PROJECT REPORT
Converting Indonesian Active Sentence To Passive Sentence And The Opposite Using CYK Algorithm
Teguh Suganda
08.02.0028
2011

FACULTY OF COMPUTER SCIENCE
SOEGIJAPRANATA CATHOLIC UNIVERSITY
Jl. Pawiyatan Luhur IV/1, Bendan Duwur, SEMARANG 50234
Telp. 024-8441555 (hunting) Web: http://www.unika.ac.id
Email: ikom@unika.ac.id
This project report has been approved and ratified by the Dean of faculty of Computer Science and Supervisor on January 16th 2012

With Approval,

Examiners, Examiners.

Suyanto EA.,Ir.M.Sc Hironimus Leong, S.Kom., M.Kom

Examiners,

Shinta Estri Wahyuningrum, S.Si,M.Sc
NPP : 058.1.2007.272

Supervisor, Dean of Faculty of Computer Science,

R.Setiawan Aji Nugroho, ST, M.ComplIT Hironimus Leong, S.Kom., M.Kom
STATEMENT OF ORIGINALITY

Hereby signed:

Name: Teguh Suganda
ID: 08.02.0028

Hereby certify that this project was made by myself and not copy or plagiarizes from other people, except that in writing expressed to the other article. If it is proven that this project was plagiarizes or copy the other, I'm ready to accept a sanction.

Semarang, January 16th 2012

Teguh Suganda
08.02.0028
FOREWORD

Thanks to God, this project has been finished with title: Converting Indonesian Active Sentence To Passive Sentence and The Opposite Using CYK Algorithm.

In this opportunity, writer would thank to:

1. My Lord, Jesus Christ that give me faith and courage to finish this project.
2. My parents and my brothers for their support, love, and pray.
3. Robertus Seiawan Aji N.ST., McomIT as my supervisor, for his advice, and ideas that inspired me.
4. All lecturers in Faculty of Computer Science, Hironimus Leong, S.Kom., M.Kom., Suyanto EA., Ir, M.Sc, Shinta Estri Wahyuningrum, S.Si., M.Sc, Rosita Herawati ST.,MIT. for their help and advice in programming.
5. All of my friends, Yudianto Gunawan, Ferdianiyo Handoyo, Arries Riyadi and also all of my friends that cannot be said in IKOM for their support until this project is finished.

Finally, writer apologize because this project is still not perfect, there are some bugs. But writer hope this project can inspire other students to make better projects. Questions and critics about this project would be accepted in order to improve this project to be better.

Semarang, January 16th, 20112

Teguh Suganda
ABSTRACT

Sentence is the smallest unit of language. There are many kind of sentence in Indonesian. Every kind of sentence has its characteristic that makes it is different one another. There are two kind of sentence that related one each other, they are active sentence and passive sentence in Indonesian language.

This program is to convert active sentence to passive sentence and the opposite. Sentence will be parsed into a chart using CYK Algorithm and processed based on characteristic of the sentence’s parts. Data structure that used is linked list.

*Keyword: CYK Algorithm, data structure, linked list*
# Table of Content

APPROVAL AND RATIFICATION PAGE ................................................................. i  
STATEMENT OF ORIGINALITY ...................................................................... ii  
FOREWORD ........................................................................................................ iii  
ABSTRACT ......................................................................................................... iv  
Table of Content .............................................................................................. v  
Table of Table .................................................................................................. vii  
Table of Figure ............................................................................................... viii  

CHAPTER I INTRODUCTION ........................................................................... 1  
1.1 Background ................................................................................................ 1  
1.2 Scope .......................................................................................................... 2  
1.3 Objective ..................................................................................................... 2  

CHAPTER II LITERATURE STUDY ................................................................. 3  
2.1 CYK Algorithm .......................................................................................... 3  
2.2 Linked List .................................................................................................. 6  

CHAPTER III PLANNING ............................................................................... 7  
3.1 Research Methodologies ............................................................................ 7  
3.2 Project Management .................................................................................. 7  

CHAPTER IV ANALYSIS AND DESIGN ........................................................... 8  
4.1 Analysis ....................................................................................................... 8  
4.1.1 Use Case .................................................................................................. 8  
4.2 Design .......................................................................................................... 9  
4.2.1 Class Diagram ........................................................................................ 9  
4.2.2 Class Diagram Detail ............................................................................. 9
CHAPTER V IMPLEMENTATION AND TEST ............................................. 16
  5.1 Implementation ........................................................................... 16
  5.2 Testing ....................................................................................... 29
  5.3 Program Interface ...................................................................... 31

CHAPTER VI CONCLUSION AND FURTHER RESEARCH ................ 34
  6.1 Conclusion .................................................................................. 34
  6.2 Further Research .......................................................................... 34

REFERENCES .................................................................................. 35
Table of Figure

Figure 2.1: Linked List ........................................................................................ 6
Figure 4.1: Use Case Diagram.............................................................................. 8
Figure 4.2: Class Diagram................................................................................... 9
Figure 4.2.1: Class Conversion ........................................................................... 9
Figure 4.2.2: Class Kalimat1 ........................................................................... 10
Figure 4.2.3: Class Kalimat2 ........................................................................... 11
Figure 4.2.4: Class LinkedList2D ..................................................................... 12
Figure 4.2.5: Class Node ................................................................................... 12
Figure 4.2.6: Class HashTable .......................................................................... 13
Figure 4.2.7: Class LinkedList .......................................................................... 13
Figure 4.2.8: Class NodeList ............................................................................. 14
Figure 4.2.9: Class BacaTulisFile ..................................................................... 14
Figure 5.2: Active Conversion Page .................................................................. 32
Figure 5.3: Active Conversion Page Result ....................................................... 32
Figure 5.4: Passive Conversion Page .................................................................. 33
Table of Table

Table 2.1 Coverage Chart ........................................................................................................ 4
Table 2.2 Example of Coverage Chart ...................................................................................... 4
Table 2.3 Example of Filled-in Chart ........................................................................................ 5
Table 3.1 Project Management .................................................................................................. 7
Table 5.1 Table of Testing ......................................................................................................... 30