

# DESIGN AND IMPLEMENTATION OF WEB BASED ADMISSION SCREENING SYSTEM IN EDO STATE POLYTECHNIC

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## Abstract

*Due to the fact that Edo State Polytechnic students and admissions office staff encounter the same kinds of problems every day, we have concluded that a computer-assisted admission system would be the most effective way to handle student records and spare our school the shame that comes from dealing with student complaints. The development of a database computer program is our primary goal in creating and implementing an online student admission system. This program will provide an automated online admission processing system, which will speed up the admissions process, eliminate or greatly reduce the amount of manual labor required, and make the system more user-friendly. Further allow the admissions and registrars to process and organize the numerous students' activities at the school in a timely, accurate, and error-free manner. A student's admittance system and its development and, more specifically, its successful usage for the setup's day-to-day operations, are detailed in this project.*

**Keywords:** Admission Screening System, Computer Programme, Data base, Design, Web Based

## Introduction

The admissions process is crucial to the functioning of any educational institution since students are the lifeblood of any polytechnic. Because it involves human interaction, which is inherently error-prone, an inefficient admission application procedure might lead to a decrease in the number of students admitted to the prestigious university. The goal of this project is to address the problems with the current admissions system at Edo State Polytechnic by creating an automated system that will usher in this new era. The suggested setup: The front end of the automated admission processing system will be built with HTML, CSS, and PHP, while the back end will be built with MY SQL database management system. (Desilie, 2015) and administering WordPress websites.

Those interested in enrolling as new students still need to visit the registration counter that the Academic Bureau opens each day to complete the paper-based admissions procedure. Before they may get their paperwork at the registration counter, they need to bring hard copies of the necessary documents and verify their payment for the registration fee at the finance department. Next, the cashier enters their daily data into the computer to generate the summary. Especially during the registration period, reentering the registrant's data into the computer wastes a lot of time, making this procedure inefficient. Another issue that developed was that the police still had to manually determine the participant's serial number code, which led to frequent numbering mistakes and

participant confusion. Prospective students also face this issue, since they are required to print paperwork for long periods of time. Because of Maluku's location, prospective students from outside Ambon Island incur higher travel and lodging costs than those from within the island.

This research intends to address these issues by developing and launching an online admissions system for Edo State Polytechnic, Usen. Statistical information on registration for each study program and faculty, registration and payment details, and analysis findings may all be shown by this system, in addition to effectively recording student registration data (Liu *et al.*, 2012).

Prospective students and law enforcement officials will also find the registration procedure facilitated by this method. Instead, then waiting in line for hours at campus, prospective students can register online from any location. Counter personnel will have an easier time processing registration paperwork and personal information from individuals who have already registered. Several scholars have also reviewed prior work on the admissions process. Aiming to build and implement an Android-based registration information system, Pramana, *et al.* (2019) conducted study entitled "Android-Based New Student Registration Information System" (Pramana *et al.*, 2019). Using the CodeIgniter (CI) framework and Application Programming Interface (API), Simanullang, *et al.* (2021) investigated new student registration information systems. Their goals were to improve service for potential students and eliminate manual registration issues at registration locations through the use of the Waterfall method (Simanullang *et al.*, 2021). Furthermore, Priyanto and Sirajuddin (2018) published a study titled "Web-Based New Student Registration Information System at the Wiratama Polytechnic of Science and Technology, North Maluku" that explored similar territory.

The purpose of this research is to use the waterfall approach to create an admissions system for the Wiratama Polytechnic of Science & Technology in North Maluku (Priyanto & Sirajuddin, 2018).

## Literature Review

Students attend higher education at colleges and universities through the admissions procedure. Different countries and even different institutions have vastly different systems. Many Nigerians are looking closely at the country's policies and practices around school admissions right now. This is due to the fact that there are flaws in the system and people feel the system isn't doing enough to improve school profiles and accomplishment

profiles that are desirable from different viewpoints. According to

Iwhiwhu (2015) Applicants to universities often submit their applications during their senior year of high school or the first year of community college in many nations. The administration of standardized entrance examinations and the processing of applications is centralized in several countries by either independent organizations or government entities. Afolabi (2016).

Because students are the lifeblood of a university, admissions processes are an integral element of every institution's operation. A university cannot function without students, making the admissions process one of the most crucial parts of the institution. As a result of human error or an excessively long processing period, fewer students may be admitted to an institution with a flawed admissions system. As a prospective student, you may start the application process by going straight to the universities and polytechnics' websites and filling out their specialized online forms. The following phase is for the Admissions service center to go over the application and make sure everything is in order, from the form to the supplementary financial documents such language and degree certificates. The year 2016 was Enwere's. The secretary of the relevant department will get in touch with the prospective student and make arrangements for the submission of any missing information if any is needed. Each prospective student's application is subsequently sent to the Admissions Tutor of their specific department, who has the last decision on acceptance or rejection. The Admissions Tutor looks over the application and any supporting materials before making a decision, comparing the applicant's academic background to a database of university rankings and comparable applications.

