



INDIGENOUS MEDICINE WEBSITE

**A dissertation submitted for the Degree of Master of
Information Technology (MM)**

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University of Colombo School of Computing
2017



Declaration

The thesis is my original work and has not been submitted previously for a degree at this or any other university/institute.

To the best of my knowledge it does not contain any material published or written by another person, except as acknowledged in the text.

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Mr./Ms.

under my supervision. The thesis has been prepared according to the format stipulated and is of acceptable standard.

Certified by:

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Date:

Abstract

Sri Lankan Ayurveda medical system is still live treatment method and Indigenous medicine or Ayurveda natural home remedy one of part in Sri Lankan Ayurveda. Our current generation is lack of knowledge about medicinal plants based herbal drugs as well as indigenous medicine or Ayurveda natural home remedy medicine like previous generation. The problem is indigenous medicine system including medicinal plants knowledge not digitalization in this digital world.

Then, creation of this multimedia based www application is solution for that problem. This www application not just informational site and it's featured with multimedia and interactivity. User can search medicinal plant and view of plant multimedia galleries. Multimedia gallery included image/video and 3D view of plants. This feature couldn't find any other similar www application. On the other hand, event calendar, email subscription and multilingual features added usability in this website. The Software design and development principles with multimedia web technologies used for this website creation. Such as WordPress, HTML5, CSS3, PHP, MySQL, Adobe creative suite, 3D studio Max and open source plug-ins. The CeylonHerb will bring indigenous medicine knowledge to digital world as a multimedia based multilingual application.

Acknowledgement

I would like to express my appreciation to all those who provide possibility to complete this project.

I am highly indebted to my supervisor Mr. G K A Dias and Mr. S T Nandasra who are encouraged and guided me throughout this implementation.

Furthermore, I am really thanking full to all workers in Department of Ayurveda, Nawina. Specially, Dr. Nadi who provided all details about medicinal plants for this project well.

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List of Abbreviations

- 3D view – 3Dimensional view
- CMS – Content Management system
- ER diagram – Entity Relationship diagram
- GUI – Graphical user interface
- GPS code – The global positioning system
- SEO – Search Engine Optimization
- UI – User interface
- UX – User Experience
- VR – Virtual Reality
- VRML – Virtual Reality Modeling language

Chapter 1: Introduction

1.0 Background

Sri Lankan Ayurveda has long history and still live medical system in Sri Lanka. Indigenous medicine or Ayurveda natural home remedy one of part in Sri Lankan Ayurveda.[2] [8] Our current generation is lack of knowledge about medicinal plants based herbal drugs as well as indigenous medicine or Ayurveda natural home remedy medicine like previous generation.

The major reason is this knowledge bringing by word of mouth in generation to another generation. There are written books also. But we are live in digital world and few materials can find about Indigenous medicine or medicinal plants through Internet. Those materials are just written articles or few images or videos. Not much provide clear information for users. The problem is indigenous medicine system including medicinal plants knowledge not digitalization in this digital world.

The main motivation is save this valuable indigenous medicine system for next generation as a Sri Lankan citizen.

1.1 Aims and Objectives

The objective of project is bringing indigenous medicine system to digital world as a website - multimedia based www application. It includes Indigenous medicine or Ayurveda natural home remedy including medicinal plants detail by using multimedia.

The user should be able to get information by search or in plants directory. Application increases engagement and interaction and provide richer user experience whenever user wants more details. Furthermore, this website or multimedia based www application should work in desktop and mobile device.

1.2 Scope of Project

The scope of project is creating website - multimedia based www application combined information and multimedia. This is user interactive digital library of indigenous medicine.

- WWW Application

This website is responsive bootstrap well built GUI. It will use UI design techniques for front-end design. Then, this web application not just for desktop, it will be on tablet and mobile devices as well as.

- Search Directory

1st way : User can search plant scientific or English or local name in search box

2nd way : User can search by sickness name in search box

3rd way: User can directly go to herbal directory in Navigation menu.

Then alphabetical ordered plants names listed page will appear to user. Plants details store in Database system.

- Web Administration

The whole website maintain by admin and admin role play major role in this WWW application. Admin create new post, update post, upload multimedia items (images or videos) and check all functions working status in website. Web admin will register users by email request and give permission to users to download videos. Furthermore, web admin responsible to update event calendar, handle subscriptions and generate reports based data analysis. (E.g.: How many videos include, user visits data etc.)

- Multimedia

This website is multimedia based www application. User can experience in image galleries, audio/ video galleries and 3D view of plant in this website project. Image gallery include different angle of plant images. Video gallery include plant view with audio description about plant and usage of plant. 3D view of plant shows how medicinal plant in 3 dimensional view and user can view same plant in 2D and 3D views in this www application. In 3D view of plant will give information by clicking plant parts. VR tour is specific multimedia feature for user to feel virtual reality experience in this website. User can identify plant by click on plant code when they are going around virtual herbal garden. This plant code will be change in to GPS code and it will be use in future development of this web project (Mobile App).

Chapter 2: Review of current similar systems and Requirement Analysis

2.0 Introduction

This web application development goal is creating website – multimedia based www application combined information and multimedia for indigenous medicine system in Sri Lanka. To full fill this Goal need to satisfied functional and non functional requirements. Then, requirement analysis is very important and first step of web application development.

Before we go to requirement analysis, we have to review of current similar systems. However, there are very few of similar systems like this web application. All of current websites focus only information with one or two images relating medicinal plant.

2.1 Review of instituteofayurveda.org

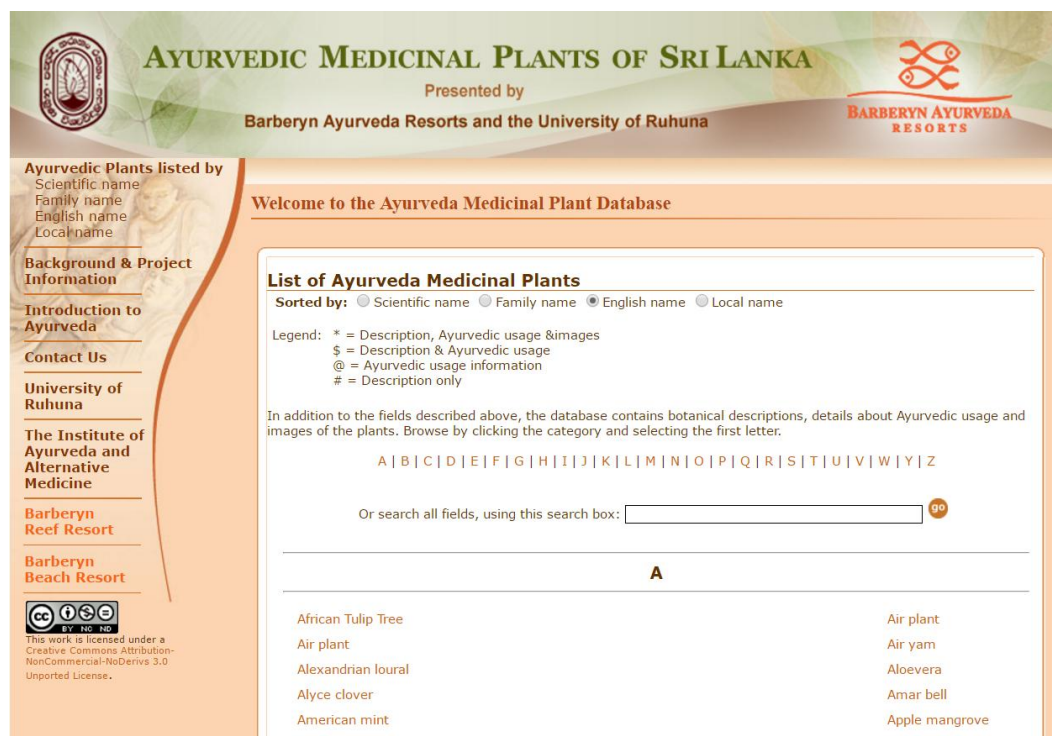


Figure 2.1: Review of similar www application

Currently, this instituteofayurveda.org [4] website only similar www application for the introducing multimedia based www application. However, it's just information website and there are no any UI/UX or interactivity experience. It's not providing any functional or non functional features to the users. This website includes large collection of medicinal plants

database. It's one and only advantage for users. But this website didn't update since year 2013.

The review of current similar web application is great guide for finalize requirement analysis of new introducing multimedia based www application. The introducing web application development requirement can be categories like below.

