

TAMIL VIRTUAL UNIVERSITY
Tulsi Infotech, Chennai.

PROJECT REPORT

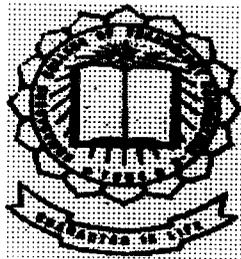
P-926

SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTER OF SCIENCE IN APPLIED SCIENCE - SOFTWARE ENGINEERING
OF BHARATHIAR UNIVERSITY, COIMBATORE.

Submitted by
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

KUMARAGURU COLLEGE OF TECHNOLOGY
COIMBATORE- 641 006
APRIL 2003

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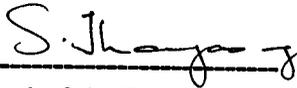
CERTIFICATE

This is to certify that the project work entitled
"TAMIL VIRTUAL UNIVERSITY"
has been submitted by

P.N.PADMESH

9837S0055

in partial fulfillment of the award of the degree of
Master of Science in Applied Science – Software Engineering
of Bharathiyar University, Coimbatore
during the Academic year 2001-2002



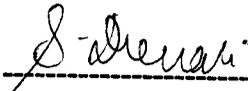
Head of the Department

31/3/03



Guide

Certified that the candidate was examined by us in the Project Work VivaVoce
Examination held on ~~5-4-03~~ and the University Register Number is 9837S0055.



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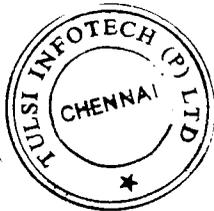
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10th March 2003

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. *P.N.PADMESH* was associated with us as a PROJECT TRAINEE from 11-12-2002 to 06-03-2003. The project he worked on was “*TAMIL VIRTUAL UNIVERSITY*”. He has completed the Project successfully. He was very good at work and has the ability to solve the complexity of any problems.

We wish him all success in his future endeavors.



S. [Signature]
MANAGER - PROJECTS

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

At the very outset I would like to thank God for his abundant grace and mercies without which this project would not have been taken up and successfully completed.

I am grateful to our Principal **Dr. K.K.Padmanabhan B.sc(Engg.), M.Tech, Ph.D,** Kumaraguru College of Technology, Coimbatore for the overall support that he provided during the project work.

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I express my profound gratitude to my external guides **Mr.K.Gopi, B.E.(Mech)** Project Leader Tulsi Infotech and my team members for their encouragement, valuable support, constant and timely suggestions and technical guidance throughout the project.

My sincere word of thanks for all the staff members of Kumaraguru College of Technology, Coimbatore and Tulsi Infotech, Annanagar, Chennai. for the help rendered in the successful completion of this task.

Last but not the least, I express my sincere thanks to all my friends and relatives who helped and encouraged me to make this project successful. I would like to dedicate this project to my dear parents for their inspiration, encouragement and sincere prayers without which this project would not have been successful.

SYNOPSIS



SYNOPSIS

The Title of the project is “**Tamil Virtual University**”. This project is done at Tulsi Infotech, Chennai for Tanjore University. The Tamil Virtual University aims at providing Internet based resources and opportunities for the Tamil Communities living in different parts of the globe as well as others interested in learning Tamil and acquiring knowledge of the history, art, literature and culture of the Tamils. This package is developed using Java, JSP and HTML as client’s side programming and Oracle as the Backend. Designing Tools such as Adobe Photoshop 6.0, Flash 5.0 are also used. Using JavaScript the form Validations are done. This package mainly aims in building up a web portal for this university wherein students of Tamil Virtual University and general users can access this site, which provides all the details regarding their subjects, and also about Tamil literature and poetry in Tamil language. This helps to promote Tamil language through the web. This site helps us to develop and deliver Internet based learning material in Tamil language, literature and culture to global Tamil Communities and others interested. This also deliver customized programmes to meet the cultural needs of the Tamil Communities in different parts of the world and help them retain contact with their heritage. Above all this package has been developed in a user-friendly manner for easier access for the users.

COMPANY PROFILE



COMPANY PROFILE

Tulsi is a global technology services company, with a focus on Industry-Specific Solutions, Strategic Outsourcing and Integration Services. They can address the most challenging technology issues your company is facing through a unique on-site, off-site, offshore delivery model that helps you achieve rapid deployment, world-class quality and reduced costs.

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A team of professionals manages the Group with expertise in the fields of Information Technology, Finance, Manufacturing, Marketing, Services and Training. The operating personnel of TULSI have comprehensive knowledge of competing IT products from Microsoft, IBM, SUN, and Oracle among others and a cumulative experience of close to 200 man-years.

At Tulsī, they approach with appropriate technology with innovation and responsibility to achieve two broad objectives:

Effectively address the business issues our customers face today generate new opportunities that will help them stay ahead in the future they do this in three distinct areas. Our IT Services aim at empowering the enterprise. From getting e-businesses up and going to managing technology infrastructure, they are focused on helping businesses do their business better. Their Product Design Services help companies bring defect-free products to market, in time and within budget. Their Service Provider Solutions address the specialized needs of this market to offer a complete business and technology offering given our technological depth and breadth they have developed a common approach that underlies all our areas of operation. Using this, they consistently deliver solutions that maximize value for our customers. This approach rests on:

- » A robust offshore development methodology that offers the advantages of parallel development and reduced demand on customer resources.

- » A focus on the use of reusable frameworks to provide cost & time benefits

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SYSTEM REQUIREMENTS



1. SYSTEM REQUIREMENTS

1.1 Product Definition:

1.1.1 Problem Statement:

The Tamils living in different parts of the world, in order to preserve their cultural identity and observe their traditions and values, need to maintain familiarity with Tamil and be knowledgeable about their heritage. Recognizing this fact and for meeting the felt and emerging needs of the Tamil Communities and others interested in Tamil studies, the Chief Minister of the Government of Tamil Nadu, announced at an International Seminar and Conference on Information Technology in February 1999 that a Tamil Virtual University (TVU) would be setup. This University has been established in pursuance of that announcement. The functions of TVU are guided by a Board of Directors and are administered by a full time Director. So a web portal for Tamil Virtual University is developed. The Tamil Virtual University aims at providing Internet based resources and opportunities for the Tamil Communities living in different parts of the globe as well as others interested in learning Tamil and acquiring knowledge of the history, art, literature and culture of the Tamils.

1.1.2 Functions To Be Provided:

The functions of Tamil Virtual University include Internet based Educational Programmes, Digital Library and Development of Tamil computing. So based on these Requirements a web portal of Tamil Virtual University is built.

1.1.3 User Characteristics :

This Web portal can be visited by everyone. Some of the common users are

Visitor:

A Registered member of TVU website is a visitor, who can have a look at the programmes of TVU and can have a glance at the sample contents of the web. Registration is free.

Auditor :

One can enroll on payment for auditing any lesson of the academic programmes for knowledge sake.

Student :

One can enroll on payment as a student of any academic programme. An enrolled student gets free access to the Library.

Library Member :

One can enroll for the Library Membership by paying annual or life membership fee. Library Members will have no access to the lessons of the academic programmes.

1.1.4 Solution Strategy :

The problem was approached in a step-by-step fashion. First all the details of this project is gathered and the analysis is done on the problem definition given by the project manager. Then the rough draft is made on the analysis and finally ends up in a solution by breaking the defined problem into modules. The solution is to have a home page as the first interface for this product. The user can then choose the desired menu option and the module is automatically called. Thus the solution strategy for this is obtained.

1.1.5 Product features:

This product has many features and is mainly developed to promote Tamil education through the web. The other features include

- ◆ To develop and deliver Internet based learning material in Tamil language, literature and culture to global Tamil Communities and others interested.
- ◆ To develop and deliver customized programmes to meet the cultural needs of the Tamil Communities in different parts of the world and help them retain contact with their heritage.

- ◆ To initiate and continue necessary measures to co-ordinate and pool together knowledge resources, developed in Tamil in different parts of the world, for wider dissemination.
- ◆ To offer academic programmes in Tamil Language, literature and culture for audit or credit and to award appropriate Certificate/Diploma/Degree through Tamil University, Thanjavur on completion of prescribed requirements.

PROJECT PLAN



2. PROJECT PLAN

2.1 Life Cycle Mode:

The Prototype Model is proposed to be life cycle mode followed while developing this product. It provides the potential for the rapid development of incremental versions of this software.

Prototype model

The goal of a prototyping based development process is to counter the first two limitations of the waterfall model. The basic idea here is that instead of freezing the requirements before any design or coding can proceed, a throwaway prototype is built to help understand the requirements. This prototype is developed based on the currently known requirements. Development of the prototype undergoes design, coding and testing, but each of these phases is not done very formally. By using this prototype, the client can get an actual feel of the system, because the interactions with the prototype can enable the client to better understand the requirements of the desired system. This results in a more stable requirement that change less frequently.

- The development of the prototype typically starts when the preliminary version of the requirement specification document has been developed. At this stage there is a reasonable understanding of the system and its needs and which needs are unclear or likely to change.
- After the prototype has been developed, the end users and clients are given an opportunity to use the prototype and play with it.
- Based on their experience, they provide feedback to the developers regarding the prototype regarding what is correct and what has to be modified.
- Based on the feedback, the prototype is modified to incorporate some of the suggested changes that can be done easily and then the users and the clients are again allowed to use the system.

2.2 Development Schedule:

In Order to complete the project in a given time, the development schedule is framed and based on the time slots, the product is developed. The development Schedule consists of milestones and reviews which has been stated below

Terminology/Milestones and Work products:

Task Region 1:

Terminology : Interaction with the Project Leader

Milestones : December 11th to December 13th

Work Product : The Project leader defines about the problem statement.

Task Region 2:

Terminology : Planning

Milestones : December 18th to December 20th

Work Product : Analysis of the product definition, function the Product has to perform, Processing environment, product features ,programming languages and development tools to be implemented are all decided in this stage.

Task Region 3:

Terminology : Designing for both the modules

Milestones : December 21st to January 11th

Work Product : Since Design Document plays a vital role in coding, Preparation of Design Documentation takes more time. Time limit must be specified for each module.

Task Region 4:

Terminology : Coding for both the modules

Milestones : January 18th to February 25th

Work Product : Coding for the analyzed product is carried out.

Task Region 5:

Terminology : Customer Evaluation

Milestones : February 26th – March 5th

Work Product : On seeing the performance of the project the feedback is given and debugging process takes place

2.3 Team Structure:

A team consisting of 6 members does the Project. The members undertake different modules of the project

2.4 Documents to be Prepared:

It is suggested that the following documents must be prepared during the time of the project.

- A system Definition consisting of a product definition and a project plan.
- A Software Requirement Specification.
- A Design Document
- A Test Plan
- A properly documented, debugged and tested program.

2.5 Manner of Demonstration:

Reviews

Every Weekend the completed modules are explained to the Project Leader, reviewed and inputs are taken.

Documents:

Drafts of every document are reviewed by the Project Leader before it is finalized. If any changes are there in the draft they are incorporated in the document.

Product:

Demo of each module is shown to the Project Leader when the module is completed. If any changes are there in the draft they are incorporated in the document.

**SOFTWARE
REQUIREMENT
SPECIFICATION**



3. SOFTWARE REQUIREMENT SPECIFICATION

3.1 PROJECT DESCRIPTION :

Aim Of The Project:

The Tamil Virtual University aims at providing Internet based resources and opportunities for the Tamil Communities living in different parts of the globe as well as others interested in learning Tamil and acquiring knowledge of the history, art, literature and culture of the Tamils.

Detailed Description

The Tamil Virtual University is built to provide Internet based Educational Programmes, Digital Library and Development of Tamil computing. This web-based application has lot of facilities for the user like:

TVU at a glance:

This gives us information about the mission, vision and all details regarding Tamil virtual university.

Academics :

This gives us information about the academics and details about the courses. One can enroll on payment as a student of any academic programme. An enrolled student gets free access to the Library. This site offers academic programmes in Tamil Language, literature and culture for audit or credit and to award appropriate Certificate or Diploma Degree through Tamil University, Thanjavur on completion of prescribed requirements

Library :

This gives us information about the books in the library. An enrolled student gets free access to the Library

Primer Education :

This is developed for small students (around the age of 5) for them to study Tamil alphabets.

Cultural Gallery:

This gives information about the history, art, literature and culture of the Tamils.

Sample contents:

A Registered member of TVU website is a visitor, who can have a look at the programmes of TVU and can have a glance at the sample contents of the web.

