COMPUTER APPROACH TO STUDENTS' CONTINUOUS ASSESSMENT RECORDS IN SENIOR SECONDARY SCHOOLS.

(A CASE STUDY OF AHMADU ATAHIRU SECONDARY SCHOOL, KAGARA).

BY

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PGD/MCS/99/2000/901

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FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.

APRIL, 2002.

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A PROJECT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A POSTGRADUATE DIPLOMA IN COMPUTER SCIENCE.

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APPROVAL PAGE

This Project Work has been read and approved by the Undersigned, as meeting the requirements of the Department of Mathematics /Computer Science, Federal University of Technology, Minna.

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DEDICATION

This Project Work is dedicated to my beloved wife Lanti Rachel Amos, my children Emmanuel, Florence, Ezra and Silwanisu and my Late Father, and mother.

ACKNOWLEDGEMENT

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ABSTRACT

Continuous Assessment is a Mechanism whereby the final grading of a student in the Cognitive, affective and psychomotor domains of behaviour Systematically takes account of all his performances during a given period of Schooling.

Consequently, there is the need for an effective management and maintenance of Continuous assessment records in Senior Secondary Schools.

Based on this, a dbase Iv Computer language was designed to aid in effective Compilation of Students Continuous assessment records.

CHAPTER ONE

1.0. INTRODUCTION

1.1. BACKGROUND OF THE STUDY

Measurement and evaluation of students' behaviour at the end of undergoing the process of acquisition of knowledge is an integral part of any education system. In the senior secondary school, students' understanding of the concepts they have been taught is measured and evaluated using the continuous assessment method. The continuous assessment method is the periodical assessment of students using assignments, tests and examinations based on the concepts that were taught by the teacher and learned by the students within a particular time frame. The cumulative evaluation of students' performances in assignments, tests and examinations in one school term of a session forms the continuous assessment of students. The performances of students in assignments, tests and examinations are graded and scores awarded accordingly. The scores that have been awarded to students during each term of a school session forms the raw data in the continuous assessment system of schools.

Scores are very vital data in the senior secondary school and for the scores to be meaningful and useful, they have to be processed. The processing of continuous assessment scores produces useful information that are used for decision making by the school authority, such as deciding the academic performance of each student and the academic standard of the need for organization and maintenance of continuous assessment scores cannot be overemphasized.

The record of continuous assessment scores of students in the school requires proper organization and maintenance to enhance adequate handling and extraction of information. The collection, Processing, organization, maintenance

and extraction of useful information from continuous assessment scores is an information system in the senior secondary school system.

The processing, organization and maintenance of continuous assessment scores involves large volume of data, the processing of the scores is cumbersome. During the processing of scores, many errors are made and this affect the quality of information obtained. The records of continuous assessment scores of students are always organized to enhance easy access to records, maintenance of records, location and viewing of students' continuous assessment records. Organizing students' continuous assessment records involves a great deal of work and occurrence of errors is frequent, which leads to the repetition of work already done.

The application of computer to the processing and organization of continuous assessment records in senior secondary schools will solve the problems of occurrence of errors, inability to handle large amount of data, low speed of processing and organization. In a computerized system, processing of data is done at greater speed with much accuracy, large volume of data can be handled at a time and the data are easily organized using database management system.

This study is therefore concerned with the computerization of students, continuous assessment records in the senior secondary schools. A system will be designed to effectively and efficiently process and organize continuous assessment scores in the senior secondary school system.

1.2   STATEMENT OF PROBLEM

The processing and organization of continuous assessment scores in Senior Secondary Schools is done manually and since it involves large volume of data, the occurrence of errors is frequent. Similarly, the teachers in the senior secondary school system find the compilation of the continuous assessment

scores tedious and this subsequently leads to errors, repetition of compilation and delay in the preparation of the termly statement of students' results. The statement of results issued to the students are characterized by incorrect entering of their continuous assessment scores. Consequently, the scores have to be entered again which leads to delay in the completion of students' statement of results.

In the senior secondary school system, students' continuous assessment records are poorly kept and maintained. This results to loss of students' continuous assessment records and make the retrieval of information from student's' assessment records difficult.

1.2.   PURPOSE OF THE STUDY

The purpose of this study is to computerize students' continuous assessment records in the senior secondary schools. The study is aimed at designing a simplified system and applying computer to the processing and organization of students' continuous assessment records in the Senior Secondary schools.

1.3.   SIGNIFICANCE OF THE STUDY

This study will be useful to teachers in the senior secondary schools. The teachers will find it easy to process and organize students' continuous assessment records without errors.

School administrators will find the study to be of importance to them since the information needed by them from students' continuous assessment records will be hand at the appropriate time.

The study will be of immense benefit to the officials of the Ministry of Education because they will be able to obtain accurate data of students' continuous assessment records without delay.

The students in the senior secondary schools will also benefit from this study since the statement of results of their academic performance will be prepared accurately and released to them on time.

1.4.   SCOPE AND LIMITATIONS

The scope of this study has been limited by the amount of material for literature review. Finance has been another factor that has limited the scope of the study. Huge finance is involved in this type of research, hence the scope of this study has been made in such a way that the available limited financial resources could be used effectively and efficiently.

The time or duration of the study has also limited the scope of this study. The researcher has made the scope of the study to suit the duration allotted to the project work.

1.5.   METHODOLOGY

The appropriate method used in this project work is record searching and interviewing.

