INTRODUCTION TO RICCS

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INTRODUCTION TO PROJECT

Overview

As we know the manual processing is quite tedious, time consuming, less accurate in comparison to computerised processing, so the main objective of my project is to computerise the tough task of finding the words in a standard English dictionary. I have tried to create a friendly user-interface which is time-saving as well as lot of paper work is reduced.

I have used the Eclipse Helios platform for coding at the front end. All the queries used for extracting the data from the database are MySQL queries. All the various frames and applets have been created using core java language. I have used MySQL 5.0 for creating the database.

All the words of the dictionary are stored in a table called “stock”. Also there are enhanced options which store your favourite words and recently viewed words as well. The user can also access the pronunciation of different words by clicking on the sound button. The several vocabulary games have also been included by me so that the user can learn while having fu at the same time. User guide is also a part of my project so that the user can easily access all the features of the dictionary and to help the user at each step with the various features available.

Existing System and Proposed System

System Analysis is a detailed study of various operations performed by a system and their relationships within an outside of system. Here the key question is- what all problems exist in the present system what must be done to solve the problems Analysis begins when a user or manager begins a study of program using existing system. In our existing system all the words of dictionary are searched manually which is a cumbersome tedious process. Another major disadvantage of a manual dictionary is that it doesn't provide a audio pronunciation facility. So after conducting the feasibility study we decided to make the manual dictionary system to be computerized.

In the proposed system, I have computerized the process of finding the words in the dictionary and also improving the pronunciation of the user by including sounds. So lot of time and paper work is saved.

User Requirement Analysis

- The main requirement of the user is the further description of words for which the database dictionary stores the words with their description (noun/adjective, meaning, and example). This information can be accessed by the user using the graphical user interface (designed in eclipse)
- User can get the pronunciation of various words with the help of an audio clip. User can play the audio clip in the project using the graphical user interface.
- User can retrieve the favourite words from the database using the interface.
- User can get the recently opened words in the history using the interface.
- User can also take a help from user guide section.
- User can also improve vocabulary skills and grammar skills via games.

Feasibility Study

In feasibility study phase we had undergone through various steps which are described as under:

1. Analyze the origin of the information at different level.
2. Analyze the expectation of user from computerized system.
3. Analyze the drawback of existing system (manually).

Objectives of Project

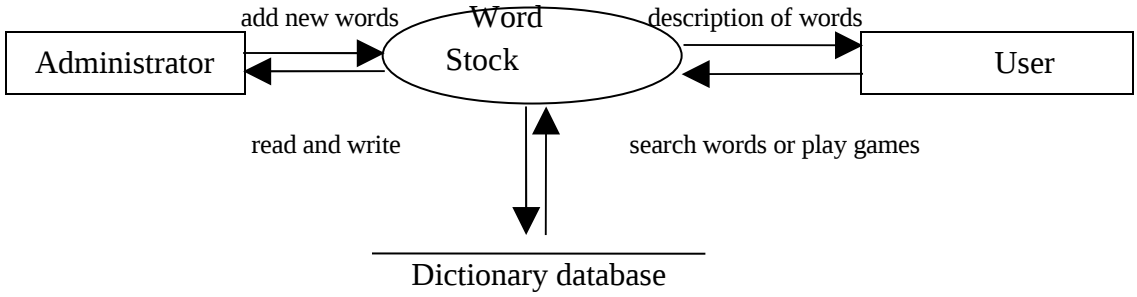
- A system that receives word as an input and output the description of that particular word which includes meaning ,noun/adjectives, phonetics, synonyms, example of sentence which uses that word.
- A system which make the user to learn the pronunciation of the words via sounds.
- A system provides learning via games like crossword, sentence game ,smily man, words with words.
- A system which maintain the records for favorite words and a system which maintain the records for recently view words.

PRODUCT DESIGN

User requirements

- Words, their meanings, phonetics, synonyms , noun/adjectives and examples.
- Pronunciation of words with the help of sound.
- Facility for marking the words as favorites.
- Facility to store recently opened words from history.
- Games for learning and entertainment.
- Guide for knowing how the project will work.
- Search the words so that it can be easily formed.

Data Flow Diagram



Figure(a).Data flow diagram

Database Design

A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and effectively. After designing input and output ,the analyst must concentrate on data base design or how data should be organised around user requirements. During database design the following objectives are concerned-

1. Control redundancy
2. Data independence
3. Accurate and integrating
4. Recovery from failure
5. Privacy and security
6. Ease of learning and use

Table Structure

Table(a) Stock

Column Name	Datatype
Word	Varchar(45)
Meaning	Varchar(45)
Phonetics	Varchar(45)
Noun/Adjective	Varchar(45)
Synonyms	Varchar(45)
Example	Varchar(45)
Audio	Varchar(45)

