<u>ORATEUR-ONLINE NEWS READER</u>

MAIN PROJECT REPORT

Submitted in partial fulfillment of requirement for the award of the degree of Master of Computer Applications of Cochin University of Science and Technology

By

JAIMOL JOSE
Reg.No: 95580017

**COCHIN UNIVERSITY OF
SCIENCE AND TECHNOLOGY**

**DEPARTMENT OF COMPUTER APPLICATIONS
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
COCHIN-22
KERALA**

Project Work

(Sixth Semester)

<u>ORATEUR-ONLINE NEWS READER</u>

Bonafide record of work done by

JAIMOL JOSE

Reg.No : 95580017

Submitted in the partial fulfillment of the

Requirements for the award of the degree of

Master of Computer Application

of Cochin University of Science and Technology

April 2011

Project guide   Head of the Department

Internal Examiner   External Examiner

Submitted on:

DECLARATION

I hereby declare that this project work and the report submitted to the Department of Computer Applications, Cochin University of Science and Technology ,Cochin-22 in the partial fulfillment of the award of degree of master of Computer Applications is an outcome of my own work.

A copy of the project has been submitted to the Department of Computer Application ,CUSAT, for which this project was developed.

To the best of my knowledge this project work or parts there ,does not form a part of any other project work or thesis on the basis of which a degree or award was conferred on an earlier occasion.

Place : Cochin   JAIMOL JOSE

Date : 27 – April – 2011   Reg.No : 95580017

ACKNOLEDGEMENT

I am thankful to god almighty for the blessings in the successful completion of my project "Orateur-Online News Reader".

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JAIMOL JOSE

Reg. No:95580017

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Orateur(software for reading online news) software is a new software ,which read the news from news websites for the users. This software uses festival text to speech engine which is to read the extracted newsfrom webpage. The project has been divided into modules namely,

Module1

- Connecting to the website selected
- Parsing the webpage for headlines
- Saving the headlines
- Reading the text contents in the language selected

Module2

- Getting the address of the news selected by the user
- Connecting to the webpage containing details
- Parsing and reading the content
- Returning back to homepage

PREFACE

2.PREFACE

2.1 Analysis Phase

Analysis can be defined as "breaking up of any whole so as to find out their nature, function etc. a statement of these findings". It defines design as "to make preliminary sketches of; to sketch a pattern or outline for plan. To plan and carry out especially by artistic arrangement or in a skillful way". System analysis and design can be characterized as a set of techniques and processes, a community of interests, a culture and an intellectual orientation.

The various tasks in the system analysis include the following:

- Understanding application.
- Planning.
- Scheduling.
- Developing candidate solution.
- Performing trade studies.
- Performing cost benefit analysis.
- Recommending alternative solutions.
- Selling of the system.
- Supervising, installing and maintaining the system.

System analysis involves the study of an application area to fully understand the problem being posed. Activities are focused on developing a comprehensive knowledge of the existing system, its strengths and weaknesses and the reasons for the need to restructure, replace, or automate the existing system. Risk assessments and risk containment plan, cost estimation and plans for the remainder of the development are results usually prepared by the system analyst as

a by-product of system analysis.

2.2 Design Phase

The primary objective of the design phase is to create a design that satisfies the agreed application requirements. In the design phase the SDLC process continues to move from the "what" questions of the analysis phase to the "how" questions.The requirements prototype that was developed earlier during the analysis phase is gradually improved and extend to include all the specified functions of the application. The system documentation process also starts in this phase.

2.3 Development phase

The development phase is the most exciting phase of the SDLC. During this phase, computer hardware is purchased and the software is developed.Coding starts in this phase.In this phase , examination and re-examination of the requirements statement is needed to ensure that is being followed as per customer needs . Any deviations would usually have to be approved either by the project leader or by the customer.

The development phase can be split into two sections, that of Prototyping and Production Ready Application Creation. Prototyping is the stage of the Development phase that produces a pseudo-complete application, which for all intents and purpose appears to be fully functional.

Developers use this stage to demo the application to the customer as another check that the final software solution answers the problem posed. When they are given the OK from the customer, the final version code is written into this shell to complete the phase.

We have used the prototype design which we had developed in the analysis and design phase in this phase. The coding of Presentation layer and Data layer is done here. We have created Stored procedures, Functions, Triggers ,and Constraints as a part of this phase. In this development phase the review of presentation layer and data layer has been done.

2.4 Testing Phase

The testing phase requires organizations to complete various tests to ensure the accuracy of programmed code and the inclusion of expected functionality. Thorough testing is critical to ensure system meet organizational and end-user requirements.

If organizations use effective project management techniques, they will complete test plans while developing applications, prior to entering the testing phase. Test plans created during initial project phases enhance an organization's ability to create detailed tests. The use of detailed test plans significantly increase the likelihood that testers will identify weaknesses before products are implemented.

Testing groups are comprised of technicians and end users who are responsible for assembling and loading representative test data into a testing environment . Functional tests should ensure that expected functional, security and internal features are present and operating properly. Testers then complete integration and end-to-end testing to ensure application and system components interact properly. Users then conduct acceptance tests to ensure systems meet defined acceptance criteria .

Documenting corrections and modifications is necessary to maintain

the integrity of the overall program documentation. Organizations should review and complete user, operator, and maintenance manuals during the testing phase. Additionally, they should finalize conversion, implementation, and training plans.

We have done unit testing, functionsl testing, integration testing end to end testing and user acceptance testing

2.5 Implementation Phase

The implementation phase involves installing approved applications into production environments. Primary tasks include announcing the implementation schedule, training end users, and installing the product. Additionally, organizations should input and verify data , configure and test system and security parameters, and conduct post-implementation reviews. Management should circulate implementation schedules to all affected parties and should notify users of any implementation responsibilities.

SYSTEM ANALYSIS

3.SYSTEM ANALYSIS

3.1 INTRODUCTION

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remainder of the development are results usually prepared by the system analyst as a by-product of system analysis.

System Planning and Initial Investigation

The most critical phase during system analysis is planning. To launch a system investigation, we need a clear cut plan detailing the steps to be taken. Initial investigation has the objective of whether the user's request has potential merit.

Information Gathering

A key part of system analysis is gathering information of the present system about the factors affecting the system, the drawbacks and merits of the system, present activities and the process of the system etc. The traditional tools used for information gathering are interview, questionnaire and on-site observation. They help in evaluating the existing system.

Applying analysis tools for structured analysis:

The traditional tools for information gathering have many drawbacks. Because of these drawbacks, the analyst needs to focus on functions rather than physical implementation. Therefore, structured tools, such as Dataflow Diagrams, Data Dictionary and Structured English are used along with the traditional tools. The main objectives of structured tools are to study user affected areas, model new logic systems, select hardware and software etc.

Feasibility Study

It describes and evaluates the proposed system. Cost estimate also taken in to consideration hardware, personal facility and supply costs for final evaluation.

3.2 PROPOSED SYSTEM

The aim of proposed system is to develop a system of improved facilities. The system provides proper security and reduces the manual work.

The aim of proposed system is to develop a system of improved facilities. The system provides The existing system ha s several disadvantages and many more difficulties to work well. The proposed system tries to eliminate or reduce these difficulties up to some extent. The proposed system will help the user to reduce the workload and mental conflict. The proposed system helps the user to work user friendly and he can easily do his jobs without time lagging.

Advantages

The system is very simple in design and to implement. The system requires very low system resources and the system will work in almost all configurations. It has got following features

        -Can be easily implemented
        -user doesn't need any soft skill to use the system
        -user can utilize time by doing another work while hearing news
        -Minimize manual effort.
        -Minimum time needed for the various processing.
        -Greater efficiency.
        -Better service.
        -User friendliness and interactive.

3.2 FEASIBILTY STUDY

Preliminary investigation examines project feasibility, the likelihood the

system organization. All projects are feasible given unlimited resources and infinite time. Unfortunately the development of a computer based system or product is more likely plagued by a scarcity of resources and difficult delivery dates. It is both necessary and prudent to evaluate the feasibility of the project at the earliest possible time. Feasibility and risk analysis are related in many ways.

Feasibility study is a test of system proposal according to its work ability, impact on the organization, ability to meet the users need, and effective use of resources. A feasibility study is conducted to identify the best system that meets all the requirements. This entails an identification description, an evaluation of proposed systems and the selection of the best system for job. The requirement of the system is specified with a set of constraints such as system objectives and description of the outputs. Then the feasibility of the proposed is evaluated to generate the above results. Depending of the results of the initial investigation, the study expanded to more detailed feasibility study. During this study, the problem definition is crystallized and aspects of the problem to be included in the system are determined. Consequently, costs and benefits are estimated with greater accuracy in this stage.

Three key considerations are involved in the feasibility analysis. They are

- Economic Feasibility
- Technical Feasibility
- Behavioral Feasibility

Technical Feasibility

There are a number of technical issues, which are generally raised during the feasibility stage of the investigation. A study of function, performance and constraints that may affect the ability to achieve an acceptable system.

