

**DESIGN AND IMPLEMENTATION OF AN AUTOMATED SCHOOL  
REGISTRATION SYSTEM: A CASE STUDY OF EKITI STATE POLYTECHNIC  
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**ABSTRACT**

*The use of a computerized system in the campus is to keep track record of all students and employees of the polytechnic. All the data that the campus required are stored in connection to the students, and the employees. The issue with student registration (the currently utilized manual approach) is extensive; it varies from time-consuming, tiresome, and expensive to a lack of effective record preservation and data loss, which is frequently caused by carelessness or even attack by natural catastrophes. The purpose of this study is to proffer a solution to manual registration and develop a web-based automated registration system for Ekiti State Polytechnic (ESKPOLY). The system was developed using HTML, CSS and JavaScript for the front end, PHP programming language was used for the linking the front end with the backend database which was developed with the MySQL database.*

**1.0 INTRODUCTION**

School Auto-registration is a system that eliminates the need of filling papers manually and sending them to a registration office. When using auto-registration system the participants can simply register at their convenience and submit their information immediately (Digital, 2022).

The automation process works by predetermining the decision criteria, the subprocess linkages, and related actions as well as encoding those predeterminations in machines. The process of automation refers to a broad range of technologies that minimize human interaction in processes. (Mikell, 2014)

When a person enrolls as a prospective student in any higher education institution, a record containing the student's information

is created. This information includes the student's full name, sex, date of birth, marital status, religion, state of origin, nationality, and permanent address, among other things. However, a student registration system can be described as a method of offering sufficient resources for assessing, developing, and recording student-related records, such as: the student registration process, the payment system, and their academic records. Over the years, most organizations and even institution has benefited from the technological advancements been one of the Institutional processes which have been made easier to work with. Asaf, (2002) mentioned that with just a mouse click, an automated system can communicate with your member or applicants, enhancing your relationship with them, make email automatically sent when a user completes a particular action in your application, such as making purchases or submitting, a form. You

may even schedule bulk newsletter and mailing, as well as automated reminder emails.

The use of a computerized system in the campus is to keep track record of all students and employees of the polytechnic. All the data that the campus required are stored in connection to the students, and the employees.

Student payment database entails keeping the record of any fund or payment made by the student record to the school. It is a means of storing fund payment in an electronic way by the use of computer system and also be able to issue out receipt for clarity. The student database system can be done by developing a standard software using any attractive package for designing it and using it with a strong database like oracle or SQL database to be able to store the student record, retrieve, delete and edit the saved student record for any additional data of the student.

The Ekiti State Polytechnic makes use of manual registration which is very stressful. The collection of data in manual registration includes the carrying of files and making of photocopies and which takes a lot of time before completion.

The investigation and creation of a computerized system for student registration, sectioning, and record-handing will be the main focus of this research. The studies of storage management and the need for student information for administrative planning also defined the need to focus attention on registration procedures and student record systems. This paper will outline a system that will be developed at Ekiti State Polytechnic and explain the study's findings. The basic system will be discussed along with the procedures involved. This will also examine the application of computer technology and scientific management techniques to the area of student registration and student records. This report will present the results of this study and will describe a system that will be developed for Ekiti State Polytechnic

Isan Ekiti.

## 2.0 LITERATURE REVIEW

Ambrose et al., (2020) developed an Automated E-Campus System.

In their study, they discussed that it is impossible to overstate the importance of information technology in today's culture and in our daily lives because it is essential to completing tasks quickly, effectively, and efficiently. Barriers like distance, time, and place have been eliminated in part thanks to the development of the Internet. Some universities encounter a variety of difficulties, including those related to fee payment, course registration, housing reservations, exams, and adequate and effective learning. These issues have repeatedly arisen for both students and school administration, which has significantly hampered production and efficiency at most colleges. Thus, their research worked on creating an automated e-campus system for on-demand learning in a classroom setting. MySQL served as the database while PHP was used to create the system. The approach has the potential to give kids a more effective education and boost teachers' efficiency.

