**A WEB BASE SYSTEM FOR DISTANCE LEARNING (A CASE STUDY OF NOUN UNIVERSITY)**

**(SOFTWARE ALSO AVAILABLE)**

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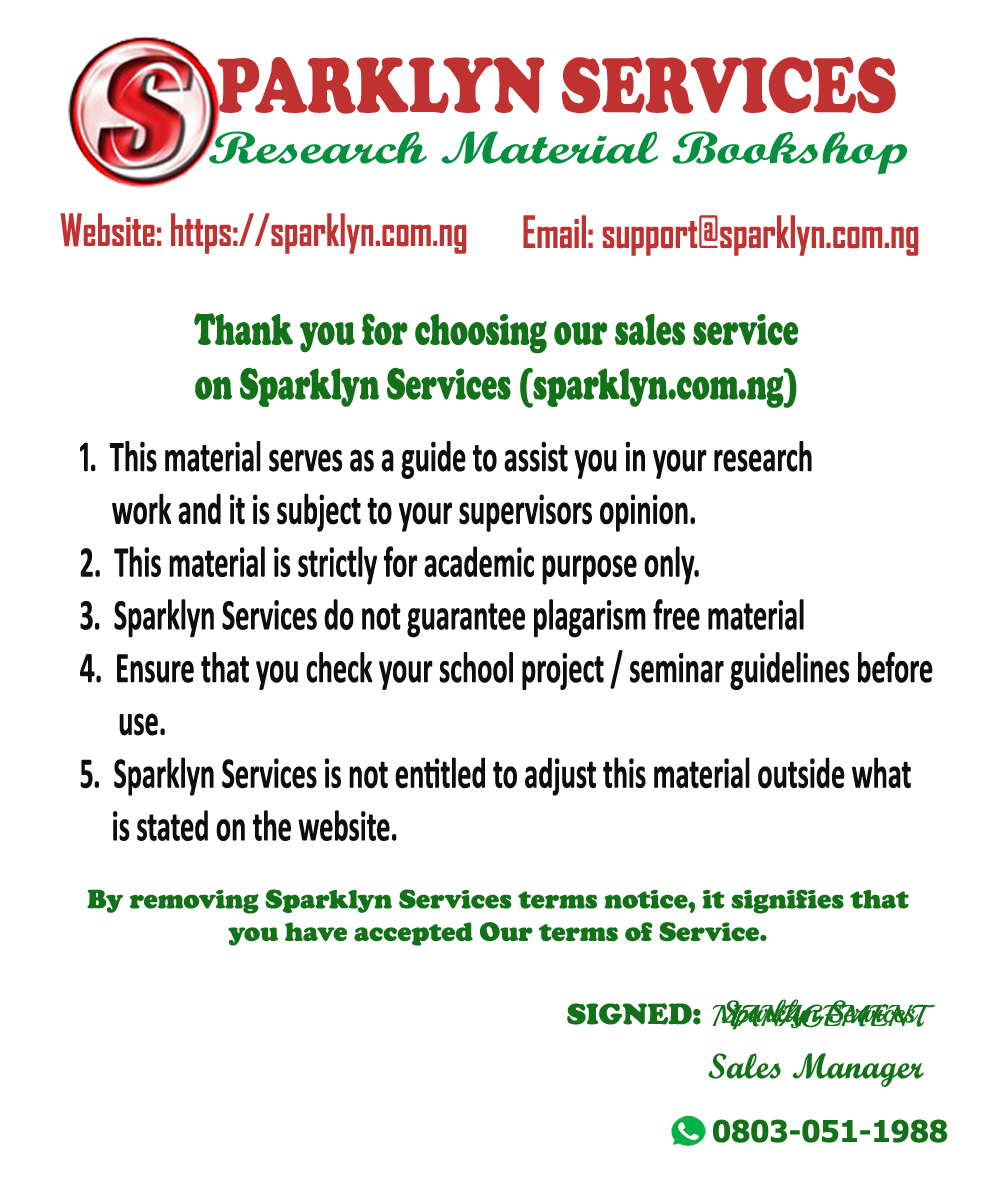
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**APPROVAL PAGE**

This is to certify that this project work, “**A Web Base System for Distance Learning (A Case Study of NOUN University)**”, was written by ***Student’s Name***with Registration number ***Your Matric / Registration Number*** and has been read and approved for the award of **(Degree, ND, or HND)** in the department of ***(Your Department)****,* ***Your School (SIAS, SBMT, SHSS)****,* ***Institution Address.***

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***Project Supervisor’s Name* DATE**

**(Project Supervisor)**

**………………………………… ………………………….**

***Your HOD’s Name* DATE**

**(Head of Department)**

**DEDICATION**

This work is dedicated to God for his enabling grace, and to all computer enthusiasts who help to make life a pleasant experience.

**ACKNOWLEDGEMENT**

I owe my indebtedness to my Supervisor (Name of your Supervisor), the Head of Department (Name of your HOD) and the Lecturers in the department of (Your Department) for their moral support that facilitated the successful completion of my (Tertiary Institution level). I am grateful to God Almighty and my parent for their financial support in my career. I really appreciate you all for everything, Thank you very much.

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**ABSTRACT**

*Distance Learning is a web-based environment that allows students to participate in live teaching and learning events without the need to travel. The aim of the study is to develop a Web Base System for Distance Learning using NOUN University as a case study. In achieving this aim, the following specific objectives were laid out as follows to design an application that will, provide alternative way of attaining education, facilitate the development of information technology, enhance examination and certification of students thereby improving the standard of education, reveal the use and technology of wireless network to the user, proffer solution to students whom because of nearness to institute and are unable to acquire knowledge that they need, and provide students easier way to acquire any of the NOUN certificates without been in the institute or with less difficulty. The methodology adopted in this study is the object oriented analysis and design methodology (OOADM) which is a technical approach for analyzing and designing an application or system by applying object throughout the software development process. The programming language used is HTML, CSS, JAVASCRIPT, PHP, SQL and JQUERY. The reason why web programming languages was used is because, it is platform independent and it is a web based application. This project will be of benefit to: organizations and students, and lecturers. This study will be of immense benefit to researchers who intend to know more on this study and can also be used by non-researchers to build more on their research work. This study contributes to knowledge and could serve as a guide for other study. The expected result is a Distance Learning System that will bridge the communication barrier between students learning and lecturer teaching in a University Environment.*

**CHAPTER ONE**

**INTRODUCTION**

**1.1 Introduction**

Distance Learning is a system designed to help students gain access and acquire knowledge in any university of their choice. It can include: Enhance face –to- face instruction (on campus, in class use of computer and the World Wide Web (WWW), enhanced distance education (on or off campus) individuals and group learning with both print and computer-based materials instruction entirely on- line (individual and group learning) because of this mix Distance Learning and text based e- learning knowledge is moving towards every student being an e- learner at last for part of their study, whether through learning materials, e-mail for contacting teachers/ tutors or any one of their myriad other e-learning applications. Distance Learning results to learning and other supportive resources that are available through a computer and it includes computer based training, computer based instruction and technology.

As a prelude to other parts of this study, this chapter will discuss the background upon which this study was initiated, the statement of problems that led to this study, the Aim and Objectives of the study. Others are Significance of the study, Scope of work, Limitation of the study and Definition of technical terms.

**1.2 Background of Study**

A distance learning framework carries education nearer to the individuals and evacuates the pressure and imperatives, which characterize the conventional classroom learning system. The hallmarks of distance learning are the separation of teacher and learner in space and/or time, the control of learning by the student rather than the distant instructor, and non-adjacent communication between student and teacher, mediated by print or other forms of technology. At its most essential level, distance education is a procedure where number of teachings is conducted by remotely located lecturers. Two categories of distance learning systems exist; namely On-line and Off-line distance learning. On-line distance learning, also known as virtual classroom is a type of learning system in which students work on their own at home or at the office and communicate with personnel and different studies by means of email, electronic discussions, videoconferencing and different types of PC based correspondence.. Off-line distance learning on its own is a multi-campus system where a University or Polytechnic establishes many campuses and each of these campuses may be centrally controlled or decentralized.

Education is the way toward achieving a generally lasting change in human conduct. It is the primary instrument used to safeguard, keep up and overhaul people’s culture, standards and qualities. In any developing country, education is a veritable device for deciding innovative headway and passing on to the new ages, the current learning of the physical condition. Training likewise fills in as stage for presenting people to any association, giving aptitudes for performing day by day employments, recreation just as teaching sound ethics in the individuals for their own advantage and that of the general public. In synopsis, training is the stage on which more youthful age comprehend the past legacy just as take an interest and contribute seriously to the development and advancement of the general public. Conventionally, education has been practiced across the world in segregated buildings by carefully regimented and standardized classes of students and teachers. This has a consequential effect on both the teacher and the learner. For instance, education is verifiably limited distinctly to the individuals who could be in the classroom and pursue the instructor unbendingly with the pace by which he introduces his lectures, the ever increasing population explosion all over the continent and different educational system in every region of the world brought greater challenges to this method of education. For instance, there is an issue of lacking number of human and material assets to cater for the training of the enormous populace. The number of inhabitants in school age resident in many spots has developed immensely to the degree that solitary a little rate can be offered admission. The student – lecturer and student-classroom ratios have grown to the extent that teaching and learning in the classroom have been less effective. The field of education therefore provides the most fascinating application of computing system, which has consequently attracted considerable attention from educationists and policy makers since the late 1960s when computers were introduced into classrooms. Various information technologies have been applied in learning and teaching, such as Computer Aided Instruction, (CAI), Computer Aided Learning (CAL), Research Packages, Project Monitoring, and Computerized Libraries and so on. As a result of technological advancement in multimedia technology, computer networks and the Internet, computers are now being applied in distance learning premised on on-line and real time teaching and instruction.

