DESIGN AND IMPLEMENTATION OF CAMPUS ONLINE HELP DESK INFORMATION SYSTEM

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CST/2009/329

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AUGUST 2013.

Title Page

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A Project Present to the Department of Computer Science and Information Technology, Faculty of Natural Science, Caritas University Amorji-Nike, Enugu Nigeria

A Partial fulfillment of the Requirements for
The Award of Bachelor of Science (B.Sc) Degree in Computer Science and Information Technology

August 2013.

CERTIFICATION

I certify that this work recorded was carried out by EGBULONU JIDECHUKWU with registration number CST/2009/329 in the Department of Computer Science and information Technology, faculty of Natural Science, Caritas University Amorji-Nike, Enugu State, Nigeria. I claim the right and sole authorship of this project work.

……

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Student's Signature Date

APPROVAL

We certify that the work recorded in this report was carried out by EGBULONU JIDECHUKWU with registration number CST/2009/329 in partial fulfillment out of the requirement for the award of Bachelor of Science (B.sc) degree in computer science and information technology.

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MR. IGWE JOSEPH Date
Project Supervisor

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DR. NWAEZE ARINZE Date
Head of Department

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DR. BON OKECHUKWU Date
External Supervisor

DEDICATION

This project is dedicated to God almighty for his immeasurable love, grace, wisdom in making this work a success and for seeing me throughout my stay in the university

ACKNOWLEDGEMENT

I cannot find enough words to thank the almighty God for his mercies, love and inspiration throughout the test, trails, temptations and tribulation in my academic pursuit.

My gratitude goes to my parents of inestimable values in the person of DR.AND MRS.EGBULONU and I will not forget the efficacious effort put in place by my sister MRS. Oluchi olawoyin and my friends David, ugo, and all my course-mate.

I am highly indebted to my supervisor Mr. IGWE JOSEPH who devoted time to go through each page of the manuscript and who also made helpful suggestion to the success of this work.

My sincere gratitude also goes to the head of department (HOD) computer science and information technology DR. ARINZE NWAEZE and also all the lecturers in the department who have contributed immensely in so many ways in making it possible for me to get to this stage of my academic pursuit.

My irrevocable gratitude goes to all those whose names are not mentioned that harnessed that aided the completion of this work in one way or the other but I still say a big thank you to you all.

ABSTRACT

The abstract of the project is now the online help desk information system has eased the general public who wish to make there enquires, log complaints, make a suggestion. These incidents vary significantly in type and urgency and require the attention of officials (hereafter referred to as ‘users’) within one or more Public Sector entities. The Campus online help desk has a Human Resource System with a single purpose of maintaining sensitive information that is required for a few key employees outside of HR. The Campus online help desk is a major change to the way thing is currently done. Using the Campus online help desk must be a Company Directive otherwise it will never be fully implemented. In other to achieve the best out of this work, Html,PHp, javascript was used for the design of the web-based program.

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CHAPTER ONE

1.0 INTRODUCTION

Background of the Study

Customer care is a crucial element of business success. Every time you have contact with your customers you have an opportunity to improve your reputation with them and increase the likelihood of further sales.

From your telephone manner to the efficiency of your order-fulfillment systems, almost every aspect of your business affects the way your customers view your business. There are also specific programmes you can put in place to increase your level of customer care.

This guide outlines what customer care involves. It explains how you can use customer contact, feedback and loyalty schemes to retain existing customers, increase your sales to them and even win new customers. It also covers how to prepare for receiving a customer complaint.

Customer care involves putting systems in place to maximize your customers' satisfaction with your business. It should be a prime consideration for every business - your sales and profitability depends on keeping your customers happy.

Customer care is more directly important in some roles than others. For receptionists, sales staff and other employees in customer-facing roles, customer care should be a core element of their job description and training, and a core criterion when you're recruiting.

But don't neglect the importance of customer care in other areas of your business. For instance, your warehousing and dispatch departments may have minimal contact with your customers - but their performance when fulfilling orders has a major impact on customers' satisfaction with your business.

A huge range of factors can contribute to customer satisfaction, but your customers - both consumers and other businesses - are likely to take into account:

- how well your product or service matches customer needs
- the value for money you offer
- your efficiency and reliability in fulfilling orders
- the professionalism, friendliness and expertise of your employees
- how well you keep your customers informed
- the after-sales service you provide

1.1 STATEMENT OF PROBLEM

Owing to:

(i) The difficulties people face in transferring information/data.

(ii) Unwillingness attitude of some Caritas University staff when checking their customers' information.

(iii) Fragile nature of customers' information.

(iv) Difficulties people encountered when checking their customers information

(v) Time wasted in manual processing of students' information.

(vi) Important nature of students' information in the business world.

The need arise for the development of an online help desk to alleviate these problems.

1.2 PURPOSE OF STUDY

The main purpose of this study is to put to an end the difficulties people encountered when checking their customers information. This is actualized by designing computerized CAMPUS ONLINE HELP DESK which is user friendly and interactive. By the time this software is designed and implemented, the difficulties encountered with manual method of checking customers' information will be eliminated.

1.3 SIGNIFICANCE OF STUDY

With the growth in information technology, the study offers numerous benefits to the Caritas University and to any organization that deals on customers' information.

Manual method of checking customers' information will no longer be there again because it will be done by the computer with the help of the computerized CAMPUS ONLINE HELP DESK.

Because of the easy to use nature of the CAMPUS ONLINE HELP DESK, any organization can easily buy it to make use of them.

1.4 AIMS AND OBJECTIVES

The aims and objectives of this project are listed below:

- To develop software called CAMPUS ONLINE HELP DESK that will replace the manual method.
- To develop, promote, and provide adequate and efficiently CAMPUS ONLINE HELP DESK.
- To maintain an efficient system of collection, sorting and delivery of customers information.
- To demonstrate increased motivation to the Caritas University workers.
- To eliminate the error involved with the manual method of checking customers' information.
- To save the time wasted with manual method of checking customers' information.

1.5 SCOPE OF STUDY

This project work is narrowed to Caritas University. It deals with the development of CAMPUS ONLINE HELP DESK to help in the checking of customers' information.

1.6 LIMITATION OF STUDY

Owing to the scope of this project work as stated above, this project work is limited to CAMPUS ONLINE HELP DESK.

It is important to mention here that time was a major constraint in the course of fact finding. It is also wise to mention here that some information we need to work with was not collected because of the unwillingness of the staff to review such information.

1.9 DEFINITION OF TERMS

Business: is a legally recognized organization designed to provide goods, services, or both to consumers or tertiary business in exchange for money.

Computer: A computer is a programmable machine that receives input, stores and manipulates data, and provides output in a useful format.

Customer: A customer (also known as a client, buyer, or purchaser) is usually used to refer to a current or potential buyer or user of the products of an individual or organization, called the supplier, seller, or vendor.

Database: A database is a system intended to organize, store, and retrieve large amounts of data easily.[1] It consists of an organized collection of data for one or more uses, typically in digital form.

Report: Reports are often used to display the result of an experiment, investigation, or inquiry.

Order: Confirmed request by one party to another to buy, sell, deliver, or receive goods or services under specified terms and conditions.

System: whole compounded of several parts or members, system", literary "composition"· Is a set of interacting or interdependent system components forming an integrated whole.

Information: is a processed data.

Storage: is a device for recording (storing) information (data)

Staff: a set of people, such as the employees or volunteers, within an organization

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Customer Service

Customer service is the provision of service to customers before, during and after a purchase.

According to Jamier L. Scott. (2002): “Customer service is a series of activities designed to enhance the level of customer satisfaction – that is, the feeling that a product or service has met the customer expectation."

Its importance varies by product, industry and customer; defective or broken merchandise can be exchanged, often only with a receipt and within a specified time frame. Retail stores will often have a desk or counter devoted to dealing with returns, exchanges and complaints, or will perform related functions at the point of sale.

Customer service may be provided by a person (e.g., sales and service representative), or by automated means called self-service. Examples of self service are Internet sites. However, In the Internet era, a challenge has been to maintain and/or enhance the personal experience while making use of the efficiencies of online commerce. Writing in *Fast Company*, entrepreneur and customer systems innovator Micah Solomon has made the point that "Online customers are literally invisible to you (and you to them), so it's easy to

shortchange them emotionally. But this lack of visual and tactile presence makes it even more crucial to create a sense of personal, human-to-human connection in the online arena."

Customer service is normally an integral part of a company's customer value proposition. In their book *Rules to Break and Laws to Follow*, Don Peppers and Martha Rogers, Ph.D. write that "customers have memories. They will remember you, whether you remember them or not." Further, "customer trust can be destroyed at once by a major service problem, or it can be undermined one day at a time, with a thousand small demonstrations of incompetence."

From the point of view of an overall sales process engineering effort, customer service plays an important role in an organization's ability to generate income and revenue. From that perspective, customer service should be included as part of an overall approach to systematic improvement.

Some have argued that the quality and level of customer service has decreased in recent years, and that this can be attributed to a lack of support or understanding at the executive and middle management levels of a corporation and/or a customer service policy. To address this argument, many organizations have employed a variety of methods to improve their customer satisfaction levels, and other KPIs.

2.1.1 Instant Feedback

Recently, many organizations have implemented feedback loops that allow them to capture feedback at the point of experience. For example, National Express, one of the UK's leading travel companies invites passengers to send text messages whilst riding the bus. This has been shown to be useful as it allows companies to improve their customer service before the customer defects, thus making it far more likely that the customer will return next time.[6]

A challenge working with customer service is to ensure that you have focused your attention on the right key areas, measured by the right Key Performance Indicator. There is no challenge to come up with a lot of meaningful KPIs, but the challenge is to select a few which reflects your overall strategy. In addition to reflecting your strategy it should also enable staff to limit their focus to the areas that really matter. The focus must be of those KPIs, which will deliver the most value to the overall objective, e.g. cost saving, service improving etc. It must also be done in such a way that staffs sincerely believe that they can make a difference with the effort.