An Automated Inventory Management system was designed implemented for Segofar Technical Services when the company faced difficulties with disorganized business procedures which resulted in duplicate records and redundant data, delays in providing customer services, excessive paper works that take a lot of space, bad decision-making when restocking products, and the inability to keep track of available stock was developed by Irene, (2011). By creating and executing a prototype inventory management system capable of product registration, sales and profit maximization, and stock control, the study was able to address the aforementioned issues. Interviews and document reviews were successfully used to obtain data for the qualitative study, which used the Software Development Life Cycle (SDLC). The system was designed

utilizing the prototyping techniques. It was determined and advised that business processes needed to be computerized in order to increase sales and profits, achieve customer happiness, control and monitor inventories, keep track of customers and their contacts, and compete favorably in the competitive market. Nearly all of the research's goals were met, and the developed prototype could be further developed into a fully functional system that the company or any other business could use for information management

Ezenma, et al., (2014) implemented a Result Processing System for Public Secondary Schools in Nigeria. The inadequacies with the manual process of compiling student results in secondary schools in Nigeria were examined in this study. To do so, preliminary analyses of the state of the manual record-keeping were conducted at a few chosen secondary schools in Nasarawa. After identifying the issues with the manual result processing, a new system was suggested, created, and put into use. In this study, a computer software program was created to make the automated processing of the findings easier. The software was created using the relational database management system MYSQL (My Structural Query Language) and the PHP (Hypertext Processor) programming language to design the database. The system provided the desired result when tested. For recording student test and exam results, teachers do not need to draw vertical or horizontal lines on a large piece of paper, nor do they need to perform any type of math because the system does almost everything for them. The printing of result booklets for each student is also unnecessary. Results can be printed on A4-sized paper or embossed cardboard paper that has been cut into that size. The embossed cardboard paper has a certificate-like appearance and looks more attractive, and it is less expensive than printing result booklets and relieving teachers of the stress of preparing students' results. By reducing the time and effort required for result preparation, the program will lessen the stress associated

with the teacher's work and free up more time for teaching and other instructional concerns. In both public and private secondary schools, this new system is adaptable and can be changed to accommodate any type of student record keeping and data processing.

Adeniran, et al., (2019) developed an Automated Attendance Monitoring System for a Nigerian University using Radio Frequency Identification (RFID). They mentioned that the practice of recording attendance at any institution, including universities and other tertiary institutions, is crucial to demonstrating a student's quality. The traditional attendance management method, which uses an attendance sheet and requires signatures, has shown to have some related issues, including time wastage, fake attendance, and attendance sheet misplacement, which renders the system inefficient and unproductive. Microsoft Visual Basic and Microsoft Access were used to create the program. An RFID-based Attendance Monitoring System (AMS) that automatically records attendance and computes percentages by scanning the Unique Identifier (UID) of a tag that represents each student was successfully built and implemented as a result of their research. The created system has proven to be efficient enough to process data obtained from the attendance taking process at any institution, including universities and other tertiary institutions.

Ridwan, (2020) developed a Pupil Registration and Result Computation System. In their research, they discussed the computer and its advancements as essential tools for the economic, industrial, and social advancement of mankind. In order to replace the manual system that the school was using for student registration and result computation, this project was carried out. Microsoft Access was used as the database and Visual Studio.Net was used for system development. A survey of pertinent and related literature were reviewed in order to understand better comprehend the nature of the system. To comprehend the system's

functional and non-functional requirements, a thorough requirements elicitation was conducted. The database holds each student's entire registration and academic information. The system was protected from unauthorized users and extremely secured.

### 3.0 METHODOLOGY

The designed system was created by doing an analysis of the current system and automating the processes that surround it. Prior to the determination of what the school registration system should be, information was gathered on the current system of administering the different type of registration in the institution.

The list of existing systems includes;

1. The administrator compiles all the student data into a file according to each department.
2. Students filling out paper forms and submitting them to the administrative office for approval.
3. The administration receives forms and decides whether to approve or reject them based on specific criteria.

The following problems were discovered to have plagued the current data processing method.

