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Automated Bio Information System for a Boys' Brigade Company in an ICT Driven World (ABISBBC)

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Abstract
The reason and essence of any data management system is to provide the right information in the right place, in the right order, at the right time for the right person at the cheapest cost. This is better achieved by a computer-based system. There are some data management information systems in existence, but they are not readily usable nor are their designs available for improvement. The aim of this research was to design and develop a Bio-data information system for 258th Benue Company. The 258th Boys' Brigade Benue Company attached to NKST Ama-Makurdi was used as a case study. The research methodology used, was the waterfall model software development approach. The Bio-data of Boys' Brigade Members was automated, which gives a direct benefit to the Company, whilst avoiding any confusion that would jeopardize the quality of members information. The design and implementation of the Automated Bio Information System for a Boys' Brigade Company in an ICT Driven World presented a veritable stepping stone for other bio-data information systems.

Keywords: Automation, Bio-data, Boys' Brigade, Information, Database.

Introduction

Storage and retrieval of bio-data information of members of any organization is very important, whether the storage is manual or electronic. Large amount of information missing in various organizations today has become a source of concern. The Boys' Brigade organization is not an exception of this ugly trend in various Companies. The Boys Brigade Company is the smallest but, most important lowest level of authority, in The Boys' Brigade organisation [9].

Bio-data which is the short form for Biographical Data and is an archaic terminology for resume or curriculum vitae. In a bio-data, the focus is on personal particulars like date of birth, gender, religion, race, nationality, residence, marital status, and the like. Large amount of bio-data of Boys' Brigade officers, Boys and Patrons are easily destroyed by rodents, natural disasters etc. as these records are been kept in filing cabinets. The Boys' Brigade can also be regarded as organizations based on high technology and information intensive processes. Generating and organizing data in a useful way is called data processing [8]. Records stored in file cabinets are easily tampered with, destroyed or got missing because they are written on sheet of papers. In a study by [10] the manual methods being employed suffer a number of setbacks; they make the process to be time consuming and prone to error. This manual system has so many problems associated with it such as insecurity of files, poor file retrieval system and inefficient file update system [2].

Automated systems achieve significantly superior performance than what is possible with manual systems, in terms of power, precision and speed of operation. According to [1], an automated system will be necessary because there are a lot of challenges in handling a large amount of information on paper, especially as there is usually no back-up for the information, access to information can prove difficult and time-consuming if it has to be searched for and accuracy is needed in the recording of important information. By information we mean data that have been shaped into a form that is meaningful and useful to human beings [6]. The Company's captain or Secretary cannot oversee all that is written on the vast amount of paper to be used. It is, therefore, very important for a Boys' Brigade organization companies to have an automated bio-data information system. [7]

viewed an Information System (IS) as any organized combination of people, hardware, software, communications networks, data resources, policies and

procedures that stores, retrieves, transforms and disseminates information in an organization. Hence, the need for an automated bio-data information system in a Boys' Brigade Company for proper data storage and retrieval about members of the Company is very important.

Materials and Methods

Proposed system

In this proposed Boys' Brigade Company bio-data information management system, the provision of adding the details of members will be carried out by the company captain/secretary. Another advantage of the system is that, it is very easy to access, edit the details of members and delete a member when it is found unnecessary [4]. The project was focused around 258th Benue Company, NKST Ama-Makurdi as the case study.

Data collection

The methods used in data collection are questionnaire, site observation, interviews and document of analysis that are references or indirectly related with Boys' Brigade information management system.

Site observation: actual observation of the organization.

Interview: by asking the members of the organization

System design

System specification shows the functional and non-functional requirements posed on a system element [6]. The Data Flow Diagram (DFD) is a graphical representation of the "flow" of members' bio-data information management system. The data flow diagram can also be used for the visualization of Data Processing [11]. DFD shows the interaction between the system and outside entities. A DFD represents flow of data Movement of data through the different transformations or processes [3]. The system Data Flow Diagram is as shown in Figure 1 and Figure 2 is the Use case diagram for the proposed system showing the actors and their use cases.

