# MODELING OF A DIGITALIZED INDEXING STRUCTURE USING HTML CODING;

(A CASE STUDY OF THE DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING LIBRARY, FEDERAL UNIVERSITY OF TECHNOLOGY MINNA)

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**2006/24467EE**

**A thesis submitted to the department of Electrical and Electronics Engineering, Federal University of Technology Minna.**

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## DEDICATION

This work is dedicated to my loving parents Mr & Mrs S.U.Okongwu and siblings (Ekene, Ifeoma, Nnamdi and Ebuka) for their unwavering support, to all my lecturers who have imparted knowledge in me.

## DECLARATION

I hereby delcare that this work was done by me and has never been presented elsewhere for the award of a degree. I hereby relinquish the copyright to the Federal University of Technology, Minna.

Okongwu Obinna Emmanuel ..... 14/11/11

( Name of Student) (Signature and date)

## CERTIFICATION

I hereby certify that this project "Modeling of a Digitalized Indexing Structure using HTML coding" was carried out by Okongwu Obinna Emmanuel with matriculation number 2006/24467EE and meets the standard deemed acceptable by the department of Electrical and Electronics Engineering, school of Engineering and Engineering Technology, Federal University of Technology, Minna.

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# ABSTRACT

Every existing library possess a catalogue, which is a guiding document for every user of the library who does not intend to waste time in identifying the actual location of the resource in a section of the library. A catalogue serves as a library's blueprints i.e. the various sections and the system of arrangement in the library. These catalogues in most libraries have become an old pile of cards which is of little or no help to a library user in terms of resource location. A library viewed as a network of different sections can have its catalogue modeled using a web language (HyperText Mark-up language, HTML). The use of such model as this, affords the community which the library serves several advantages. This project models a digital indexing structure to replace the card catalogues.

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# CHAPTER ONE

# INTRODUCTION

Searching through the library in a quest to locate a content of choice can be a herculean task especially when the visitor is not well adapted to the system of classification of the content of that particular library. Though the library attendant might hand a guiding document (in hardcopy) which usually contains a list of the library content but the visitor might still face difficulties in locating the content of choice due to unfamiliarity with the system of classification used.

Most advanced higher institutions of learning possess a digital library. These digital libraries most often contain comprehensive details of the original contents which were possible to be converted to digital format. The comprehensive list of available materials that can be sourced in the library is also put in digital format. In Nigeria today, most of the higher institutions' libraries still operate an analogue form.

No existing library can boast of completely digitizing its content since some contents of the library like artifacts cannot be digitized. But a library can have all its content in a digital catalog which is properly indexed for easy library access.

## 1.1 Scope of work

This Project covers the areas of resource classification, and indexing of these resources. It provides an easier means of indexing compared to that provided by the card catalog and microforms. This work is not to be confused to be a model of a digital library but a model of an integral part (catalog) of a library (either analog or digital).

## 1.2 Aims and Objectives

The aims of this project are;

- To make available a simple indexing structure in digital format for easy assessment of the content of a library. This indexing structure is to be locally accessed and designed to help the staff, students and researchers in a local group (a department) to easily run through the content of the library and locate the available content of choice quickly on the shelf.
- To develop a system of classification similar to that of the Library of Congress to uniquely identify library contents and content location on the library shelf. It is to limit the usual time wasting and frustration associated with locating specific content on the shelf.

## 1.3 Case study

The Electrical and Electronics departmental library of Federal University of Technology Minna is to be used as a case study to model the proposed indexing structure in this project. In this indexing structure, the visitor can view the title, names of author, call numbers, the titles of past student projects, the year the project was worked upon, available journals and list of other contents that are already in a digital format. All these are to be arranged in the structure according to the options available in the department and also a general list containing all the contents is to be made available.

## 1.4 Methodology

The processes to be involved in the execution of this project include data collection, data classification, structural modeling, shelf organization and coding.

### 1.4.1 Data Collection

Data collection involves collecting the titles of available contents, the names of authors, the year of publication, and the list of works in already in digital format. This collection is to be carried out in the library.

### 1.4.2 Data Classification

Data classification deals with grouping of data according to the options available in the department and using a modified predefined classification system (modification of the Library of congress classification system).

### 1.4.3 Structural Modeling

Structural modeling reveals a block diagram for the design. The design model is as shown below

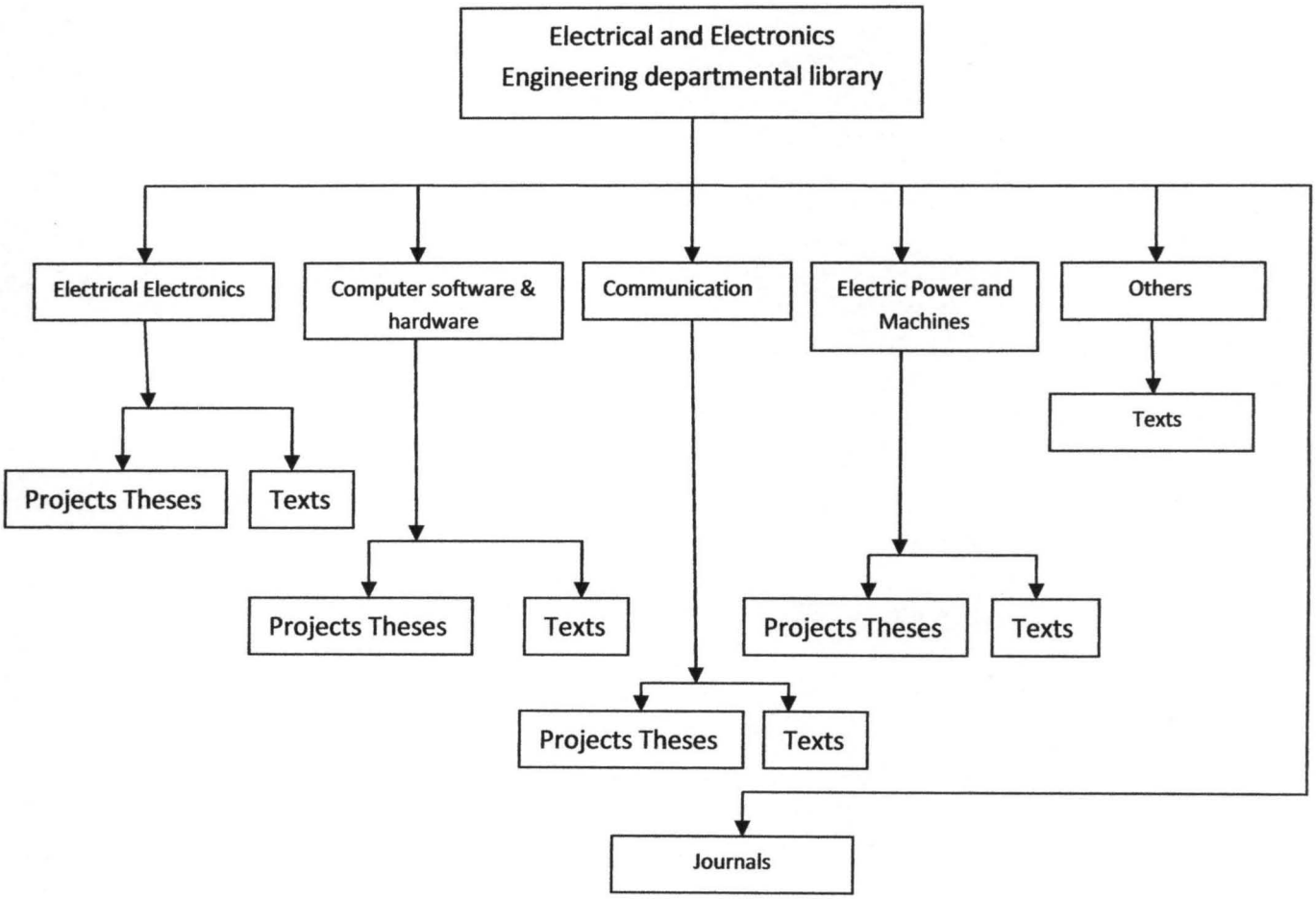


Fig. 1.1 Structural model of design

### 1.4.4 Shelf Organization

Shelf organization sections the shelf and assigns the generated naming system to the section.