**1.3 Statement of the Problem**

Due to the problems students find and experiences, it has never been easy for students to acquire basic and necessary education in any institution one wishes irrespective of the fact that the resources are there. This poses a lot of problems sometimes they will embrace not going to school at all. It is very impossible for a student in America or any other country coming to NOUN everyday for lectures more so, it will be impossible for NOUN staff going to America or any other country where the students might be located everyday to deliver lectures. Sometimes if number of students increase reduction in student admission will be affected in order to provided adequate structures where they can have their lectures. The above views are what gave birth to the research work in order to find solution to them.

**1.4 Aim and Objectives of Study**

The aim of the study is to develop a Web Base System for Distance Learning using NOUN University as a case study. In achieving this aim, the following specific objectives were laid out as follows to design an application that will:

1. Provide course material on time and with different media types (audio, text and video).
2. Provide chat room, online exams, upcoming events and grade report.
3. Provide students easier way to acquire any of the NOUN certificates without been in the institute or with less difficulty.
4. Proffer solution to students whom because of nearness to institute and are unable to acquire knowledge that they need.

**1.5 Significance of Study**

Distance Learning can provide benefits for the organizations and individuals involved. Improved performance: it is interactive to the students thereby improving their productivity.

1. **Improves Standard of Education:** it eliminates examination inadequacies like examination malpractices.
2. **Increased Access:** It enables people from any part of the world to be educated.
3. **Convenience and Flexibility to Learners:** learning process is structured in units; this makes the learner study at his own convenience without getting too bored with lectures.
4. **Reduced cost:** it reduces the cost of learning, examination and result processing institutions.

This study will be of immense benefit to researchers who intend to know more on this study and can also be used by non-researchers to build more on their research work. This study contributes to knowledge and could serve as a guide for other study.

**1.6 Scope of Study**

The scope of the research is focused on designing and implementing a web based system for Distance Learning using innovative technology as a significance tool to drive quality of education using National Open University of Nigeria (NOUN), Nigeria.

**1.7 Limitations of the study**

During the course of this study, many things militated against its completion, some of which are:

1. **Time Constraint:** The time frame given to accomplish this project was very short due to school academic calendar and it was carried out under pressure which made the researcher not to implement some necessary features.
2. **Establishment Policies:** Establishment policies posed a serious limitation as most staffs are not ready to release information needed for this project work. There were lots of information needed from the staffs of this institution to enhance the study which took them time to release or they did not release at all for security purposes, hence the scope was reduced.
3. **Research material:** availability of research material is a major setback to the scope of the study.
4. **Frequent power failure:** This made the researcher append more money on fuel to ensure sustainable power.
5. **Financial Constraint:** Insufficient fund tends to impede the efficiency of the researcher in sourcing for the relevant materials, literature or information and in the process of data collection (internet).

**1.8 Definition of Terms**

**Computer:** an electronic device that is capable of accepting data, processing data automatically, store it, produces the result where needed.

**Distance Learning:** is an act of using IT tools to distribute or share knowledge between groups of learners. It is not going to be physically but the use of electronics.

**E–Learning:** it is an acronym of eletroniic learning it is an aspect of Distance Learning that is concerned with sharing of knowledge electronically by use of text video, web or any other IT tools.

**File:** This is a collection of related records.

**VEL:** This is the acronym of virtual electronic learning

**Program:** a set of logical instructions combined together to perform a specific task to a given problem and providing solution to it.

**IT Tools:** is any machines techniques etc. used in information technology.

**Output:** result of the processed data by the computer.

**Input:** data supplied to the computer for processing.

**IT (Information Technology):** It is combination of computing and telecommunication facility.

**Data:** raw materials used by the computer.

**Information:** processed data capable of solving a problem

**E-mail:** electronic mail, which is an alternative of HIPOST. This is the use of on - line computer to send messages across the net.

**Storage Devices:** a device for storing data in the computer

**Computer Network:** it is connection of two or more computers using special protocol such that they share data or information inform of text, audio, messages or mail.

**CHAPTER TWO**

**LITERATURE REVIEW**

**2.1 Introduction**

This chapter focuses on the review of related literature. A literature review includes the current knowledge as well as theoretical and methodological contributions to a particular topic. It documents the state of the art with respect to the topic you are writing. It surveys the literature in the topic selected. In this research work the literature review includes the Conceptual Review, Theoretical Framework for Distance Learning, Overview of Constructivist Learning and Distance Learning, and Empirical Review.

**2.2 Conceptual Review**

Learning is the part of human existence. Each day of a man’s life, he learns new things to survive in a changing world. This is an informal learning in that as many interacts with his environment at any stage in time, he learns new things. But in a formal learning situation, learning starts at home in a credle format, continues in the school, college, universities, workplace (Singh, 2011). “Learning is breaking out of the narrow boxes that it was trapped in during the 20th century: teachers’ professionalism, reflection and ingenuity are leading learning to places genuinely exciting to this new generation of connected young school students – and their teachers too”. In effect, virtual learning environments (VLE) are making students not to be confined to a particular building, or restricted to any single location or moment”.

The school learning environment offers opportunities for teachers and students to come together for institutional teaching/learning process. In this learning process, various technological gadgets are employed to facilitate the process. Such advanced technologies include internet, e-mail, website, mobile phone, ipod etc (Mangal and Mangal, 2009). These advanced technologies are variable tools for rendering valuable assistance and good alternative to traditional method of education. This alternative could be in form of Distance Learning.

Distance Learning has been described by Turoff (2007) as a web-based environment that allows an individual to participate in live training events without traveling to any other place. You can sit in the comfort of your environment and listen to lectures. You can participate in the lab exercises, ask questions and effectively interact with the teacher as if the action is taking place in a conventional classroom but it is done with the convenience of technological gadgets as desktop that have internet and phone connection. The internet on the other hand provides such advantages and new ways of communicating, interacting, and assessing information for both teachers and students.

Writing on the definition of Distance Learning, technopedia viewed it as, “an online classroom environment facilitated via specialized video conferencing applications”. In this environment, the people concerned will be in the position to interact with one another, communicate, view and discuss lecture contents presented via internet connectivity while working in groups in an online setting to actualize learning. From the Whatis.com, a Distance Learning is, “an online learning environment”. It is like the real classroom world where students are participating in Distance Learning in synchronous instruction. That is to say that both the teachers, the student should be logged into the virtual learning environment (VLE) simultaneously.

Bringing more light on the concept of Distance Learning (VC), Turoff (2007) in Mangal (2009:774) opined that “Distance Learning is a web-based environment that allows you to participate in live training events without the need to travel. You listen to lectures, participate in lab exercises, ask questions, and receive feedback just as you would do in a conventional classroom – except you do it from the convenience of your desktop or anywhere you have an internet and phone connection. It saves the hussle, expense, and travel time to a training site”.

In another words, Distance Learning could be seen “as the classrooms”, capable of replacing partially or totally the conventional educational, evaluative and administrative functioning of a regular classroom by adopting the advanced computer and ICT technologies like the internet, e-mail, on-line chatting, www, CD-ROMS, DVDs, teleconferencing and video conferencing” (Mangal and Mangal:774).

The modern system of using internet in teaching and learning is receiving great attention the world over. The use is phasing out the traditional method of teaching which is limited to chalk and talk system of teaching and learning (Olibie, Ezoem and Ekene, 2014). The students are like the raw materials in education production while the teachers are the producing machines. The teachers wound send out the materials to the students to learn for character transformation with the necessary instructions to be applied in the process. The following are the merits accruable from the Distance Learning:

* It provides the learners the flexibility of getting the learning experiences at the time, place and rate of assimilation.
* Distance Learning can help in good class organization. The operational documents, assignments, class notes and other related information in the internet can be readly categorized for easy accessibility for the teachers and students. The information posted on the internet could be easily revised and updated for more effective teaching and learning.
* Distance Learning provides the learners with the opportunity of gaining learning experiences 24 hours of every 7 week days without tampering with the learners leisure time.
* The system has the capability of employing the services of most experienced personnel in different areas of need which is not possible in traditional classroom setting.
* Another educational value is the intellectual and social partnership created by the technology of Distance Learning. Students in their use of technological equipments cultivate the habit of leadership role in relation to other students (Husu, 2000). The implication is that the technology used increases group cohesion and mutual support more especially inn remote classrooms. Besides the Distance Learning enables the students to develop a range of communicative skills that enable them perform creditably in class.
* Cost effectiveness is a great advantage. Distance Learning saves money, time and transport for students. The students who are motivated could work on their own at their home environment without wasting time and money to travel to school.
* The teacher equally enjoys the teaching because everything is digital and these works in general are sent through e-mail typed. The teacher can easily re-use his materials and can easily get materials elsewhere.
* The system can prove quite advantageous to the students in various ways with regard to its on-line features. It will help in admission, information about the courses and academic activities, assignments and projects, tests and evaluation, grading and results, faculty available for interaction, guidance and needed help, information about the commencement of the public examinations, merit schemes, entry in a vocational and professional streams etc.
* Despite the merits of Distance Learnings as listed above, there are some demerits associated with it. They include the following:
* Flexibility of the system: The flexibility of the system to the learners as they go about their studies with ease and convenience, comforts and adjustment of the space and timings to suit them could be abused. When they are young in age and immature to handle responsibilities to build up their career, they play away their time and fall short of expectation in the long run.
* Poor quality of organization and the poor quality of study materials with low quality of teaching staff make Distance Learning unacceptable in quality educational pursuit. The staff inefficiency and low productivity will adversely affect the students enrolled in the system which will affect the overall assessment of the Distance Learning.
* Training problem of personnels: In a Distance Learning, professional training is very essential. University professions who are not trained in computer and internet functions should not operate effectively. Consequently, the professors should undergo training because the more conversant they are with the online services, the more efficient the teaching strategy and curriculum would be.
* The Distance Learning is not providing real classroom experiment such as teacher- student face-to-face interactions. The warmth of teacher-student relationship is absent in Distance Learning.
* Students at times generate problems for themselves by enrolling on online classes without an e-mail address or account with an internet service. This means that they cannot assess information for Distance Learning consumption. Consequently, they cannot achieve their objectives of effective learning.
* Effective participation in Distance Learning requires ‘robust hardware and a broad band internet connection’. Some classrooms or computer labs may not have computers that meet the minimum or recommended specification for optimal use of virtual world (Stacy & Liz, 2008).
* Standard for accessibility is limited. Virtual words do not operate with screen readers which makes the virtual impaired not to benefit from virtual worlds.

**2.3 Theoretical Framework for Distance Learning**

Constructivism is a concept that indicates that knowledge is constructed through an individual’s association with a given environment. Individuals in other words construct knowledge of their own when they are actively involved in learning by doing and sharing ideas with peers. In the process, the learner uses sensory knowledge in constructing meaning out of a given task. This concept believes in interacting with the environment by navigating through physical space, reading skills, field trips, research projects, workshops and presentations. Constructivists lay much emphases on collaborative learning principles. It states that a group of learners, when they team up to solve a given problem, when provided with adequate information and cognitive tools to assist them, they would collaboratively create meaning through their interactions with each other and with the tools (Jonassen, 1997).

On the other hand, in the social learning theory, Bandura (1976) opined that learning is a cognitive process that takes place in a social context. This context could be observed through imitation of behaviours that occur in the immediate contests of the individual. The tenets of social theory of Bandura are as follows:

1. Learning is not purely behavioural, rather it is a cognitive process that takes place in a social context.
2. Learning can occur by observing a behavior with its consequences.
3. Learning is a function of observation, extraction of information from those observations and making decisions about the performance of the behavior (observational learning or modeling).
4. Reinforcement plays a role in learning but is not entirely responsible for learning.
5. The learner is not a passive recipient of information. Cognition, environment and behavior all mutually influencing each other (reciprocal determinism).

**2.3.1 Audio-visual Theory**

American audio-visual educationist Edgar Dale put forward the theory of “cone of experience” in his monograph Audio-Visual Teaching Method. He contended that there were primarily three ways for obtaining experience: personal experience, observation and summarization, and abstract generalization. For the Distance Learning, nonlinear multimedia information resources were used to provide learners with a multi-level learning experience such as sensorial overall interaction and scene reappearance to improve learning efficiency and effect.

**2.3.2 Constructivist Learning theory**

Constructivist learning theory emphasizes student orientation and stresses that learners are subjects of information processing and active builders of knowledge rather than passive receivers of knowledge. Learning must be conducted in real situations, a real task that emphasizes the importance of cooperative learning. In constructivism, learners construct and obtain knowledge with the help of others (including teachers and learning partners) by using necessary learning data under a certain situation or background. A Distance Learning system can and must provide virtual situations and learning data, guide learners’ cooperation and competition, and stimulate the initiative of learners according to the requirements of constructivist.

**2.3.3 Humanistic Learning Theory**

The humanistic learning theory considers that the most useful learning method in modern society is to help learners know how to learn. In the teaching process, the function of the classroom is “teaching how to fish” rather than “giving fish.” In the Distance Learning, teachers should acknowledge the significant role of students, provide an atmosphere that promotes learning from the perspective of the students (e.g. examinations, group discussions and pro-active question and answer raising), and allow students to master learning skills and learn to draw inferences about other cases from one instance.

**2.3.4 Cooperative Learning Theory**

Cooperative learning theory, emerging in the 1970s, is a teaching strategy aimed at promoting learning in which some students cooperate to compete in regard to a given learning objective and in which students are organized for learning in groups or teams.

**2.3.5 Internet**

The internet is a global network covering the whole world that is formed by mutual connection of a group of general protocols. The internet can realize information exchanging and sharing at a low cost without the limitation of space and make communication in Distance Learnings possible. With the development of science and technology, the internet is becoming mobile, cloud-based, and pervasive and provides a larger development space for Distance Learnings.

**2.3.6 TCP/IP**

A TCP/IP protocol stack divides the network into five layers: physical layer, data link layer, IP layer, TCP/UDP layer, and application service layer from low to high. The TCP/IP protocol stack provides technical support for data communication between Distance Learning networks.

**2.3.7 UDP**

TCP and UDP protocols are in the transmission layer of a TCP/IP protocol stack. The TCP can guarantee reliable and error-free data transmission. When multiple data packets are sent, the TCP ensures that all packets will reach the destination and be submitted to the application layer in the correct order. The UDP is a simpler connectionless transmission protocol for the purpose of one-time transmissions. It cannot guarantee consistency between the submission order and sending order of data packets and does not have lost packet retransmission mechanism.

The UDP protocol rather than the TCP protocol is often used for transmission of audio and video files in a Distance Learning system via the internet. When transmitted on the internet, audio and video files are often divided into smaller data packets. Although the loss of one or two data packets in the transmission process is unsatisfactory, it is sustainable. Moreover, modern audio and video encoding algorithms can occasionally recover lost packets and will not cause the reduction of the audio and video quality.

On the other hand, audio and video are very sensitive to time delay. If TCP protocol is used for communication, great time delays will be caused. Even worse in the case of packet loss, the TCP protocol will attempt to resend data packets until it has success, which will produce greater time delays.

**2.3.8 VoIP**

VoIP, the abbreviation of Voice over IP, refers to voice processing technology based on the internet. This technology compresses voice data coding through compression algorithms, transforms voice data into IP data packets, and transmits them based on an IP network. The receiver connects voice data packets in series and recovers the original voice signal through decompression processing, thus achieving voice transmission on the internet. VoIP can be applied to a Distance Learning system to achieve wide and cheap data transmission, such as voice and video.

**2.3.9 Virtual reality**

Virtual reality (VR) technology is a comprehensive technology developed with the integration of comprehensive computer graphics technology, multimedia technology, sensor technology, parallel real-time technology, and artificial intelligence and simulation technology. It creates a three-dimensional image world reflecting the change and interaction of entity objects, in analog form, in real time for users and allows participants to directly participate in the exploration of functions and changes of virtual objects in the environment through the realistic experience of perceptual behaviors such as vision, auditory sense, touch and smell as if they were in a real world. Virtual reality technology applied to Distance Learnings can create a scenic learning environment, present information in multiple dimensions, mobilize utilization of learners’ sensory organs, and reproduce natural phenomena that cannot be observed. Additionally, it can change the processing of things in everyday life or help visualize abstract concepts and theories, e.g. demonstrate the internal symmetry of crystals with virtual reality technology. Meanwhile, various virtual laboratories can be established with virtual reality technology. For example, learners can perform various kinds of practices in industrial arts design experiments and do not have to worry about material waste caused by disoperation.

**2.4 Overview of Constructivist Learning and Distance Learning**

The constructivist learning and Distance Learning are relatively related in various forms as outlined below: (Chen, 2000).

1. Constructivist learning is always interesting, attractive, problem representing with contextual issues that surround the problem. But Distance Learning can present problem to students in a three dimensional environments that can portray the real world situation.
2. Constructive learning can give interpretations of a problem to encourage various ways of thinking. While Distance Learning can present multiple viewpoints, independent controlled viewpoints for each learner and can do away with negative elements that would divert the attention of the learner in the learning process.
3. In constructive learning approach, the learner utilizes his sensory potentials to construct meaning out of a given concept. But the virtual learning creates problem space for free exploration. Here feedback and interaction can be observed through visual, auditory and other cues by participating learners.
4. In constructivist learning understanding is enhanced by experience. On the other hand in the Distance Learning, virtual experience is provided without words or pictures. This creates indelible meaning in the students mind without further explanation.
5. Constructivist learning requires the learner to construct his own knowledge. But in the virtual learning, there is no pattern. Any type of interaction is permitted.
6. Constructivist learning provides rich sources of information. Also Distance Learning contains required information and can be supported with other technological gadgets for more relevant information through the web.
7. In constructivist learning, conversation and collaboration tools are used to access and share information and knowledge to help learners construct socially shared knowledge. But in Distance Learning, a shared space for a group of learners could be provided to collaboratively construct knowledge through synchronous and/or asynchronous communication. It could also take control of virtual bodies to actualize the reality of collaborative process.

Linking the Distance Learnings to the theory of constructivism, the participants make use of affordable computers to generate experiences from the virtual environment which are displayed in a computer monitor. Usually, there are interactions with other students as the world collaboratively work in teams. The fact was noted in Chen (No date) who reported that human interaction with the generated virtual world could be done via input technological devices.