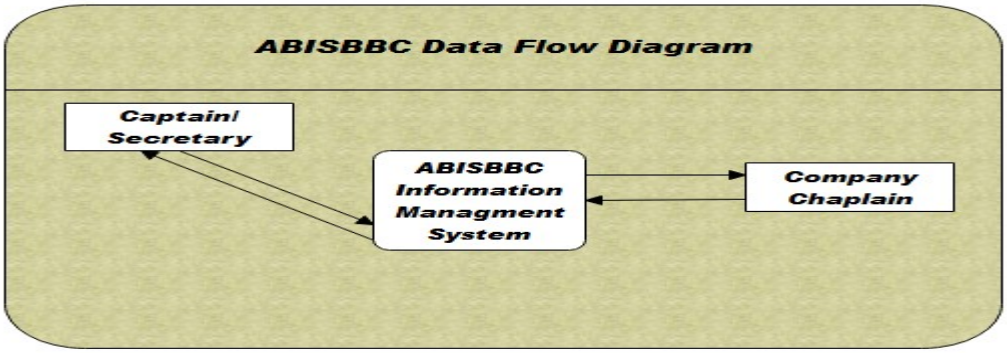

Figure 1: DFD for the Proposed ABISBBC System.

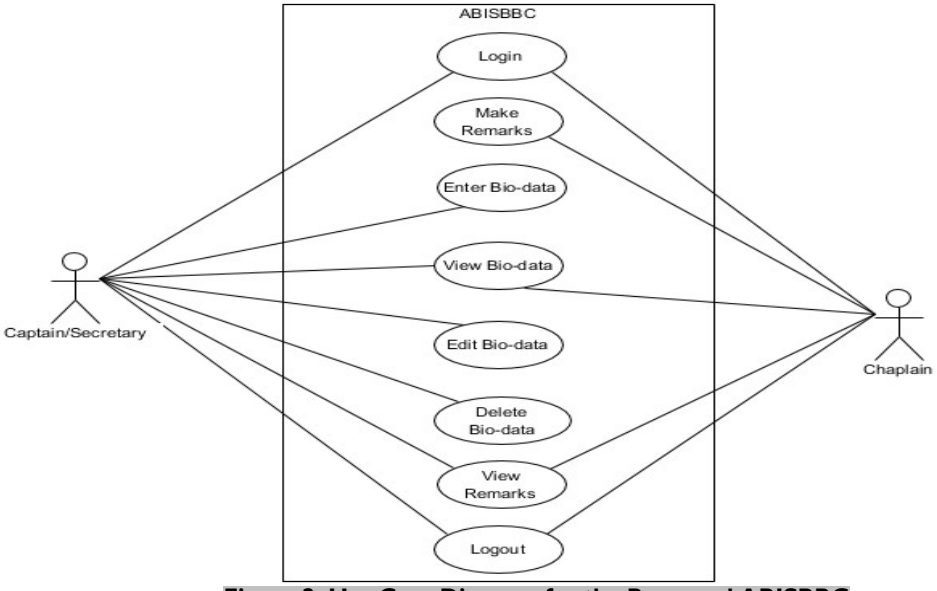

Figure 2: Use Case Diagram for the Proposed ABISBBC

Database design

The bio-data information system database had to be designed in a particular manner, as one of the core elements of any management information system. Databases are created with the intention of supporting the intended users in their search for information and knowledge within a particular area [5]. The entities about which data are required include The Boys, Officers and Patrons. A number of the required attributes are presented in Figure3 to 5, as part of the physical database design. This process started at the analysis phase of the project, to identify the necessary entities and relations, and their attributes, leading to determination of tables required for the database and the associated field names, format and length of each table. The Entity Relationship Diagram (ERD), which is a graphical representation of the relationship between the entities, and their attributes within proposed database of the system, is shown in Figure 6.

