## UNIVERSITI TEKNOLOGI MALAYSIA

# DECLARATION OF THESIS / UNDERGRADUATE PROJECT PAPER AND COPYRIGHT

Date of birth :		
Title :		
Academic Session :		
I declare that this thesis is	classified as :	
CONFIDENTIAL	(Contains confide	ential information under the Official
	Secret Act 1972)	k
RESTRICTED	(Contains restrict	ed information as specified by the
	organization when	re research was done)*
OPEN ACCESS	I agree that my th access (full text)	esis to be published as online open
I acknowledged that Unive	ersiti Teknologi Malay	sia reserves the right as follows:
1. The thesis is the prope	erty of Universiti Tekno	ologi Malaysia.
2. The Library of Univer purpose of research on		ia has the right to make copies for the
1 1		the thesis for academic exchange.
SIGNATURE		SIGNATURE OF SUPERVISOR
(NEW IC NO. / PASSP	ORT NO.)	NAME OF SUPERVISOR
Date:		Date:

**NOTES:** \* If the thesis is CONFIDENTAL or RESTRICTED, please attach with the

letter from the organization with period and reasons for confidentiality or restriction.

in terms of scope and quality for t	his thesis and in my opinion this thesis is sufficient the award of the degree of Doctor of Philosophy ware Engineering)"
Signature	:
Name of Supervisor Date	: :

# YOUR THESIS TITLE

# THE AUTHOR

A thesis submitted in fulfilment of the requirements for the award of the degree of Doctor of Philosophy (Software Engineering)

Advanced Informatics School Universiti Teknologi Malaysia

٠	٠
1	1

I declare that this thesis entitled "title of the thesis" is the result of my own research
except as cited in the references. The thesis has not been accepted for any degree and
is not concurrently submitted in candidature of any other degree.

Signature	:	
Name	:	
Date	:	

This nation, turning 100 years old, had no Odyssey, no St. George slaying the dragon, no Prometheus. The emerging American genius for making a lot of money was a poor substitute for King Arthur and his knights (although the Horatio Alger myth of rags to riches was good for a lot of mileage). Without a mythology and set of ancient heroes to call its own, America had to manufacture its heroes. So the mythmaking machinery of nineteenth-century American media created a suitable heroic archetype in the cowboys of the Wild West. The image was of the undaunted cattle drivers living a life of reckless individualism, braving the elements, staving off brutal Indian attacks. Or of heroic lawmen dueling with six-guns in the streets at high noon. This artificial Wild West became America's Iliad.

## **ACKNOWLEDGEMENT**

Donald Knuth has spent the past several years working on a system allowing him to control many aspects of the design of his forthcoming books—from the typesetting and layout down to the very shapes of the letters! Seldom has an author had anything remotely like this power to control the final appearance of his or her work. Knuth's TEX typesetting system has become well-known and is available in many countries around the world. By contrast, his METAFONT system for designing families of typefaces has not become as well known or as available.

In his article "The Concept of a Meta-Font", Knuth sets forth for the first time the underlying philosophy of METAFONT, as well as some of its products. Not only is the concept exciting and clearly well executed, but in my opinion the article is charmingly written as well. However, despite my overall enthusiasm for Knuth's idea and article, there are some points in it that I feel might be taken wrongly by many readers, and since they are points that touch close to my deepest interests in artificial intelligence and esthetic theory, I felt compelled to make some comments to clarify certain important issues raised by "The Concept of a Meta-Font".

## **ABSTRACT**

Imagine trying to live in a world dominated by dihydrogen oxide, a compound that has no taste or smell and is so viable in its properties that it is generally benign but at other times swiftly lethal. Depending on its state, it can scald you or freeze you. In the presence of certain organic molecules it can form carbonic acids so nasty that they can strip the leaves from trees and eat the faces off statuary. In bulk, when agitated, it can strike with a fury that no human edifice could withstand. Even for those who have learned to live with it, it is often murderous substance. We call it water.