### 1.4.5 Coding

The coding process is the final process and it does the main conversion of the indexing structure to digital format. A system of coding known as the HTML (HyperText Markup Language) is used.

The processes ranging from data classification to shelf organization requires the attention of the librarian. His or her experience in classification systems and shelf organization is optimally required.

# CHAPTER TWO

# LITERATURE REVIEW

A library catalogue is an index to the library collection that enables a user to find materials [4]. Library users can determine whether the library owns the materials they need by searching through catalog records. In many cases the information of the item provided on the record will enable the user to make a decision whether the items listed suits his or her needs. Catalog records typically list the item's author, its subjects, the date it was published, the name of its publisher, and other information. In addition, the catalog record contains some item's call number, a combination of letters and numbers used to classify the work. The call number also indicates the item's location in the library. For example, a book on circuit theory is classified and arranged in the library with the library's other books on Electrical Engineering.

The difficulties of library management grew in the 19th century. Libraries had increased in size, but their growth had been haphazard; administration had become weak, standards of service almost nonexistent; funds for acquisition tended to be inadequate; the post of librarian was often looked on as a part-time position; and cataloging was frequently in arrears and lacked proper method.

Libraries list their contents in different kinds of catalogs; card catalogs, microform catalogs, and computerized catalogs in either CD-ROM or online format. The computerized catalogs are yet to be popularized in local libraries.

In the early 1950s computers entered library services in the form of punched card applications in technical services operations and through the development of the MARC

(MAchine-Readable Cataloging) standard for digitizing and communicating library catalog information [5]. Often referred to as Online Public Access Catalogs (OPAC) or online catalogs, computerized catalogs were first introduced in libraries in the early 1980s [4]. Online catalogs provide broader access to library's collection by allowing more sophisticated searching of the catalog. They are also updated easily. They can be searched from locations outside the library building through the internet. In addition, many libraries have integrated their online catalogs with their circulation systems, providing information on the status of a book's availability in the library in addition to the usual cataloging information. This useful feature has never been a characteristic of other catalog formats. Despite these advantages, libraries with small operating budgets have difficulty raising the funds to convert book catalogs, microform catalogs, or card catalogs into machine-readable formats that computers can use. The essentials of cataloging in an information age is very necessary in the capacity that a lot of activities in this age have been made possible, such as searching made easy and catalogue updating.

Conclusively, one of the vital reasons that hinder the digitization of library and its information material especially cataloguing is lack of adequate fund. Budgets provided to libraries are not sufficient to convert other forms of cataloguing to a digitized system. This Project develops a simple and inexpensive digital indexing structure that enables easy assessment of library content and develops a localized system of library resource classification similar to that used in the Library of Congress.

## 2.1 Overview of HyperText Mark-up Language

HTML (HyperText Mark-up Language) is a formatting system for displaying text, graphics, and audio retrieved over the Internet on a computer monitor (browser) [3]. Each retrieval unit is known as a Web page and such pages frequently contain hypertext links that allow related pages to be retrieved. HTML is the markup language for encoding Web pages. It was designed by the British scientist Sir Tim Berners-Lee in Switzerland during the 1980s.

The HTML document itself is a text file with a .htm or .html filename extension. It forms the source code of a web page. When viewed in an editor (either Microsoft Frontpage, Notepad, or Macromedia Dreamwaver), the document is a series of tags and elements that specify how the page is to be displayed.

HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML markup consists of several key components [1] , including;

- Elements (and their attributes),
- Document type declaration,
- Character-based data types,
- Character references and entity references.

### 2.1.1 Elements

HTML documents are composed entirely of HTML elements that, in their most general form have three components [1]: a pair of tags; a "start tag" and "end tag", some attributes within the start tag; and finally, any textual and graphical content between the start and end tags, perhaps including other nested elements. The HTML element is everything between and including the start and end tags. Each tag is enclosed in angle brackets.

The general form of an HTML element is: <tag attribute1="value1" attribute2="value2">*content*</tag>. Some HTML elements are defined as empty elements and take the form <tag attribute1="value1" attribute2="value2" />. Empty elements may enclose no content. The name of an HTML element is the name used in the tags. The end tag's name is preceded by a slash character, "/", and that in empty elements, the slash appears just before the closing />.

Most of the attributes of an element are name-value pairs, separated by "=" and written within the start tag of an element after the element's name.

### 2.1.2 Document Type Declaration

HTML documents are required to start with a Document Type Declaration tag <!doctype…> . This tag defines for the browser, the version of HTML with which the document was created. For example: "<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional…>" document type declaration signifies that the HTML document version XHTML 1.0 Transitional was used. Other document types include XHTML 1.0 Strict, XHTML 1.0 Mobile, XHTML 4.01Transitional, XHTML 4.01 Strict.

Character-based data types and character references are not discussed since they are not used in the scope of this work.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Data Collection

The first stage of work carried out in this design was data collection. This involved a visit to the departmental library. The librarian handed a copy of the card catalogue that was in use at the time of visit. The card catalogue included the following;

- List of the available textbooks in the library with the names of the authors
- List of projects implemented by students in the last decade (2001-2010)

The list of available textbooks was verified to ensure that every material listed in the text resource catalogue is available in the library. The verification process involved taking a fresh stock of textbooks in the library and having the new stock matched with the available catalogue. Resources found not in match were identified as either missing or new stocks. All matched and available resource titles were put in soft form for easy incorporation into to new digital catalogue.

The Project thesis list as forwarded by the project coordinator to the librarian, which is usually authentic needed not to be verified as done to the list of textbooks.

A list of journals and magazines in the library was compiled and put in soft form as well.

## 3.2 Data Classification

The collected texts and projects were classified according to the major options in Electrical Engineering namely;

- Power and Machines
- Communication Engineering
- Electronics
- Computer Engineering

The predefined naming system of the library of congress was modified to generate a suitable naming system. The subclass of the technology class in the library of congress identified as TK was modified since it covers all aspect of Electrical Engineering. On modification, power and machines was assigned the subclass name TK-PM, communication Engineering was assigned TK-CmE, Electronics was assigned TK-EE and Computer Engineering was assigned TK-CE. The major criterion for classification of texts is the content of each text.

### 3.2.1 Power and Machines

Texts with major topics in power and machines engineering were classified under the power and machines heading. The topics include but are not limited to those in; power generation, transmission and distribution, power systems, power electronics, machine theories, electrical installations in buildings, and electric machines.

### 3.2.2 Communication Engineering

Texts with major topics in communication engineering were classified under the communication Engineering heading. The topics include but are not limited to those in; radio Engineering, satellite technology, communication systems, communication electronics, networking, telephony, and information management.

### 3.2.3 Electronics

Texts with major topics in Electronics were classified under the Electronics heading. The topics include but are not limited to those in;electricity, electronics principles, electronic devices, IC technology, and circuit theories.

### 3.2.4 Computer Engineering

Texts with major topics in computer Engineering were classified under the computer engineering heading. The topics include but are not limited to those in; programming languages, Computer Aided technology, computer hardware and software, computer applications, web design and multimedia technology.

### 3.2.5 Journals and Magazines

All available journals, magazines and proceedings are classified under the heading journals and magazines.

### 3.2.6 Others

Texts that did not fall into any of the categories above were classified as 'other texts'.

## 3.3 Shelf organization

The shelves available in the library were organized in three sections:

- The Textbooks Section
- The past Projects Theses Section
- The Journals and Magazines Section

Each section was further subdivided according to the mode of classification used for the resources in the Section.