2.2 Functional Requirements

The functional requirement must be exhibited by the system/ website in order to complete. The one of core function in this web application is search tool. User can search by text using English/local name or scientific name. Then search results will be on search result page. This www application based multimedia website administrator will register users based their email request. Register user can send request for download videos relating medical plants from multimedia video/3D view galleries. This web application will have virtual tour for virtual experience. User can get info about plant by plant code or GPS code in virtual garden.

Indigenous medicine website includes the CMS functionality. The CMS system allows for multiple users to have access to the admin area for editing site content, menu items and general configuration parameters. This is user interactive interface and Bootstrap responsive GUI ready to desktop, tablets and mobile devices. The presentation of the website for delivering its information can be accomplished by three ways like text, multimedia or form. Contact form can use to get more information and request permission to download video content as well as be a register user in website.

Furthermore the event calendar function is publishing coming events relating indigenous medicine. The data analysis will be analysis data daily, monthly or yearly and generate report based those data. The report can be print or online view by authorized people.

2.3 Non- Functional Requirements

The soft goals or non functional requirements are the constraints or the quality parameters that are desirable from the system. This web application provides subscription email service for subscribers about new plants or events like wise. Security and the quality of content high in this web application. Administration and Management of the website is all done through a password-protected browser interface. This web application will be user-friendly and can update authorized non-technical person as well as.

This www application will include large amount of high quality multimedia components like 3D, audio/ video galleries or high quality galleries. However, it must not affect for performance of website. Furthermore, this web application is multilingual and will available in Sinhala and English languages. User can switch between these 2 languages for read content on web pages.

Chapter 3: Design solutions

3.0 Introduction

Design solution is major initial step of website creation before to go coding process or development. Design solution include high level of software engineering diagrams, User interface designs, navigation structure of website and story board of multimedia items. draw.io and Adobe illustrator used as tool for create below designs. [7]

3.1 Use Case Diagram

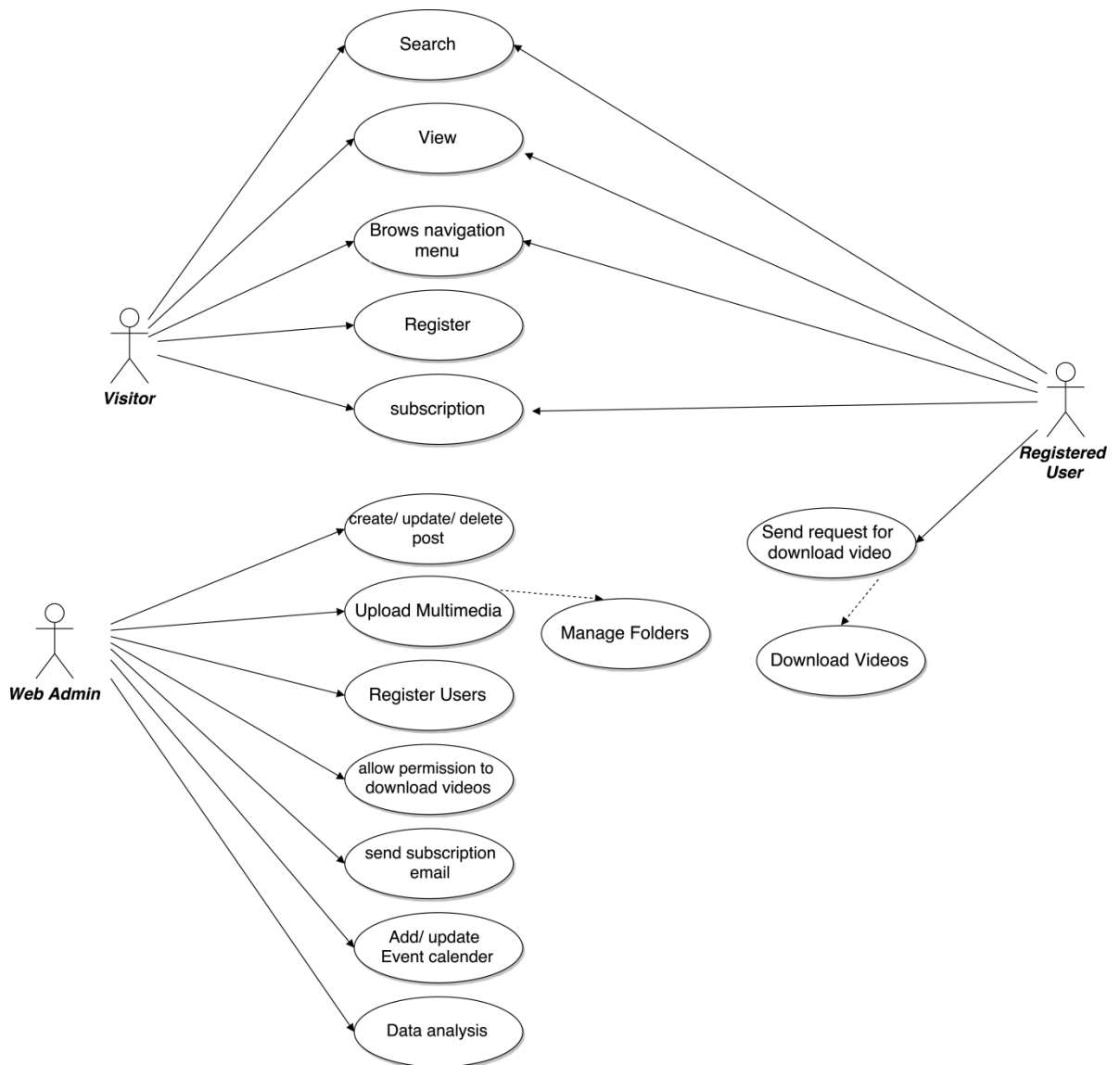
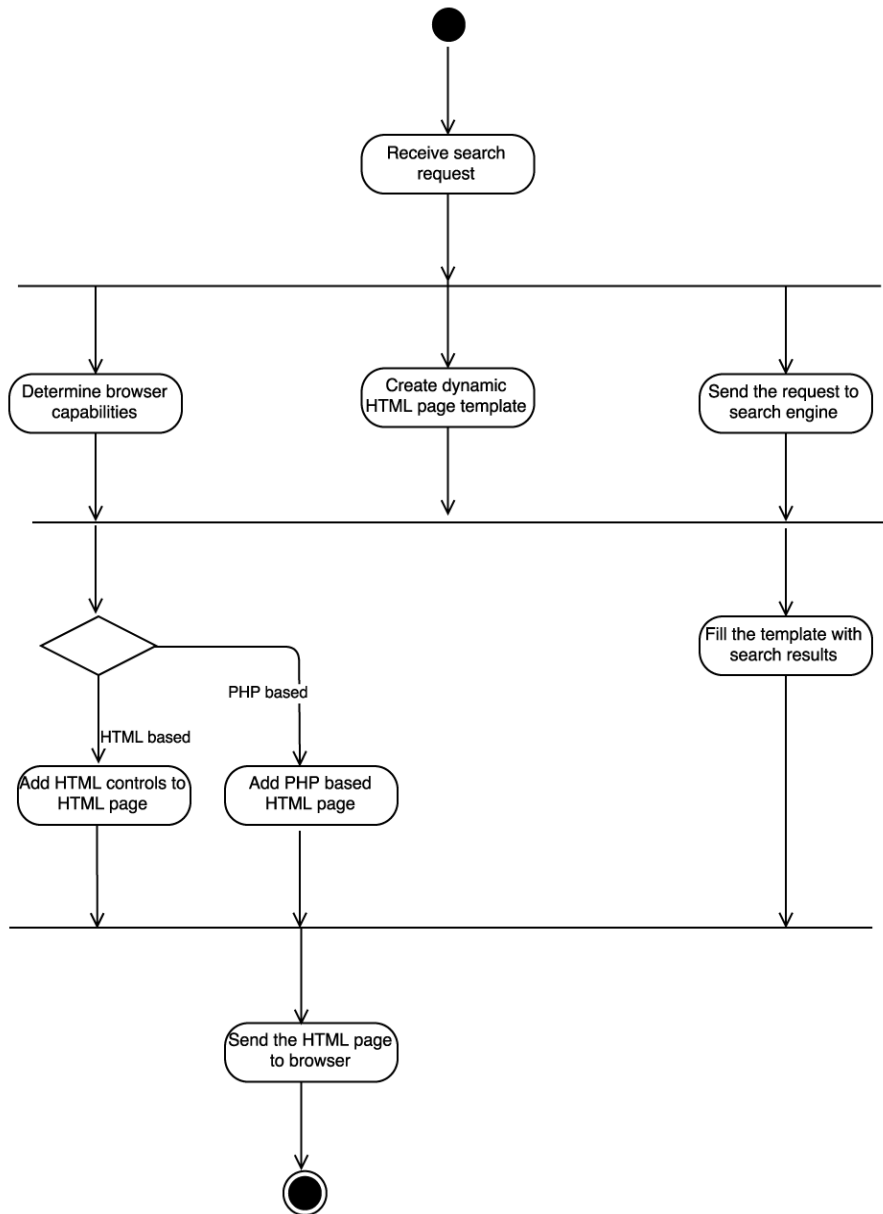


Figure 3.1: Use case Diagram

A simple use case diagram was drawn to better represent the requirements instead of use case scenarios or user stories. Visitor, register user and web admin are 3 main actors. Visitor and

register user apart from download video facility. Web admin is the main authorized person with full permission in this web application.