## **ABSTRAK**

This nation, turning 100 years old, had no *Odyssey*, no St. George slaying the dragon, no Prometheus. The emerging American genius for making a lot of money was a poor substitute for King Arthur and his knights (although the Horatio Alger myth of rags to riches was good for a lot of mileage). Without a mythology and set of ancient heroes to call its own, America had to manufacture its heroes. So the mythmaking machinery of nineteenth-century American media created a suitable heroic archetype in the cowboys of the Wild West. The image was of the undaunted cattle drivers living a life of reckless individualism, braving the elements, staving off brutal Indian attacks. Or of heroic lawmen dueling with six-guns in the streets at high noon. This artificial Wild West became America's Iliad.

# TABLE OF CONTENTS

CHAPTER			TITLE		PAGE
	DECL	ARATION	ſ		ii
	DEDI	CATION			iii
	ACKN	OWLEDG	EMENT		iv
	ABST	RACT			v
	ABST	RAK			vi
	TABL	E OF CON	TENTS		vii
	LIST	OF TABLE	ES		ix
	LIST	OF FIGUR	ES		X
	LIST	OF ABBRE	EAVIATIO	NS	xi
	LIST	OF SYMBO	OLS		xii
	LIST	OF APPEN	DICES		xiii
1	INTRODUCTION				
	1.1	Introduc	ction		1
	1.2	Problen	n Statement		2
	1.3	Project	Research A	im	2
	1.4	Objectiv	ves		2
	1.5	Researc	h Scope		3
	1.6	Researc	h Contribut	ion	3
	1.7	Report	Organization	n	3
2	LITE	RATURE R	REVIEW		5
	2.1	First sec	ction		5
		2.1.1	First sub	section	6
			2.1.1.1	First subsubsection	6
			2.1.1.2	Second subsubsection	6
	2.2	Second	section		6
		2.2.1	Second s	ubsection	7

3	METH	ODOLOG	<b>GY</b>		8
	3.1	First se	ction		8
		3.1.1	First sub	osection	9
			3.1.1.1	First subsubsection	9
			3.1.1.2	Second subsubsection	9
	3.2	Second	section		9
		3.2.1	Second	subsection	10
4					11
	4.1				
					11
		4.1.1			11
			4.1.1.1		11
					12
			4.1.1.2		12
					12
	4.2				
					12
		4.2.1			
					13
REFERI	ENCES				15

viii

# LIST OF TABLES

TABLE NO.	TITLE	PAGE
1.1	Sample dummy table	4
4.1		
		14

# LIST OF FIGURES

FIGURE	E NO. TITLE	PAGE
1.1	Sample dummy image	4
4.1		
		13

# LIST OF ABBREAVIATIONS

RTFM – Read The Fine Manual

YMMV – Your Mileage May Vary

# LIST OF SYMBOLS

# LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Sample Appendix	16
В	Another Appendix	17
C		
		18

#### **CHAPTER 1**

#### INTRODUCTION

#### 1.1 Introduction

You probably should RTFM (Read The Fine Manual) before taking any actions. Donald Knuth has spent the past several years working on a system allowing him to control many aspects of the design of his forthcoming books—from the typesetting and layout down to the very shapes of the letters! Seldom has an author had anything remotely like this power to control the final appearance of his or her work. Knuth's TEX typesetting system has become well-known and is available in many countries around the world. By contrast, his METAFONT system for designing families of typefaces has not become as well known or as available.

In his article "The Concept of a Meta-Font", Knuth sets forth for the first time the underlying philosophy of METAFONT, as well as some of its products. Not only is the concept exciting and clearly well executed, but in my opinion the article is charmingly written as well. However, despite my overall enthusiasm for Knuth's idea and article, there are some points in it that I feel might be taken wrongly by many readers, and since they are points that touch close to my deepest interests in artificial intelligence and esthetic theory, I felt compelled to make some comments to clarify certain important issues raised by "The Concept of a Meta-Font".

#### 1.2 Problem Statement

(Chang et al., 2008) We thrive in information—thick worlds because of our marvelous and everyday capacity to select, edit, single out, structure, highlight, group, pair, merge, harmonize, synthesize, focus, organize, condense, reduce, boil down, choose, categorize, catalog, classify, list, abstract, scan, look into, idealize, isolate, discriminate, distinguish, screen, pigeonhole, pick over, sort, integrate, blend, inspect, filter, lump, skip, smooth, chunk, average, approximate, cluster, aggregate, outline, summarize, itemize, review, dip into, flip through, browse, glance into, leaf through, skim, refine, enumerate, glean, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

## 1.3 Project Research Aim

(Han et al., 2011) The Earth, as a habitat for animal life, is in old age and has a fatal illness. Several, in fact. It would be happening whether humans had ever evolved or not. But our presence is like the effect of an old-age patient who smokes many packs of cigarettes per day — and we humans are the cigarettes.