The considerations that are normally associated technical feasibility include:

1. Development risk.

2. Resource availability.

3. Technology.

Technical feasibility centers around the existing computer system (Hardware, Software etc.) and to what extend it can support the proposed addition. This involves financial considerations to accommodate technical enhancements. If the budget is a serious constraint, then the project is judged not feasible.

Economic Feasibility

Economic feasibility is an important task of system analysis. A system that can be developed technically and that will be used if installed must still be profitable for the organization. Financial benefits must equal or exceed the costs. The analysis raises financial and economic questions during the preliminary investigation to estimate the following:

- The cost to conduct a full system investigation.
- The cost of hardware and software for the class of application of Internet Banking& and Mailing system being considered.
- The benefits in the form of reduced costs or fewer costly errors.
- The cost if nothing changes.

To be judged feasible, a proposal for the specific project must pass all these tests, otherwise it is not considered as a feasible project. It is known as the cost benefit analysis. Here the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs. If benefits outweigh costs, then the decision is made to design and implement the system. Otherwise, alterations in the proposed system will have to be made if it is to have a

chance of being approved. This is an ongoing effort that improves in accuracy at each phase of the system life cycle.

Behavioral Feasibility

People are inherently resistant to change and computers have been known to facilitate change. An estimate should be made of how strong a reaction the users is likely to have towards the development of a computerized system. The introduction of a candidate system requires special effort to educate, and train the user on how to use the system.

As the Multithreaded Network Server doesn't need any hardware or software additionally other than the developed application it is low cost. Also it is easy to handle.

Operational Feasibility

Proposed projects are beneficial only if they can be turned into information system s that will meet the operating requirements of the organization. This test of feasibility asks if the system will work when it is developed and installed. This project satisfies all the operational conditions.

Legal Feasibility

A determination of any infringement, violation, or liability that could result from development of the system. Legal feasibility encompasses a broad range of concerns that include contracts, liability, infringement, and myriad other traps frequently unknown to technical staff.

Alternatives

An evaluation of alternatives approaches to the development of the system or product. The degree to which alternatives are considered id often limited by cost

and time constraints; however a legitimate but unsponsored variation should not be buried. The feasibility study may be documented as a separate report to upper management and included as an appendix to the system specification. The feasibility study is reviewed first by project management and upper management. The study should result in a "go/no go" decision.

INTRODUCTION

4. INTRODUCTION

4.1 ORGANIZATION PROFILE

Cochin University of Science & Technology (**CUSAT**) is a government owned autonomous university in Kochi (Cochin), Kerala, India. Founded in 1971, the university consists of three campuses, two in Kochi and one in Kuttanad, Alappuzha, about 66 km inland. The university awards degrees in various fields of engineering and allied subjects at the undergraduate, postgraduate and doctoral levels. Nearly 2,000 students engage yearly in various areas of undergraduate and postgraduate study in this university. The institute was poised to become *Indian Institute of Engineering, Science and Technology, Kochi* (*IIEST Kochi*), but the proposal was rejected by the state government in a surprising turn of events.

Originally known as *University of Cochin*, the University came into being in 1971 through an Act of the Legislature of Government of Kerala that was the result of a concerted campaign for postgraduate education in the State of Kerala. The university was reorganized into *Cochin University of Science and Technology (CUSAT)* in February 1986. The process of reorientation resulted in redefining the objectives as the promotion of undergraduate and postgraduate studies and advanced research in applied science, technology, industry, commerce, management and social sciences . Admissions are based on an All India Entrance Examination known as Common Admission Test (CAT) conducted by the University which includes different papers for admissions to various undergraduate and postgraduate courses. Various Departmental Admission Tests (DAT) are also conducted for some postgraduate Courses.

Department of Computer Application

              Computer Applications is one of the thrust areas in science and technology. In appreciation of its growing importance in business and visualising the career prospects, the University established the Department of Computer Applications to facilitate research and human resource development in the subject. The M.C.A. programme was started (1994) with a model curriculum prepared jointly by ISTE and the Department of Electronics with minor modifications. The Syllabus is updated periodically, based on the current trends and requirements of the industry. The Department has a proud alumni, most of them being placed in much reputed international firms like IBM, WIPRO, INFOSYS, TCS, CTS etc. The Research activities of the Department include the subject areas Fuzzy sets and Logic Applications in Artificial Intelligence, Simulation, Cryptography & Coding Theory, Algorithm, Pattern recognition, Internet-Marketing, E-commerce and Internet Technology, Networking and Mobile Communication and Software Engineering. Apart from this, the Department has taken up a challenging research project funded by AICTE, Computer Assisted Classical Music. The Department of Computer Applications is also doing consultancy work for public and private sector undertakings. The Department has an excellent library with more than 3000 books and various national and international journals.The Department has a well-equipped laboratory, which is being constantly updated with the latest computers.

4.2 PROJECT PROFILE

- Title   :   *ORATEUR -ONLINE NEWS READER*

- Type   :   *Application*

- Project objective   :   *To create software, which helps users to hear news from the given online news website, without reading them.*

- Organization   :   *Department of Computer Application, Cochin University of Science and technology, Kochi-22*

- Duration   :   *4 months*

- Project Guide   :   *Dr.B Kannan, Reader, Department of Computer Application,Cusat*

Objectives

This project is to develop software, which helps users to hear news from the given online news website, without reading them. The software to be designed will read the news for the user from the website they asked to.   This will allow the user to select and hear desired news in detail just by a click. This software uses Swaram Text to Speech engine which is to convert the extracted news from webpage into speech.

When we enter the url the home page of the website will be opened and read first. Each news headlines and a small description about the news will read first, it the user want to hear news in more detail, he should click the enter button. Then the user can hear detailed description of the desired headline.

User can select either Malayalam or English online news websites.

To hear the news, here used a festival text to speech engine. And also needed Swaram speech engine which works with festival to hear Malayalam news.

A good system invariably has good software that is a collection of computer programs, procedures, rules and associated documentation and data. The study of what is needed and evolving the best possible method to implement them is a very important step towards the goal of efficient software development. Major objective of the system.

- User efficiency
- Hearing news rather than reading
- Ease of selecting language
- Friendly user interface
- Hear more details just in one click

4. 3 DOMAIN INFORMATION

Operating system   : Ubuntu

Programming Language   : JAVA

Development Environment   : Eclipse

Ubuntu

Ubuntu is a computer operating system based on the Debian GNU/Linux distribution and distributed as free and open source software.

With an estimated global usage of more than 12 million users Ubuntu is designed primarily for desktop use, although netbook and server editions exist as well. Web statistics suggest that Ubuntu's share of Linux desktop usage is about 50% and indicate upward-trending usage as a web server.

Ubuntu is sponsored by the UK-based company Canonical Ltd., owned by South African entrepreneur Mark Shuttleworth. Canonical generates

revenue by selling technical support and services tied to Ubuntu, while the operating system itself is entirely free of charge.

Features

Ubuntu is composed of many software packages, the vast majority of which are distributed under a free software license. The only exceptions are some proprietary hardware drivers. The main license used is the GNU General Public License (GNU GPL) which, along with the GNU Lesser General Public License (GNU LGPL), explicitly declares that users are free to run, copy, distribute, study, change, develop and improve the software.

On the other hand, there is also proprietary software available that can run on Ubuntu. Ubuntu focuses on usability, security and stability. The Ubiquity installer allows Ubuntu to be installed to the hard disk from within the Live CD environment, without the need for restarting the computer prior to installation.

Ubuntu also emphasizes accessibility and internationalization to reach as many people as possible. Beginning with 5.04, UTF-8 became the default character encoding,which allows for support of a variety of non-Roman scripts. As a security feature, the sudo tool is used to assign temporary privileges for performing administrative tasks, allowing the root account to remain locked, and preventing inexperienced users from inadvertently making catastrophic system changes or opening security holes. PolicyKit is also being widely implemented into the desktop to further harden[*jargon*] the system through the principle of least privilege.

Ubuntu comes installed with a wide range of software that includes OpenOffice, Firefox, Empathy (Pidgin in versions before 9.10), Transmission, GIMP (in versions prior to 10.04), and several lightweight games (such as Sudoku and chess). Additional software that is not installed by default can be downloaded and installed using the Ubuntu Software Center or the package manager Synaptic,

which come pre-installed. Ubuntu allows networking ports to be closed using its firewall, with customized port selection available. End-users can install Gufw (GUI for Uncomplicated Firewall) and keep it enabled. GNOME (the current default desktop) offers support for more than 46 languages. Ubuntu can also run many programs designed for Microsoft Windows (such as Microsoft Office), through Wine or using a Virtual Machine (such as VMware Workstation or VirtualBox).

For the upcoming 11.04 release, Canonical intends to drop the GNOME Shell as the default desktop environment in favor of Unity, a graphical interface it first developed for the netbook edition of Ubuntu.