Through record Searching, information about the academic performance of the students will be possible. The search include gearing the students Scores in their various tests, assignments and Project and examination from the various subject officers.

Interviewing approach was adapted. This involves gerring some vital information about the students. Both the examination officers and the various subject teachers were interviewed in order to ascertain objective, constraints and failure in the existing system.

1.6 RATIONALE FOR CONTINUOUS ASSESSMENT

Some of the reasons for the need for continuous assessment may be inferred from the policy statements of the Government on education, but there are other reasons not referred to in the National policy on education. However, the following appears important for continuous Assessment:

(a) Assessment is an interim part of the teaching process. It is therefore reasonable that the teacher school be involved in the final assessment of the pupils that have been taught.

(b) An assessment procedure which takers into account the learner's performance through the entire period of school is likely to be more valid and indicative of the learner's overall ability than a single examination.

(c) The readiness of instructors to introduce innovations into their teaching is often frustrated by the fact that a final external examination does not take into account of such innovation.

(d) An important aspect of instruction is the appropriate guidance of the learner both in his/her learning. And in preparation for career, continuous assessment procedure facilitates such guidance function in a school.

(e) A teacher/instructor also needs to assess his/her own instruction methods from time in order to improve his/her performance.

1.7 DEFINITION OF TERMS

(1) **COMPUTER -** This is an electronic device that is Capable of accepting data, process the data and produce information accurately and efficiently.

(2) **DATA -** These are the raw facts that are fed into Computer for processing e.g. raw data of students continuous assessment are the marks and grade scores. by them.

(3) **CONTINUOUS ASSESSMENT** - This is a mechanism whereby the final grading of a student in the Cognitive, affective and Psychomotor domains of behaviour Systematically takes account of all his performances during a given period of schooling.

(4) **RECORDS** - A record is a group of related facts treated as a unit refrestenting a particular transaction.

(5) **INFORMATION** - This is a data that have been processed into a form that is useful to the user.

(6) **DATA BASE MANAGEMENT SYSTEM** - This is Computer Software that Construct, expands and maintains the data contain in a database.

(7) **AFFECTIVE DOMAIN** - This has to do with values, beliefs, attitude, appreciation, interest, habit and life style.

(8) **ORGANIZATION** - This involves the arrangement of facts and the resulting output.

(9) **PSYCOMOTOR DOMAIN** - This deals with manipulative skill and body movements.

(10) **INFORMATION** - Those are data that have been processed into a useful form to the user.

(11) **FILE** - A collection of items arranged in form of records.

1.9. PROBLEMS OF IMPLEMENTING OF CONTINUOUS ASSESSMENT.

The second extract from the national policy on education shows that government is aware that the implementation of the policy of continuous assessment poses certain significant problems for the educational system in general and teachers in particular. The policy therefore advocates a rigorous training program from teachers who in the final analysis have to implement continuous assessment. However, two major problem areas may be identified Namely: -

(1)   **COMPABILITY OF STANDARDS:** -   At present the single nation examination provides some basis for comparing the quality of students performances across school. Under a continuous assessment situation, such comparison become extremely difficult. The difficult arises from two main sources namely: -

i.   Differences in the quality of tasks and other assessment instrument used in different schools.

ii.   Differences in the procedure for scoring and grading the various assessment instruments in the various schools.

(2) RECORD KEEPING AND CONTINUITY OF RECORD:

For continuous assessment to be meaningful there has to be meticulous keeping of accurate records on each pupil.

Secondly, since these records are expected to be cumulative from class to class and from school to school, there is the need for uniformity in the kinds of record kept and the format for keeping such records. There is therefore, the problem that the educational system must expect several thousands of teachers to keep accurate records with a more or less uniform format.

Thirdly, the fact that a student even within the same level of education, may move from one place to another, for example, if the parents are transferred to another town demands that a mechanism must be involved to ensure that the

record of the student form one school can be transferred to another school without removing those records from the first school.

CHAPTER TWO

2.0. LITERATURE REVIEW

2.1. INTRODUCTION

In accordance with the National policy on education, students in senior secondary schools are assessed periodically through assignments, tests and examinations. The students are graded or scored according to their performances and the teachers keep cumulative records of the scores obtained by each student (Adedayo, 1987).

The scores obtained by students are raw data in the senior secondary school system. For the scores or data to be useful, they have to be processed. Data are raw facts that are fed into the computer for processing.

The continuous assessment practice in senior secondary schools is a system, which consist of the teachers, student, processing and organization of scores. A system is a component which interact with one another towards achieving a common goal (Woodhouse, 1984).

The application of computer to the continuous assessment system makes the computer part of the system. A computer is an electronic device that accepts and processes data by following a set of instructions to produce an accurate result. A computer system consists of the user, hardware, and software and has the objective of solving a problem for the user.

The processing of data using the computer is accomplished using computer programs.

A computer program is a set of instructions describing the logical steps a computer will follow to solve a particular problem.

Computers are very useful in the processing of data. There is the need for computers because it produces accurate and reliable information to the user, processes huge volume of data easily, makes complex calculation easier, makes

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storage, filing and retrieval of data and information easier and it process data at very great speed.

The purpose of processing data is to obtain information. Information is a processed data which is useful and from which decision can be made. Processing of data is the manipulation, retention and retrieval of data. Information system is a collection of procedures and resources to produce information for decision making.

