

## TABLE OF CONTENTS

APPROVAL.....	ii
SELF DECLARATION AGAINST PLAGIARISM .....	iii
ABSTRACT .....	iv
ABSTRAKSI.....	v
DEDICATION .....	vi
ACKNOWLEDGEMENT.....	vii
TABLE OF CONTENTS .....	viii
LIST OF TABLES .....	xi
LIST OF FIGURES.....	xii
CURRICULUM VITAE .....	xiv
CHAPTER 1 THE PROBLEM .....	1
1.1    Rationale / Motivation.....	1
1.1    Theoretical Framework .....	2
1.2    Conceptual Framework/Paradigm .....	3
1.3    Problem Statement.....	3
1.4    Objectives.....	4
1.5    Hypothesis.....	4
1.6    Assumption.....	4
1.7    Scope and Delimitation .....	5
1.8    Importance of the Study .....	5
CHAPTER 2 REVIEW OF LITERATURE AND STUDIES.....	7
2.1. <i>Bahasa Indonesia</i> Morphology .....	7
2.2.    Related Works .....	9
2.2.1    Nazief – Adriani Stemmer Algorithm (S_NA).....	9

2.2.2	CS Stemmer Algorithm .....	12
2.2.3	Enhanced Confix Stripping Stemmer .....	15
CHAPTER 3 RESEARCH METHODOLOGY .....		17
3.1	Morphological Observation.....	17
3.1.1	Weakness of S_NA Stemmer .....	17
3.1.2	Weakness of CS Stemmer .....	19
3.1.3	Weakness of Enhanced Confix Stripping.....	20
3.1.4	New Stemmer Algorithm (S_HA).....	21
3.2	Experiment with Real Data .....	27
3.2.1	Experiment Design .....	27
3.2.2	Experiment Scenario.....	30
3.2.3	Instrument and Data Collection.....	31
3.2.3.1	“Laskar Pelangi” Novel Book .....	31
3.2.3.2	“Riyadhus Shalihin” Hadits Book .....	32
3.2.3.3	“Republika” Online News .....	33
3.2.3.4	“Kamus Besar Bahasa Indonesia Tahun 2008” (KBBI 2008).....	34
3.2.4	Tools for Data Analysis.....	36
3.2.4.1	Python 2.7.....	36
3.2.4.2	Apache Open Office 4.1.1 .....	36
3.2.4.3	Stemming Process Output .....	36
3.2.4.4	Categorized Failed Stemmed Words .....	38
CHAPTER 4 PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA.....		39
4.1.	Presentation of Data .....	39
4.1.1	Performance Comparison S_NA, CS, and New Stemmer Algorithm .....	39
4.1.2	Cause Failures Category for <i>Laskar Pelangi</i> Data .....	43
4.1.3	Cause Failures Category for <i>Riyadhus Shalihin</i> .....	44
4.1.4	Cause Failures Category for Republika.....	45

---

4.1.5	Result Comparison S_NA vs CS Stemmer.....	45
4.1.6	Result Result Comparison CS Stemmer vs New Stemmer (S_HA).....	47
4.2	Analisis of Data .....	48
4.2.1	Analisis of Data Impact to Stemmer Performance .....	48
4.2.2	Analysis of Failed Cause .....	49
4.2.3	Analysis of Comparison of S_NA vs CS Stemmer .....	50
4.2.4	Analysis of Comparison of CS Stemmer vs New Stemmer .....	53
CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS.....		55
5.1	Conclusions .....	55
5.2	Recomendations .....	55
REFERRENCES.....		56