AN AUTOMATED ACADEMIC TRANSCRIPT GENERATION SYSTEM

(A CASE STUDY OF AUCHI POLYTECHNIC, AUCHI)

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BEING A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE, SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY AUCHI POLYTECHNIC, AUCHI

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF HIGHER NATIONAL DIPLOMA (HND) IN COMPUTER SCIENCE

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CERTIFICATION

We the undersigned, certify that this project work was carried out by Saheed Salaki Jamiu with Matric Number **ICT/2252070567** of the Department of Computer Science.

We also certify that the work adequate in scope and quality in partial fulfillment of the requirements for award of **Higher National Diploma (HND)** in Computer Science.

_____ _____ _____

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_____ _____

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DEDICATION

I also want to dedicate this project work to my late parents Saheed Salaki Okede, Hajarah Kadiri and my late brother Kabiru Saheed. I pray Almighty Allah grant you everlasting rest and peace in paradise. Amen

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First and foremost, I would like to thank Almighty Allah. He has given me strength and encouragement throughout all the challenging moments of completing this project and throughout my years of studies.

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To my HOD (Head Of Department) Mr. Akhetuamen S.O and staffs of computer science department who contributed to my academic success, I say may God bless you all

I would like to express my deepest gratitude to my friends and course mates, may God bless you all richly.

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ABSTRACT

Students' transcript is the summary of each of the two-year performance either in (ND) National Diploma or (HND) Higher National Diploma. A transcript is also demanded by a student who has finished ND/HND and wishes to further higher study in another institution or . A transcript is not given directly to a student. It is sent to the school that the student wishes to transfer or to the establishment or organization, which the student wishes to secure a job. A students' transcript is prepared or formed by the scores entered on the designed score sheet by the individual subject lectures on each semester examinations. But the extent at which the transcript is processed in school are very slow and this come with too many disadvantage, such as making a student loose admission to study abroad. The research is aimed at automating the system to fasten the generating process. The method of data collection involve both the primary and secondary method. The result of the data collected shows that transcript are processed on a slow pace which this study is aimed to solved. The program will be design with HTML, CSS, PHP and Mysql as the database.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The emergence of electronic-data (e-data) processing system is an answer to the dire need for tools and alternative ways to improve man's well-being and activities as a whole. It has relieved workers of the stressful routine of collecting, organizing and managing data. According to Nmaju*et al* (2013), apart from teaching and researching which are the primary activities in higher institutions, there are other important activities such as managing of students' data, tracking of students' progress at each level, as well as other administrative and managerial activities. In the developed countries of the world, these activities are automated. This, however, is not the case in the developing countries as evident in Nigeria where most institutions still adopt the manual method of managing students' data which is time consuming and demanding, and are often prone to a variety of errors and disasters. Hence, there is a need to properly address these shortcomings. The solution to these shortcomings lieson an efficient information management system which has transcript generation as one of its modules.

According to Microsoft Encarta (2009), a transcript is an official document showing the educational work of a student in a school or college. It is used when there is need for official academic actions to be taken such as inter-departmental, inter-faculty or inter-university transfers, proficiency awards and higher academic pursuit. It must display the students' full name, academic program and the university's name along with transcript legends/keys/grading scales printed on the reverse side that explain the course numbering system, credit types, grading systems, institutional scholastic indexes, abbreviations and symbols, special credit notations, and transfer credit as well as other relevant information. Transcript generation is done by the student's department and forwarded to exams and records department for final processing and authentication.

In this research, we aim to design a web-based automated transcript generation application. The ability to update and maintain the system without distributing and installing the software on a lot of client computers is a major reason for our choice of a web-based application. When adopted, the application will help the department in quick generation of students' transcripts on demand due to the rapid increase in the number of students making the manual transcript generation process an uphill task for the record officer.

1.2 Statement of the Problem

In many institutions, proper handling and management of students' academic report is of immense importance as mistakes and misplacement of any of these documents can cause a great havoc on the lives of the students involved. It is a challenging task requiring concentration as well as good calculation abilities. However, this process is still being handled manually in Auchi Polytechnic, Auchi, which we have set as the case study. It is associated with tremendous problems such as:

i. Grave errors, omissions and/or mutilation of students' record.
ii. Involvement of a lot of paper documentation which takes up storage space
iii. Delay in searching through students files whenever record is needed
iv. Insecurity of files as they can be subject to forgery, destruction by rodents and fire outbreak which can damage all the documents in just a matter of some minutes.
v. Too much work load on few numbers of staff thus resulting to stress.

Hence, an alternative approach is required to address the aforementioned problems and provide a cost-effective solution. Black (2007) has seen the need for the automation of transcript generation process and thus concluded that it is the beginning of the end for paper transcripts after surveying certain issues, the solutions and the pros and cons of both methods.

1.3 Aim and Objectives of the Study

The aim of this study is design an academic transcript generating system. The objective are;

i. Proper account of student record.

ii. Check multiple or omission of scores.

iii. To develop a system that will capture number of student and the result of each.

iv. Developing a system that will create room for amendment when there are errors.

1.4 Significance of Study

This research work is greatly hoped to eliminate the manual way of generating transcript in Auchi Polytechnic, Auchi. It will enhance speedy of the results, to eliminate errors due to manual processing, to provide security measure to check students mischievous act of changing marks on the result sheet.

1.5 Limitation of Study

The limitations encounter in this research work includes:

1. Limited time to carryout research on the subject. Not enough time to gather information for this research work.
2. The epileptic nature of power supply in the country. After we have gather the little material – information for this work, there was shortage of power

supply to organize our work.