#### 1.4 Objectives

Imagine trying to live in a world dominated by dihydrogen oxide, a compound that has no taste or smell and is so viable in its properties that it is generally benign but at other times swiftly lethal. Depending on its state, it can scald you or freeze you. In the presence of certain organic molecules it can form carbonic acids so nasty that they can strip the leaves from trees and eat the faces off statuary. In bulk, when agitated, it can strike with a fury that no human edifice could withstand. Even for those who have learned to live with it, it is often murderous substance. We call it water.

## 1.5 Research Scope

This nation, turning 100 years old, had no *Odyssey*, no St. George slaying the dragon, no Prometheus. The emerging American genius for making a lot of money was a poor substitute for King Arthur and his knights (although the Horatio Alger myth of rags to riches was good for a lot of mileage). Without a mythology and set of ancient heroes to call its own, America had to manufacture its heroes. So the mythmaking machinery of nineteenth-century American media created a suitable heroic archetype in the cowboys of the Wild West. The image was of the undaunted cattle drivers living a life of reckless individualism, braving the elements, staving off brutal Indian attacks. Or of heroic lawmen dueling with six-guns in the streets at high noon. This artificial Wild West became America's Iliad.

#### 1.6 Research Contribution

I used a similar illustration in one of my Royal Institution Christmas Lectures in 1991. I said I had reason to believe that among my audience was a psychic, clairvoyant individual, capable of influencing events purely by power of thought. I would try to flush this individual out. "Let's first establish," I said, "whether the psychic is in the left half or the right half of the lecture hall." I invited everybody to stand up while my assistant tossed a coin. Everybody on the left of the hall was asked to 'will' the coin to come down heads. Everybody on the right had to will it to be tails. Obviously one side had to lose, and they were asked to sit down. Then those that remained were divided into two, with half 'willing' heads and the other half tails. Again the losers sat down. And so on by successive halvings until, inevitably, after seven or eight tosses, one individual was left standing. "A big round of applause for our psychic." He must be psychic, mustn't he, because he successfully influenced the coin eight times in a row?

## 1.7 Report Organization

If [in 2600] you stacked all the new books being published next to each other, you would have to move at ninety miles an hour just to keep up with the end of the line. Of

name: dummy file: dummy state: unknown

Figure 1.1 Sample dummy image

course, by 2600 new artistic and scientific work will come in electronic forms, rather than as physical books and paper. Nevertheless, if the exponential growth continued, there would be ten papers a second in my kind of theoretical physics, and no time to read them.

 Table 1.1
 Sample dummy table

Header1	Header2	Header3	Header4	Header5	Header6
One	two	three	four	five	six
One	two	three	four	five	six
One	two	three	four	five	six
One	two	three	four	five	six
One	two	three	four	five	six
One	two	three	four	five	six
One	two	three	four	five	six
One	two	three	four	five	six
One	two	three	four	five	six
One	two	three	four	five	six

#### **CHAPTER 2**

#### LITERATURE REVIEW

#### 2.1 First section

Donald Knuth has spent the past several years working on a system allowing him to control many aspects of the design of his forthcoming books—from the typesetting and layout down to the very shapes of the letters! Seldom has an author had anything remotely like this power to control the final appearance of his or her work. Knuth's TEX typesetting system has become well-known and is available in many countries around the world. By contrast, his METAFONT system for designing families of typefaces has not become as well known or as available.

In his article "The Concept of a Meta-Font", Knuth sets forth for the first time the underlying philosophy of METAFONT, as well as some of its products. Not only is the concept exciting and clearly well executed, but in my opinion the article is charmingly written as well. However, despite my overall enthusiasm for Knuth's idea and article, there are some points in it that I feel might be taken wrongly by many readers, and since they are points that touch close to my deepest interests in artificial intelligence and esthetic theory, I felt compelled to make some comments to clarify certain important issues raised by "The Concept of a Meta-Font".