### 3.3.1 The Textbook Section

This Section was divided into five Subsections according to the classification used viz; Power and Machines, Communication Engineering, Electronics, Computer Engineering and Other texts. Call numbers were assigned to every Text available.

### 3.3.2 The past Projects Theses Section

Only Projects implemented from 2001 to 2010 were collected and as such, this Section was divided into ten Subsections, viz; 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, and 2010. Projects Theses were assigned call numbers generated according to the year the Project was implemented.

### 3.3.3 The Journals and Magazines Section

This shelf Section was divided into five Subsections according to the year of Publication of the Journal or Magazine. Those published in year 2000 and earlier were placed in one

Subsection. Those published from 2001-2003 were placed in another section. Those published from 2004-2006 were placed in another section. Those published from 2007-2009 were placed in another section; while those published in 2010 till date were placed in another section. Call numbers were not attached to the Journals.

## 3.4 Coding

Sharing a small amount of information with other users requires a web page and larger information require a web site [2]. A website is a collection of web pages and related files and folders stored on a server. The concept of a website was used in this work so as to enable a number of different users to access information they need about the library simultaneously. HTML (HypertexT Mark-up Language) being the bedrock of website design is the language used for the coding process.

### 3.4.1 Requirements

The requirements for the coding process include [2]:

- Computer running windows XP, Vista or windows 7 (preferably windows vista and windows 7)
- Installed macromedia Dreamweaver application software used as the command editor
- Any of the listed installed browser application software ( Internet Explorer, Mozilla Firefox, opera, safari, Google chrome)

Developing a web site requires going about the same phases and rules as when developing an application. These phases include the design phase and the development phase [1].

### 3.4.2 Design Phase

The design phases through which the design went through involved the following considerations;

#### 3.4.2.1 Objectives Definition

The objectives of the site were clearly defined. Its main purpose is to provide a broader means of awareness of the resources available in the library for its user community. It also helps alleviate the stress of going through the contents in search of a particular resource.

#### 3.4.2.2 Audience

*Identification of target audience was very important. Academic sites have a different look* and feel from the entertainment sites.

#### 3.4.2.3 Storyboarding

A storyboard is a description of the layout, contents, sequence and operation of the site. This defines the conceptual design of the site. The following information was provided for each page;

- *Title describing the document*
- The main heading
- Subheadings (where necessary)

- Purpose of the page
- Description of contents
- Images to be used
- Description about the links.

#### 3.4.2.4 Information Organization

In this phase, the navigation scheme for the site was defined. The three basic steps in information organization were:

- Division of information into logical units
- Creation of a hierarchy of important and general topics
- Use of the hierarchy to structure relationships among units of information.

### 3.4.3 Development Phase

In the development phase, two important factors were kept in mind. They are:

- The layout of the page
- Navigation around the site

#### 3.4.3.1 Layout and Content Development

The basic rule here is unity and variety. This means that everything should fit together as a unit, but at the same time, there is enough variety to keep it interesting. Consistency created the unique identity of the site. Colours, fonts, column layout, and other design elements were kept consistent throughout every section of the site.

The effect that the site is trying to create was kept clear. Being an academic site, the image to be created should be professional, solid and dependable. The use of colours is an important feature. Colours were used depending on the effect to be created. Shades of purple (the University's colour ) was used on the background.

The text is a common feature of every site. Well laid-out text is easier to read. Type attributes like bold, italics, underlined and others have special functions. These attributes are used to call attention to specific content. Underlined text indicates a hyperlink; thus texts were not underlined unless they were hyperlinks.

#### 3.4.3.2 Navigation around the site

Every site should have a simple navigation scheme no matter how attractive the site is. This ensures that users do not lose their way in the course of navigation. Basic principles that should be kept in mind when designing a navigation scheme are:

- Specifying the contents of the site
- Creating a navigation scheme that helps users to go to the required section, quickly
- Providing means to search for additional information

The hierarchical navigation layout is the most common layout that is used in web site design. The home page has links to several other pages. The user can select a link and 'jump' to the required page. Each page has a link to the home page.

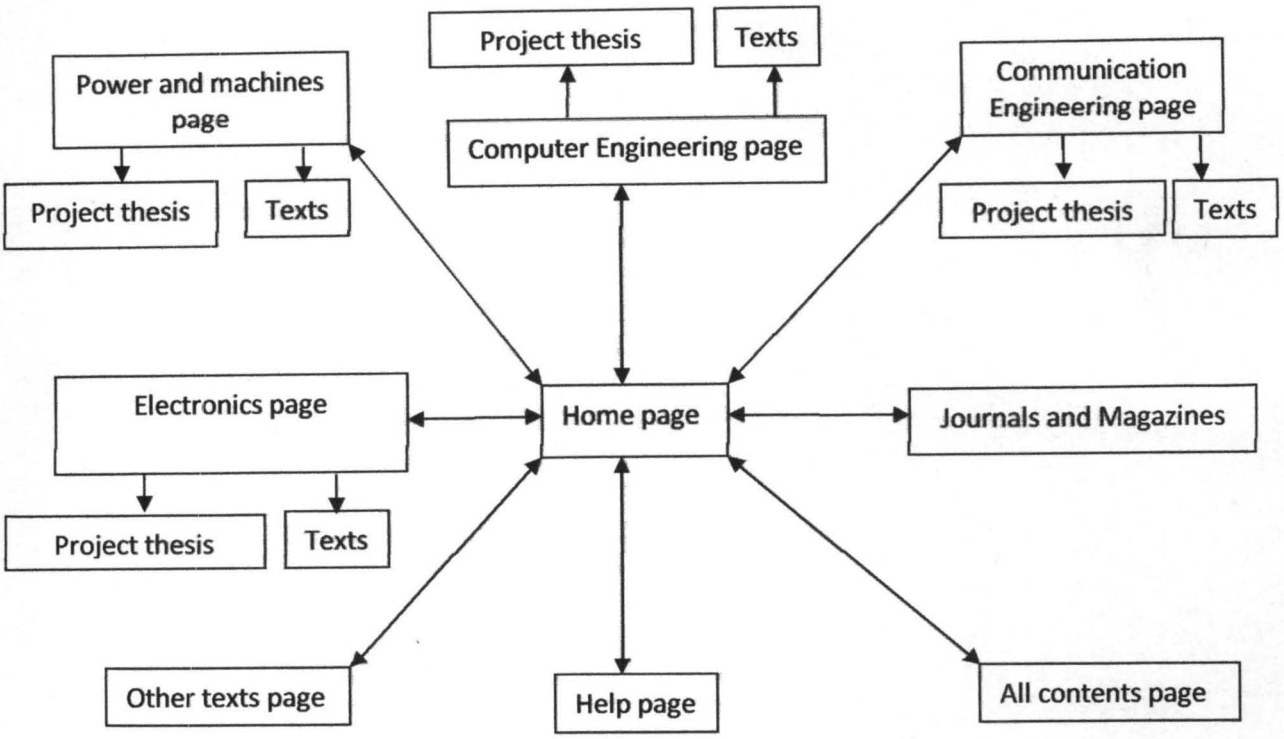


Fig. 3.1 Hierarchical Navigation Layout.

### 3.4.4 HTML Tags

HTML commands are called tags. Tags are used to control the content and appearance of the HTML document. The opening tag is a "< >" pair of brackets. This indicates the beginning of the HTML command. The closing tag is represented as "</ >" to indicate the end of the HTML command. Tags are not case sensitive. The HTML tag is comprised of :

- Element
- Attribute
- Value

The ELEMENT is the tag identifier; the ATTRIBUTE describes the tag while the VALUE is the content that is assigned to the ATTRIBUTE.

