification, Current Job, Current salary, Comment if called up immediately, District, Address, and village. At the bottom of the window, there are buttons for Submit, Cancel, Back to menu, and Exit. The form is filled with the following data: Name: Hillary Okot, Sex: Male, Number of Dependants: 1, Education: Diploma in Business, Other Jobs Served: Loans Officer DFCU, Other Skills Or Areas Of Interests and Abilities: Customer care, Country: Kenya, Marital Status: Single, Date of Birth: 10/2/1983, Employment Interest: Career, Qualification: Bachelor in Business, Current Job: Loans officer, Current salary: 500000, Comment if called up immediately: Appreciated, District: Naivasha, Address: Moi street, and village: Naivasha.

Name	Hillary Okot	Marital Status	Single
Sex	Male	Date of Birth	10/2/1983
Number of Dependants	1	Employment Interest	Career
Education	Diploma in Business	Qualification	Bachelor in Business
Other Jobs Served	Loans Officer DFCU	Current Job	Loans officer
Other Skills Or Areas Of Interests and Abilities	Customer care	Current salary	500000
Country	Kenya	Comment if called up immediately	Appreciated
		District	Naivasha
		Address	Moi street
		village	Naivasha

Submit Cancel Back to menu Exit

Figure 16: showing main menu to the system



Figure 17: Report for General recruitment information submitted

General Submission Report

Zoom 100%

NFT CONSULTS

5:33:44 AM Tuesday, August 16, 2011

Name of applicant:

hillay Okot

Sex:

Male

Marital Status:

Single

Date Of Birth:

1/2/1983

Number Of Dependants:

1

Education:

IT Certified

Qualification:

Bachelor in Business

Current Job:

loan attendant

Current Salary:

400000

Other Jobs Served:

loan Officer DFCU

Respose:

Appreciate

Other Skills:

Customer Care

Employment Interest:

Career

Country:

Kenya

District:

Naivasha

Village:

Naivasha

Adress:

Moi street

Telephone:

0

Pages: 1

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END