3.2 Activity Diagram for search Engine



The search function is the main function in this web application and this activity diagram shows how it happens in detail.

First user request search by text using English/Local name or scientific name of medicinal plant and it does receive to the data base.

Then, its check browser capabilities and fill search results. After done all back process and send that filled search result page to browser.

Figure 3.2: Activity diagram of search Engine

3.3 ER Diagram

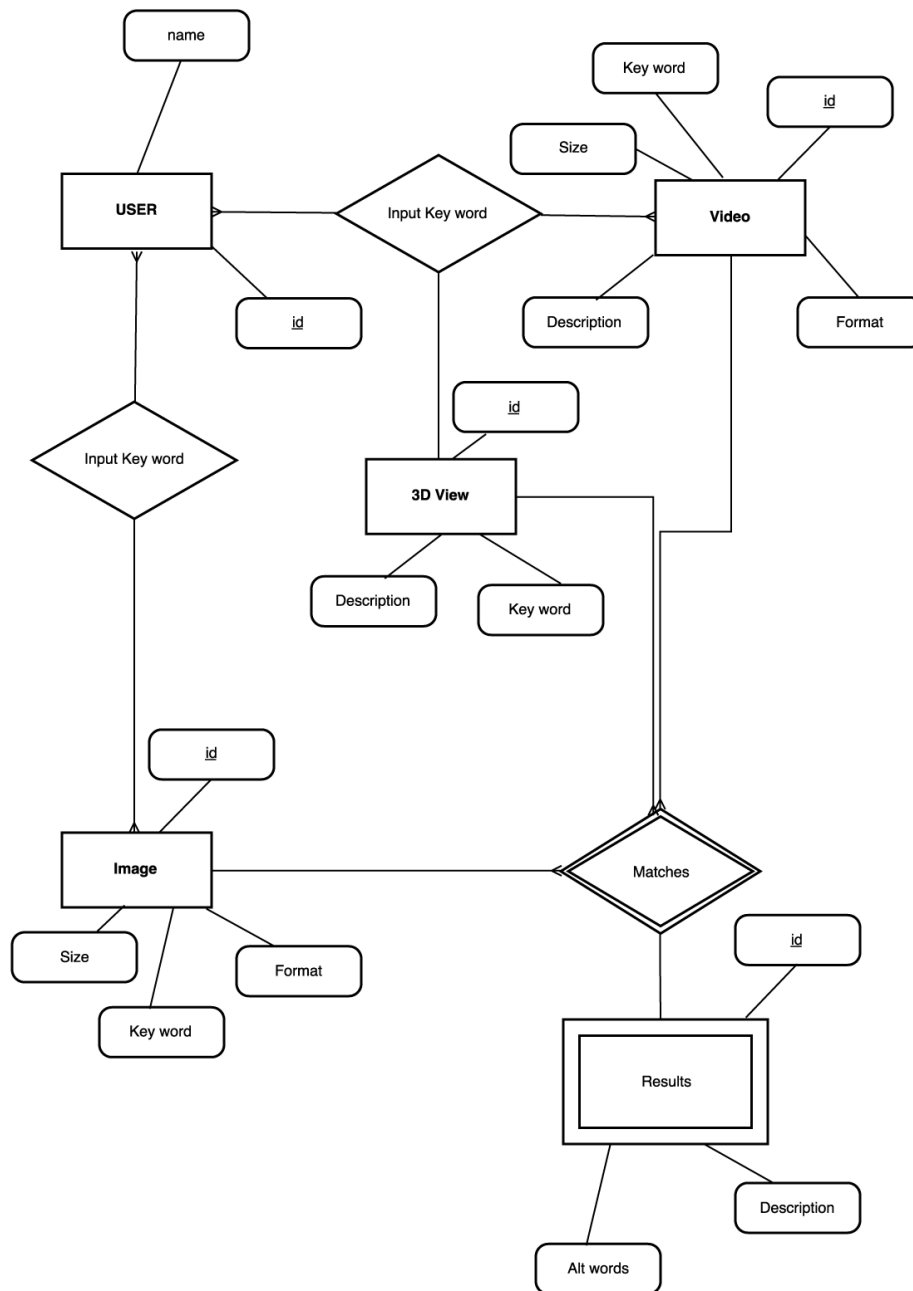


Figure 3.3: ER diagram

This ER diagram use data from data base and it build in phpmysql. It's connecting with php and SQL in there. When user input keyword its check with database multimedia uploads. Such as images, videos, posts and 3D view videos and shows results after match keyword and database multimedia data.

3.4 Site Map

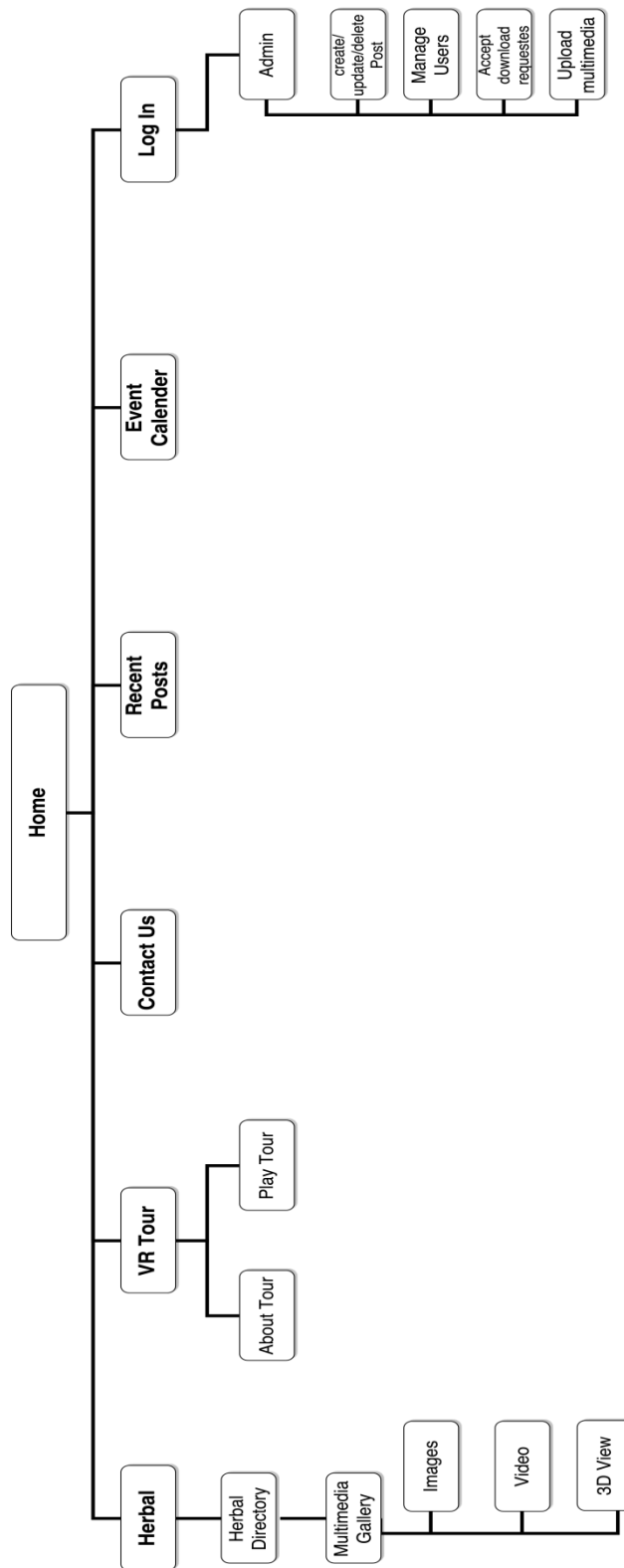


Figure 3.4: Site Map

This site map shows how web structure is, how many levels are there and how this web structure work on likewise.