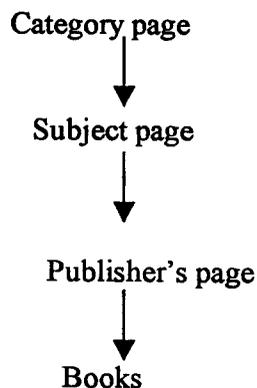
Apart from this we have section on **Science, Tamil in IT, Glossary and other links.**

The two main modules which are done here include :

- **Glossary**
- **Kamba Ramayanam**

Glossary:

This Glossary section a hierarchical flow

**Category Page :**

Here in this page we have different categories like science, medical science, Agriculture etc... By clicking into this links this will take us to the subject's page where the user can enter according to his choice. From this page itself the User has the access to go to common Glossary page and he can search for the particular word by clicking common Search.

Subject Page :

Here in this page we have different subjects for each category. If the user has come under science category then he will be provided with access to subjects like physics, chemistry etc... By clicking into this links this will take us to the publisher's page where the user enters according to his choice. From this page itself the User has the access to go to Glossary page for this particular subject and he can search for the particular word by clicking Search button

Publisher Page :

Here in this page we have different publications for each subject. Under this section we have different publication's like Govt. edition, Ceylon edition etc... By clicking into this links this will take us to the desired book where the user enters according to his choice.

Books :

Under this section the glossary for the prescribed book will be given .The User can go page by page or he can go to the particular page by typing the page number. The introduction about the book is also given. In this Glossary page we are provided with alphabets and by clicking the particular alphabet we get the corresponding glossary. This Glossary section has a Flash Keyboard in which we can enter both tamil as well as English words and find out their meanings.

**Kamba Ramayanam :**

This is a part of the Library module. Under this Module the whole epic of Lord Rama's life is digitized and presented here for the users. This has all the poems and the user can go through all the Kandams and he is also provided with word Search and Numeric Search options with the help of Flash keyboard. The User can type in the poem number or he can type the beginning of the word and search. The final result will be got after checking with the database if the poem is found it is displayed else gives us the message not found.

Thus this software is designed with a User interactive and friendly interface.

3.2 Processing Environment:

3.2.1 Hardware Requirements:

Processor	- Any machine from Pentium I
Clock speed	- 133 MHZ and above
Hard Disk	- 16 MB and above
Operating System	- Linux/Unix/Windows 9x/ME/NT
Cache	- 256 Cache and above
Monitor	- Any Monitor (Color or Black/White)
Keyboard	- Windows Keyboard with 104 keys
Mouse	- Microsoft compatible Ps/2 Mouse

3.2.2 Software Requirements:

- Java
- Java Server Pages
- HTML
- Oracle 8
- Java Script
- Design Tools - Adobe Photoshop 6.0, Flash 5.0

Web Server - Apache / IIS /Netscape Server with servlet engine

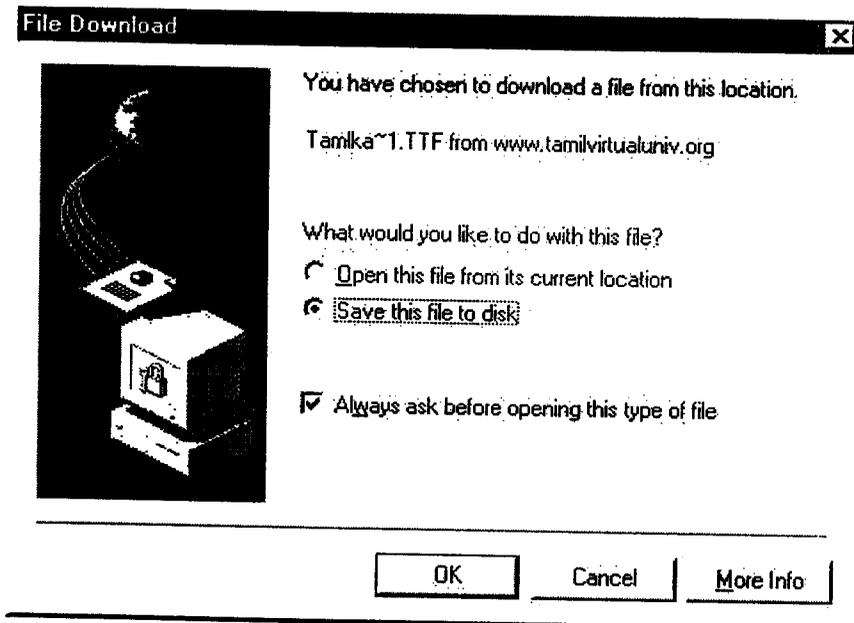
3.2.3 Other Requirements:

Tamil Font installation is necessary for viewing this site. If the Tamil Font installation is not done the Tamil characters will be seen as Junk Characters.

Step-by-step instructions for Tamil Font installation.**For Windows Users:**

(a) Click on TAB-LFS-KAMBAN.TTF , TABXPonni

TAMLKAMBAN.TTF (You need TAM font to view Pals dictionary and Madras University dictionaries)

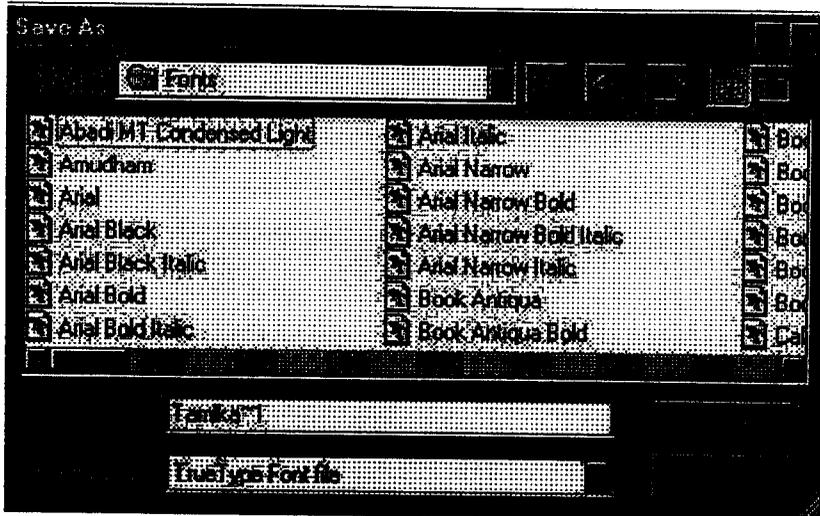


(b) A window will appear.

Check the option " Save this file to disk" and press Ok.

(ii) A window opens asking for the location for saving file. Select the location

"C:\windows\fonts" and press the button "Save".



(c) If you want to use any other TAM or TAB font, install the desired font in your system, and do the following:

Click Tools -> Internet options -> Fonts -> set Language script as "User defined" -> set Web page font as "Desired font" -> click "Ok"

(d) For Internet Explorer, please set the encoding to User Defined

Click View->Encoding->User Defined from the browser menu

For Netscape, please set the encoding to User-Defined

Click View->Character Set ->User-Defined from the browser menu

(e) This should let you see Tamil documents in Tamil script.

3.3 Programming Languages and Development Tools:

Programming Languages:

- Java
- Java Server Pages
- HTML
- Java Script
- Oracle 8

Features of Java Server Pages:

Java Server Pages offers a number of features. They are :

The JSP is platform Independent, both in its dynamic web pages, web servers and other server components. JSP Pages can be authored on any platform, they can be run on any web server or web enabled application server.

The Java Server Pages enable the separation of static content from dynamic content that is inserted into the static template. The Java Server Pages Technology supports scripting elements as well as actions. Powerful Middle Tier application can be developed using a web site that uses Java Server Pages technology as a front end.

Features of HTML:

Hyper Text Markup Language is a collection of platform independent Styles that defines the various components of the World Wide We document. HTML documents are plain text files that can be created using any text editor. An element is a fundamental component of the structure of a text document. Some examples of elements are heads, tables, lists etc. to denote the elements we use tags. HTML is not case sensitive.

Features of Java Script:

Java Script codes can be added to the HTML document by using the script tag. The different types of variables that can be used in the java script are number, Boolean, string, null, undefined. Arrays are considered as objects in java script. Java script performs automatic type conversion when used in expressions and statements. Java script performs excellent Event Handling Techniques. When the user submits a form, java script can validate the entire form to check if the user has filled in every data before the form is sent back to the server. These reduce the workload on the server.

Features of Oracle 8:

Database applications at work in networked environment can often benefit from distributing data as well as processing tasks. A distributed database is a collection of databases that appears to an application as a single, local database. Some features of Oracle 8 are as follows

1. Oracle 8 can improve throughput performance when replicating data. Oracle 8 reduces the amount of replicated data propagated over the network.
2. Oracle 8 supports the fast refresh of most sub query snapshots.
3. Data Replication: Data Replication can improve the performance of an application and a distributed database system's network. This is because the application can access replicate data in a local database rather than data in a remote database that is available across the network. Data Replications can increase the availability of an application because replicate data exists at several locations. If one location becomes inaccessible due to a system or network failure alternate data access option exists. Data Replication is useful to distribute copies of useful information. Oracle's Replication features can be used to periodically copy data from a transaction-processing database to data warehouse.
4. Security :Oracle 8 provides security for client-server systems especially when they encompass multiple databases.
5. Password Management Enhancements: The new enhancement feature offered for Password Management in Oracle 8 include locking, aging and expiration
6. Backup and Recovery: Oracle 8 and its companion management tool Oracle Enterprise Manager include several new features to make data base backup and recovery more automated, easier to use and faster.

Reasons For Selection of these Software :**Java Server Pages:**

Java Server Pages are used in the proposed system, for easy retrieval of data from the database.

HTML:

HTML is used for implementing frames which contains links to various pages

Java Script:

Java Script can validate the entire form to check if the user has filled in every data before the form is sent back to the server. These reduce the workload on the server.

Oracle 8:

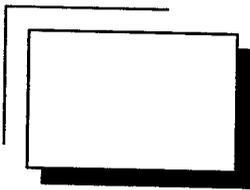
Oracle 8 is chosen for developing the database. The reason behind the choice of Oracle as the backend in this project are as follows:

- For the optimum design of the Database.
- To have a better response time.
- To maintain the security of the Database.

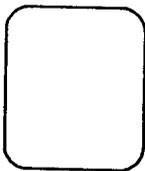
3.4 Dataflow Diagram :

This is one of the various methods to show the flow of data within the module and is a useful and intuitive way of describing a system. It describes about end-to-end processing, that is, the flow of processing from when data enters the system to where it leaves the system can be traced. This Data flow diagram shows how data flows through a system and how the output is derived from the input through a sequence of functional transactions.

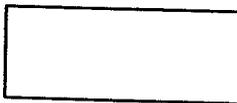
The various symbols used in the Data flow diagrams are as follows:



- Source or Destination of Data



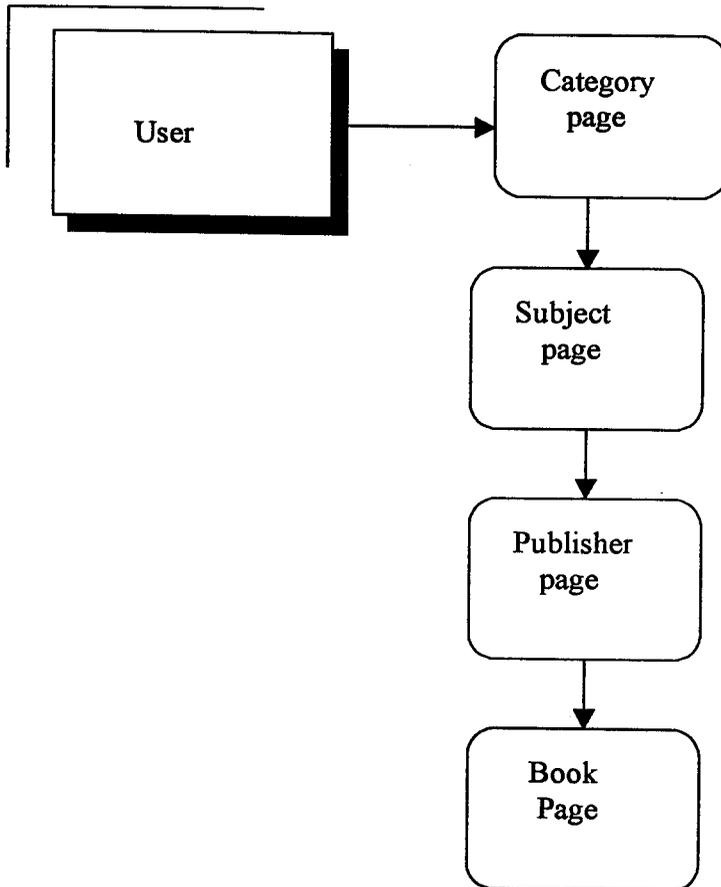
- A Process:
Process transfers flow of data



