

## Employee Management System for Nigerian Universities

<sup>1</sup>Raphael Enihe Ozighor, <sup>2</sup>Victor Omopariola Adebola, <sup>3</sup>Felix Uloko,

<sup>1</sup> Department of Computer and Information Technology, Veritas University, Abuja, Nigeria

<sup>2</sup> Department of Computer and Information Technology, Veritas University, Abuja, Nigeria.

<sup>3</sup> Department of Computer and Information Technology, Veritas University, Abuja, Nigeria.

### Abstract

The proposed Employee Management System is a web application that uses MYSQL Server as its database and acts as a bridge between users and the database, which houses all of the data. Its purpose is to enable the administrator to collect and save personnel information and records. The application also performs the leave management system task, which keeps track of all of the organization's employees' leave, allows for easy retrieval of information without the need for human intervention, and allows managers to manage their employees' leave and mark their leave dates. Furthermore, it will abolish the paper/file system, which will solve the current system's problems. Finally, it is revealed that this system would not only automate the entire procedure, but it will also save time for the administrator, which can be put to better use for his institute.

**Keywords:** Employee, Record, University, Management, Information,

### Introduction

In every organization, there is an existence of a system that manages its staff information. Nowadays, huge amount of data stored in institutions such as universities and organizations have valuable information beyond the immediate environment. The loss of the University's personnel records or even a part of them could destroy the evidence of staffs' history, staff entitlements and jeopardize the University's rights and interests (Abikoye et al., 2019). Employee record management is one of the crucial, tasking and, risking aspects of an organization which is glaringly not only important but a necessity (Abdulrazaq, 2015). The term employee record management system, among others, contains employment, deployment, employee's promotions, and leaves, as well as staff training and development, industrial relations, and joint consultation (Abikoye et al., 2019). University personnel record keeps track of entire service history of all the staff of the University and generates gender-based information, category of staff by promotion, retirement forecasting, and staff complete demographic profile within the Faculty/Departments/Units in the University. A good University Personnel Record Management System should be able to produce the list of staff by departments, faculties, and research interests date of appointments, their salary structure, their contribution to the university (Pho & Tambo, 2014), etc. In most universities, staff's information and data are handled manually with the traditional filing and paper method. This method of keeping employee records has been rendered "old school" and out of use with the advent of online database management systems. Some of the disadvantages of the systems are, employee data could easily be lost, tampered with or destroyed, it takes up office space office. Furthermore, these systems are not that equipped to fully handle these complex and dynamic nature of employee's data in institutions like the university which is ever-growing in its operations and staffs strength. Meanwhile application database systems such as Microsoft Access and Excel have been widely used by several organizations including universities for database purposes, these databases have limited functionalities and applications (Abdulrazaq, 2015). Such limitations could be the corruption of the hard disk used in storing these data, or theft of the storage devices. Also these storage devices could get filled up hence the need to buy more them it. More so, the data retrieval process is quite daunting for files that had been stored there several years ago. With the advent of cloud computing, resources could be stored, managed, shared, and retrieve from the cloud. Storing employee data in an online database where administrators can log in and obtain employees

records with just a click of the button is the new trend (Demirtel & Bayram, 2014). Hence, the need for the adoption of computers and cloud platforms to facilitate the operations of organizations such as managing the data of employees using an organized database management system from the cloud. This will bring about increased productivity, better information management and faster processing of data.

In the development of the management system, the storing of data of the organizational staffs is prioritized (Mohammed, 2019). Adequate attention is given to secure the database. Only admins with the passwords can login in to the cloud platform to view, edit and manage the system. A proper employee record system will not only give the admin the sole rights to edit or delete employee data but with the verification and digital signature of the necessary parties involved in the registry department of the institution. This is unlike the traditional system where someone managing the employee records could easily destroy the data of an employee by error or intentionally.

The significance of the study is that it will provide a better means of managing employee records in the university. It will facilitate the capturing of employee information so that it will be easy to manage. The report of any employee can be called up by entering the ID number of the employee. The system will also give Head of departments to manage and monitor their staff strength in the department, and staffs on leaves. Finally, staffs can login in to the staff portal view their profile and academic details as well as update their details. This will reduce about 90% of the paper work carried in the registry department, fast track leave application and help the school to monitor their staff strength and growth.