### 3.4.5 Structure of an HTML document

An HTML document has three basic sections:

- **The HTML section**: Every HTML document must begin with an opening HTML tag '<html>' and end with a closing HTML tag '</html>. The HTML tags tell the browser that the content between these two tags is an HTML document.
- **The Header section**: The header section begins with a <head > tag and is closed with a </head> tag. This section contains the title that is displayed in the navigation bar of the web page. The title itself is enclosed within the title tag, which begins with a <title> tag and is closed with a </title> tag.
- **The body section**: This comes after the head section. It contains the text, images, and links that are displayed on the page. The body section begins with a <body> tag and ends with a </body> tag.

Block level elements are elements that appear in the body section. So many block level elements exist in HTML, but for the purpose of this work, only a few are used. They include; the image element, table element, font element, link element. Each of these block level elements has its attribute and values as illustrated below,

<element attribute = "value">

All the elements mentioned above have their closing tags </element> except the image element which opens and closes within the same braces

<img attribute =”value”/>.

### 3.4.5.1 Creating Tables

The table element was most frequently used since the design involves data display. Its use helps to group related data into lists. The <table> tag is used to create a table in the HTML document. The attributes of the table element applies to the table itself. The basic unit of a table is a cell and is defined with the <td> tag (refer to appendix for use of tags). A horizontal group of cells make a row and a table row is defined using the <tr> tag. The position of the data within each cell was specified using the align attribute. The alignment was either left, right, centre, and justify. Apart from positioning the content of the table cells, the size and position of the table on screen was adjustable. The width and height attributes of the table tag fixes the area of the table on the screen while the align attribute aligns the table accordingly on the screen.

### 3.4.5.2 Image formats

The images that are inserted into the web page are called inline images. There are various graphic formats that are in use today. However, three are common to web pages. They are as listed below:

- **GIF (Graphics Interchange Format) images**: GIF is the most common format that is used in HTML documents. GIF files have a platform-independent format and support up to 256 colours. The advantage of .gif files is that they are considerably easier to transfer even over low-speed modem lines.

- **JPEG (Joint Photographic Expert Group) images**: JPEG format supports over 16million colours and is typically used for true colour images. Both JPEG (.jpg filename extention) and GIF fiile formats compress the images to ensure faster rate of transfer over the network. JPEG format uses a compression scheme that is lossy in nature. This means that resulting compressed image is not like the original image.
- **PNG (Portable Network Graphics):** The format for a PNG file is "lossless". In "lossless" compression, the image data is compressed without removing the detail.

When deciding on graphic format, the following factors were considered:

I. *Quality of the image – is the quality of image important during display.*
II. Data size – The larger the file size, the longer the transfer time.
III. Display requirements – Should the image support transparency, streaming display, progressive rendering.

The image tag is used to insert images in the document. The image tag has no content. it displays the content specified in the src attribute. The syntax is:

<img src = " url "/>

Where the src (source) is the attribute and the value is a url which specifies the exact location of the image file.

Typically, the image scrolls with the text as the user scroll the page in the browser. This effect was avoided by using the "position:fixed;" attribute and value.

Hyperimages are images that that serve as hyperlinks. When these images are clicked on by the user, the document specified in the URL is displayed. This was achieved by nesting the image tag in another anchor tag. In this project work, only images on the homepage are hyperimages. Refer to the appendix to see where tags are used.

# CHAPTER FOUR

# IMPLEMENTATION

## 4.1 Installation and Testing

After every page has been coded successfully, testing became necessary to ensure that page contents load successfully as designed. To test this work, the following steps were followed:

I. During coding, a server folder was created where all the pages (HTML documents) coded were stored. Page contents like images were also stored in this folder.

II. The digital catalogue was installed on the computer in the library by copying the sever folder to the computer's storage.

III. A desktop shortcut to the Index page (Home page) was created for easy access to the catalogue.

IV. Click on the "Library Home" shortcut on the desktop to go to the Home page.

V. Turns were taken to click on every hyperlinked item on the Home page and other subsequent pages to ensure that they navigate to the intended page as designed in each case.

VI. On every page containing lists of resource materials, use the "CTRL+f" command to find a resource of interest. Availability of a resource material in Library is noted by a "yellow" highlight.

VII. Use the call number or other forms of identification specified to locate resource on the library shelf.

The display screens of all the coded pages are as shown below:

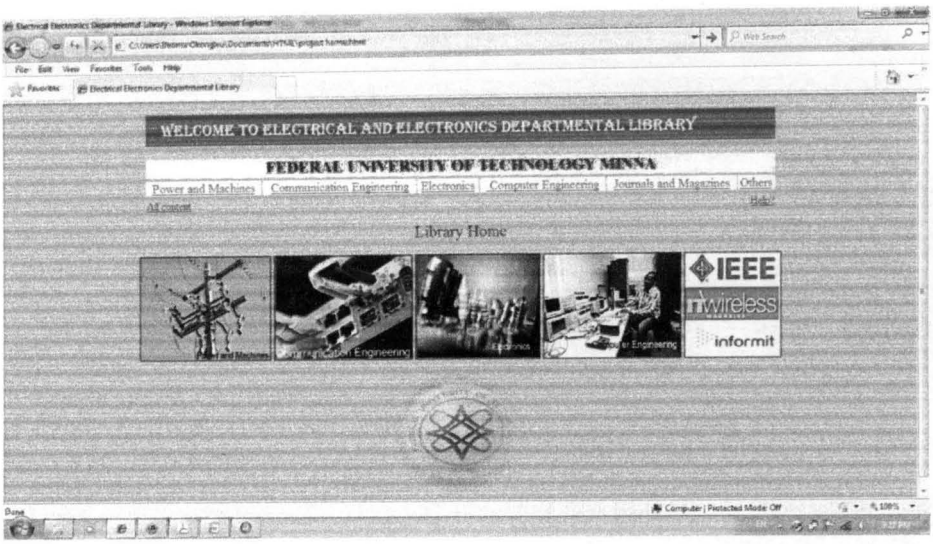


Fig. 4.1 Library Home Page (HTML Document)

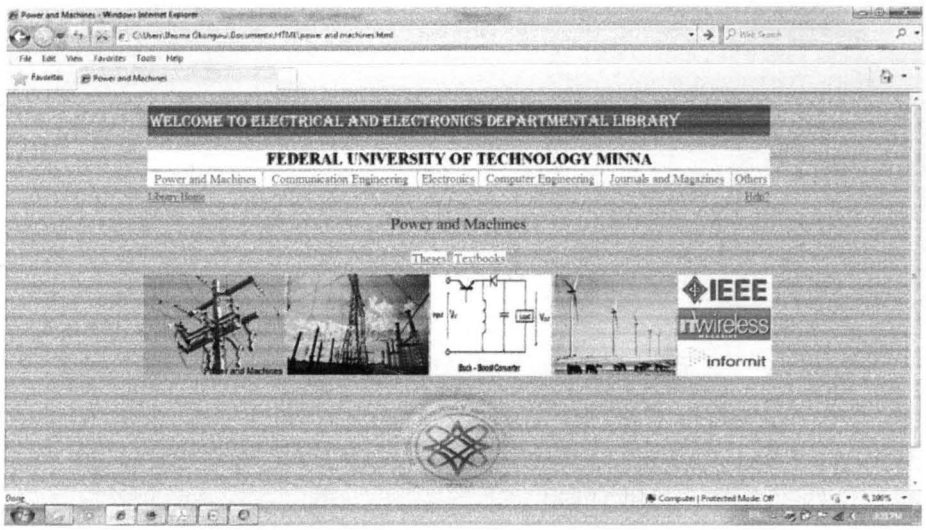


Fig. 4.2 Power and Machines Page (HTML Document)