2.2.   CONTINUOUS ASSESSMENT SYSTEM.

The continuous assessment system in one school is not quite different from any other school in the Federation since they are following the same policy of education. One school year is made up of three terms consists of about twelve (12) weeks. Within the first and the third weeks teachers give assignments to the students in different subjects offered in the school. The assignments are evaluated by the teachers and the scores obtained by the students are recorded. At the end of the third week, the teachers administer a test in each of the subjects, evaluate it and record the scores obtained by students. The teacher total the scores obtained by students in subject for the first quarter of the term. The maximum obtainable scores for the first quarter of the term is usually 10marks.

At the beginning of the fourth quarter which from the tenth week to the twelfth week, the school conducts a terminal examination in which each teacher examines the students on what they have been taught during the term. The scores obtained by teacher from the assessment of the examination papers are recorded.

In grading students according to their total scores the following guidelines are used:-

80 - 100	Excellent
80 - 70	Very Good

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60 -	70	Good
50 -	60	Credit
50 -	40	Pass
40 -	below	Fail

2.3. CHARACTERISTICS OF CONTINUOUS ASSESSMENT.

Continuous assessment may be characterized as follows:-

    (i)   Systematic

    (ii)   Comprehensive

    (iii) Cumulative

    (iv) Guidance oriented

(i) **SYSTEMATIC:-** Continuous assessment is said to be system in the sense that it requires an operational plan which indicates what measurement is to be made of the students performance at certain time interval or time during the school year. The measurement is made and the result recorded.

(ii) **COMPREHENSIVE:-** Continuous assessment is comprehensive in the sense that many types of instruments are used in determining the performance, this include test, assignments, observation, examination etc. Another aspect of the comprehensiveness is that the student is seen in his totality because decisions are made based on information obtained in the cognitive, affective and psychomotor domains.

(iii) **CUMULATIVE:-** Continuous assessment is cumulative since any decision to be made at any point in time on the student takes into account all previous decision about such student. This requires the keeping of up-to-date record on each student.

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(iv) **GUIDANCE –ORIENTED:-** Continuous assessment is guidance – oriented because information obtained is used to guide his further development.

2.4.   SHORT COMINGS OF THE SYSTEM

It has been shown that the test of examination is for the most part, used as the document method of assessing pupils progress in this country. Our problem with this approach is that assessment is then directed mostly to the taught aspect of learning activities.

Knowledge, understanding and other thinking skills acquired in various subjects of the school curriculum are evaluated and marks are awarded relatively to pupils' performance in the several subjects. Often total neglected in this procedure is the assessment of skills normally associated with both the character and the industry of the pupil.

Another problem with this system of assessment is that emphasis is laid on the performance at the year, the term or the course. One shortcoming of this practice is that by the time a decision is made, it is often too late to assist the pupils improve on their learning because most of them would be going on to other classes, course or topics. As a result, the entire educational system is denied opportunity for meaningful growth.

A third problem of this system of assessment or practice is to seen in the manner in which reports are sent to parents and guardians. In primary and secondary schools the common practice is to add new scores, as given by different teachers, find and average and give the student a rank among his classmate on the basis of this questionable procedure. The problem with this is that marks obtained in different subjects or giving by different teacher may not have equal weights.

Another issue associated with the manner in which reports are presented to parents and guardians is that information provided is usually scanty. At best

there are marks or letter grades indicating attainment in different subjects and an overall average which does not indicate much or indicate a false mark based on this average.

Other weaknesses include examination malpractices, which has crept into the practice of assessment in this country as a symbol of national disgrace and poverty of the state of record keeping. There is therefore, definite need for change of practice.

2.5. WEAKNESSES OF THE EXISTING SYSTEM

(1) The system is not economic because it consumes much papers i.e a lot of papers are used for printing the continuous assessment forms.

(2) In compiling the continuous assessment of students the teachers mark a lot of mistakes.

(3) The job of compiling the scores is tedious. This leads to the delay in the release of students result.

(4) Only one copy of the continuous assessment form is produced for each class and kept by principal. Hence it is difficult to lay hands on the score sheets of the students once the only copy got lost.

(5) Searching and retrieval of information about students academic records in schools is tedious and consumes time.

(6) The system is not flexible because of the volume of continuous assessment records to be processed by each teacher is increased, the job of compiling the continuous assessment records becomes boring.

(7) Prove to manipulations by staff.

2.6. CATEGORIES OF EXAMINATIONS.

The primary function of the college is to impart knowledge to students and also equip them for the end of term examinations and end of course

examinations. These examinations are categorized into two namely:-
INTERNAL AND EXTERNAL EXAMINATIONS.

(1) INTERNAL EXAMINATION

Internal examinations are solely set and mark by the individual schoolteacher. The examinations consist of continuous assessment test, end of term examinations and promotion examinations. For each term, continuous assessment test is conducted twice. This will form part of the final terminal examinations.

In the junior secondary level, each of the continuous assessment tests carries a maximum of 30 marks, while in the senior secondary level each continuous assessment test carries a maximum of 15 marks.

(2) EXTERNAL EXAMINATIONS

In this category, there Are two types:-

    (i)   The senior school certificate examination

    (ii)   The junior school certificate examination

The former is now been organised by 2 bodies i.e the West African Examination Council and Nat. Examination Council and the latter is conducted by the National Examination Council (NECO). In both cases the school has no control over mode of the Examinations.

FORM OF REPORTING SCORES

There are two forms reporting score presently in our educational system:-

(a)   A lot of School report only the raw score, for instance, a pupil permanent record or the report card sent to his parents might contain the entry elementary mathematics of 60 marks.