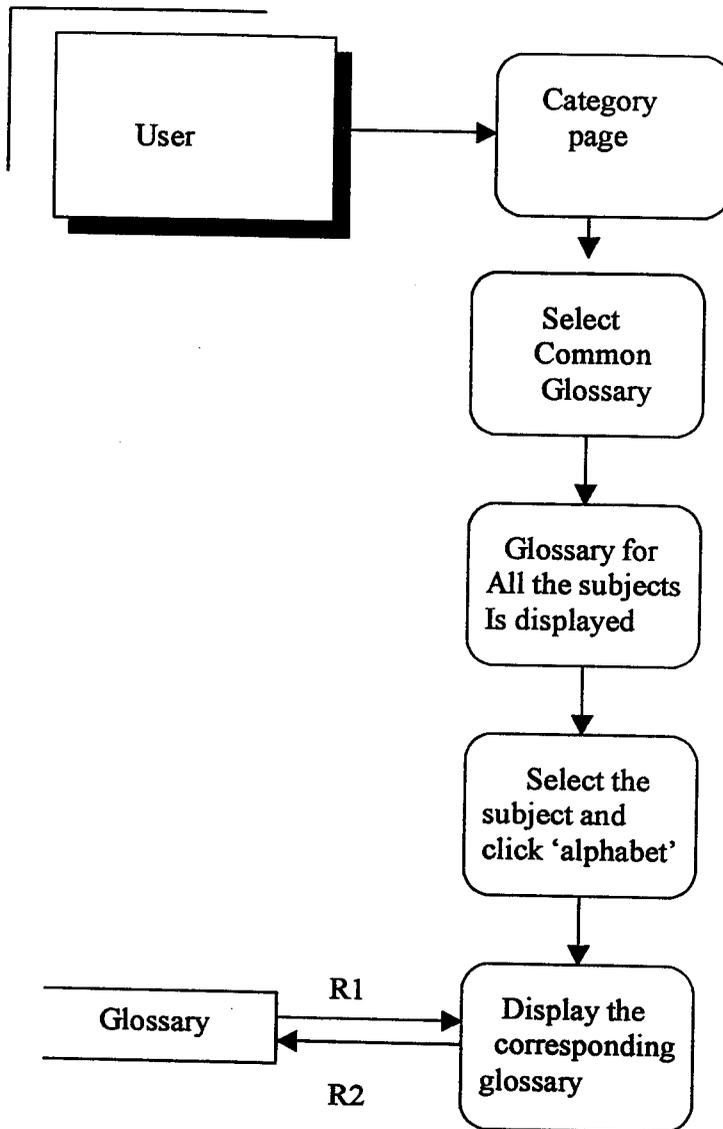
- A Data store or a Database



- A Data flow

**Description :**

This shows us the hierarchical flow of the Glossary Section.

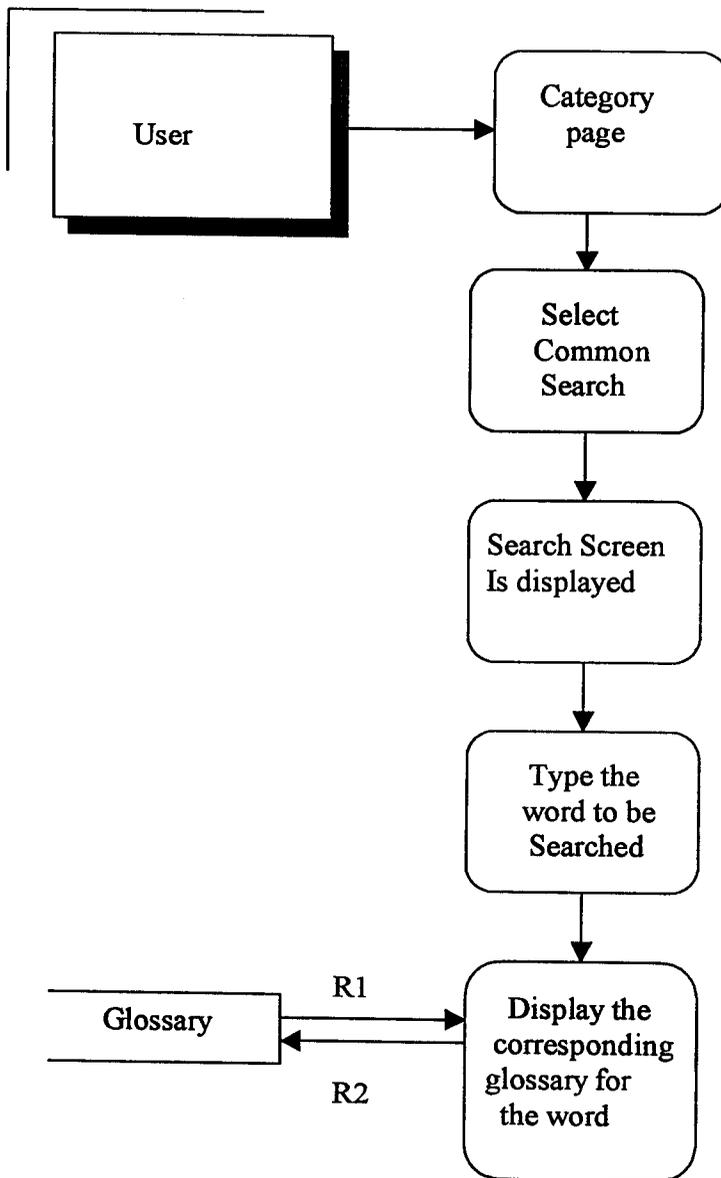


R1 – Request to the Database

R2 - Response from the Database

Description :

This gives information about the Common glossary for all the subjects present. This displays the value pertaining to the user Input, among the categories in alphabetical order (i.e) similar to book.

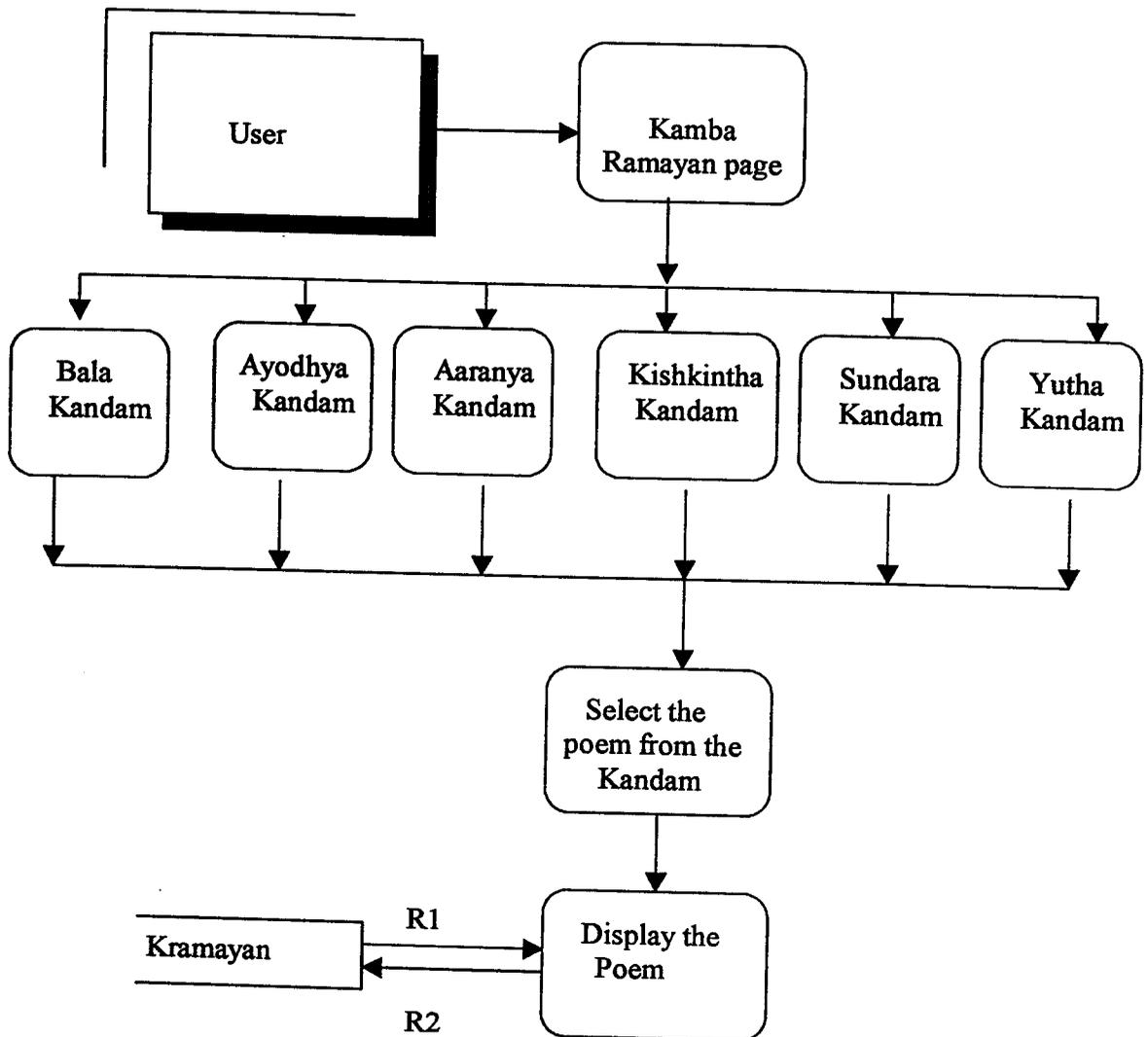


R1 – Request to the Database

R2 - Response from the Database

Description :

The user can search the meaning of the words by typing it in the textbox either in Tamil or English. This searches the value pertaining to the user Input, among all the categories both in Tamil as well as in English

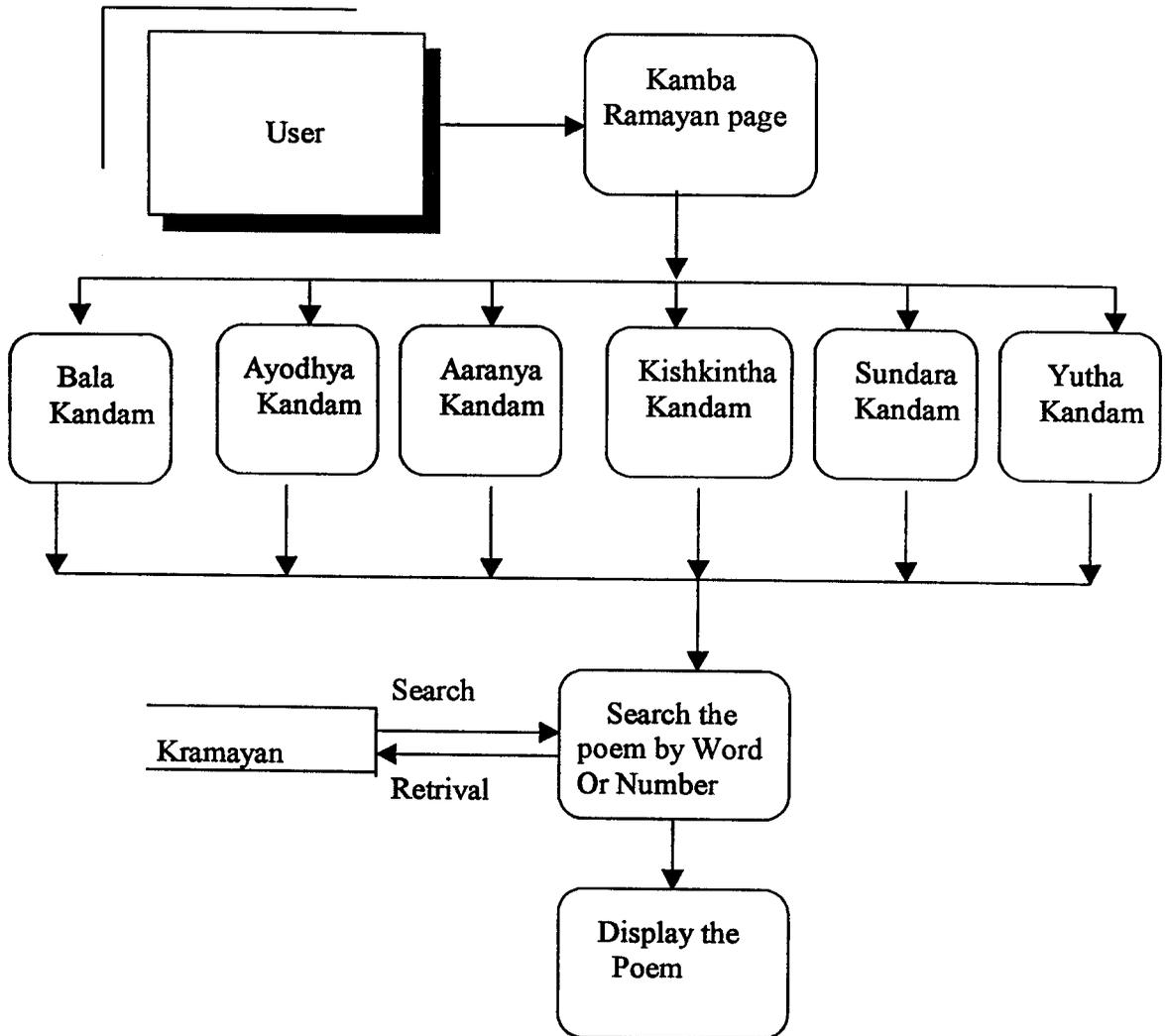


R1 – Request to the Database

R2 - Response from the Database

Description :

The User can browse through all the poems or can select any particular poem from any Kandam.



