UNIVERSITI TEKNOLOGI MARA

A GREAT THESIS WRITTEN IN A GREAT UNIVERSITY

A GREAT THESIS AUTHOR BIN A GREAT DAD

PhD

March 2021

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A GREAT THESIS WRITTEN IN A GREAT UNIVERSITY

A GREAT THESIS AUTHOR BIN A GREAT DAD

Thesis submitted in fullfillment of the requirements for the degree of **Doctor of Philosophy**(Mathematics)

Faculty of Computer and Mathematical Sciences

March 2021

CONFIRMATION BY PANEL OF EXAMINERS

I certify that a Panel of Examiners has met on July 3, 2021 to conduct the final examination of A Great Thesis Author bin A Great Dad on his **Doctor of Philosophy** (**Mathematics**) thesis entitled "A Great Thesis written in a great university" in accordance with Universiti Teknologi MARA Act 1976 (Akta 173). The Panel of Examiners recommends that the student be awarded the relevant degree. The Panel of Examiners was as follows:

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Date: July 3, 2021

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I declare that the work in this thesis was carried out in accordance with the regulations

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Faculty : Faculty of Computer and Mathematical Sciences

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ABSTRACT

The summary of everything. Master-minimum 200 words. PhD-minimum 250 words. Limit to one(1) page only. Font: Times New Roman - 12pt. Single spacing.

ACKNOWLEDGEMENT

A very special thanks to...

Finally, this (thesis/report/dissertation) is dedicated to the loving memory of my very dear late father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you. Alhamdulilah.

Must include all supervisors names. Limit one (1) page only. Font Times New Roman 12pt.

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LIST OF SYMBOLS

Symbols

c Speed of light

f Frequency

LIST OF ABBREVIATIONS

Abbreviations

ACO Ant Colony Optimization

PPP Public Private Partnership

LIST OF NOMENCLATURES

Nomenclatures

SI International System

SMB Serial Mini Bus

CHAPTER ONE INTRODUCTION

1.1 Research Background

Section 1.1 on page 1. The data is on Appendix A on page 19. Chapter 2. Section 1.1 Chapter 5. Appendix B on 20. Appendix A on 19. Theorem 1.1

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1.2 Problem Statement

Theorem 1.1. A great theorem with no name.

Theorem 1.2 (The great theorem). *The great theorem*.

Proof. This is the proof for 1.2.

And a consequence of theorem 1.2 is the statement in the next corollary.

П

Corollary 1.2.1. *The corollary*

Lemma 1.3. A lemma. The number follows theorem.

Remark 1.1. This is a remark. It's true.

Example 1.1. This is an example.

Solution. The solution

1.3 Research Objectives

The objective is

This is a new paragraph.

1.4 Research Questions

1.5 Significance of Study

1.6 Limitations

1.7 Scope of Study

1.8 Definitions of Terms

(subject to discipline of study)

Table 1.1 Length Units Again

Millimeters	Centimeters
mm	cm
1	0.1
10	1
100	10
1000	100
10000	1000

Note: This table is useful for

CHAPTER TWO LITERATURE REVIEW

2.1 Introduction

This is a LATEX book (Urban, 1986). Lamport (1994) wrote a good LATEX book. Knuth (1986) claimed that ...

2.2 Previous Study on Problem B

Three or more authors (Mittelbach et al., 2004)

Mittelbach et al. (2004) has three or more authors.

Two authors (Kopka & Daly, 1995).

Kopka and Daly (1995) has two authors.

Cite more than one articles (Lamport, 1994; Urban, 1986).

Newspaper (AFP, 2021).

2.3 Improved Method for Problem B

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CHAPTER THREE RESEARCH METHODOLOGY

3.1 Study Area

3.2 Sampling

Table 3.1 My Sample

Millimeters	Centimeters
mm	cm
1	0.1
10	1
100	10
1000	100
10000	1000

Note: This table is useful for

Table 3.2
The Second Sample

Millimeters mm	Centimeters cm
1	0.1
10	1
100	10
1000	100
10000	1000

Note: This table is useful for



Figure 3.1 A New Figure Again!