The collated information that gives 60 its full meaning is not reported and in such a case, a parent can only make the assumption that 60 in mathematics is the same as 60 in Geography.

(b)   Some Schools, in addition to the pupils master, report the class average or the pupils place in the order of merit. Even so, it will be an easy task for the parents to decide how better or worse is 60 marks in mathematics than 60 marks in Geography.

2.7   SCALING OF CONTINUOUS ASSESSENT

Any programme of studies or method of instructions usually results in a broad range of achievement among members of the group who participated in the program or received the training.

Teachers should not compare performance of their pupils across subject by subject by using just the raw scores. Hence there is the need for teachers to be familiar with simple methods of processing raw scores. This involves the use of elementary statistical methods such as the mean (X) mean deviation, Standard deviation, range, median and modes.

In order to facilitate meaningful analysis and interpretation, raw scores are usually transformed to other scores, one of which is called the standard scores. A standard score express an individual's performance in terms of that individual's deviation from the mean in standard deviation unit. The standard score is also called Z-Scores. In Z-Scores can be subjected by common algebraic operations.

The formula for computing Z-Score is given as $Z = \dfrac{X - X}{S}$ where X is the score, X is the mean and S is the Standard deviation.

For example suppose 6 students in a class have the following scores in a test scores out of 10.

Students	Scores
1. Danjuma	8

2.	Umar	7
3.	Bala	6
4.	Shehu	5
5.	Bello	4
6.	Garba	6

To find the Z-Score for the above scores, first calculate the mean (X) then calculate the standard deviation (S)

$$X = \frac{8+7+6+5+4+6}{6} = \frac{36}{6} = 6$$

$$S = \sqrt{(8-6)^2 +(7-6)^2+(6-6)^2+(5-6)^2+(4-6)^2+(6-6)^2}$$

$$= \sqrt{2^2+1^2+0(-1)^2 + (-2)^2 + 0}$$

$$= \sqrt{\frac{4+2+2+4+0}{6}} \qquad \sqrt{\frac{=12}{6}} \qquad =1.4$$

Hence the Standard Scores for the Score becomes:-

(1) Danjuma $=\frac{8-6}{1.4} =1.43$

(2) Umar $= \frac{7-6}{1.4} = 0.714$

(3) Bala $= \frac{6-6}{1.4} = 0$

(4) Shehu $= \frac{5-6}{1.4} = -0.714$

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(5)   Bello $= \dfrac{4-6}{1.4} = -1.43$

(6)   Garba $= \dfrac{6-6}{1.4} = 0$

Another example, if the mean score for school aptitude test score of a student is 48, the standard deviation is 8. What is the Z-Score equivalent of a score of 43 at the college.

$$Z = \dfrac{X-X}{8} = \dfrac{43-48}{8} = -.625$$

That is, a raw score of 43 is .625 of standard deviation unit below the mean. To achieve the goal of comparability of students' performance therefore, the students' raw scores must be standardized by using the following mathematical expressions given as a guide by the Federal Ministry of Education Science and Technology.

COMPUTING GUIDE:-FOR STANDARDIZING RAW CONTINUOUS ASSESSMENT SCORE SUBJECT BY SUBJECT

(1) Find THE SUM i.e. $1+2+3+4+5\ldots\ldots+n =$ sum

(2) Calculate the mean $\overline{X}$

Calculate $(X-X)^2$ where X represents a raw score and X represents the mean.

(3) Compute the Standard deviation which is :-

$$\sqrt{\dfrac{(X-X)^2}{n-1}} = SD.$$

(5) Calculate Z-Score i.e $\dfrac{X-X}{SD} = Z$

(4) Calculate T-Score i.e $50+10x\ Z = T$.

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CHAPTER THREE

3.0. SYSTEMS ANALYSIS AND DESIGN

3.1. INTRODUCTION

System analysis is a critical study and analysis of the current procedures with a view to designing a better and more efficient alternative procedure using computer and other resources to perform tasks, which meet the information needs of an organisation. The objective of system analysis is to design an effective. Computerised procedures that will create benefits in excess of those created by other means. It entails a process of collecting and analysising facts in respect of the existing operations and procedures in order to obtain a full appreciation of the situation prevailing so that an effective computer system may be designed and implemented.

3.2. FEASIBILITY STUDY

The feasibility was embarked upon to determine the potential or desirability of the proposed system by studying the existing method of continuous assessment. Since the establishment of continuous assessment procedure the manual method of continuous assessment has been employed in the preparation of student result. Information generated from the study of the old system was used in the development of the new system. During the preliminary investigation, some of the problems associated with the manual system were identified to be inadequate security and privacy of files.

Students records are not adequately secured as such unauthorized person can easily tampered with them with the aim to get relevant information about a particular student.

3.3. TESTING PROJECT FEASIBILITY

For any project or work to be judged feasibly, it must pass three tests i.e.

(a) Operational Feasibility test

(b) Technical Feasibility test

(c) Economical Feasibility test

(a) OPERATIONAL FEASIBILITY:-

This is concerned with the workability of the proposed system when developed and installed. In this case one consider the acceptability and support of the management for the project and the way the new system will affect performance.

(b) TECHNICAL FEASIBILITY:-

This is to whether the proposed system can be done with current equipment, existing software and the available personnel.

(c) ECONOMICAL FEASIBILITY:-

This tests for the financial feasibility of the project to access the cost of implementing the proposed project vis-à-vis the benefits to be derived from it.