3.5 Prototyping

3.5.1 Navigation Structure

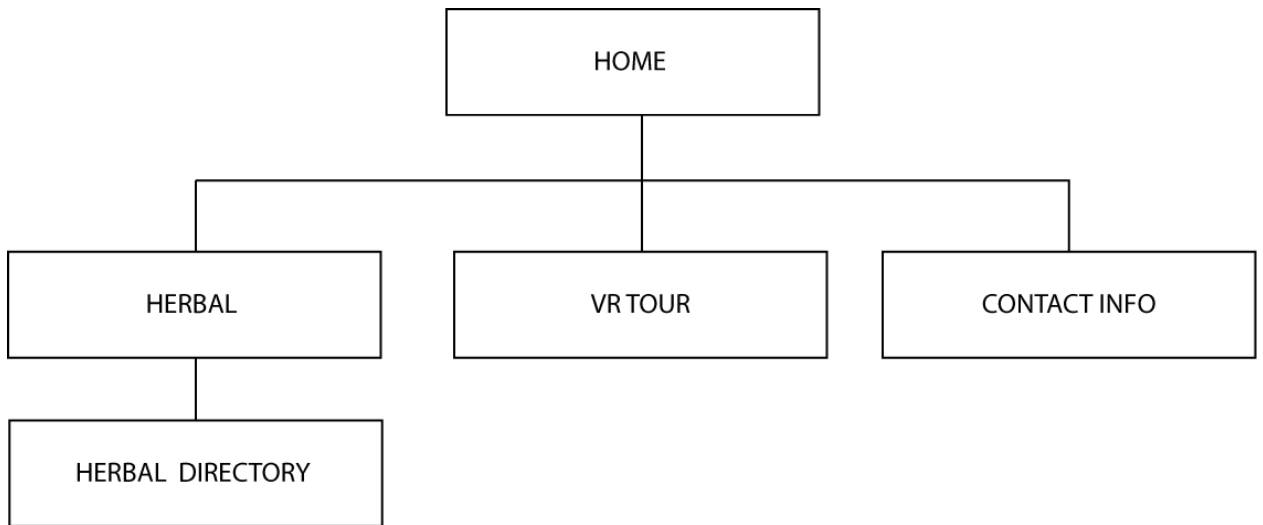


Figure 3.5: Navigation Structure

This navigation structure is composite navigation model and user navigates freely but occasionally constrained- moves, data organized in a hierarchy form.

3.5.2 Low Fidelity

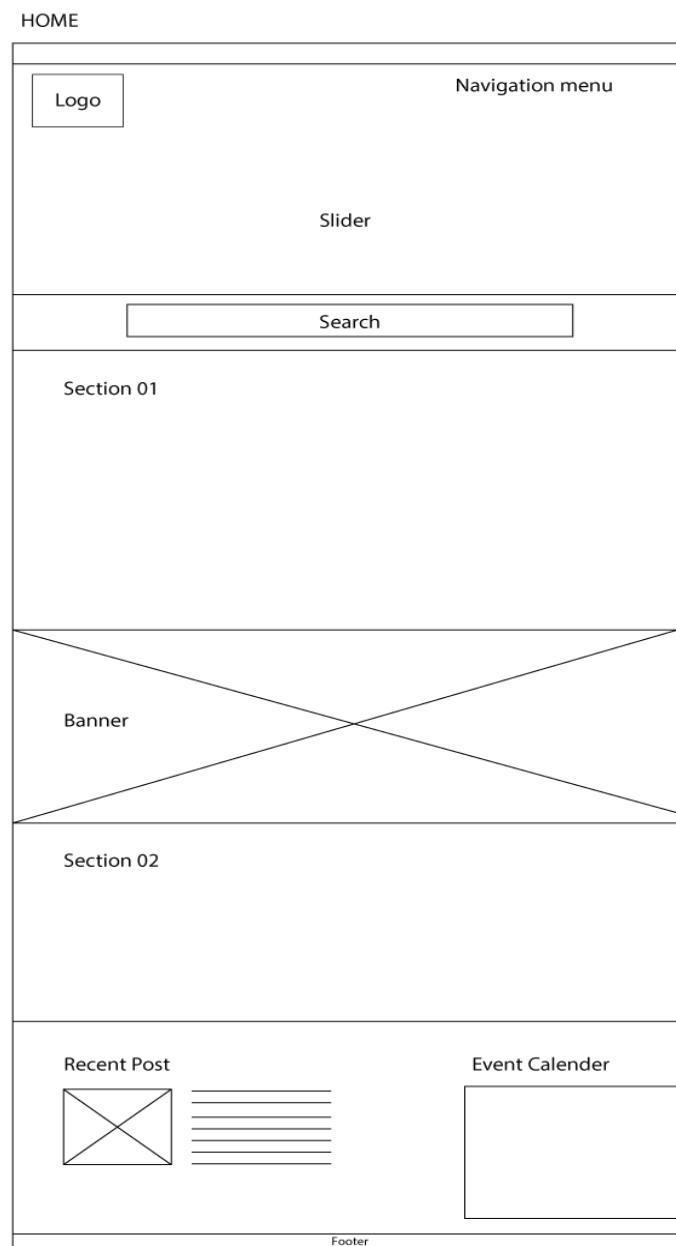












Figure 3.6: Low Fidelity- Home page

This low fidelity design of home page basic design and used most needed items on home page. It shows main function of web page such as search function, sections, where the navigation menu comes and what are the inside of footer area likewise.

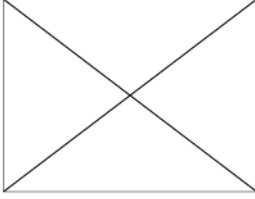
Herbal

Name	Image Gallery	Video Gallery
_____ _____ _____ _____		
_____ _____ _____ _____		
_____ _____ _____ _____		
_____ _____ _____ _____		
_____ _____ _____ _____		


Footer

Herbal Page


Image Gallery

<  >

Video



Usage



Footer

Contact

Contact form

Contact details

_____ _____ _____ _____	_____ _____ _____ _____	_____ _____ _____ _____
----------------------------------	----------------------------------	----------------------------------

Footer

Figure 3.7: Low Fidelity- Herbal directory, one herbal plant page and contact page

3.5.3 High Fidelity



Home page designed based current trend and bootstrap responsive 12 columns grid. This website can view full resolution on desktop and available on mobile version as well as. The color scheme is greenish based medicinal plants theme. Such as #75BF43 and # 37823E. Black and grey color text used in white background for readability.

Search, email subscription and event calendar are main functions in this www application and its located main page. Logo design, brief intro, popular and recent posts include here as well as. Then user experience will be high level in this website.

Figure 3.8: High Fidelity- Home Page

Herbal Directory

A
 Herbal name 01
 simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag
 Read more...



A
 Herbal name 01
 simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag
 Read more...

B
 Herbal name 01
 simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag
 Read more...

Herbal Name 01



simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag

simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag

simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag

B
 Herbal name 01
 simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag
 Read more...

C
 Herbal name 01
 simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag
 Read more...



Video and 3D view of plant



C
 Herbal name 01
 simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag
 Read more...

D
 Herbal name 01
 simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag
 Read more...

Usage of Plant



D
 Herbal name 01
 simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem ipsum passag
 Read more...

Tags: category 01, category 02



Figure 3.9: High Fidelity- Herbal Directory page and one medicinal plant page

Contact or Request video download

Your Name*

Your E-mail*

Your Subject*

Your Message*

Submit

Figure 3.10: High Fidelity- contact page

This contact form is major part of make relationship with website user and administrator. Then its use main parameters and details of contacts organizations. Form must be simple and less color webpage.