3. Another limitation is Finance: doing a research work definitely needs money. Shortage of funds is one of the greatest challenges we encountered during this project.

1.6 Definition of Terms

The following are some terms commonly use in this project software –logical related programs that works together to control hardware.

Transcript: A result

Data: A raw information or it is fact and figure collected.

System: A collection of organized things.

Conventional: is a set of agreed, stipulated, or general accepted standards, norm, social norms or criteria, often talking the form of a cut.

Databases: A systematically arranged collection of computer data, structured so that it can be automatically retrieved or manipulated. It is also called databank

System: is a collection of element or components that are organized for a common purpose.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

A transcript is proof of education. It has a detailed record of all the subjects you have studied with your scores in the form of marks or grades given by the institution of study (Tony, 2012). Transcripts are commonly known as mark sheets in India. Given below is a list of documents known as Academic Transcripts or other names of Transcripts:

- Mark Sheet
- Mark List
- Academic Certificates
- Report Card
- Diploma Supplement
- Statement of Learning
- Record of Achievement
- Academic Record

- Cumulative Record File (CRF)
- Permanent Record
- Transcript of Records (ToR)

2.2 Difference between a Degree, Diploma, and Transcript

Though all the documents, Transcript, Degree, Diploma, Certificate, and Mark Sheet are proofs of completing an education qualification, a Transcript is different than a Diploma or a Degree.

Diploma/Degree/Certificate: The final certificate you receive upon completing your educational qualification is called a Degree or a Diploma or a Certificate depending upon the nature of programme pursued (Eliot, 2016).

Transcript of Records (ToR): The mark sheet which covers all the academic records of a student is called a Transcript or ToR. It implies to a sheet that contains the list of all the courses/subjects studied, grades received against each column, the awards and achievements of the student and also the degrees granted to the student for the entire academic programme. There is no limit on the information that could be provided in a transcript (Wilson, 2000).

2.3 Transcript Covers

A transcript must cover a complete list or table of yearly modules/subjects and practical work that we have studied and conducted throughout the study

period. It consists of our marks or grades or in some cases the subject-wise credit value is mentioned in it, considering the grading system followed by an institution.

2.4 When do students need a Transcript of Records? When to request one?

To attend a college or university abroad, the applicants need to provide the admission committee with a set of documents to support their previous academic qualifications. These documents are called Academic Transcripts or Transcripts of Records. As proof of completing your school, under-graduation, or post-graduation, these documents are mandatory to justify your suitability for the programme that you aspire to pursue (Shogun, 2012).

2.5 Role of Information Technology in the Academic System

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 transcript generating system.

The introduction of computer into information technology has massively improved the information need of organization; the success of this machine is dependent on the knowledge base. Therefore, one can be prompted to ask aloud "what is a computer". Funk, (2017) defined a computer as an electronic device that can perform automatically and at a high speed a sequence of logical operations according to instructions given to it inform of a pre-arranged program.

Anigbogu (2015) defined a computer as an electronic device capable of accepting data and instructions, processing the data based on the instructions to generate results or output in such a manner that is yet to be equaled by any other known machine to mankind.

Chimezie (2015) defined it by saying that "Computers are looked upon as obedient servants who are ever ready to free man from tedious procedures and produce results as compared with human computing time".

Vossen (2014), defined computer as a machine that is capable of accepting input data, store and process the data based on instructions given by the computer user and in this way produce expected results, generally called output. World Net describes an information system (I.S) as "a system consisting of the network of all communication channels used within an organization, and includes software and hardware". It may also be defined as "a system that collects and processes data

(information) and provides it to mangers at all levels that use it for decision making, planning, program implementation and control.

The aim of information system to admission, registration, result processing and clearance in schools is improving the quality and accuracy of information provided to all involved as well as assisting polytechnic in compiling and reporting information.

Information Technology has been an integral part of academic system since almost four decades. According to Hewlett (2015), the world is entering "an era in which technology will literally transform every aspect of business, every aspect of life and every aspect of society.

Since the arrival of Internet technology, school system has taken a new shape and style with a blend of convenience and satisfaction. Taylor (2017) said that computer-based education includes both computer-assisted instruction programs that interact with students in a dialogue and a broader array of educational computer applications such as simulations or instruction in computer programming. Learning from a student's bedroom, office or anywhere in the World has made its way into schools system with the advent of Internet technology. Information technology has always helped the schools system to educate students in better way. To explain few examples, student online clearance is a method where the student obtains his/her clearance letter without carrying files

around. This is only possible with the help of information technology. This feature is safe, fast and has no hazels. Filling out the documents and comparing options and waiting for approval is a time consuming process. Through the Internet, this process is made much easier and sometimes the approval is made within minutes. This explains an efficient way of obtaining clearance and saves time and money for students.

2.6 Data and Information

The concepts of data and information is very important in understanding issues that go with development and implementation of a computer-based information system. The term “data“ and „information“ are used interchangeably in everyday conversation as meaning the same thing. Too many managers and information specialists, however, these terms have distinct meanings. According to Vossen (2014), data simply consists of raw, unprocessed facts while information is data that have been processed by the computer. Hordeski (2014) gives the following definition of data: A graphic or textual representation of facts, concepts, numbers, letters, symbols, or instructions suitable for communication, interpretation, or processing. Data is the basic element of information that is used to described objects, ideas, conditions, or situations.

