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OXFORD DICTIONARY APPLICATION USE ECLIPSE'S EDITOR OF ANDROID OPEN SOURCE WITH DEPTH FIRST SEARCH METHOD

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Abstract

Mobile phone is an electronic telecommunication device that has the same basic capabilities with conventional fixed-line phone. The development of mobile phone application is very quickly marked by affluence of a mobile phone type with a variety of facilities. This led to intense competition between mobile phone vendors and operators of service providers. They compete to attract customers and dominate the market. One way to do this is adding multimedia and game services. This research will be discussed about creating a search application letter and verse on the title search using the string matching algorithm like Depth First Search Method that will implement on Android-based mobile phone. Application built with Android Programming language, which is the development of the Java Programming language is applied in device with limited resources such as mobile phone.

Keywords: *Depth first search, Android*

Abstrak

Ponsel merupakan suatu peralatan elektronik telekomunikas yang memiliki kapabilitas yang sama dengan telepon kabel lain. Perancangan aplikasi ponsel saat ini sangat cepat perkembangannya, ditandai dengan adanya kemajuan dari jenis ponsel dengan berbagai fasilitas. Keunggulan ini merupakan pembeda dengan perusahaan ponsel dan operator sebagai penyedia layanan. Mereka berkompetisi secara atraktif kepada pelanggan dan pasarnya. Salah satu cara yang dilakukan adalah dengan menambah layanan multimedia dan game. Penelitian ini mendiskusikan tentang pembuatan sebuah aplikasi pencarian arti menggunakan metode pencocokan karakter seperti Metode Depth First Search dengan bahasa pemrograman Android yang mana dapat membantu untuk pengembangan bahasa pemrograman Java yang di aplikasikasikan di piranti yang dibatasi sumber daya seperti ponsel.

Kata Kunci : Pencarian pertama dalam, Android

INTORDUCTION

English is a universal language. Nowadays, many English courses places are available anywhere in regions. You can see also that actually English Cmaterials in classrooms do not meet their needs in learning English since students still seek for other places to learn English more like take a dictionary. So, teachers feel difficult to delegate it. There are many tools to search mean of English words, such as manual of text book, online translator like Google's translate, or translator's application in mobile phone and others.

Android is a software stack for mobile devices that includes an operating system, middleware and key applications Google, purchased the initial developer of software. Android has opened mobile phone development to thousands of developers who haven't had access to tools for building mobile applications. Oxford Dictionary is a utility to translate English words. With mobile dictionary like a student hey can take it without take a manual of text book anywhere. Sometimes we trouble to seek the meaning of a word, so that by using Depth First Search Method, we easily find the meaning of a word that we want than use manual technique.

1. The Formulation Of Problem

Based on condition above, the researcher will identify the problem and can make formulas, such as:

1. How to implement the manual text book into the mobile application.
2. How differences in the search for the meaning of English Language using Depth First Search Method than others.
3. How to build Oxford Dictionary Application use Eclipse's Editor on Android Open Source

2. Purpose And Benefit Of Research

The benefits from making the application are:

1. The application that can be used by anyone and anywhere especially Android mobile's user
2. Provide an alternative way of translating a language
3. It can be as solution to search mean of English words especially to students
4. As a mobile application that is able to solve the problems of finding the meaning of English Words

3. Research Methodology

The method use by the researcher in the research data collection is as follows:

1. Library Research
   The research is done by reading literature books, magazines, lecture materials, computers books and other sources to obtain data in accordance with the object of research in writing this essay
2. Observation
   With direct observation of an object under study, it can be more clearly know the constraints of an existing problem
3. Interview
   I do this method by interviewing several people who are expert in the field of English Grammar in particular home
4. Analysis and design application for needs
   At this step, I performed an analysis and design of the needs that you want to research into the application to be made

A. ANALYSIS

Eclipse is a multi-language software development environment, comprising an integrated development environment (IDE) and an extensible plug-in system. It is written mostly

in Java and can be used to develop application in Java and by means of various plug-ins., other programming languages including C, C++, COBOL, Perl, Python, Ruby, and Scheme. Since 2006, Eclipse Foundation has coordinated an annual simultaneous release. Each release includes the Eclipse Platform as well as a number of other eclipse projects. Until the Galileo release, releases were name after the moons of the solar system.