One of the most important aspects of a customer service KPI is that of what is often referred to as the "Feel Good Factor". Basically the goal is to not only help the customer have a good experience, but to offer them an experience that exceeds their expectations. Several key points are listed as follows:

1. Know your product – Know what products/service you are offering back to front. In other words be an information expert. It is okay to say "I don't know", but it should always be followed up by... "but let me find out" or possibly " but my friend knows!" Whatever the situation may be, make sure that you don't leave your customer with an unanswered question.

2. Body Language/Communication – Most of the communication that we relay to others is done through body language. If we have a negative body language when we interact with others it can show our lack of care. Two of the most important parts of positive body language are smiling, and eye contact. Make sure to look your customers in the eye. It shows that we are listening to them, not at them. And then of course smiling is just more inviting than someone who has a blank look on their face.

3. Anticipate Guest Needs – Nothing surprises your customer more than an employee going the extra mile to help them. Always look for ways to serve your customer more than they expect. In doing so it helps them to know that you care and it will leave them with the "Feel Good Factor" that we are searching for.

2.2 Understand your Customers

In business-to-business trading, providing a high level of customer care often requires you to find out what your customers want. Once you have identified

your most valuable customers or best potential customers, you can target your highest levels of customer care towards them. Another approach, particularly in the consumer market, is the obligation to treat all consumers to the highest standard.

2.2.1 Collect information about your customers

Information about your customers and what they want is available from many sources, including:

- their order history
- records of their contacts with your business - phone calls, meetings and so on
- direct feedback - if you ask them, customers will usually tell you what they want
- changes in individual customers' order patterns
- changes in the overall success of specific products or services
- feedback about your existing range - what it does and doesn't do
- enquiries about possible new products or services
- feedback from your customers about things they buy from other businesses
- changes in the goods and services your competitors are selling
- feedback and referrals from other, non-competitive suppliers

2.3 Manage your customer information

It's important that you draw up a plan about how customer information is to be gathered and used. Establish a customer-care policy. Assign a senior manager as the policy's champion but make sure that all your staff are involved - often less senior staff have more direct contact with customers.

You can manage your customer records using a database or customer relationship management software..

Collecting and using customer information may require you to register with the Information Commissioner and comply with data protection regulations. For more information on data protection, see our guide on how to comply with data protection legislation.

2.4 Measure your Customer Service Levels

Where possible, put systems in place to assess your performance in business areas which significantly affect your customers' satisfaction levels. Identify Key Performance Indicators (KPIs) which reflect how well you're responding to your customers' expectations.

For instance, you might track:

- sales renewal rates
- the number of queries or complaints about your products or services

- the number of complaints about your employees
- the number of damaged or faulty goods returned
- average order-fulfilment times
- the number of contacts with a customer each month
- the volume of marketing material sent out and responses generated
- time taken from order to delivery

Your customers and employees will be useful sources of information about the KPIs which best reflect key customer service areas in your business. Make sure the things you measure are driven not by how your business currently runs, but by how your customers would like to see it run.

There are important areas of customer service which are more difficult to measure. Many of these are human factors such as a receptionist's telephone manner or a salesperson's conduct while visiting clients. In these areas it's crucial that you get feedback from your customers about their perceptions of your customer service.

Customer surveys, feedback programmes and occasional phone calls to key customers can be useful ways of gauging how customer service levels in your business are perceived.

2.5 Customer Feedback and Contact Programmes

Customer feedback and contact programmes are two ways of increasing communication with your customers. They can represent great opportunities to listen to your customers and to let them know more about what you can offer.

Customer feedback can provide you with detailed information about how your business is perceived. It's a chance for customers to voice objections, suggest changes or endorse your existing processes, and for you to listen to what they say and act upon it. Feedback is most often gathered using questionnaires, on your website, in person, over the telephone or by post.

The purpose of customer contact programmes is to help you deliver tailored information to your customers. One example is news of a special offer that is relevant to a past purchase - another is a reminder sent at the time of year when a customer traditionally places an order. Contact programmes are particularly useful for reactivating relationships with lapsed customers.

Do your best to make sure that your customers feel the extra contact is relevant and beneficial to them - bombarding customers with unwanted calls or marketing material can be counter-productive. Newsletters and email bulletins allow you to keep in touch with useful information that can be read at a time that is convenient for the customer.

2.6 Customer Loyalty Schemes

While good overall service is the best way of generating customer loyalty, sometimes new relationships can be strengthened, or old ones refreshed, using customer loyalty schemes.

These are programmes that use fixed or percentage discounts, extra goods or prizes to reward customers for behaviour that benefits your business. They can also be used to persuade customers to give you another try if you feel you have successfully tackled past problems with your customer service.

You can decide to offer rewards on the basis of:

- repeat custom
- cumulative spend
- orders for large quantities or with a high value
- prompt payment
- length of relationship

For example, a car wash might offer free cleaning every tenth visit or a free product if a customer opts for the deluxe service. A mail-order company might seek to revive the interest of lapsed customers by offering a voucher redeemable against purchases - response rates with such vouchers can be improved by setting an expiry date.

You can also provide key customers with loyalty cards that entitle them to a discount on all their purchases.

Employees who deal with customers' orders should be fully aware of current offers and keep customers informed. Sometimes brochures and other marketing materials are the best way of getting word out about a new customer incentive.

Don't forget though that your customers' view of the overall service you provide will influence their loyalty much more than short-term rewards will.

2.7 Use Customer Care to Increase Sales

Your existing customers are among the most important assets of your business - they have already chosen you instead of your competitors. Keeping their custom costs far less than attracting new business, so it's worth taking steps to make sure that they're satisfied with the service they receive.

There are a number of techniques you can employ, including:

- providing a free customer helpline
- answering frequently asked questions on your website
- following up sales with a courtesy call
- providing free products that will help customers look after or make the most of their purchases

- sending reminders when services or check-ups are due
- offering preferential discounts to existing customers on further purchases

Existing customer relationships are opportunities to increase sales because your customers will already have a degree of trust in your recommendations.

Cross-selling and up-selling are ways of increasing either the range or the value of what you sell by pointing out new purchase possibilities to these customers. Alerting customers when new, upgraded or complimentary products become available – perhaps through regular emails or newsletters - is one way of increasing sales.

To retain your customers' trust, however, never try to sell them something that clearly doesn't meet their needs. Remember, your aim is to build a solid long-term relationship with your customers rather than to make quick one-off profits.

Satisfied customers will contribute to your business for years, through their purchases and through recommendations and referrals of your business.

2.8 How to Deal with Customer Complaints

Every business has to deal with situations in which things go wrong from a customer's point of view.

However you respond if this happens, don't be dismissive of your customer's problem - even if you're convinced you're not at fault. Although it might seem contradictory, a customer with a complaint represents a genuine opportunity for your business:

- if you handle the complaint successfully, your customer is likely to prove more loyal than if nothing had gone wrong
- people willing to complain are rare - your complaining customer may be alerting you to a problem experienced by many others who silently took their custom elsewhere

Complaints should be handled courteously, sympathetically and - above all - swiftly. Make sure that your business has an established procedure for dealing with customer complaints and that it is known to all your employees. At the very least it should involve:

- listening sympathetically to establish the details of the complaint
- recording the details together with relevant material, such as a sales receipt or damaged goods
- offering rectification - whether by repair, replacement or refund

- appropriate follow-up action, such as a letter of apology or a phone call to make sure that the problem has been made good

If you're proud of the way you rectify problems - by offering no-questions refunds, for example - make sure your customers know about it. Your method of dealing with customer problems is one more way to stay ahead of your competitors.

CHAPTER THREE

METHODOLOGY AND ANALYSIS OF THE EXISTING SYSTEM

3.1 Research Methodology

Methodology is the study of how to perform scientific research. It is the part of any analysis or research that is used to find out what type of data is maintained, what fact to find and look for, how to find them and how to record them for usage. Many methodologies include a diagramming notation for documenting the results of the procedure; approach for carrying out the procedure; and an objective (ideally quantified) set of criteria for determining whether the results of the procedure are of acceptable quality. There are different types of research methodologies which include:

1. OOADM - Object-Oriented Analysis and Design Methodology,
2. SSADM - Structured Systems Analysis and Design Methodology.
3. Extreme Programming methodology,
4. Prototyping methodology,

3.1.1 Object-Oriented Analysis and Design

OOAD is a software engineering approach that models a system as a group of interacting objects. Each object represents some entity of interest in the system being modeled, and is characterized by its class, its state (data elements), and its behavior. Various models can be created to show the static structure, dynamic behavior, and run-time deployment of these collaborating objects. There are a number of different notations for representing these models, such as the Unified Modeling Language (UML).

Object-oriented analysis (OOA) applies object-modeling techniques to analyze the functional requirements for a system. Object-oriented design (OOD) elaborates the analysis models to produce implementation specifications. OOA focuses on *what* the system does, OOD on *how* the system does it.

Object-oriented analysis (OOA) is the process of analyzing a task (also known as a problem domain), to develop a conceptual model that can then be used to complete the task. A typical OOA model would describe computer software that could be used to satisfy a set of customer-defined requirements. During

the analysis phase of problem-solving, the analyst might consider a written requirements statement, a formal vision document, or interviews with stakeholders or other interested parties. The task to be addressed might be divided into several subtasks (or domains), each representing a different business, technological, or other areas of interest. Each subtask would be analyzed separately. Implementation constraints, (e.g., concurrency, distribution, persistence, or how the system is to be built) are not considered during the analysis phase; rather, they are addressed during object-oriented design (OOD).

The conceptual model that results from OOA will typically consist of a set of use cases, one or more UML class diagrams, and a number of interaction diagrams. It may also include some kind of user interface mock-up.