Details of Multimedia items

LOGIN / REGISTER

LOGO
HOME
HERBAL
VR TOUR
CONTACT INFO

🔍

Herbal Name 01 📷 🎥 📺








Video and 3D view of plant




Usage of Plant



simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem Ipsum passag

simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make torem Ipsum passag simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type a

imply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type a simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type a

Image Gallery will be

1. Photography by author with using high quality DSLR camera
2. Edit in Adobe Photoshop, Davinchi code, light room
3. Save as web optimized high quality JPEG format
4. Front , top, angle view of plant photos

3D view of plant will be

1. Model in 3D studio Max
2. Animation
3. VR experinece

Video Gallery will be

1. Video by author with using high quality video camera
2. Edit in Adobe Premier, After Effects
3. Front, top and angle view of plant and description of plant will be include

Usage will be

Video or user interactive activity

Tags: *category 01, category 02*

Figure 3.11: Details of multimedia items on page

3.5.4 Story board

Web

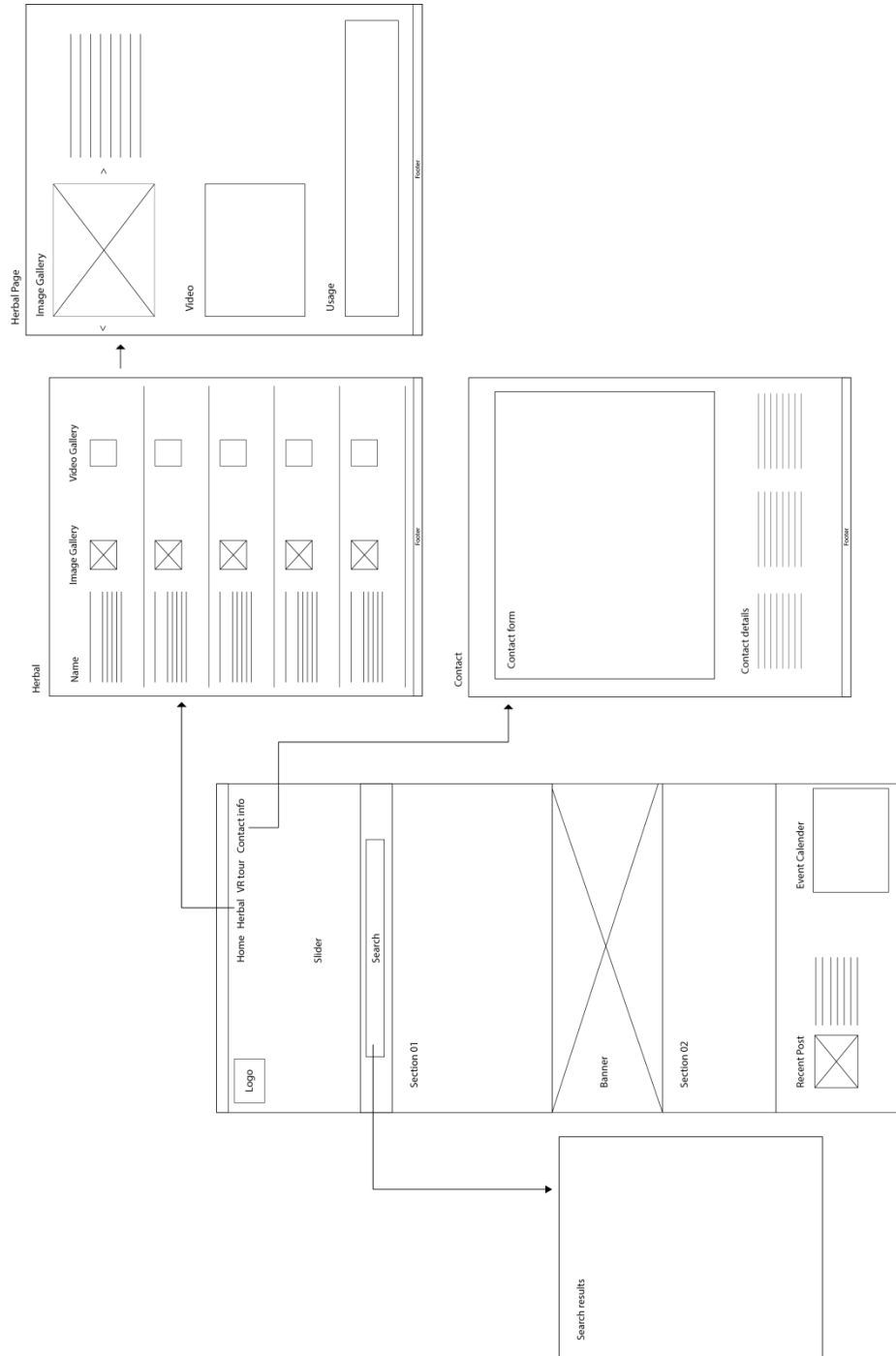


Figure 3.12: Web storyboard

This web storyboard shows how this website works for user or visitor. First visitor or user will be in home page. Then user can use search function or go directly herbal directory page. This website use composite navigation structure and user can navigate freely.

Video

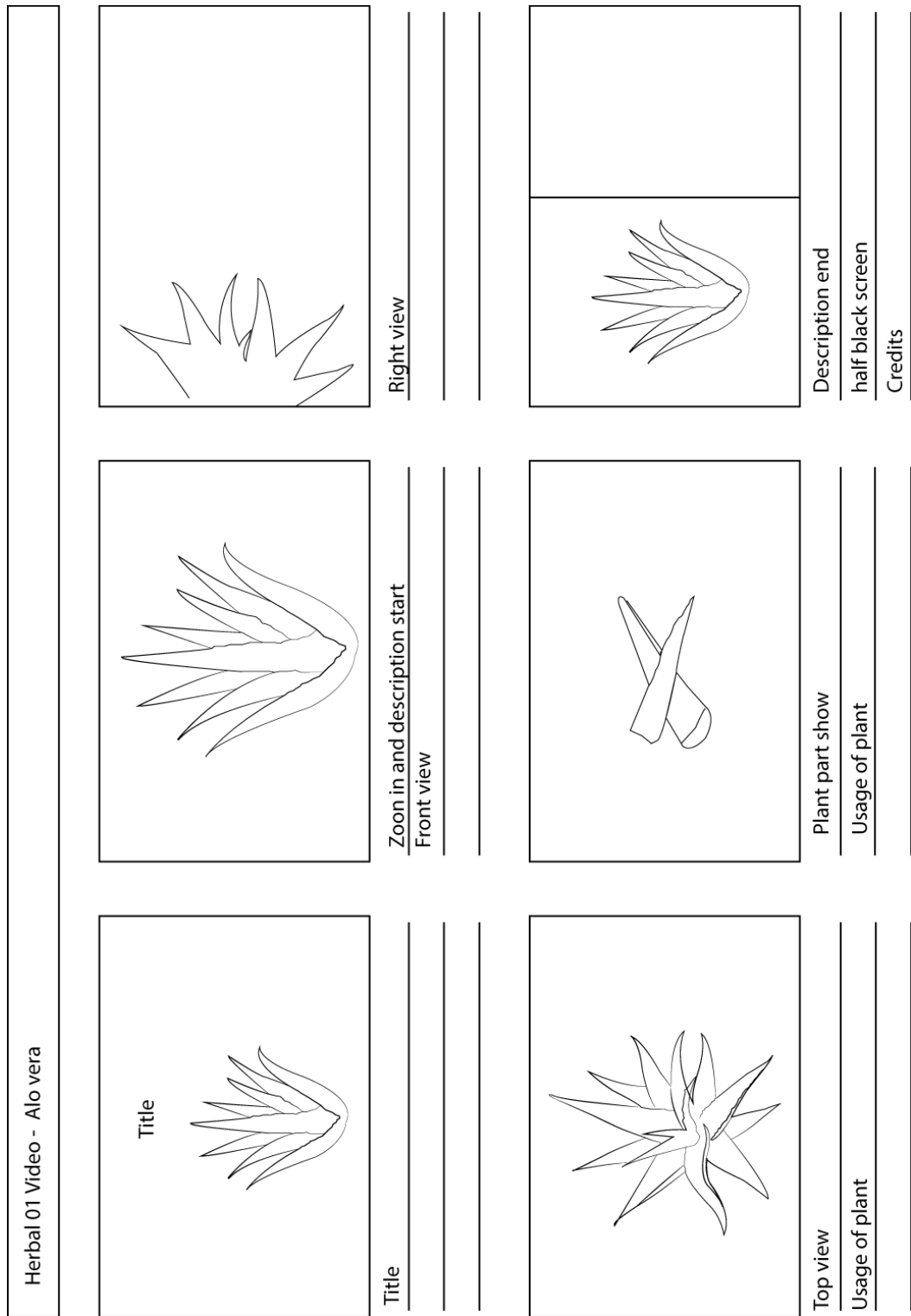


Figure 3.13: Video storyboard

Video storyboard is initial step of video creation and this is a guide for create all medicinal plants videos.