Lucey (2014) defines data and information as follows:

Data are facts, events, transactions, and so on, which have been recorded. They are the raw materials from which information is produced. Information is data that has been processed in such a way as to be used by the recipient. Data are facts obtained by observation, counting, measuring, weighing, etc., which are then recorded. Frequently, they are called raw or basic data and are often records of day-to-day transactions of the organization. For example, the date, amount, and other details of an invoice or cheque, payroll details of pay, the number of students living in a particular hostel and so on.

Enwere (2012), argues that the concept of information in an organization sense is more complex and difficult than the frequent use of this common word would suggest. (Oketunji, 2010) emphasized that information is data that have been processed, transmitted to the recipient, interpreted and understood by the recipient. Here it should be noted that the user, not just the sender is involved in the transformation of data into information. There is a process of thought and understanding involved and it follows that a given message can have different meanings to different people. Based on this, one can conclude that the data which has been analyzed, summarized, or processed in some other fashion to produce a message or report which is conveniently deemed „management information" only becomes information if it is understood by the recipient. Therefore, it is the user who determines whether a report contains information or just processed data.

2.7 Computer-Based Information Systems

An information specialist, Lucey, (2014) defines computer-based management information system as:

The combination of human and computer-based resources that results in the collection, storage, retrieval, communication and use of data for the purpose of efficient management of operations and for business planning.

Computer-based information system is a feature of all large organizations nowadays. The literature identifies four kinds of computer-based information system: Transaction Processing System (TPS), Management Information System (MIS), Decision Support System (DSS), and Executive Support System (ESS). Some systems record routine activities: employees hired, material purchased or produced, and the like. Such recorded events are called transactions. Other systems use these recorded events to help managerial planning and control. The systems form a pyramid, each primarily supporting one another level of management to another.

a) Transaction Processing System (TPS): This system records day-to-day transactions such as customer orders, bills, inventory levels, and production outputs. The TPS helps supervisors by generating database that act as foundation for other information system.

b) Management Information System (MIS): MIS summarizes the detailed data of the transaction processing system standard reports for middle-level managers. Such reports might include production schedules and budget summaries.

c) Decision Support System (DSS): The DSS provides a flexible tool for analysis. The DSS helps middle-level managers and others in the organization to analyze a wide range of problems, such as effects of events and trends outside the organization. Like the MIS, the DSS draws on the detailed data of transaction processing system.

d) Executive Support System (ESS): The ESS is an easy-to-use system that presents information in a very highly summarized form. It helps top-level management oversee the company's operations and develop strategic plans. The ESS combines internal data from TPS and MIS with external data.

2.8 Databases

In the early days of computerization, it was normal to maintain specific files for individual applications. Data were processed centrally in batches and there was little or no online interrogation of data. This approach is wholly inefficient for most of today's data processing systems. Supporting this, Vossen (2014) enumerated the problems that result from organising data using the file system:

a) There exists a high redundancy between files, which result from the fact that the information is replicated in different places, and that these replications are not controlled by a central monitor.

b) Inconsistencies might result from the possibilities that a program makes changes on the files it uses without these changes being made (at the same time) by all other programs that uses the file.

c) There exists inflexibility against changes in the application: if new actions or events arise in the course of time, these can be realized at a substantial expense of time.

d) The work of many programmers involved is characterized by low productivity, since program maintenance is expensive: if the structure of an existing file has to be modified during its lifetime, then all application programs has to be modified correspondingly.

e) Finally, there is the problem of adopting and maintaining standards (with respect to coding, data formats, etc.), which is important for exchanging data or for migration to a new operating system release, or even to a new computer system. To overcome these problems, databases were developed. It is now common for large organisations to organize their operational data using the database technology.

The subject of database is adequately covered in many works on database technology. Clifton (2014) briefly defines database as a collection of data supporting the operation of an organisation. Quoting CIMA, Lucey (2014) provides a more detailed definition:

A database is a file of data structured in such a way that it may serve a number of applications without its structure being dictated by any one of those applications, the concepts being that programs are written round the database rather than files being structured to meet the needs of particular programs.

Russell, M. (2015) dealt extensively on the need for the use of computers on such database system like computerized clearance system. In the words of Dimorji (2003). "At the center of any information system is a database, which is any collection of related information grouped together as a simple item. The term can also apply to the ways in which information is catalogued, analyzed, stored and used manually.

Russell (2005) was also of the view that without a computer, effective handling of Candidates" records cannot be achieved effectively.

In a database, all the data is defined together rather than each file being defined separately. In fact, all the literature consulted seems to support the fact that a database is a collection of structured data with the structure of data being

independent of any particular application. Specifying the need for databases, Eddy (2014) listed the following advantages:

a) Sharing: In an organization, information from one department can be readily shared with others.

b) Security: Users are given passwords or access only to the kind of information they need to know. Thus, the Payroll department may have access to employees‟ pay rate, but other departments would not.

c) Fewer Files: With several departments having access to one file, there are fewer files. Therefore, excess storage or what is called „redundancy‟ is reduced.

d) Data Integrity: Older filing systems many times did not have „integrity‟. That is, a change made in the file in one department might not be made in the file in another department. As one might expect, this can cause serious problems and conflicts when data is used for important decisions affecting both departments.

To the advantages enumerated above, Vossen,(2014) adds:

a) Standards/access protocols can be enforced.

b) Currency of data can be maintained.

c) Data/program independence can be maintained.

d) Conflicting requirements can be balanced among users.

