FSKKP THESIS FORMATTING APPLICATION

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This report is submitted in partial fulfillment of the requirements for the Bachelor of Computer Science (Software Engineering)

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MAY 2010

ABSTRACT

FSKKP Thesis Formatting Application (FTFA) will be developed with the object to help student to produce a thesis document that follows the Faculty of Computer System & Software Engineering (FCSSE) thesis standard. The current application being use by student are the normal word processing applications that also provide the features to produce thesis but it just following the general standard without any specific thesis standard. Other than that, FTFA is expected to be able to reduce the mistakes made by the student in producing thesis document due to their carelessness. Therefore, this project is carried out to build an application that will specifically provide thesis document processor that follow accurately to the FCSSE thesis standard. Rapid Application Development method will be use as the framework for the development of the FTFA. The development FTFA will go through four phases in RAD which are requirement planning phase, user design phase, construction phase and cutover phase. FTFA will be developing using PHP as it programming language on a Windows platform workstation. Overall, the development of FTFA is hoped to help students who take final year project to perfecting their thesis document.

ABSTRAK

Aplikasi Memformat FSKKP Tesis (FTFA) akan dibangunkan dengan objektif untuk membantu pelajar untuk menghasilkan dokumen tesis yang mengikuti format tesis Fakulti Sistem Komputer & Kejuruteraan Perisian (FSKKP). Aplikasi saat ini sedang digunakan oleh pelajar adalah aplikasi pengolah kata yang biasa juga mempunyai ciri-ciri untuk menghasilkan tesis tapi hanya mengikut piawaian umum biasa tanpa mengikuti format tesis tertentu. Selain itu, FTFA diharapkan untuk dapat mengurangkan kesalahan yang dibuat oleh pelajar dalam menghasilkan dokumen tesis yang kerana kecuaian. Oleh kerana itu, projek ini dilakukan untuk membina aplikasi yang secara khusus akan memberikan proses dokumen tesis yang tepat untuk mengikuti standard tesis FSKKP. Kaedah Rapid Application Development akan digunakan sebagai rangka kerja bagi pembangunan FTFA. Pembangunan FTFA akan melalui empat tahap dalam Rad yang tahap perancangan keperluan, pengguna fasa rekabentuk, fasa pembinaan dan fasa cutover.FTFA akan berkembang dengan menggunakan PHP seperti bahasa pengaturcaraan pada komputer yang menggunakan platform Windows. Secara keseluruhan, pembangunan FTFA diharap dapat membantu pelajar-pelajar yang mengambil Projek Tahun Akhir untuk menghasilkan tesis mereka.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

FSKKP Thesis Formatting Application (FTFA) is an application designed to automate the process of producing a thesis document for Undergraduate Project according to the Faculty of Computer System & Software Engineering thesis format. This application will produce the thesis document in the form of Microsoft Doc file format which will have the ".doc" as an extension for the document. Since it uses the Microsoft Doc file format, the thesis document is also editable in Microsoft Office 2007. The application will be developed using Dreamweaver in PHP programming language and it will use the Rapid Application Development (RAD) as the software development process where usability testing will be done in the construction phase based on Jakob Nielson's Heuristics. Overall, the FTFA is a standalone desktop application that is able to reduce the risk of student's carelessness in producing a thesis document.

1.2 Problem Statement

Due to the carelessness, most students tend to make mistake in thesis document format for their Undergraduate Project. This is because they just modifying the content of the thesis template given to them without realizing that the type of the font, alignment of the texts, line spacing between texts and the size of the texts were changed after they transferring or pasting the content of the draft document into the real template of the thesis document.

As a result, their mark for the thesis format will be deducted and it will harm the overall mark for the thesis and even the mark for the Undergraduate Project. In order to reduce the risk of thesis format mark being deducted, a certain application must be developed to overcome the carelessness of the students in producing the thesis document.

1.3 Objectives

The objectives of this project are:

i. To develop an Auto Generated Thesis Format Application
ii. To produce thesis document in Microsoft Doc format.
iii. To apply the Jakob's Nielson heuristics in usability testing.