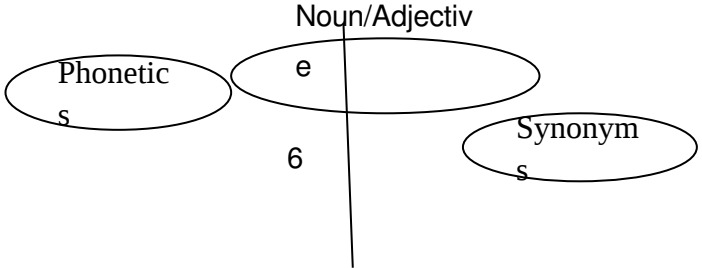
Table(b) Favourites

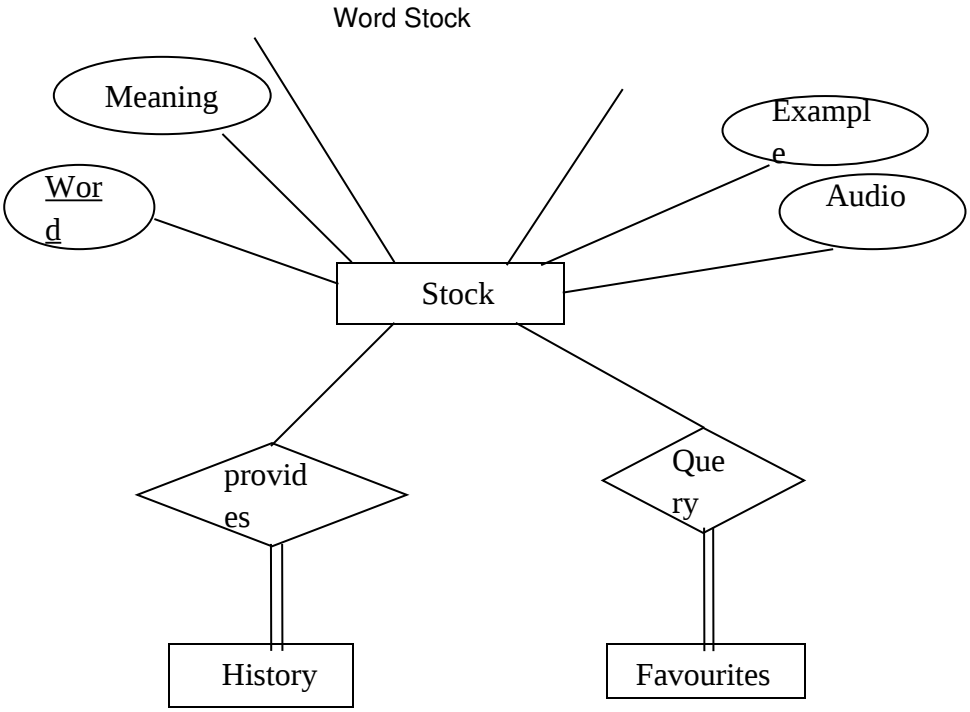
Column Name	Datatype
Word	Varchar(45)

Table(c) History

Column Name	Datatype
Word	Varchar(45)

ER Diagram





Figure(b). ER diagram

Assumptions

- User inputs alphabets only in text fields of Home ,History,Favorites' pages.
- In the brain teaser section in "Smilyman"game , user enter the alphabets in serial order of

textboxes.

Specific requirements

Software

- Eclipse Juno
- My SQL 1.2.17
- Photoshop 10.0
- Window Vista , XP and above.

Hardware

- Laptop/Desktop
- RAM-2GB
- Pentium IV and above

DEVELOPMENT AND IMPLEMENTATION

Introduction to languages:

Core Java has been used at the front end and MySQL has been used at the backend.

FRONT END: Core Java

Java is a general-purpose, object-oriented programming language developed by Sun Microsystems of USA in 1991.Originally called Oak by James Gosling (one of the inventor of the language). Java was invented for the development of software for consumer electronic devices like TVs, toasters, etc. The main aim had to make java simple, portable and reliable.

JAVA Features:

As we know that the Java is an object oriented programming language developed by Sun Microsystems of USA in 1991. Java is first programming language which is not attached with any particular hardware or operating system. Program developed in Java can be executed anywhere and on any system.

Features of Java are as follows:

1. Compiled and Interpreted

Basically a computer language is either compiled or interpreted. Java comes together both these approaches thus making Java a two-stage system.

Java compiler translates Java code to Byte code instructions and Java Interpreter generate machine code that can be directly executed by machine that is running the Java program.

2. Platform Independent and portable

Java supports the feature portability. Java programs can be easily moved from one computer system to another and anywhere. Changes and upgrades in operating systems, processors and system resources will not force any alteration in Java programs. This is reason why Java has become a trendy language for programming on Internet which interconnects different kind of systems worldwide. Java certifies portability in two ways. First way is, Java compiler generates the byte code and that can be executed on any machine. Second way is, size of primitive data types are machine independent.

3. Object-oriented

Java is truly object- oriented language. In Java, almost everything is an Object. All program code and data exist in objects and classes. Java comes with an extensive set of classes; organize in packages that can be used in program by Inheritance. The object model in Java is trouble-free and easy to enlarge.