Table 1: Eclipse Editor Series

Release	Date	Series
Indigo	June 2011	3.7
Helios	24 June 2010	3.6
Galileo	24 June 2009	3.5
Ganymede	25 June 2008	3.4
Europa	29 June 2007	3.3
Calisto	30 June 2006	3.2
Eclipse 3.1	28 June 2005	3.1
Eclipse 3.0	28 June 2004	3.0

Oxford dictionary design using the Android platform Android 2.2 Frozen Yoghurt type which is a second generation of Android Operating Systems .One of the hallmarks of Android Frozen Yoghurt 2.2 quick between their switching multiple keyboard languages and dictionaries. Some Gadgets that have the facilities that support Android features like mobile PDA, Tablet PC.

Oxford dictionary which will be designed using Depth First Search as a solution in search problem solving word, as in the use of the dictionary form of book users take advantage of how the presentation of words that correspond to the order alphabetic, so users are very helpful in finding words and meaning of the word you want translated. In a depth first search method is done by searching the meaning of the words to bring meaning each word is typed. The meanings were selected and remember the spelling or composition of the words in a word the English

language will be very helpful to seek meaning.Search performed on all nodes in each level sequentially. One level have not found a solution's nodes, the search will proceed to the node below the level one and so on.

If no solution is found it will return to the main modes .This should do a search back if a solution is found. The implementation of the above diagram with the problems that exists .The researcher will elaborate .At the Depth First Search method using the sequence alphabet in the word search process, to facilitate in determining the sequence alphabet can be seen in Table 2.

Table 2: Point of Key Alphabetic

Alphabetic	Level
A	1
B	2
C	3
D	4
E	5
F	6
G	7
H	8
I	9
J	10
K	11
L	12
M	13
N	14
O	15
P	16
Q	17
R	18
S	19
T	20
U	21
V	22

W	23
X	24
Y	25
Z	26

The important thing of implementation it or keyword is "Depth First Search" can be found of mean's word when we search the same string from leftmost to found it.

The oxford dictionary which will be designed only words that could be translated while the numbers do not. And do not know uppercase and lowercase words in search of meaning. Example: we want to search the meaning of English word "DRIVE" it is the following troubleshooting flow to break the problem.

1. **Input**
   It is a word we want to find the meaning

2. **Process**
   Word processing stage where the input for further processing, which in the processing using existing algorithms or methods to produce better output

3. **Output**
   Is the result of the above processing stage .Case: find the meaning of "DRIVE".

The following step by step to finish of task are:
1. Input : the word meaning to search is "DRIVE"
2. Process : If you want to search for the word "DRIVE" the number of characters from "DRIVE" is a 5(five) characters. In the Depth First Search Algorithm , to search for the meaning of the final depth is: F = n
   Information: F= First Character, n= Level
   Completion:
   D = n , so D=4

The final depth of word is "Level 4"
Because the level 0(root) for "word"

There are 3(three) technical to implement of Depth First Search Method. The first we give a different between input search and output search.

1. Implementation of Depth First Search in input process. This is the description it. Here. Is a picture of a word search using Depth First Search Method into tree diagram.
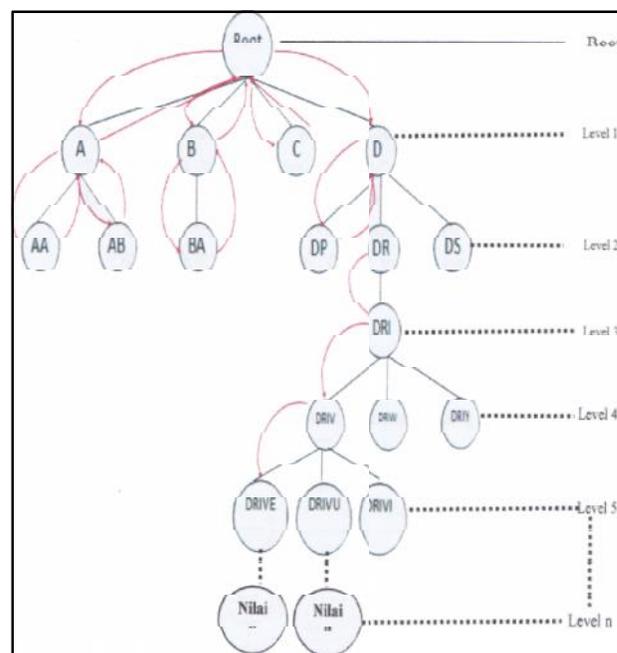
Picture 1: Graph of Case Study