3.4. COST AND BENEFITS ANALYSIS

(1) DEVELOPMENT COST	N	K
System Analysis & Design	60,000 .	00
For 4 weeks at #15,000 per wk		
Software Development	25,000 .	00
Personal Computer (2)	150,000 .	00
Laser Jet Printer (6L model)	45,000 .	00

Stabilizer (1000 K.V.A)	10,000 .	00
U.P.S	25,000 .	00
Miscellaneous	50,000 .	00
TOTAL	₦365,000 .	00

(2) OPERATING COST

Supplies (stationeries, Diskettes etc for Iyr)	100,000	00
Equipment Maintenance	25,000	00
Labour Cost (4 operators at #10,000.00)		
Per month for 2 months)	80,000	00
2 Air conditioners (2½HP)	80,000	00
Utilities	80,000	00
Miscellaneous Expenses	50,000	00
TOTAL	₦415,000	00

GRAND TOTAL ₦365,000.00 + N415,000.00 ₦780,000 00

BENEFITS ANALYSIS

(1) High speed of Execution which makes it very easy to communicate faster and respond quickly to any given situation.

(2) It has the facility for handling large volume of data more efficiently and with high degree of accuracy and at relatively low cost.

(3) The information generated in the system will be error free.

(4) Security and privacy of file is guarantee.

(5) Misplacement of Continuous assessments records of students will no longer exist.

(6) Automatic updating of records and maintenance

(7) Elimination of many repetitive work on students records.

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3.5. SYSTEMS CONVERSION/CHANGEOVER

File Conversion is a vital activity, which is sometimes underestimated. it involves the Conversion of the old file data into the form a very expensive stage in the whole Project.

The changeover may be achieved in a number of ways. The most common methods are – **DIRECT, PARALLEL, and PILOT**

(1) **Direct Changeover** –This method is the complete replacement of the old System by the new, in one move. For Security reasons, the old system may be held in abeyance, including people and equipment. In the event of a major failure revert to the old system.

(2) **Parallel Method** –This means processing current data by both the old and new systems to cross-check the results. Here the old system is vast alive and operational until the new system has been proved for at least one system cycle, using full live data.

(3) **Pilot Method** –This is in a piece meal like. Until results are obtained and are satisfactory, nothing much will be done to other section of the organisation.

Generally, the Parallel method is recommended for the school. This method allows the results of the new system to be compared with the old system before acceptance by the user, thereby promoting users confidence.

3.6. THE DESIGN OF THE PROPOSED SYSTEM

The design of the proposed system is done to suit the analysis specified above. The design takes cognisance of the required input in order to generate the necessary reports as well as the relevant software that will help in carrying out the job satisfactorily.

3.7. INPUT SPECIFICATION

For computer to perform the task of data processing, data needs to be entered into thee system. The input specification states the source and type of data that needs to be supplied into a system. This is considered important because if the information supplied is correct, it usually follows that the result of processing would also be right. This is in consonance with the popular saying in computer parlance that 'Garbage In Garbage Out' (GOGO). It is line with this that the data input of the proposed system is designed to produce a cost-effective method, aimed at achieving the highest level of accuracy and ensuring that the input is acceptable and easily understandable to the user.

It is note worthy that the above objectives were considered in designing the input for the proposed system that is mainly in an interactive mode. This is done with dialoguing with an online system in which the computer system prompts the user for entry. In data entry, information is coded in such a way that words ideas or relationships are expressed by coded. This is developed in order to reduce input task, control errors, and increase speed. Therefore, with code fewer details are necessary in input without loss of information.

3.8. OUTPUT SPECIFICATION

Output refers to the results and information that are generated by a system. The output from a computer system are required primarily to communicate the result of processing to users or other system or more importantly, to provide a permanent (hard) copy of this result for consultation. The design process of the output begins by the identification of the output the system must produce. It is as a result of this that in designing the output for the proposed system, the needs of the users were fully considered.

CHAPTER FOUR

4.0. SOFTWARE DEVELOPMENT/IMPLEMENTATION

4.1 INTRODUCTION

Programming can be defined as an act of writing program. A program is a set or Sequence of instructions, which informs the Computer of the steps required for achieving a defined task. This Section focuses more at providing the users with the necessary information needed on how to install and run the system effectively and efficiently.

Indeed, all aspect of the system were operationally tested prior to their use. This thereby allows the software designed to be accepted. Implementation includes all those activities that take place to convert from the old system to the new one.

4.2. CHOICE OF LANGUAGE

The Language used in programming is Database management system IV. A database management system is a software that constructs, expends and maintain the data contained in database. It provides the inter face between the user and the data in such a way that it enable the user to record, organize, select, report on and otherwise manage data contained in the database.

A database can be defined as a mechanized shared and centrally controlled of data used in an organisation it is any collection of useful information organized in a systematic and consistent manner. A database can also be regarded as an organized databank where data are stored.

4.3. FEATURES OF THE CHOSEN LANGUAGE

In data processing environment, data are view as a whole irrespective of their type. Furthermore, the integration of data of different types are linked by logical relationship through Data Base management system. The features of DBMS are as follows:

(1) Data Integration:- In a database, information from several files is co-ordinated, accessed and operated upon as though it is in a single file. Logically, the information is centralized, physically the data may be located at different files.

(2) Data Redundancy is Eliminated:- Data redundancy occurs when the same data appears in more than one file. This leads to wastage of storage space and duplication of efforts during data entry. DBMS eliminates data redundancy since data are not duplicated in files.