4. Robust and secure

Java is a most strong language which provides many securities to make certain reliable code. It is design as garbage–collected language, which helps the programmers virtually from all memory management problems. Java also includes the concept of exception handling, which detain serious errors and reduces all kind of threat of crashing the system. Security is an important feature of Java and this is the strong reason that programmer use this language for programming on Internet. The absence of pointers in Java ensures that programs cannot get right of entry to memory location without proper approval.

5. Distributed

Java is called as Distributed language for construct applications on networks which can contribute both data and programs. Java applications can open and access remote objects on Internet easily. That means multiple programmers at multiple remote locations to work together on a single task.

6. Simple and small

Java is very small and simple language. Java does not use pointer and header files, goto statements, etc. It eliminates operator overloading and multiple inheritance.

7. Multithreaded and Interactive

Multithreaded means managing multiple tasks simultaneously. Java maintains multithreaded programs. That means we need not wait for the application to complete one task before starting next task. This feature is helpful for graphic applications.

8. High performance

Java performance is very extraordinary for an interpreted language, majorly due to the use of intermediate byte code. Java architecture is also designed to reduce overheads during runtime. The incorporation of multithreading improves the execution speed of program.

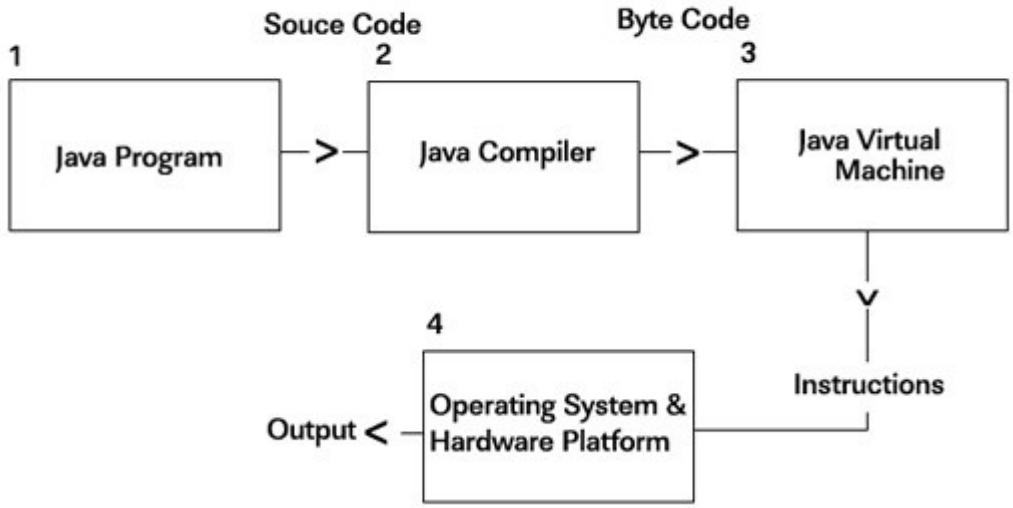
9. Dynamic and Extensible

Java is also dynamic language. Java is capable of dynamically linking in new class, libraries, methods and objects. Java can also establish the type of class through the query building it possible to either dynamically link or abort the program, depending on the reply. Java program is support functions written in other language such as C and C++, known as native methods.

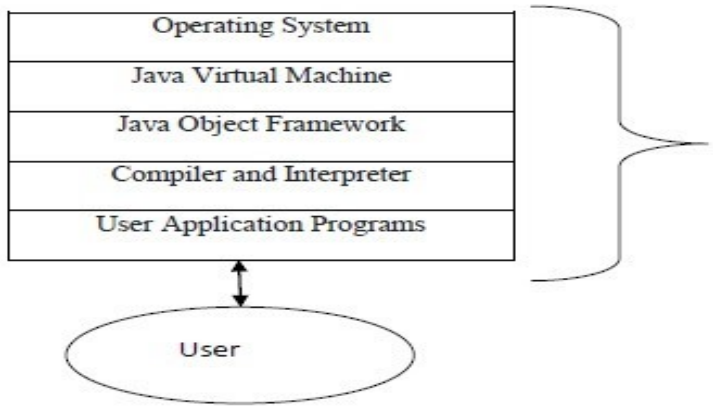
Java Virtual machine:

As we know that all programming language compilers convert the source code to machine code. Same job done by Java Compiler to run a Java program, but the difference is that Java compiler convert the source code into Intermediate code is called as bytecode. This machine is called the Java Virtual machine and it exists only inside the computer memory.

Java Program Execution



The Virtual machine code is not machine specific. The machine specific code is generated. By Java interpreter by acting as an intermediary between the virtual machine and real machines
Java Object Framework act as the intermediary between the user programs and the virtual machine which in turn act as the intermediary between the operating system and the Java Object Framework.



Java Environment:

Java environment includes a number of development tools, classes and methods. The development tools are part of the system known as Java Development Kit (JDK) and the classes and methods are part of the Java Standard Library (JSL), also known as the Application Programming Interface (API).