#### 2.1.1 First subsection

We thrive in information—thick worlds because of our marvelous and everyday capacity to select, edit, single out, structure, highlight, group, pair, merge, harmonize, synthesize, focus, organize, condense, reduce, boil down, choose, categorize, catalog, classify, list, abstract, scan, look into, idealize, isolate, discriminate, distinguish, screen, pigeonhole, pick over, sort, integrate, blend, inspect, filter, lump, skip, smooth, chunk, average, approximate, cluster, aggregate, outline, summarize, itemize, review, dip into, flip through, browse, glance into, leaf through, skim, refine, enumerate, glean, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

#### 2.1.1.1 First subsubsection

The Earth, as a habitat for animal life, is in old age and has a fatal illness. Several, in fact. It would be happening whether humans had ever evolved or not. But our presence is like the effect of an old-age patient who smokes many packs of cigarettes per day — and we humans are the cigarettes.

## 2.1.1.2 Second subsubsection

Imagine trying to live in a world dominated by dihydrogen oxide, a compound that has no taste or smell and is so viable in its properties that it is generally benign but at other times swiftly lethal. Depending on its state, it can scald you or freeze you. In the presence of certain organic molecules it can form carbonic acids so nasty that they can strip the leaves from trees and eat the faces off statuary. In bulk, when agitated, it can strike with a fury that no human edifice could withstand. Even for those who have learned to live with it, it is often murderous substance. We call it water.

#### 2.2 Second section

I used a similar illustration in one of my Royal Institution Christmas Lectures in 1991. I said I had reason to believe that among my audience was a psychic, clairvoyant individual, capable of influencing events purely by power of thought. I would try to flush

this individual out. "Let's first establish," I said, "whether the psychic is in the left half or the right half of the lecture hall." I invited everybody to stand up while my assistant tossed a coin. Everybody on the left of the hall was asked to 'will' the coin to come down heads. Everybody on the right had to will it to be tails. Obviously one side had to lose, and they were asked to sit down. Then those that remained were divided into two, with half 'willing' heads and the other half tails. Again the losers sat down. And so on by successive halvings until, inevitably, after seven or eight tosses, one individual was left standing. "A big round of applause for our psychic." He must be psychic, mustn't he, because he successfully influenced the coin eight times in a row?

#### 2.2.1 Second subsection

If [in 2600] you stacked all the new books being published next to each other, you would have to move at ninety miles an hour just to keep up with the end of the line. Of course, by 2600 new artistic and scientific work will come in electronic forms, rather than as physical books and paper. Nevertheless, if the exponential growth continued, there would be ten papers a second in my kind of theoretical physics, and no time to read them.

#### **CHAPTER 3**

#### **METHODOLOGY**

#### 3.1 First section

Donald Knuth has spent the past several years working on a system allowing him to control many aspects of the design of his forthcoming books—from the typesetting and layout down to the very shapes of the letters! Seldom has an author had anything remotely like this power to control the final appearance of his or her work. Knuth's TEX typesetting system has become well-known and is available in many countries around the world. By contrast, his METAFONT system for designing families of typefaces has not become as well known or as available.

In his article "The Concept of a Meta-Font", Knuth sets forth for the first time the underlying philosophy of METAFONT, as well as some of its products. Not only is the concept exciting and clearly well executed, but in my opinion the article is charmingly written as well. However, despite my overall enthusiasm for Knuth's idea and article, there are some points in it that I feel might be taken wrongly by many readers, and since they are points that touch close to my deepest interests in artificial intelligence and esthetic theory, I felt compelled to make some comments to clarify certain important issues raised by "The Concept of a Meta-Font".

#### 3.1.1 First subsection

We thrive in information—thick worlds because of our marvelous and everyday capacity to select, edit, single out, structure, highlight, group, pair, merge, harmonize, synthesize, focus, organize, condense, reduce, boil down, choose, categorize, catalog, classify, list, abstract, scan, look into, idealize, isolate, discriminate, distinguish, screen, pigeonhole, pick over, sort, integrate, blend, inspect, filter, lump, skip, smooth, chunk, average, approximate, cluster, aggregate, outline, summarize, itemize, review, dip into, flip through, browse, glance into, leaf through, skim, refine, enumerate, glean, synopsize, winnow the wheat from the chaff and separate the sheep from the goats.