R1 - Request to the Database

R2 - Response from the Database

Description :

The User can search any particular poem from any Kanda by providing its poem number or the word from the poem.

3.5 Functional Specifications:

Functional requirements are typically expressed in relational and state-oriented notations that specify relationships among inputs, actions and outputs.

Process Description : Category page

The process is to list all the categories for the glossary page.

- Generates : All the details of the category page.
- Receives : Input for all the details in the category page.
- Part Of : Glossary (under TVU).
- Derives : All the details of all the category page.
- Using : Inputs given from the Database.

Process Description : Subject page

The process is to list all the Subjects for the glossary page.

- Generates : All the details of the subject page.
- Receives : Input for all the details in the subject page.
- Part Of : Glossary (under TVU).
- Derives : All the details of all the subject page.
- Using : Inputs given from the Database.

Similar Process is done for **publisher's page** and **Book's Page**

Process Description : Searching for glossary of a particular Word

The process is to search the glossary of a particular Word and list its Corresponding meaning.

- Generates : Lists the glossary of a particular Word if it is available in the Database.
- Receives : Input for the particular Word.
- Part Of : Glossary (under TVU).

- Derives : The Glossary for that Word.
- Using : Inputs given from the Database.

Process Description : To Display all the Poems in KambaRamayan

This process show all the Poems from the particular Topic.

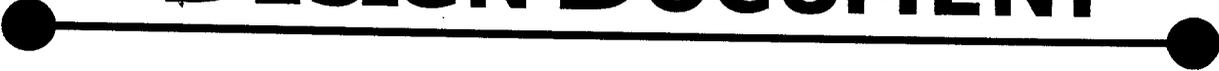
- Generates : All the Poems from the particular Topic.
- Receives : The particular poems that has to be displayed.
- Part Of : KambaRamayan (Under TVU).
- Derives : The poems from particular Kandam.
- Using : Inputs given from the Database.

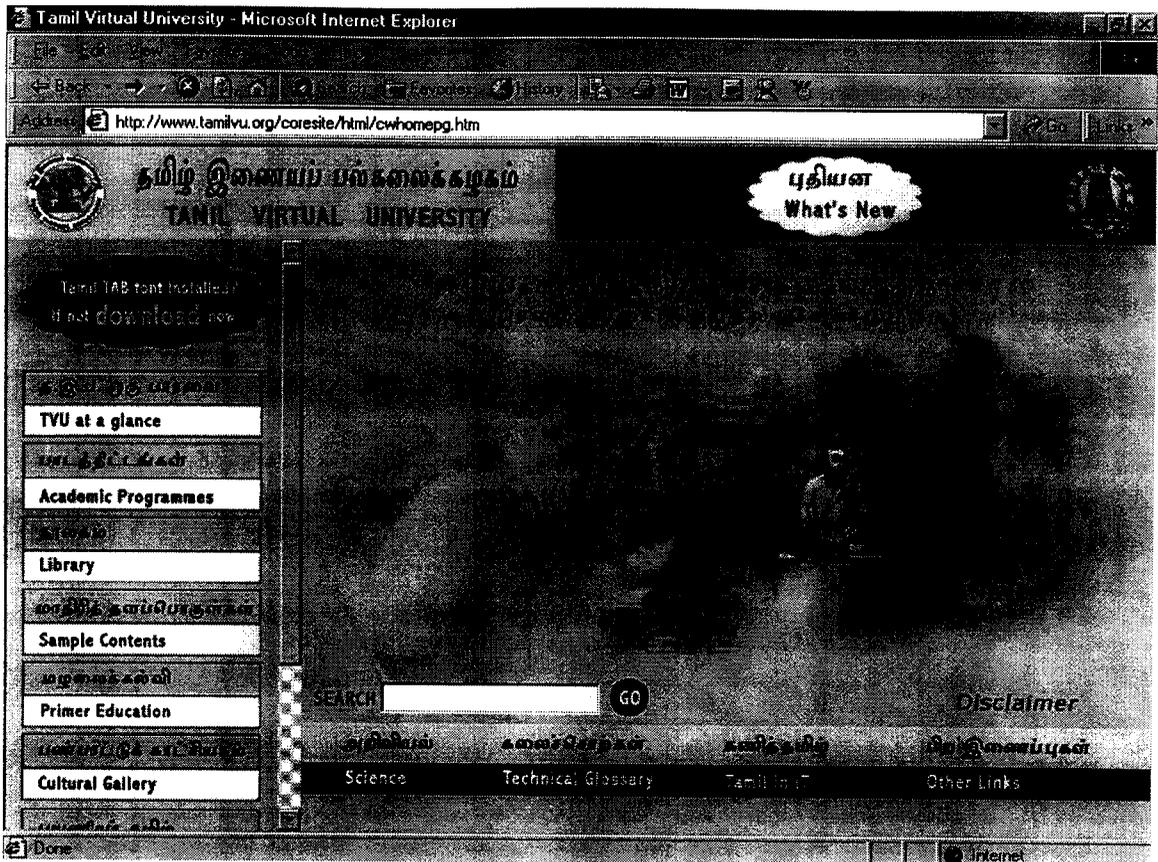
Process Description : Searching for poems by tying the Word or Number

This process is to display the poem after searching by its poetry number or by the word.

- Generates : All the poem that has been searched .
- Receives : Poetry number or the word.
- Part Of : KambaRamayan (Under TVU).
- Derives : The poems from the Database.
- Using : Inputs given from the Database

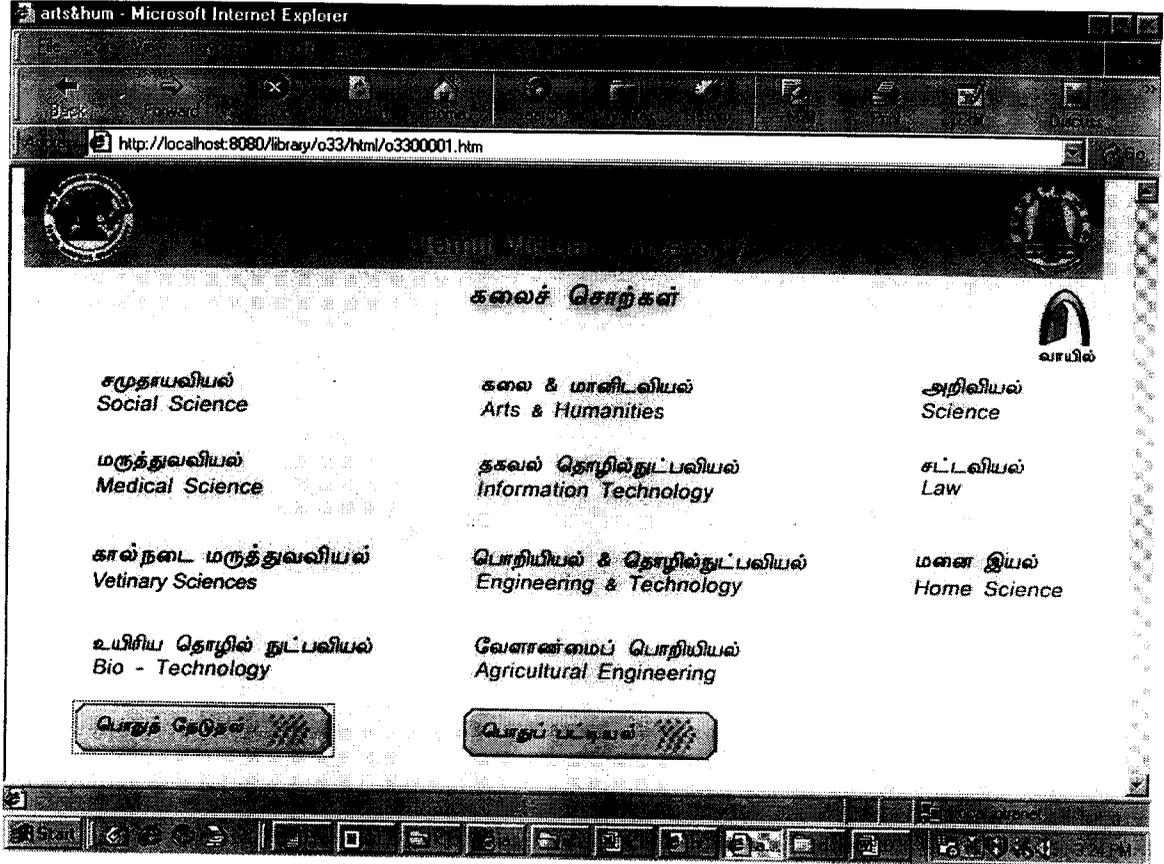
DESIGN DOCUMENT





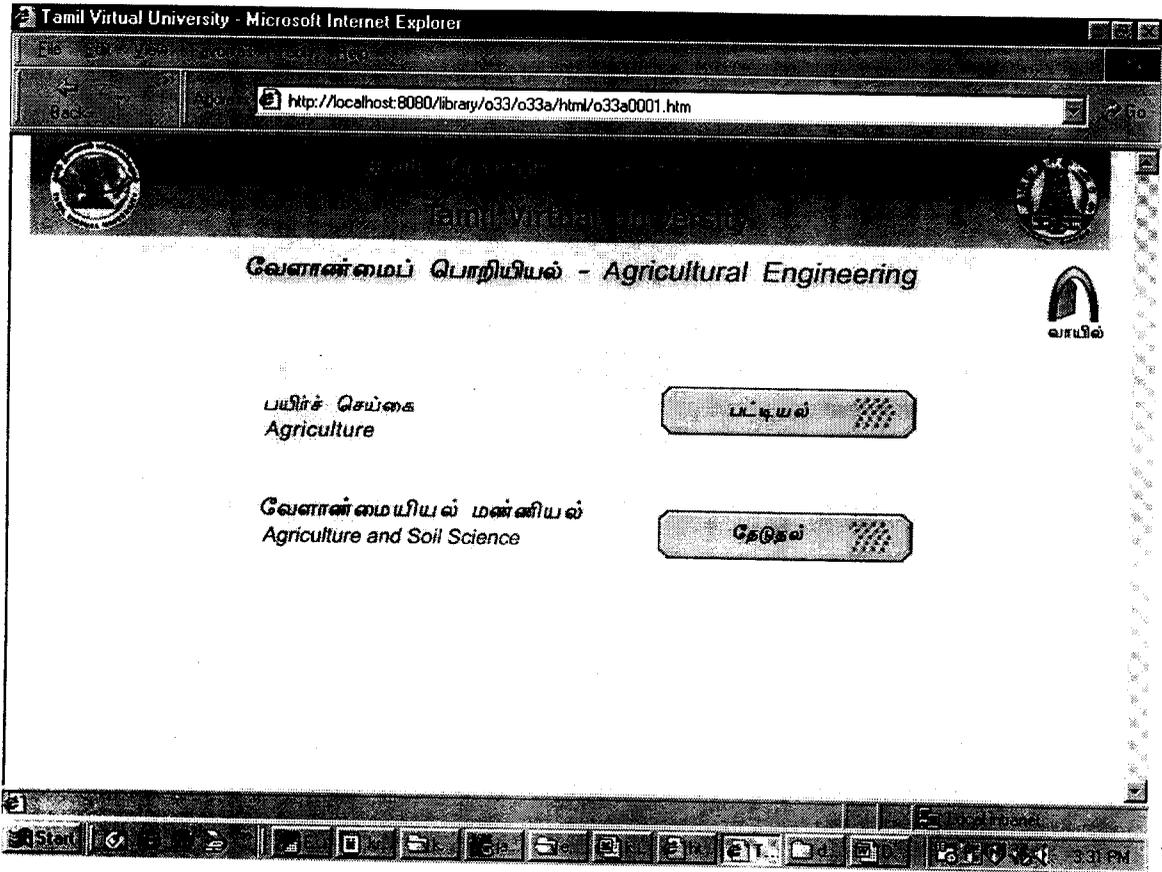
Home Page Of Tamil Virtual University

This Screen shows the Home Page Of Tamil Virtual University which has all the details of these Links.