During object-oriented design (OOD), a developer applies implementation constraints to the conceptual model produced in object-oriented analysis. Such constraints could include not only constraints imposed by the chosen architecture but also any non-functional – technological or environmental –

constraints, such as transaction throughput, response time, run-time platform, development environment, or those inherent in the programming language. Concepts in the analysis model are mapped onto implementation classes and interfaces resulting in a model of the solution domain, i.e., a detailed description of *how* the system is to be built.

3.1.2 Structured System Analysis and Design Methodology

Structured Systems Analysis and Design Methodology (SSADM) is a systems approach to the analysis and design of information systems. SSADM was produced for the CCTA, a UK government office concerned with the use of technology in government, from 1980 onwards.

System design methods are a discipline within the software development industry which seeks to provide a framework for activity and the capture, storage, transformation and dissemination of information so as to enable the economic development of computer systems that are fit for purpose. SSADM is a waterfall method by which an IS design can be arrived at; SSADM can be thought to represent a pinnacle of the rigorous document-led approach to

system design, and contrasts with more contemporary Rapid Application Development methods such as DSDM.

3.1.3 Extreme Programming:

Extreme Programming (or XP) is a set of values, principles and practices for rapidly developing high-quality software that provides the highest value for the customer in the fastest way possible. XP is extreme in the sense that it takes 12 well-known software development "best practices" to their logical. A software development that follows a specific structure that is designed to simplify and expedite the process of developing new software. Kent Beck developed Extreme Programming to be used with small teams of developers who need to develop software quickly in an environment of rapidly-changing requirements.

XP teams design software for specific functionalities without adding any functionalities that are not specifically requested that may slow down the process, keeping the development course simple through systematic and regular testing and design improvements.

Extreme Programming is based on 12 principles:

1. **The Planning Process** -- The desired features of the software, which are communicated by the customer, are combined with cost estimates

provided by the programmers to determine what the most important factors of the software are. This stage is sometimes called the *Planning Game*.

2. **Small Releases** -- The software is developed in small stages that are updated frequently, typically every two weeks.
3. **Metaphor** -- All members on an XP team use common names and descriptions to guide development and communicate on common terms.
4. **Simple Design** -- The software should include only the code that is necessary to achieve the desired results communicated by the customer at each stage in the process. The emphasis is not on building for future versions of the product.
5. **Testing** -- Testing is done consistently throughout the process. Programmers design the tests first and then write the software to fulfill the requirements of the test. The customer also provides acceptance tests at each stage to ensure the desired results are achieved.
6. Refactoring -- XP programmers improve the design of the software through every stage of development instead of waiting until the end of the development and going back to correct flaws.
7. **Pair Programming** -- All code is written by a pair of programmers working at the same machine.

8. **Collective Ownership** -- Every line of code belongs to every programmer working on the project, so there are no issues of proprietary authorship to slow the project down. Code is changed when it needs to be changed without delay.
9. **Continuous Integration** -- The XP team integrates and builds the software system multiple times per day to keep all the programmers at the same stage of the development process at once.
10. **40-Hour Week** -- The XP team does not work excessive overtime to ensure that the team remains well-rested, alert and effective.
11. **On-Site Customer** -- The XP project is directed by the customer who is available all the time to answer questions, set priorities and determine requirements of the project.
12. **Coding Standard** -- The programmers all write code in the same way. This allows them to work in pairs and to share ownership of the code.

3.1.4 Computer-Aided Software Engineering

CASE provides software process support by automating some process activities and by providing information about the software that is being developed. The main purpose of case tools is to decrease the cost / development time and increase quality of software. As these tools are not free their use is limited. Computer Aided Software Engineering is the name given to software used to support software process activities such as requirement engineering, design,

program development and test. CASE tools therefore include design editors, data dictionaries, compilers, debuggers, system building tools and so on.

CASE tools can be divided into two main groups – those that deal with the first three parts of the system development life cycle (preliminary investigation, analysis, and design) are referred to as Front-End CASE tools or Upper CASE tools, and those that deal mainly with the Implementation. The major reason for the development of CASE tools was to increase the speed of the development of systems. By doing so, companies were able to develop systems without facing the problem of having business needs change before the system could be finished being developed. Quicker installation also allowed the companies to compete more effectively using its newly developed system that matched its current business needs. In a highly competitive market, staying on the leading edge can make the difference between success and failure. CASE tools also allowed analysts to allocate more time to the analysis and design stages of development and less time coding and testing. Previous methods saw only 35% of the time being spent of analysis and design and 65% of the time being used to develop code and testing. CASE tools allowed analysts to use as much as 85% of the time in the analysis and design stages of the development. This resulted in systems that more closely mirrored the requirement from the users and allowed for more efficient and effective systems to be developed.

By using a set of CASE tools, information generated from one tool can be

passed to other tools which, in turn, will use the information to complete its task, and then pass the new information back to the system to be used by other tools. This allows for important information to be passed very efficiently and effectively between many planning tools with practically no resistance. When using the old methods, incorrect information could very easily be passed between designers or could simply be lost in the shuffle of papers and Installation are referred to as Back-End CASE tools or Lower CASE tools.

3.1.5 Prototyping

A prototype is an original type, form, or instance of something serving as a typical example, basis, epitome, or standard for other things of the same category. A prototype is built to test the function and feel of the new design before starting production of a product. The construction of a fully working full-scale prototype, the ultimate test of concept, is the engineers' final check for design flaws allows last-minute improvement to be made before larger production runs are ordered. Building the full design is often expensive and can be time-consuming, especially when repeated several times building the

full design, figuring out what the problems are and how to solve them, then building another full design.

In object-oriented programming, a prototype is an object that can be cloned in order to produce new object. Prototyping is the process of quickly putting together a working model (a prototype) in order to test various aspects of design, illustrate ideas of features and gather early user feedback. Prototyping is often treated as an integral part of the system design process, where it is believed to reduce project risk and cock. Early visibility of the prototype gives user an idea of what the final system looks like. Software prototyping is the process of creating an incomplete model of the full-featured software program, which can be used to let the users have a first idea of the completed program or allow the clients to evaluate the program. This has several advantages: The software designer and implementer can obtain feedback from the users early in the project. The clients and the contractor can compare if the software made matches the software specification, according to which the software program is built. It also allows the software engineer some insight into the accuracy of initial project estimates and whether the

deadline and milestones proposed can be successfully met. The model can take one of three forms: a paper prototype that depicts human-machine interaction in a form that enables the user to understand how such interactions will occur, a working prototype that implements some subset of the function required of the desired software, or an existing program that performs that part or all of the function but has other features to be improved upon in the new development effort.

3.1.6 Methodology Adopted in the Research

In this project analysis, SSADM was adopted because of its simplicity. SSADM does not require special skills and can easily be taught to the staff. Normally, common modeling and diagramming tools are used. There are five stages involved in SSADM.

3.1.6.1 Feasibility Study: Step 0

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. In essence this is a shortened, higher-level version of Stages 1 and 2

(requirements analysis and requirements specification). This should not be an expensive or time consuming exercise (maximum of one team working for 1/2 months). 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. Context diagrams, current physical DFDs, overview ERDs, a requirements catalogue, project management techniques such as activity networks and Gantt charts are produced. To pass this stage and go through to system development a proposal must demonstrate [Kendall&Kendall, 2012]:

1. Economic feasibility;
2. Technical feasibility;
3. Operational feasibility;

Other types of feasibility may also require consideration, for example legal feasibility.

Economic Feasibility

The aim here is to assess the costs required for alternative systems and set them against the expected benefits. The types of alternatives that are frequently considered are the manual/computer boundaries as some tasks may benefit more than others from computerization and non-functional characteristics such as the time delay between the real world and the different parts of the system: should we be looking at batch, on-line or real-

time or a combination? The system costs should also be estimated in terms of basic resources of money, people and time. For example, the following must be costed:

1. Systems development, for example in-house or management consultancy;
2. User time for requirements acquisition, testing and training;
3. Hardware & software costs.

Set against the costs should be a quantifiable assessment of the expected benefits, for example reduced labour costs, improved customer service or predicted increase in orders. Economic feasibility is a bit of a *'black art'*, it's difficult to predict with any degree of certainty whether a system will in fact benefit an organisation. The most frequently missed cost is the cost of maintaining the system once it is installed.

Technical Feasibility

This is concerned with whether the solution can be implemented using existing technology. If it can then existing technology may require upgrading or adding to. If it can be done then the solution may require the integration of equipment or software that has not been combined before. Non-functional requirements such as batch or on-line processing, maximum response time for user-computer interaction, estimated frequency of transactions, maximum

record and file sizes, networking loads and typical number of users are considered here. In addition, requirements of system expansion, security, data archiving and reliability are considered.

Operational Feasibility

This investigates factors such as the likely reaction of employees and union representatives to job and other proposed organisational changes. The main aim is to assess whether the solution will operate and be used after installation. For example, if users are happy with the current system and see no reason to change then there may be a high degree of resistance to the new proposal. Relevant factors here concern whether the solution has general management support and whether or not the users have been involved in the development of the proposal.

Legal Feasibility

This encompasses a broad range of subjects including contracts, liability and the Data Protection Act.

Feasibility Report

The result of the feasibility study should be a feasibility report that provides a detailed terms of reference, a management summary, details of how the

feasibility study was undertaken, analysis of the current situation, details of the future requirements, explanation of the proposed system, details of options that were rejected, a financial assessment of the costs and benefits of developing the proposed system, a project plan and recommendations.

3.1.6.2 Requirements Analysis: Steps 1 & 2

This consists of 2 stages. In stage 1 requirements are defined by investigating the current environment and identifying problems or areas that need improvement. Stage 2 then develops a range of options that meet the defined requirements and selects one option as the basis for the desired system.

Stage 1: Investigation of Current Environment

An overview of the current processing and data is created. Current problems are documented as a necessary improvements and any new data or functions that will be required. The intended users of the new system are also identified.

1. A DFD is produced showing the current system.
2. An ERD is produced showing the entities and relationships obtained by analysis of the data in the current system.