### **Problem Statement**

Perhaps it would not be an overstatement to say that record keeping problems are common to the big organizations. It is however becoming clearer that it is more pronounced in the university system because accurate, reliable and trustworthy records that fulfill evidential requirements are being created but not properly managed. This therefore becomes an issue of great concern to parents, students, individuals and organizations. Another challenge is that most of the organizations have their employee records kept at the big file room in the admin block of the organization making it difficult to access the employee information remotely when needed at short notice. The above identified problems can be resolved using the employee management system. The system will store and maintain employee record in a database from the web with privacy only accessed by the admin with the given rights and permission to do so. The system makes it easy for the admin to access employee data from the web, track leave structure of staff, manage faculty progress etc.

### **Literature Review**

(Abikoye et al., 2019) developed an employee record management system for Ladoke Akintola University of Technology (LAUTECH). Their system uses k-way merge sorting algorithm for sorting and merging the data in the database to produce the needed information. The database system was designed using MYSQL database. The application was developed PHP, JavaScript and HTML. The developed system has a login interface and homepage where user can navigate to any section or operation the user wants to carry out. The developed system can perform CRUD operations in addition to performing functions such as track promotion of staffs, staffs' leave records retirement projection and list of staff on leave with salary and those on sabbatical leave. The authors were able to develop the existing system using application software to a web-based application increasing speed, efficiency, reliability and the records of staffs are archived for future purposes. Similarly, (Mohammed, 2019) developed an employee management system for managing employee's data in an organization. The application developed is able to carry out basic CRUD activities such as, add new employee data, delete employee data and, update employee data. The application was developed using C# an object oriented programming language based on C++ syntax. The database management system (DBMS) used was Microsoft Access DBMS. The limitations however is the scalability of the developed system which this project aim to achieve.

Moreso, to ascertain the measurable benefits of electronics record management (ERM) applications in Turkey, Demirtel & Gökkurt, (2014) conducted a series of research by administering questionnaires to executive officials in public institutions using the system as well as those in charge of records in public institutions. Using the traditional record tracking system (RTS) in place to compare with Ministry of development electronic record management system (MD-er), parameters such as the number of writings,

number of transfer (Assignment) , Average transfer time, number of signature, average time of signature (completion of approval) were compared between the two systems. Their findings revealed that, 1. Average transfer time was accelerated upon the launch of the ERM. 2. Average processing time was also noted to decrease for internal correspondence making an effective contribution to the system. 3. ERM application was seen to also decrease the average completion time for external correspondence. Further findings from the questionnaire administered showed the followings that, they were personal benefits gotten from using ERM applications, these benefits included the following; easy access to documents, facilitating of processes, less complaints and less conflicts. 90% of the correspondence also agreed that there were institutional benefits such as completing tasks faster, completing a duty with less efforts, increasing the quality of the business process and decisions. From their findings, it is safe to say ERM applications improves the efficiency of an organization making workflow easier and creating an enabling environment for more productivity.

(Abdulrazaq, 2015) investigated the management of records in universities in North central Nigeria. His studies entails a descriptive survey method. Research questionnaires were issued to gather data. He surveyed a population consisting of Deans, heads of departments, administrator records personnel of universities in the region. His findings showed that universities still use the manual filings of records in cupboard and shelves in the universities. His findings also showed that activities such as creation of records, retrieval of data, records scheduling and, correspondence management were carried out manually.

(Eusoff & Yusof, 2011) developed a record management system for matriculation colleges in Malaysia. To justify the development of the study, they issued out a questionnaire to the intended populace. The findings showed that 79.6% agreed there are advantages in using automated system for managing courses. 87.4% strongly agreed to the development of such a system. The system developed by the authors passed through a User acceptance test (UAT). 80% of the users asserted the system worked according to specifications whereas 20% worked as specified. Furthermore, 15% agreed the system is strongly safe, 75% agreed the system is safe enough whereas 15% said they were unsure if the system security is adequate enough.

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(Adetoye Aribisala, 2014) developed an employee management system comprising of a functionally related GUI and a database. The system designed for National Iron Ore Mining company Itakpe Kogi state Nigeria was based on C# as the programming language and Microsoft SQL Server 2010 as the database structure. The system consists of functionalities such as Login page for admins to login and perform basic CRUD operations on the Application Interface. Admins can also generate payroll slip. The system helps automate the working process of the organizations and reducing lag and delay in several operations in the company as well as helping to relegate errors especially in operations like generating payroll for employees.