Java Development kit (JDK) – The JDK comes with a set of tools that are used for developing and running Java program. It includes:
1. Applet viewer (It is used for viewing the applet)
2. Javac (It is a Java Compiler)
3 .Java (It is a java interpreter)

4 .Javap (Java diassembler, which convert byte code into program description)
5.Javah(It is for java C header files)
6.Javadoc(It is for creating HTML document)
7.Jdb(It is Java debugger)
For compiling and running the program we have to use following commands:
a)javac (Java compiler)
In java, we can use any text editor for writing program and then save that program with —.java extension. Java compiler convert the source code or program in bytecode and interpreter convert —.java file in —.class file.
Syntax:
C:\javac filename.java
If my filename is —abc.java then the syntax will be
C:\javac abc.java
b) java(Java Interpreter)
As we learn that, we can use any text editor for writing program and then save that program with —.java extension. Java compiler convert the source code or program in bytecode and interpreter convert —.java file in —.class file.
Syntax:
C:\java filename
If my filename is abc.java then the syntax will be
C:\java abc

BACK END: MySQL

MySQL is an open source relational database management system which is quite popular for light-weight web applications. Over the last few years, the product has also added some features which allow it to be used for larger business tools. This paper will provide an overview of this software on Windows. MySQL does not have as many features as PostgreSQL, and while many of the more advanced features are not as mature. However one would expect it to perform substantially better than PostgreSQL on Windows because of its thread-based architecture (PostgreSQL uses a process-based architecture instead).

MySQL: Features
1. Speed
2. Multi-threaded architecture: Multiple clients have concurrent access.
3. Query Cache: Cache the results of common queries.
4. Reliability
5. Ease of use
6. Command line interface
7. Graphical tools- Desktop/ Web based
8. Multi-User support- Multiple clients have concurrent access to one (or more) databases simultaneously.
9. Powerful and flexible user privilege system
10. User and host-based authentication schemes
11. Scalability
12. Portability- Unix/ Non-Unix: Linux, Solaris, Windows..Intel x86, Alpha, SPARC, PowerPC
13. Standards Compliance- MySQL operates in different modes that comply to different SQL standards.

Screenshots:

1.

This is the main page of the application “word stock”. It shows 5 different buttons as:

(i) Home: It will take you to a new frame where you can enter the words to search their meanings, to listen to pronunciations or to get some examples of the word usage etc.

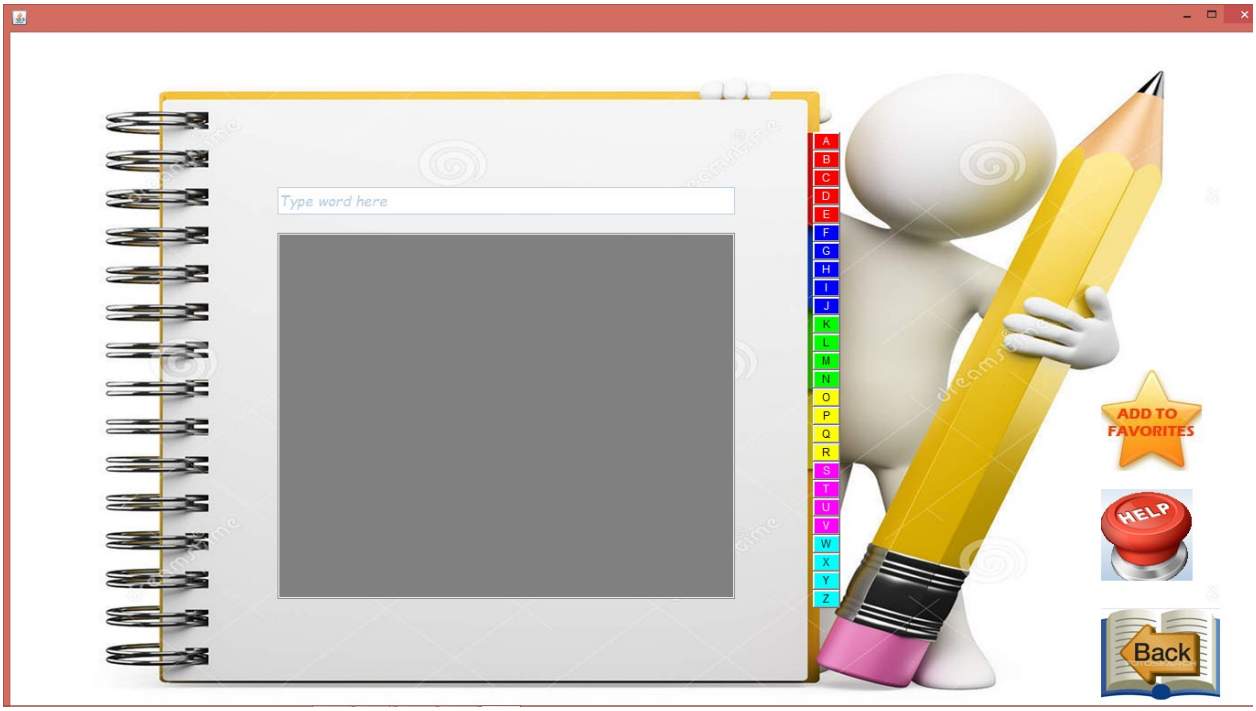
(ii) Brain teasers: It will take you to a new frame which consists of a number of vocabulary games from which you can choose any game to play.