Stage 2: Business Systems Options

A Business System Option (BSO) describes a suggested new system in terms of its functionality and its boundary: inputs, outputs, processes and data are described. The aim is to help the users choose, from all the listed requirements, just what they want their new system to do.

A BSO is a textural description of the boundary, inputs and outputs, and principle processing activities (or functions) to be performed of a proposed system. The BSO may include diagrams (DFDs, ERDs etc.). However, such diagrams would be very much an overview.

Technique: Draw up a list of about 6 BSOs, covering a range of requirements identified in Stage 1. The range should cover:

1. One option that covers the stated minimum requirements and no more;
2. One option that covers every new requirement;
3. Up to four options that each cover the stated minimum requirement and a different set of the other requirements.

The six options will then cover six different boundaries and six different functionalities - all will cover the minimum functionality required.

Non-functional requirements should also be covered, for example:

1. Cost/benefit of the proposed option;
2. Impact Analysis of implementing the BSO;

3. Timescales for development and construction.

The obvious non-starters can then be eliminated. The remaining BSOs should then be extended to include:

1. Constraints;
2. Impact on existing systems - look out for the *ripple effect*;
3. Detailed plans and time scales for the subsequent SSADM activities and implementation of the system;
4. Organisational impacts and implications.

The short-listed BSOs should then be presented to the decision making body.

3.1.6.3 Requirements Specification: Step 3

Having selected a specific BSO a detailed specification of requirements now begins. The emphasis is on determining the desired system data, functions and events. Prototyping techniques are also suggests for the development of the HCI.

1. The previously defined skeletal DFDs and ERDs are modified and refined to match the requirements in the selected BSO;
2. All attributes are specified for the ERD;
3. Non-functional characteristics such as security, access and archiving requirements are defined;

4. The input/output data is defined using *'input/output structures'*;
5. The system dialogues are defined;
6. As a check on the ERD *'relational data analysis'* is used;
7. Prototyping the requirements with the users to obtain errors and capture any additional requirements is suggested. SSADM provides procedures for managing prototyping sessions;
8. Using *'entity-event modelling'* more detailed processing requirements are obtained, This is done by creating an *'entity life history'* for each entity on the ERD, and an *'effect correspondence'* diagram is constructed for each event, showing the entities affected by that event. An *'enquiry access path'* is created for each anticipated enquiry showing the entities on the ERD that are to be accessed.

3.1.6.4 Logical System Specification: Steps 4 & 5

Stage 4: Technical System Options

This assesses the different options for implementing the specification and describes the costs, benefits and constraints. Factors include internal and external constraints. External constraints consist of, for example, time, cost, business performance and any hardware or software constraints set in the feasibility study.

The procedure for producing and selecting Technical System Options (TSOs) is very similar to that for BSOs. First, draw up an initial list of approximately six options. The skeletal TSOs should then be expanded to include details derived from potential suppliers such as:

1. Cost;
2. Facilities;
3. Performance;
4. Support etc.

The intention is not to decide on a choice of vendor but to establish *ballpark* figures and estimates to present to the Project Board for each TSO. As with BSOs, the range should cover:

1. One option that suggests no change;
2. One option that covers the stated minimum requirements and no more;
3. One option that covers every new requirement;
4. Up to four options that each cover the stated minimum requirement and a different set of the other requirements.

The range should then be examined to eliminate obvious *non-starters*. The remaining TSOs should then be presented to the board

Step 5: Logical Design

The Logical Dialogue of the system is defined. This does not include the physical dialogues (menu structures, form designs etc.). Neither is this the stage at which the physical screen characteristics are defined. At this stage the logical exchange of data is defined.

The Update Processing is also defined. This specifies the logic of each database update required for an event. The Entity Life Histories are updated with State Indicators. State Indicators describe the specific state of the data associated with each event in the ELH. For example, when a Customer Record is created the initial state of all the attributes is empty. As the Customer Record is processed the state of the attributes will change over time.

3.1.6.5 Physical Design: Step 6

The Physical Environment the system will operate in is considered.

A *Physical Environment Classification Scheme* is used to categorize the physical environment. The scheme considers factors including:

1. Data storage;
2. Performance;
3. Processing characteristics.

The characteristics, demands and constraints of the environment will clearly have an effect on translation from the Logical Design. Decisions such as denormalising, clustering and indexing will be made at this time.

The physical screen designs are developed.

3.2 Analysis of the Existing System

The existing system is a system that is been carried out in terms of manual operation, A system in which all the methods of checking customer customers information is of a manual approach. Critical analysis of this system reveals that it is a system prone to a lot of errors and it is not effective. Searching for somebody's information is time consuming and boring. Careful analysis also shows that because of the complexities of the manual system, information stored is difficult to retrieve.

Also because of the inconsistency of the manual system, at times files and items are lost because of mismanagement.

Another problem of this manual method of checking customer customers' information is prone to attack by fraudulent.

3.2 FACT FINDING METHOD USED

1. PERSONAL INTERVIEW: Some of the staffs were interviewed to share their feeling and experience about the manual system of checking customers'

information. Their respond was that manual system is highly cumbersome and boring. They stressed that the manual system has not helped them much.

2. OBSERVATION: A situation whereby the customers' information of few customers will be check for day is annoying. Having observed that searching for pupils record are time consuming makes the manual method ineffective.

3, BROWSING METHOD: I visited internet to browse for information concerning computerized CAMPUS ONLINE HELP DESK.

3.3 OBJECTIVES OF THE EXISTING SYSTEM

The objectives of the existing system are listed below:

- To develop software called CAMPUS ONLINE HELP DESK that will replace the manual method.
- To develop, promote, and provide adequate and efficiently CAMPUS ONLINE HELP DESK.
- To maintain an efficient system of collection, sorting and delivery of customers information.
- To demonstrate increased motivation to the Caritas University workers.
- To eliminate the error involved with the manual method of checking customers' information.

- To save the time wasted with manual method of checking customers' information.

3.4 ORGANIZATIONAL STRUCTURE

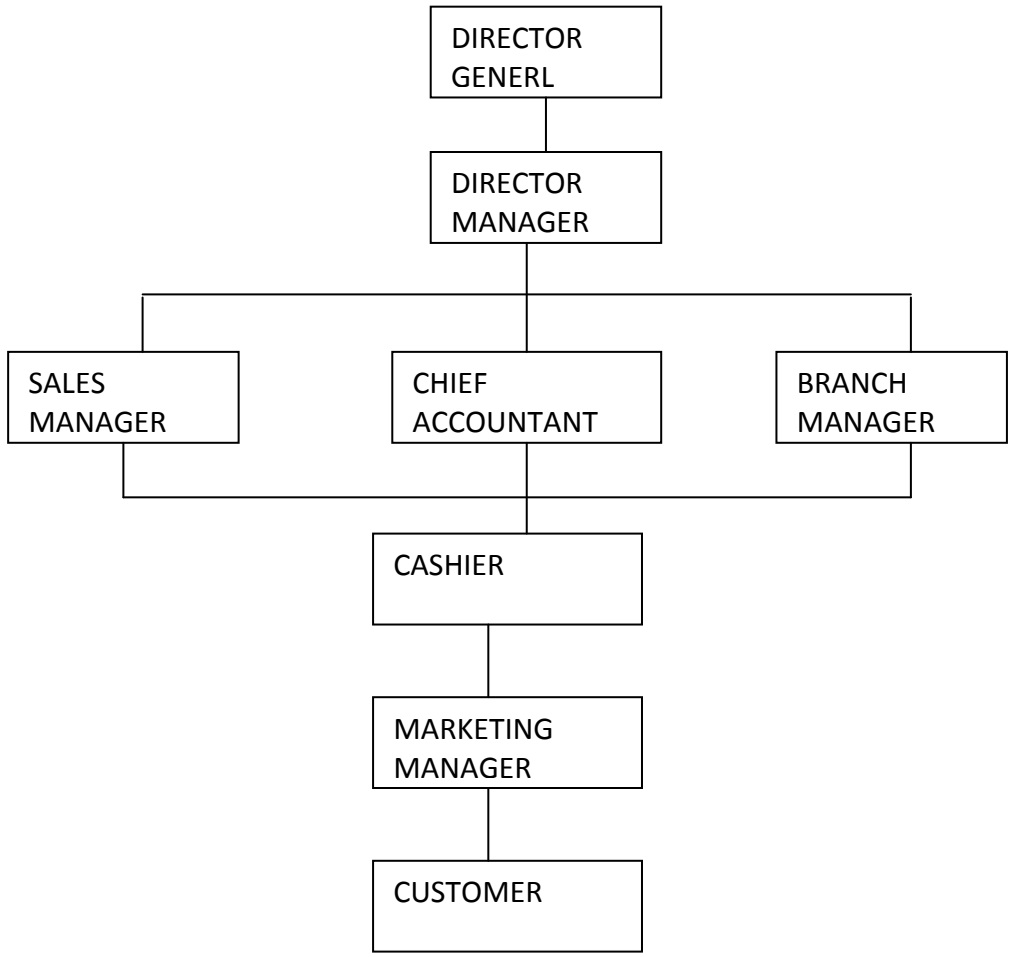


FIG1: **ORGANIZATIONAL STRUCTURE**

3.5 INPUT ANALYSIS

This deals with the process used to feed data to the system for processing. Here the inputs to the system are through registration and payment form.

All these are through which data are supplied to the system which are Name, address, local govt. area, state, complain, occupation, sex, next of kin, phone number, account number, rate of interest, date.

3.6 OUTPUT ANALYSIS

This involves the resultant documentation generated after processing of data/information supplied to the system. The output here can be:

i. Displayed Reply.

ii. Balance sheet

3.7 PROCESS ANALYSIS

Once the inputs are collected, the obtained data are processed properly for effective use. The data/information processed is stored in the computer for subsequent use.