Ubuntu, unlike Debian, compiles their packages using gcc features such as PIE and Buffer overflow protection to harden their software. These extra features greatly increase security at the performance expense of 1% in 32 bit and 0.01% in 64 bit.

System requirements

The desktop version of Ubuntu currently supports the x86 32 bit and 64 bit architectures. Unofficial support is available for the PowerPC, IA-64 (Itanium) and PlayStation 3 architectures (note however that Sony officially removed support for OtherOS on the PS3 with firmware 3.21, released on 1 April 2010), as well as ARM mobile processors (see HTC HD2).A supported GPU is required to enable desktop visual effects.

Current Minimum Requirements	Server	Desktop
Processor (x86) with the i686 instruction set	300 MHz	1 GHz
Memory	128 MB	512 MB
Hard Drive (free space)	1 GB	5 GB
Monitor Resolution	640× 480	1024× 768

JAVA

The Java programming language provides the following:

A language that is easy to program because it:

- Eliminates the pitfalls of other languages such as pointer arithmetic and memory management that affect code robustness.
- Is object-oriented to help the programmer visualize the program in real-life terms.
- Provides a means to make code as streamlined and clear as possible.

An interpreted environment resulting in the following two benefits:

- Speed of development - eliminates the compile-link-load-test cycle.
- Code portability -Enables the operating system to make system level calls on behalf of the runtime environment.

A way for programs to run more than one thread of activity.

- A means to change programs dynamically during their runtime life by allowing them to download code modules.
- A means of checking code modules that are loaded to ensure security.

The Java technology architecture uses the following features to fulfill the previously listed goals:

- The Java virtual machine.

- Garbage collection.

- Code security

Java Platform, Enterprise Edition (Java EE)

Java Platform, Enterprise Edition (Java EE) is focused on making development easier, yet keeping the richness of Java 2 Platform Enterprise Edition (J2EE).

Java Platform, Enterprise Edition (Java EE) 5 is the latest version of the premier platform for developing robust, scalable enterprise applications. Here are some highlights:

- Easier development. The focus in Java EE 5 is ease of development. With Java EE 5, there is less code to write -- much of the boilerplate code has been removed, defaults are used whenever possible, and annotations are used extensively to reduce the need for deployment descriptors.

- EJB -- simpler, better. EJB 3.0 makes programming with Enterprise JavaBeans technology simpler through the use of Plain Old Java Objects (POJOs), it also introduces a new persistence API.

- Enhanced web services. Java EE 5 includes simplified web services support and the latest web services APIs, making it an ideal implementation platform for Service-Oriented Architectures (SOA).

- JSF, JSTL, AJAX, and more. Constructing web applications is made easier with Java Server Faces (JSF) technology and the JSP Standard Tag Library (JSTL). Java EE 5 supports rich thin-client technologies such as AJAX, technologies that are crucial for building applications for Web 2.0.

Low cost development

One of the benefits of Java EE as a platform is that it is possible to get started with little, or no, expenditure. The Java EE implementation from Sun can be downloaded for free, and there are a great many open source tools available to extend the platform or to simplify development.

Java Virtual Machine

The Java virtual machine specification defines the Java Virtual machine (JVM) as: **"An imaginary machine that is implemented by encoding it in software on a real machine. Code for the Java Virtual Machine is stored in .class files, each of which contains code for at most one public class."** The Java virtual machine specification provides the hardware platform specification to which all Java technology code is compiled. This specification enables Java software to be platform independent because the compilation is done for a generic machine known as the Java virtual machine (JVM). You can emulate this "generic machine" in software to run on various existing computer systems or implemented in hardware. The compiler takes the Java application source code and generates byte codes. Byte codes are machine code instructions for JVM. Every Java interpreter, regardless of whether it is a Java technology development tool or a Web browser that can run applets, has an implementation of the JVM.

The JVM specification provides concrete definitions for the implementation

of the following:

- Instruction set (equivalent to that of a central processing unit [CPU])

- Register set

- Class file format

- Stack

- Garbage-collected heap

- Memory area

The code format of the JVM consists of compact and efficient byte codes. Programs represented by JVM byte codes must maintain proper type discipline. The majority of type checking is done at compile time. Any compliant Java technology interpreter must be able to run any program with class files that conform to the class file format specified in The Java virtual machine specification.

Code Security

Java software source files are *"compiled"* in the sense that they are converted into a set of byte codes from the text format in which programmers write them. The byte codes are stored in .class files. At runtime, the byte codes that make up a Java software program are loaded, checked and run in an interpreter. In case of applets, the byte codes can be downloaded and then interpreted by JVM built into the browser. The interpreter has two functions: it executes byte codes and makes the appropriate calls to the underlying hardware.

FESTIVAL TEXT TO SPEECH ENGINE

Speech synthesis is the artificial production of human speech. A computer system used for this purpose is called a **speech synthesizer**, and can be implemented in software or hardware. A **text-to-speech (TTS)** system converts normal language text into speech; other systems render symbolic linguistic representations like phonetic transcriptions into speech.[1]

Synthesized speech can be created by concatenating pieces of recorded speech that are stored in a database. Systems differ in the size of the stored speech units; a system that stores phones or diphones provides the largest output range, but may lack clarity. For specific usage domains, the storage of entire words or sentences allows for high-quality output. Alternatively, a synthesizer can incorporate a model of the vocal tract and other human voice characteristics to create a completely "synthetic" voice output.[2]

The quality of a speech synthesizer is judged by its similarity to the human voice and by its ability to be understood. An intelligible text-to-speech program allows people with visual impairments or reading disabilities to listen to written works on a home computer. Many computer operating systems have included speech synthesizers since the early 1980s.

A text-to-speech system (or "engine") is composed of two parts:[3] a front-end and a back-end. The front-end has two major tasks. First, it converts raw text containing symbols like numbers and abbreviations into the equivalent of written-out words. This process is often called *text normalization*, *pre-processing*, or *tokenization*. The front-end then assigns phonetic transcriptions to each word, and divides and marks the text into prosodic units, like phrases, clauses, and sentences.

The process of assigning phonetic transcriptions to words is called *text-to-phoneme* or *grapheme-to-phoneme* conversion. Phonetic

transcriptions and prosody information together make up the symbolic linguistic representation that is output by the front-end. The back-end—often referred to as the*synthesizer*—then converts the symbolic linguistic representation into sound. In certain systems, this part includes the computation of the *target prosody*(pitch contour, phoneme durations),[4] which is then imposed on the output speech.

Festival is a general multi-lingual speech synthesis system originally developed by Alan W. Black at Centre for Speech Technology Research(CSTR) at the University of Edinburgh. Substantial contributions have also been provided by Carnegie Mellon University and other sites. It is distributed under a free software license similar to the BSD License.

It offers a full text to speech system with various APIs, as well as an environment for development and research of speech synthesis techniques. It is written in C++ with a Scheme-like command interpreter for general customization and extension.[1]

Festival is designed to support multiple languages, and comes with support for English (British and American pronunciation), Welsh, and Spanish. Voice packages exist for several other languages, such as Castilian Spanish, Czech, Finnish, Hindi, Italian, Marathi, Polish, Russian and Telugu.

SWARAM TTS

The first Free Text-to-Speech (TTS) synthesis system in Malayalam based on festival speech synthesis system. It gives Orca - a free domain screen reading software, the additional functionality to read Unicode Malayalam documents and websites as well.

SOFTWARE REQUIREMENT

SPECIFICATION

5.SOFTWARE REQUIREMENT SPECIFICATION

5.1 Introduction

Purpose

The purpose of this document is to present a detailed description of the project Orateur: online news reading. It explain the purpose and features of the each module of the system, the interfaces of the system, what the system will do, the constraints under which it must operate. This document is intended for the user and the developer of the system.

Scope

This software is an application software which reads news from online news website selected by the user in his chosen language. It gives maximum weightage to the user who have all the choices. If the user is intended to read more details of any news he have to select any of the news while reading. It will move on to the next page and reads the details for him.

This software is intended for all those busy men who have no time to read newspaper daily. It is also helpful if someone is travelling and wants to hear news.

5.2 Overall description

Product Perspective

Orateur(software for reading online news) software is a new software ,which read the news from news websites for the users. This software uses festival text to speech engine which is to read the extracted news from webpage. The project has been divided into modules namely,

Module1

- Connecting to the website selected
- Parsing the webpage for headlines
- Saving the headlines
- Reading the text contents in the language selected

Module2

- Getting the address of the news selected by the user
- Connecting to the webpage containing details
- Parsing and reading the content
- Returning back to homepage

5.3 System environment

HARDWARE   REQUIREMENTS

Developing Machine:

Processor	: Core 2 Duo
Monitor	: SVG Colour Monitor
RAM	: 256 MB
FREE SPACE	: 1 GB
INPUT DEVICE	: MOUSE
OUTPUT DEVICE	: SPEAKER

SOFTWARE REQUIREMENTS

Developing Machine:

Operating System : Ubuntu 10.4

Development Kit   : Eclipse

Text to Speech System : Swaram-Festival

5.3 User Requirements

This project is to develop software, which helps users to hear news from the given online news website, without reading them. The software to be designed will read the news for the user from the website they asked to. This will allow the user to select and hear desired news in detail just by a click.