In analysis this section we know to searching performed on all nodes in each level sequentially. If at first level have not found a solution's nodes, the search will proceed to the node below the level one and so on. If no solution too, it will return to the main node this should do a search back if a solution is found. So, based on the Depth First Search Method
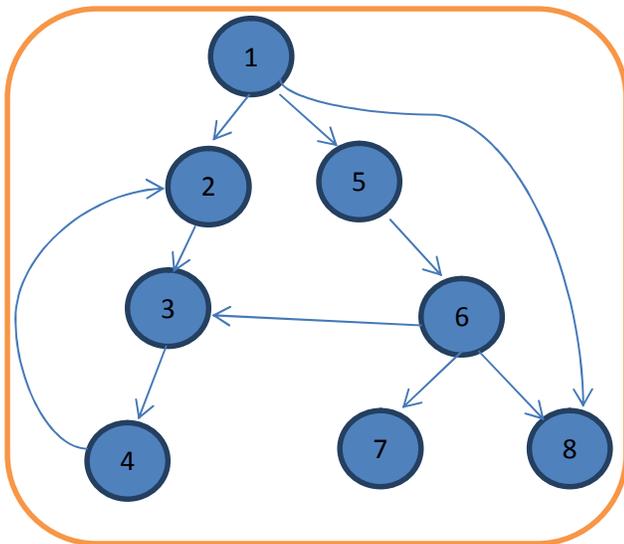
Picture 2: Graph of Depth First Search Method

It is also possible to use the depth first search to linearly order the vertices of the original graph (or tree). There are three common ways of doing this.

a. A preordering is a list of the vertices in the order that they were first visited by the depth first search algorithm
b. A post ordering is a list of the vertices in the order that they were last visited by the algorithm. A post ordering of an expression tree is the expression in reverse polish notation
c. A reverse post ordering is the reverse of a post ordering. When searching a tree, reverse post ordering is the same as preordering, but in general they are different when searching a graph. For example, when searching the directed graph.

Example we try searching mean of "DRIVE" word. Based on step by steps:

a. We start from 1st leftmost string. The description of tree diagram is
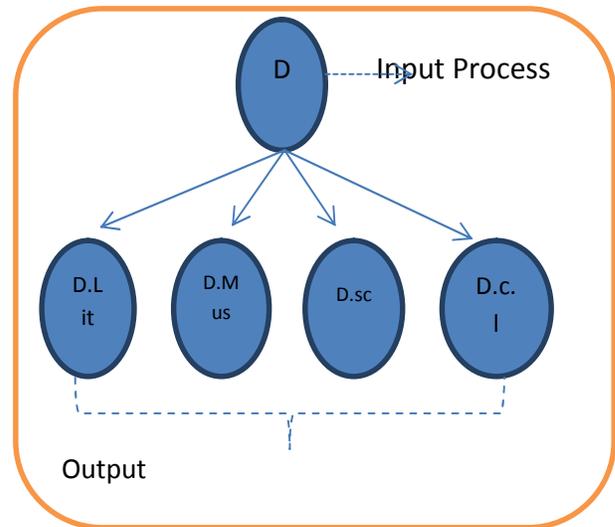
Picture 3: Start Process DFS