3.8 DATA FLOW DIAGRAM

The trend of information starts from the Managing director when he gave instructions to the staff on how to carry out their duties. The staffs have to attend to the people (customers).

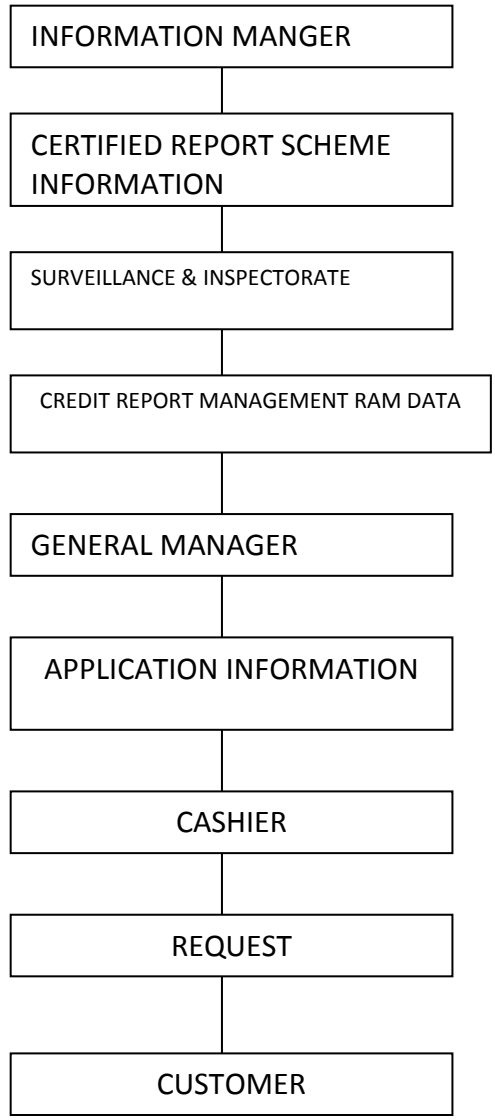


FIG2: DATA FLOW DIAGRAM

3.9 PROBLEMS OF THE EXISTING SYSTEM

A lot of problems are associated with existing system. The existing system involves the use of manual way to check customers' information and store data/information.

The system has proved defective as the objective of the system has also failed. Among the problems associated with the existing system include the following:

1. Prone to fraudulent attack.
2. Data redundancy.
3. Time wasted in checking customers' information, searching/sorting for information.
4. Dullness and boring experience of the staff.
5. Poor security and protection.
6. Misplacing and mismanaging of pupils data.

3.10 JUSTIFICATION FOR THE NEW SYSTEM

CCS provides full accountability. All incidents can be tracked at all times and customers can view information including where their incident has been sent and who (users) is responsible for resolution.

· Incident resolution deadlines (set according to incident nature) are most likely to be adhered to since system issues automated reminders if deadlines are passed without action.

· The entire system is more efficient since submissions can be both accessed and transmitted far more quickly than would be the case for a paper-based system.

· The benefits for students with access to their incidents and the ease with which they can track progress.

CHAPTER FOUR

4.1 DESIGN OF THE NEW SYSTEM

The major factor taken into consideration in the design of the new system is the issue of storing and ordering for data/information in a electronically format. The new system has sections things that can be ordered or mailed and order form.

4.2 OUTPUT SPECIFICATION AND DESIGN

The output of the design is a comprehensive report of the program. It is a personnel management information system for a higher institution. The output here is the reply given to the customer containing the detailed information about things their ordered for. We also have ordered form that contains: Name, address, local govt. area, state, complain, occupation, sex, next of kin, phone number, account number, rate of interest, date.

4.3 INPUT SPECIFICATION AND DESIGN

The word input entails the various data supplied to the system which are processed to give out an output. The input is supplied to the system using keyboard and mouse. The inputs to the system are: Name, address, local govt. area, state, type of credit, occupation, sex, next of kin, phone number, account number rate of interest, date.

Registration Form

Customer:

Name _____ _____ _____

First name Middle name Surname

Sex _____ Age _____ Marital Status _____

Type of Account _____ Amount _____

Rate of interest _____ Expiry Date _____

Account Number _____ Occupation _____

Address _____ Phone Number _____

Email Address _____

Local govt area _____ State _____

Next of kin

Name _____

Address _____ Email _____

Phone number _____

Date _____

Complain form

Name _____ _____ _____

First name Middle name Surname

Complain _____ Account Number _____

Date _____

4.4 FILE DESIGN

SN	FIELD	FIELD TYPE	FIELD ABBREVATION	FIELD WIDTH
1	FIRST NAME	TEXT	FN	20
2	MIDDLE NAME	TEXT	MN	20
3	SURNAME	TEXT	SN	20
4	ADDRESS	TEXT	A	50
5	LOCAL GOVT. AREA	TEXT	LGA	20
6	STATE	TEXT	ST	20
7	SEX	TEXT	S	20
8	AGE	TEXT	A	50
9	MARITAL STATUS	TEXT	MS	20
10	COMPLAIN	TEXT	C	15
11	PHONE NUMBER	TEXT	PN	13
12	ACCOUNT NUMBER	TEXT	AN	13
13	OCCUPATION	TEXT	OCC	30
14	DATE	DATE/TIME	D	8