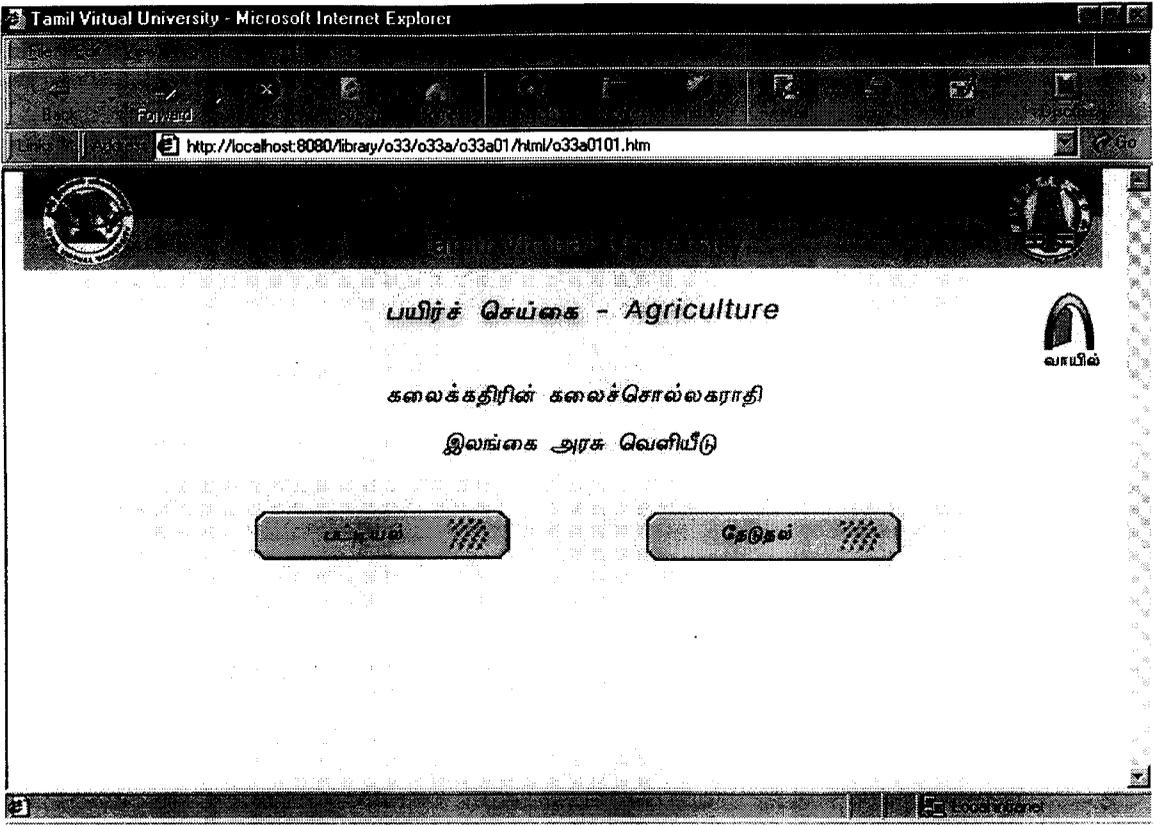
Category page

Clicking different categories will lead the user to different “subjects “under it. Common Search searches the value pertaining to the user Input, among all the categories both in Tamil as well as in English. Common glossary displays the value pertaining to the user Input, among the categories in alphabetical order (i.e) similar to book.



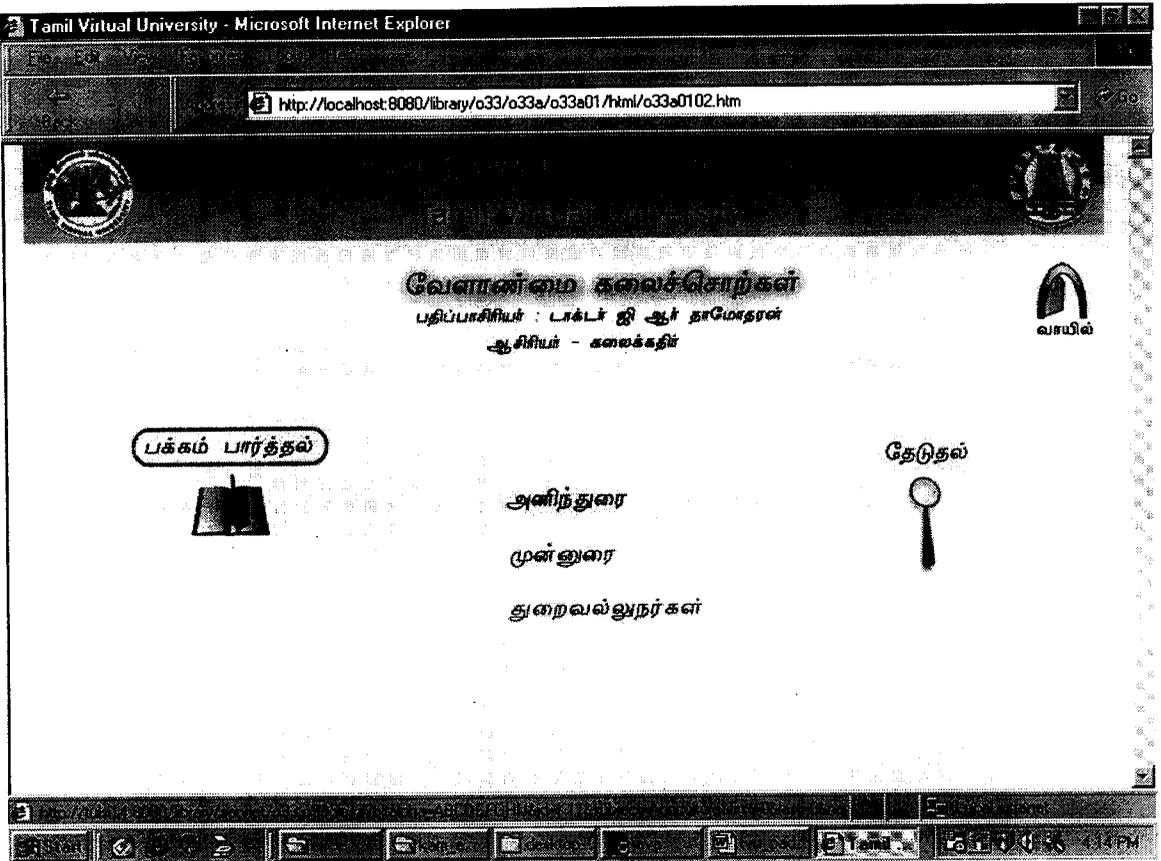
Subject Page

This Screen shows the subjects under the Agricultural Engineering Category. This Screen has Search button and a Glossary button for these subjects. Clicking on the Subjects will lead into Publisher's Page



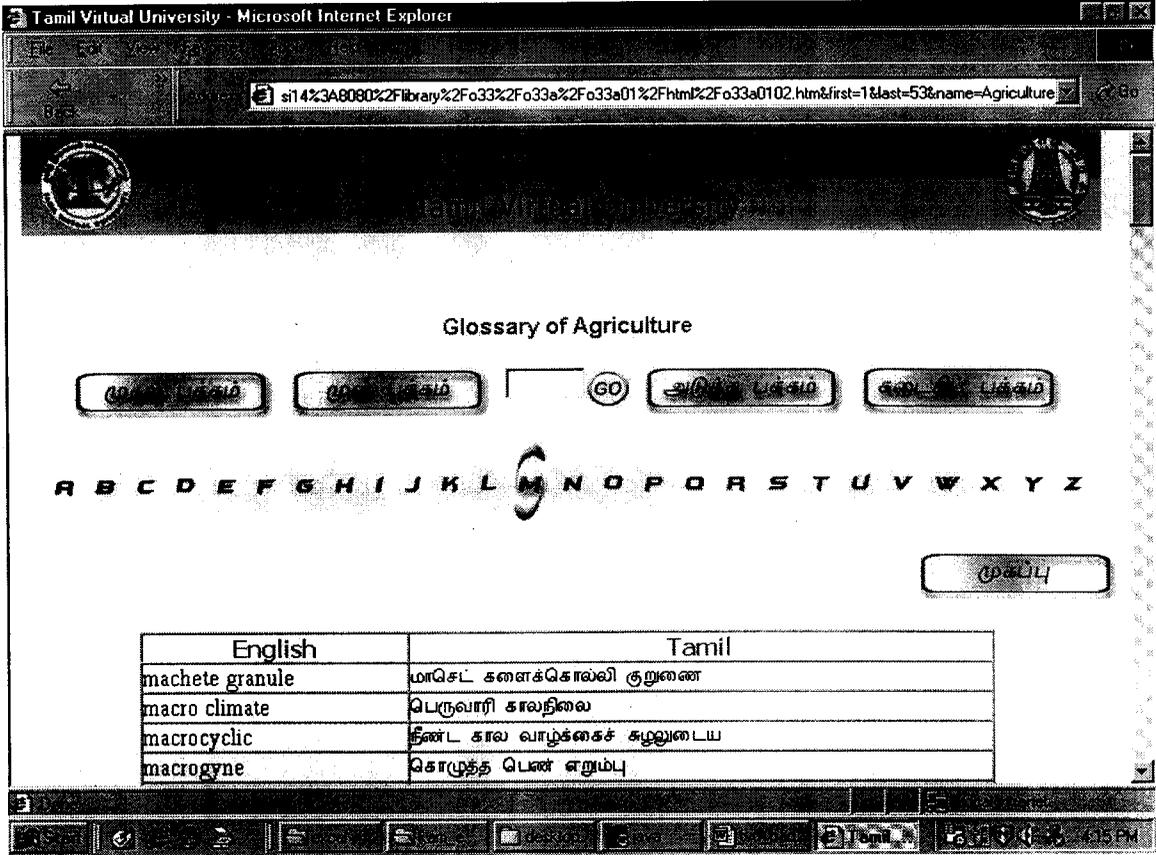
Publisher's Page

The above screen has various "Publisher's" mentioned under it. User can select any Publisher he wants ..



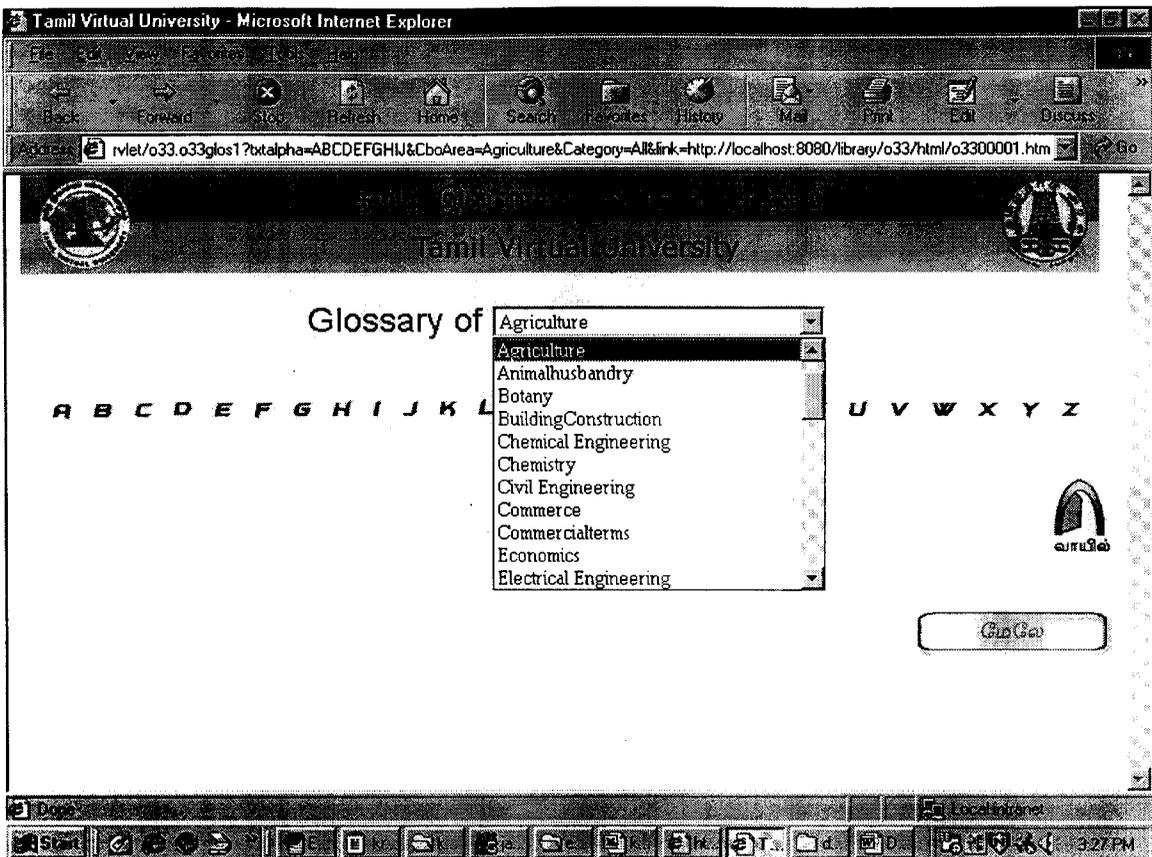
Book's Page

Under this section the glossary for the prescribed book will be given. The introduction about the book is also given. The User can go page by page and a Search button is given in which we can enter both Tamil as well as English words and find out their meanings.