Again, when participants are connected to virtual reality system to the networks, it will allow students who are at different locations geographically to interact and also they will be experiencing the same virtual learning worlds. The students do work in groups and ideas are shared and the outcomes of their activities are clearly observed by every participants. Subsequently, these activities which are seen normally influence others behavior in the Distance Learning environment. Therefore, Bandura’s social learning theory is in support of Distance Learning environment. The networked virtual world available do allow mimic to real-world form of collaborative activities definitely enhance learning experiences.

**2.5 Empirical Review**

Distance Learning has no single definition because the system is characterized as the learning devoid of time and space. Learning is continuously adopting new formats involving advanced technologies such as multimedia, internet, blogs, website, mobile phone and wikis as these are accessed in the internet. Virtual learning is not a factor that is confined in the walls of a traditional classroom. According to Lokie (2011), virtual learning expands the possibility of using internet facilities, platforms, satellite links, and related system to access, analyse, create, exchange, and use data, information, and knowledge in ways which until recently, were almost unimaginable. In effect, it involves learning acquired by students through the interaction of digitally delivered content. It involves network-based inputs and tutoring support obtained on no-line tool and media such as internet, intranets, extranets, simulations and games, virtual worlds, clouds, satellite broadcasts and web platforms (Jarman, 2011; Schutt & Linegar, 2013; Pelet & Lecarte, 2012). Besides, learning is equally actualized through the use and integration of electronic discourses, such as e-mail, portal, downloadable – executable-file face-book, social networking, web platform electronic dissertations and e- portfolios among others (Bouchard, 2011; Weller, 2010, Wells, de Lange & Fieger, 2008). Moreso, Kharbach, (2013), opined that mobile learning is the ability to obtain or provide educational content on personal pocket devices such as PDAs, smart phones and mobile phones. These devices help the students to actualize virtual learning potentials.

Distance Learning is actualized through various process such as online learning, web-based training and technology delivered instructions. All these Virtual Learning Environments (VLEs) are defined as computer-based environments which are relatively open systems. They operate by allowing interactions and encounters with other participants who equally have access to a wide range of resources (Pelet & Lecarte, 2013). Downes (2009), Fournier & Kop (2011), Merrih, (2009) all agree that VLEs provide tools that are customized for education. Even in higher education, these tools have become very popular for learning among the students because of the increase in internet technology.

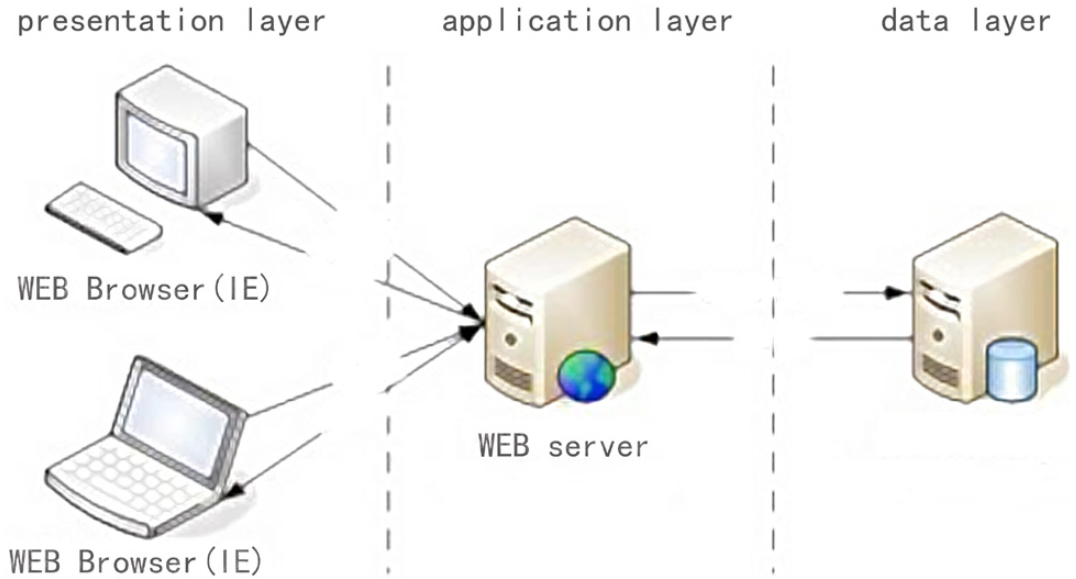
The advent of Information and Communication Technology (ICT) gave rise to the institution of Distance Learning or virtual world. Information and communications technology has rapidly covered the whole nations of the world, improving the technological awareness of students and various individuals in their pursuit to acquire diverse knowledge to harness their professional dreams. With this explosive awareness of technological knowledge, the higher education environment is expected to expand focus on meeting students’ expectations with more attention in widening the students’ greater involvement in ICT. It is through this ICT that students could develop the lifelong learning skills that would enable them cope with emergencies of new subject disciplines and increased utilization of technology in learning. The potentials of ICT in molding students for greater achievements cannot be overemphasized. Through ICT, innovative learning approaches such as virtual learning is already being widely explored both in traditional and non-traditional educational settings all over the nations. For this course, Crawford and Kirby (2008) noted, the utilization of relevant virtual learning has never been more important and should therefore be a significant element of this generation’s approach to education, socializing and normalizing.

Distance Learning is based on Information and Communication Technology. Tertiary institution should integrate virtual learning effectively into their systems because the world is becoming more technologically inclined. That was why Oye, Lahad, Madar & Ab. Rahim (2012) called the new technological trend an e-driven world. This e-driven world has brought unimaginable changes in all aspects of life. Consequently, students should be well equipped through virtual learning to provide them with the necessary experiences for personal growth and development.

In their contribution, Olibie, Ezoem and Ekene (2014) described virtual learning as an enabling process, which depends on learners awareness. For virtual learning to be achieved, there must be awareness to knowledge and understanding of the meaning, structure and the components of any new technology. When this is done, it will provide the base for effective learning among the students in the universities. In addition, Virtual Learning Environment (VLEs) are defined as computer-based environments that are relatively open systems, allowing interactions and encounters with other participants and providing access to a wide range of resources (Pelet and Lacarte, 2012). The VLEs offer technological gadgets that are customized for education (Downes, 2009; Fourmer & Knof; Olibie et al; 2014:35).

Nevertheless, studies conducted recently have investigated the investigated the roles of synchronous and asynchronous online system at a distance (Fallon, 2011a, 2011b). Hrastinski (2008) compared the types of students interactions which are important in online distance learning (ODL). These are; related content, planning of tasks and social support. When the analysis of the oral discussion of two groups of students; the findings revealed that the related content interactions on asynchrous groups, and the social support communication in the synchronous chat platforms. In the discussion of results in relation to Kock (2005), he indicated that synchronous communication seemed to have “increased psychological arousal” (Hrastinski, 2008:53) via its ability to disseminate information that show the features of nurtural media. For instance, immediacy, feedback, facial or oral expression and body language. The suggestion was that students might have felt more opportuned in regard to using the synchronous chat to, “exchange social support and discuss less complex issues… since this type of communication more closely resembles face-to-face interaction (Hrastinski, 2008:54).

In all, Hrastinski revealed that the asynchronous platforms showed better in facilitating deeper cognitive involvement as suggested in Garrison and Cleveland – Innes (2005) whereas, synchronous learning platforms enhanced less formal, or social, involvement. The two are very important in Open and Distance Learning experience.

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**Figure 2.1:** Schematic diagram of Virtual Class Architectural Pattern

**CHAPTER THREE**

**SYSTEM ANALYSIS AND DESIGN**

**3.1 Methodology Adopted**

The structured system analysis and design methodology (SSADM) was adopted for the analysis, design and implementation of this system. Structured systems analysis and design methodology (SSADM) is a set of standards for systems analysis and application design. It uses a formal methodical approach to the analysis and design of information systems.

SSADM follows the waterfall life cycle model starting from the feasibility study to the physical design stage of development. One of the main features of SSADM is the intensive user involvement in the requirements analysis stage. The users are made to sign off each stage as they are completed assuring that requirements are met. The users are provided with clear, easily understandable documentation consisting of various diagrammatic representations of the system. SSADM breaks up a development project into stages, modules, steps and tasks. The first and foremost model developed in SSADM is the data model. It is a part of requirements gathering and consists of well defined stages, steps and products. The techniques used in SSADM are logical data modeling, data flow modeling and entity behavior modeling.

1. **Logical Data Modeling:** This involves the process of identifying, modeling and documenting data as a part of system requirements gathering. The data are classified further into entities and relationships.
2. **Data Flow Modeling:** This involves tracking the data flow in an information system. It clearly analyzes the processes, data stores, external entities and data movement.
3. **Entity Behavior Modeling:** This involves identifying and documenting the events influencing each entity and the sequence in which these events happen.