5.4 Functional Requirements

- Selecting the language

- Selecting the url

- Parsing the webpage

- Getting the text content from html page

- Passing the text to festival speech engine

- getting the links in the webpage

5.5 System Requirements
Frontend: JAVA
Speech engine: Festival-swaram

5.6 Non-functional Requirements
User constraints are the non functional requirements. It must contain the language and the operating system to be used in the developing of the software. The

festival and swaram speech engine has to be installed before implementing the software.

5.7 **Domain requirements**

Domain requirements are derived from the application domain of the system rather than from the specific needs of the system users. May be new functional requirements, constrain existing requirements or set out how particular computation must take place.

SYSTEM DESIGN

6. SYSTEM DESIGN

Design is the first in the development phase for any engineered product or system. System design is the process of evaluating alternate solutions, evaluating the choice following up the specification for the chosen alternative. System design work follows logical system analysis. The objective of the system design is to improve the existing system or design a new system as the case may be and implement the system with improved facilities.

Computer software design, like engineering design approaches in other disciplines, changes continually as new methods, better analysis and broader understanding evolved. Using one of the design methods, the design steps reduce a data design, architectural design and procedural design.

Purpose

The purpose of the Software Design Document is to provide a description of the design of a system fully enough to allow for software development to proceed with an understanding of what is to be built and how it is expected to built. The software Design Document provides information necessary to provide description of the details for the software and system to be built.

Scope

This Design Document relates to the system Orateur-Online News

Reading.This Software Design Document is for a base level system which will work as a proof of concept for the use of building a system the provides a base level of functionality to show feasibility for large scale production use. This Software Design is focused on the base level system and critical parts of the system. For this particular Software Design Document, the focus is placed on generation of the documents and modification of the documents. The system will be used in conjunction with other pre-existing systems and will consist largely of a document interaction facade that abstracts document interactions and handling of the document objects.

6.1 INPUT DESIGN

Input design is the part of the overall system design that requires very careful attention and is the most expensive phase. It is the point of contact for the users with the computer system and so it itself is prone to error. If data going into the system is incorrect then processing and output will magnify these errors. Objective during input design are as follows:

- Produce cost effective method input.

- Achieve high-level accuracy.

- Ensure that input is free of ambiguity.

The input type involves converting the user-originated inputs into a computer-based format. The aim of the computer design is to make the data entry easier, logical error free. It helps us to filler errors in the input data that otherwise entered into the database might have brought in a lot of inconsistency.

Alert for wrong entries such as primary key duplication, letters in numeric data, wrong data format, range exceed have been provided in the application. Upon this, a well-documented instruction set and navigation maps, have been also provided for the non-frequent and first-time users to familiarize them with our web site.

Maximum care has been taken to ensure that users type in only minimum data into the system, as all he or she will have to do is to move and click the mouse or strike a key to select the desired data at the desired position.

The screens are designed in such a way that the user can find the needed components like options, actions etc. with ease of use. The needed columns where interaction is needed like Labels, Push Buttons etc. are also simple. The related data columns are clubbed together as groups, this is made so that the user can understand the related data easily and the data entered suits the purpose.

The input design is the link between the information system and the user. It comprises developing specification and procedures for data preparation and those steps that are necessary to put input data into a usable form for processing data entry. Instructing the computer to read data from a written or a printed document can achieve the activity of putting data into the computer for processing or it can occur by having people key data directly into the system. The design of inputs focuses on controlling the amount of inputs required, controlling errors, avoiding delay, avoiding extra steps and keeping the process simple.

6.2 OUTPUT DESIGN

An inevitable activity in the system design is the proper design of output in a form acceptable to the user. Outputs from the system are required primarily to communicate the result of processing to users.

Outputs also provide a permanent copy of the results for later consultation. An intelligible output will improve system relationship with the user and help in the decision-making process.

The various types of outputs required by most systems are:

- **External Outputs**: Whose destination is outside the organization and which require special attention

- **Internal Outputs**: Whose destination is within the organization and which require careful design because they are user's main interface with the computer?

- **Operational Outputs**: Whose use is purely within the computer department?

- **Interactive Outputs**: Which involve the user in communicating with the computer?

The approach to output design is very dependent on the type of output and nature of data. Special attention has to be made to data editing. The choice of appropriate output medium is also an important task. The selection may be affected by the following kinds of consideration.

- Response time.

- Location of users.

- Cost.

- Software/hardware.

- Suitability of the device for application concerned.

The output design must be specified and documented, data items have to be accurately defined and arranged for clarity and easy comprehension. The other two objectives that were taken care of were:

The interpretation of the results of the computer part of the system to users in a form that they can understand meets their requirements.

The output Design specification is made in such a way that it is unambiguous, comprehensive and capable of being translated into a programming language.
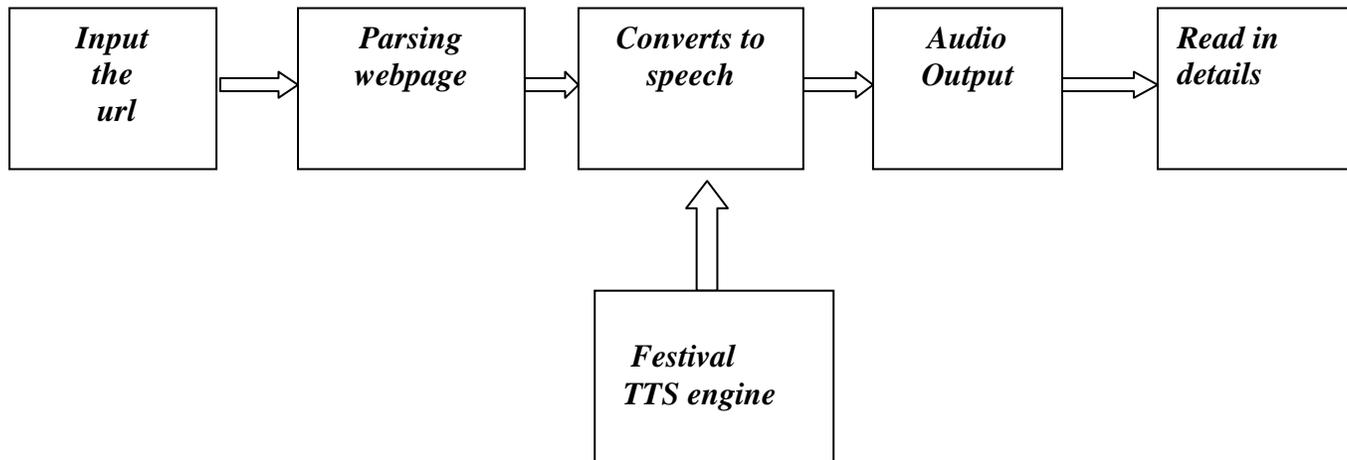
6.3 SYSTEM OVERVIEW

Orateur the online news Reader is a software which read news for the user from the specified news website. Now the user only has to hear the news and if he wants to hear more details about the news, he could select so. Nowadays, there are lot of online news website from where you can find the latest news updates. But for all user it may not be comfortable to read it from the website. If the user is travelling or if he is too old or weak to read, then it would useful if someone reads the news for him. This software does that. It will read the headline one by one and if the user is interested to hear more, he can select and hear further details of the selected news.

This project is a system for reading news for the user from the given news website. The system extracts the text content from the news webpage and using the festival text to speech engine, convert it into speech and read the news. In this system you can select reading language between English or Malayalam.

This project has been inspired by the current developments in the field of Text-to-Speech Systems and tried to implement its merits for a public

application.

3.1 Architectural Design

```
┌──────────┐    ┌──────────┐    ┌──────────┐    ┌──────────┐    ┌──────────┐
│  Input   │    │ Parsing  │    │Converts to│   │  Audio   │    │ Read in  │
│   the    │──▶ │ webpage  │──▶ │  speech  │──▶ │  Output  │──▶ │ details  │
│   url    │    │          │    │          │    │          │    │          │
└──────────┘    └──────────┘    └──────────┘    └──────────┘    └──────────┘
                                      ▲
                                      │
                                ┌──────────┐
                                │ Festival │
                                │TTS engine│
                                └──────────┘
```

6.4 DECOMPOSITION DESCRIPTION

Input the url:- The input to this system is the url of the online website of the newspaper the user intended to listen. The system has a very effective user interface where the user can select language of the newspaper as well as the newswebsite.