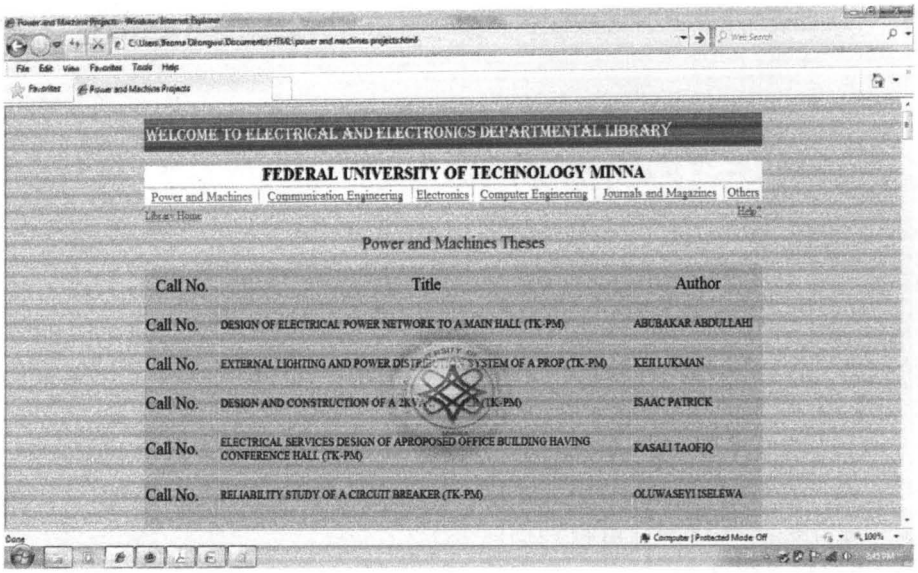


Fig. 4.3 Power and Machines past Project Theses List Page (HTML Document)

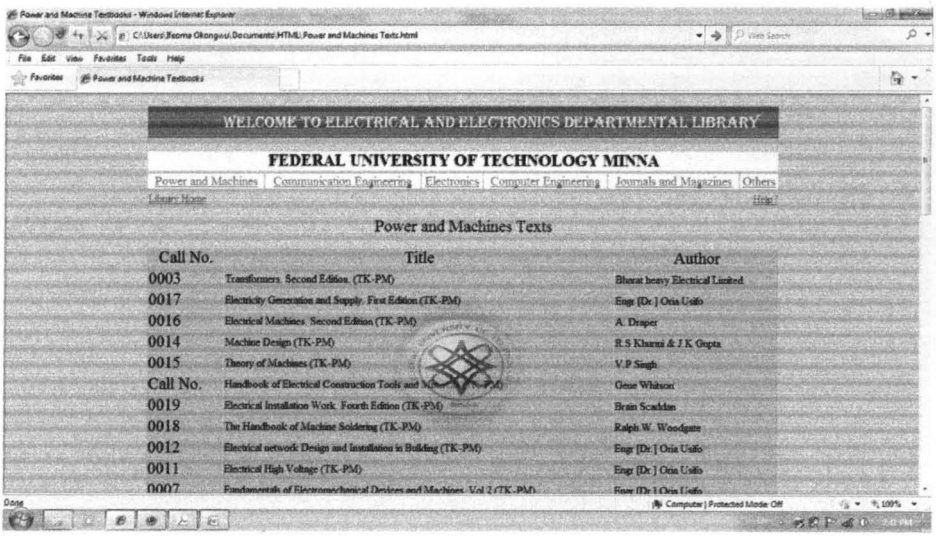


Fig. 4.4 Power and Machines Text List Page (HTML Document)

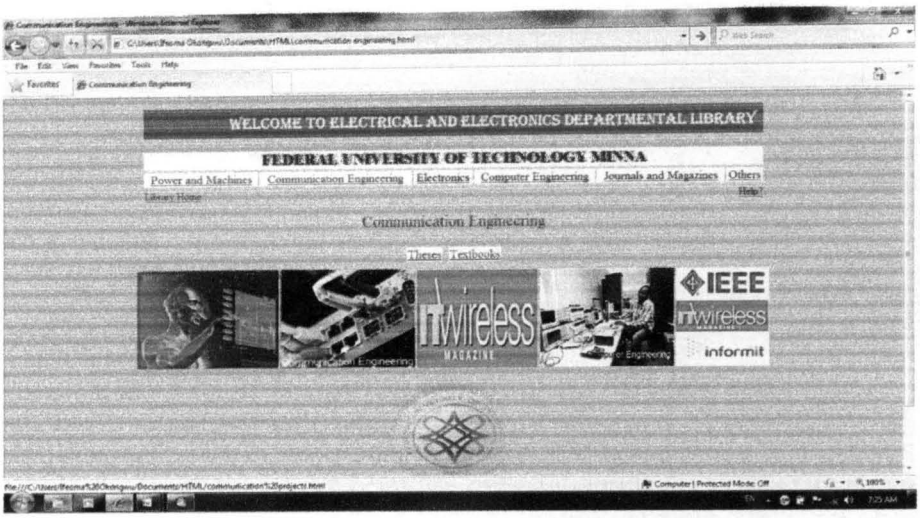


Fig. 4.5 Communication Engineering Page (HTML Document)

Fig. 4.6 Communication Engineering past Project Thesis List Page (HTML Document)

Fig. 4.7 Communication Engineering Text List page (HTML Document)

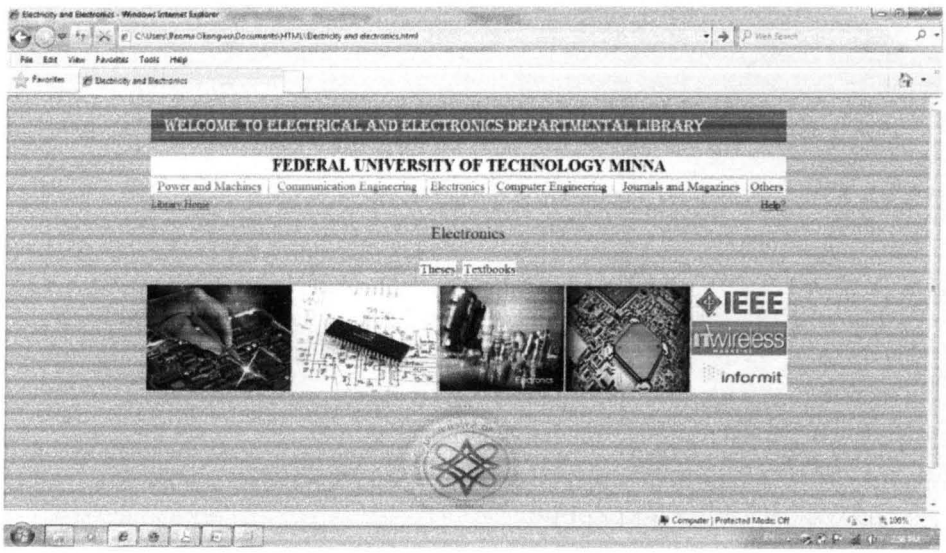


Fig. 4.8 Electronics page (HTML Document)

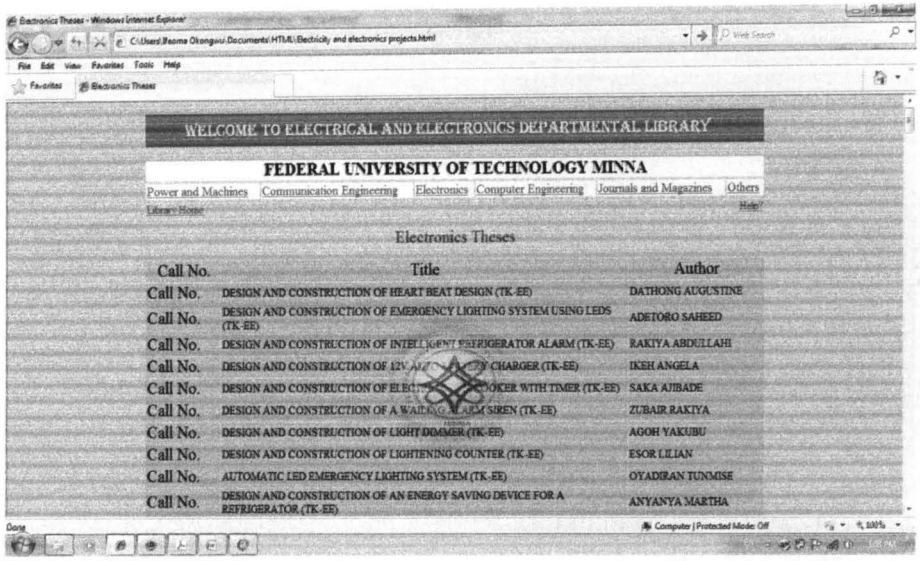


Fig. 4.9 Electronics past Project Thesis List Page (HTML Document)