1. Inefficient and ineffective (forms may get lost)
2. Expensive to use because the method uses paper, which might be too expensive.
3. Because the form is only available in-person at schools rather than online, students must pick them up when they are available.
4. Records of the students may not be managed appropriately, making it challenging to store and retrieve inherent information.

#### 3.1 Design of the system

In this system, individual system components was built and tested. This involves the use of HTML, CSS, JavaScript, and MySQL to support and provide front-end and back-end programming of the

system database and develop the graphical user interface, and communication between the graphical user interface and the database. The Online Registration Portal's database, which contains all the names of students, and general information on registration, was designed using HTML, CSS, and JavaScript for the front-end design while PHP is the programming language used to communicate between the front-end and back-end while the back end database used a Sequential Query Language (MySQL) database

The system works such that the records of each students are created using their JAMB (Joint Admission and Matriculation Board) registration number captured from the list of admitted students sent to the School by JAMB. The students will thereafter proceed to edit their bio data on the portal using their JAMB registration number as their login details. These biodata includes details such as Full name, Date of birth, Email Address, Phone number and password. These fields were created using HTML forms. However, to delete or edit the details.

Also, the administrator can also be able to manage each departments on the system; these includes updating information such as the school fees for each department, course codes and lecturers such that each students who logs into the system can easily familiarize themselves with their departmental details without much hassle. The administrator can also manage their details on the portal, updating their profiles and also add another administrator.

The use case diagram of the system is shown in figure 1

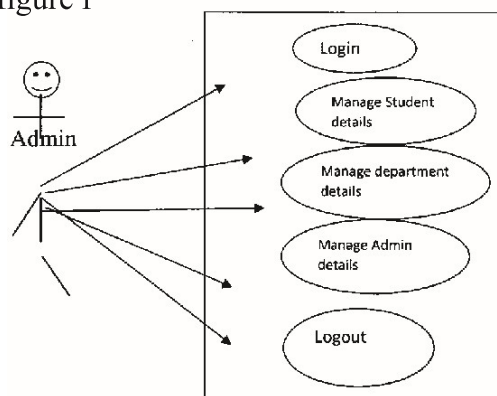


Figure 1: Use case diagram of the System

## 4.0 RESULTS AND DISCUSSION

To demonstrate and identify an operational system that is implemented on a computer system and is thoroughly documented, the system was developed on a web platform using development tools like HTML, PHP, CSS, JavaScript and MySQL. VS Code was used in writing the programming languages while XAMPP was used as the localhost server. The system was tested with different web browsers and they performed excellently well on a system with minimum specifications of 2 gig RAM, 160 gig Hard disk, Intel Dual Core processor and 1.7GHz processor speed.

### 4.1 IMPLEMENTING THE SYSTEM

A computing service must do research on what its supporting infrastructure needs to do in order to support the institution's mission objectives and strategic direction. Additionally, they must be receptive to and flexible in order to meet the expectations of their customers.

The following factors need to be taken into account in order for this project to be implemented with some degree of success.

1. Management of online registration data.
2. Ongoing maintenance and improvement of developed systems and infrastructure.

### 4.2 HOW THE SYSTEM WORKS

Only the user interface is run on the client side; the database itself is run on the server machine. It improves database speed while lowering network traffic.

The database manages the activities of manipulating the database files kept on the file server using a program that runs in the server computer. The client database software will then ask the database program to do and manipulate certain actions on their behalf.

### 4.3 USING THE GRAPHICAL USER INTERFACE FORMS

The graphical user interface was designed with HTML, CSS and JavaScript, which gives it a beautiful and interactive look. The system was designed with the user in mind thus it is user-friendly and easy to navigate. The flow of the system is such that when a user enters into the system, it takes the user to a login page which is shown in figure 2