3D view of plant

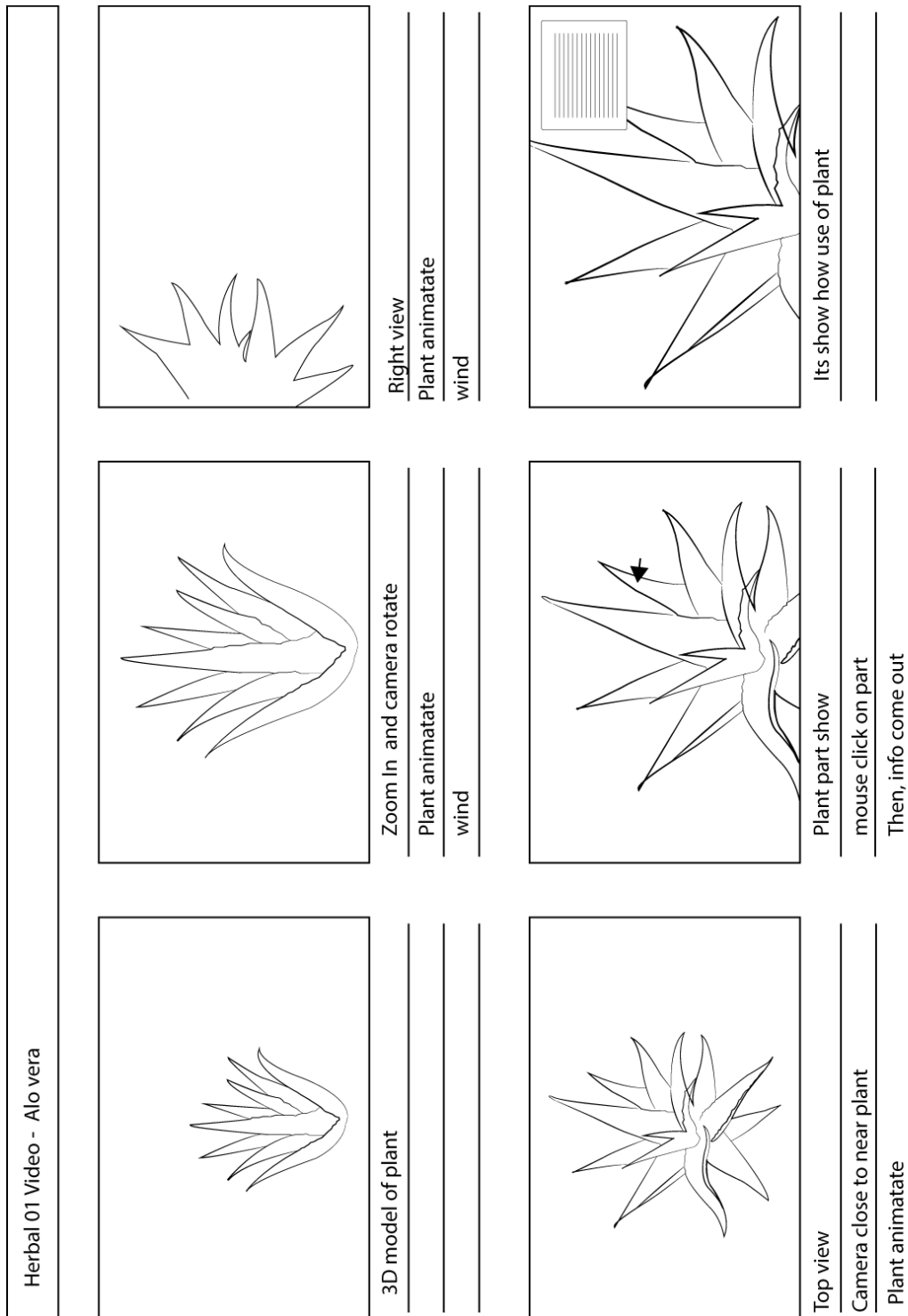


Figure 3.14: 3D view of plant story board

This storyboard is initial step of 3D view of plant video creation and this is a guide for create all 3D view of medicinal plant videos.

Chapter 4: Implementation

4.0 Multimedia based web application (www.ceylonherb.com)

This is Sri Lankan traditional medicine or indigenous medicine plant website based multimedia and website domain name as a ceylon + herb. Logo design, color scheme and UI design all based relating this concept.

4.1 Logo Design



This website logo design represents main colors of website. The main colors are #37823E and #75BF43. Its include tag line “Indigenous medicine in Sri Lanka” and identify what is the website for likewise.

4.2 Design and Development Methodology including requirements

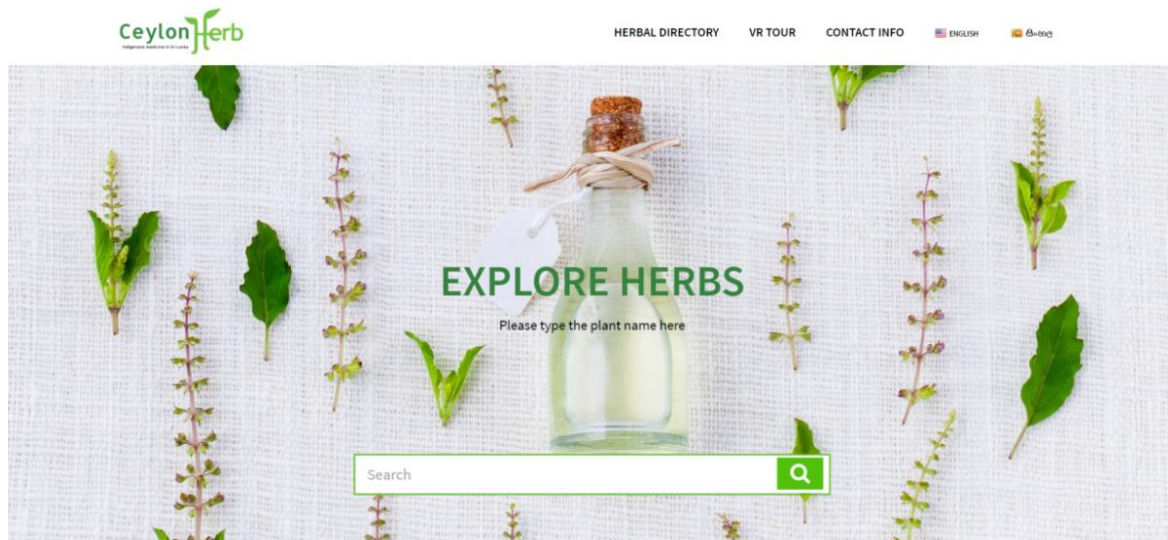
This multimedia based www application used content management system (WordPress) Theme and did fully customization with using HTML5, CSS3, PHP5.5 and MySQL. Some of initial high-fidelity UI's changed based UX/UI design concepts and current trend. Multimedia components created by Adobe creative suit including Photoshop, Illustrator, Premier, After Effects, Audition and Autodesk 3D studio max. For image/ video color correction used light room and Davinchi code. This website is SEO friendly and used open source plug-in for it. Furthermore, all of software and plug-ins are creative common license and level up usability and user experience to high level in this multimedia based web application.

Software requirements: HTML5, CSS3, PHP, MySQL, WordPress, Adobe Creative suite, Autodesk 3D studio max, Light room, Davinchi code etc.

Hardware requirements: Basically suite to handle 3D modeling and animation, Aftereffects video creation. It needs at least 8GB RAM, 2GB separated graphic card and 1TRB Hard drive likewise.

4.2.1 Actual website UI Designs

Home



Sri Lankan Indigenous Medicine

Sri Lankan Ayurveda has long history and still live medical system in Sri Lanka. Indigenous medicine or Ayurveda natural home remedy one of part in Sri Lankan Ayurveda. Four systems of traditional medicine have been adopted in Sri Lanka: Ayurveda, Siddha, Unani and Deshiya Chikitsa. The Ayurveda natural home remedy system use mainly plant and herbal preparations for the treatment of diseases—the former uses about 2000 species, the latter about 500. The plants are used singly or as mixtures. The traditional systems of medicine have a vast literature, mainly in the form of manuscripts. The principle of the Ayurvedic system is to consider the body as a whole, ailments of different organs not being treated separately as in modern medicine. Similarly, Ayurveda takes into account the actions of the drug in its entirety. The threat of extinction of certain species of plants and herbs is stressed, the causes being the destruction of jungles, the greater demand for raw materials for increased manufacture of traditional medicinal preparations, the absence of organised cultivation of medicinal plants, and unscientific harvesting. Indigenous system is very rich in unique medical preparations, prescriptions, pharmaceutical products, techniques of diagnosis, therapeutic techniques etc.