Parsing the webpage:- The given url is then connected and is located , Then the webpage is copied and paste as html into a file. Then the html file is read and parsed for the text content in the newswebpage. And then the text content in the page is copied to another file.

Converting text to speech:- The system runs the Festival text to speech engine which converts any text to speech. The text file is passed to the Festival engine along with the selected language.

Audio Output:- Now the news headings are read out along with the user interface to select if he/she wants to read more in detail.

Read in Details:- If the user wants to read it in detail the address to that webpage is found. Now the webpage is taken and saved as html file . Then the headings and its detail are saved in another file and the text file is passed to the Festival engine. After reading the details it returns back to the homepage.

6.5 DATA DESIGN

The major data values that are considerable in this project are -

- The given webpage url and selected language.
- The html files containing the webpage
- The text files containing the text contents
- Address of the homepage
- Addresses of the selected pages.

6.6 COMPONENT DESIGN

The purposes of each of the files that in use in the application are summarized below :

- Main.java – The main frame the application, this class starts the application
- Myframe.java- Here the userinterface of the system is created
- Htmlparse.java- The webpage is parsed and converted to text and then to speech.

6.7 HUMAN INTERFACE DESIGN

The user interface of this system is build using JAVA frames and buttons. As the system starts, a frame with two selection button "Select Language" is viewed. The user has to select one of the language among the two options. Only when selected, the combobox "Select the url" for the webpage get activated. Then the user has to select one of the url from the box. If he has to change the option , he can select once again. At last the user has to press the "Go" button.

The output is in form of audio. As the system reads out the news heading one by one the user has the option to either select or deselect the "Read more" option. As the system reads , if the user wants to read it he can select or can deselect it.

6.8 CLASS DIAGRAM

Class Paneling.java extends JPanel

public:
 	
      JLabel lab
      BufferedImage image
      int width
      int height

public:
 	
   paneling()
   Dimension getPrefferedSize()
   Void paintComponent(Graphics g)
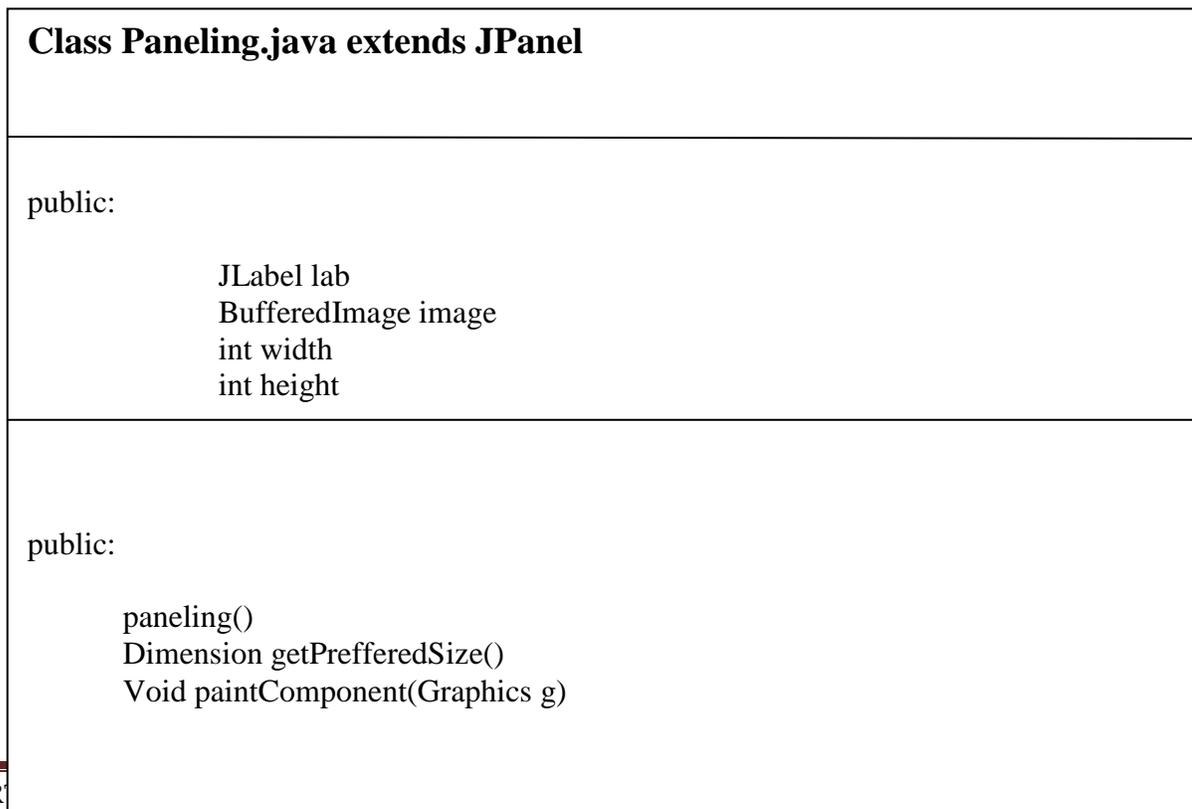
Class present.java extends JFrame

Public:

        int engormal
        Toolkit kit
        File file
        JButton go
        JLabel lab
        Image img
        String givenurl
        JCombobox cbox
        Dimension screenSize
        JRadioButton English
        JRadioButton Malayalam
        ButtonGroup radiob

Public:

        void html2text()
        static void main(String[] args)

Class htmlpar.java extends HTMLEditorKit.ParserCallBack

Public:

       int engormal
       StringBuffer contents
       int icounter,paragraph,second,seccounter,rep,readme,nochange
       Process process
       OutputStream output
       String givenurl,address,givenurl1
       static String changdurl
       static int tags
       static HashMap hash

public:

       htmlpar(String u, int i)
       htmlpar(String u, int ivalue, int sel)
       void parse(Reader in)
       void handleStartTag(HTML.Tag tag, MutableAttributeSet mt,int position)
       void handleEndlTag(tag t,final int pos)
       void handleText(char[] text,int pos)
       void second1(String add)
       String getText()
       void load()
       void say(String content)
       void read(int engormal)

DI

SYSTEM TESTING & IMPLEMENTATION

7. SYSTEM TESTING & IMPLEMENTATION
7.1 SYSTEM TESTING

Testing is the stage of implementing, which is aimed at earning system running accurately and efficiently. The purpose of the system testing is to identify and correct errors in the new system. The performance factors like turn around time, back up, file protection and human factors are some of the performance criteria for system testing. A system is tested for online response, volume of transactions, recovery from failure and usability.

Effective testing early in the process translates directly into long-term cost savings from a reduced number of errors. Back up files are need when the system is failure or down. The usability test verifies the user-friendly nature of the system. Accurate and complete documentation is necessary for the user-friendly nature of the system.

System testing is designed to uncover weaknesses that are not found in the earlier tests. This includes forced system failure and validation of the total system, as its users in the operational environment will implement it. Generally it begins with low volume of transactions based on live data. The volume is increased until the maximum level for each transaction type is reached. The total system is tested for recovery and fallback after various major failures to ensure that no data are lost during the emergency. All this is done with the old system still in operation. After the candidate system passes the test, the old system is discontinued.

System testing involves unit testing, integration testing, acceptance testing. Careful planning and scheduling are required to ensure that modules will be available for integration into the evolving software product when needed. A test plan has the following steps

- Prepare test plan

- Specify conditions for user acceptance testing

- Prepare test data for program testing

- Prepare test data for transaction path testing

- Plan user training

- Compile/assemble programs

- Prepare job performance aids.

System testing is the stage of implementation that is aimed at ensuring that the system works accurately and efficiently before live operation commences. The system on a whole was tested for the following:

- Validation of inputs

- Referential integrity test

- Sequential tests

- Consistency of the application

System testing, asks a logical assumption that if all the parts of the system are correct, the system will be successfully achieved. The objective of testing is to discover errors. To fulfill these objectives a series of tests were planned and executed.

The logical design and the physical design should be thoroughly and continually examined on paper o ensure that they will work when implementation should be a confirmation that all is correct and an opportunity to show the users that the system works.

7.1.1 Unit Testing

Here, each individual program was tested using the test data. The outputs as per the requirements were found satisfactory. Thus it was possible to conclude that every program in the software was functionally correct. The interrelated modules were also tested in an exhaustive that will make the whole software work properly.

- Module interface is tested to ensure that information properly flows into and put of the program under test.
- Local data structures are examined to ensure that data stored temporarily maintains its integrity during all steps in algorithm execution.
- Boundary condition is tested to ensure that the module operates properly at boundaries established to limit or restrict processing.
- All independent paths through the control structures are executed to ensure that all statements in the module have been executed at least once.
- Error handling paths are also tested.

This test focuses verification effort on the smallest unit of software design, the module. Here, the module interfaces, local data structure, boundary conditions, and all independent paths and last but not the least, all error handling paths were verified by inputting false data. Tests of data flow across each module interface of this software were done before any other test was initiated.

