

Design and Development of Online Clearance System for Tertiary Institution: A Case Study of Tai Solarin University of Education, Ogun State, Nigeria

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ABSTRACT

Online clearance system is an internet base research work that will help ease the queuing system in the university's clearance process. Online clearance system will build an effective information management that is very convenient to use for schools since it is internet based and can be accessed from anywhere. It is aimed at developing a computer software system that replaces the manual method of clearance for graduating students and that also help students to carry out their clearance without coming to the various offices for clearance. The designed software will serve as a more reliable and effective means of undertaking students clearance, remove all forms of delay and stress as well as enable you to understand the procedure involved, as well as how to do your clearance online. This project work makes use of data collection from the university, materials and journals from various authors and the software was developed to effectively achieve the aim of the project. In this project, the implementation of the computer based system was carried out using PHP language, Html, CSS and the database for the software is MySQL.

Keywords:: Computer, Automation, Clearance, Query Language, World Wide Web, Databases, Online, System

Aims Research Journal Reference Format:

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1. INTRODUCTION

Improvement in information and communication technology has made time and space less complex and could be seen that this modern age is the age of information boom in which an average individual wants to explore the information system. Thus, the capability for timely acquisition, utilization, communication and retrieval of relevant and accurate information has become an important attribute for better teaching and learning processes (Adebayo, 2008). The use of ICT in educational arena is not limited to teaching and learning situations alone, but also extend to the administrative assignments. One of such administrative tasks is the development of a web-based clearance system called online clearance.

By definition, clearance is a status granted to individuals, typically members of military, university graduates and employees of governments and their contractors, allowing them access to classified information. The term "clearance" is also used in private organizations that have a formal method to vet employees for access to sensitive information. Clearance can refer to authorization or permission from an authority (Anigbogu, 2000; Chimezie, 2000; Wikipedia 2013). The act of clearing an individual involves granting individual a permission to have access to sensitive or secret documents or other information. The Oxford dictionary defines "online" as controlled by or connected to a computer and as an activity or service which is available or performed using the internet or other computer network (Dictionary of British and World English, 2015). As people of this generation become more dependent on the internet for information, the need for automated clearance becomes more apparent.

Online clearance is now used in various academics institute both locally and internationally for various clearance, for instance, online hostel accommodation, UTME online clearance exercise, online admission exercise, online graduating clearance exercise, and National Youth Service Corp online mobilization registration exercise to mention but a few. The admission process of students is strictly done online in some universities such as Ambrose Alli University, where physical presence of admitted candidates is not required in the university premises during the clearance exercise as it is strictly online while in some university in Nigeria such as University of Ibadan, University of Ilorin, Tai Solarin University of Education, the admission process are done online, and physical presence of candidate is needed for other admission clearance exercise. Online clearance system has been employed by International Islamic University for vetting graduating students.

In universities like TASUED, there is need for automated method of data keeping, so a greater need for an automated online clearance system. This will go a long way in alleviating the various problems and stress involved in the manual method of clearance. Also, the issue of delay in youth service as a result of inability to complete the tedious manual processing of clearance will be curtailed. The focus of this research therefore is to provide a reliable and transparent system devoid of personal inclinations and interest, to eliminate travelling and queuing of students during clearance in the study university and to serve as reference material to other researcher.

1.2. Statement of Problem

When a student is about to graduate in Tai Solarin University of Education, Ogun State, Nigeria, he/she will take his/her degree exam after which he obtains a clearance form from Exam and Record Unit of the University after the payment of all necessary dues. This form will have to be certified at various departments and units including bursary, library, candidate's department, and the University Health Centre. The bursary department certifies that the student has completed all payments while library will have to certify that the student does not owe any textbooks and library materials, and so. In summary, the current final clearance system of the university is a manual one. This makes the system so tedious and time-consuming. In this case, students will have to visit all the clearance offices with a form for them to sign. Once the form is fully signed, it proves that the student has been cleared.