(3) Data Independence:- DBMS ensures data independence because application programs are isolated from the physical or logical storage of data: This feature seeks to allow for change in the content and organisation of physical data without re-programming of application.

(4) Data Integrity:- This is an important features of DBMS. Since data is stored once with duplication, the information retrieved is consistent, as only one update is enough if there is a change in the data.

4.4. ADVANTAGES OF DATABASE MANAGEMENT SYSTEM

(i) It is suitable for transaction processing application

(ii) It is easy to use and understand

(iii) It is easy to develop user-friendly application hence; data entry and updating can be easily performed.

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(iv)   It is easy to make corrections.

4.5. TRAINING

The new system could be fully implemented by having an in-house training for teachers, examination officer, senior staff and computer operator in the school. The duration of the training depends on how fast the personal involved can understand the system.

However, in a situation where such staff are lacking a new hand will be recruited to manage the system.

4.6. SYSTEM TESTING

The system was examined to ensure its workability. This is done by testing each individual program to prove that they are error-free. The testing of the program were done by using the data collected. The output obtained from testing the system shows that the programs were free from errors and the system as a whole working.

4.7. DOCUMENTATION OF THE SYSTEM

The present system involves the computerization of students' continuous assessment scores in the senior secondary schools. In this system, only a systems analyst can change programs, master file, and storage facilities.

The vice-Principal's office, Examination office, computer office and teachers are directly involved in the implementation of the system.

The benefits of this system include:-

1.   The tedious task been performed by the teachers in the preparation of students continuous assessment scores is reduced.

2.   There is timely completion of processing and organisation of students' continuous assessment scores.

3. Students records of continuous assessment scores can easily be accessed when the need arises.

4. Students record of academic performance can easily be handled and maintained.

5. Information about students' continuous assessment scores can easily be retrieved when required.

4.8. HARDWARE REQUIREMENTS

Personal Computers with the following configuration:-

-   Pentium 700MHZ
-   At least 1.2.GB
-   At least one 3.5" disk drive
-   14" SVGA Colour
-   (2 N0s) Printers) Laser –Jet (6L model)
-   (1) DeskJet Printer 1125C
-   Stabilizer 5000 K.V.A
-   U.P.S 5000 K.V.A

2.   SOFTWARE REQUIREMENTS

-   MS-Dos Version 6.0 or later
-   DBMS-D Base iv
-   Clipper 5.0 Software Development Kit
-   Text Editor-MS. Dos.

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PROCEDURE FOR IMPLEMENTATING THE SYSTEM

This involves the subject teachers recording the subject, class, name of students, continuous assessment scores for the first three quarters, examination scores, total scores, grades and remarks into the continuous assessment form.

The maximum obtainable score for continuous assessment for each quarter is 10% and maximum obtainable score for the examination is 70%. Hence the total obtainable score is 100%.

If the total score is less than 40%, grade is F and the remark is "FAIL". If the total score is 40% and less than 50%, grade is E and the remark is "PASS" if the total score is 50% and less than 60%, grade is D and the remark is "CREDIT". If total score is 60% and less than 70%, grade is C and the remark is "Good" if total score is 70% and less than 80%, grade is B and remark is "VERY GOOD". If total score is 80% and above, grade is A and the remark is "EXCELLENT".

The continuous assessment form is used in entering data into the Master file already created for each subject in each class. The records are stored and output printed. The MASTER FILE consists of eight fields namely: NAME, CA1, CA2, CA3, EXAM, TOTAL, GRADE and REMARKS.

The program was written in D Base IV Programming Language. To load the D Base IV environment, the user enters the Dbase directory e.g.

C: /> CD DBASE - ENTER

The next step is the involve the dbase IV Program by typing "dbase" at the prompt i.e.

C: / DBASE / > dbase

On getting to the Dot prompt of the dbase IV environment, the user then execute the Continuous Assessment by typing.

.Do Assess

The program displays the main menu from which the user can make a choice.

MAIN MENU

(a)   ADD RECORDS

(b)   UPDATE RECORDS

(c)   DELETE RECORDS

(d)   VIEW RECORDS

(e)   SORT RECORDS

(f)   PRINT RECORDS.

(G)   QUIT

CHAPTER FIVE

5.0. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. SUMMARY

The work is focussed on the computerization of students' continuous assessment records in secondary schools. The present system was reviewed and analyzed through observation and inspection. The analysis showed the urgent need for computerization and the requirements of the system.

A design of a new system was carried out by specifying the system output, input, types of file structure and organization, and the system procedure.

5.2. CONCLUSION

The output obtained from the implementation of the system led to the following conclusion:-

1. .The system is simple, easy, reliable economical and flexible.
2. The new system is error free in processing and organization of students' continuous assessment records.
3. The output is produced without delay.
4. Where there is an omission of students' records, such records can be replaced without destroying the entire work.
5. Retrieval of information about students' continuous assessment records will be fast and easy.

5.3. RECOMMENDATIONS

I   As a result of the immense benefits of the system, school administrator in both the private and public schools should adopt this system of continuous assessment.

II. The Federal and State, Public and Private groups involved in education should lay greater emphasize on the use of this system of continuous assessment in school under their jurisdiction.

III. Greater awareness and computer literacy should be encouraged to ease the burden on teachers and students whose future might be ruined by lose of his or her records.