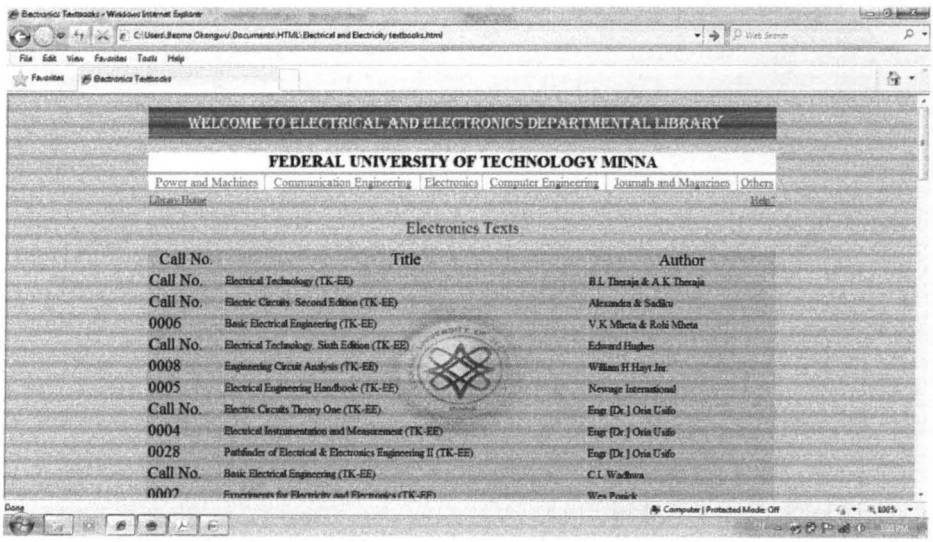


Fig. 4.10 Electronics Texts List Page (HTML Document)

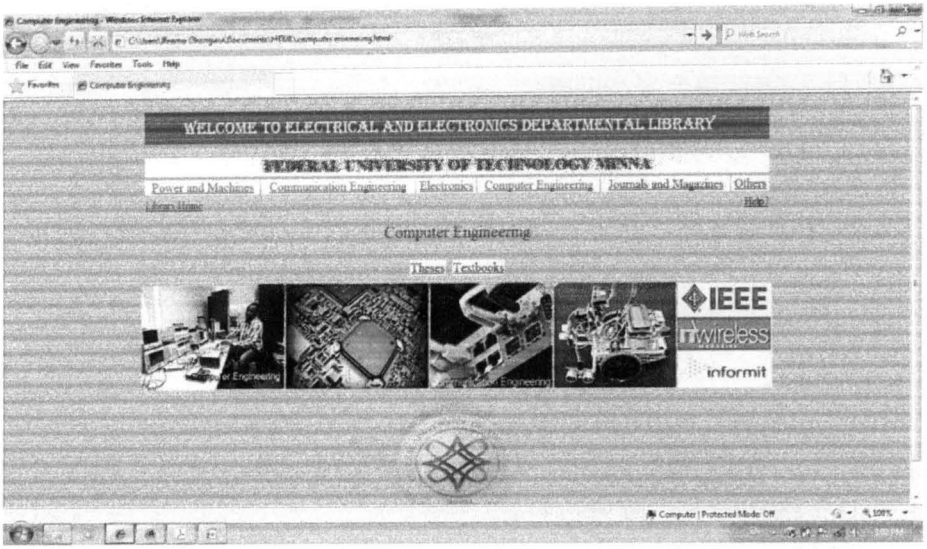


Fig. 4.11 Computer Engineering page (HTML Document)

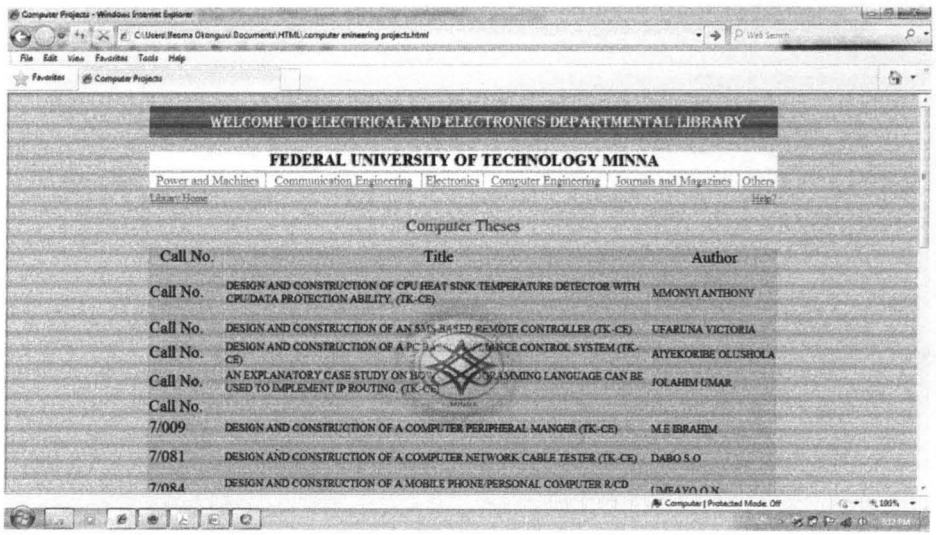


Fig. 4.12 Computer Engineering past Project Thesis List Page (HTML Document)

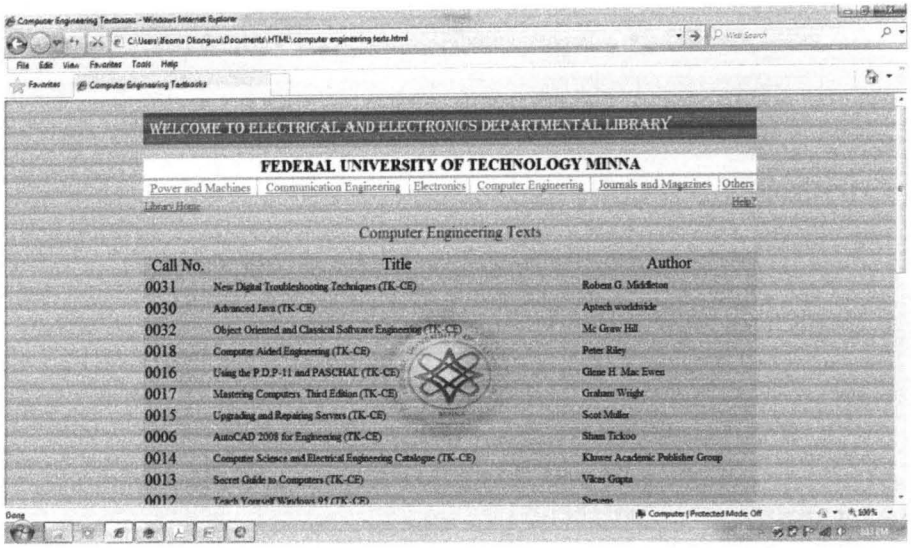


Fig. 4.13 Computer Engineering Text List Page (HTML Document)