In the manual system, the clearance forms are documented in a file cabinet. Each time the clearance form is needed, a search operation is conducted on the file cabinets to locate a particular student's clearance form. To alleviate this problem, there is need to develop an efficient web-based platform that is reliable and cost-effective, which can manage the process efficiently. Therefore, the objective of this study is summarized below:

- i. To develop an online clearance system that will effectively and efficiently process students' final clearance.
- ii. To provide a reliable and transparent system for the students' final clearance devoid of personal inclinations and interest.
- iii. To alleviate the problems and stress encountered by students during final clearance, most prominent one being the queuing up of students at various clearance spot.

2. RELATED WORKS

Clearance is a certificate giving permission for something to be done. In higher institution of learning, final year students that have satisfied the academic requirements to graduate must undergo a clearance process before they disengage from the institution. The above fact prompted the development of a web-based database-driven students' clearance system by Agbo-Ajala and Makinde (2015). The system was developed using PHP and MySQL, and is aimed at eliminating the delays associated with the manual process of final clearance. In similar manner, Umezina, Uwakwe and Abode (2015) developed online clearance system for final year clearance of Imo State University using PHP, JAVASCRIPT, CSS, APACHE and MySQL for the database. The above system was able to process data with great speed and also replaces the error-prone manual clearance system.

Zuhaib (2013) supervised a project on the development of online clearance system using ASP.Net to create interfaces of the system. The system which was implemented at Quest University, Nawabshah contain database that can store all the required information of students for clearance certificate via web pages. Awuzie (2013) summarizes the advantages of online clearance system to include the following:

- i. It save a lot of time.
- ii. It is very convenient to use anywhere at any time e.g., office, bedroom or anywhere in the world.
- iii. Information processing is very fast and delay can be avoided.
- iv. It is inexpensive to students and school management.
- v. It also help the school in reducing cost such as labour and stationery.

As many universities have chosen to pursue the dynamic educational options available on web pages (online), the advantages of e-learning cannot be estimated. According to Cox (2005), online system is presented as an efficient means of conveying instruction to an extensive learning community any place at any time. Indicating that adequate attention be designated to online learning as it serves as the driving force and model for transformation of teaching, learning and formal schooling, Environmental Education and Training Partnership (2006) posits that, online course has the potential to provide learner individualized attention by the instructor. This is otherwise impossible in a large classroom environment.

With the continued development of online system applications, many colleges and universities have begun to offer online courses as an alternative to traditional face-to-face instructions. Hillstock (2005) reports that 67% of colleges and universities agreed that online education are the most logical long-term strategies for their institutions. However, there are considerable hesitations rising predominantly related quality and student respectively to online system, (Yong and Conellus, 2004). Just as their advantages there are also disadvantages to the online system of instruction delivery method. There is evidence through previous research that student feel isolated or disconnected when not engaged in traditional face-to-face instruction (Guhu 2001; Graham, 2001), while other reports indicate large success (Hoffman, 2002; Kaczynski and Kelly, 2004; Meyer, 2006). There remains a lack of clarity whether online courses are as affective as traditional courses (Peirier and Feldman, 2004).

While there has been vast number of studies conducted on the merits and demerits of online system institution, little is known on how assessment is used in online classroom to monitor performance and progress (Liang and Creasy, 2004). Hew, Liu, Martinez, Bonk, and Lee (2004) in Agbo-Ajala and Makinde (2015) describe the evaluation of current online education system at three levels; the macro level, the meso level and micro level. The macro level is an online evaluation that access an entire online program, the meso level evaluation access individual online courses, and the micro level access the learning of the online student. Several communicational tools are at the disposal of students and staffs to support their activities during the clearance. The partner universities offer two virtual communication tools with different capabilities "**Marratech and Central**". It is also available online as the communication management systems (CMS) and independent discussion forum.

Marratech is a virtual interactive tool that allows holding meeting and video conferencing on the web, face-to-face, whenever you want to talk, see each other and share application and document without being in the same room, the same building, or even the same country. This platform is used in several systems, like in the energy online master program for lectures, project meetings and project presentation. Central enables group to work faster and more effectively by automating critical clearance system and training initiatives online through virtual classroom, online meeting and web conferences. Central has a broad array of features that make live, group-oriented system effective on the web. Interactive white board, YES/NO feedback, hand-raising, multi-point conferencing, advanced application shearing and text and full-duplex chat examples, in the energy online master program for lectures, project meetings and project presentation. Communication management tools are available at each university and also in an online clearance system homepage.