TABLE1: FILE DESIGN

4.5 PROCEDURE CHART

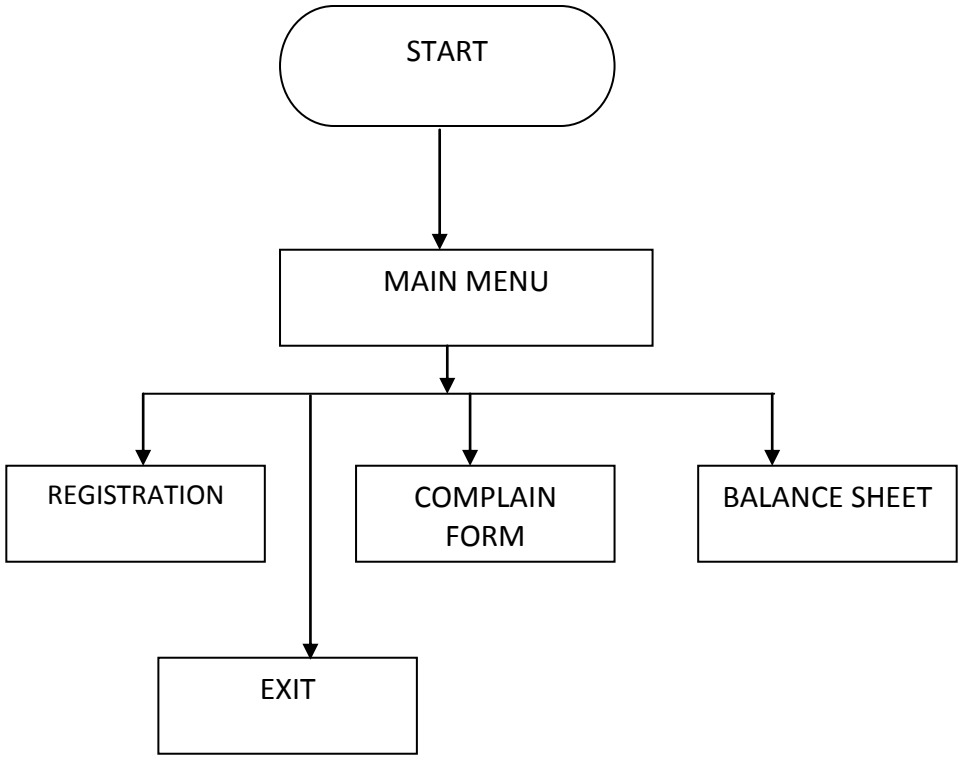


FIG3: PROCEDURE CHART

4.6 SYSTEM FLOWCHART

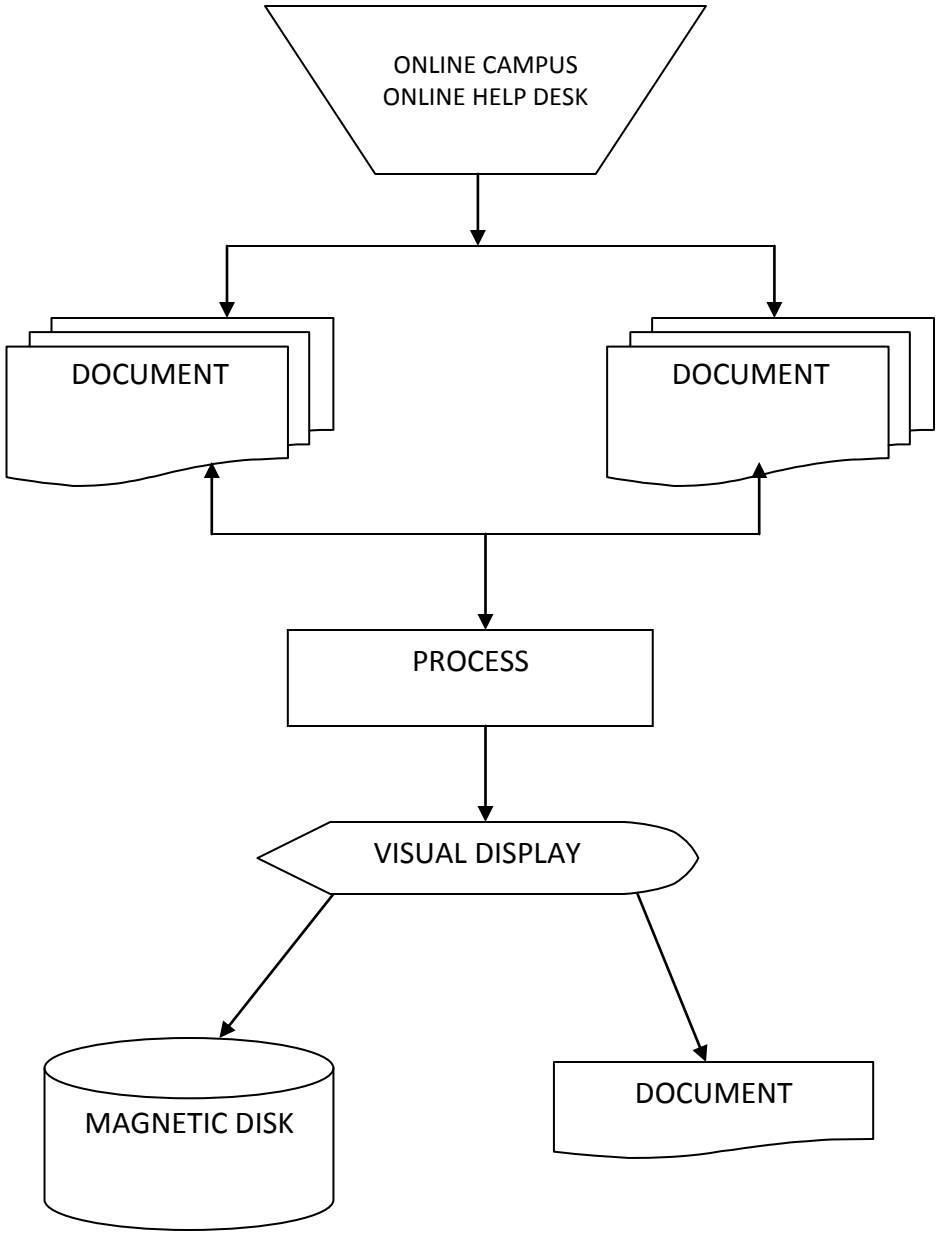


FIG4: SYSTEM FLOWCHART

4.7 SYSTEM REQUIREMENT

SOFTWARE REQUIREMENT

The following software is needed for adequate implementation of the design.

1. Window 98/2000/xp
2. Visual Basic 6.0
3. Microsoft Access
4. Internet Explorer

HARDWARE REQUIREMENT

The following hardware are required for the efficient work of the system:

1. At least 100 gigabyte of hard disk
2. At least 2GBB of RAM
3. At least 2.0MHZ of speed processor
4. At least Pentium IV Processor
5. CD ROM drive

4.8 PROGRAM DESIGN

Having considered the old system, the structure of the new system was being prepared on paper.

This involves a segmental designing method applied to the structure for the new system.

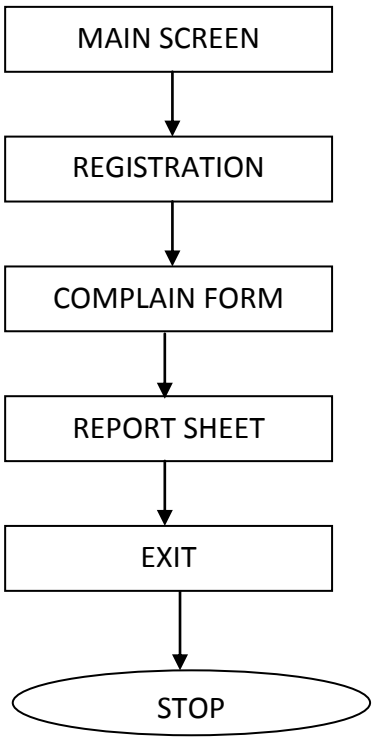


FIG5: PROGRAM DESIGN

4.9 PROGRAM FLOWCHART

During the online customers' information design, a modular designing approach was used to design the program for the system. The design of the new system was carefully developed into paper considering the old system.

Flowchart was used as an effective graphical representation of the program, as well as a design tool and it is aided in the evaluation of a logical correct program.

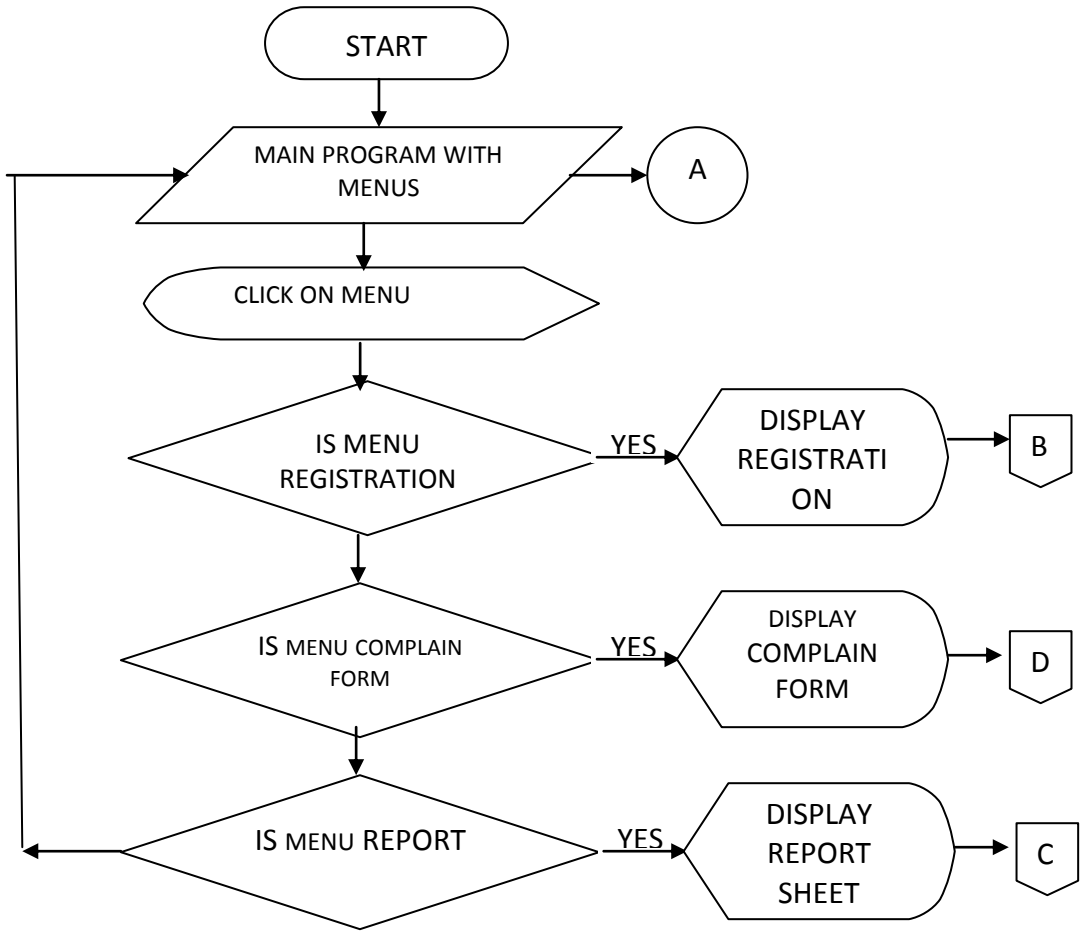
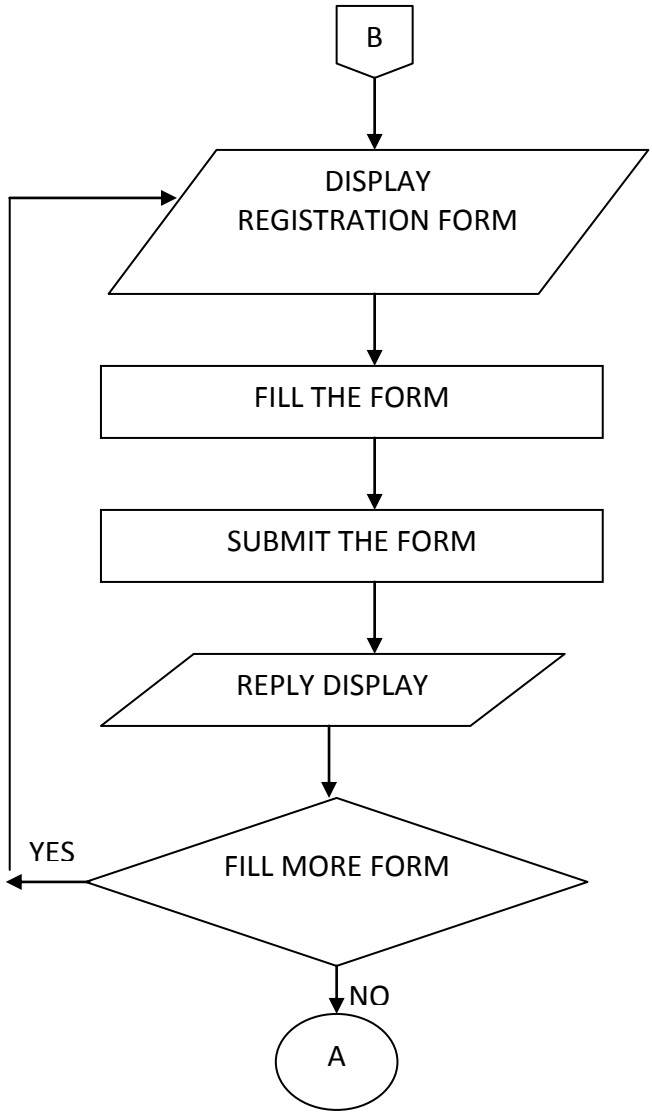
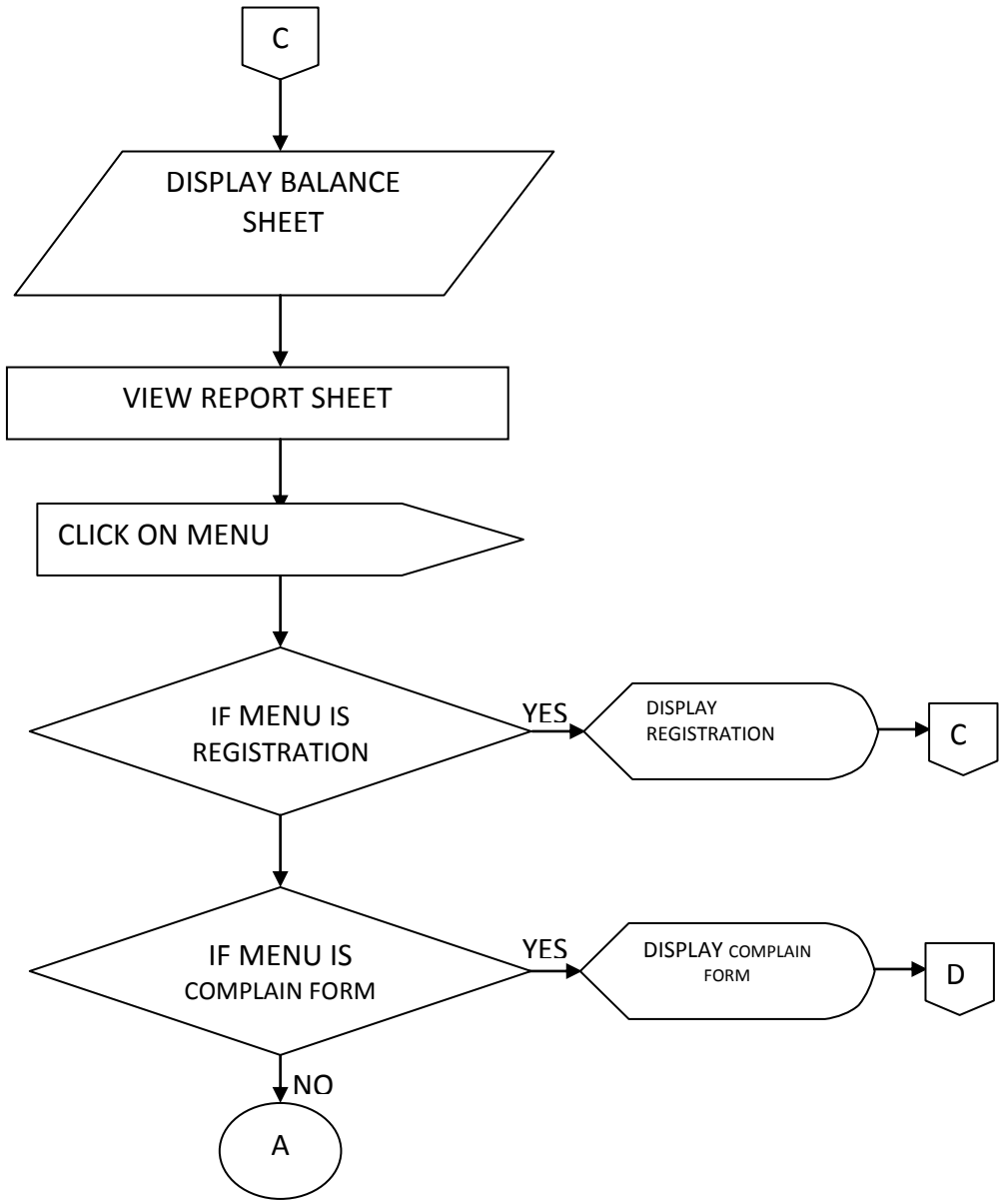
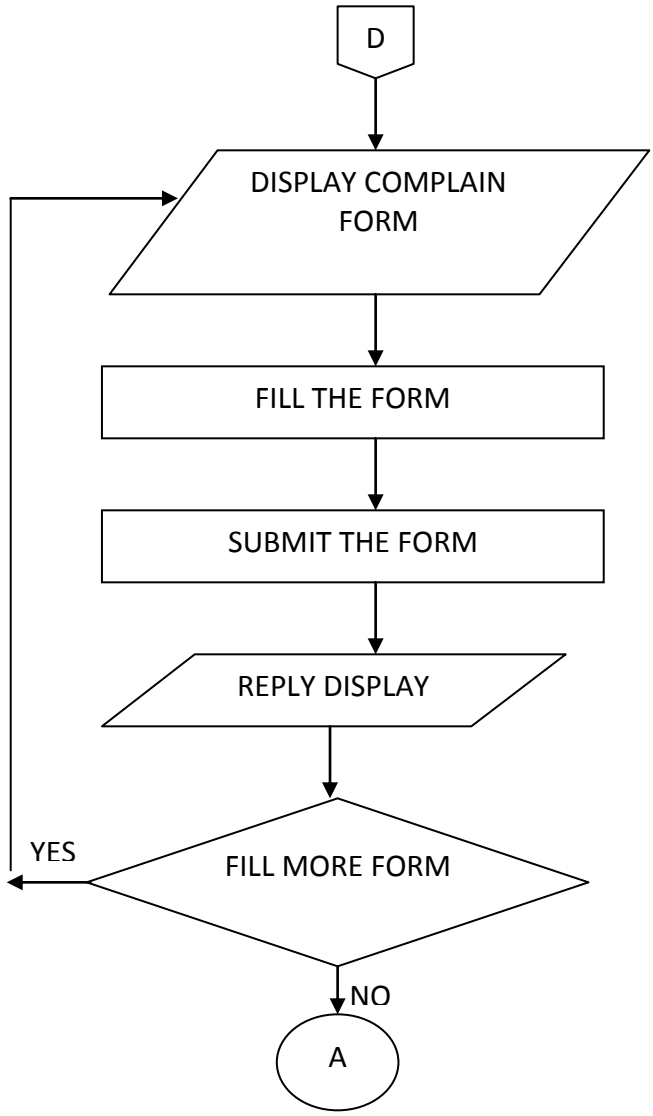