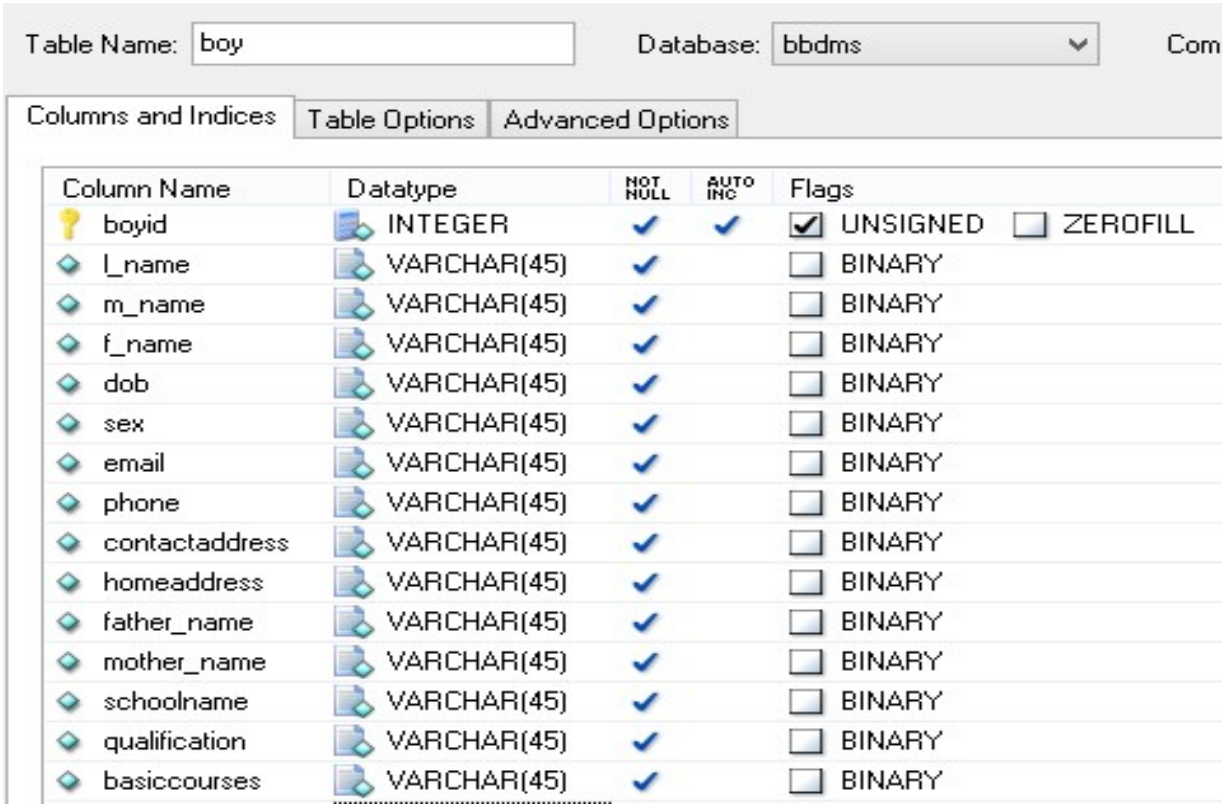

Figure 3: Structure of a Boy table.

The structure of the Table in Figure 3, shows the fields names and data type in the table housing the information

about a boy in 258th Benue company in the database of the proposed Boys' Brigade information system.