Similarly, student's final year management software was developed for storage, retrieval and archiving of final year projects. the system was developed by (J.T Fakoya, 2021) using Visual Basic.Net as front-end while MS -Access was used as the back-end. The basic functions of the application were user management, uploading completed projects and downloading existing projects.

## **Materials and Method**

### **System Design**

The proposed Employee Management System is a web application that uses MYSQL Server as its database and acts as a bridge between users and the database, which houses all of the data. Its purpose is to enable the administrator to collect and save personnel information and records. The application also performs the leave management system task, which keeps track of all of the organization's employees' leave, allows for easy retrieval of information without the need for human intervention, and allows managers to manage their employees' leave and mark their leave dates. Furthermore, it will abolish the paper/file system, which will

solve the current system's problems. Finally, it is revealed that this system would not only automate the entire procedure, but it will also save time for the administrator, which can be put to better use for his institute.

The core features of the platform are:

Admins of the platform can

- Create new staff profile
- View department staffs.
- View Head of Departments profiles.
- Upload / Update staffs' credentials.
- Manage leave application.

The HOD section

- View staffs of the department.
- View staffs holding various position.
- Update new level adviser information.

Staffs can

- view their Bio Information.
- view their Academic information.
- view their Work information.
- view their Emergency Contact Information.
- Apply for leave.
- Check their leave application status.

The interaction of the different sections of the system is depicted in the system design flowcharts (which comprises of the admin flowchart and user flowchart) and the use case diagram shown below:

### System Flow Chart

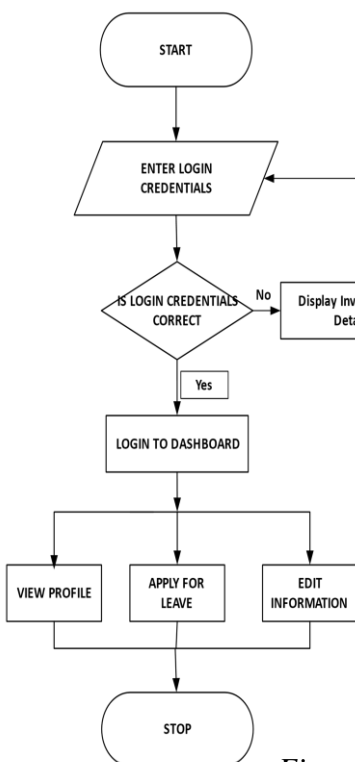


Figure 1 User Flowchart

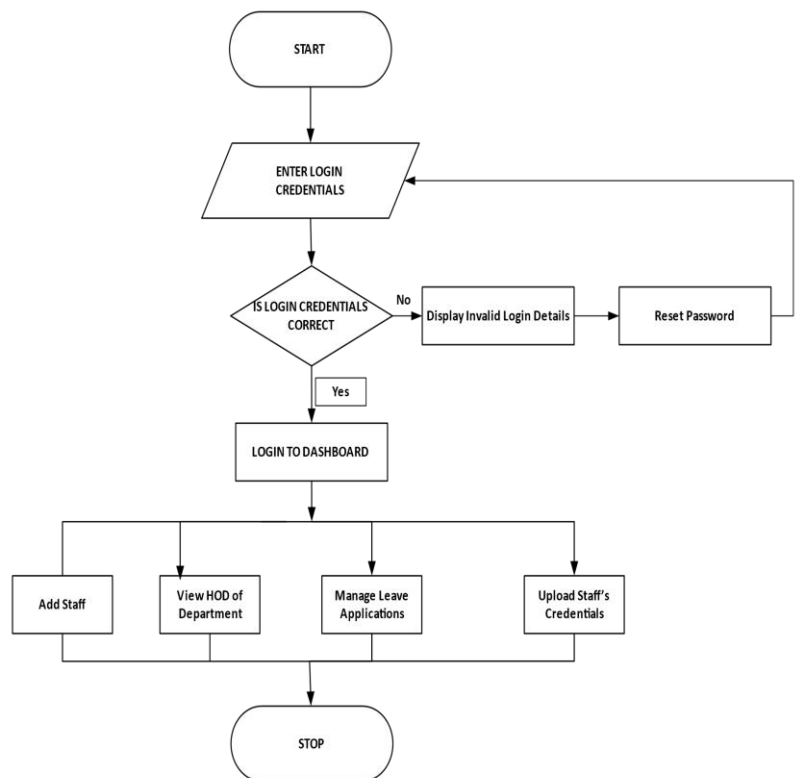


Figure 2 Admin Flowchart

### Use case Diagram

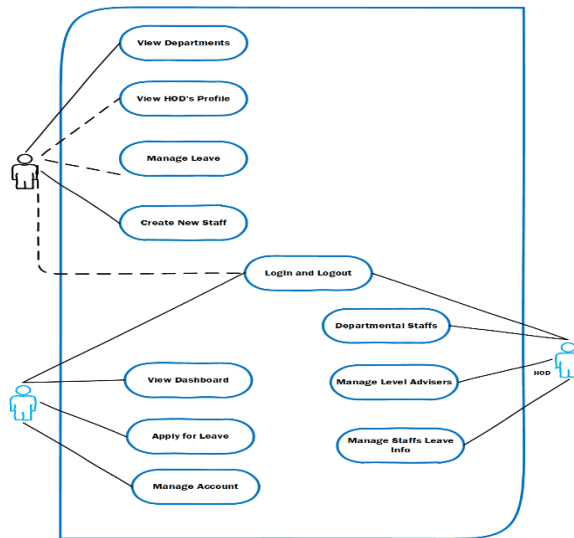


Figure 3 Use Case Diagram

### Implementation Procedure

The developed system utilizes MySQL 8.2 as a backend database, PHP 8.2 as a scripting language, Bootstrap CSS framework, and JavaScript as front-end and JQuery library for AJAX call. The system is designed to provide an efficient way for alumni association management and interaction.

- User login: Staffs can login using a valid username and password.
- Data management: The system allows the administrator to manage staffs' information and other data relevant to the platform.
- Search and retrieval of information: Admin can search and retrieve information from the platform using different parameters such as staff's ID, and staff's name.
- Data security: The system is designed to ensure that sensitive data is protected and only accessible to authorized users.
- Robustness: The system was tested using both valid and invalid data to ensure it can handle different inputs and prevent errors.
- Scalability: The system is built to be scalable and can handle an increased number of users and data.

### Results and Discussions.

The results of the system have shown that

The developed system can handle errors, updates, and modifications more efficiently, as changes can be made quickly and easily through the user interface. Furthermore, the system is accessible from anywhere and at any time, as long as the user has an internet connection. This allows staffs and admins to access the portal.

The developed system has been implemented and tested and some of the interfaces of the developed system are shown below.