A **unit testing** focuses on the verification effort on the smallest unit of the software design. Using the unit test plan prepared in the design phase of the system,

important control paths be tested to uncover the errors within these modules. This testing was carried out doing the coding itself. In this testing step, each module is going to be working satisfactorily as the expected output from the module.

7.1.2 Integrated Testing

The individual programs are combined together to form modules. Integrated tests were performed on each of the modules and again the validity was checked. After that, all modules were brought under a single module and the integrity test was found to be successful.

This system was validated in such a way that even the slightest deviation in inputting the data will invoke error messages and provide guidelines regarding the input. Before the software is being released, the developers to do testing by implementing the commercial security package for security. This ensures that the software works properly. These tests can also be performed

- Top down integration
- Bottom up integration

It is systematic technical for constructing the program structure while at the same time conducting test to uncover errors associated with the interface. The objective is to take unit tested module and build the program structure that has been detected by design.

All modules are combined in this testing step, and the entire program is tested as a whole. If a set of errors are encountered correction is difficult because the isolation of causes is complicated by vastness of the entire program.

Using integrated system test plan prepared in the design phase of the system developed as a guide, he integration was carried up.

7.1.3 Validation Testing

Validation testing is done to ensure complete assembly of the error-free software. Validation can be termed successful only if it functions in manner that is reasonably expected by the customer.

Under validation is alpha and beta testing. Alpha testing is where the end user tests the system rather than the developer, but in a controlled environment. The software is used on a natural setting with the developer monitoring the user using the system. The developer records the errors and usage problems encountered by the user.

The sales person conducts beta testing at one more sites. The developer is not present during these tests. Hence, beta test can be said as the live application of the software on an environment that cannot be controlled by the developer.

The sales person takes down the problems encountered during beta testing and reports these to the developer at regular intervals. The developer makes suitable modifications to the software henceforth.

The first step in system testing is to develop a plan that tests all the aspects of the system. Completeness, correctness, reliability and maintainability of the software are to be tested for the best quality assurance-an assurance that the system meets the specification and requirements for its intended user and performance. System testing is most useful practical process of executing a program with explicit intention of finding errors that makes the program fail. The following phases were developed.

7.1.4 Module Testing

Each individual programs module is tested for any possible errors. They were also tested for specifications, i.e. to see whether they are working as per what the program should do and how it should perform under various conditions.

7.2 SYSTEM IMPLEMENTATION

7.2.1 Implementation

Implementation is the process of converting a new or a revised system design into an operational one. Conversion means changing from one system to another. The objective is to put the system into operation while holding costs, risks and personnel irritation to minimum. It involves

7   Creating computer compatible files.

8   Training the operating staff.

9   Installing terminals and hardware.

A critical aspect of conversion is not disrupting the functioning of the organization. The implementation plan is a function of line management at least as far as key decisions or alternative plans are concerned. The implementation plan was to convert the existing clerical files to the computer. The implementation plan listed all sub tasks so that individuals in the organization may be assigned specific responsibilities.

The installation of the new system that is bound to replace the current one may require a major revision of computer facilities swell as completely new after space. Space planning took in to account the space occupied by the people, space by equipment and the moment of people and equipment in the working investment. After conducting, the initial testing the system is loaded in the client officer's computer. Some of the user employees in this case are selected. These users are trained first and they run the system.

7.2.2 Maintanance

This phase occurs as a result of deploying the whole system at the end users organization. They will perform the beta testing at the end users and inform to the developers about any needed modification to the application .the customer records all the problems that are encountered during the beta testing and rep[orts these to the developer at regular intervals.

As result of problems reported during implementation, the software product to the entire customer base

Types of changes that can be encountered during the maintenance phase

Corrective maintenance:

Even with the best quality assurance activities, it is likely that the customer will uncover defects in the software. Corrective maintenance changes the software to correct the defects

Adaptive maintenance:

Over time, the original environment (CPU, operating system, business rules, external product characteristics) for which the software was developed is likely to change. Adaptive maintenance results in modification to the software to accommodate changes to its external environment

Enhancement maintenance:

As software is used, the customer /user will recognize additional functions that will provide the benefit. Perfect maintenance extends the software beyond its original functional requirements

Preventive maintenance:

Computer software deteriorates due to change ,and because of this preventive maintenance often called software re engineering ,must be conducted to enable the software to serve the needs of its end users .preventive maintenance makes changes to computer programs so that they can be more easily corrected, adapted and enhanced

MODULE DESCRIPTION

8.MODULE DESCRIPTION

PROJECT MODULES

Orateur : Online News Reading is the system that helps anyone to access any online news website and hear news as from a radio. In this system you can choose language among English or Malayalam.

The module which I have exercised in this project is

TO READ THE HEADLINES OF THE GIVEN WEBSITE

In this module the language in which the news should be heard can be selected and the headlines can be heard in that language. User can select the desired url .The headline of that website are erad. From the url selected the source code is extracted and write it into one file. This file reader is passed into the parser which parses that html document. There the html text can be extracted in the handleText function. This text contents are passed into a function, in which the text is given to the speech engine. There the news can be heard.

The classes which mainly included in my module are

8.1 Main class

To Select the language

There provided the radio buttons for selecting English or Malayalam language in which the user wants to hear news. When language is selected one integer type variable is set, which is *engormal*.

If the radio button is selected one variable is assigned a value to indicate whether user selected Malayalam or English online news website.

if(english.getModel()==radiob.getSelection())

  engormal=1;

else

  engormal=0;

To Select the url

There provided combobox from where the online news websites can be selected.According to the language selected combobox is populated. That is if user selected English language then the websites of English online news will be present in the combobox. If selected language is Malayalam then Malayalam news websites will be present in the combobx.

if(engormal==1)

     {

      cbox.removeAllItems();

      cbox.addItem("http://www.thehindu.com/");

      cbox.addItem("http://www.mathrubhumi.com/english/");

      cbox.addItem("http://www.indianexpress.com/");

      cbox.addItem("http://www.deccanchronicle.com/");

```
        }
        if(engormal==0)
        {
            cbox.removeAllItems();
            cbox.addItem("http://in.malayalam.yahoo.com/");

        }
```

Then url from the combobx can be slected.There also present one "go" button, and one action listener is attached to it. After selecting the desired url the go button should be pressed, then action performed is called. The url is passed into another class's constructor.Now only few urls are given in the combobox.

To Get the url connection and Extract the source code

The selected url is assaigned into one url variable *pageURL*. Then url connection is established to it.

HttpURLConnection urlConnection = (HttpURLConnection) pageURL.openConnection();

InputStream in = new BufferedInputStream(urlConnection.getInputStream());

Reader r = new InputStreamReader(in) ;

FileWriter firstfile=new FileWriter("homepage.txt");

From that using an inputStreamReader each character of the source code of the webpage is read,and is written into a file.

while ((c = r.read()) != -1) {

   string1=String.valueOf((char) c);

   firstfile.write(string1);

   }

 FileReader fread1 = new FileReader("homepage.txt");

 htmlpp parser1 = new htmlpp(givenurl,1,engormal);

 parser1.parse(fread1);

The filereader of the file, givenurl ,language selected are passed into the class htmlpp,where parsing is done.

2.htmlpp class

To get the headlines

This class extends the htmleditorkit.parsercallback static class. There present one funciton, parse, where parsing is done.

ParserDelegator delegator = new ParserDelegator();

  delegator.parse(in, this, Boolean.TRUE);

There present one inbuilt function handleText(),where text fields are handled. While parsing the document it will come across HTML tags present in it. When a tag is seen, the control moves into it and checks for any content. If there present text inside the tags then handleText function invoked.

public void handleText(char[] text, int pos)

{

   String content = null;

   content=new String(text);

hash.put(content, address);

say(content);

}

The HTML texts are added into hashmap. Here we get the headlines of the given news websites. Each text is assaigned into one string and it is passed into say function where it is given into festival speech engine.

Function to hear the news

Here string in which html text is assigned is given into the festival speech engine. The festival speech engine is loaded when this class is called. According to language selected language of the festival engine is selected.

if(engormal==0)

{

output.write("(voice_ins_ml_rij_diphone)\n".getBytes());

output.flush();

}

if(engormal==1)

{

output.write("()\n".getBytes());

output.flush();

}

Giving the input to the festival engine is only needed.

output.write(("(SayText \"" + content + "\")\n").getBytes());

While reading headlines, if user wants to hear details of any headline he can select and hear it. Then the address of the webpage which contains the details of news is attained and control passes into that page. These details are given into festival speech engine.

