CHAPTER IV

Analysis and Design

4.1 Analysis

4.1.1 Use Case

Figure 4.1 Use Case Diagram
4.2 Design

4.2.1 Class Diagram Kamus

Figure 4.2 Class Diagram Kamus
4.2.2 Class Diagram Detail

4.2.2.1 Class BacaFile

```c
BacaFile
m openfile(String) String
m writefile(String, String) void
```

Baca file code to read n write data before included in data structures

Figure 4.3 BacaFile Class

4.2.2.2 Class BininaryTree

```c
BinaryTree
m insertTree(Word, TreeNode) void
m hitungascii(String) int
m addkata(Word) void
m carikata(String, TreeNode) Word
m ambilkata(String) Word
m toLinkedList() LinkedList
m hasillinkedlist(TreeNode, LinkedList) void
empty boolean
root TreeNode
```

Binary tree used for insert data to datastruct tree and searching kata.

Figure 4.4 BininaryTree Class

12
4.2.2.3 Class HashTable

Hash table used for search the position of kata and connected tree as data structure.

Figure 4.5 HashTable Class

4.2.2.4 class InggrisStemmer

inggris stemmer used algorithm to get root word in english word.

Figure 4.6 InggrisStemmer Class
4.2.2.5 Class IndonesiaStemmer

![Stemmer Diagram](image)

Indonesia stemmer used algorithm to get root word in Indonesia word.

Figure 4.7 IndonesiaStemmer Class

4.2.2.6 class Kamus

![Kamus Diagram](image)

Kamus used to linked between translator and hash table.

Figure 4.8 Kamus Class
4.2.2.7 class LevenstheinDistance

```plaintext
LevenstheinDistance

minMum(int, int, int) int
LevenshteinDistance(String, String) int
```

levenstein distance
is algorithm for get
value string of word

Figure 4.9 LevenstheinDistance Class

4.2.2.8 class LinkedList

```plaintext
LinkedList

position int
head Node
tail Node
curr Node

LinkedList() void
finder(int) boolean
getValueAt(int) Object
setValueAt(int, Object) boolean
clear() void
toString() String

size int
```

Linked list used to
create linked list
data structure

Figure 4.10 LinkedList Class
4.2.2.9 class MainKamus

main kamus used to operate and show of searching synonym program

Figure 4.11 MainKamus Class

4.2.2.10 class Node

node is collection method seter and getter of class Linked List

Figure 4.12 Node Class

4.2.2.11 class Stemmer

Stemmer is parent class of inggris stemmer and indonesia stemmer.

Figure 4.13 Stemmer Class

16
4.2.2.12 class Tampilan

Tampilan class for show gui of the program

Figure 4.14 Tampilan Class

4.2.2.12 class Translator

Translator class for connected between main kamus and kamus, in there any method for searching synonym

Figure 4.15 Translator Class
4.2.2.1 class TreeNode

Figure 4.16 TreeNode Class

```
TreeNode
kanan: TreeNode
data: Word
kiri: TreeNode
```

Tree node used for collection setter and getter of BinaryTree class.

4.2.2.1 class Word

Figure 4.17 Word Class

```
Word
artikata: LinkedList
kata: String
```

Word is class for set kata, get kata and get artikata kata