(iii) History: It will take you to a new frame which will enable you to look up the recently viewed words.

(iv) Favourites: It will take you to another frame where you can access the words which you have saved or bookmarked.

(v) User guide: It will take you to a series of frames which will help you with the various functionalities of the application.

2.



This is the main page of the application where you can type the word whose meaning you wish to search in the text field at the top. The various alphabets which are provided on the frame will make you aware of all the words which are stored in the dictionary database. When you click on any one of the alphabets, all the words stored in the database starting with that particular alphabet will be displayed in the box below.

Also the 3 buttons are added in the frame as:

(i) Add to favourites: Clicking on this button adds the word which is currently in the text box to the favourites. You can then directly access your favourite words from the favourites menu.

(ii) Help: Clicking o this button will take you to the user guide which will give you the complete description of all the functionalities of the home page.

(iii) Back: Clicking on this button will take you to the preceding page.

3.

This frame allows you to select any one game from the 4 available games:

(i) Crossword

(ii) Sentence completion

(iii) Words within words

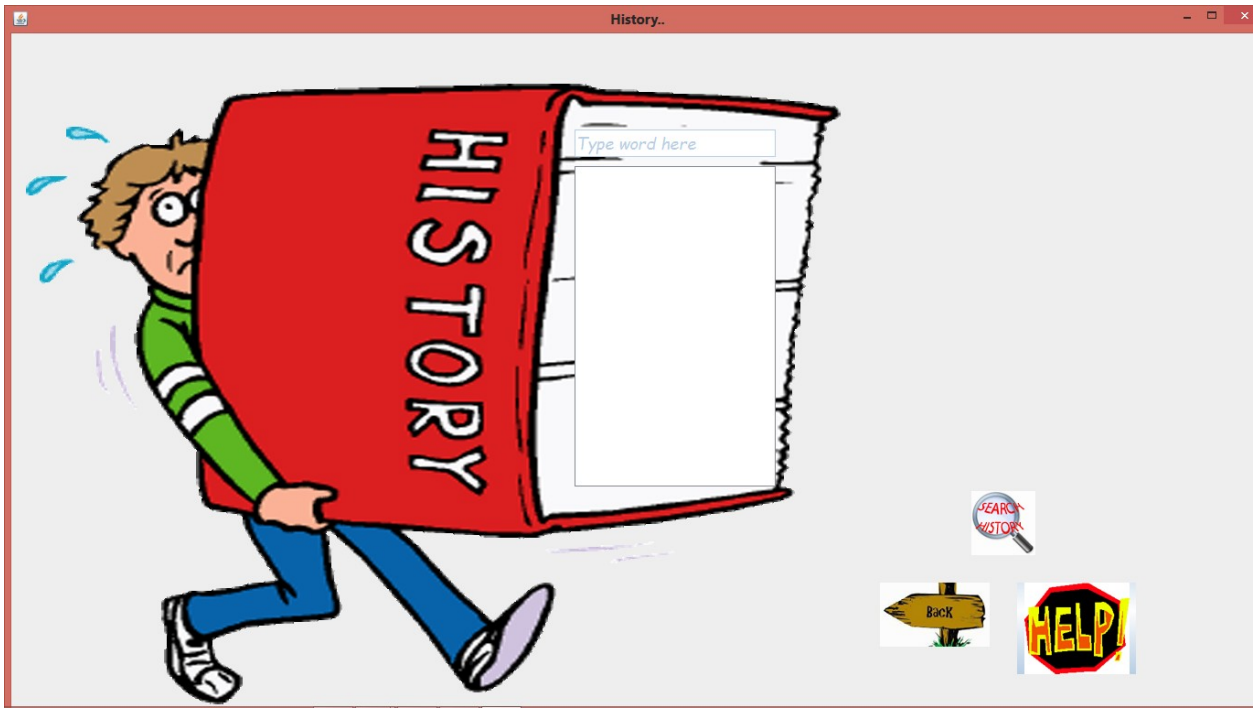
(iv) Smilyman

Two buttons are also included in the frame:

(i) Help: Clicking on this button will take you to the user guide which will give you the complete description of all the functionalities of this page.

(ii) Back: Clicking on this page will take you to the preceding page.

4.



This frame enables the user to access the words which have been recently viewed at the home page. There are 3 buttons on this page as:

(i) Search history: Clicking on this button will display all the recently viewed words in the list box.

(ii) Back: Clicking on this button will take you to the preceding page.

(iii) Help: Clicking on this button will take you to the user guide which will give you the complete description of all the functionalities of this page.

5.

This frame includes all the words which have been added to favourites by the user. This frame also includes 3 buttons as:

(i) Search favourites: Clicking on this button will display all the words which have been added to favourites by the user in the list box.