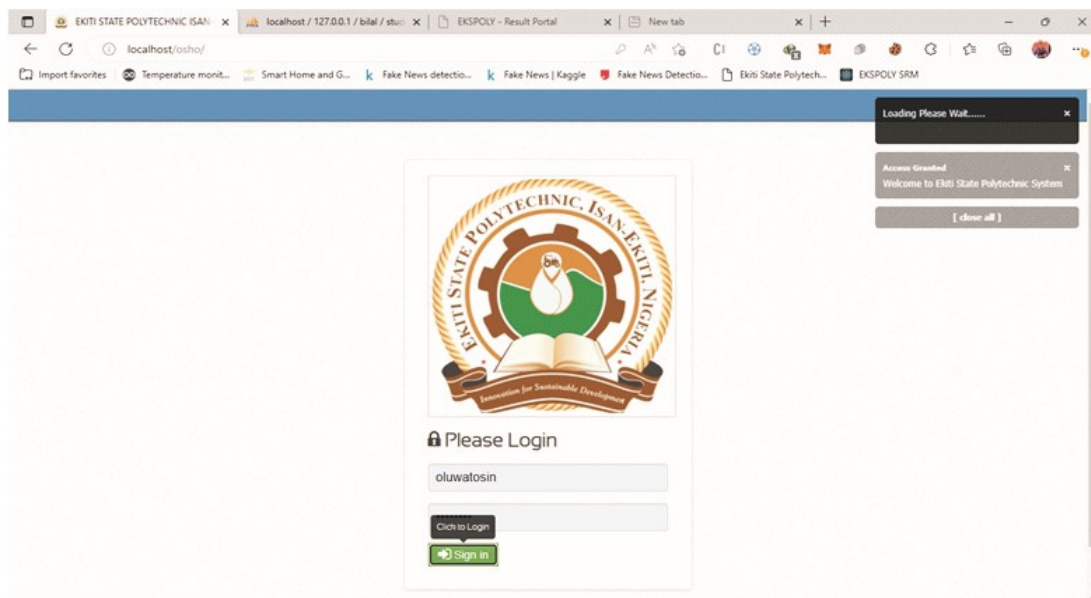


Figure 2: The login page of the system  
 After the user has successfully logged in, it shows an alert of welcome to Ekiti State Polytechnic, after which the user is taken to the dashboard. If the login details are

incorrect, the system shows incorrect login details and the user cannot proceed to use the system. The dashboard which is shown in figure 3 shows details about the user, students and departments

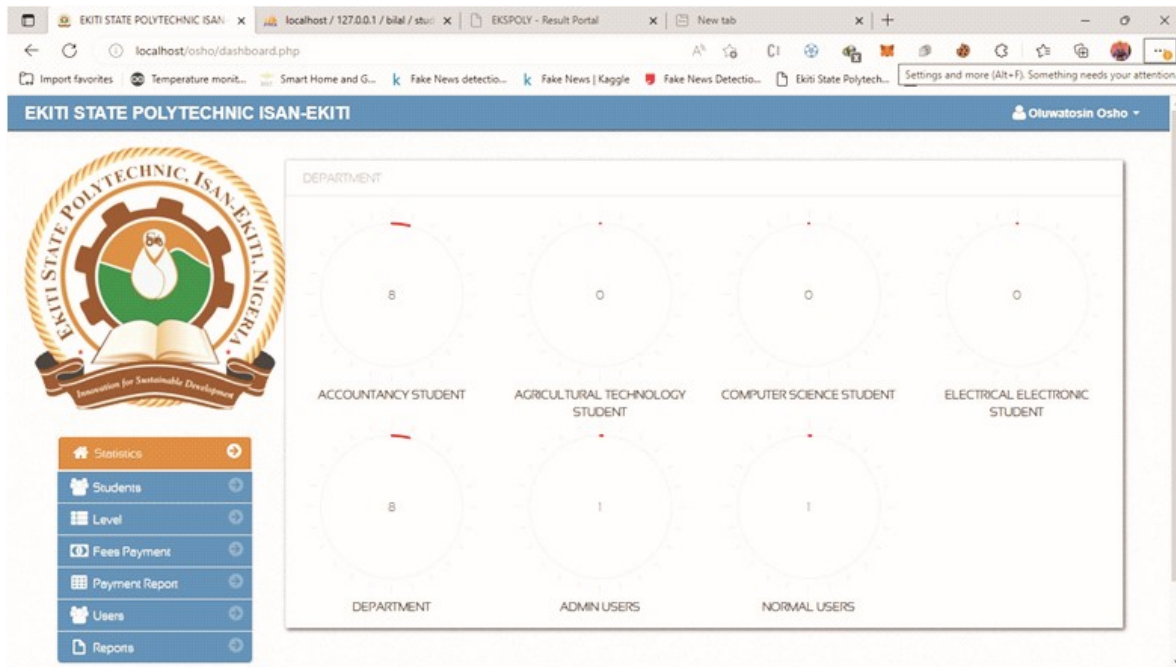


Figure 3: the dashboard of the system  
 The user can proceed to view the already registered students as shown in figure 4.