Popular indigenous medicinal plant



Herbs with short, thick, branching subterranean stems. Leaves radical, 25-80 cm Long. 3-10 broad at base, very fleshy, narrowly lanceolate, more or less flatadaxially, convex at the back, tapering to the apex and tipped by a spine, with distant spines along the margins. Inflorescences to about 110 cm tall; peduncle green, bearing few distant bracts. Flowers crowded, cernuous, bright orangish red. Capsule ovoid up to 1.5 cm long.

Grows in: southern Africa, Arabia, Sri Lanka, India, Morocco, Mauritania, Egypt, Australia, Barbados, Belize, Nigeria, Paraguay and the United States

Ayurvedic usage: Swelling, Burns, Skin diseases, Urinary disorders, Gastritis

Parts used to make Medicine: Leaves



Figure 4.1: Home Page –Actual website

Home page designed based low fidelity and high fidelity designs. This website is Bootstrap responsive and it views full resolution on desktop and available on mobile version as well as. The color scheme is greenish based medicinal plants theme. Such as #75BF43 and #37823E. Black and grey color text used in white background for readability.

Search, email subscription and event calendar are main functions in this www application and its located main page. Logo design, brief intro, popular and recent posts include here as well as. Then user experience will be high level in this website.

There are some of changes in home page than high fidelity home page UI. Such as logo link to home page and there are 3 navigation buttons in navigation menu. Search is highlight and added slider about indigenous medicine also. E-mail subscription position changed than high fidelity design and now it located in footer area with calendar and recent post. User can use English or Sinhala for read this www application content. This home page performance is high level and loading time was few seconds.

This website used CMS Word Press theme (open source) and fully customized with using open source plug-ins for add more section and footer area. The HTML5, CSS3, PHP and MySQL languages and knowledge usable for this customization. All other function in this home page will be explanation detail on later in this chapter.

All the home page images, plug-ins have creative common license and open source as well as.

Herbal Directory

Aloevera- Komarika



Aloe vera is a plant species of the genus. It grows wild in tropical climates around the world and is cultivated for agricultural and medicinal uses. Aloe is also used for decorative purposes and grows successfully indoors as a potted plant. It is found in many consumer products including beverages, skin lotion, or ointments for minor burns...
[Read More](#)
 Categories: Plants
 Tags: Abdominal Pains, Burns, Fevers, Gastritis, Skin Diseases, Swellings, Urinary Disorders

Canereed-Thebu / Koltan



This plant is cultivated for its medicinal uses, and is cultivated elsewhere as an ornamental. In some areas *Chelocostus speciosus* is introduced and has become an invasive species. Scientific name: *Costus speciosus* Family name: ZINGIBERACEAE English name: Canereed Local name: Thebu / Koltan Description: Rhizomatous herbs. Stems branched or unbranched, stout, up to 3 m...
[Read More](#)
 Categories: Plants
 Tags: Catarhal Fever, Coughs, Dysentery, Dyspepsia, Eye Ailments, Skin Diseases, Typhoid, Worms

Chinese chaste tree - Nika



Vitex negundo is an erect shrub or small tree growing from 2 to 8 m (6.6 to 26.2 ft) in height. The bark is reddish brown, its leaves are digitate, with five lanceolate leaflets, sometimes three. Each leaflet is around 4 to 10 cm (1.6 to 3.9 in) in length, with the central leaflet being the largest and possessing a...
[Read More](#)
 Categories: Plants
 Tags: Asthma, Catarah, Coma, Coughs, Fevers, Flatulence, General Pains, Headaches, Inflammation, Leprosy, Rheumatism, Strokes, Snake Bites, Sores, Stomach, Swellings, Taranata Bites, Wounds

Ginger - Inguru



Oral or topical uses of ginger to treat various disorders, such as nausea or arthritis pain, are under research, but no conclusions are possible from these studies about its effectiveness or safety in long-term use. Scientific name: *Zingiber officinale* Family name: ZINGIBERACEAE English name: Ginger Local name: Inguru Description: Rhizomatous herbs. Leafy stems up to 2 m. Leaf...
[Read More](#)
 Categories: Plants
 Tags: Abdominal Pains, Colds, Dyspepsia, Flatulence, Vomiting

Goose berry - Nelli



In traditional Sri Lankan/ Indian medicine, dried and fresh fruits of the plant are used. All parts of the plant are used in various Ayurvedic/ Unani medicine (Jawarish amla), herbal preparations, including the fruit, seed, leaves, root, bark and flowers. According to Ayurveda, amla fruit is sour (amla) and astringent (kashaya) in taste (rasa), with sweet...
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 Categories: Plants
 Tags: Abdominal Diseases, Asthma, Burning Sensation, Coughs, Diabetes Mellitus, Excessive Thirst, Headaches, Hemorrhoids, Leucorrhoea, Menstrualgia, Mental Disorders, Skin Diseases, Tuberculosis

Long pepper - Thippili



Long pepper (Piper longum), sometimes called Indian long pepper (Pipili), is a flowering vine in the family Piperaceae, cultivated for its fruit, which is usually dried and used as a spice and seasoning. Long pepper has a taste similar to, but hotter than, that of its close relative *Piper nigrum* - from which black, green and white...
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 Categories: Plants
 Tags: Acute & Chronic Bronchitis, Cough, Dropsy, Fever, Hemorrhoids, Piles, Splenomegaly

Malabar Nut - Adathoda / Agaladara / Wanepala / Wetahera



This shrub has a number of traditional medicinal uses in Siddha medicine, Ayurvedic and Unani systems of medicine. Scientific name: *Justicia adathoda* Family name: ACANTHACEAE English name: Malabar Nut Local name: Adathoda / Agaladara / Wanepala / Wetahera Description: Shrub upto 4m high, Leaves oval elliptic, 11-20x4-10 cm opposite, Petiole 0.8-3.6 cm long, Spikes terminal...
[Read More](#)
 Categories: Plants
 Tags: Asthma, Coughs, Dysentery, Eczema, Fevers, Gastritis, Menorrhagia, Nausea, Swellings, Tuberculosis, Urinary Tract Problems

Neem tree-Kohomba



Neem or Kohoba is a fast-growing tree that can reach a height of 15-20 metres (49-66 ft), and rarely 35-40 metres (115-131 ft). It is evergreen, but in severe drought it may shed most or nearly all of its leaves. The branches are wide and spreading. The fairly dense crown is roundish and may reach a diameter of 15-20...
[Read More](#)
 Categories: Plants
 Tags: Asthma, Coughs, Eye Infections, Fevers, Skin Ailments, Worms, Wounds

Pomegranate tree - Delum



In the ancient Ayurveda system of traditional medicine, the pomegranate is frequently described as an ingredient in remedies. Scientific name: *Punica granatum* Family name: PUNICACEAE English name: Pomegranate tree Local name: Delum Description: A large shrub or small tree, to 3.3-5 m tall; branches often with spiny ends. Leaves usually opposite, sometimes alternate, shortly petiolated, without stipules...
[Read More](#)
 Categories: Plants
 Tags: Asthma, Coughs, Dysentery, Eye Infections, Fevers, Heart Diseases, Oedema, Worms Diseases

Turmeric- Kaha / Ath kaha / Bim kaha



In Ayurveda practices, turmeric has been used as an attempted treatment for a variety of internal disorders, such as indigestion, throat infections, common colds, or liver ailments, as well as topically to cleanse wounds or treat skin sores. Scientific name: *Curcuma longa* Family name: ZINGIBERACEAE English name: Turmeric Local name: Kaha / Ath kaha / Bim...
[Read More](#)
 Categories: Plants
 Tags: Anemorrhoea, Bruises, Catarah, Colds, Diabetes Mellitus, Diarrhoea, Fevers, Jaundice, Leach Bites, Skin Diseases, Snake Bites, Sprains, Wound

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Name

Email

Event Calendar

March 2017						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

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Figure 4.2: Herbal directory Page –Actual website

The herbal directory page is most interesting part of this website. Because this is multimedia based www application and this herbal directory page include all herbals details as a short summery.