FIG5: PROGRAM DESIGN


B
DISPLAY
REGISTRATION FORM
FILL THE FORM
SUBMIT THE FORM
REPLY DISPLAY
FILL MORE FORM
YES
NO
A


C
DISPLAY BALANCE SHEET
VIEW REPORT SHEET
CLICK ON MENU
IF MENU IS REGISTRATION
YES
DISPLAY REGISTRATION
C
IF MENU IS COMPLAIN FORM
YES
DISPLAY COMPLAIN FORM
D
NO
A



4.10 PSEUDO CODE

Main Menu Pseudo code

Display program message

Enter your password

```
Check for validation
If password < > BILL THEN
    Goto enter password
ELSE
    Display main menu
    Select menu option
    If option K = 1 then
    Display do entry
Else if option k = 2 then
    Display do record
Else if option k = 3 then
    Display do update
Else if option k = 4 then
    Display do exit
Else
    Print error
End if

End if
```

4.11 CHOICE OF PROGRAM LANGUAGE

To ensure a standardized object oriented program in its entire ramification, I used HTML, CSS and Microsoft Access.

These entire programs are used to ensure effective program.

4.12 SOURCE OF PROGRAM LISTING (SEE APPENDIX A)

4.13 TEST DATA

The accuracy of the program was tested with some varying data. This gives the assurance that the new system with achieve its purpose and objectives.

4.14 SAMPLE REPORT

After test-running with varied data, which is after running the program, the output was shown on the monitor. The output can also be printed on paper. This shows that the design of the new system was perfect and effective.

4.15 DOCUMENTATION

SYSTEM DOCUMENTATION

The software was designed to be user friendly. It can be operated by anyone irrespective of their education level provided that the instruction is followed. The software runs on window operating system platform.

The program also need internet explorer.

4.16 PROGRAM DOCUMENTATION

PROGRAM NAME: DESIGN AND IMPLEMENTATION CAMPUS ONLINE HELP DESK.

AUTHOR: EGBULONU JIDECHUKWU

PURPOSE: TO PROVIDE A PROGRAM THAT WILL ENHANCE THE CHECKING OF CUSTOMERS INFORMATION THROUGH CARITAS.

USER DOCUMENTATION

i. Switch on the computer system.

ii. At the desktop, click start button.

iii. Select my computer

iv. From the CD ROM, Select the CUSTOMERS INFORMATION Program to load it.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY

The primitive manual ways of checking customers' information are being replaced by the online customers' care system.

Most organization now employs it because of unprecedented profit derived from online customers' care system. When the new customer comes on board your service they will automatically receive a thank you email. The use of auto responders from this point onwards is critical in. getting your message in front of your customers. Not only to sell to them but to keep in contact with them. This is very important.

Send them your messages with a contact email address, phone number or your mailing address if they wish to get in touch with you. You cannot afford not to do this because the next merchant will if you don't, and that's the merchant who will gain a loyal customer.

Many times as a result of nothing more than a minor misunderstanding I have upgraded clients to a better deal at no extra cost. The clients love to see that you are not mainly after their money. And really you are not. Or at least you should not be. You are after a successful business that will supply your wealth over a period of time when you have worked at it, not before hand.

Surveys suggest that service driven companies are able to charge up to 9% more for the goods and services they offer and grow twice as fast as the average. These are powerful incentives for becoming the best customer-service company in any industry. Equally, poor service has a cost penalty. It costs up to five times as much to go out and get a new customer as to retain those we have.

5.2 CONCLUSION

The Importance of Good Customer Care. Good customer care matters because keeping existing customers is easier than finding new ones, and satisfied customers will do a lot of our advertising for us. Most people consider doing business with a certain company because of a recommendation by a friend or acquaintance. Dissatisfied customers spread the bad news and undermine your business, which ultimately threatens everyone's jobs.

So, Your objective must be to provide the highest standard of Customer Care possible and to always aim for excellence. A customer who feels good doing business with you and through you, the company is more than likely to stay with you and recommend you to others.

People react to the way they are treated and act accordingly. With this in mind, think about why a customer is rude/angry/uncommunicative and ask yourself:

. Am I getting the customer-reactions that I deserve?

. Is my treatment of the customer at fault?

. Why is the customer acting that way and what can I do to improve the situation.