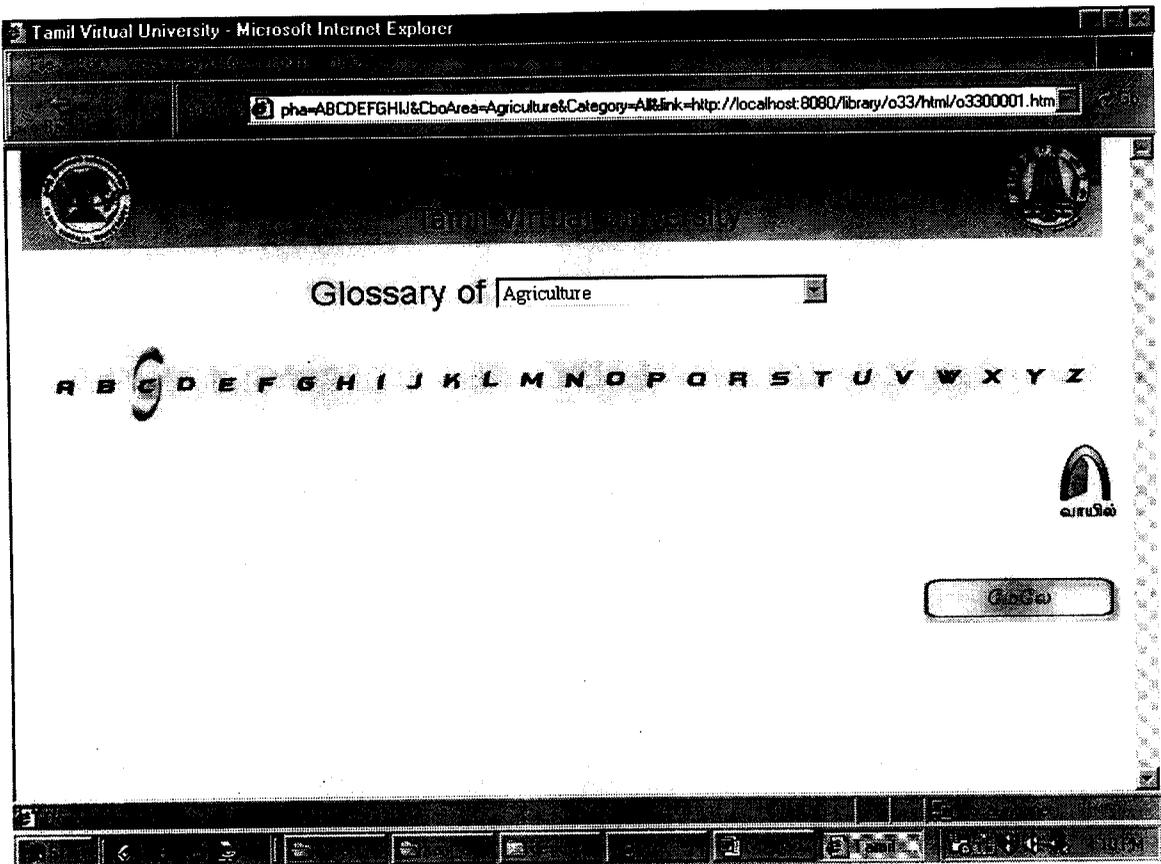
Screen Showing Glossary of Agriculture

In this Glossary page we are provided with alphabets and by clicking the particular alphabet we get the corresponding glossary. The “mugappu” button takes us to the previous page.



Common Glossary Screen

This screen gives information about the Common glossary for all the subjects present in the Combo box. This displays the value pertaining to the user Input, among the categories in alphabetical order (i.e) similar to book.



Screen showing Glossary of Agriculture

The User here clicks the alphabet 'C' and the result for it is shown in the next screen.

Tamil Virtual University - Microsoft Internet Explorer

http://localhost:8080/library/servlet/c33.c33glos1?CboArea=Agriculture&xtalpha=c&Category=All&link=http%3A%

Glossary of Agriculture

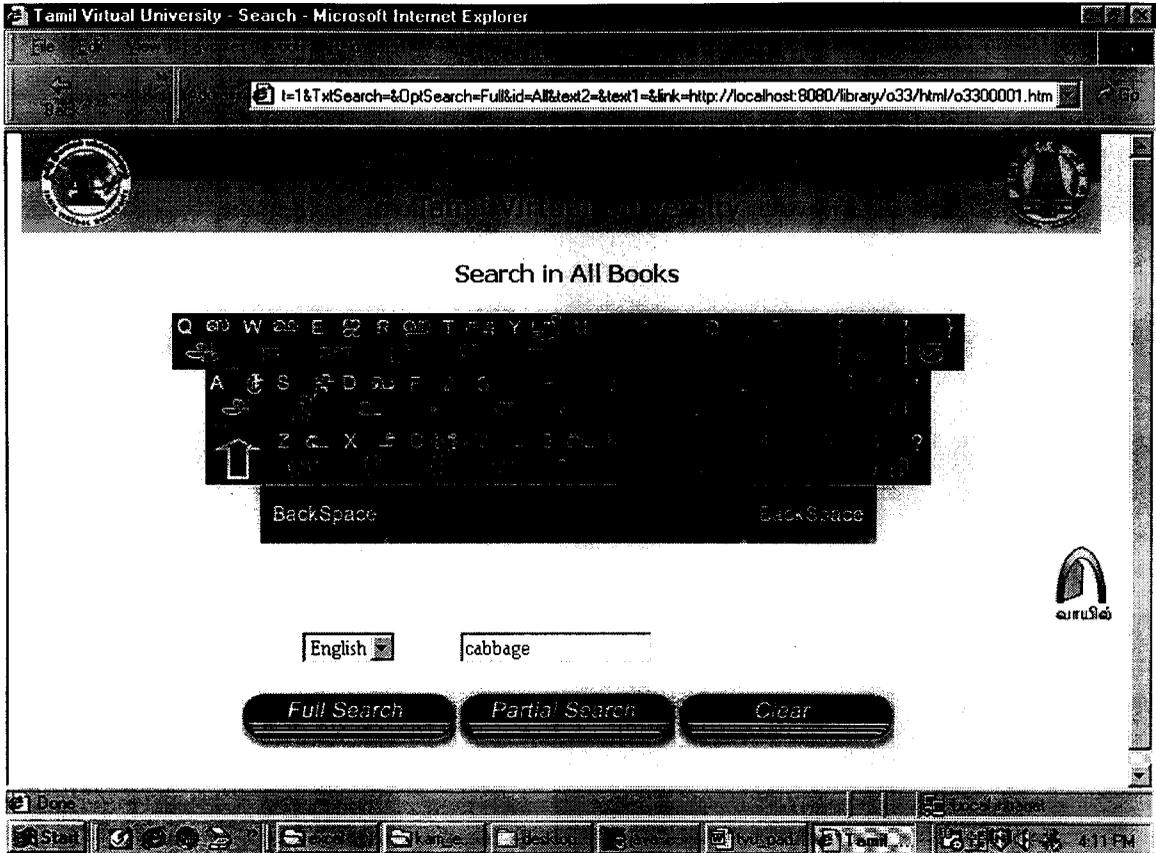
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

வாய்க்கால்

English	Tamil
cabbage	முட்டைக்கோசு
cabbage	முட்டைக் கோசு, இலைக்கோசு
cacao swollen shoot disease	இலைக்காம்பு நோய்
cactus	கள்ளிக்கொட்டை
cactus	கள்ளிச் செடி
cactus	கள்ளியினம்

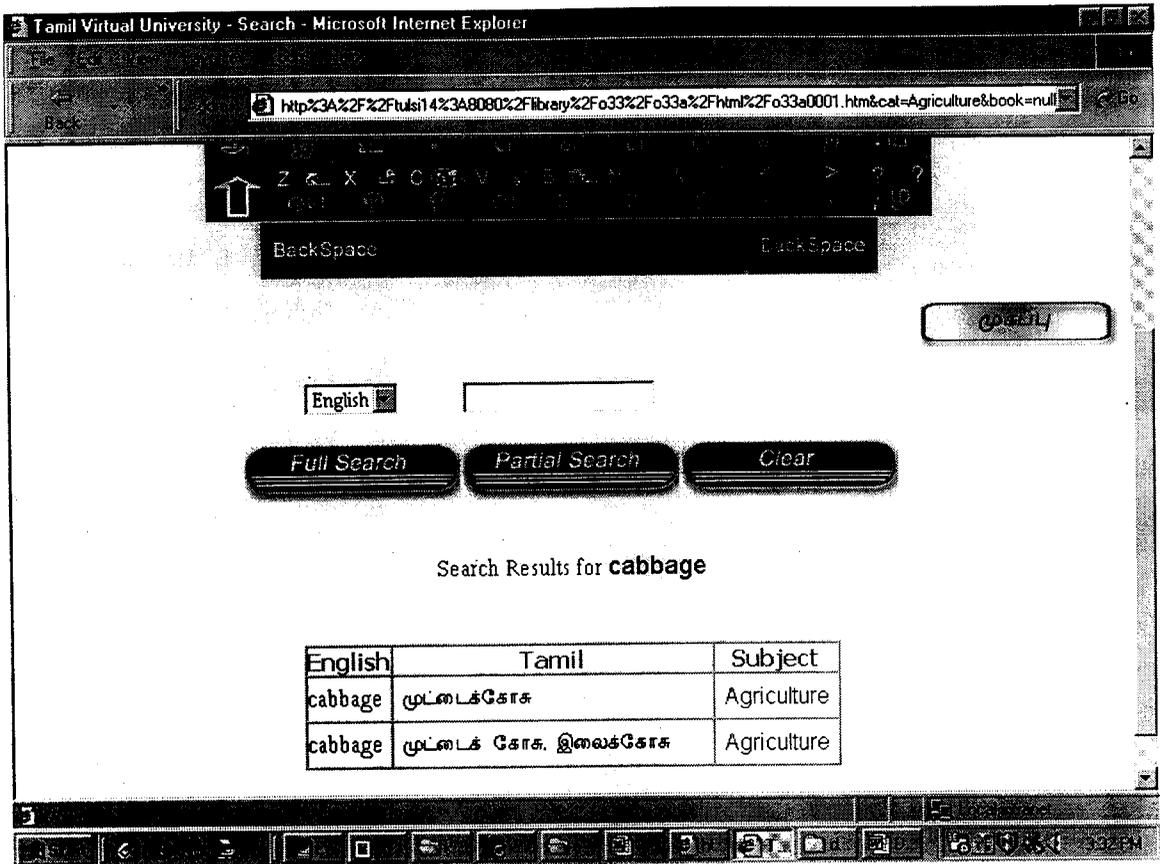
Screen showing the result of glossary page

The result screen showing the glossary page for alphabet 'c'.