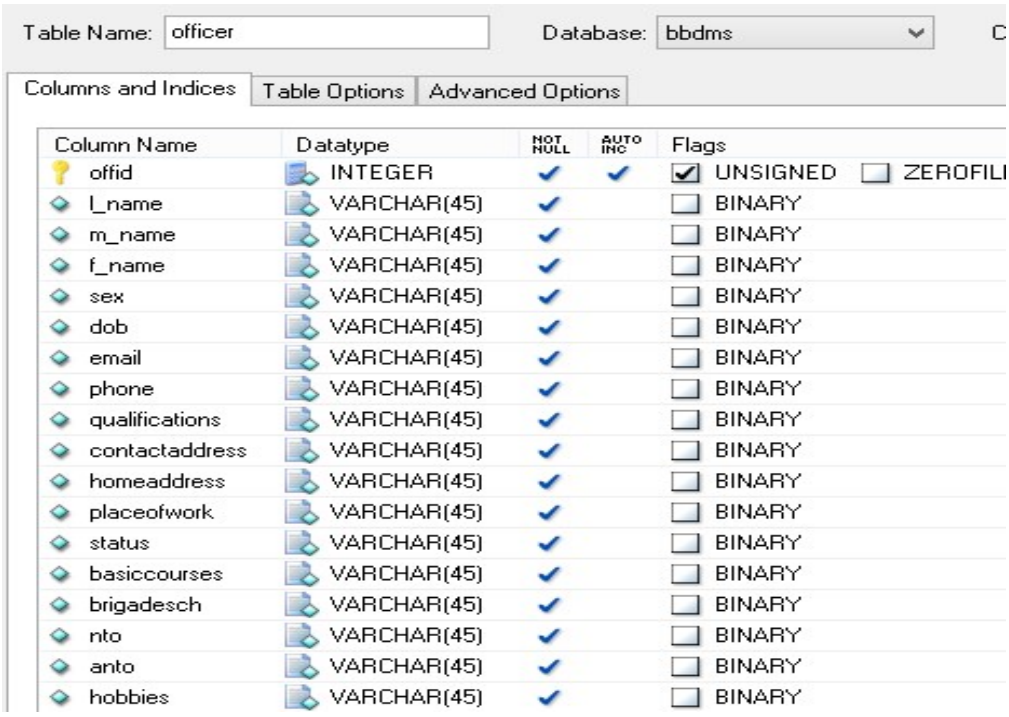

Figure 4: Structure of an Officer table.

Figure 4 gives the details of the table about an officer. This shows the fields names and data type in the table housing the information about an officer in 258th Benue company in the database of the proposed Boys' Brigade information system.

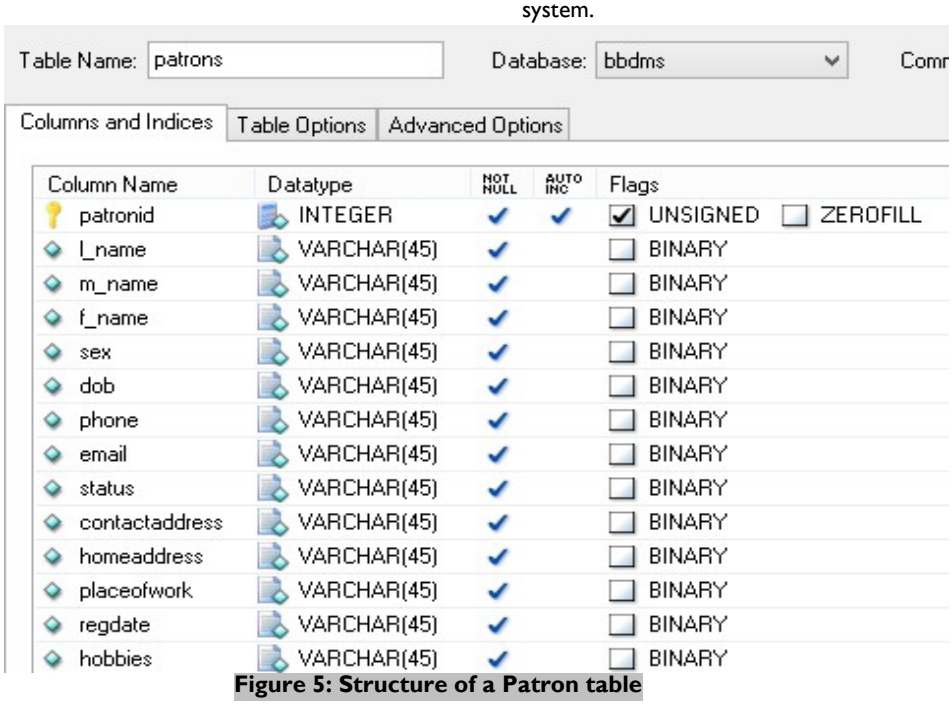

Figure 5: Structure of a Patron table

The structure of the table in Figure 5, shows the fields names and data type in the table housing the information about a patron in 258th Benue company in the database of the proposed Boys' Brigade information system.