In these days of integrated networks, the database appears as the most logical method for organizing the operational data of large organizations. One may as well

say that these advantages give the database the attractions over the traditional file processing method.

2.9 The Concept of School

A school is an institution designed to provide learning spaces and learning environments for the teaching of students (or "pupils") under the direction of teachers. Most countries have systems of formal education, which is commonly compulsory. In these systems, students progress through a series of schools. The names for these schools vary by country (discussed in the Regional section below) but generally include primary school for young children and secondary school for teenagers who have completed primary education. An institution where higher education is taught, is commonly called a university college or university.

In addition to these core schools, students in a given country may also attend schools before and after primary and secondary education. Kindergarten or pre-school provide some schooling to very young children University, vocational school, college or seminary may be available after secondary school. A school may be dedicated to one particular field, such as a school of economics or a school of dance. Alternative schools may provide nontraditional curriculum and methods.

There are also non-government schools, called private schools. Private schools may be required when the government does not supply adequate, or special education. Other private schools can also be religious, such as Christian schools, madrasa, hawzas (Shi'a schools), yeshivas (Jewish schools), and others; or schools that have a higher standard of education or seek to foster other personal achievements. Schools for adults include institutions of corporate training, military education and training and business schools.
In much of continental Europe, the term school usually applies to primary education, with primary schools that last between four and nine years, depending on the country. It also applies to secondary education, with secondary schools often divided between Gymnasiums and vocational schools, which again depending on country and type of school educate students for between three and six years.

In North America, the term school can refer to any educational institution at any level, and covers all of the following: preschool (for toddlers), kindergarten, elementary school, middle school (also called intermediate school or junior high school, depending on specific age groups and geographic region), high school (or in some cases senior high school), college, university, and graduate school (Walter, 2010).

2.10 Examination

Examination (informally, exam or evaluation) is an educational assessment intended to measure a test-taker's knowledge, skill, aptitude, physical fitness, or classification in many other topics (e.g., beliefs). A test may be administered verbally, on paper, on a computer, or in a predetermined area that requires a test taker to demonstrate or perform a set of skills.

Tests vary in style, rigor and requirements. There is no general consensus or invariable standard for test formats and difficulty. Often, the format and difficulty of the test is dependent upon the educational philosophy of the instructor, subject matter, class size, policy of the educational institution, and requirements of accreditation or governing bodies.

A test may be administered formally or informally. An example of an informal test is a reading test administered by a parent to a child. A formal test might be a final examination administered by a teacher in a classroom or an IQ test administered by a psychologist in a clinic. Formal testing often results in a grade or a test score. A test score may be interpreted with regards to a norm or criterion, or occasionally both. The norm may be established independently, or by statistical analysis of a large number of participants.

A test may be developed and administered by an instructor, a clinician, a governing body, or a test provider. In some instances, the developer of the test may not be directly responsible for its administration. For example, Educational Testing

Service (ETS), a nonprofit educational testing and assessment organization, develops standardized tests such as the SAT but may not directly be involved in the administration or proctoring of these tests.

2.11 Types of Examination

Diagnostic Examination

With this test you can test how much your students already know about a given subject or topic. You can use the results of this test to schedule your class. Which subjects need some extra attention. For the student this gives him or her some insights in which part of the class need some extra study hours.

Placement examination

This kind of test can be used to place the student in the appropriate class or level. For example for language classes this is often used prior to starting the class.

Progress or Achievement examination

These tests are used to measure progress in a given subject. This will mostly follow a diagnostic test or can be in regular intervals. If you measure regularly you get a better picture of the progress of your students.

Internal examination

These are internal tests given by the institution where the student is following classes.

Objective examination

Objective test have clear right or wrong answers. All multiple-choice test fall into this group. The students get a pre-defined set of answers to choose the correct answer from.

Subjective examination

With this type of tests the maker of the exam has to pass judgement on the answers of the student. Mostly this in the form of free text questions or essays.

School Time Table

Junginger (2017) described the research in Germany on the school time tabling problem. In particular, he described the various software products implemented, and their actual utilization by the use of paper. The paper also described the underlying approaches, most of which are based on direct heuristic, but at the end of his research the programmers were unable to display equal lecture time scheduling successfully to all the levels,

Ali (2017), provide a survey of application of generic algorithms to time tabling. The paper discusses also future prospective of such approach, and compares its results obtained so far with respect to some other approaches, haven't he carried all the survey in the present system computerized lecture time table scheduling system, he was unable to provide hall or venue to student of his case study successfully.

Werra (2016) state the various problem in a computerized examination time table scheduling system, and provide die rent formulation for that. He also described the most importance approaches to the problem (till date), stressing the graph theoretic one. Consequently; he tried to develop a program that will display the entire necessary field such as password, priority preference consideration, allocation adjustment mode, materials and methods, result and discussions, conclusion and future work. But he was unable to achieve the goal he put an interest due to some problems he encountered during the program.

Lastly, the group stated that, in most general terms, scheduling can be described as the constrained allocation, of resources of object, being placed in space time in such a way to minimize the total cost of set resources used. Time table construction is the satisfying or nearly satisfies a desirable set of possible objective. Class time table and examination time table are example of this problem where all hard constraint must be satisfied to generate a valid solution.

Thus, the scheduling covers all the activity of locating resources and at the same time, satisfying some predetermine objectives, therefore, in practical terms the time tabling problem can be described as scheduling a sequence of examination time table. And likewise, during this research work, we were able to develop a program in such a way that it can cover all the aspect involving proper facilitation.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.1 Description of the Existing System

The current transcript system of the polytechnic is a manual one. This makes the system so tedious and time consuming. So many a times when a student apply for transcript the academic purpose, their tends to be delay before the transcript get to the destination which might cause delay in admitting the said student.