Common Search Screen

This Screen is embedded with a flash keyboard whereby the user can search the meaning of the words by typing it in the textbox either in Tamil or English. This searches the value pertaining to the user Input, among all the categories both in Tamil as well as in English



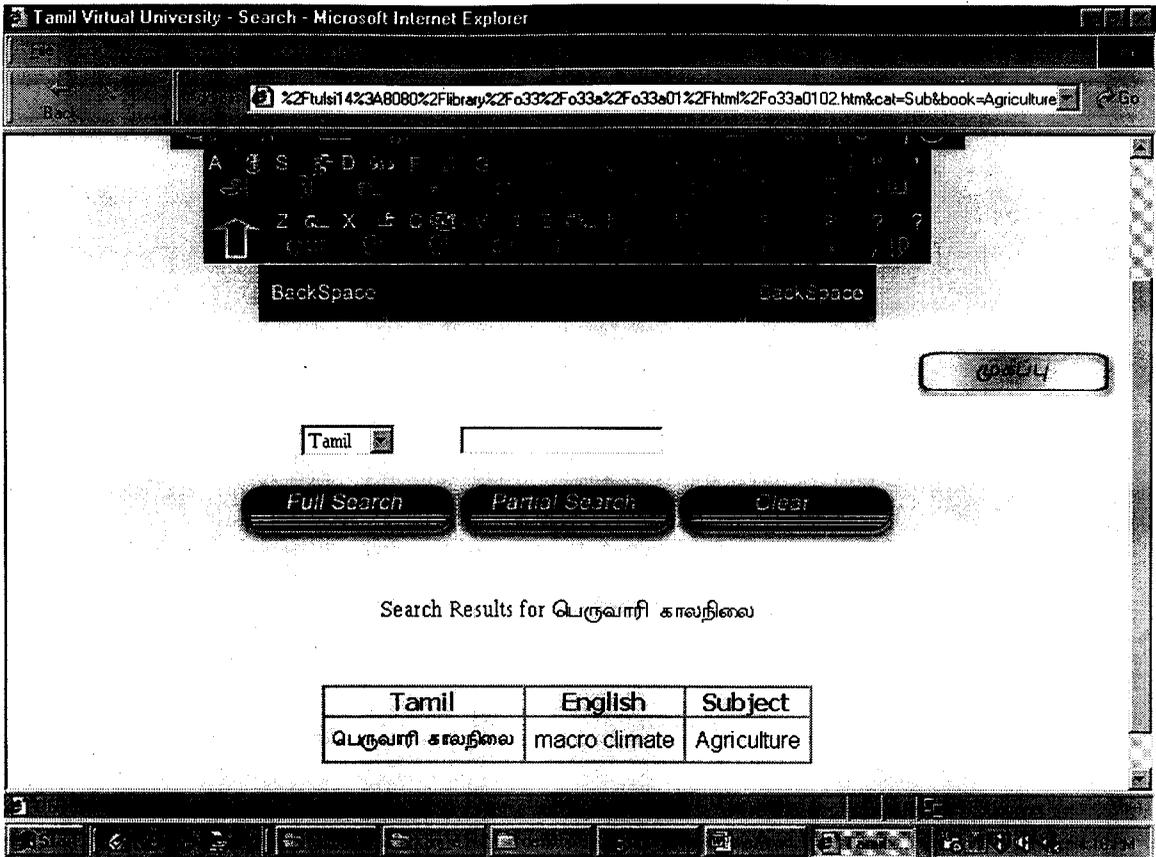
Screen showing the Search Result

The Screen showing the Search Result for the English word cabbage.



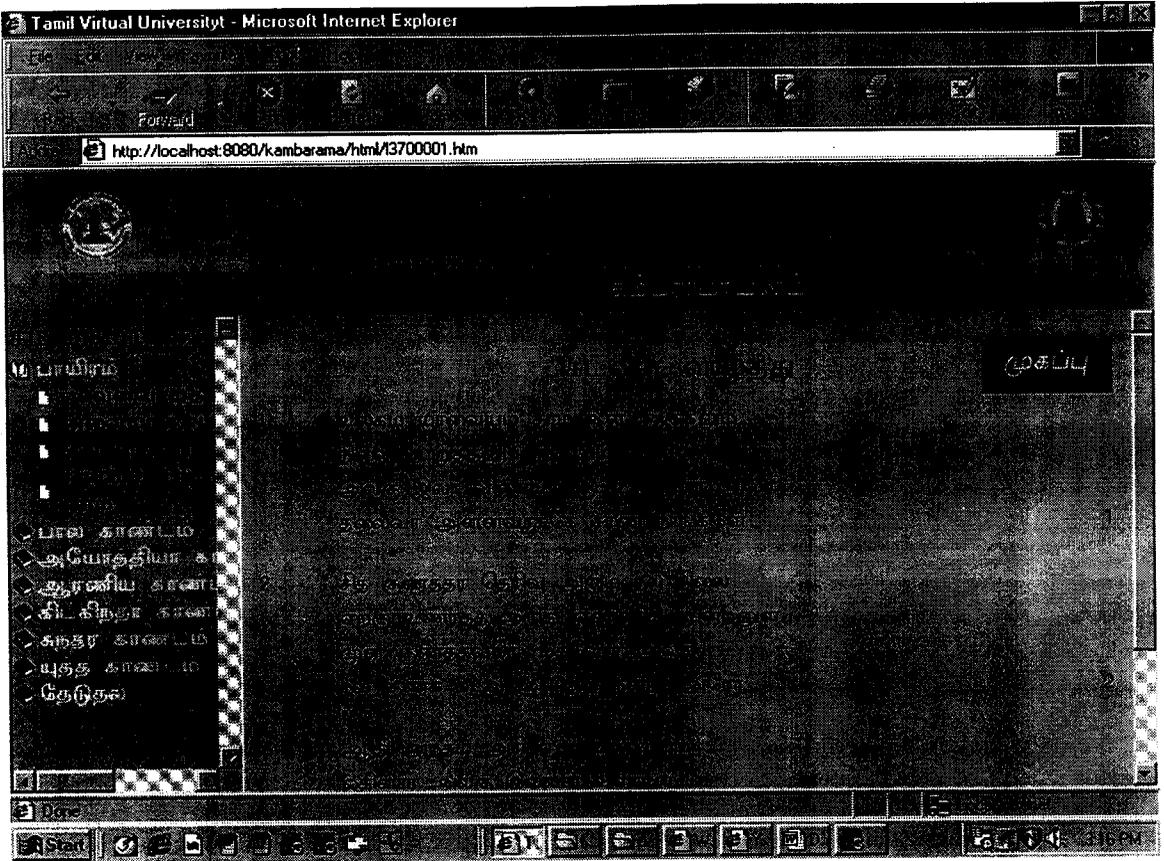
Search Screen for Agriculture

Here the User types the word in Tamil and searches for its corresponding meaning in English.



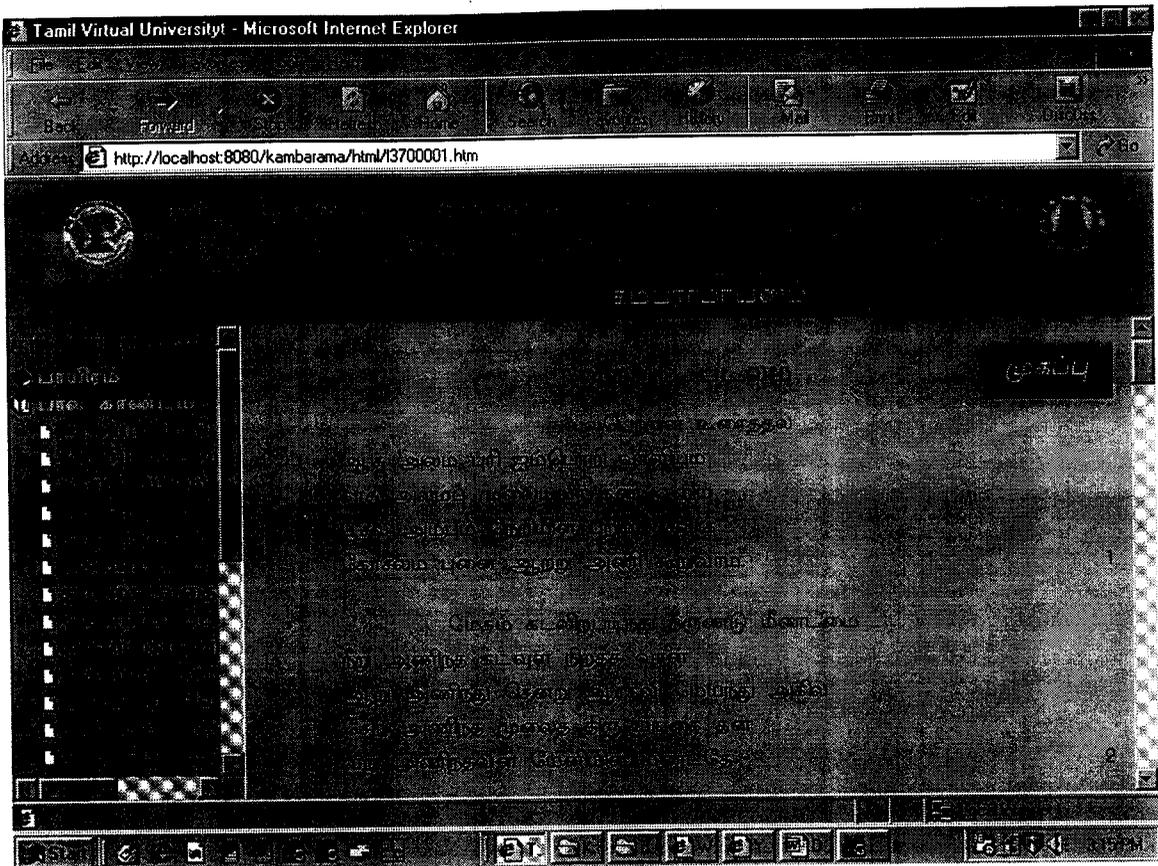
Screen showing the Search Result

The Screen showing the Search Result for the Tamil word.



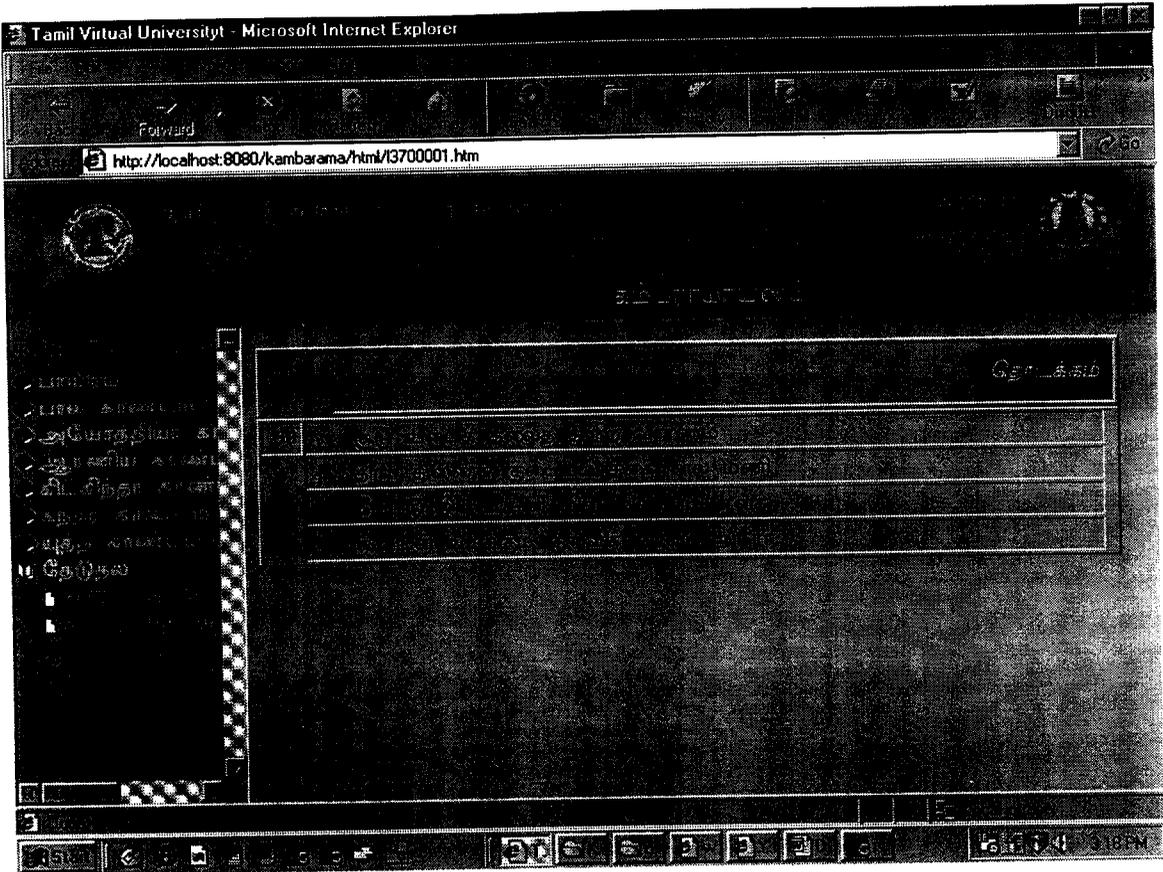
Home Page Of Kamba Ramayanam

This Screen shows the first page of the epic and has the links to view other poems.