Giving first is essential to your growth so put the client first every time, even if it costs you more now. The value of getting the customer in the first place must never ever be overlooked. Always try to answer any questions from your customers as soon as possible; this will create a feeling of professionalism immediately with your clients, so remember first impressions do

5.3 RECOMMENDATIONS

For the computerized customer information to be effective, I recommend

(1) These for CARITAS UNIVERSITY

- Having access to internet
- Having a well designed website
- Strong and reliable database

- I. T inclined staffs

(2) These for the Government

- Government should ensure necessary infrastructure.
- Masses should be educated on the use of information technology.

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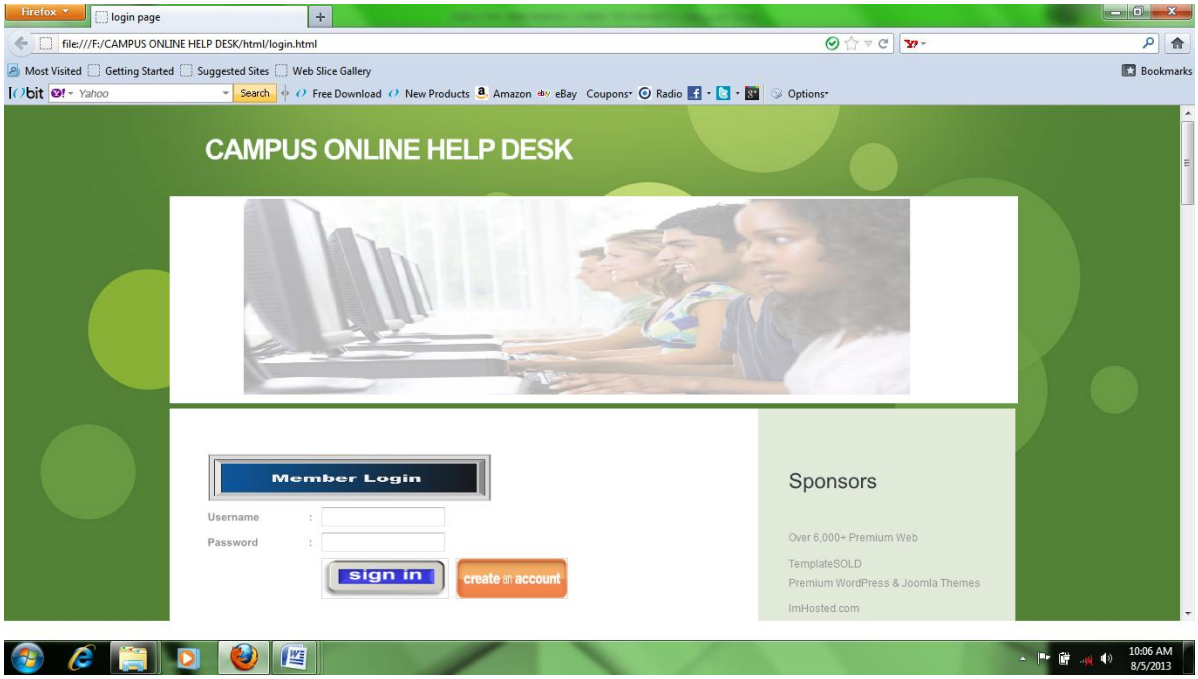
APPENDICES

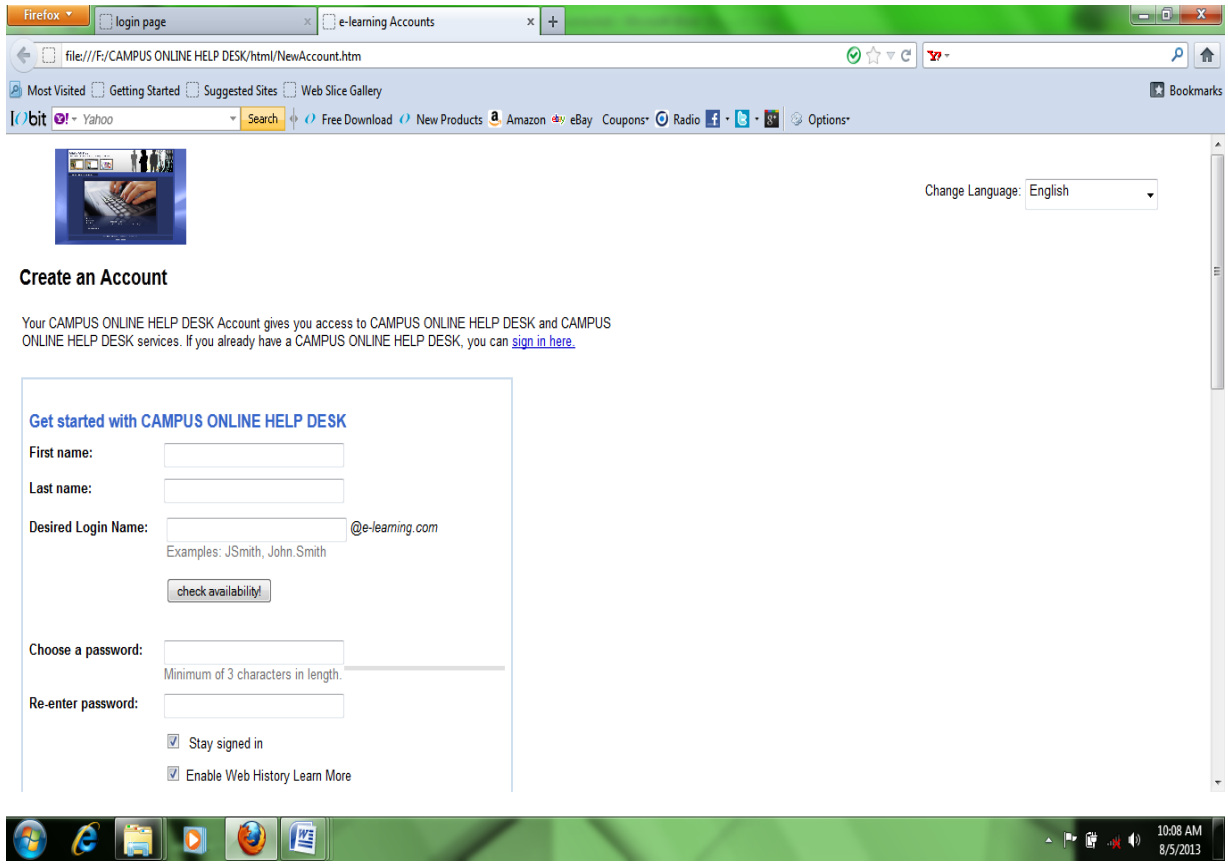
Appendix: I

Login



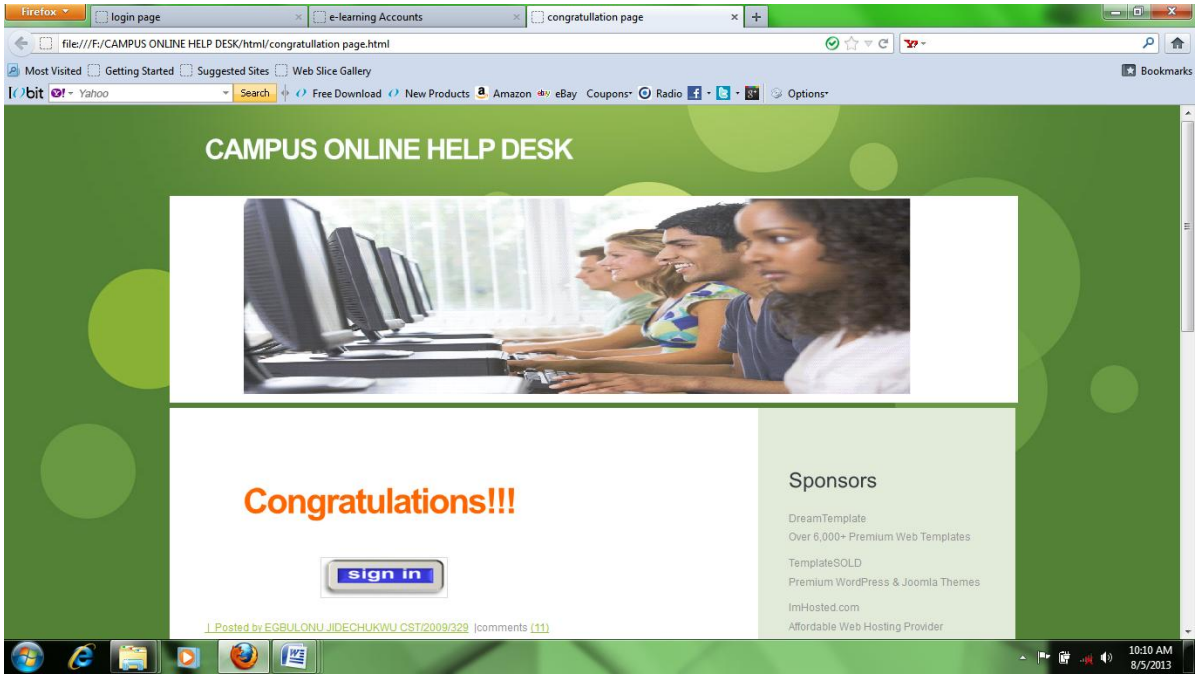
Appendix: II

Create an account



Appendix: III

Congratulation page


Firefox
login page
e-learning Accounts
congratullation page
file:///F:/CAMPUS ONLINE HELP DESK/html/congratullation page.html
Most Visited
Getting Started
Suggested Sites
Web Slice Gallery
Bookmarks
Search
Free Download
New Products
Amazon
eBay
Coupons
Radio
Options
CAMPUS ONLINE HELP DESK
Congratulations!!!
sign in
Posted by EGBULONU JIDECHUKWU CST/2009/329
comments (11)
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Over 6,000+ Premium Web Templates
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Premium WordPress & Joomla Themes
ImHosted.com
Affordable Web Hosting Provider
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Appendix: IV

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