These shows the details of the students and actions the user can take on individual students

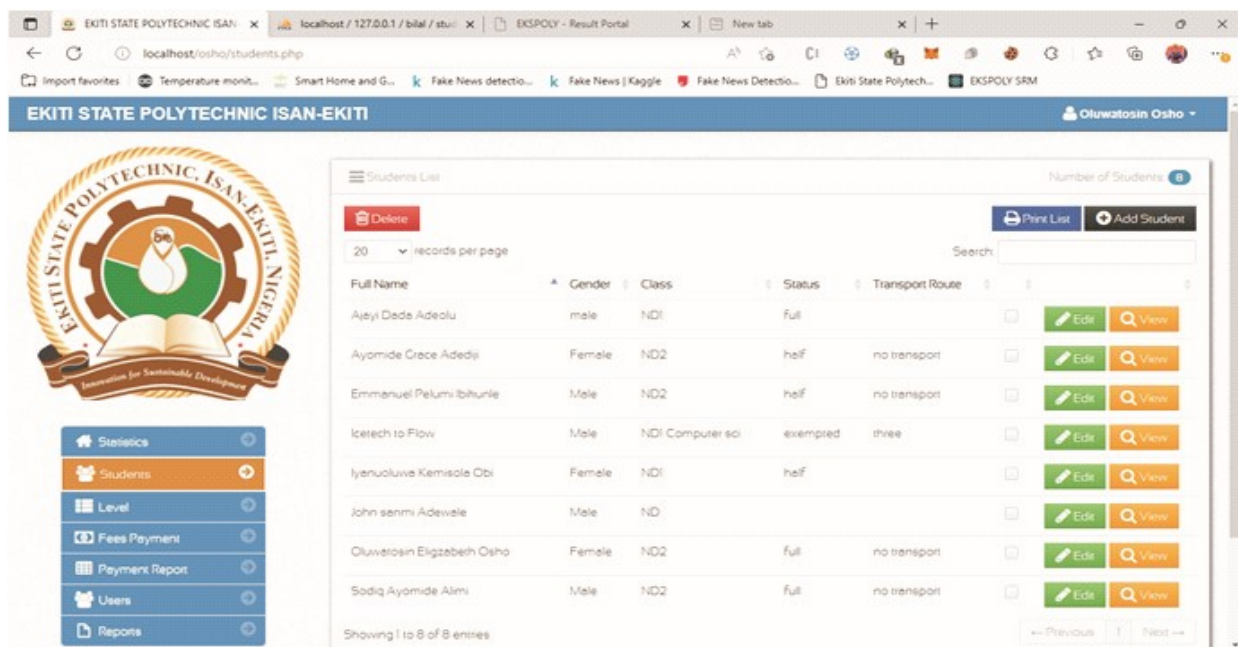


Figure 4: View Students' Page

Adding new students involves the collection of basic student data like their names, date of birth, address, level, and so on. After registration, the user can view the data.

Above the data, there are two icons showing whether to print the list or to add the student. The interface for adding the students registration data is shown in figure 5