#### 3.1.1.1 First subsubsection

The Earth, as a habitat for animal life, is in old age and has a fatal illness. Several, in fact. It would be happening whether humans had ever evolved or not. But our presence is like the effect of an old-age patient who smokes many packs of cigarettes per day — and we humans are the cigarettes.

#### 3.1.1.2 Second subsubsection

Imagine trying to live in a world dominated by dihydrogen oxide, a compound that has no taste or smell and is so viable in its properties that it is generally benign but at other times swiftly lethal. Depending on its state, it can scald you or freeze you. In the presence of certain organic molecules it can form carbonic acids so nasty that they can strip the leaves from trees and eat the faces off statuary. In bulk, when agitated, it can strike with a fury that no human edifice could withstand. Even for those who have learned to live with it, it is often murderous substance. We call it water.

#### 3.2 Second section

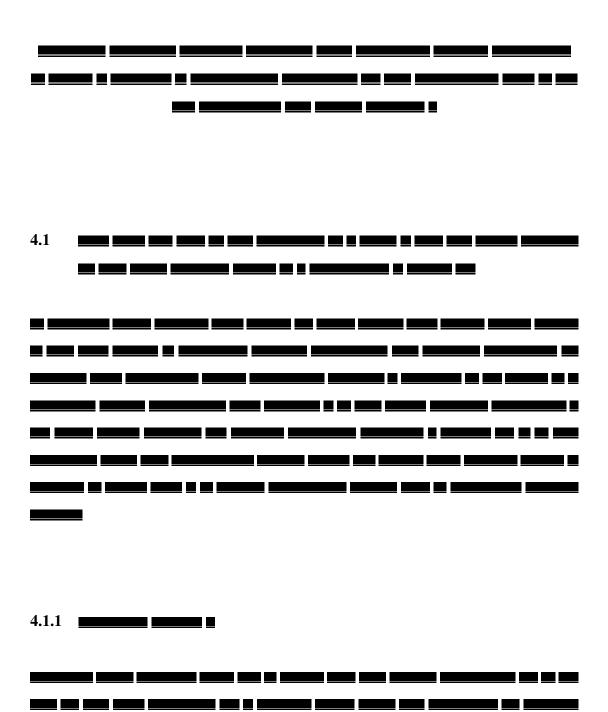
I used a similar illustration in one of my Royal Institution Christmas Lectures in 1991. I said I had reason to believe that among my audience was a psychic, clairvoyant individual, capable of influencing events purely by power of thought. I would try to flush

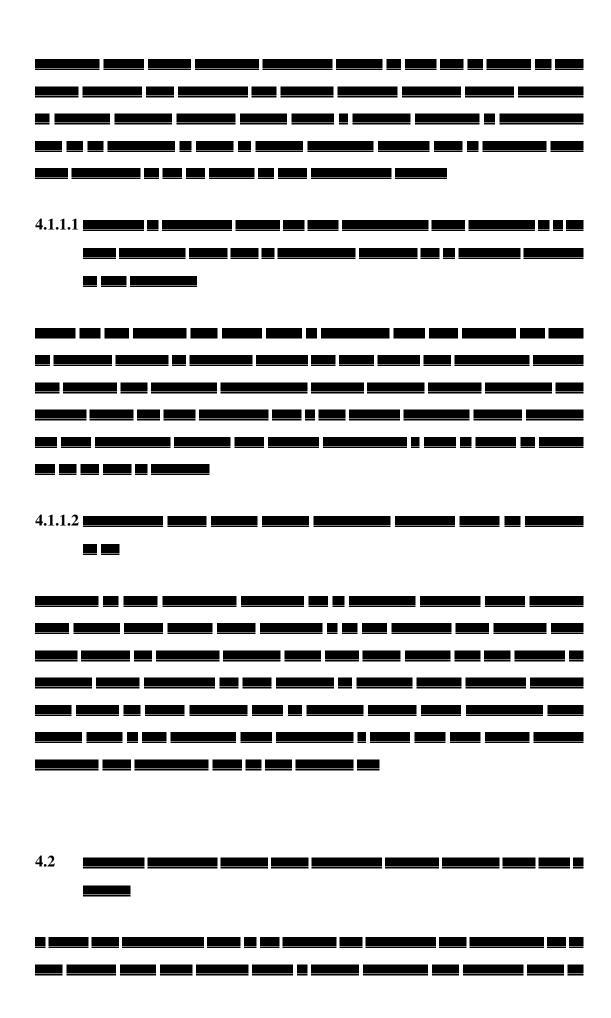
this individual out. "Let's first establish," I said, "whether the psychic is in the left half or the right half of the lecture hall." I invited everybody to stand up while my assistant tossed a coin. Everybody on the left of the hall was asked to 'will' the coin to come down heads. Everybody on the right had to will it to be tails. Obviously one side had to lose, and they were asked to sit down. Then those that remained were divided into two, with half 'willing' heads and the other half tails. Again the losers sat down. And so on by successive halvings until, inevitably, after seven or eight tosses, one individual was left standing. "A big round of applause for our psychic." He must be psychic, mustn't he, because he successfully influenced the coin eight times in a row?