IV. The Ministry of Education should organise Seminars & workships for their teachers and students constantly.

V. Computer literacy should be Vigorously pursued by all concerned particularly for students & teachers.

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```
*MAIN MENU PROGRAM


SET TALK OFF
SET STATUS OFF
SET SCOREBOARD OFF
SET COLOR TO B+
DO WHILE .T.
CLEAR
@ 1,24 TO 16,54 DOUBLE
@ 2,35 SAY "MAIN MENU"
@ 3,35 TO 3,43 DOUBLE
@ 5,27 SAY "TASK CODE"
@ 5,42 SAY "TASK"
@ 6,27 TO 6,35
@ 6,42 TO 6,45
@ 7,31 SAY "1" + SPACE(7) + "ADD RECORD"
@ 8,31 SAY "2" + SPACE(7) + "UPDATE RECORD"
@ 9,31 SAY "3" + SPACE(7) + "DELETE RECORD"
@ 10,31 SAY "4" + SPACE(7) + "SORT RECORD"
@ 11,31 SAY "5" + SPACE(7) + "VIEW RECORD"
@ 12,31 SAY "6" + SPACE(7) + "PRINT RECORD"
@ 13,31 SAY "0" + SPACE(7) + "QUIT"
CHOICE = 0
@ 15,29 SAY "ENTER A TASK CODE:"
@ 15,48 GET CHOICE PICTURE "9" RANGE 0,7
READ
DO CASE
  CASE CHOICE = 1
   DO ADD
  CASE CHOICE = 2
   DO UPDATE
  CASE CHOICE = 3
   DO DELETE
  CASE CHOICE = 4
   DO SORT
  CASE CHOICE = 5
   DO VIEW
  CASE CHOICE = 6
   DO PRINT
```

```
  CASE CHOICE = 0
    EXIT
  ENDCASE
ENDDO
SET TALK ON
SET STATUS ON
SET SCOREBOARD ON
CLEAR
RETURN
```

```
*PROGRAM TO VIEW RECORD

SET TALK OFF
SET STATUS OFF
SET SCOREBOARD OFF
SET COLOR TO B+
USE CONASS
DO WHILE .T.
 GO TOP
 CLEAR
 MNAME = SPACE(20)
 @ 2,3 TO 11,72 DOUBLE
 @ 4,10 SAY "NAME"
 @ 6,5 GET MNAME
 READ
 LOCATE FOR NAME = MNAME
 IF FOUND()
  @ 4,27 SAY "CA1"
  @ 6,27 GET CA1
  @ 4,32 SAY "CA2"
  @ 6,32 GET CA2
  @ 4,37 SAY "CA3"
  @ 6,37 GET CA3
  @ 4,42 SAY "EXAM"
  @ 6,43 GET EXAM
  @ 4,48 SAY "TOTAL"
  @ 6,49 GET TOTAL
  @ 4,55 SAY "GRADE"
  @ 6,57 GET GRADE
  @ 4,63 SAY "REMARK"
  @ 6,62 GET REMARK
 READ
ELSE
 @ 8,5 SAY "RECORD NOT FOUND"
ENDIF
CH = SPACE(1)
@ 10,5 SAY "TO CONTINUE(Y/N)" GET CH PICT "!"
READ
IF CH = 'Y'
```

```
      LOOP
    ELSE
      EXIT
    ENDIF
ENDDO
CLOSE DATABASE
SET TALK ON
SET STATUS ON
SET SCOREBOARD ON
RETURN
```

```
*PROGRAM TO UPDATE

SET TALK OFF
SET STATUS OFF
SET SCOREBOARD OFF
SET COLOR TO B+
USE CONASS
DO WHILE .T.
  GO TOP
  CLEAR
  MNAME = SPACE(20)
  @ 2,24 TO 22,58 DOUBLE
  @ 3,26 SAY "ENTER NAME" GET MNAME
  READ
  LOCATE FOR NAME = MNAME
  IF FOUND()
    @ 5,26 SAY "ENTER CA1" GET CA1
    @ 7,26 SAY "ENTER CA2" GET CA2
    @ 9,26 SAY "ENTER CA3" GET CA3
    @ 11,26 SAY "ENTER EXAM" GET EXAM
    @ 13,26 SAY "ENTER TOTAL" GET TOTAL
    @ 15,26 SAY "ENTER GRADE" GET GRADE
    @ 17,26 SAY "ENTER REMARK" GET REMARK
    READ
  ELSE
    @ 19,30 SAY "RECORD NOT FOUND"
  ENDIF
  CH = SPACE(1)
  @ 21,30 SAY "TO CONTINUE (Y/N)" GET CH PICT "!"
  READ
    IF CH = 'Y'
      LOOP
    ELSE
      EXIT
    ENDIF
ENDDO
CLOSE DATABASE
SET TALK ON
SET STATUS ON
SET SCOREBOARD ON
```