1.4 Project Scopes

These are the scope of this project:

i. The thesis format application is according to the Faculty of Computer System & Software Engineering thesis format for Undergraduate Project
ii. The document of the document produce by the application will be in Microsoft Doc.
iii. The application does not include the grammatical checking and spelling error

checking features

iv. The application will run as web based application.

v. The application does not provide inserting picture function and page numbering function

1.5 Thesis Organization

This thesis consists of 6 chapters. Chapter 1 will discuss about the Introduction to the System. These first chapters briefly explain about the objective of the system, problem statement and project scopes. Chapter 2 and 3 are about the Literature Review and Methodology of the project. Chapter 2 and 3 will discuss about the methods that will be used, elaborating the sources from the research, and deciding the best tools that will be used to build the system. Chapter 4, Implementation; are about the documentation of the processes during the development of the system, including any modification that been plan and made. While the last, Chapter 5 Result and Discussion and Chapter 6 Conclusion. Chapter 5 will explain about the result that have collected from the analysis and tests of the system along with the constraints and suggestion to enhance the system performance. Conclusion and overall summary of the system, data, methodology, implementation, and the suggestions are in the matter of the discussion on of the chapter 6.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The thesis also called dissertation or disquisition is a document that presents the author's research and findings and is submitted in support of candidature for a degree or professional qualification [15]. The word "thesis" comes from the Greek word that means "position", and refers to an intellectual proposition. "Dissertation" comes from the Latin word that means "discourse." In the universities, the word thesis is used as part of a Bachelors or Masters course, while dissertation is usually applied to a Doctorate.

The normal thesis document format usually has at least a title page, an abstract, a table of contents, a body, and a bibliography. Sometime there are also other add-on components that can be include such as an introduction, materials and methods, results, discussion, acknowledgments, a dedication, indices and appendices, glossaries, lists of tables, images or figures and lists of abbreviations.

In Universiti Malaysia Pahang (UMP), thesis document is present as a project report resulted from student's research in their Undergraduate Project subject for the Bachelor degree students and Final Year Project subject for the Diploma students. In order for students to get awarding for their Diploma and Bachelor degree, they must

prepare a thesis document for their Final Year Project or Undergraduate Project by following UMP's house style thesis format in preparing the thesis document.

In the process of the application development, usability testing is also important to satisfy the users and improve the user experience. Heuristic evaluation is used in the usability testing in order to help developer to identify usability problems in the user interface (UI) design of the software application. Example of heuristic evalution is based on Jakob Nielson's 10 Usability Heuristic that are more in the nature of rules of thumb than specific usability guidelines.

2.1.1 Faculty of Computer System & Software Engineering Thesis Style Format

Currently the thesis format for Final Year Project and Undergraduate Project is prepared by the faculty itself. Basically the thesis for FCSSE consists of components in the list below:-

i. Cover page
ii. Declaration page
iii. Supervisor's Declaration page
iv. Dedication page
v. Acknowledgement page
vi. Abstract page
vii. Table of contents
viii. List of tables
ix. List of figures
x. List of appendices
xi. Main chapters' pages
xii. References page
xiii. Appendix page

2.1.1.2 Cover Page

In the thesis document, cover page is the front cover for the document. Cover page or also called as title page consist of title of the project, author name, declaration for the submission of the thesis, name of the university and lastly the month and year of the thesis submission. The font type for the cover page must be in Times New Roman and the size of the text is 12.

2.1.1.3 Declaration Page

The declaration page content the declaration statement made by the author about the thesis that he or she had been writing for the undergraduate project. The declaration page also includes the signature of the author, name of the author and date of the submission. The overall declaration page use the Times New Roman type font and the text size use is 12.

2.1.1.4 Supervisor's Declaration Page

Same as the declaration page before, the supervisor's declaration page consist of declaration statement made by the author's supervisor in order to approve the submission of the thesis document. The supervisor's declaration page also uses the Times New Roman font type with the text size of 12.