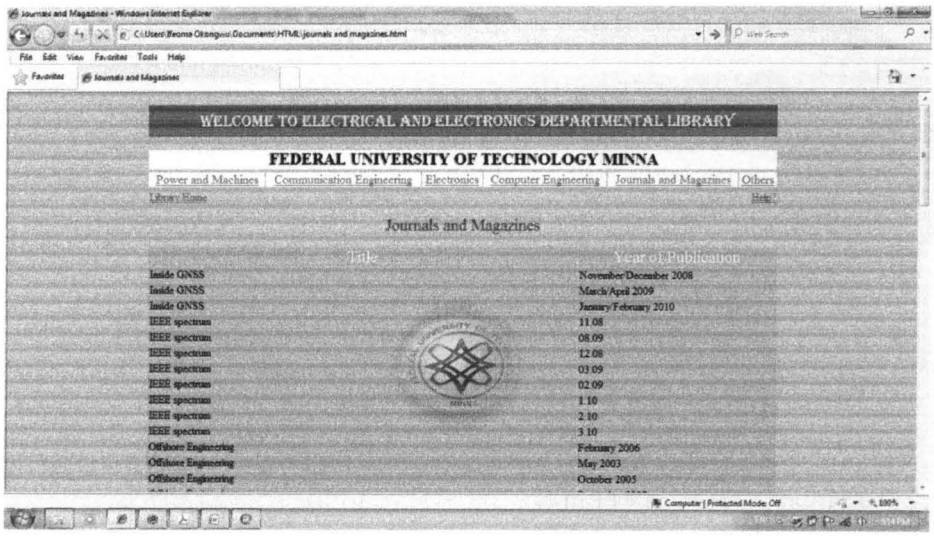


Fig. 4.14 Journal and Magazines List Page (HTML Document)

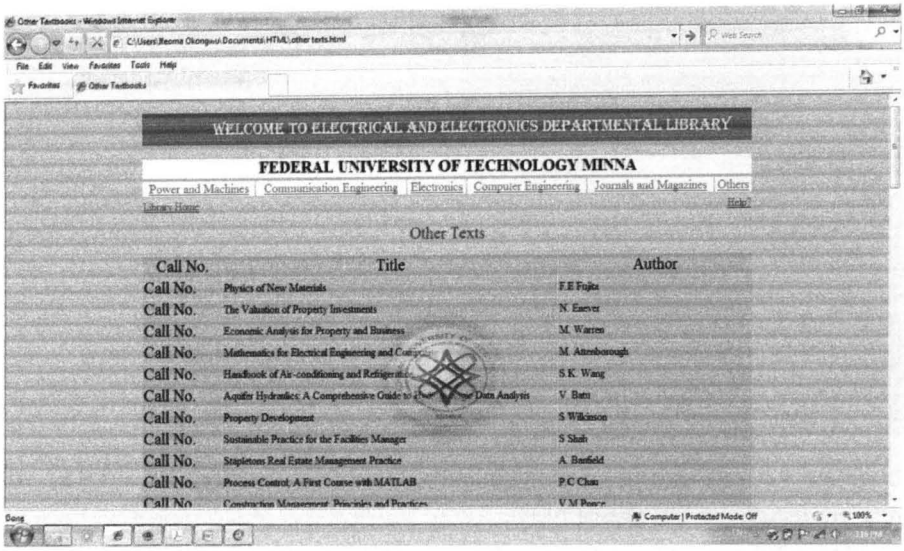


Fig. 4.15 Other Texts List Page (HTML Document)

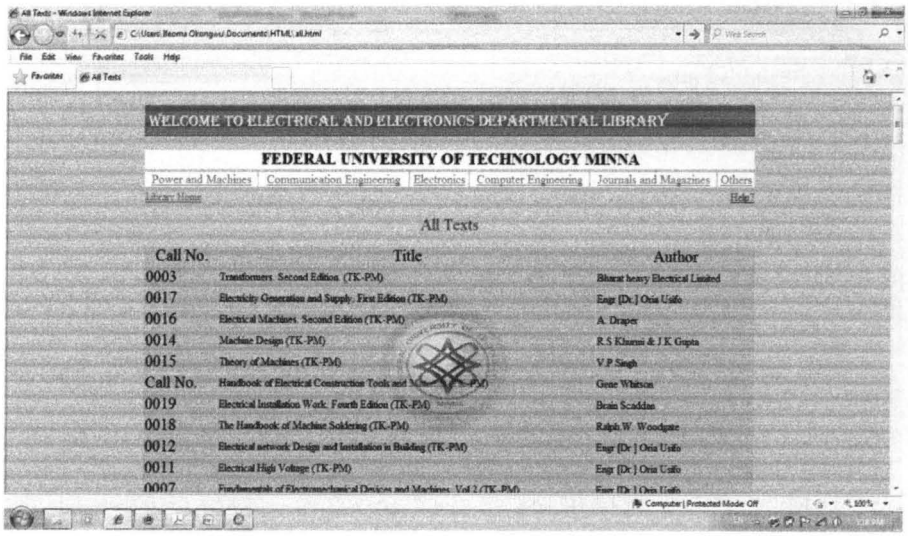


Fig. 4.16 All Text List Page (HTML Document)

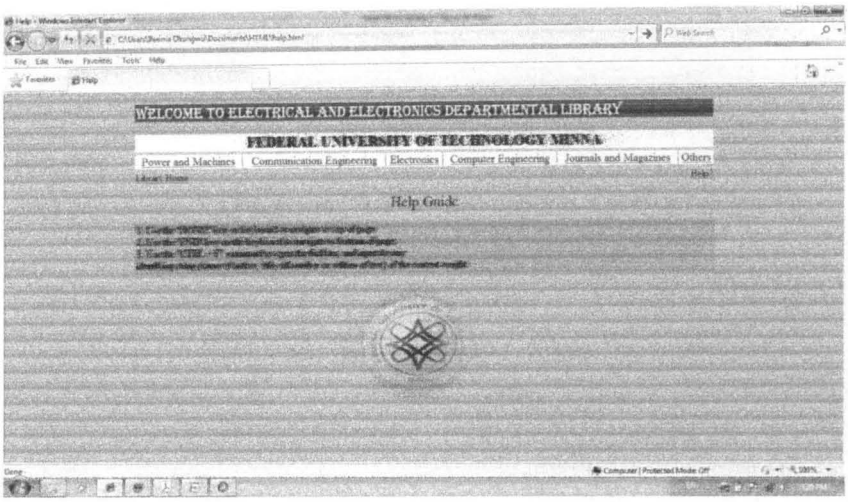


Fig. 4.17 Help Guide Page (HTML Document)

## 4.2 System Response

The system responded well and all pages from the Home page, Power and Machines page, Communication Engineering page, Electronics page, Computer Engineering page, Journals and Magazines page, Other Texts page, Help page, General content page, past Project Theses pages and Textbooks pages, with their containing data were displayed without errors.

## 4.3 Problems Encountered

The whole design process was carried out in a Windows 7 environment and as such, when implemented on earlier versions of Windows, problem of page rendering (page distortion) occurred due to incompatibility with previous versions of Windows (vista and Windows XP), though the main data content was not affected. The incompatibility was as a result of older versions of the browsers used in older Windows versions and improper interpretation of the HTML code by the operating system.

## 4.4 Solution

- Latest versions of browsers similar to those used in Windows 7 are installed before displaying the catalogue (an example is Internet Explorer 8).
- Operating systems (Windows XP) of the Library Computers should be upgraded to Windows 7. Also, hardware components of the computers need to be upgraded as well to meet the minimum installation requirements [1] of Windows 7 operating system.

[1] Windows 7 operating system Hardware minimum installation Requirement: 1GB of RAM, 16GB Hard disk space, 1GHz 32bit Processor, DirectX 9 graphic device

# CHAPTER FIVE

# Conclusion and Recommendation

## 5.1 Conclusion

The aims of this work were to design a digital indexing model for a library for easy assessment of the library content, and to develop a system of classification (similar to that used for the Library of Congress) for content identification and location on the shelf. As implemented in chapter four, these objectives were met and hence the design met the proposed goal.