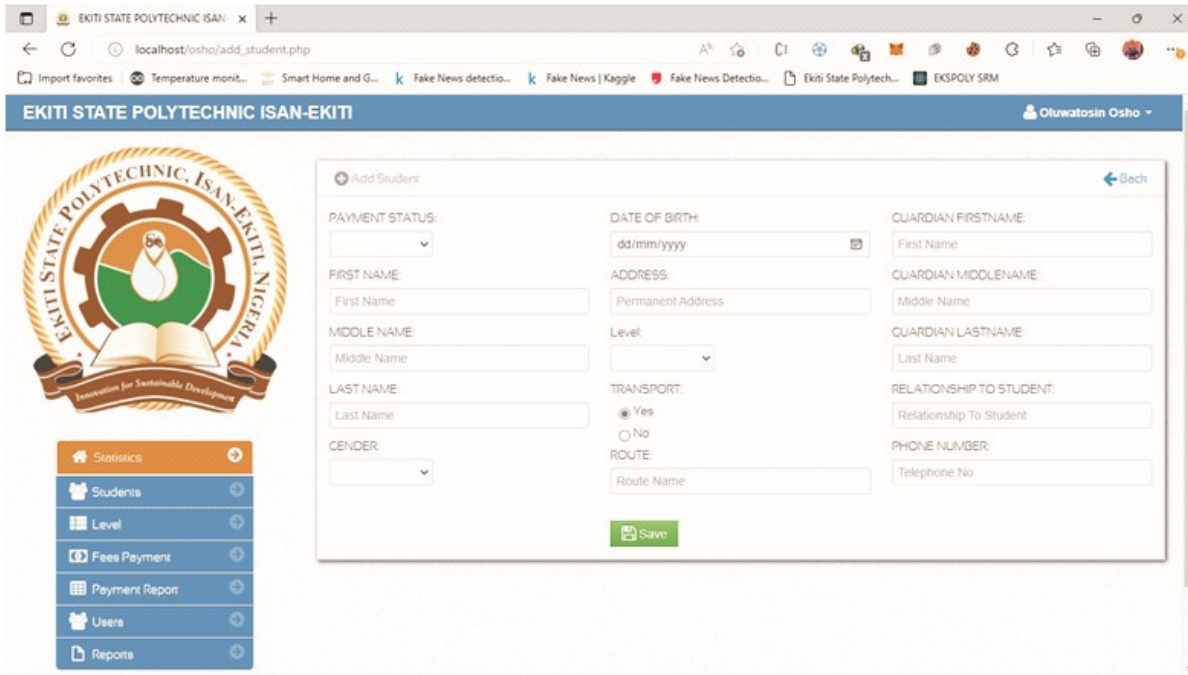


Figure 5: Page for adding students data  
In order to add departments and amount fees for each department and level, the level page

is used. This page also displays the already existing departments, levels and fees. This is as shown in figure 6.