3. SYSTEM DESIGN METHODOLOGY

The proposed system uses a top-down design which is a software design technique which aimed to describe functionality at a very high level, then partition it recursively into more detailed level one at a time as shown in Fig.1. The information captured in Fig.1 is further described in Fig.2, which depicts the Use-Case diagram showing the interaction between the user and the proposed system. In designing the proposed system for Tai Solarin University of Education, Ogun State, for managing graduating student clearance system, the following will be used: PHP language, JavaScript, CSS and MySQL server as the database.

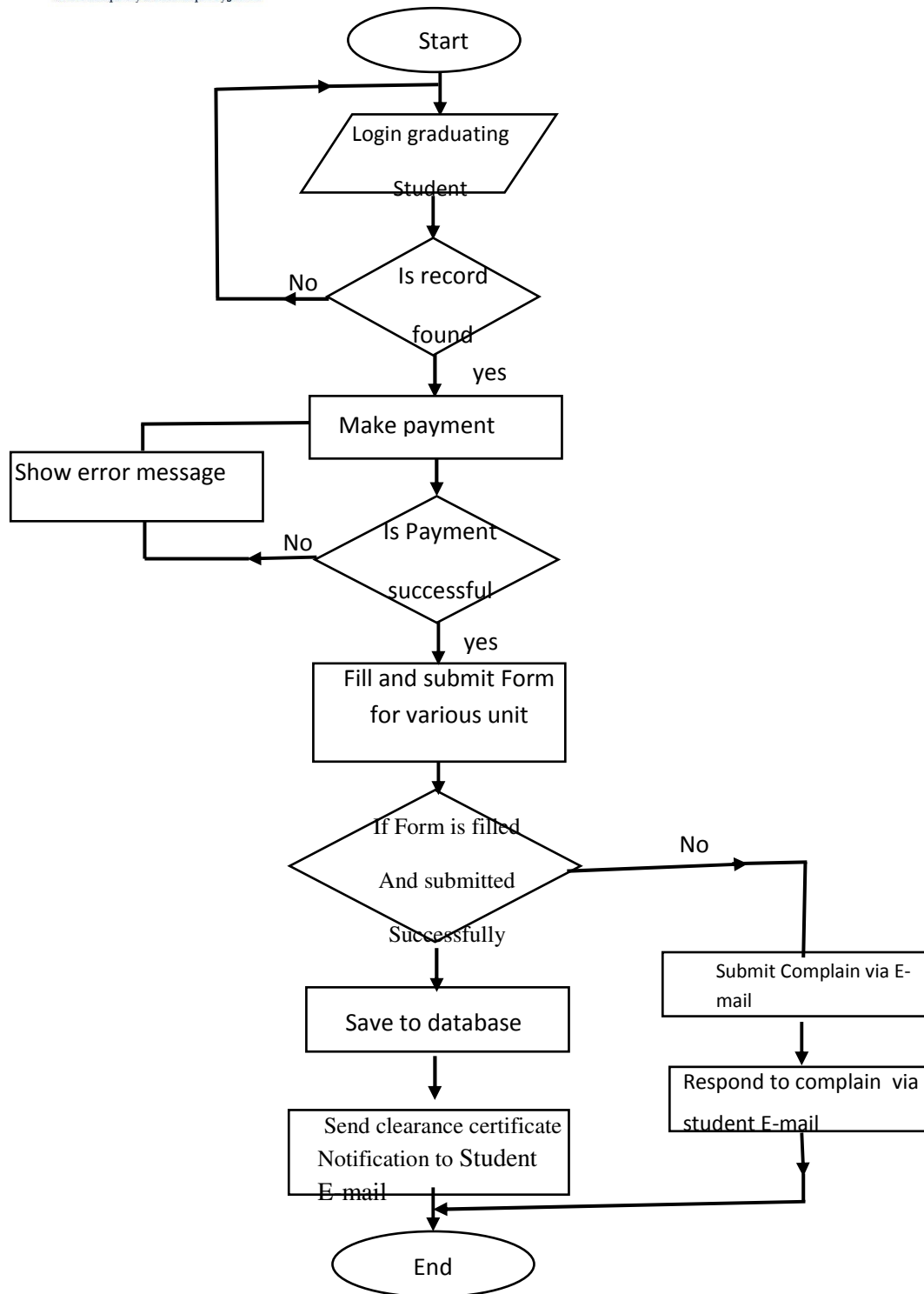


Fig.1: Flowchart of Online Clearance System

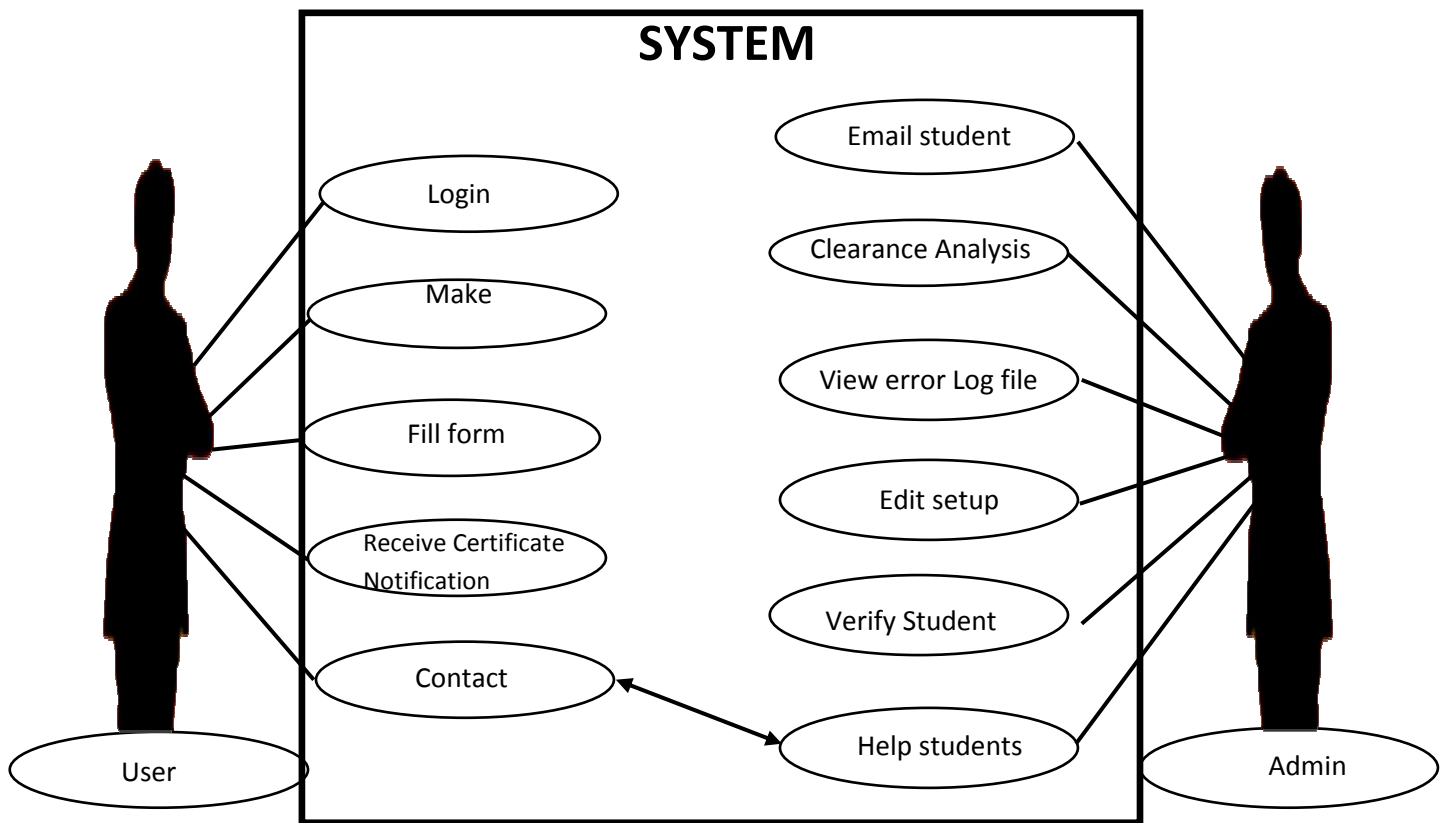


Fig.2: Use-Case Diagram Showing the Interactive Between the System, User and Admin