## 5.2 Recommendations

1. This catalogue should be updated each time new materials are received.
2. This catalogue should be made an integral part of the school's website so as to enable wider awareness to library resources in the department.
3. This model catalogue is best implemented for small libraries of size (with less than 2500 collections) equivalent to the library (Electrical and Electronics departmental library) used for the case study in this work. It is not very suitable for Libraries with larger capacity than was specified above since the conversion of analog catalogue to digital form becomes more tedious and expensive.
4. As an improvement on this model for use in large libraries, a comprehensive database structure should be created and linked with the model for safe keep away from damages (corruption).

## References


1. APTECH Worldwide, HTML, DHTML and JAVASCRIPT, First Edition

2. David Sawyer McFarland, Dreamweaver CS3 the missing manual, First Edition, Pogue Press.

3. Encyclopedia Britannica, **HTML,** Encyclopedia Britannica Student and Home Edition. Chicago: Encyclopedia Britannica, 2010.

4. Halsey, Richard S., et al. "Library (institution)." Microsoft® Encarta® 2009 [DVD]. Redmond, WA: Microsoft Corporation, 2008.

5. Harter, S. (1997). Scholarly communication and the digital library: Problems and issues. Journal of Digital Information. http://jodi.ecs.soton.ac.uk

6. L. Candela et al. *The DELOS Digital Library Reference Model - Foundations for Digital Libraries*. Version 0.98, February 2008.

7. Microsoft Windows, http://windows.microsoft.com/en-US/windows7/products/system-requirements.

# GLOSSARY

**Attribute**: Describes tag property.

**Browser:** Application software that interprets web design language.

**Element**: Identifies Tag type.

**Home Page**: Opening page of a site through which other pages are accessed.

**HTML**: HyperText Mark-up Language; a language used to create documents that can be accessed over a network.

**Hyperimages**: An images serving as a link.

**Hyperlink**: A link usually text, to another document or file.

**MARC**: MAchine Readable Cataloging; electronic version of card catalog

**Microform:** A piece of film containing miniature reproduction of materials in a library.

**OPAC:** Online Public Access Catalog

**Page**: Collection of texts and graphics displayed on a computer screen.

**Tag**: Commands used in HTML.

**Value:** Content assigned to Attribute.

**XHTML:** Extensible HyperText Mark-up Language; a version of HTML that allows for code rendering in different devices e.g. mobile phones and other hand-held devices.

## APPENDIX

HTML CODES

**Home Page**

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title>Electrical Electronics Departmental Library</title>

</head>

<p align="center"><table width="70%" height="50" align="center"><tr
bgcolor="#9900CC"><td align="center"><marquee behavior="alternate"><font face="algerian"
color="#FFFFFF" size="+2">WELCOME TO ELECTRICAL AND ELECTRONICS
DEPARTMENTAL LIBRARY</font></marquee></td></tr></table></p>

<body bgcolor="#FF99CC" link="#330066" vlink="#3300FF">

<table width="70%" align="center"><tr bgcolor="#FFFFFF"><td align="center"><font
color="#000000" face="Times New Roman, Times, serif" size="+2"><b>FEDERAL
UNIVERSITY OF TECHNOLOGY MINNA</b></font></td></tr></table>

<table width="70%" align="center"><tr bgcolor="#ffffff"><td align="center"><a href="power
and machines.html"><font face="Times New Roman, Times, serif" size="+1">Power and
Machines</font></a></td><td align="center"><a href="communication
engineering.html"><font face="Times New Roman, Times, serif" size="+1">Communication
Engineering</font></a></td><td align="center"><a href="Electricity and
electronics.html"><font face="Times New Roman, Times, serif"
size="+1">Electronics</font></a></td><td align="center"><a href="computer
enineering.html"><font face="Times New Roman, Times, serif" size="+1"> Computer
Engineering </font></a></td><td align="center"><a href="journals and magazines.html"><font
face="Times New Roman, Times, serif" size="+1">Journals and Magazines</font></a></td><td
align="center"><font face="Times New Roman, Times, serif" size="+1"><a href="other
texts.html">Others</a></font></td></tr></th></table>

<table width="70%" align="center"><td align="left"><a href="all.html">All
content</a></td><td align="right"><a href="help.html">Help?</a></td></table>

<p align="center"><font size="+2" color="#330066">Library Home</font></p>

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/></a></td><td align="center"><a href="communication engineering.html"><img
src="images/images (5).jpg" align="middle" height="150" width="200" /></a></td><td
```

```
align="center"><a href="Electricity and electronics.html"><img src="images/electronics.jpg"
align="middle" height="150" width="180"/></a></td><td align="center"><a href="computer
enineering.html"><img src="images/electronic.jpg" align="middle" height="150" width="200"
/></a></td><td><a href="journals and magazines.html"><img src="images/images (11).jpg"
align="middle" height="150" width="140"/></a></td></tr></table>

<table width="70%" align="center"><tr><td align="center"><img src="F.U.T Logo_2.png"
width="200" height="200"/></td></tr></table>

<table width="70%" align="center"><tr><td align="center"><font size="-1">Designed By:
Okongwu Obinna Emmanuel 2006/24467EE</font></td><td align="center"><font size="-
1">Supervised By: Mr. Olatomiwa Lanre</font></td></tr></table>

<table width="70%" bgcolor="#FFFFFF" align="center"><tr bgcolor="#6633CC"
align="center"></tr></table>

</body>

</html>
```

**Section (e.g Power and Machines Page)**

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<title>Power and Machines</title>

</head>

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DEPARTMENTAL LIBRARY</font></marquee></td></tr></table></p>

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engineering.html"><font face="Times New Roman, Times, serif" size="+1">Communication
Engineering</font></a></td><td align="center"><a href="Electricity and
electronics.html"><font face="Times New Roman, Times, serif"
size="+1">Electronics</font></a></td><td align="center"><a href="computer
```

```
enineering.html"><font face="Times New Roman, Times, serif" size="+1">Computer
Engineering</font></a></td><td align="center"><a href="journals and magazines.html"><font
face="Times New Roman, Times, serif" size="+1">Journals and Magazines</font></a></td><td
align="center"><font face="Times New Roman, Times, serif" size="+1"><a href="other
texts.html">Others</a></font></td></tr></th></table>

<table width="70%" align="center"><td align="left"><a href="project home.html">Library
Home</a></td><td align="right"><a href="help.html">Help?</a></td></table>

<p align="center"><font size="+2" color="#330066">Power and Machines</font></p>

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align="center"><img src="images/control 3.gif" align="middle" height="150"
width="180"/></td><td align="center"><img src="images/Wind_Power.jpg" align="middle"
height="150" width="180" /></td><td align="center"><img src="images/images (11).jpg"
align="middle" height="150" width="140"/></td></tr></table>

<table width="70%" align="center"><tr><td align="center"><img src="F.U.T Logo_2.png"
width="200" height="200"/></td></tr></table>

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Okongwu Obinna Emmanuel 2006/24467EE</font></td><td align="center"><font size="-
1">Supervised By: Mr. Olatomiwa Lanre</font></td></tr></table>

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</body>

</html>
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**Subsection (e.g Electronics Texts Page)**

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<title>Electronics Textbooks</title>

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<table width="70%" align="center"><td align="left"><a href="project home.html">Library Home</a></td><td align="right"><a href="help.html">Help?</a></td></table>

<font size="+2" color="#330066">Electronics Texts</font>

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<td width="30%" align="center"><font size="+2" color="#000000">Author</font></td></tr><tr bgcolor="#999999"><td align="left"><font size="+2" color="#000000">Call No.</font></td><td align="left">Electrical Technology (TK-EE)</td><td align="left">B.L Theraja & A.K Theraja</td></tr>

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