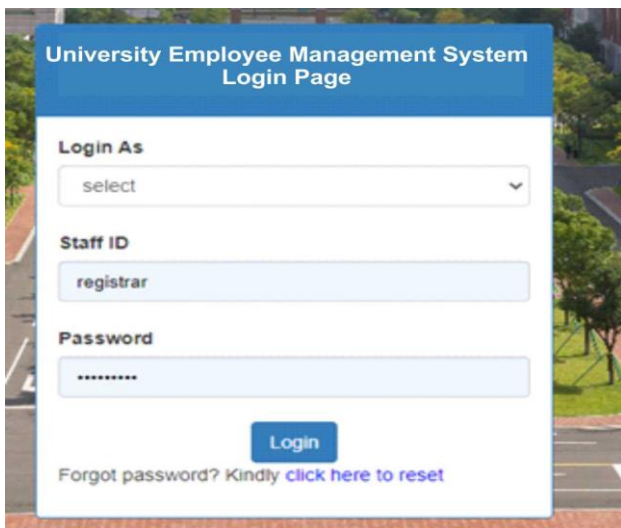


Figure 4: Login Interface

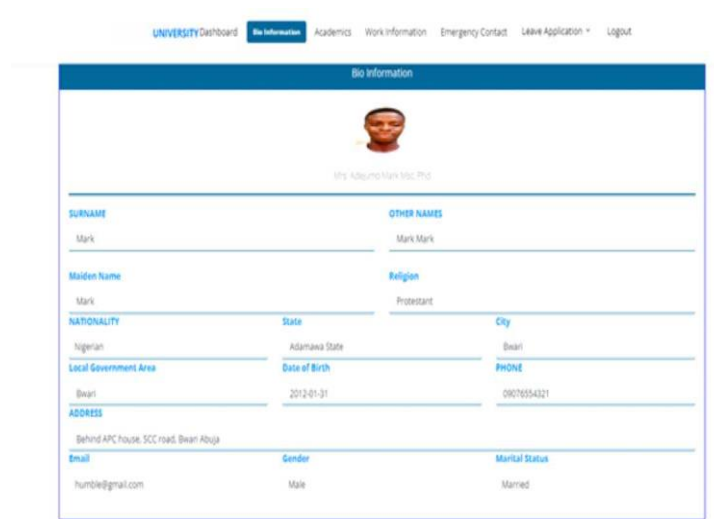


Figure 5: Staff Bio Information Dashboard

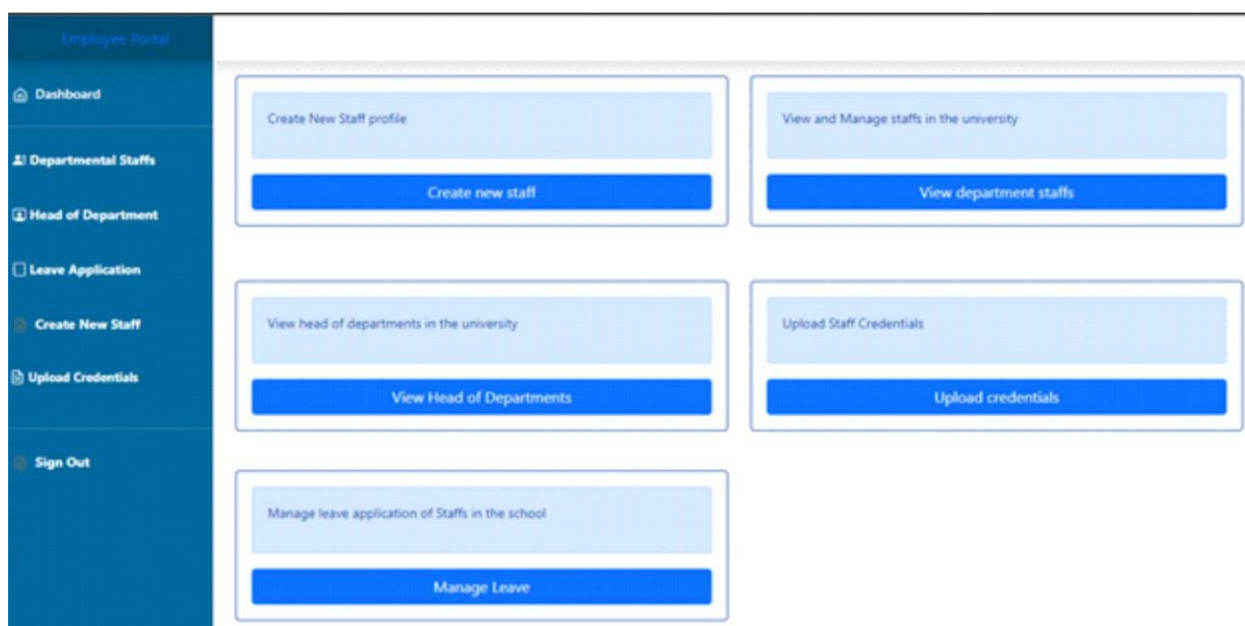


Figure 6 Admin Dashboard.

## Deployment and Installation

The system is hosted on a shared hosting platform. User can access the platform through the registered domain name.

## Server Requirements

- The web-based Alumni employee management system makes use of web server hardware and software that is industry standard. The minimum requirements needed for development are:
- Apache Server
- MySQL
- Windows
- Minimum of 2GB RAM and 160GB HDD ROM.

## Conclusion and Recommendations

In conclusion, employee management is a crucial aspect of any university's operations. A well-designed employee management system can improve employee satisfaction, retention, and performance. This paper has discussed the development of an employee management system for Nigerian universities. Various components of the developed system have been presented and how they can be adapted to the unique needs of a university setting. A good employee management system can provide valuable data and insights that can be used to make informed decisions, improve processes, and develop more effective strategies. Overall, investing in an employee management system is an important step for universities looking to build a strong and successful workforce and achieve their academic goals. In subsequent works, the developed platform will be integrated with the system bursary and payroll system.

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