**3.1.1 Problem Identification Using SSADM**

The SSADM was used to discover some problems;

1. **Feasibility Study:** This assumes that the proposed project has been identified as a result of an exercise such as strategic planning and sets out to evaluate the various technical, organizational, financial and business options available. The aim is to establish the whether the direction and requirements of the project are feasible. The aim is to evaluate the feasibility of the proposal, involving an analysis of the problem and determination of the best solution; usually a range of potential solutions are presented.
2. **Investigation of the Environment:** The process of identifying, modeling and documenting the data requirements of the system being designed. The result is a data model containing entities (things about which a business needs to record information), attributes (facts about the entities) and relationships (associations between the entities).
3. **Business System Option (BSO):** A BSO defines the functional scope of a proposed solution. At its most basic level it consists of textual descriptions of those requirements satisfied by the solution. All BSOs must satisfy the minimum requirement as identified by user representatives.
4. **Requirement Certification:** Requirement Certificate aims to equip the learner or end user (client) with the advanced knowledge of project management and will enable the learner to understand the system requirement to uphold the project management required parameters.
5. **Technical System Option (Implementation):** There is availability of software, hardware and technical man power for the development and running of the new system. Hence the system is technically feasible as the requirement can be met without stress and much financial input. The software and hardware requirements include an Integrated Development Environment for web based applications, a standard PC for running this application, a local server and an up to date web browser for testing. As a programmer, the researcher can provide these requirements with ease and as such, this project is technically feasible.
6. **Logical Design:** Technical system options are production and logical design updates and query processing and system dialogue.
7. **Physical Design:** physical database design and a set of program specifications Program specifications are using the logical system specification and the technical system specification.

**3.2 Analysis of the Existing System**

The operations of the A Web Base System for Distance Learning (A Case Study of NOUN University) were analyzed, and some drawbacks were detected which led to the initiation of the new A Web Base System for Distance Learning (A Case Study of NOUN University). In the old system, the problems students find and experiences, it has never been easy for students to acquire basic and necessary education in any institution one wishes irrespective of the fact that the resources are there. This poses a lot of problems sometimes they will embrace not going to school at all. It is very impossible for a student in America or any other country coming to NOUN everyday for lectures more so, it will be impossible for NOUN staff going to America or any other country where the students might be located everyday to deliver lectures. Sometimes if number of students increase reduction in student admission will be affected in order to provided adequate structures where they can have their lectures.

**3.2.1 Dataflow of the Existing System**

**DISTANCE LEARNING SYSTEM**

Input Analysis

Output Analysis

Process Analysis

Fill Class Form

Opening Account

Login to System

Process Request

Process New Account

Validate Login Details

Produce Result

Generate Report

**Figure 3.2.1: Dataflow of the Existing System**

**3.3.2 Disadvantages of the Existing System**

Some of the problems identified in the present system include:

1. The speed of processing data manually is low and prone to errors.
2. The current process is stressful to end-users
3. Things done manually were very uncomfortable.

**3.2.3 Weakness of the Existing System**

Due to the problems students find and experiences, it has never been easy for students to acquire basic and necessary education in any institution one wishes irrespective of the fact that the resources are there. This poses a lot of problems sometimes they will embrace not going to school at all. It is very impossible for a student in America or any other country coming to NOUN everyday for lectures more so, it will be impossible for NOUN staff going to America or any other country where the students might be located everyday to deliver lectures. Sometimes if number of students increase reduction in student admission will be affected in order to provided adequate structures where they can have their lectures. The above views are what gave birth to the research work in order to find solution to them.

**3.3 Analysis of the Proposed System**

An overview of the proposed system flow chat has a relationship between an object to another just like the entity. Relationship diagram, the object relationship pair can be graphically represented by a diagram called entity relationship diagram (Entity Relationship Diagram). It is mainly used in database applications but now it is more commonly used in data design. The primary purpose of ERD is to represent the relationship between data object.

**3.3.1 Data Flow Diagram of the Proposed System**

This is a data flowchart of the proposed system as shown in figure 3.2.

Registration Details

ADMIN TABLE

STUDENTS TABLE

ADMIN

USER

LOGIN ACCOUNT

REGISTER

Success / Failure

Success / Failure

Login Details

Success / Failure

Login Details

Sends Details

Sends Details

Found / Not Found

Found / Not Found

**Figure 3.2:** Data Flow Diagram of the Proposed System

**3.3.2 Advantages of the Proposed System**

The following are the advantages of the proposed A Web Base System for Distance Learning (A Case Study of NOUN University);

1. Provide course material on time and with different media types (audio, text and video).
2. Provide chat room, online exams, upcoming events and grade report.
3. Provide students easier way to acquire any of the NOUN certificates without been in the institute or with less difficulty.
4. Proffer solution to students whom because of nearness to institute and are unable to acquire knowledge that they need.

**3.3.3 Justification of the Proposed System**

Distance Learning can provide benefits for the organizations and individuals involved. Improved performance: it is interactive to the students thereby improving their productivity.

1. Improves Standard of Education: it eliminates examination inadequacies like examination malpractices.
2. Increased Access: It enables people from any part of the world to be educated.
3. Convenience and Flexibility to Learners: learning process is structured in units; this makes the learner study at his own convenience without getting too bored with lectures.
4. Reduced cost: it reduces the cost of learning, examination and result processing institutions.

This study will be of immense benefit to researchers who intend to know more on this study and can also be used by non-researchers to build more on their research work. This study contributes to knowledge and could serve as a guide for other study.

**3.4 Functional Requirements**

The following figure 3.4 shows the various modules involved in the system and available to users who have limited access and to the Admin who have full access to the system.

**3.4.1 Use Case Diagram of the Admin / User Privileges**

**ADMIN**

**END-USER**

**Figure 3.3: Use Case diagram of the Admin**

**Figure 3.4: Use Case diagram of the User (Client)**

**3.5 Data Requirements**

The following are the data requirements of new and existing users in the system. New users are required to create an account by providing some necessary information such as:

1. **Email Address:** The user's email address is required during registration and subsequent login on the system.
2. **Password:** The user is required to enter a secured password or pin during registration and subsequent login on the system
3. **User Name:** The user is required to enter a nickname which he/she will be addressed as subsequently for security reasons.
4. **Passport:** This field contains the photograph or picture of the account holder or system user.
5. **Address:** This field contains the address of the system user.

**3.6 High Level Model of the Proposed System**

The high level model of the proposed system is illustrated below;

**DISTANCE LEARNING SYSTEM**

HOME

Admin

END-USER (Client)

Open Account

Select Subject

Join Online Class

Input Password

Update Record

Enable Students’ Participation

Activate Account

Respond

Give Feedback

**Figure 3.5:** High Level Model of the Proposed System

**CHAPTER FOUR**

**SYSTEM DESIGN AND IMPLEMENTATION**

**4.1 Objectives of the Design**

The following are the objectives of the proposed A Web Base System for Distance Learning (A Case Study of NOUN University) design will;

1. Provide course material on time and with different media types (audio, text and video).
2. Provide chat room, online exams, upcoming events and grade report.
3. Provide students easier way to acquire any of the NOUN certificates without been in the institute or with less difficulty.
4. Proffer solution to students whom because of nearness to institute and are unable to acquire knowledge that they need.

**4.2 Cohesion and Decomposition High level Model**

**Description:** This is a cohesion and Decomposition High level Model

Admin

Update Record

Ensure Students’

Participation

Activate Account

Deactivate Account

Admin

Admin

**Figure 4.1:** Admin User Privileges

Client (User)

Open Account

Select Subject

Join Online Classes

Input Password

Give Feedback

**Figure 4.2:** Client (User) Privileges

**4.3 Control Center / Overall Dataflow Diagram**

**Description:** This is a control center / overall dataflow diagram

DISTANCE LEARNING SYSTEM

Input from keyboard

Process

Disk storage

Result to screen

Report (output)

**Figure 4.3:** Control Center / Overall Dataflow Diagram

**4.3.1 Proposed System Operation Flowchart**

**Description:** The diagram below entails the proposed system operation flowchart

Enter Student

Portal ID

Select & Join Class

Validate Portal No

Give Feedback

Answer security question

A

B

Are answers correct?

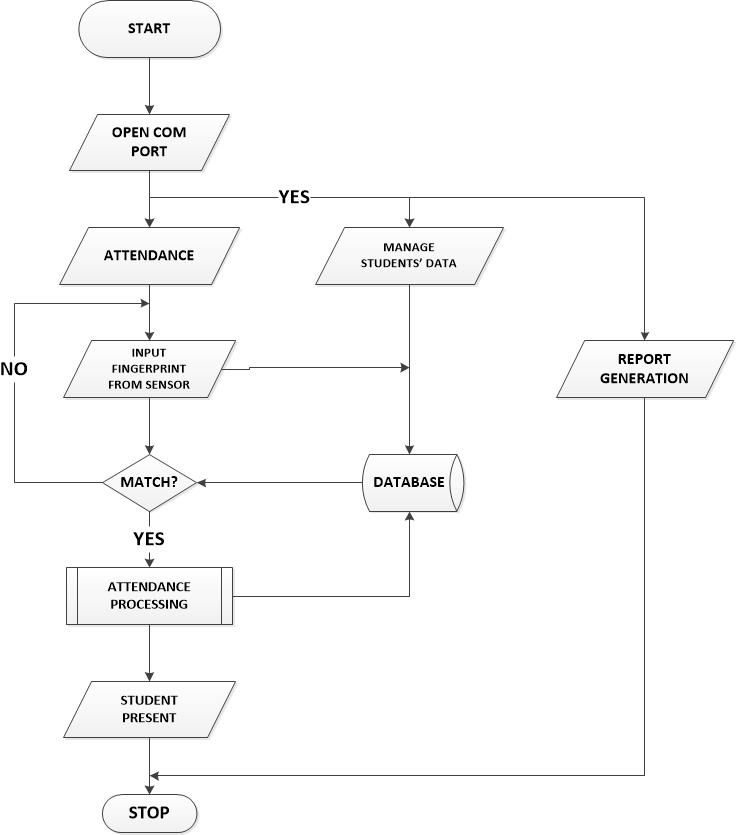
Send Request

Display Error message

Save

NO

YES

****

**Figure 4.4:** Proposed System Operation Flowchart

**4.4 System Specification and Design**

**4.4.1 Input and Output Specification**

**Description:** The diagram below entails the Input and Output Specification of the proposed system.

**DISTANCE LEARNING SYSTEM**

Enter Phone Number

Enter Password

Sign In

Register Here

Student ID:

Password:

**Figure 4.5:** Input Specification for Login System

**Login Successful**

**Or**

**Login Unsuccessful**

**Figure 4.6:** Output Specification for Distance Learning System

**4.4.2 Database Specification and Design**

The Development of Distance Learning System database contains four (4) tables which are attendance, course, lecturer, and register table:

**Table 4.1: Attendance Table Structure**

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Field Name** | **Type** | **Size** |
|  | Id | Integer | 30 |
|  | Regno | Varchar | 100 |
|  | Course | Varchar | 200 |
|  | Level | Varchar | 10 |
|  | Semester | Varchar | 50 |
|  | Lecturer | Timestamp | 200 |
|  | dateofreg | timestamp |  |

**Table 4.2: Course Table Structure**

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Field Name** | **Data type** | **Size** |
|  | Id | Integer | 30 |
|  | coursetitle | Varchar | 200 |
|  | coursecode | Varchar | 100 |
| 4. | datereg | timestamp |  |

**Table 4.3: Lecturer table structure**

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Field Name** | **Data type** | **Size** |
|  | id | Integer | 30 |
|  | fname | Varchar | 200 |
|  | contact | Varchar | 30 |
|  | dept | Varchar | 200 |
|  | datereg | timestamp |  |

**Table 4.4: Register table structure**

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Field Name** | **Data type** | **Size** |
|  | Id | Integer | 30 |
|  | user | Varchar | 100 |
|  | pass | Varchar | 100 |
|  | contact | Varchar | 30 |
|  | connect | Varchar | 50 |
|  | Lastdateconnected | Varchar | 50 |
|  | request | Varchar | 255 |
|  | photo | Varchar | 30 |

**4.4.1 Data Dictionary**

The data dictionary table contains the list of field and their description used in the database table structure designation.

**Table 4.5: Virtual\_Class\_System table structure**

|  |  |  |
| --- | --- | --- |
| **S/N** | **Field Name** | **Description** |
|  | Id | This field signifies the unique identification of the table and it’s a primary key. |
|  | Regno | It signifies the regno of the student |
|  | Course | Course of Study |
|  | Level | Level of the student |
|  | Semester | Semester in each session |
|  | Lecturer | Academic Lecturer’s Name |
|  | dateofreg | Date of registration |
|  | coursetitle | Course title |
|  | coursecode | Course Code |
|  | datereg | Date of registration |
|  | fname | Full name |
|  | contact | Phone Number |
|  | dept | Department |
|  | user | User name or user identification (Matric Number) |
|  | pass | Password |
|  | connect | Connected to network |
|  | Lastdateconnected | Last date a user established connection |
|  | Request | Connection Request |

**4.5 Choice and Justification of Programming Language**

To ensure a standardized object oriented program in its entire ramification, HTML, CSS, JAVASCRIPT, PHP and MYSQL Database was used in the A Web Base System for Distance Learning (A Case Study of NOUN University). These entire programs are used to ensure effective program. The motive behind the use of the language is its compatibility with several Operating Systems. It is object oriented and combines the feature of hypertext Preprocessor (PHP) and JavaScript platform thereby making it to run on any Operating System. It is secured in that it does not cause harm to user’s system and access to information is restricted. The language is simple and easy to learn.

Below is a brief explanation of the programming languages used;

**HTML:** HTML is a **markup** language for **describing** web documents (web pages).

1. HTML stands for **H**yper **T**ext **M**arkup **L**anguage
2. A markup language is a set of **markup tags**
3. HTML documents are described by **HTML tags**
4. Each HTML tag **describes** different document content

**CSS:** stands for Cascading Style Sheet, it describes how HTML elements are to be displayed on screen, paper, or in other media. CSS saves a lot of work. It can control the layout of multiple web pages all at once and External style sheets are stored in CSS files

**JAVASCRIPT:** JavaScript is the programming language of HTML and the Web. Programming makes computers do what you want them to do. JavaScript is easy to learn.

**Hypertext Preprocessor (PHP):** PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages. PHP is a widely-used, free, and efficient alternative to competitors such as Microsoft's ASP.

**MYSQL:** SQL is a standard language for accessing and manipulating databases. SQL stands for Structured Query Language, SQL lets you access and manipulate databases, and SQL is an ANSI (American National Standards Institute) standard. SQL can perform the following task;

1. SQL can execute queries against a database
2. SQL can retrieve data from a database
3. SQL can insert records in a database
4. SQL can update records in a database
5. SQL can delete records from a database
6. SQL can create new databases
7. SQL can create new tables in a database
8. SQL can create stored procedures in a database
9. SQL can create views in a database
10. SQL can set permissions on tables, procedures, and views

**4.6 Program Documentation**

The main purpose of program documentation is to describe the design of your program. The documentation also provides the framework in which to place the code. As coding progresses, the code is inserted into the framework already created by the program documentation. The following was documented for the successful implementation of the software;

1. README file which contains a brief description of the project, installation instructions, a short example/tutorial,
2. Document your code which comprises application of coding conventions, such as file organization, comments, naming conventions, programming practices, etc.
3. Version of the files along with the major edits you did in each version

**4.7 Implementation Techniques**

The software Implementation is a process carried out to make changes on the tested programs developed in the system. The software will be installed successfully if the hardware requirement and the software requirement are available. The following phase contains how the software was implemented successfully;

**1) Coding:** The coding system has been developed to meet the following main objectives;

* To design an application that will provide alternative way of attaining education
* To design an application that will facilitate the development of information technology
* To enhance examination and certification of students thereby improving the standard of education.
* To reveal the use and technology of wireless network to the user.
* To proffer solution to students whom because of nearness to institute and are unable to acquire knowledge that they need.
* To provide students easier way to acquire any of the NOUN certificates without been in the institute or with less difficulty.

**2) File conversion:** During file setup it is necessary to convert the existing master file to a new page. This new form is the responsibility of the newly designed, which undergoes the process of converting the old system master file to a new one.

System Conversion is a transformation process stage in system implementation at which the newly designed system is put in place of the old system by the organization after been tested and documented to prove that it is working. It is a significant milestone after which the ownership of the system if been officially transferred from the researcher (analyst) and the programmer to the end user.

The under listed are various system conversion briefly described to enable the implementation process.

1. **Parallel System of Conversion:** This takes place simultaneously at the same time, runs between the old and new system until probably the new system is completely put in place and the old system discarded.
2. **Direct System of Conversion:** This takes place automatically at a time over a short period of time. It saves cost, manages time and enhances fast operation but finds to a high risk of failure without new system comparability.

**3) Changeover Procedure:**

This is the process of changing from the former or previous system to the new system. In a changeover procedure, the organization change from the existing system to new system. This can be done in one of the following ways:

1. **Parallel Changeover:** This is the process of running the two systems simultaneously and comparing their results until the new system proves satisfactory; after which the use of the new system would be commenced.
2. **Direct Changeover:** This is the case whereby the new system replaced the old system immediately after development and when it must have proved successful. This procedure may be drastic if the new system fails.
3. **Phased Changeover:** In phased changeover method, the system usually starts with one unit or department of the organization. The advantage is that the organization would avoid losses in case it (the new system) fails.

**4) Commissioning:** This is the process of ensuring that installed systems are functionally tested and capable of being operated and conform to the design intention.

**4.8 Programming Module Specification**

Programming module specification follows successful implementation and incorporates also evaluation of the system in order to give the desired or necessary improvement. It includes monitoring the process of the other stages of system development to ensure that the development plan and objective are being accomplished. There are three types of system maintenance which include;

1. **Corrective Maintenance:** This covers maintenance, which is needed to put right coding errors and other faults, which may be introduced into the software. It include, the routine “debugging” of newly produced or recently amended code and emergency error correction in response to report faults.
2. **Adaptive Maintenance:** This covers the changes which are made to the software to meet new or changed circumstances, such as restructuring of a database, alternatives in operating procedures and changes to hardware or software versions.
3. **Preventive Maintenance:** This covers attempts to make the software perform more effectively. It includes user requests for enhancement, improvement due to experience, changes to make the software more easy to use and rewrite the code to make the maintenance that is specifically used for the new system to reduce its chances of breakages.

**4.8.1 Installation**

The following are the steps required for the installation of the new Web Base System for Distance Learning using NOUN University as a case study.

**Installing Software from the CD Drive or Flash Drive**

**Step 1:** Insert and Open you Compact Disk (CD)

**Step 2:** Copy the “**distance-learning-system”** folder and paste in your WAMP server Path to Paste the folder: **C:\wamp\www\**

**Step 3:** Turn on your Window Apache MySQL and PHP (WAMP Server 2.4)

**Step 4:** Open your browser e.g Mozilla Firefox, Google Chrome.

**Step 5:** Type in this URL below on your address bar of your browser

**localhost/phpmyadmin/**

**Step 6:** Ensure the username is **root** and password is empty before clicking on **Go** button

**Step 7:** Click on Import and Browse your computer to search for vclassroom.db

Path: **C: \wamp\www\distance-learning-system\db**

Step 8: Click and open on **vclassroom**, then click on **Go** button below the import page.