b. If we typing 2nd Leftmost String. The description of tree diagram is:
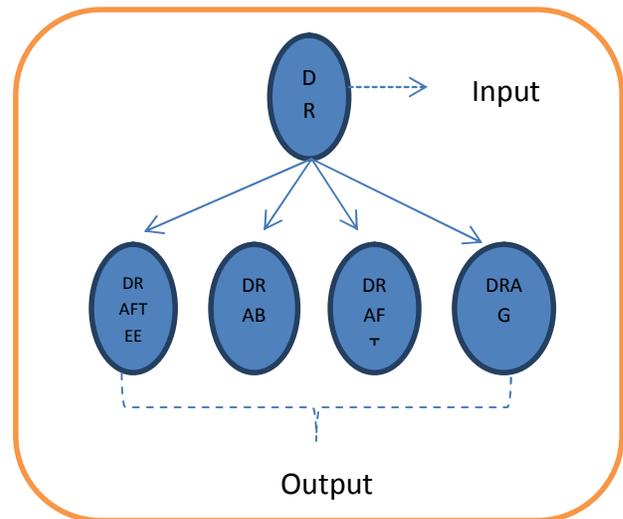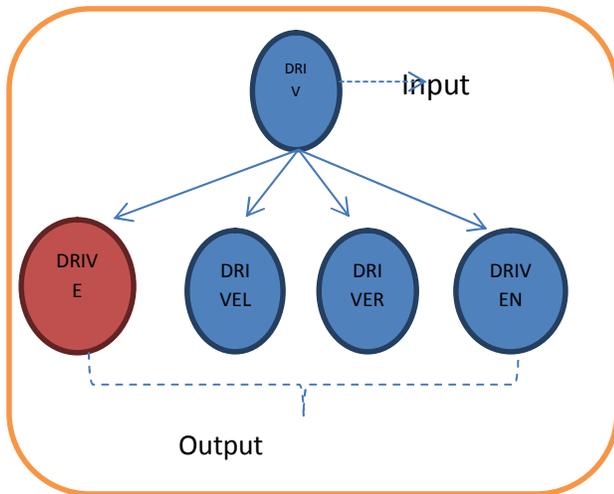

Picture 4: Output of 2nd Leftmost String

c. If we typing 3rd leftmost string. The description of tree diagram is
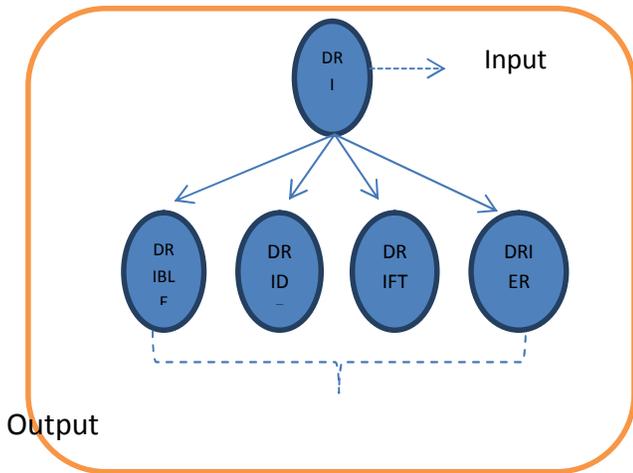
Picture 5: Output of 3rd Leftmost String

d. If we typing 4th leftmost string. The description of tree diagram is:

*Picture 6: Output of 4th Leftmost String*

We found the node "DRIVE" in 4th level. So, the result can use to description in our application.

On designing model, the researcher using Use Case Diagram and Activity diagram.

**B. Design Model Visualization**

1. Use Case Diagram

Use case is the functionality of the system, so that customers or users understand the system and understand the usefulness of the system to be built. Use Case Search process letters and verses in Oxford Dictionary can be seen in figure:
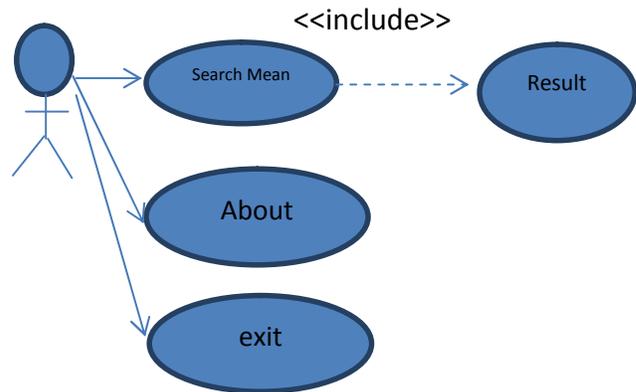
Picture 7: Use Case Diagram
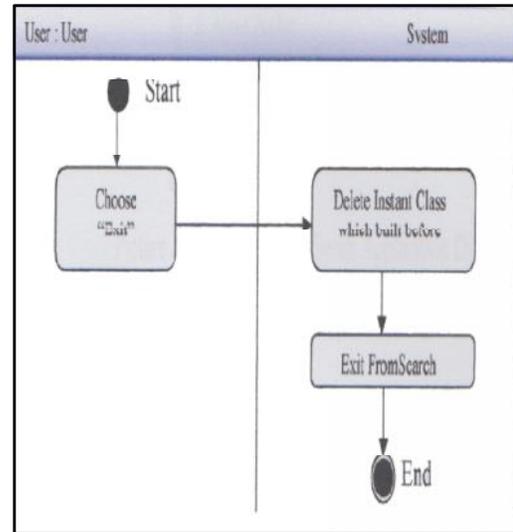
2. Activity Diagram