(ii) Delete favourite: Clicking on this button will delete the word which is currently present in the text box from the favourites.

(iii) Help: Clicking on this button will take you to the user guide which will give you the complete description of all the functionalities of this page.

(iv) Back: Clicking on this button will take you to the preceding page.

6.

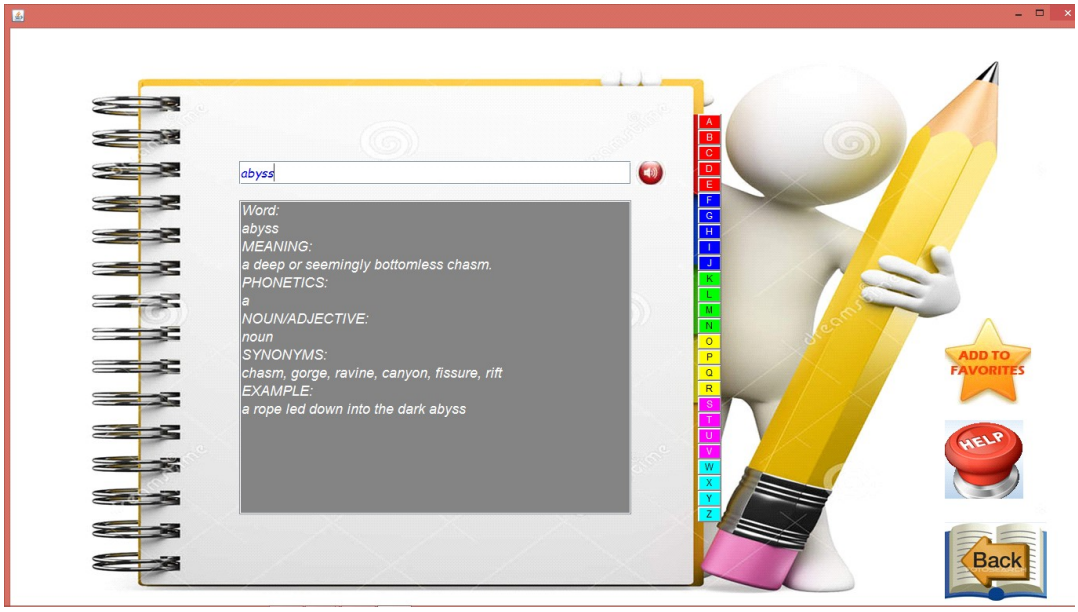
This frame enables the user to understand the various functionalities of the application more thoroughly. This frame consists of the following 2 buttons:

(i) Next: Clicking on this button will take you to the user guide of the next frame.

(ii) Back: Clicking on this button will take you to the preceding page.

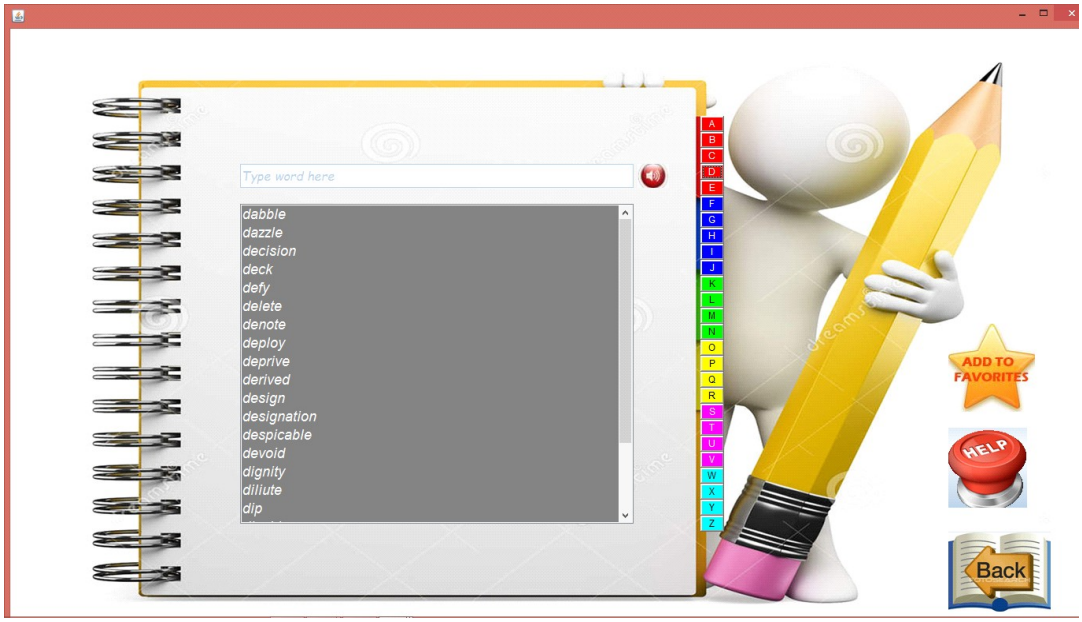
TESTING:

1.