Step 9: Type in this URL below to execute the Software

**127.0.0.1/distance-learning-system/**

Step 10: You’re done

**Re-Executing the Software after Installation**

Step 1: Start your WAMP Server

Step 2: Open your browser and type in the URL below and click enter

**127.0.0.1/distance-learning-system/**

**4.9 Computer Hardware Minimum Requirement**

The software designed needed the following hardware for an effective operation of the newly designed system.

1. A system running on AMD, Pentium 2 or higher processor
2. The random access memory (ram) should be at least 512mb.
3. Enhanced keyboard.
4. At least 20 GB hard disk.
5. V.G.A or a colored monitor.

**4.10 Software Requirement**

The software requirements include:

1. A Windows XP operating system or higher version for faster processing
2. MySQL database
3. Apache webserver
4. PHP 5.6+ runtime environment

**4.11 Personnel / User Training**

Before the user can use the software, it is necessary to give a thorough training on how to use the software. It is also important to note that the users of the software are the operators. Training involves the tutorials, lectures or other methods used to make the users to understand how to use and maintain the software program. The following steps would help train and guide the users on how to use the program effectively:

1. Follow the instruction as in the software installation above
2. Right click on the Development of Distance Learning Software and copy to the installed WAMP server
3. If successful, click on your browser and type in **127.0.0.1/distance-learning-system**
4. Enter the security password and click on login
5. Enter the main menu, select any of the submenus you want and continue
6. After performing necessary actions on the submenu, exit the program from the browser close button

**CHAPTER FIVE**

**SUMMARY, CONCLUSION, AND RECOMMENDATION**

**5.1 Introduction**

It is important to ascertain that the objective of this study was on A Web Base System for Distance Learning (A Case Study of NOUN University). In the preceding chapter, the relevant data collected for this study were presented, critically analyzed and appropriate interpretation given. In this chapter, certain recommendations made which in the opinion of the researcher will be of benefits in addressing the A Web Base System for Distance Learning (A Case Study of NOUN University).

**5.2 Summary**

Distance Learning is a web-based environment that allows students to participate in live teaching and learning events without the need to travel. Due to the problems students find and experiences, it has never been easy for students to acquire basic and necessary education in any institution one wishes irrespective of the fact that the resources are there. This poses a lot of problems sometimes they will embrace not going to school at all.

The aim of the study is to develop a Web Base System for Distance Learning using NOUN University as a case study. In achieving this aim, the following specific objectives were laid out as follows to design an application that will, provide alternative way of attaining education, facilitate the development of information technology, enhance examination and certification of students thereby improving the standard of education, reveal the use and technology of wireless network to the user, proffer solution to students whom because of nearness to institute and are unable to acquire knowledge that they need, and provide students easier way to acquire any of the NOUN certificates without been in the institute or with less difficulty.

The methodology adopted in this study is the object oriented analysis and design methodology (OOADM) which is a technical approach for analyzing and designing an application or system by applying object throughout the software development process. The programming language used is HTML, CSS, JAVASCRIPT, PHP, SQL and JQUERY. The reason why web programming languages was used is because, it is platform independent and it is a web based application. This project will be of benefit to: organizations and students, and lecturers. This study will be of immense benefit to researchers who intend to know more on this study and can also be used by non-researchers to build more on their research work. This study contributes to knowledge and could serve as a guide for other study. The expected result is a Distance Learning System that will bridge the communication barrier between students learning and lecturer teaching in a University Environment.

**5.3 Conclusion**

In essence, the research work was successfully researched to meet the objectives set at the beginning of the project work. While one cannot completely rule out one form of limitation or the other, it was a success to a greater extent. On the whole, the research has been a worthwhile exercise. It has afforded the researcher the opportunity to really appraise the situation on the ground and allow one to bring out areas that might need attention for the improvement of the research work.

**5.4 Recommendation**

The following are recommendations for further study on this research work;

Only few across the counter information were provided for in the research work, it is strongly recommended for subsequent researcher to expand the scope of the research work.

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**APPENDIX A**

**“SOURCE CODE”**

<?php

#Distance Learning System

session\_start();

$db['db\_host'] = 'localhost';

$db['db\_user'] = 'root';

$db['db\_pass'] = '';

$db['db\_name'] = 'stdreg';

foreach($db as $key => $value){

define(strtoupper($key), $value);

}

$conn = mysqli\_connect(DB\_HOST,DB\_USER,DB\_PASS,DB\_NAME);

if (isset($\_POST['register1'])) {

$name = $\_POST['name'];

$email = $\_POST['email'];

$dob = $\_POST['dob'];

$address = $\_POST['address'];

$department = $\_POST['department'];

$sex = $\_POST['sex'];

$level = $\_POST['level'];

$session = $\_POST['session'];

$sql = "INSERT INTO `student` (`id`, `regno`, `name`, `email`, `sex`, `dob`, `department`, `level`, `session`, `waec`, `nd`, `birth`, `attestation`, `fees`, `date`, `status`) VALUES (NULL, '', '$name', '$email', '$sex', '$dob', '$department', '$level', '$session', '', '', '', '', '', '', '');";

if(mysqli\_query($conn,$sql)){

$message = "Bio Data Uploaded Successfully, Proceed to Upload Your Credentials!";

}else{

$error = "Bio Data was not Uploaded Successfully, try again later!";

}

if (isset($message)) {

$sql = "SELECT \* FROM `student` WHERE `email` = '$email' AND `name` = '$name';";

$query=mysqli\_query($conn,$sql);

$numrow=mysqli\_num\_rows($query);

if($numrow>0){

$result=mysqli\_fetch\_array($query,MYSQLI\_ASSOC);

$\_SESSION['uid']=$result['id'];

}

echo "<script>alert('".$message."');</script>";

echo "<script>window.location='register2.html';</script>";

}elseif (isset($error)) {

echo "<script>alert('".$error."');</script>";

}

}

if (isset($\_POST['register2'])) {

// Count # of uploaded files in array

$total = count($\_FILES['waec']['name']);

// Loop through each file

for( $i=0 ; $i< $total ; $i++ ) {

$name = $\_FILES['waec']['name'][$i];

$ext = end((explode('.', $name)));

$ext1= ".".$ext;

//Get the temp file path

$tmpFilePath = $\_FILES['waec']['tmp\_name'][$i];

//Make sure we have a file path

if ($tmpFilePath != ""){

//Setup our new file path

$newFilePath = "images/" . $newname = date('YmdHis',time()).mt\_rand().$ext1;

//Upload the file into the temp dir

if(move\_uploaded\_file($tmpFilePath, $newFilePath)) {

$waec = $newname;

}

}

}

// Count # of uploaded files in array

$total = count($\_FILES['nd']['name']);

// Loop through each file

for( $i=0 ; $i< $total ; $i++ ) {

$name = $\_FILES['nd']['name'][$i];

$ext = end((explode('.', $name)));

$ext1= ".".$ext;

//Get the temp file path

$tmpFilePath = $\_FILES['nd']['tmp\_name'][$i];

//Make sure we have a file path

if ($tmpFilePath != ""){

//Setup our new file path

$newFilePath = "images/" . $newname = date('YmdHis',time()).mt\_rand().$ext1;

//Upload the file into the temp dir

if(move\_uploaded\_file($tmpFilePath, $newFilePath)) {

$nd = $newname;

}

}

}

// Count # of uploaded files in array

$total = count($\_FILES['birth']['name']);

// Loop through each file

for( $i=0 ; $i< $total ; $i++ ) {

$name = $\_FILES['birth']['name'][$i];

$ext = end((explode('.', $name)));

$ext1= ".".$ext;

//Get the temp file path

$tmpFilePath = $\_FILES['birth']['tmp\_name'][$i];

//Make sure we have a file path

if ($tmpFilePath != ""){

//Setup our new file path

$newFilePath = "images/" . $newname = date('YmdHis',time()).mt\_rand().$ext1;

//Upload the file into the temp dir

if(move\_uploaded\_file($tmpFilePath, $newFilePath)) {

$birth = $newname;

}

}

}

// Count # of uploaded files in array

$total = count($\_FILES['attestation']['name']);

// Loop through each file

for( $i=0 ; $i< $total ; $i++ ) {

$name = $\_FILES['attestation']['name'][$i];

$ext = end((explode('.', $name)));

$ext1= ".".$ext;

//Get the temp file path

$tmpFilePath = $\_FILES['attestation']['tmp\_name'][$i];

//Make sure we have a file path

if ($tmpFilePath != ""){

//Setup our new file path

$newFilePath = "images/" . $newname = date('YmdHis',time()).mt\_rand().$ext1;

//Upload the file into the temp dir

if(move\_uploaded\_file($tmpFilePath, $newFilePath)) {

$attestation = $newname;

}

}

}

// Count # of uploaded files in array

$total = count($\_FILES['fees']['name']);

// Loop through each file

for( $i=0 ; $i< $total ; $i++ ) {

$name = $\_FILES['fees']['name'][$i];

$ext = end((explode('.', $name)));

$ext1= ".".$ext;