5. System Implementation

This system was implemented using object-oriented approach. In this approach, two different applications were created each for the system. The system consists of codes that connect the user to the database engine. This is to hide database from the user. In implementing the system, this concept was used because of future updates of the system. Procedure can be added to the class and corrections made without affecting the application. Figures below are the visual display of the online clearance development environment.



Figure 3: Home page

The figure above shows the home page of the system window. In this home page interface, the icons are clickable and the login icon redirects the user to the login page.



Start Your Clearance

Login

Login

Figure 4: Login page

The figure above shows the login interface. In this login interface, is a login form provided by the admin in order to test authentication of graduating student. The form included: Matric Number, which is the graduating student matric number. Password, which is the graduating student surname.

Figure 5: Payment page

Interface used for making payment. Login user is redirected to this page to make payment. If payment is successful, user is redirected to the next page to print receipt.

Figure 6: Successful payment page

The figure above is successful payment interface. In this interface, payment ID is generated on every payment which is used as payment security.

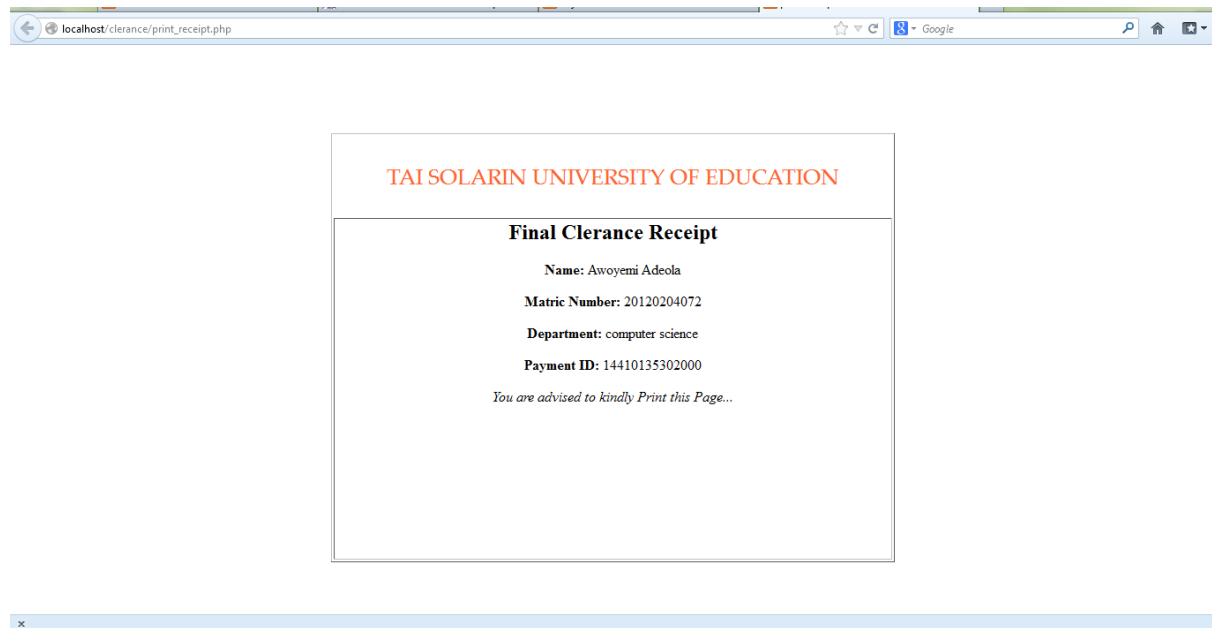


Figure 7: Payment Receipt Page

The interface above is the receipt interface, issue to every student after payment. Thereafter, the user proceeds to verify payment.