Activity Diagram is one way of modeling events that occur in the use case. In this important diagram similar to the flow diagram shows the control flow from one activity to another activity. Activity diagram serves to visualize, specify, construct and document the nature of the set of objects, but it also can be used to model the flow of control of an operation. In the diagram below, show the flow of a global system which can be seen streams or processes within the system, as shown in the picture below
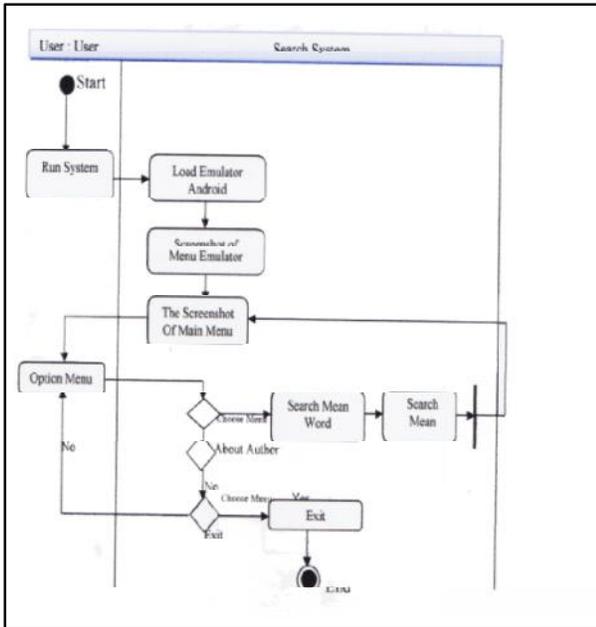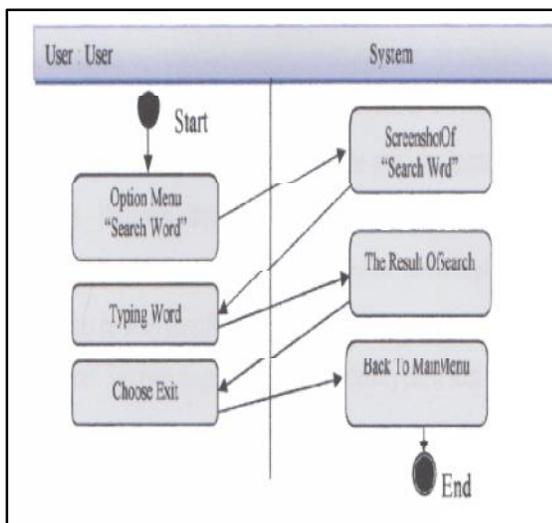
Picture8: Activity Diagram

In figure 6 can be seen that the diagram describes the objects in the classroom a more detailed and linkages between objects that are in different classes. It shows a series of activities undertaken by the system in the process of finding the letter and verse.

Picture 9: Activity Diagram of Search Mean Form

The series of letters and verse search activitybegins when a user selects the menu find letters and verses and then show the form to search for letters and verse, the next user to enter the word you are looking for the letter and the verse then the system works to find and display search results that is in the form of letters and verse.


Picture10: Activity Diagram of Exit from Search

Activities for exit menu is shown through pictures in the process of a sequence of activities out process, the system performs the cleaning in the first memory and the objects of a class that has been created previously.