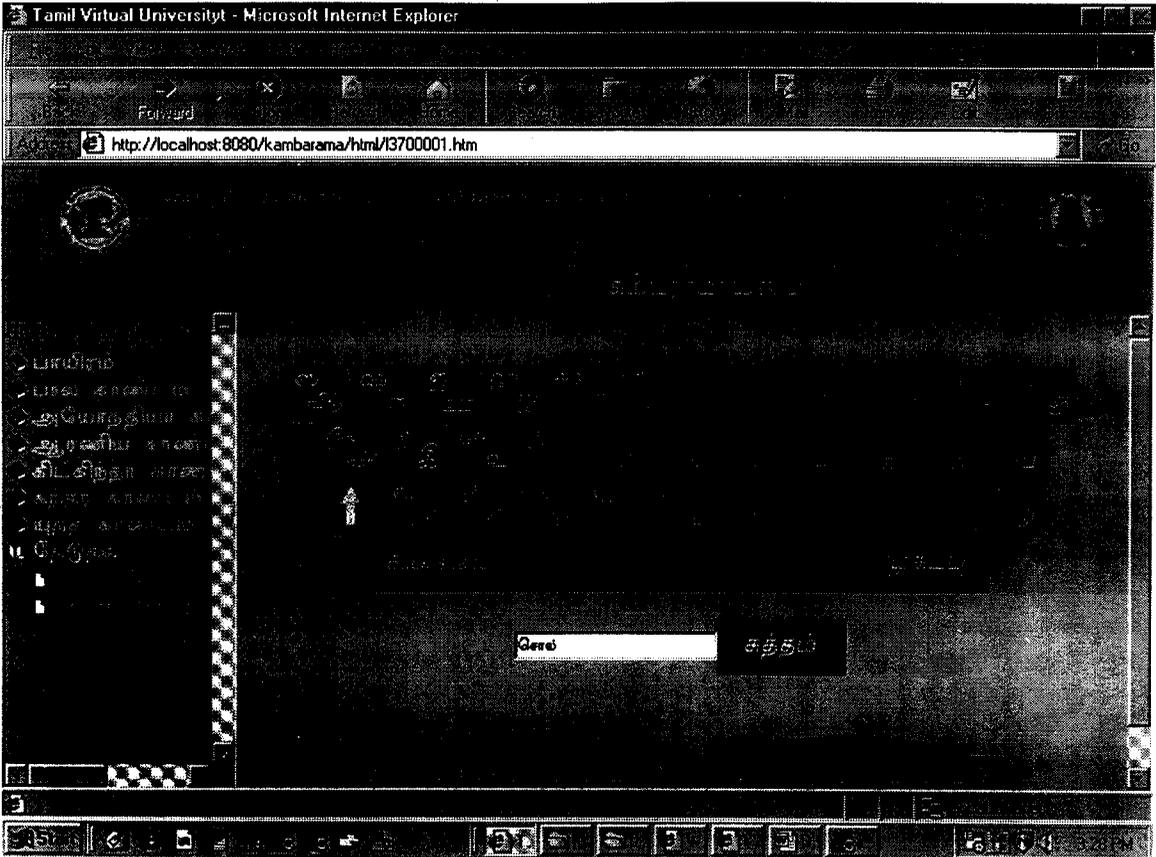
Screen Showing Bala Kanda

This section shows all the poem sunder Bala Kanda which describes about early part of Lord Rama's Life.



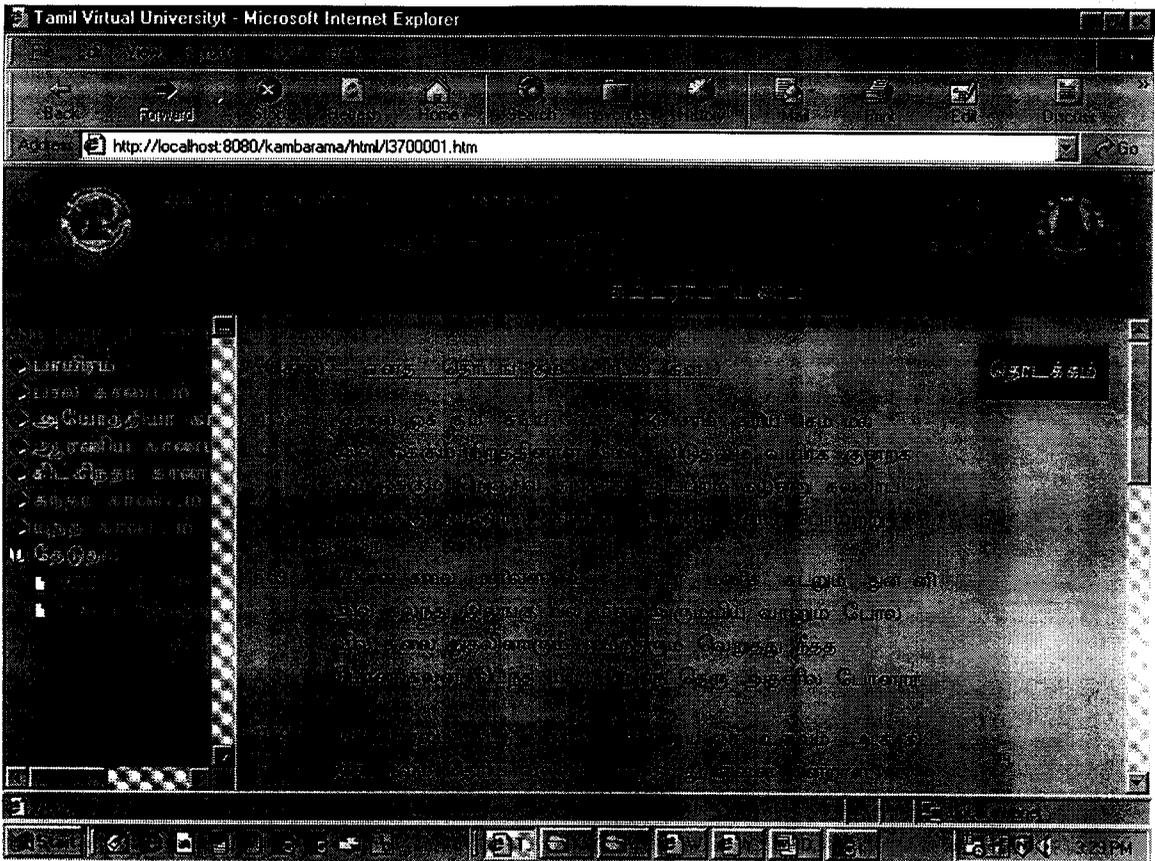
Search Result Screen

This Screen shows us the result for the Numeric Search.



Word Search Screen

This Screen is provided for searching the poem by giving the beginning of the Word or any word from the Poem



Search Result Screen

This Screen shows us the result for the poem which is begun by the particular word

DATABASE DESIGN

Glossary Table :

This table contains the details of the Glossary Page

Field Name	DATA TYPE	REMARK
Sno	varchar2 (20)	Serial Number
Pageno	number(15)	Page Number of the book
English	varchar2(300)	English words
Tamil	varchar2(300)	Tamil words
Subject	varchar2(300)	Subject's Name
Category	varchar2(300)	Category's Name
Book No	varchar2(40)	Book Number

Kramayan :

This table contains all the details of the Kamba Ramayan book

Field Name	DATA TYPE	REMARK
PageNo	varchar2(20)	Page Number of the book
Poetry Lines	varchar2(300)	Poetry
Poetry Number	number(15)	Poetry Number
Kandam	varchar2(300)	Name of the Kandam
Topic	varchar2(300)	Name of the padalam
TamST	varchar2(40)	Sub Topic

TEST PLAN



5. TEST PLAN

5.1 Objectives of Testing:

The Objectives of testing are as follows:

- i. Testing is a process of executing a program with the intent of finding an error.
- ii. A good test is one that has a high probability of finding an undiscovered error.
- iii. A successful test is one that uncovers an as-yet undiscovered error.

5.2 Testability:

Software testability determines how easily a program can be tested.

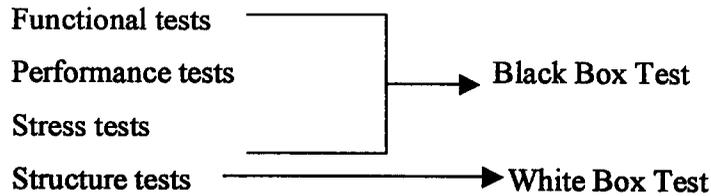
- i. Operability- The better it works the more efficiently it can be tested.
- ii. Observability- What you see is what you Test. Incorrect output is easily identified.
- iii. Controllability- The better we control the software. The more the testing can be optimized.
- iv. Understandability-The more information we have the smarter we will test.

5.3 Unit Testing:

Unit testing comprises the set of tests performed by an individual programmer prior to integration of the unit into a larger system. The situation is illustrated as follows:

Coding and Debugging —————▶ Unit testing —————▶ Integration testing

A Program unit is usually small enough that the programmer who developed it can test it in great detail and certainly in greater detail than will be possible when the unit is integrated into an evolving software product. There are four categories of tests that a programmer will typically perform on a program unit:



Black Box Testing:

This testing focuses on the functional requirements of the software. Black box testing finds errors in the following functions: Incorrect or missing functions, interface errors, errors in database access, performance errors or initialization or termination error.

White Box Testing:

Using the White box testing all the logical decisions on the true and false side of the product are tested. All the loops within the operational Bounds are tested. Logical errors and incorrect assumptions are identified and rectified.

The unit testing for this product is done and shown on the input and output screen The sample testing for the modules is shown here.

Page Name: Category Page

Labels : Different categories like Science, Agricultural Engineering etc..

Buttons :Common Glossary, Common Search

Input	Desired Output	Actual Output	Comment
Click any category	Should go to its corresponding subjects	Goes to its corresponding subjects	Verified and found to be correct

Click Common Glossary	Should go to Common Glossary Page	Goes to Common Glossary Page	Verified and found to be correct
Click Common Search	Should go to Common Search Page	Goes to Common Search Page	Verified and found to be correct

Page Name: Subject Page

Labels : Different Subjects like Agricultural and Agricultural Science.

Buttons : Glossary

Search

Input	Desired Output	Actual Output	Comment
Click any Subjects	Should go to its corresponding Publisher's page	Goes to its corresponding Publisher's page	Verified and found to be correct
Click Glossary	Should go to Glossary Page	Goes to Glossary Page	Verified and found to be correct
Click Search	Should go to Search Page	Goes to Search Page	Verified and found to be correct

Similar Tests are done for **Publisher Page** and **Book's page**.

Page Name: Common Glossary Page

Combo Box: contains all the Subjects.

Buttons : Alphabets from A to Z

Input	Desired Output	Actual Output	Comment
Click any alphabet	Should show Corresponding Glossary for the particular alphabet	Shows Corresponding Glossary for the particular alphabet	Verified and found to be correct
Click different subjects from the combo Box	Should show Corresponding Glossary for the particular subject	Shows Corresponding Glossary for the particular subject	Verified and found to be correct

Page Name: Search Screen for Kamba Ramayan

Text Box: Numeric or Word.

Buttons : Numeric Search or Word Search

Input	Desired Output	Actual Output	Comment
Type the poem Number	Should fetch Corresponding Poem from the Database.	Fetches Corresponding Poem from the Database.	Verified and found to be correct
Type the word From the poem Or beginning word	Should fetch Corresponding Poem from the Database	Fetches Corresponding Poem from the Database.	Verified and found to be correct

If irrelevant poem number or word is typed	Should Display a warning message	Displays a Warning message	Verified and found to be correct
--	----------------------------------	----------------------------	----------------------------------

Similar tests are done for the entire product.

6. IMPLEMENTATION

After testing these two modules successfully, the necessary privileges are given to users. All the users are requested to handle the system properly.

The real time problems that occur are successfully solved.

The objective is to put the tested system into operation. It consists of

- Testing the developed program with sample data.
- Detection and corrections of errors.
- Making necessary changes in the system.
- Testing the user personnel.
- Creating browser compatible files.
- Installation of Hardware and Software utilities

7. CONCLUSION

Broad conclusions:

With the development of the proposed system, the purpose of the system is achieved. As the two modules of this software has been implemented, it has reached positive Feedback .The goals that have been achieved by the developed system are

- ❖ Faster and proved to be user friendly.
- ❖ Client's Requirements have been met.
- ❖ Search Results are processed immediately.
- ❖ Portable and flexible for further development.

8. REFERENCES

1. Madhushree Ganguli,"JSP", Wiley Publications.
2. Richard E.Fairley, "Software Engineering Concepts", Tata McGraw-Hill, 1997
3. William G.Page, Jr. Using Oracle 8/8i", Prentice Hill, 1999.
4. HTML, Pentasoft Material.
5. Java Script, Pentasoft Material.

9. APPENDIX

APPENDIX – A Acronyms

S.No	Acronyms	Expansion
1	TVU	Tamil Virtual University
2	JSP	Java Server Pages
3	HTML	Hyper Text Markup Language

APPENDIX – B Glossary

TAB-LFS-KAMBAN.TTF, TABXPonni :

Software Used for Tamil font installation.

TAMLKAMBAN.TTF :

Font needed to view Pals dictionary and Madras University dictionaries.

Kambaramayanam :

A Tamil epic.

Kandam :

Section describing about each phases of Lord Rama's Life History.

Padalam :

Section that comes under KANDAM.

Mugappu :

Go back to Previous Page.

Vaayil:

Home Page