SCREENSHOTS

THE INITIAL PAGE WHEN THE APPLICATION RUNS. USER HAVE TO
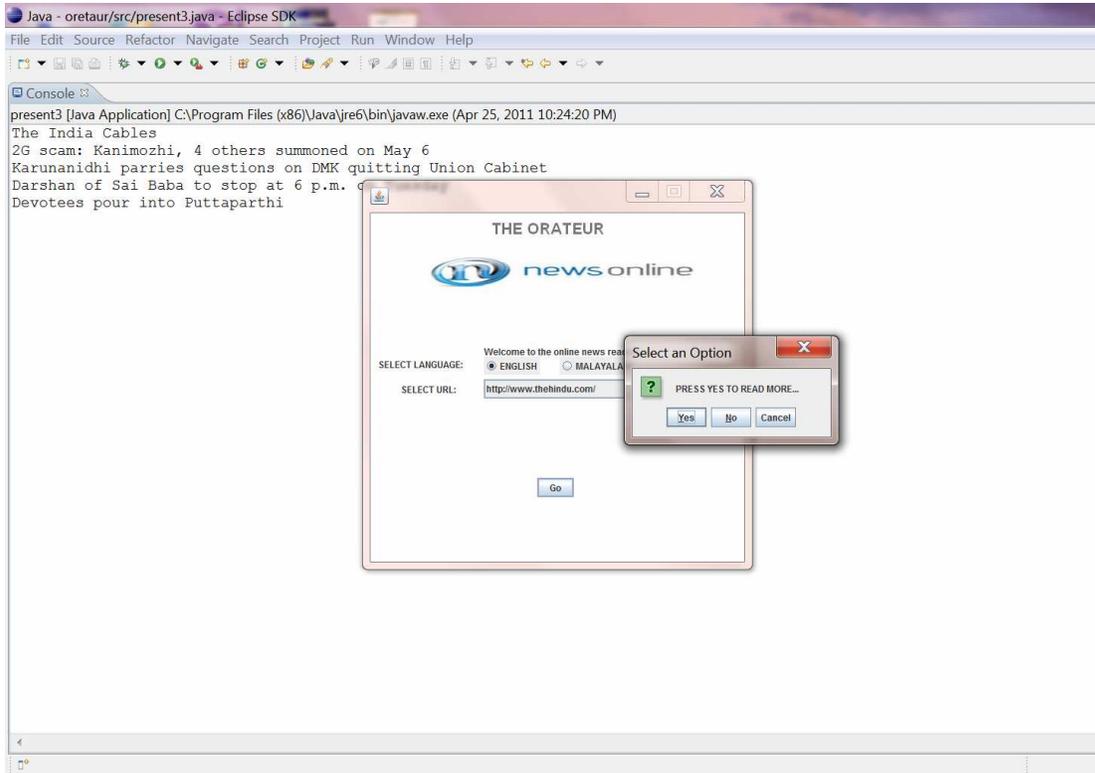SELECT ONE OF THE LANGUAGE FROM THE TWO GIVEN
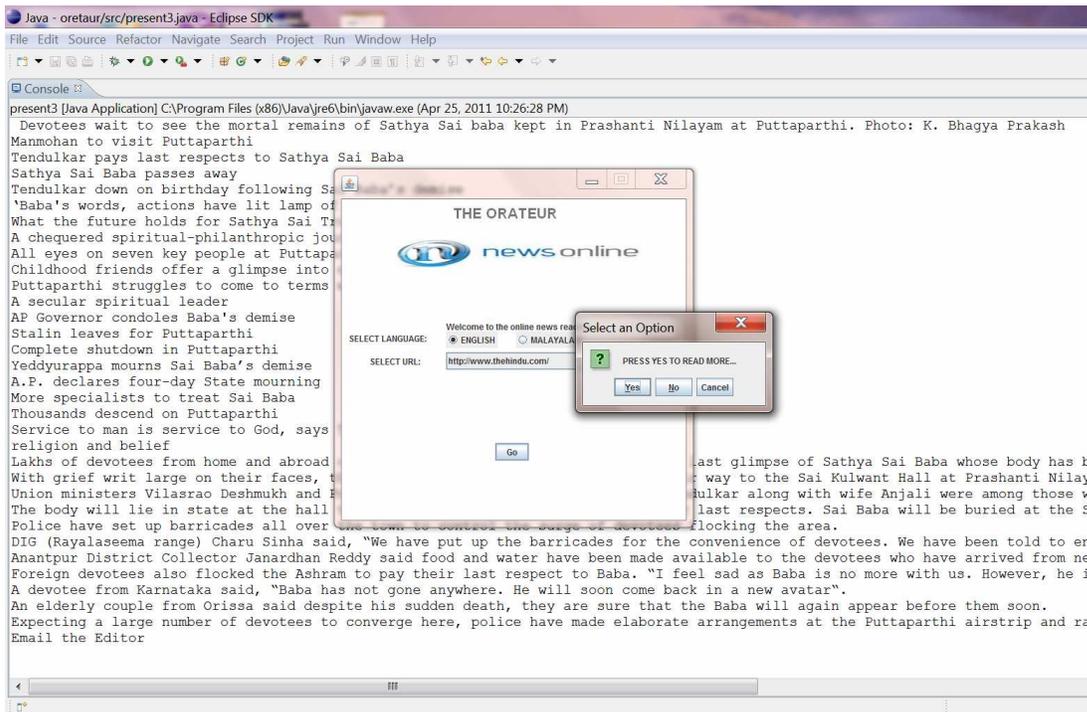
USER SELECTS ENGLISH TO READ
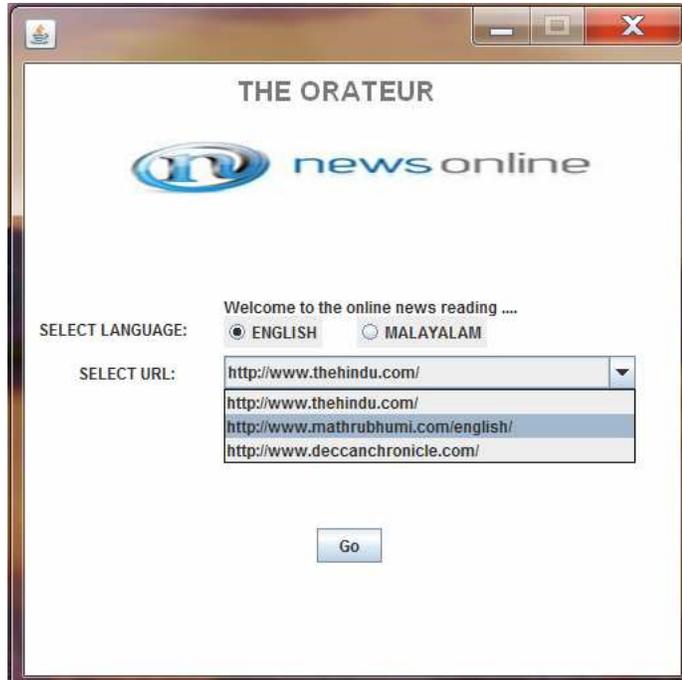
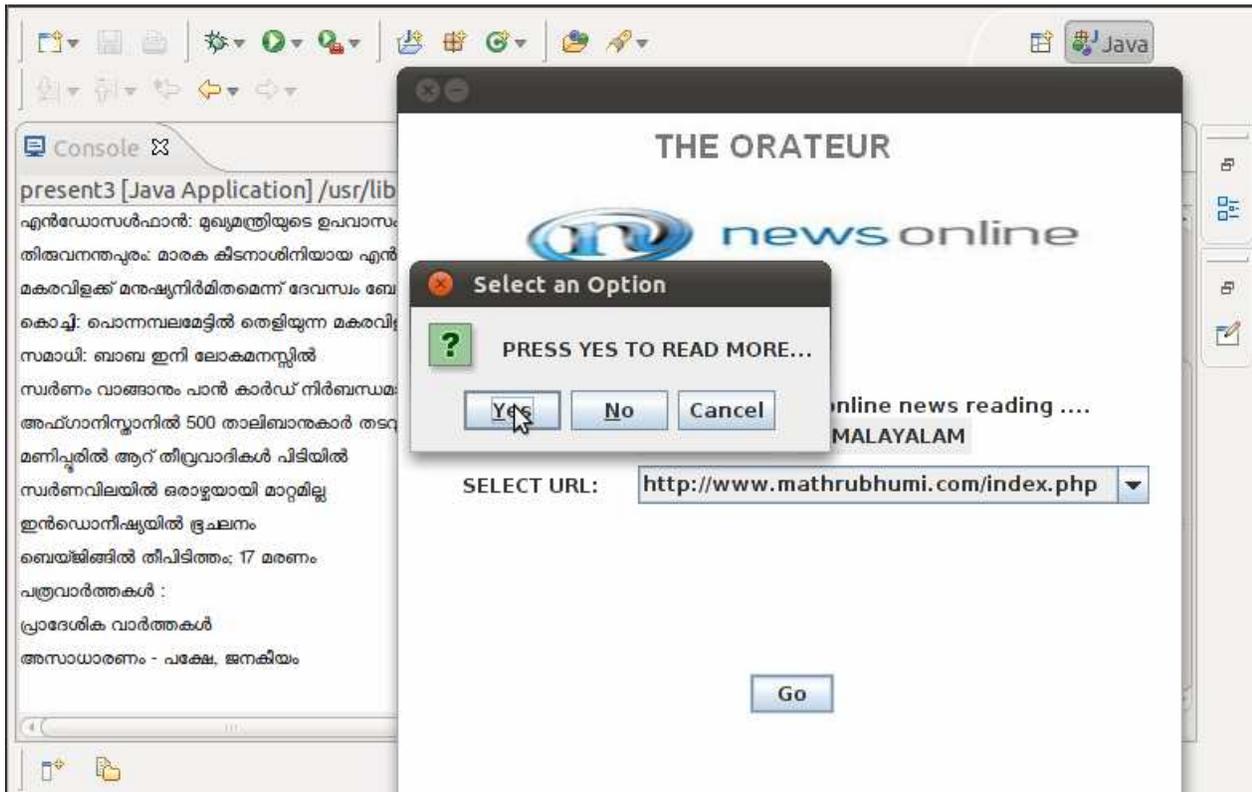THE APPLICATION READING THE HEADLINE AND WHEN THE USER SELECTS TO READ MORE
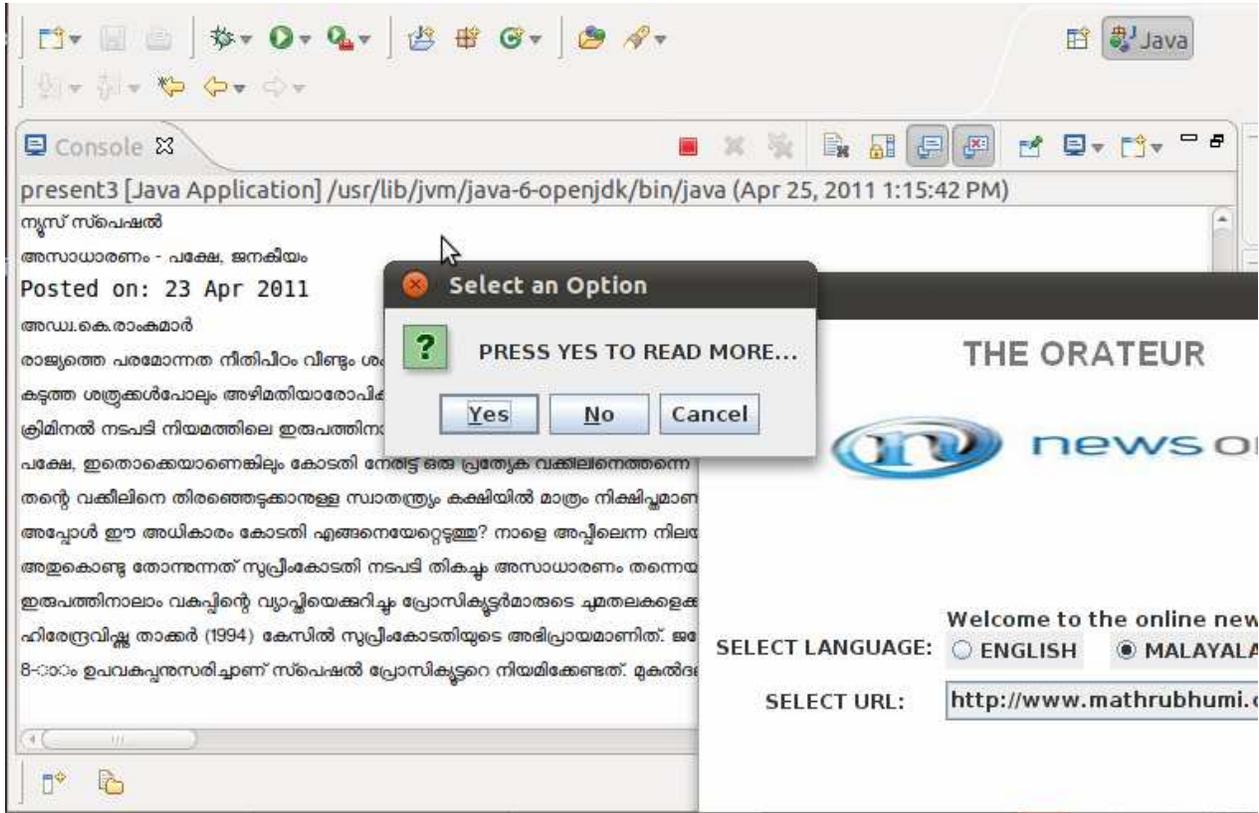
READING THE DETAILS OF A HEADLINE