3. Sequence Diagram

Sequence diagram describe the interaction as a two dimension diagram (dimensions). Vertical dimension is the time axis, time increases from to bottom. Horizontal dimension shows the classifier role which presented independent objects involved in the collaboration. Arrows depicting the flow of messages between classifier roles portrayed in a time sequence of events from top
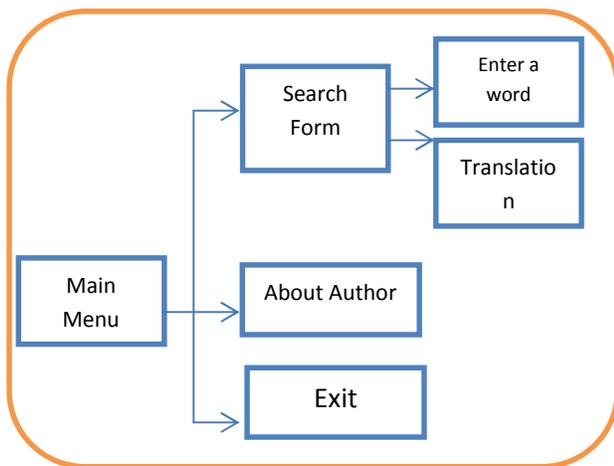
to bottom. Sequence diagram of a mobile dictionary can be seen in figure below.

2. About

3. Exit
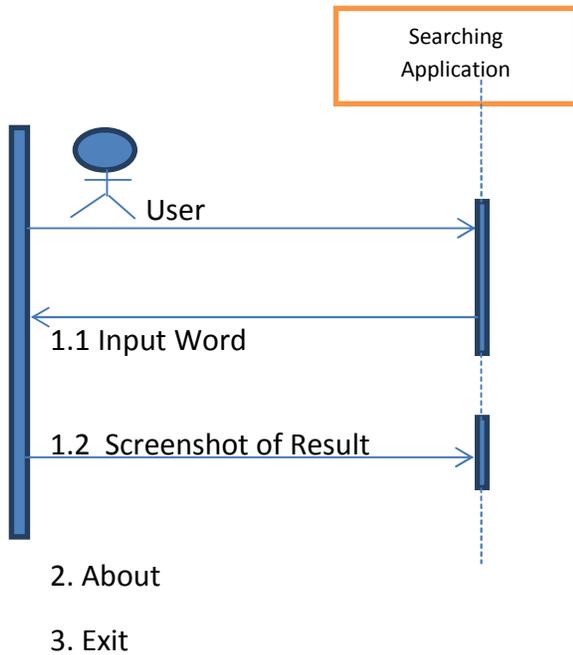
Picture11: Sequence of Search Application Diagram

4. Block Diagram
   Form of menu design of oxford dictionary to be created can be seen in the picture block diagram below

Picture 12: Block Diagram

C. Algorithm

In mathematics and computing, the algorithm is a collection of command to solve a problem. The flow logic of human thinking as outlined in the scheme next, so can use to implement like commands in a programming language to produce a piece of software. The algorithm can also be defined as a sequence of logical steps in solving problems systematically. Such steps should be logically, it means that the value of truth must be determined right or wrong. Each of steps is not really going to produce incorrect results. The following of case to reason of Depth First Search Algorithm is:

Example:

We have output is the mean of "**DRIVE**". We must do input process. The input process to found it from leftmost string like below:

a. Typing "D". it is 1st of leftmost string
b. Typing "R". it is 2nd of leftmost string
c. Typing "I". it is 3rd of leftmost string
d. Typing "V". it is 4th of leftmost string
e. Typing "E". it is 5th of leftmost string

They are input process. So we look at the processing it.

a. If we typing "D", we do not found it, we must typing the next string
b. If we typing "R", we do not found it, we must typing the next string
c. If we typing "I", we do not found it, we must typing the next string
d. If we typing "V", we do not found it, we must typing the next string

e. And the last "E", we found it, we must stop processing it.

The description of Algorithm into Pseudocode is:

If 1st String = Found then

    We stop
    Else
        We typing next string
    End if
    Else if 1st AND 2nd String= Found then
        We stop
        Else
        We typing next string
        End if

    Else if 1st,2nd AND 3rd String= Found then

        We stop
        Else
        We typing next string
        End if

    Else if 1st,2nd,3rd AND 4th String= Found then

        We stop
        Else
        We typing next string
        End if
    Else
   *"Message" Entry is not Found"*
    End if
End.