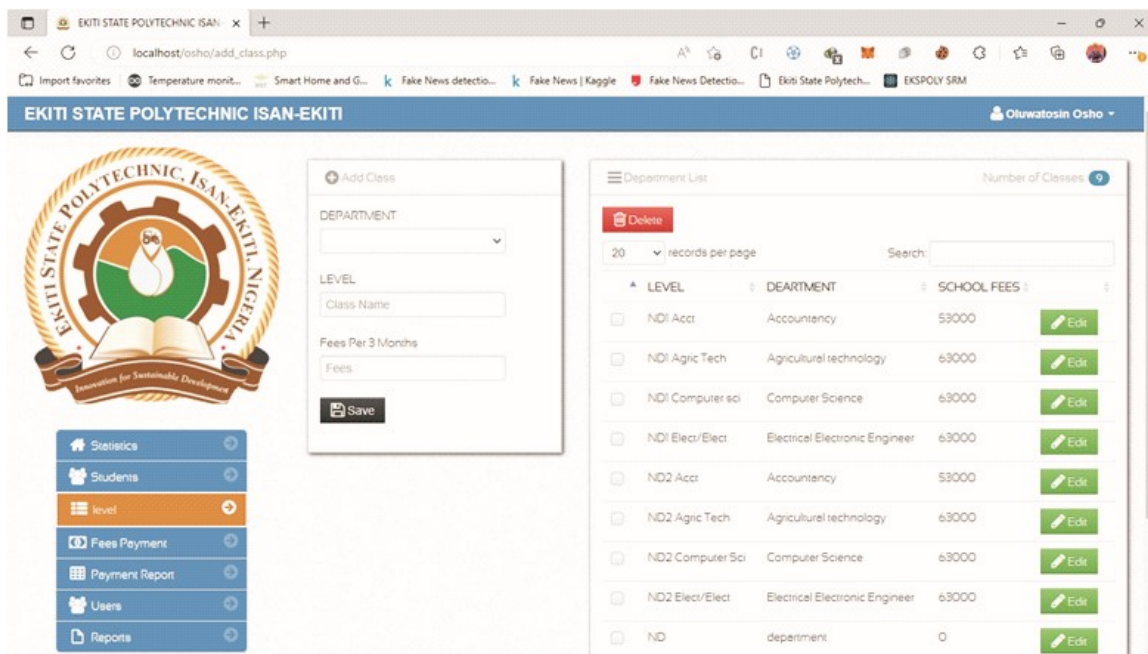


Figure 6: Page for adding and displaying the level, department and school fees  
The Admin is also able to add other users and assign roles to each user. The added

users will be able to use the system relative to the roles they are assigned. The page also displays details of already added users as shown in figure 7.

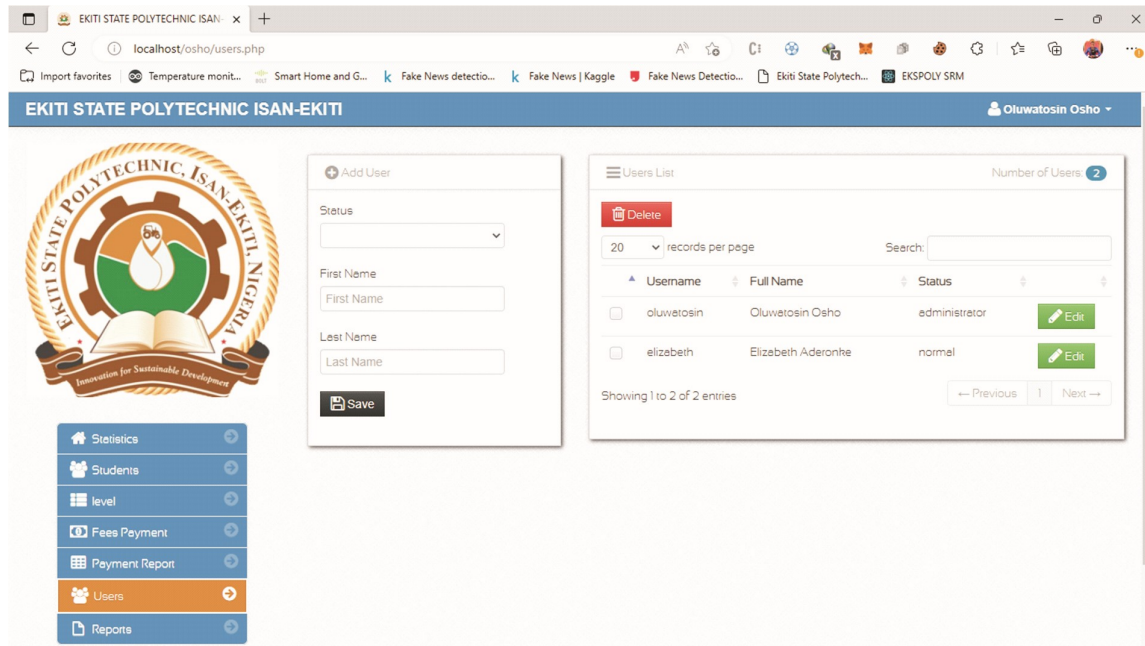


Figure 7: Page for adding and viewing users to the system

## 5.0 CONCLUSION

This research examined the development of an automated registration system at Ekiti State Polytechnic, Isan-Ekiti, Ekiti State, Nigeria. The study also investigated the acceptance and use of automated registration by studying different literatures. The benefit of the automated system is a reliable, stable, and expansive registration process. The system was developed using HTML, CSS and JavaScript for the front end, PHP programming language was used for linking the front end with the backend database which was developed with the MySQL database. The MySQLDatabase Management System was used to hold the information collected from the students. Future work may incorporate mobile learning and use of artificial intelligence in improving the educational sector.

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