2.1.1.5 Acknowledgement Page

In the acknowledgement page, author needs to write short statement to tell about appreciation and gratitude to every person that help and support him throughout the development of the undergraduate project. This page also uses the Times New

Roman font type with text size of 12 while the title of the page is capital letter and in bold text.

2.1.1.6 Abstract Page

The content of the abstract page is about the summary of the overall content of the undergraduate thesis document project. The content abstract page is written in two language which are English language and Malay language. The overall text font and size are the same as other pages in the thesis document.

2.1.1.7 Table of Contents

The table of contents provides the overall index of the structure for the thesis document. The table provides page number of every page in every main chapter including other pages such as declaration page, references page and appendix page. The table is divided into three columns which the first column is the number of chapter, the second column show the title of the pages and the third column provide the page number of every page in the thesis document.

2.1.1.8 List of Tables

The list of tables' page is almost the same as the table of contents but the items that being indexed in the list are the tables that appear in the thesis document. The list of tables also consists of three columns. The first column shows the numbering of the table while the second column shows the title of the tables. The third column shows the page number where all the tables appear in the thesis document.

2.1.1.9 List of Figures

Same as list of tables' page the list of figures' page also consist of three columns. The first column shows the numbering of the figure while the second column shows the title of the figure. The third column shows the page number where the entire figures appear in the thesis document.

2.1.1.10 List of Appendices

In the list of appendices' page, the supplementary materials to the thesis such as chart, tables and computer program listing will be listed and named in the alphabetical order. The list of three columns where the first show the appendix letter, the second column show the title of the appendix and the third column show the page number of the appendix.

2.1.1.11 Main Chapters Page

The main chapters' pages consist of six chapters which every chapter covered a specific topic. Below is the list of the main chapters of the thesis:-

i. Chapter 1 (Introduction)
ii. Chapter 2 (Literature Review)
iii. Chapter 3 (Methodology)
iv. Chapter 4 (Implementation)
v. Chapter 5 (Result and Discussion)
vi. Chapter 6 (Conclusion)

The overall content of the chapters are using Times New Roman font type with size of 12. The structure of every chapter is the same where the main chapter title is at the center top of the page and the main topics and subtopics are in the form of multilevel list of texts.

2.1.1.12 Reference Page

In the FCSSE thesis document, student can choose either alphabetically (Harvard System) or numerically (Number System). The style that has been selected by the student must be consistently being used throughout the thesis document.

i. Harvard System

This system is also known as the author and year system since it using the author name and year of reference published as the front part of the reference list.

ii. Number System

Number system is a reference system based on the numerical list of references in the incremental order. The lists of references are listed incrementally and a number will be put in the citation text according to the references list.

2.1.1.13 Appendix Page

Appendix in this thesis document is a supplemental addition to a thesis document. It may correct errors, explain inconsistencies or otherwise detail or update the information found in the thesis document, especially if any such problems were detected too late to correct the thesis document. For example, the thesis document could have had already been printed and the cost of destroying the batch and reprinting is deemed too high. As such, appendix may come in many forms like a separate letter included with the document,

text files on a digital medium, or any similar carrier.

2.2 Document File Format

A document file format is a text or binary file format for storing documents on a computer storage media. There are several types of document format that mostly in use in nowadays such as structural binary format by Microsoft (.doc), OpenDocument (.odt), Office Open XML (.docx), Portable Document Format (.pdf) and TeX.

2.2.1 Structured Binary Format (.doc)

This document format also called as DOC according to its extension is a file extension for word processing documents that being produce commonly by the Microsoft Word. The binary DOC files usually contain mostly text formatting information and several scripts as the structure of the document. The DOC was being use as the primary document format for the Microsoft Office Word 97 until Microsoft Office Word 2003.

There are other open source word processing applications that also include the DOC document format in their application such as OpenOffice.org Writer and AbiWord. Those open source word processors are able to create, read and edit the DOC document like the Microsoft Office Word application. Since the DOC file format was a closed specification for many years, the documents produce in this format are inconsistent to handle and it cause some loss of formatting information when the documents being handled by multiple word processing applications.