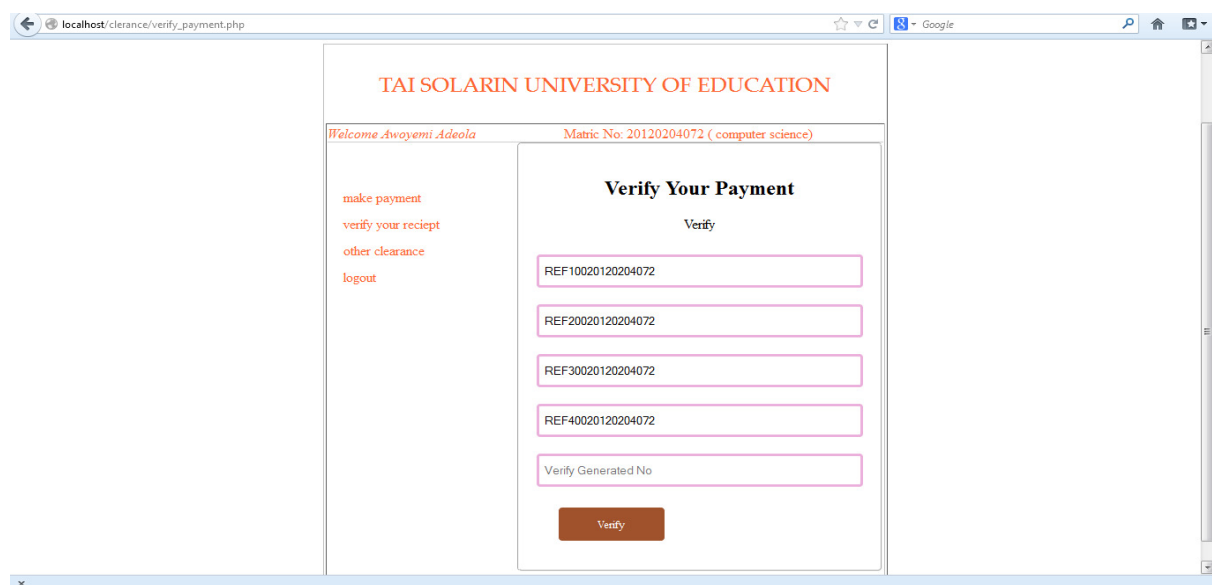


Figure 8: Bursary Clearance Page

The figure above shows the bursary clearance, where all payment made from first year in school till date are verify. In this interface the Payment Id on all receipt from first year in school till 400level are generated, and the graduating student is asked to supply the newly generated identification number from payment made, then verify. If verification is successful from the bursary unit, user is redirected to Exams and record for the final stage of the clearance.

TAI SOLARIN UNIVERSITY OF EDUCATION

Welcome Awoyemi Adeola Matric No: 20120204072 (computer science)

Exams and Record

Please Cross-Check All Information and supply your email address before you Finally Submit. If you hvae any complain, please feel free to send a message

Awoyemi Adeola

20120204072

computer science

REF10020120204072

REF20020120204072

REF30020120204072

REF40020120204072

14410135302000

LIB20120204072

ADMIN20120204072

CMP20120204072

TX20120204072

STDAFF20120204072

SENT20120204072

EMAIL

Final Submission [Send Complain](#)

Figure 9: Exam and Records Page

The figure above shows the exams and record interface. In this interface, user is to check all information and supply email. If all information are correct, click final submission, otherwise, click send complain.

TAI SOLARIN UNIVERSITY OF EDUCATION

Welcome Awoyemi Adeola Matric No: 20120204072 (computer science)

Congratulations, You have Successfully Sumbitted Your Clearance

Constantly Check Your Mail for Statement of Result

Figure 10: Successful clearance page

Figure 10 is successful clearance interface. This page is generated on successful clearance. User is redirected to this page on clicking final submission.

Figure 11: Complain Page

Figure 11 is the complain interface. User with incorrect information on the exams and record page is redirected here on clicking send complain.

Figure 12: Complain Successful Page

User who fill the complain form is redirected to this page.