```
RETURN     *PROGRAM TO DELETE


SET TALK OFF
SET STATUS OFF
SET SCOREBOARD OFF
SET COLOR TO B+
USE CONASS
DO WHILE .T.
  GO TOP
  CLEAR
  MNAME = SPACE(20)
  @ 2,24 TO 22,58 DOUBLE
  @ 3,26 SAY "ENTER NAME" GET MNAME
  READ
  LOCATE FOR NAME = MNAME
  IF .NOT. FOUND()
   @ 19,30 SAY "RECORD NOT FOUND"
  ELSE
   @ 5,26 SAY "ENTER CA1" GET CA1
   @ 7,26 SAY "ENTER CA2" GET CA2
   @ 9,26 SAY "ENTER CA3" GET CA3
   @ 11,26 SAY "ENTER EXAM" GET EXAM
   @ 13,26 SAY "ENTER TOTAL" GET TOTAL
   @ 15,26 SAY "ENTER GRADE" GET GRADE
   @ 17,26 SAY "ENTER REMARK" GET REMARK
   CLEAR GETS
   DELETE
   PACK
   @ 19,30 SAY "RECORD IS DELETED"
  ENDIF
  CH = SPACE(1)
  @ 21,30 SAY "TO CONTINUE(Y/N)" GET CH PICT "!"
  READ
  IF CH = 'Y'
   LOOP
  ELSE
   EXIT
  ENDIF
ENDDO
```

```
CLOSE DATABASE
SET TALK ON
SET STATUS ON
SET SCOREBOARD ON
RETURN
```

```
*PROGRAM TO ADD RECORD


SET TALK OFF
SET STATUS OFF
SET SCOREBOARD OFF
SET COLOR TO B+
USE CONASS
DO WHILE .T.
  CLEAR
  @ 2,24 TO 20,58 DOUBLE
  APPEND BLANK
  @ 3,26 SAY "ENTER NAME" GET NAME
  @ 5,26 SAY "ENTER CA1" GET CA1
  @ 7,26 SAY "ENTER CA2" GET CA2
  @ 9,26 SAY "ENTER CA3" GET CA3
  @ 11,26 SAY "ENTER EXAM" GET EXAM
  @ 13,26 SAY "ENTER TOTAL" GET TOTAL
  @ 15,26 SAY "ENTER GRADE" GET GRADE
  @ 17,26 SAY "ENTER REMARK" GET REMARK
  READ
  CH = SPACE(1)
  @ 19,31 SAY "TO CONTINUE (Y/N)" GET CH PICT "!"
  READ
  IF CH = 'Y'
   LOOP
  ELSE
   EXIT
  ENDIF
ENDDO
CLOSE DATABASE
SET TALK ON
SET STATUS ON
SET SCOREBOARD ON


*PROGRAM TO SORT RECORD

SET TALK OFF
SET STATUS OFF
```

```
SET SCOREBOARD OFF
SET COLOR TO B+
USE CONASS
CLEAR
SORT ON NAME TO CONASS1
SET TALK ON
SET STATUS ON
SET SCOREBOARD ON
RETURN ************************************
```

```
* This program prints the report

set talk off
set score off
@1,19 SAY "AHMADU ATAHIRU SECONDARY SCHOOL KAGARA"
@5,29 SAY "CONTINOUS ASSESSMENT"
@9,30 SAY "SS3A"
@11,10 SAY "NAME"
@11,27 SAY "CA1"
@11,32 SAY "CA2"
@11,37 SAY "CA3"
@11,42 SAY "EXAM"
@11,48 SAY "TOTAL"
@11,55 SAY "GRADE"
@11,62 SAY "REMARK"
R=12
KOUNT=0
USE CONASS
DO WHILE .NOT. EOF()
 R=R+1
 KOUNT=KOUNT+1
 @R,5 SAY NAME
 @R,27 SAY CA1
 @R,32 SAY CA2
 @R,37 SAY CA3
 @R,42 SAY EXAM
 @R,48 SAY TOTAL
 @R,55 SAY GRADE
 @R,62 SAY REMARK
 SKIP
ENDDO
CLOSE DATABASE
SET DEVICE TO SCREEN
SET TALK ON
SET SCORE ON
RETURN
```

ALMADU ATAHIRU SECONDARY SCHOOL KAGARA

CONTINOUS ASSESSMENT

SS3A

NAME	CA1	CA2	CA3	EXAM	TOTAL	GRADE	REMARK
NNAHUE AUGUSTINA	8	4	7	45	64	C	GOOD
ABDULLAHI HASSAN	7	6	10	56	79	B	VERY GOOD
POPOOLA KEMI	7	5	7	45	64	C	GOOD
VIVAN LILIAN	3	5	9	43	60	C	GOOD
AMBROSE PATIENCE	4	3	10	44	61	C	GOOD
ILUARIA E. JOY	7	5	9	51	72	B	VERY GOOD
NWOKEDI GRACE	2	7	8	42	59	D	CREDIT
YAWON REGINA	10	9	10	68	97	A	EXCELLENT
YARE B. HELEN	10	8	10	66	94	A	EXCELLENT
MAIKORI LINDA	10	8	7	57	82	A	EXCELLENT
ABUBAKAR Y. RAMATU	10	5	9	57	81	A	EXCELLENT
LAWAL A. HALIMA	10	8	8	60	86	A	EXCELLENT
ABUBAKAR Y. RAMATU	10	5	9	57	81	A	EXCELLENT
JAAFARU JOSPHINE	10	7	9	61	87	A	EXCELLENT
ODILISON SHEILA	8	10	6	58	78	B	VERY GOOD
OZIGI JUWARATU	7	8	10	60	85	A	EXCELLENT
CHUKWU CHIOMA	10	8	8	60	86	A	EXCELLENT
IMAM I. MARYAM	10	10	10	69	99	A	EXCELLENT
FARUK UMMA	2	7	6	36	51	D	CREDIT
AKINBO TAIWO	7	4	7	43	61	C	GOOD
GADJAMA AISHATU	8	6	9	55	78	B	VERY GOOD