2.2.2 OpenDocument for Word Processing Document (.odt)

The OpenDocument for word processing document (.odt) is the component of the OpenDocument Format (ODF) which is an XML-based file format for representing electronic documents such as spreadsheets, charts, presentations and word processing documents. The specifications for this format were originally developed by Sun Microsystems while the standard was developed by the OASIS Open Document Format for Office Applications, which is the committee of the Organization for the Advancement of Structured Information Standards (OASIS) consortium. This document format is based on the XML format and it is originally created and implemented in the OpenOffice.org office suite.

The odt file format is being used as the primary document format in the OpenOffice.org Writer where it consists of an XML document that has <document> as its root element. The odt and other OpenDocument type such as ods, odp, odg and odf files can also take the format of a ZIP compressed archive which containing a number of files and directories that contain binary content and it use the benefit from ZIP's lossless compression to reduce file size. The OpenDocument also benefits from separation of concerns by separating the content, styles, metadata and application settings into four separate XML files. The other word processing programs that support odt are AbiWord, Google Docs, Microsoft Office Word and etc.

2.2.3 Office Open XML (.docx)

The docx is one of the file extensions from the Office Open XML file format that also known as OOXML. The OOXML file format use for representing spreadsheets,

charts, presentations and word processing documents. The OOXML documents are stored in Open Packaging Convention (OPC) packages, which are ZIP files containing XML and other data files, along with a specification of the relationships between them. The packages have different internal directory structures and names depending on the type of the document.

The latest office suite from Microsoft which is Microsoft Office 2007 has set the OOXML as the default document format in its every office application. In the latest Microsoft Office Word 2007, the docx file format has replaced the legacy doc format as the default format while still supporting the doc format.

```
<?xml version="1.0"?>
<w:wordDocument
xmlns:w="http://schemas.microsoft.com/office/word/2003/wordml">
  <w:body>
    <w:p>
      <w:r>
        <w:t>Hello, World.</w:t>
      </w:r>
    </w:p>
  </w:body>
</w:wordDocument>
```

Figure 2.0: Example of OOXML File Structure

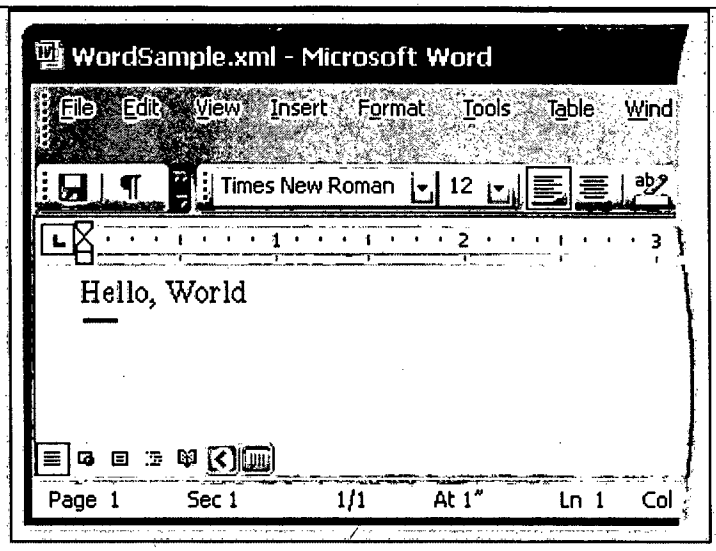

Figure 2.1: Representation of the OOXML Structure

2.2.4 Portable Document Format (.pdf)

Portable Document Format (PDF) is a file format created by Adobe Systems in 1993 for document exchange. PDF is used for representing two-dimensional documents in a way of independent in the application software, hardware, and operating system. Each PDF file encapsulates a complete description of a fixed-layout 2D document that includes the text, fonts, images, and 2D vector graphics which compose the documents.

There is only specialized software for producing PDF files, though the choices are much more limited and often expensive. The major software used for editing and producing PDF is Adobe Acrobat Professional which is very expensive for the home user. There is also freeware desktop program which allows PDF document format to be edited in and printed off which is the Inkscape software.