3.2 Application

Firstly the student visit the bank to make a payment of two thousand naira only (#2,000) (Local transcript) via remita.net website and three thousand naira only (#3,000) for international transcript. The student then proceeds to the bursary office for verification of the said payment. After which the student will proceed to examination, record and statistics department for processing of the transcript.

The rest of the job will be left for the staff to vet and confirm if the said student actually graduated from the school without any issue or challenges before the transcript will be processed. In the manual system, the transcript forms are documented in a file cabinet and sent to the school through waybill or by email.

3.3 Issues of the Existing System

Due to the manual means being used by Auchi Polytechnic, in keeping information and processing of student's transcript, a lot of problems are encountered which includes:

a. Delay in processing transcript.

b. Unavailability of some key staff while processing the transcript, which leads to students repeatedly visiting a particular office.

c. Loss of vital documents as the filing system is manual

d. Damage of documents due to fire incident.

e. Illegal removal of forms by fraudulent staff leading to insecurity.

f. Takes a lot of time to retrieve a particular clearance form.

3.4 Description of the Proposed System

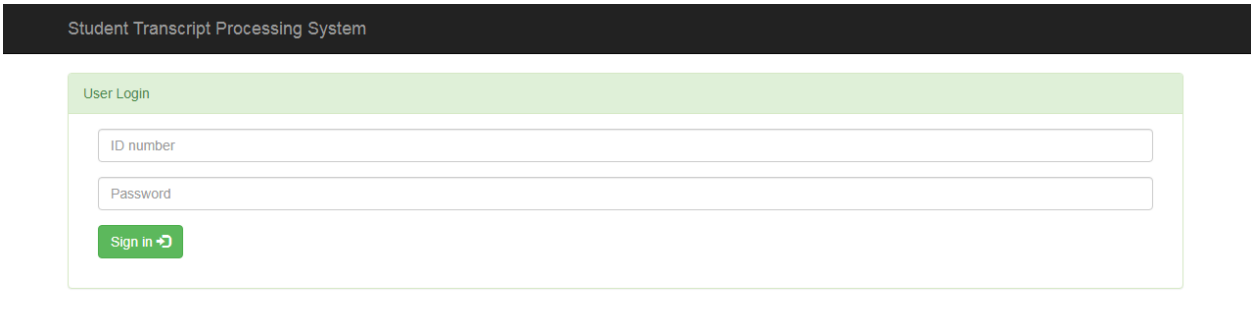
This system is a computerizes one where all the processes are done with the use of computer.in this system student result are tobe kept electronically and the break down can be requested through the system and use for the preparation of the transcript. The objective of the existing system is to enable student get their transcript on time. Some levies are charged for processing student's files and others for departmental dues or otherwise. The transcript system is designed to help students get their transcript on time.

3.5 Advantages of the Proposed System

- The new system is designed to solve problems affecting the manual system in use. It is design to be used online thereby relieving both the students and staff from much stress as experienced in the manual system.
- This system will do the analysing and storing of information either automatically or interactively. It will make use of online access to Internet.
- The proposed system will also have some other feature like:
- Accuracy in the handling of data.
- Fast rate of operation and excellent responses time
- Flexibility (i.e.) it can be accessed at any time.
- Easy way of back up or duplicating data in diskettes in case of data loss.
- Better storage and faster retrieval system.
- Accessibility from any part of the world

Input Analysis

The input to the system is the payment forms for paying dues or levies. These forms are filled by students and submitted to the various offices for issuing of receipts.



Process Analysis

The payments made by the students are collected and analyzed to certify that the student have completed all the necessary fees due. Hence a certificate issued to show that the student have completed all the fees.

Output Analysis

The output from the system is the transcript issued to the student stating that the student have fulfilled all financial obligation and is now free to pass out from the school.

3.6 Method of Data Collection

During the research work, data needed for the project was gathered from various sources. In gathering and collecting necessary data and information needed

for system analysis, two major fact-finding techniques were used in this work and they are:

(a) Primary Source

This refers to the sources of collecting original data in which the researcher made use of empirical approach such as personal interview and questionnaires.

(b) Secondary Source

The secondary data were obtained by the researcher from magazines, Journal, Newspapers, Library source and Internet downloads. The data collected from this means have been covered in literature review in the chapter two of the project.

3.6.1 Study of Manuals

Manuals and report based on transcript generating were studied and a lot of information concerning the system in question was obtained. The transcript forms were gathered and information relating to transcript fee and other requirements were also obtained.

3.6.2 Evaluation of Forms

Some forms that are necessary and available were assed. These include clearance form, fee receipts, etc. These forms help in the design of the new system.