//Get the temp file path

$tmpFilePath = $\_FILES['fees']['tmp\_name'][$i];

//Make sure we have a file path

if ($tmpFilePath != ""){

//Setup our new file path

$newFilePath = "images/" . $newname = date('YmdHis',time()).mt\_rand().$ext1;

//Upload the file into the temp dir

if(move\_uploaded\_file($tmpFilePath, $newFilePath)) {

$fees = $newname;

}

}

}

$date = date('U');

$uid = $\_SESSION['uid'];

$sql = "UPDATE `student` SET `status` = 'Pending', `waec` = '$waec', `nd` = '$nd', `birth` = '$birth', `attestation` = '$attestation', `fees` = '$fees', `date` = '$date' WHERE `id` = '$uid';";

if(mysqli\_query($conn,$sql)){

$message = "Credentials Uploaded Successfully, a confirmation email will be sent to you shortly!";

}else{

$error = "Credentials were not Uploaded Successfully, try again later!";

}

if (isset($message)) {

echo "<script>alert('".$message."');</script>";

echo "<script>window.location='index.html';</script>";

}elseif (isset($error)) {

echo "<script>alert('".$error."');</script>";

}

}

?>

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<meta http-equiv="X-UA-Compatible" content="ie=edge">

<title>Student's Portal</title>

<link href="css/index.css" type="text/css" rel="stylesheet">

</head>

<body>

<div class="container">

<header>

<nav>

<ul>

<li><a href="index.html">Home</a></li>

<li><a href="register.html">Portal</a></li>

<li><a href="login.html">Login</a></li>

</ul>

</nav>

</header>

<h1>Application for Online Classes System</h1>

<div class="slideshow-container">

<div class="mySlides fade">

<div class="numbertext">1 / 3</div>

<imgsrc="img/museum.jpg" style="width:100%">

<div class="text">Art & Design</div>

</div>

<div class="mySlides fade">

<div class="numbertext">2 / 3</div>

<imgsrc="img/paper.jpg" style="width:100%">

<div class="text">Research</div>

</div>

<div class="mySlides fade">

<div class="numbertext">3 / 3</div>

<imgsrc="img/student.jpg" style="width:100%">

<div class="text">Tech</div>

</div>

</div>

<br>

<div style="text-align:center">

<span class="dot"></span>

<span class="dot"></span>

<span class="dot"></span>

</div>

<script>

varslideIndex = 0;

showSlides();

function showSlides() {

vari;

var slides = document.getElementsByClassName("mySlides");

var dots = document.getElementsByClassName("dot");

for (i = 0; i<slides.length; i++) {

slides[i].style.display = "none";

}

slideIndex++;

if (slideIndex>slides.length) {

slideIndex = 1

}

for (i = 0; i<dots.length; i++) {

dots[i].className = dots[i].className.replace(" active", "");

}

slides[slideIndex-1].style.display = "block";

dots[slideIndex-1].className += " active";

setTimeout(showSlides, 3000); // Change image every 3 seconds

}

</script>

</div>

</body>

</html>

<?php

$allow = "no";

ob\_start();

session\_start();

require\_once('db.php');

include('mail.php');

if(isset($\_POST['checkbox'])){

foreach($\_POST['checkbox'] as $user\_id){

$regno = "15H/000".$user\_id."/CS";

$sql = "SELECT \* FROM `student` WHERE `id` = '$user\_id';";

$query=mysqli\_query($conn,$sql);

$numrow=mysqli\_num\_rows($query);

if($numrow>0){

$result=mysqli\_fetch\_array($query,MYSQLI\_ASSOC);

$email=$result['email'];

$name=$result['name'];

$department=$result['department'];

$bd = urlencode('Congratulations '.$name.', your registration in the '.$department.' department is completed. Your Registration Number is '.$regno);

file\_get\_contents("https://www.bulksmsnigeria.com/api/v1/sms/create?api\_token=0NHYGfiCNxlbb6rP00bTtKoGd3KZ8vckE28f0ansI7Dvzvx8ZYgYSm8SpS3r&from=StdRegPortl&to=".$email."&body=".$bd);

$bulk\_option = "delete";

if($bulk\_option == 'delete'){

$bulk\_del\_query = "UPDATE `student` SET `status` = 'Approved', `regno` = '$regno' WHERE `id` = '$user\_id';";

mysqli\_query($conn, $bulk\_del\_query);

echo "<script>alert('Approval Successful!');</script>";

echo "<script>window.location='index.php';</script>";

}

}

}

}

?>

<!DOCTYPE html>

<html lang="en">

<?php

include\_once('head.php');

$x = "";

$sql = "SELECT \* FROM `student` WHERE `status` = 'Pending';";

$query=mysqli\_query($conn,$sql);

$numrow=mysqli\_num\_rows($query);

if($numrow>0){

$result=mysqli\_fetch\_array($query,MYSQLI\_ASSOC);

$id=$result['id'];

$name=$result['name'];

$email=$result['email'];

$sex=$result['sex'];

$dob=$result['dob'];

$department=$result['department'];

$level=$result['level'];

$session=$result['session'];

while ($result=mysqli\_fetch\_array($query)) {

$id=$id."||".$result['id'];

$name=$name."||".$result['name'];

$email=$email."||".$result['email'];

$sex=$sex."||".$result['sex'];

$dob=$dob."||".$result['dob'];

$department=$department."||".$result['department'];

$level=$level."||".$result['level'];

$session=$session."||".$result['session'];

}

$id2=explode("||", $id);

$name2=explode("||", $name);

$email2=explode("||", $email);

$sex2=explode("||", $sex);

$dob2=explode("||", $dob);

$department2=explode("||", $department);

$level2=explode("||", $level);

$session2=explode("||", $session);

$allow = "yes";

$px=count($id2);

}

?>

<div class="content-wrapper">

<div class="container-fluid">

<!-- Breadcrumbs-->

<ol class="breadcrumb">

<li class="breadcrumb-item">

<a href="#">Dashboard</a>

</li>

<li class="breadcrumb-item active">View All Students</li>

</ol>

<!-- Example DataTables Card-->

<div class="card mb-3">

<div class="card-header">

View All Students</div>

<div class="card-body">

<div class="table-responsive">

<form method="POST" action="">

<table class="table table-bordered" id="dataTable" width="100%" cellspacing="0">

<thead>

<tr>

<th style="width: 60px"><button type="submit" class="btnbtn-primary btn-block" name="del" >Approve (\*)</button></th>

<th>Name</th>

<th>Email</th>

<th>Sex</th>

<th>DOB</th>

<th>Department</th>

<th>Level</th>

<th>Session</th>

<th>View</th>

</tr>

</thead>

<tfoot>

<tr>

<th><button type="submit" class="btnbtn-primary btn-block" name="del" >Approve (\*)</button></th>

<th>Name</th>

<th>Email</th>

<th>Sex</th>

<th>DOB</th>

<th>Department</th>

<th>Level</th>

<th>Session</th>

<th>View</th>

</tr>

</tfoot>

<tbody>

<?php

if($allow === "yes"){

for ($i=0; $i< $px; $i++) {

?>

<tr>

<td><input type="checkbox" name="checkbox[]" value="<?php echo $id2[$i]; ?>"></td>

<td><?php echo $name2[$i]; ?></td>

<td><?php echo $email2[$i]; ?></td>

<td><?php echo $sex2[$i]; ?></td>

<td><?php echo $dob2[$i]; ?></td>

<td><?php echo $department2[$i]; ?></td>

<td><?php echo $level2[$i]; ?></td>

<td><?php echo $session2[$i]; ?></td>

<td><a target="\_blank" href="<?php echo 'view.php?id='.$id2[$i] ?>" ><i class="fa fa-eye"></i></a></td>

</tr>

<?php

}}

?>

</tbody>

</table>

</form>

</div>

</div>

<div class="card-footer small text-muted">Student Registration Portal</div>

</div>

</div>

<!-- /.container-fluid-->

<!-- /.content-wrapper-->

<footer class="sticky-footer">

<div class="container">

<div class="text-center">

<small>Copyright © Priceless Stores 2018</small>

</div>

</div>

</footer>

<!-- Scroll to Top Button-->

<a class="scroll-to-top rounded" href="#page-top">

<i class="fa fa-angle-up"></i>

</a>

<!-- Logout Modal-->

<div class="modal fade" id="exampleModal" tabindex="-1" role="dialog" aria-labelledby="exampleModalLabel" aria-hidden="true">

<div class="modal-dialog" role="document">

<div class="modal-content">

<div class="modal-header">

<h5 class="modal-title" id="exampleModalLabel">Ready to Leave?</h5>

<button class="close" type="button" data-dismiss="modal" aria-label="Close">

<span aria-hidden="true">×</span>

</button>

</div>

<div class="modal-body">Select "Logout" below if you are ready to end your current session.</div>

<div class="modal-footer">

<button class="btnbtn-secondary" type="button" data-dismiss="modal">Cancel</button>

<a class="btnbtn-primary" href="logout.php">Logout</a>

</div>

</div>

</div>

<!-- Custom scripts for all pages-->

<script src="js/sb-admin.min.js"></script>

<!-- Custom scripts for this page-->

<script src="js/sb-admin-datatables.min.js"></script>

</div>

</body>

</html>

**APPENDIX B**

**“OBJECT PROGRAM”**

**THE SOFTWARE (OBJECT PROGRAM) IS AVAILABLE ON REQUEST**