Afolabi (2016). Each polytechnic has complete discretion over the admissions process. Among other things, they will look at the results of the school leaver exams, both expected and actual, while making their choice. Most institutions also utilize secondary admissions criteria, as the number of candidates with good A level grades is growing. Examination scores from GCE, WAEC, or NECO (or an equivalent), application references, and personal statement details may all be part of this. Universities have the right to reject applications based on the personal statement, which has led to the rise of a cottage business providing students with doctored statements in exchange for money. The personal statements typically include the following: the applicant's motivations for applying to the program, their strengths in relation to the program's requirements, their relevant work experience, their extracurricular activities, and any other pertinent information. Admissions tutors may often only gauge an applicant's character and level of interest in the topic through this method. Some schools require applicants to go through an interview process in addition to filling out an application.

"Polytechnic admission" refers to the steps that prospective students must take in order to enrol in a polytechnic school for higher education. As they approach their senior year of high school, many nations' potential polytechnic students submit their applications. Afolabi (2016).

The administration of standardized entrance examinations and the processing of applications is centralized in several

countries by either independent organizations or government entities. The Joint Admissions and Matriculation Board is the federal government institution in charge of undergraduate admissions in Nigeria. It oversees admissions to universities, polytechnics, monotechnics, and colleges of education and agriculture. For the purpose of admitting students to schools in Nigeria, the organization administers the Institution Matriculation Examination. Students can get into Edo State Polytechnic if they have five credits in their 0-level results (including English, math, and three other relevant subjects) and if they choose Edo State Polytechnic as their first or second choice on the JAMB exam. By Iwhiwhu, (2015) and others.

Education is all-encompassing. Our civilization is built upon it. Inquisitive brains may be shaped into intellectuals through the stimulation and molding that education provides. Expanding one's knowledge through higher education allows one to think more critically and gain a more nuanced perspective on the world. In order to have a better understanding of our society, its educational systems, and the advantages of higher education, we consult the following education and higher learning resources. Many tools are at your disposal to assist you in making your school more environmentally friendly, thanks to the growing number of people concerned about environmental issues. Teaching is the first and most crucial step in bringing about environmental improvement at your school. Making the required modifications will be less of a challenge and more likely to stick around once both students and educators are more informed and conscious of the situation. (Iwhiwhu, *et al* 2015).

Teaching individuals to think critically, creatively, and artistically has long been a goal of human civilizations. Only when individuals have learned to trust information and deliberate methodically has this occurred. Formal and informal educational settings coexisted. Intellectual exploration and practical experimentation have long been acknowledged as valuable teaching tools by major thinkers. This is Matt (2016).

#### **Methodology**

**(include study area/site/subjects, data collection and data analysis)**

Analyzing a system (like a process, a company, or a physiological function) mathematically to determine its aims and objectives and to find the most effective operations and procedures to achieve them is the essence of system analysis. An integral part of creating a system is doing some kind of research or study on it. This study makes use of the observational technique, a tried-and-true strategy for collecting reliable information, to fill up its data set.

The process of designing a system include preparing to build a new system in line with the requirements and school admissions standards. The admissions committee and the students applying for admissions were the intended users of the software.

The new approach for processing student admissions accounts for the most pressing problems with the old system. This is to propose new technology and processing enhancements that would fix application and record keeping issues. Service to applicants, admitted students, staff, and professors will be enhanced in speed, quality, and correctness

with the proposed new system.

Throughout the study process, the Agile Software Development (ASD) methodology was utilized. Worldwide, software developers prefer this model over more conventional ones like Waterfall due to its speed, sustainability, ability to adapt to changes, and user interaction throughout development (Dima & Maassen, 2018; Jain *et al.*, 2018; Shastri *et al.*, 2021)



Figure 1 . Agile Software Development (ASD)

#### Method

Software development using the ASD method has several models, and the model used in this study is the Scrum model (Al-Saqqa *et al.*, 2020; Curcio *et al.*, 2019; Dima & Maassen, 2018; Jain *et al.*, 2018). The Scrum method divides software development into small, iterative processes which are usually called sprints. The Scrum model on ASD is shown in Figure 2 below.