WHEN THE USER SELECTS MALAYALAM
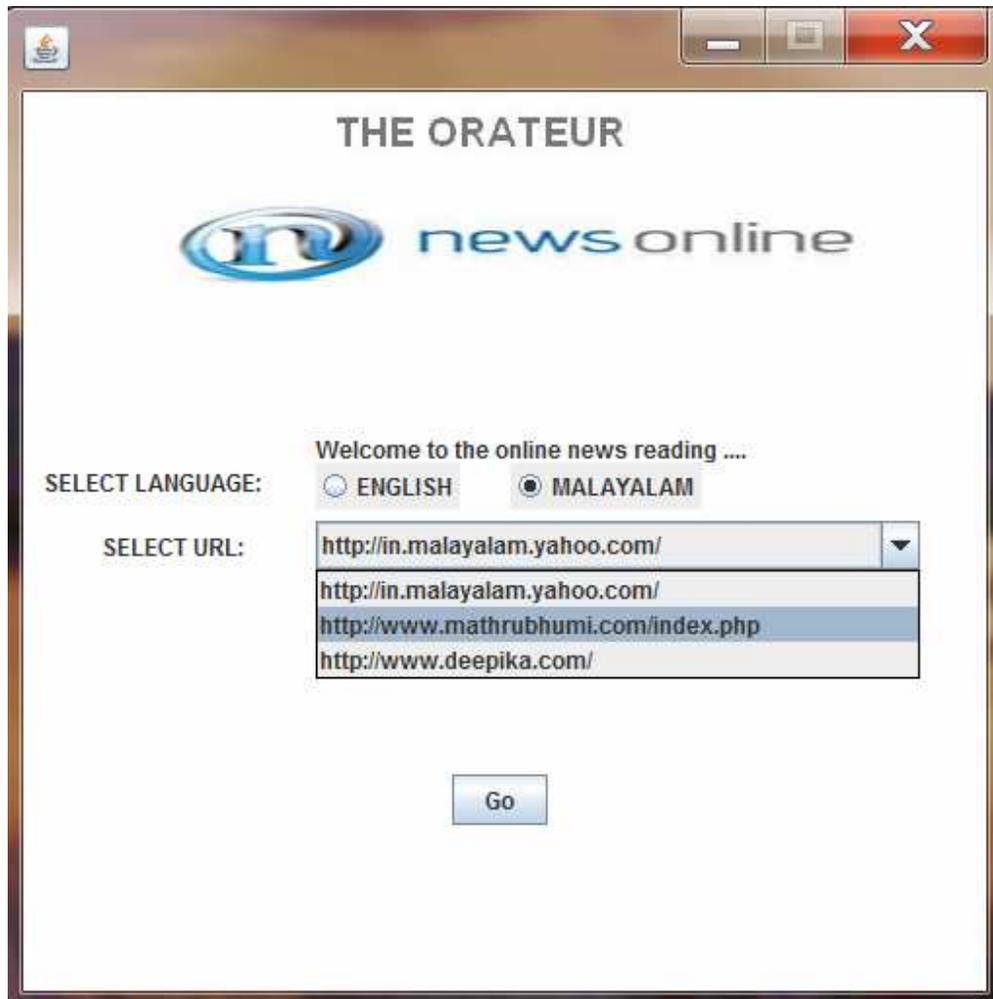
THE APPLICATION READING MALAYALAM HEADINGS AND READINGS DETAILS WHEN THE USER SELECTS MORE

READING THE DETAILS OF A HEADLINE

10. FUTURE SCOPE

This application is developed for implementing in a computer system. This new system has a lot of future scopes. The main thing that can be done is this application can be improved into run in mobiles. And also many other languages can be included in the application. Now only two language in included. Now urls should be selected from the combo box. In future this can be improved to access webpage by typing the address, as now doing web browsing.

Now the message box option should be clicked to read next news and to read news in detail. This system can be improved by accessing voice input and do as it is now. And also urls can be also given as voice input.

Another enhancement can be done is, the news can be stored as audio file and can be heard when user needed.

11.CONCLUSION

The application software is used to hear news from the user selected websites. The user can choose whichever language he wants to hear and the news websites he wants to hear from. The system reads news for the user and if the user wants to hear more about any of the news , he just have to click on it.

Here the system make it easy for the common man to hear news whenever and wherever he wants. And the system ensures that the user will get most recent updated news from the website. And the user doesn't need any software skill to use this application.

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