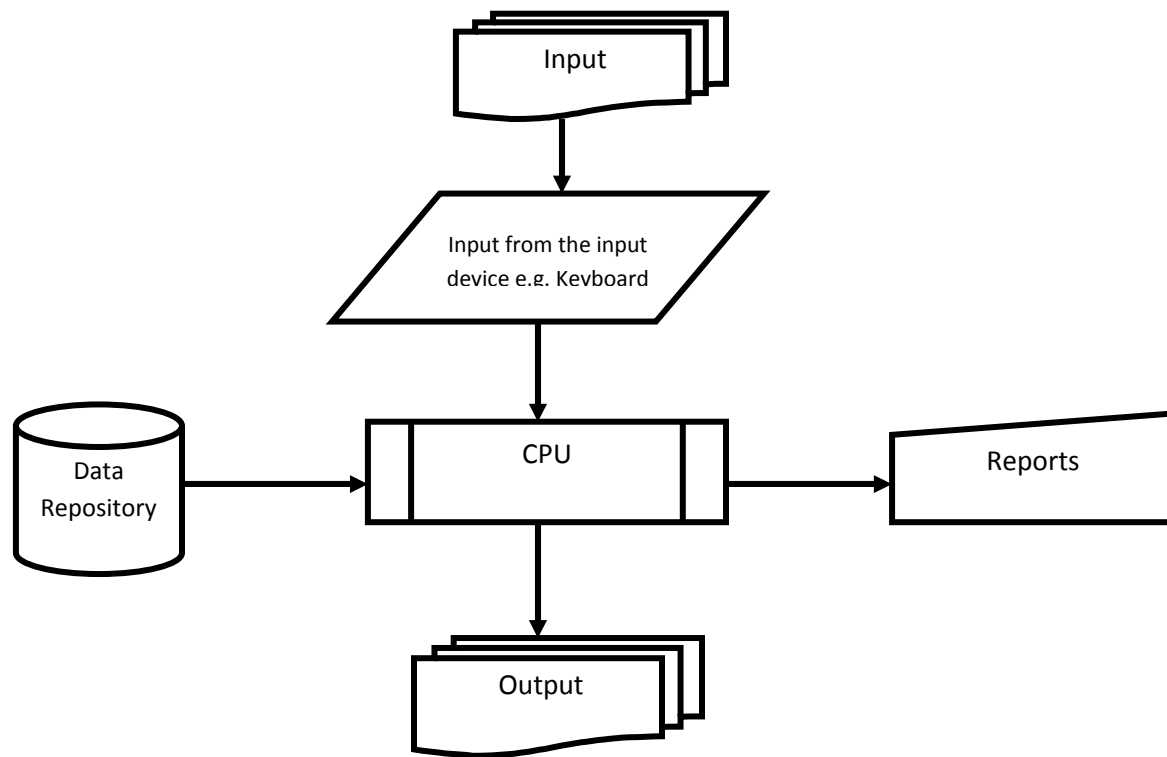


Figure 13: System Flowchart

The figure shows the interaction and the connections between the system(s) in the program and also explains how the information supplied to the system are processed. The keyboard serve as the means of inputting the data's, the disk storage is a device that saves information's and data's, the Central Processing Unit (CPU) is a machine that process information or the data supplied as well as the brain of the system, the output and report is the expected result or system of processed information.

Conclusion and Future Direction

The research paper culminated in the design and implementation of a software application, meant to ease the process and activities of graduating student, during final clearance. The application was successfully developed, tested, and found to be working as expected. However, beta and acceptance testing are expected to be carried out by the users to discover and correct more bugs. The developed system is capable of storing and processing graduating student clearance with high speed and accuracy, and presenting output in certain required format. Other qualities of this system include reduction in cost of travelling, elimination of stress for both students and administrative staff, reduction of paper works and reliability.

Research, as we know is a continuous process and this is not an exception. This research has successfully been carried out and now in a better position to make necessary recommendation and suggestions. Below are some recommendations for future research and addition to the project:

- i. All tertiary institution should endeavor to adopt and use an automated online clearance system since it is capable to carry out all the clearance process and keep records effectively and efficiently.
- ii. Researchers can carry out further research on this research.
- iii. Admission clearance in tertiary institution can also be automated using this research as bedrock

Finally, this software is recommended as decision comparison and facilitation for all tertiary institutions.

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