Figure 2: The Basic Principles of the Scrum Process

According to Linz (2014), the first step of the Scrum methodology is to develop a Product Backlog. This document includes a list of user priorities (Linz, 2014). Subsequently, this list of priorities is split into many sprints, with each sprint responsible for completing a certain task.

#### Requirements Analysis

Here, we gather data by interviewing relevant parties and seeing the current system in operation in order to conduct an analysis of system needs. New student registration criteria at Edo State Polytechnic, Usen were also the subject of a literature review.

#### Design

The Unified Model Language (UML) is used for software modeling throughout the design stage. As an example of a standard language for object-oriented programming, UML is utilized for requirements definition, analysis, design, and architectural description (ASR & Salahudin, 2019). Here, activity diagrams and use case diagrams are employed for modeling purposes.

#### Implementation

A code-based software is used to put the design outcomes into action. This application was developed using the Hypertext Preprocessor (PHP) language in conjunction with the Continuous Integration (CI) environment. Model-View-Controller (MVC) is a software development pattern that CI employs, as mentioned in the preceding chapter.

#### Testing

As a means of assuring the software's quality, testing is conducted for the purposes of verification and validation (V&V) (ASR & Salahudin, 2019). This phase of testing employs the Black-Box Testing methodology, which examines the software according to the functional requirements of the application. All of the software's features are tested to ensure they meet the necessary

standards (ASR & Salahudin, 2019). The current manual admission system might benefit from the automation or computerization of many human-intensive tasks.

For instance, we can;

1. Handle application process
2. Store student records in the database
3. Allow students to fill the registration form online
4. Process the submitted forms.
5. Compute names of students that meet up with admission requirement.
6. Enable students to check their admission status earlier.
7. Display information about the university online
8. Advertise the university online
9. Also update the database regularly.

## Results and Discussion

### System Modeling

The initial stage of the ASD approach using the Scrum methodology is to examine functional and non-functional needs. This stage's findings feed the information system that will be developed in accordance with the 2020 Regulation of the Rector of Edo State Polytechnic, Usen about the Admission System for OND and HND Programs at Edo State Polytechnic, Usen. We also counted the number of participants (Users and Admins) in this survey. Next, software development models are created using UML during the design stage. Figure 3 and Figure 4 below provide use case and activity diagrams, respectively, that convey the outcomes of the design and modeling.

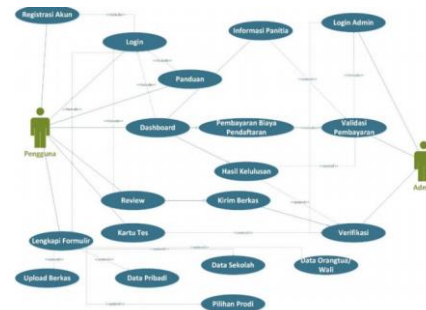


Figure 3. Use Case Diagram of Admission System

Through the use case diagram, users are able to accomplish the following: register, log in, examine the system usage guide, access the dashboard menu, fill out the form, and check the results that have already been submitted for admin verification. After the administrator has confirmed that the user's payment for the registration fee is genuine, the user will be able to enter their details and access committee information. After the file has been approved by the administrator, users will also be able to view the graduation results. The Complete Form menu offers several options, including Personal Data, School Data, Choice of Study Program, Upload Files, and Parent/Guardian Data.

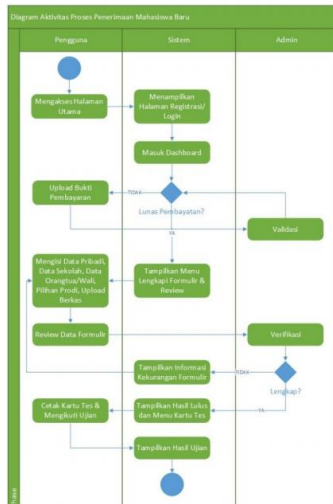


Figure 4. Activity Diagram of the New Student Admission Process

Design of the automated admission processing system is aimed at achieving some set of objectives.

- 1 A user-friendly interface
- 2 Strong and reliable database for storing and retrieving admission information.
- 3 Easy processing of admission information after filling and submission of forms by the student.
- 4 Strong security by the use of password and user name to control access to certain privileges.
- 5 Keeping admission records.
- 6 Easy decision making.

The following inferences may be made from the fruitful outcomes of the requirements gathering, design, coding, and testing processes:

1. Being end-user-centered, the ASD technique may facilitate and accelerate software development while also being adaptable to user demands.
2. This system manages online admissions of new students and helps the admissions committee at Edo State Polytechnic, Usen handle research challenges. Students may enroll at any time, from any location, and the system

can streamline the admissions process, making it both quicker and cheaper for everyone.

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