D. Implementation

Oxford Dictionary which has designed a mobile dictionary, which the dictionary can be run on mobile phones that have mobile operating system Android Frozen Yoghurt particular. The dictionary is creating with Android Programming Language. The oxford dictionary using Depth First Search Method to solve the problem of word searches, where the method have beneficial for the users to know some vocabulary words each letter is typed so that the user to easily search for the words be wanted. Following the outcome of the implementation of the overall program has been design:

1. Main Menu

The main menu can be said as a user interface between users with applications designed. The main menu displays the menu options available on the program. On the main menu is available 3(three) choices of menu and menu search words plus the word, where the menu look for the word is a link to form for words. The views from the main menu on the simulator are:
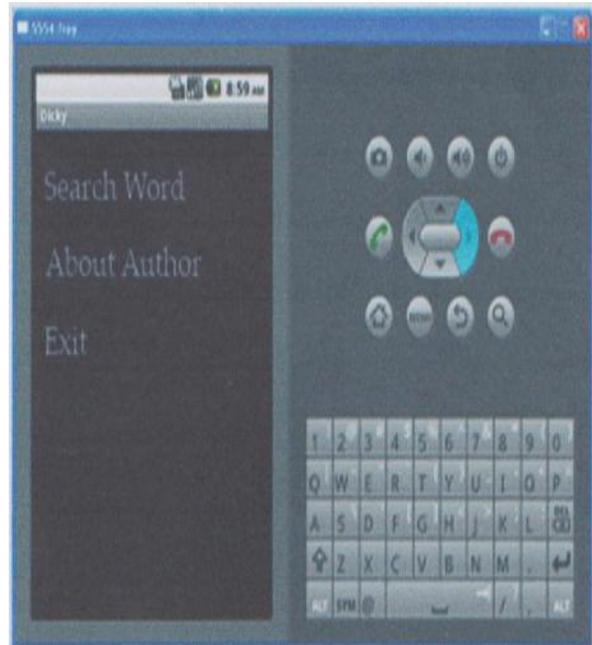
Picture 13: Main Menu

2. Picture Search Word Form

On the Form Finding Words is the core of the researcher in applying the methods used to solve existing problems. Here is the application of Depth Firs Search Method of solving the problems are:

Picture 14: Search Mean Form

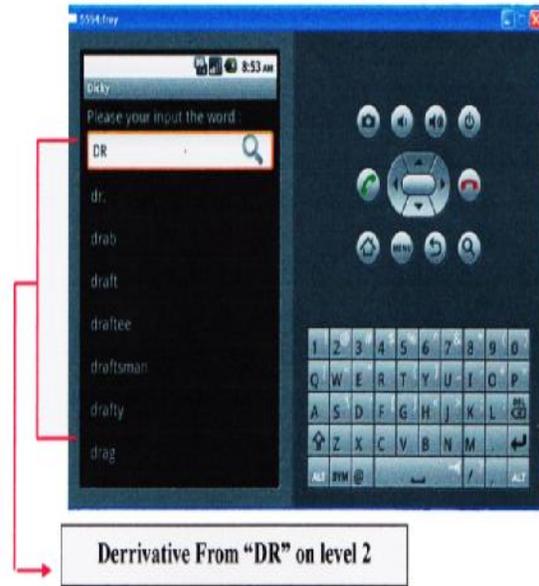Based on Implementation of Depth First Search Method in application:

a. Enter Key "**D**", automatically we are level 1

Picture 15: Entering Key "D"

b. Enter key "**DR**", it shows Derivative From Node "**DR**"

Picture 16: Entering Key "DR"

c. Enter key "I", it shows the derivative from "DRI"