In this frame, when the user typed a word in the text field, the meaning of the typed word, its phonetics, noun/adjective, synonyms and examples in sentences are displayed in the list box.

2.



In this frame, when any of the alphabet is clicked by the user, all the words starting with that alphabet are listed in the list box.

3.

When the user clicks on the "search history" button, then all the words which have been recently viewed by the user are displayed in the list below. Then the user can click on any word to read its meaning.

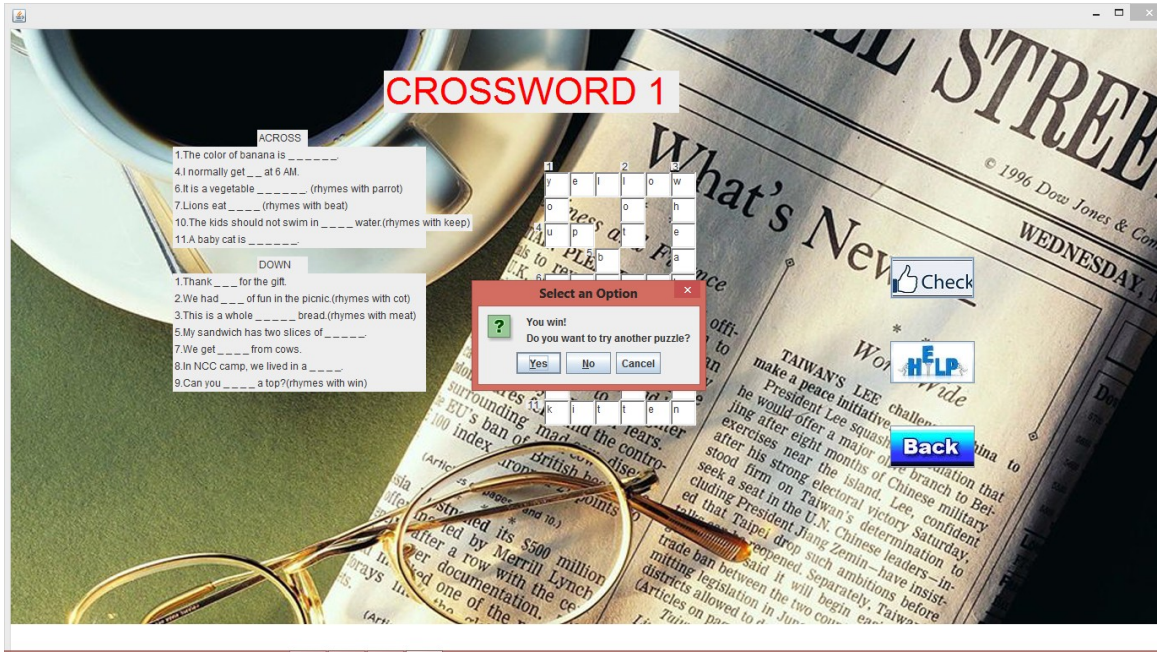
4.

When the user clicks on the "search favorites" button, all the words which have been added to favorites by the user are displayed in the list box.

5.

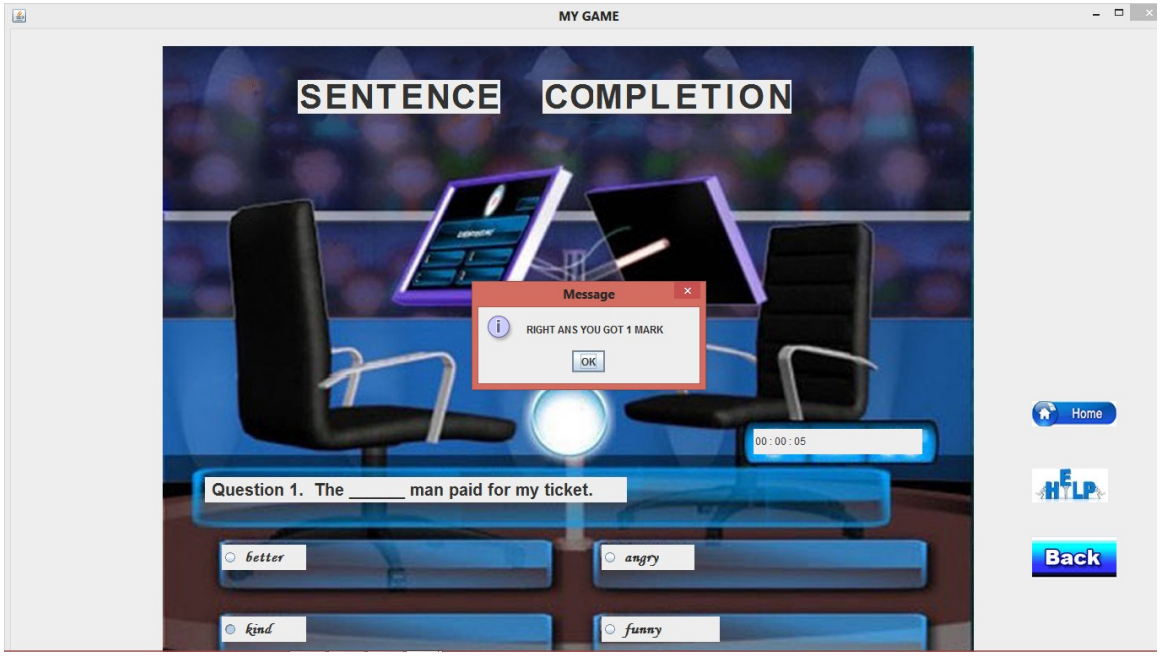
When the user selects the crossword game, there is a pomt to select the level: easy, medium or hard.