3.7 System Flowchart

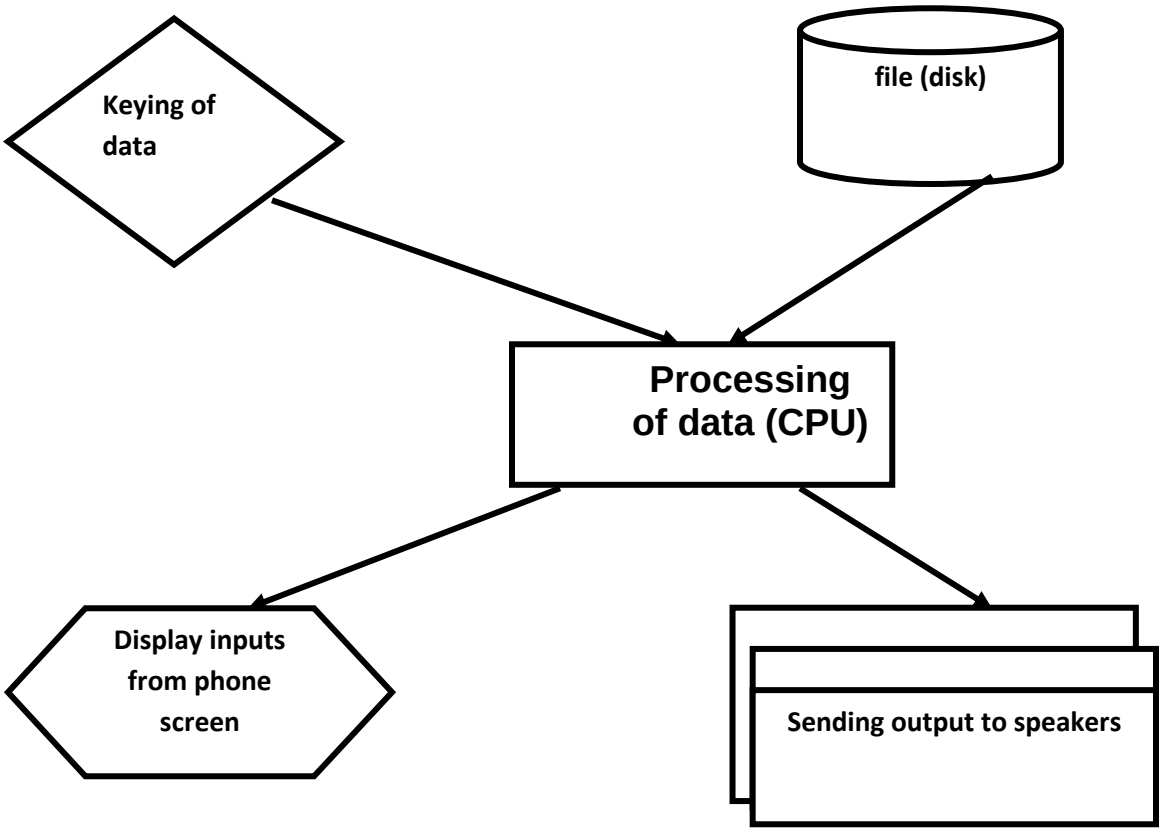


Figure 3.1 System Flowchart

3.8 Database File Design

In any good database design, effort should be made to remove completely or at worst reduce redundancy. The database design in the software is achieved using Mysql database. Below is the structure of the file designed in the database.

Table 3.1 Database Design

Field name	**Field Size**	**Data Type**
Subject	50	Text
Subject Description	50	text
Unit	50	Integer
Course Id	50	text
Semester	50	text

CHAPTER FOUR

SYSTEM IMPLEMENTATION

4.1 Introduction

In this chapter, the development and implementation of the new system were discussed, included in this chapter were the changeover method adopted, the choice of programming languages used in designing of the program and minimum system requirements for the hardware and software for proper functionality of the program.

4.2 Justification of the Programming Language

The programming languages used in the implementation of this project are HTML and PHP. Android is a mobile operating system based on the Linux kernel and now developed by Google, It is designed for the touch screen mobile devices like the smartphones, the table computers, specialized user interface for Android TV and Android enabled vehicles.

Android OS uses touch inputs to manipulate on the screen objects , It uses the virtual keyboard , It was designed for touch screen input , it has been used by in game equipment's , the cameras , PC's and other electronic devices .

It is the most widely used operating systems , It is the highest selling mobile operating system nowadays , Over 1 billion users already using this operating system mobiles , This is open source and anyone can use to build the applications.

It has massive user base, It has increasing adoption especially in the developing countries, Android's review process for apps is fairly simple and it takes less time than iOS for an app to get approved for publishing on the play store.

4.3 System Control

The entire coding of the program was done in JAVA using the Android Studio. These codes are written with the front - end tool but, with other tools provided from the SQLite classes and libraries such as SQL connection, they were able to access the back – end tool. The entire code of the program is contained in the appendix.

4.3.2 Program Module

The proposed online transcript generating system will contain the following modules:

A.Registration:

This is the first module of the system. Any user who wishes to use the system should first register to obtain username and password. This module will collect

complete information of the user by prompting the user as to what details needs to be entered. The user will need to speak up the details to which the system will again confirm by prompting alphabetically. If the information is not correct user can re-enter else the prompt will specify the operation to be performed to confirm.

B. Login:

Once the registration is done the user can login to the system. This module will ask the user to provide the username and password. This will be accepted in speech. Speech conversion will be done to text and user will be told to validate whether the details are entered correctly or not. Once the entry is done correctly database will be checked for entry. If the user is authorized it will be directed to homepage.

C. Forgot Password:

In case where an authorized user forgets the password and thus is not able to login he/she can select forgot password module. In this module the user will be first told to enter username. According to username the security question will be searched in database. This is the question provided at time of registration. The question will be spoken out by the computer. The user should in turn specify the answer that was provided by him/her during registration. If both get matched, user is given option to change password.

4.4 Systems Requirements

This application may not run effectively if the minimum system specification is not met therefore, there is need to install a proper system hardware and software required for the application to meet up the objective as stated.