f. We found the "DRIVE" word after Enter Keys "DRIVE" , we double click "DRIVE" and finally it shows means of "DRIVE" like the screenshot:
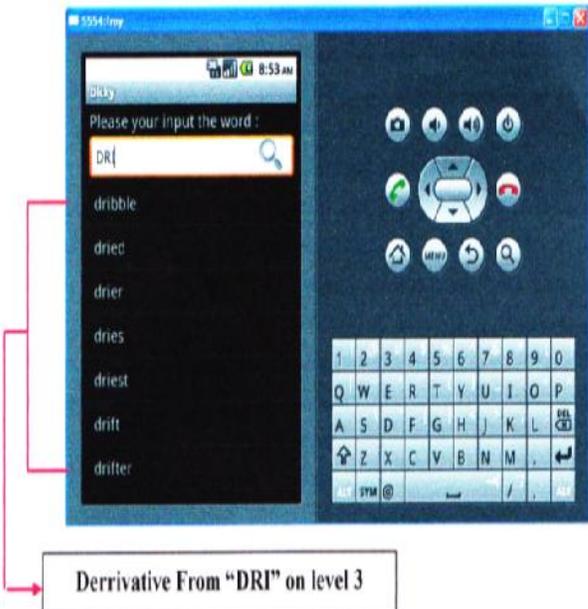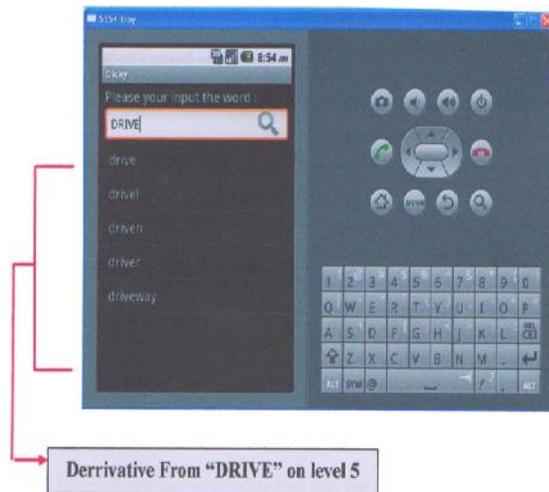
Picture 17: Entering Keys "DRI"

d. Entering key "V", it shows the derivative from "DRIV
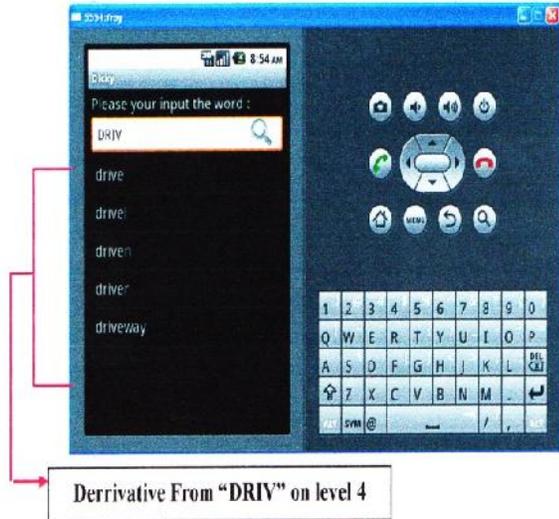
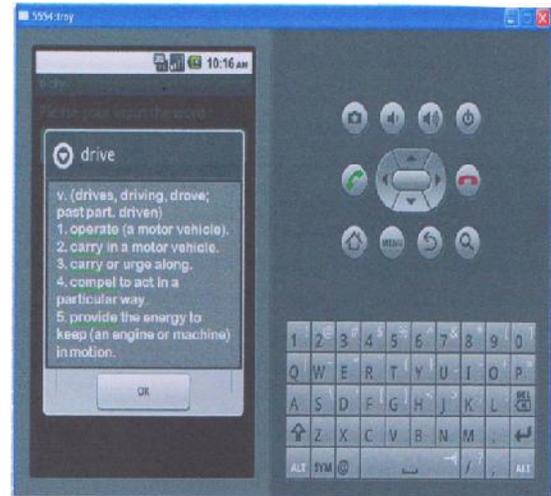*Picture 18: Entering Keys "DRIV"*

e. Entering key "E", it shows the derivative from "DRIVE"

Picture 19: Entering Key "DRIVE"

Picture 20: The Result

E. Conclusion

The following of conclusions are:

1. Have finished a dictionary application use Android Open Source. It called Oxford Dictionary. It has function for student into complete their problem. In develop this application, researcher use Eclipse's Editor and additional tools like ADT Plugin, Android SDK, AVD Manager, and Navicat Premium Profesional 9.0
2. The researcher use Depth Firs Search Method to solving problem. It is accurate to search means of English Words, because it shows the structure from leftmost string

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