6.



This is the crossword game. When the user enters all the words correctly, a dialog boxis displayed which asks if you want to try another puzzle or not.

7.

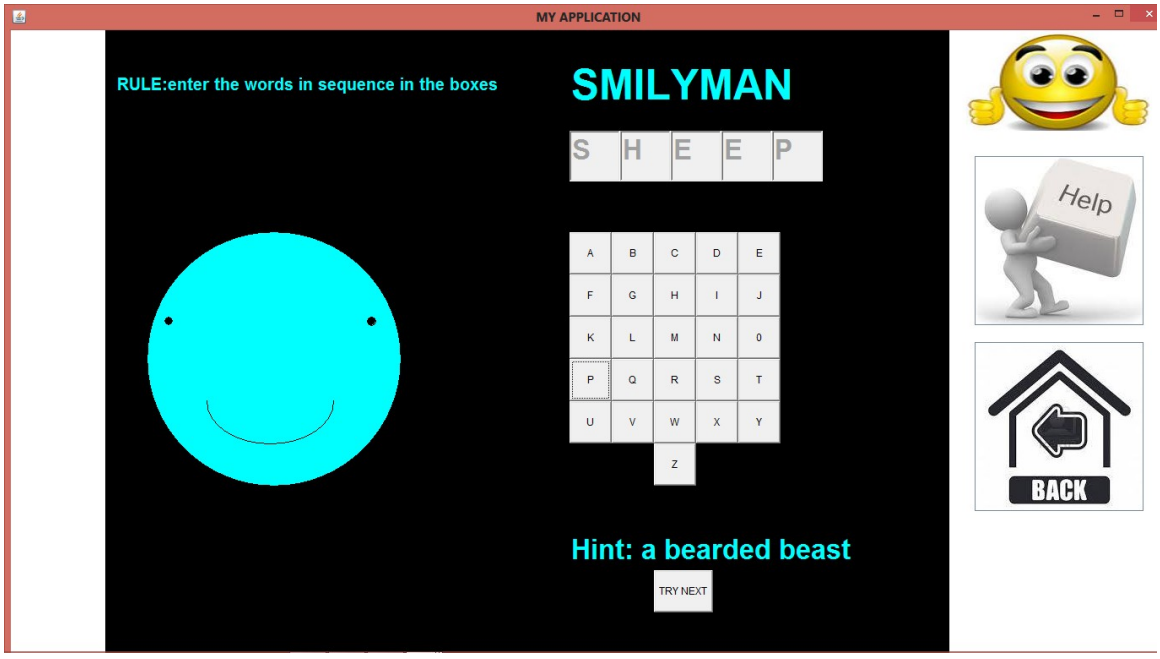


This is the sentence completion game. When the user clicks on the right answer, a dialog box is displayed which shows if your answer is right and how much amount have you displayed.

8.

This is the words within words game. When the user clicks on "start" , a word is displayed in one of the text fields and the user has to enter the words within the displayed word and if that word is a valid word, then the word is added in the list below.

9.



This is the smilyman game. When the user enters the word and if the word is correct, then a smilyman is formed.

CONCLUSION AND FUTURE SCOPE

From a proper analysis of positive points and constraints on the component, it can be safely concluded that the product is a highly efficient GUI based component .This application is working properly and meeting to all user requirements .This component can be easily plugged in many other systems.

Future Scope:

This application can be easily implemented under various situations. We can add new features as and when we require. Reusability is possible as and when require in this application .This is flexibility in all the modules.

Software Scope:

Extensibility: This software is extendable in ways that its original developers may not

Expect: The following principles enhances extensibility like hide data structure, avoid traversing multiple links or methods, avoids case statements on object type and distinguish public and private operations.

Reusability: Reusability is possible as and when require in this application. We can update it next version .Reusable software reduces design ,coding and testing cost by amortizing effort over several

designs. Reducing the amount of code also simplifies understanding, which increases the likelihood that the code is correct. We follow up both types of reusability: Sharing of newly written code within a project and reuse of previously written code on new projects.

Understanding: A method is understandable if someone other than the creator of the method can understand the code (as well as the creator after a time lapse).We use the method ,which small and coherent helps to accomplish this.

Cost-effectiveness: Its cost is under the budget and make within given time period. It is desirable to aim for a system with a minimum cost subject to the condition that it must satisfy the entire requirement. Scope of this document is to put down the requirements, clearly identifying the information needed by the user, the source of the information and outputs expected from the system.