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Figure 3.2 The Two Figures

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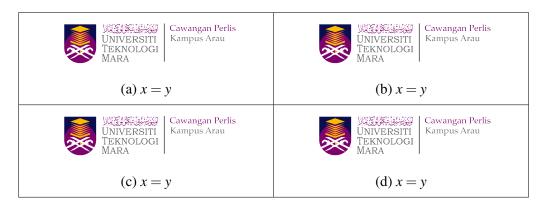


Figure 3.3 The Four Figures

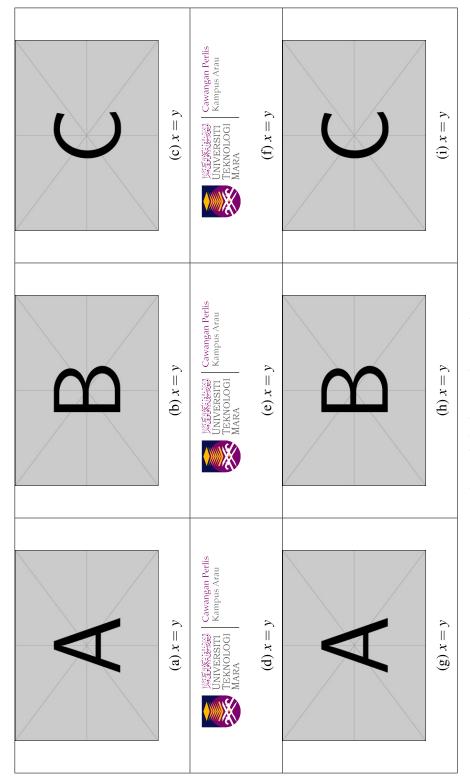


Figure 3.4 The Landscape Figures

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CHAPTER FOUR RESULTS AND DISCUSSIONS

4.1 Background of Study

Suppose that we have a line with equation y = 2x + 3. This line cuts the y-axis at y = 3. We can find the gradient of the line using (4.1). Equation (4.2),

$$m = \frac{y_2 - y_1}{x_2 - x_1} \tag{4.1}$$

$$e^{\pi i} + 1 = 0 \tag{4.2}$$

4.1.1 Comparison of Method A with Other Studies

Table 4.1 Length Units

Millimeters	Centimeters
mm	cm
1	0.1
10	1
100	10
1000	100
10000	1000

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4.1.1.1 Method A Improved

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One	Two	10.2345667890122	а	8901223532523 2334235235	8901223532523 2334235235 2334235235 abcdefghijkl 123456
One	Two	10.2345667890122	a	8901222r24234 2334235235	8901222r24234 2334235235 2334232235 abcdefghijkl 123456

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CHAPTER FIVE CONCLUSION AND RECOMMENDATIONS

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REFERENCES

- AFP. (2021, April 14). *Covid patients with sedentary habits more likely to die: Study*. https://www.nst.com.my/world/world/2021/04/682122/covid-patients-sedentary-habits-more-likely-die-study
- Knuth, D. E. (1986). *The T_EX book*. Wesley Publishing Co., Reading. Ma.
- Kopka, H., & Daly, P. (1995). A guide to LATEX document.
- Lamport, L. (1994). Lampor
- Mittelbach, F., Goossens, M., Braams, J., Carlisle, D., & Rowley, C. (2004). *The latex companion*. Addison-Wesley Professional.
- Urban, M. (1986). An introduction to LaTeX. TeX users group.

APPENDICES

APPENDIX A THE DATA

This is the data.

APPENDIX B THE CODING

This is the C code.

```
#include <stdio.h>
int main() {
    printf("Hello World\n");
return 1;
}
```