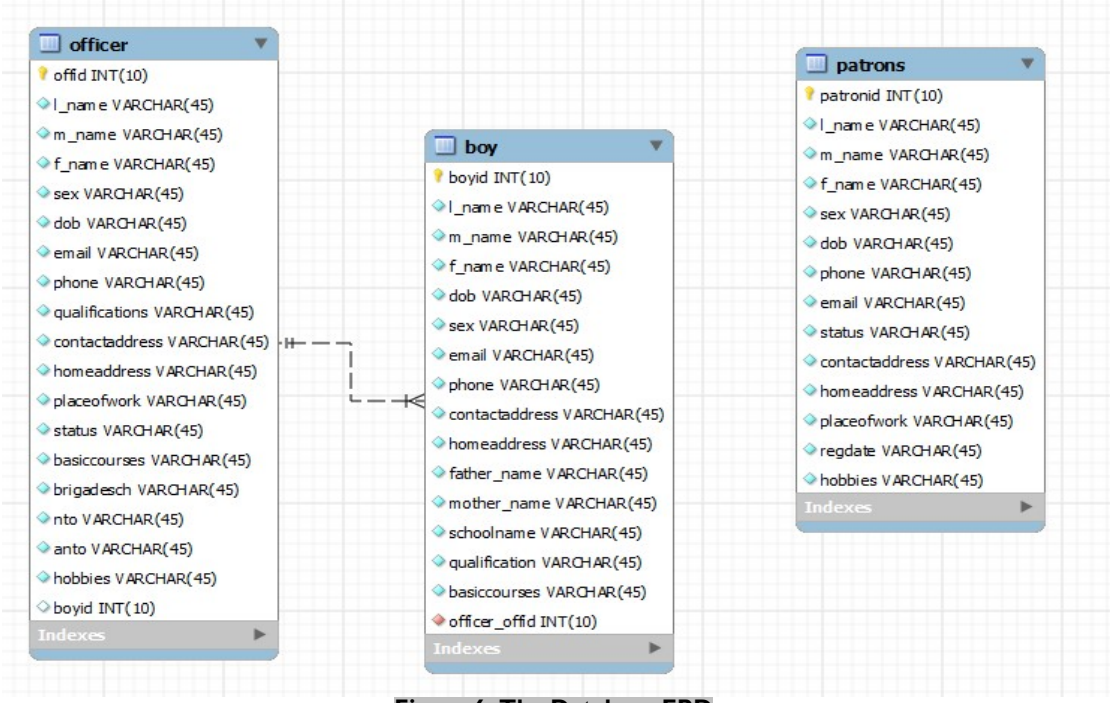

Figure 6: The Database ERD

Results and Discussion

Implementation is the realization of an application, or execution of a plan, idea, model, design, specification, standard, algorithm or policy [5]. Modules of the designed system include Welcome interface, Login, Main, Registration, Search, Edit and Delete.

The welcome interface is shown from Fig.7(a-b).

The interface in figure 7(a-b) are the welcome pages showing the pictures of both officers and boys of the organisation, well dressed in their uniform.

Figure 7a: Welcome Page with Lady Officers and Anchor Boys.

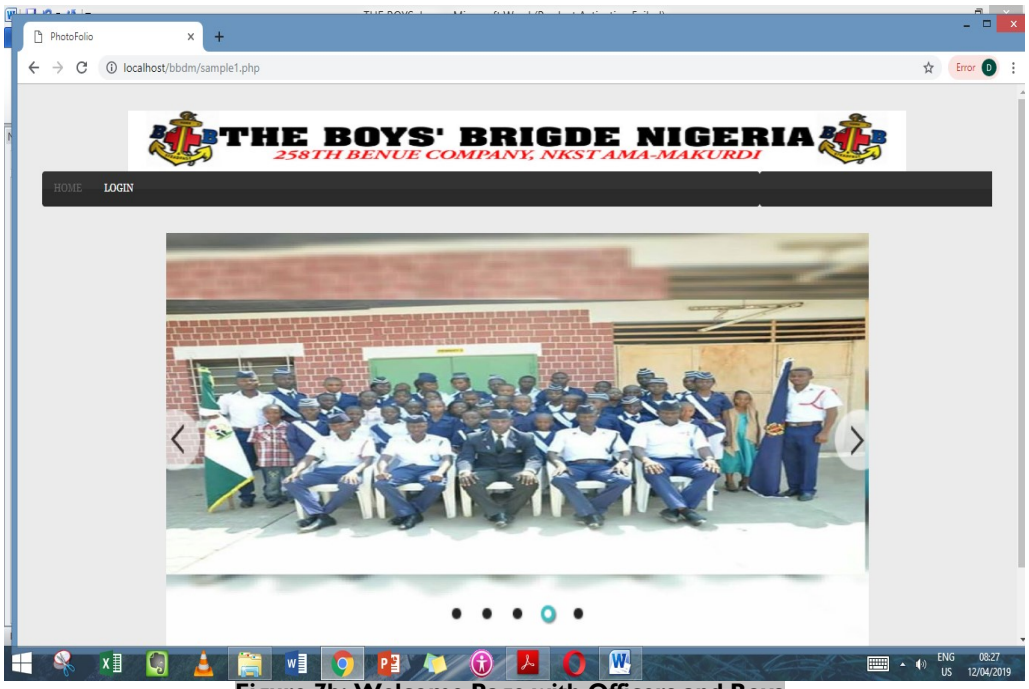

Figure 7b: Welcome Page with Officers and Boys.