4.4.1 Hardware Requirements

Processor	:	Intel Core Duo 2.0 GHz or more
RAM	:	1 GB or More
Harddisk	:	80GB or more
Monitor	:	15” CRT, or LCD monitor
Keyboard	:	Normal or Multimedia
Mouse	:	Compatible mouse

Android Mobile Phone

4.4.2 Software Requirements

Front End	:	html, CSS AND Java script
Back End	:	Mysql
Operation System	:	Windows 7 and above

4.4.3 People

The people required to use this software or website are students and staffs of the polytechnic who have a basic understanding of computing. That is, computer literacy is a criteria for using this software.

4.5 Implementation Details

4.5.1 Coding

This is the main program from the system design; see Appendix for the source code.

4.5.2 System Testing

There is need to ensure that the individual website have been correctly written and that the system will be error-free during execution. This is achieved by provision of test data for program testing and procedure testing.

The general testing includes:

1. UNIT TESTING

This involves breaking down the program into its individual units and testing it to see if units functions as intended. The various subroutines and

modules that are involved in writing the program individually tested and correction made as well.

2. INTEGRATION TESTING:

This is the second step that is involved in testing the program. It involves bringing together the various individual modules involved in the program and testing them to see how well they interact with one another in terms of data transfers and processing. This involves testing the program as to see if it functions in order.

3. VALIDATON TESTING:

In this case, the testing attention is one the program as a whole and it is tested, according to the specification of the program so given. Date time, valid and invalid data are introduced into the program and their result is examined to see if the system is working properly.

Generally, the test data for the program testing is designed into ensure that all parts of the system are put together as expected. It involves the clerical procedures such as input, processing and output. Also under security at this state is the expected volume of data efficiently.

4.5.3 File Conversion

This involves the conversion of old file into the form required by the new system since the overall objectives of the system implementation is to ensure more and orderly change over from the old to the new system.

4.5.5 Changeover Procedure

There are two method of changing over of new system they are:

i) Parallel change over techniques

ii) Direct change over techniques.

In the parallel technique, the old and new system runs concurrently utilizing the same inputs. The outputs are correlated for the purpose of resolving any differences that is noticed unit the system attains perfection.

In the direct system change over techniques, the old system is discontinued summarily while the new system is made operational immediately. The parallel change over technique is chosen, for this project, as a changeover technique can be easily assimilated.

4.5.6 User Manuals

Documentation is very important in the development of any software or any system. This is because documentation makes the system to be open to all users,

and if it is not well documented it becomes difficult in its usage. That is why the system documentation has to be included in the specification document of the systems.

In making use of the system, the user who wishes to carryout any operations has to first boot on the system. And before using the software, he/she has to make sure that Wamp server is installed in the system. Then

1. Insert the CD containing the software and then.
2. Deploy the database,
3. Go to start button below on the desktop,
4. Go to all programs and then click on Firefox,
5. Type localhost/studenTrans,
6. On clicking this, the software will load.

The software is developed in such a way that anybody, whether with the knowledge of computer or not, he/she can access it. Meaning that the software is user friendly and is developed in such an interactive manner that any individual can use it.

4.5.7 Maintenance Details

The system and application installed cannot function effectively forever without maintenance and update. This is to say in effect that the system from time to time

needs proper maintenance such as cleaning up the different parts and removing away dust particles, changing old and worn out components of the system. Software maintenance and update is not left out as IDE all known that things change innovations; such becomes imperative that the software needs updating so as to accommodate innovation. This can easily be updated by the programmer (researcher) periodically for the following reasons:

1. To deal with unforeseen problem ensuring in operation, example program may need to be modified to deal with unforeseen circuSmstance.
2. To confirm that the planned objective are being met and to take action if they are not
3. To ensure that the system is able with the changing requirements of business.
4. To confirm the realization of the set objective as a guide to future system analysis and design assignments. Exercise that needs to be carried upon the system always fro effective and accurate output.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1Summary

This study was carried out to verify al the manual processes involved in generating student's transcript and to seek for a way of automating the system for a way of automating the system for effective operations.Since there is continues moves towards technological advances that enhanced productivity of labour and free human beings of task done move economically by machines. Students' transcript is the summary of each of the two-year performance either in (OND) ordinary National Diploma or (HND) higher national diploma.

A transcript is also demanded by a student who has finished OND/HND and wishes to transfer to another school or student who wishes to secure a job. A transcript is not given directly to a student. It is sent to the school that the student wishes to transfer or to the establishment or organization, which the student wishes to secure a job.

A students' transcript is prepared or formed by the scores entered on the designed score sheet by the individual subject lectures on each semester examinations.

5.2 Conclusion

Transcript did not come like that it goes through so many processes. According to the Head of Registrar of exams and Academic Affairs Officer, said that after exam student scores from different lectures which have been recorded will be sent to the head of department of the departments, the HOD will now prepare a composite record of the result slip sign and sent it to the director of school to sign and the director after signing will send it to the deputy direct the deputy will now send it to the academic records to show that the result has been approved and the academic records will send it to exams department from department to the departments.

5.3Recommendations

The researcher recommends that the school authority in the study area should consider implementing a working e-learning system under the management of computer and experienced experts.

Having gone through the old system or method of sorting for data, It is recommended that computerized transcript system and other information management should be adapted by the school.