#### 3.2.1 Second subsection

If [in 2600] you stacked all the new books being published next to each other, you would have to move at ninety miles an hour just to keep up with the end of the line. Of course, by 2600 new artistic and scientific work will come in electronic forms, rather than as physical books and paper. Nevertheless, if the exponential growth continued, there would be ten papers a second in my kind of theoretical physics, and no time to read them.

## **CHAPTER 4**





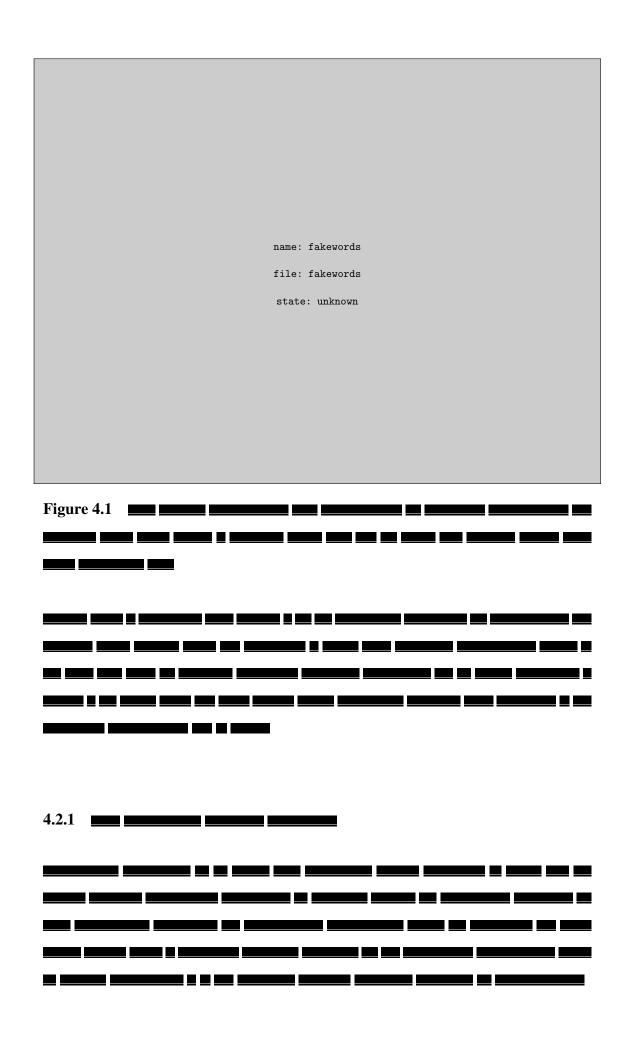


Table 4.1

\_

## **REFERENCES**

- Chang, F., Dean, J., Ghemawat, S., Hsieh, W. C. and Wallach, D. A. et al. (2008). Bigtable: A distributed storage system for structured data. *ACM Transactions on Computer Systems (TOCS)*, 26(2), 4.
- Han, J., Haihong, E., Le, G. and Du, J. (2011). Survey on nosql database. In *Pervasive computing and applications (ICPCA), 2011 6th international conference on*, pages 363–366.IEEE

# APPENDIX A

SAMPLE APPENDIX

# APPENDIX B

# ANOTHER APPENDIX

# **APPENDIX C**