Login module

The login module facilitates access to the system for the member granting the members respective access privilege. The login page is depicted in Figure 8.

Main module

In this module, the captain or secretary of the company can register members of the company into the system and can also search for records of members as shown in figure 9. The registration interface is as shown in figure 10 and the Search for a member record is as shown in figure 11

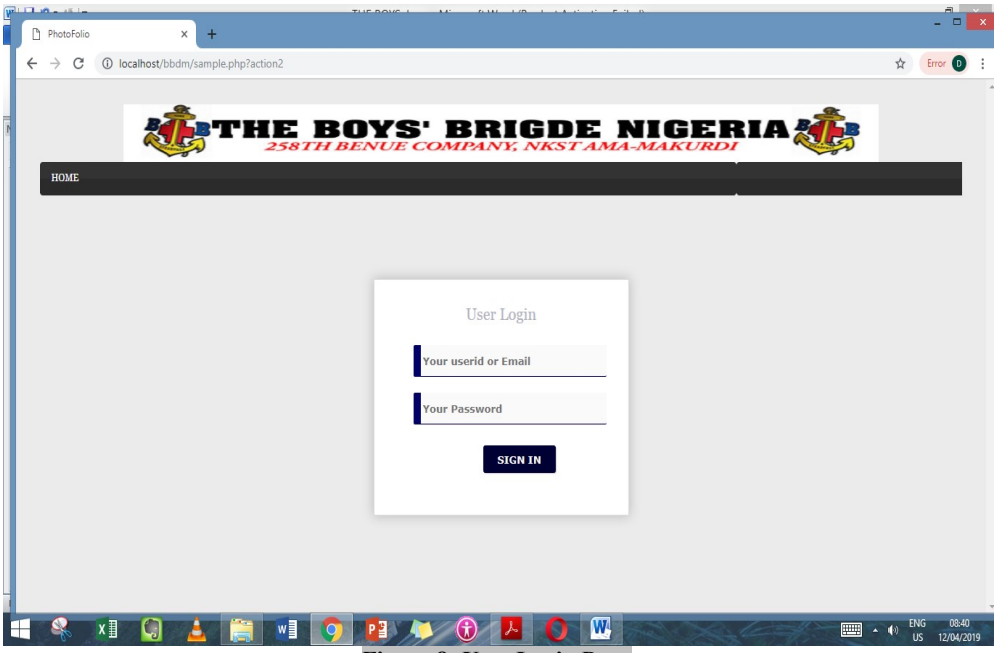

Figure 8: User Login Page

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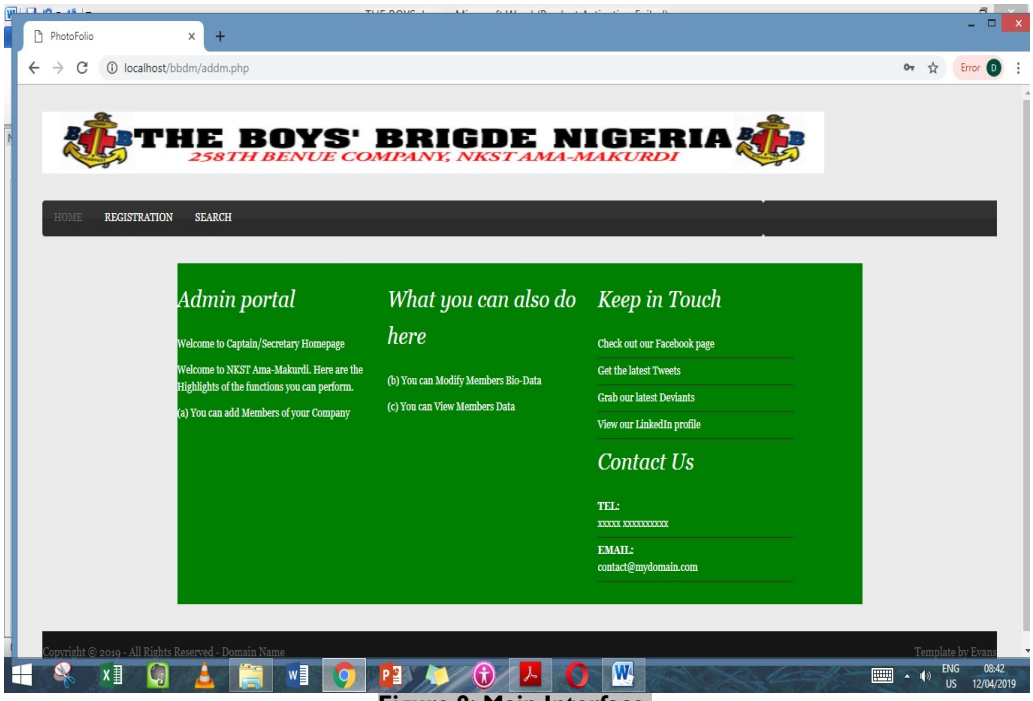