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APPENDIX I
PROGRAM SOURCE CODE

```
<?php //include 'banner.php';?>

<div class="container">

        <div class="col-xs-12 col-sm-9">

                <div class="rows">

                        <div class="well">

                                <fieldset>

                                        <legend><h2 class="text-
left">Welcome!</h2></legend>

                                        <h4>Student Transcript Processing System</h4>

                                </fieldset>

                                <br/>

<br/>


                        </div>

                </div>

        </div>

        <!--/span-->

        <div class="row row-offcanvas row-offcanvas-right">

                <div class="col-xs-6 col-sm-3 sidebar-offcanvas" id="sidebar"
role="navigation">

                        <div class="sidebar-nav">

                                <div class="panel panel-success">
```

```
                    <div class="panel-heading">Login
Information</div>
                    <div class="panel-body">
                        <div class="col-xs-12 col-sm-12">
                        <span class="glyphiconglyphicon-
user"></span><label><?Php echo $_SESSION['FNAME'];?></label><br/>
                        <span class="glyphiconglyphicon-
cog"></span><label><?Php echo $_SESSION['LNAME'];?></label><br/>
                        <a href="logout.php" class="btnbtn-
default">Logout <span class="glyphiconglyphicon-log-out"></span></a>
                        </div>

                    </div>

                </div>
            </div>
        </div>
    </div>
<!--/.well -->
</div><!--container-->
    <div class="container">
    <?php
        check_message();
```

```
?>
<div class="wellss">
    <?php

        $student = new Student();
        $cur = $student->single_student($_SESSION['IDNO']);
    ?>

        <fieldset>
            <legend>Student Information</legend>
            <table class="table table-bordered"
cellspacing="0">
                <tr><td>ID Number :</td><td
width="80%"><?php echo $cur->IDNO; ?></td></tr>
                <td>Fullname :</td><td><?php echo
$cur->LNAME .', '. $cur->FNAME.', '. $cur->MNAME; ?></td>    </tr></tr>
                <td>Gender :</td><td><?php
                    if($cur->SEX== 'F'){
                        echo "Female";
                    }else{
                        echo "Male";
                    }
                    ?></td>    </tr>
```

```
                                        <td>Age :</td><td><?php echo $cur-
>AGE; ?></td>     </tr>

                                        <td>Birth Date :</td><td><?php echo
$cur->BDAY; ?></td>    </tr>

                                        <td>Place of Birth :</td><td><?php
echo $cur->BPLACE; ?></td>  </tr>

                                        <td>Civil Status :</td><td><?php
echo $cur->STATUS; ?></td>  </tr>

                                        <td>Nationality :</td><td><?php
echo $cur->NATIONALITY; ?></td></tr>

                                        <td>Religion :</td><td><?php echo
$cur->RELIGION; ?></td>      </tr>

                                        <td>Contact No. :</td><td><?php
echo $cur->CONTACT_NO; ?></td> </tr>

                                        <td>Email Address :</td><td><?php
echo $cur->EMAIL; ?></td>    </tr>

                                        <td>Home Address :</td><td><?php
echo $cur->HOME_ADD; ?></td>    </tr>


                                    </tr>

                                </table>


                    </fieldset>

                    <?php

                    $details = new Student_details();
```

```
                    $det = $details->secondary_details($_SESSION['IDNO']);
                    ?>
                    <fieldset>
                        <legend>Secondary details</legend>
                        <table class="table table-bordered" cellspacing="0" width="100%">
                        <tbody>
                            <tr><td>Father :</td><td width="80%"><?php echo $det->FATHER; ?></td></tr>
                            <tr><td>Occupation :</td><td><?php echo $det->FATHER_OCCU; ?></td></tr>
                            <tr><td>Mother :</td><td><?php echo $det->MOTHER; ?></td></tr>
                            <tr><td>Occupation :</td><td><?php echo $det->MOTHER_OCCU; ?></td></tr>
                            <tr><td>Boarding :</td><td><?php echo $det->BOARDING; ?></td></tr>
                            <tr><td>With family :</td><td><?php echo $det->WITH_FAMILY; ?></td></tr>
                            <tr><td>Guardian :</td><td><?php echo $det->GUARDIAN; ?></td></tr>
                            <tr><td>Address :</td><td><?php echo $det->GUARDIAN_ADDRESS; ?></td></tr>
                            <tr><td>Other Person Supporting :</td><td><?php echo $det->OTHER_PERSON_SUPPORT; ?></td></tr>
```

```
                                        <tr><td>Address :</td><td><?php
echo $det->ADDRESS; ?></td></tr>
                                    </tbody>
                                    </table>



                    </fieldset>
                    <?php
                    $req = new Requirements();
                    $res = $req->single_result($_SESSION['IDNO']);
                    ?>
                    <fieldset>
                                    <legend>Requirements</legend>
                                    <table class="table table-bordered"
cellspacing="0">
                                        <tr><td>NSO :</td><td
width="80%"><?php echo $res->NSO; ?></td></tr>
                                        <tr><td>Baptismal :</td><td><?php
echo $res->BAPTISMAL; ?></td></tr>
                                        <tr><td>Entrance test Result
:</td><td><?php echo $res->ENTRANCE_TEST_RESULT; ?></td></tr>
                                        <tr><td>Mirriage Contract
:</td><td><?php echo $res->MARRIAGE_CONTRACT; ?></td></tr>
```

```
                                                    <tr><td>Certificate Of Transfer
:</td><td><?php echo $res->CERTIFICATE_OF_TRANSFER; ?></td></tr>

                                                </table>

                                        </fieldset>

                        </div><!--End of well-->

</div><!--End of container-->
```

APPENDIX II

PROGRAM OUTPUT