Figure 9: Main Interface.

In the interface in Figure 9, the user can register a boy, an officer and also a patron. The user can also search for a member whenever the need arises through the search button, with the member's ID. The clear interface of the search is shown in Figure 11 and that of registration of a member is shown in Figure 10.

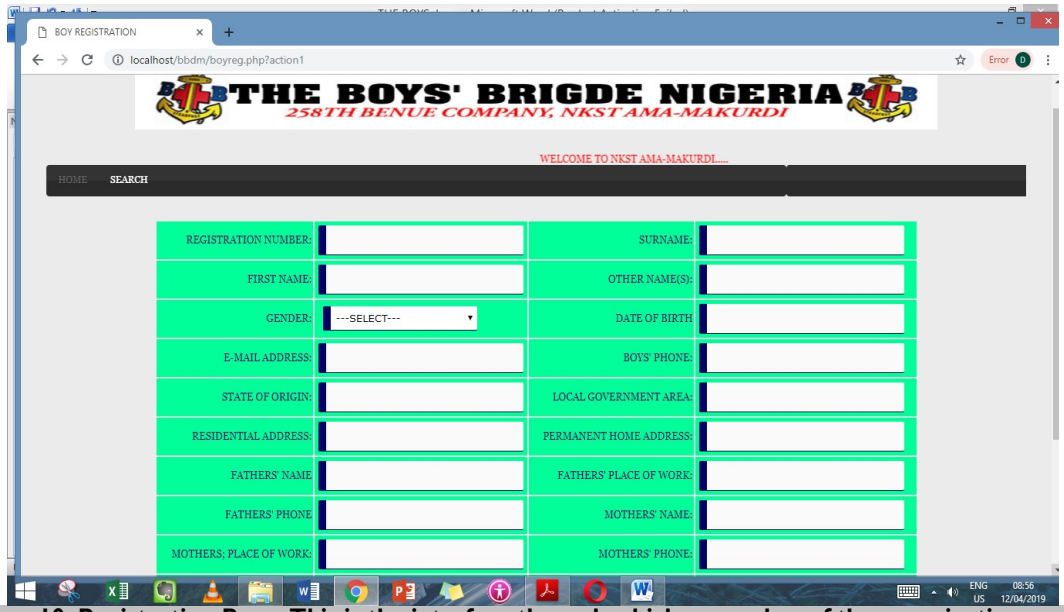

Figure 10: Registration Page. This is the interface through which a member of the organization can be registered.

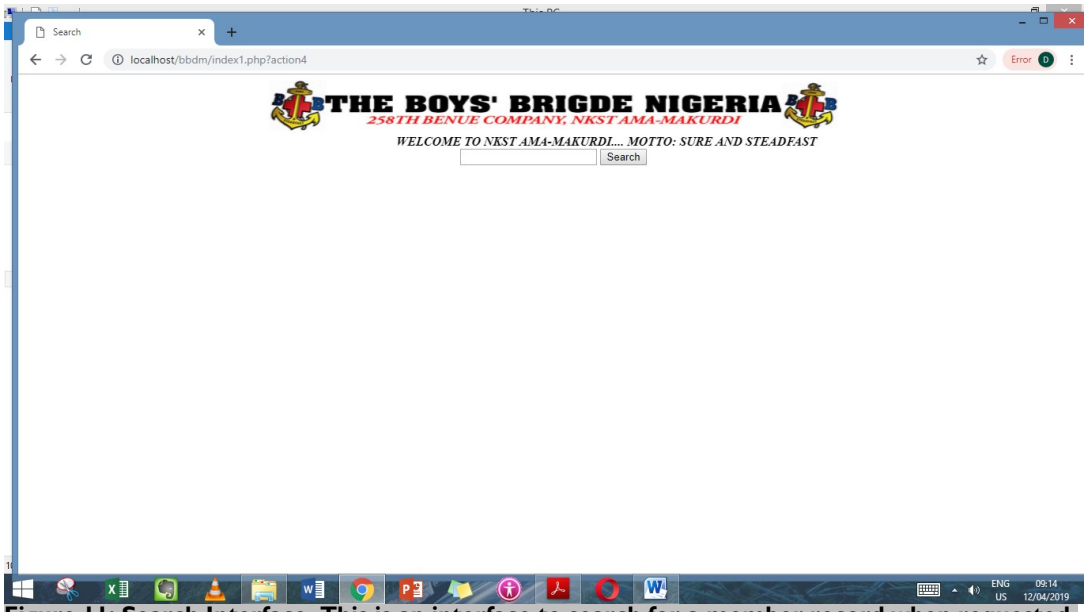

Figure 11: Search Interface. This is an interface to search for a member record when requested.

Conclusion

Computers are finding their way into every business, industry and research activity today. The use of computers is diverse, such as in sports, education, problem solving, research, personal management, among others. In organisations like The Boys' Brigade Nigeria, the process of maintaining the record of members working in the company is very important.

Keeping in mind a strong need for managing the various important information for easy access and efficiently process, An Automated Bio-data Information Management System has been designed and developed. Proper testing of the developed system with the black box method, indicates an efficient, usable and reliable records-management system.

The application scope which only focused on 258th Benue Company attached to NKST Aam-Makurdi, could be widened to accommodate entire Benue Low-Level Battalion Council (BLBC) records management. The system can also be further enhanced so that the Boys and Officers themselves can be able to access their information in a secure manner for the purpose of greater Boy-Officer relationship transparency.

Declaration of conflicting interests

The authors declared no potential conflicts of interest

References

[1] Adewale, O. A.Olugbake, K. and Toluhi, D. 2014**. Patient Record Management Information System.** *Journal of Information Technology*1(1), 1-23.

[2] Amaechi, J. C. Agbasonu, V. C. and Nwawudu, S. E. 2018. **Design and Implementation of a Hospital Database Management System (HDMS) for Medical Doctors**. *International Journal of Computer Theory and Engineering* 10(1), 1-6.

[3] Esmael, S. A. 2016.**Alkan University College Student Information Management System.** *American Journal of Operations Management and Information Systems* 1(1), 1-6.

[4] Lars-Erik, A.2006**. Identify User Profiles in Information Systems with Unknown Users - A Database Modelling Approach.** *International Journal of Public Information Systems* 2, 19-32.

[5] Laudon, K. and Laudon, J. 2010. **Management Information Systems: Managing the Digital Firm**, 11th Edition, Prentice Hal, New Jersey Pp 15-16.

[6] Modelli 2010. **Systems Specification**. Retrieved from v-modell.iabg.de/v-modellxt-html-english/be9ff771c91b7f.html 03/03/2021

[7] O'Brien J. A. and Marakas G. M. 2008**. Management Information Systems**, 8thEdition, McGraw-Hill/Irwin.

[8] Royce, W. 1970. **Managing the Development of Large Software Systems**. IEEE WESCON.

[9] Spackman, C. J. 2016. **The Boys' Brigade and Urban Cultures, 1883-1933: A Relationship Examined.** The thesis is submitted in partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy of the University of Portsmouth. Pp 267.

[10] Ukem, E. 2012. **A software application for university students results processing.** *Journal of Theoretical and Applied Information Technology* 35, 1-10.

[11] Zhi-gang, Y. J. 2010.**The development and design of the student management system based on the network environment**. *International Conference on Multimedia Communications IEEE*, 5th – 6th October 2010 Pp 1-6.

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