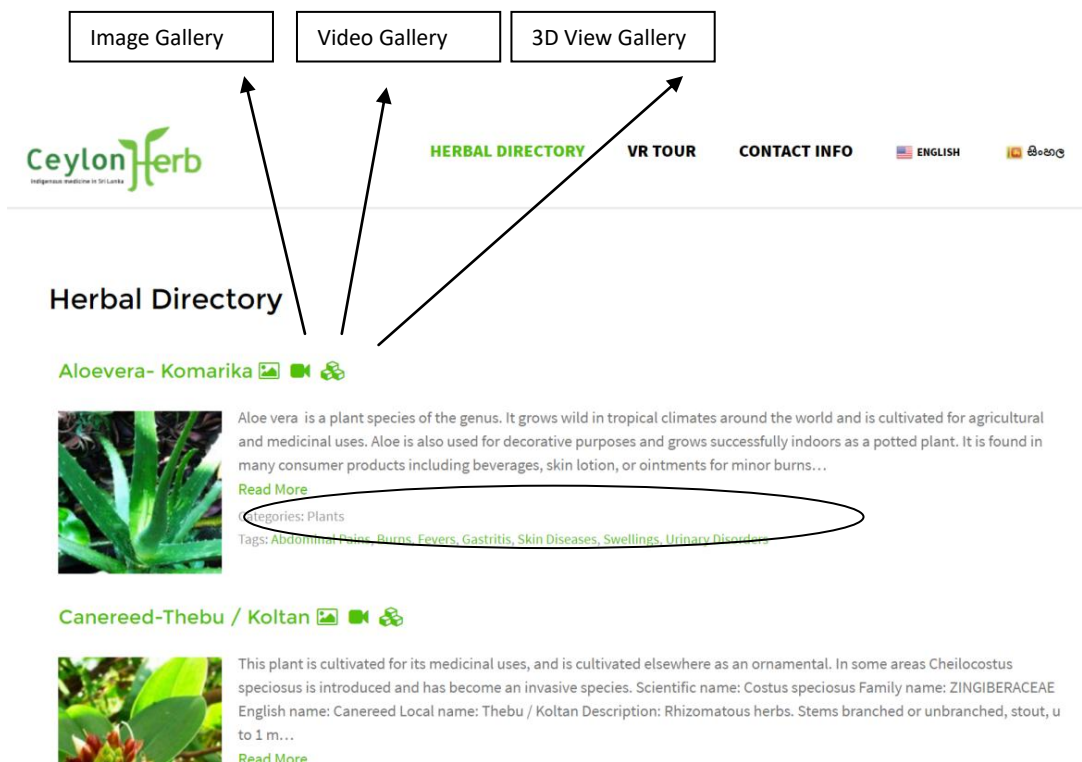



Figure 4.3: One post in Herbal directory Page –Actual website

Name with multimedia galleries icons identify plant multimedia galleries. The herbal plant may have all multimedia galleries or image/video gallery. Font-awesome use for create these icons. Tags are very useful for search function and user can easily search medicinal plant though this tags. The plant detail description may include about plant, usage of plant and plant disease for user knowledge.

CeylonHerb


HERBAL DIRECTORY VR TOUR CONTACT INFO ENGLISH Bhoj



ALOEVERA - KOMARIKA


Aloe vera is a plant species of the genus. It grows wild in tropical climates around the world and is cultivated for agricultural and medicinal uses. Aloe is also used for decorative purposes and grows successfully indoors as a potted plant. It is found in many consumer products including beverages, skin lotion, or ointments for minor burns and sunburns. There is little scientific evidence of the effectiveness or safety of Aloe vera extracts for either cosmetic or medicinal purposes. Studies finding positive evidence are frequently contradicted by other studies.

Scientific name:	Aloe vera
Family name:	ALOACEAE
English name:	Aloevera
Local name:	Komarika
Description:	Herbs with short, thick, branching subterranean stems. Leaves radical, 25-80 cm long, 3-10 broad at base, very fleshy, narrowly lanceolate, more or less flat adaxially, convex at the back, tapering to the apex and tipped by a spine, with distant spines along the margins. Inflorescences to about 110 cm tall; peduncle green, bearing few distant bracts. Bracts. Flowers crowded, cernuous, bright orangish red. Capsule ovoid up to 1.5 cm long.
Status:	Naturalized Exotic
Edible parts:	none
Ayurvedic usage:	<p>Treatment for-</p> <ul style="list-style-type: none"> Abdominal pains Swellings Burns Skin diseases Urinary disorders Fevers Gastritis
PARTS USED IN TREATMENT-	<ul style="list-style-type: none"> Leaves
RELATED MEDICINAL PROPERTIES:	<ul style="list-style-type: none"> Reduces aggravation of vatha , pitha and kapha dosha



Next →

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26	27	28	29	30	31	

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Featured image

Herbal plant details

Multimedia gallery with images, video and 3D view of plant

Related plants (Tags used)

Figure 4.4: Herbal plant Page –Actual website

Contact Info



Contact Info

Please use this form for submit request for download videos from galleries and mor info

Your Name (required)

Your Email (required)

Subject

Your Message

National Institute of Traditional Medicine

Inquiries:- +94 11 2896911 / +94 11 2896912
e mail:- departmentofayurveda@gmail.com
Address:- Department of Ayurveda, Nawinna,
Maharagama, Sri Lanka

Ayurvedic Drugs Corporation

Inquiries:- +94 11 2896911 / +94 11 2896912
e mail:- departmentofayurveda@gmail.com
Address:- Department of Ayurveda, Nawinna,
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Event Calendar

March 2017

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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

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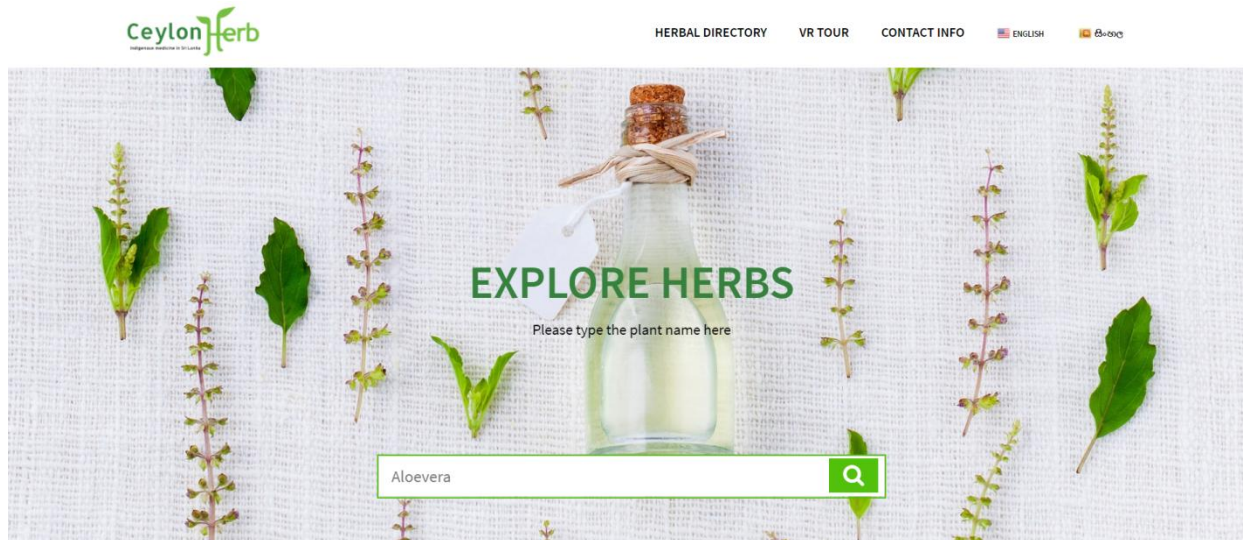
Figure 4.5: Contact Page –Actual website

The contact form is important to communicate user and web admin. If user wants download video, user has to send request through this form to web administrator. Then, web administrator will register that user and give permission to download videos. Furthermore, user can use this contact form for get more info as well as coming up events etc. Contact form 7 plugin used for create this form and configured by php. Organization address published for user needs.

4.2.2 Functional and non functional features

- Search Engine

This web application one of major function is search function and user can search through 1st way: User can search plant scientific or English or local name in search box



Result page

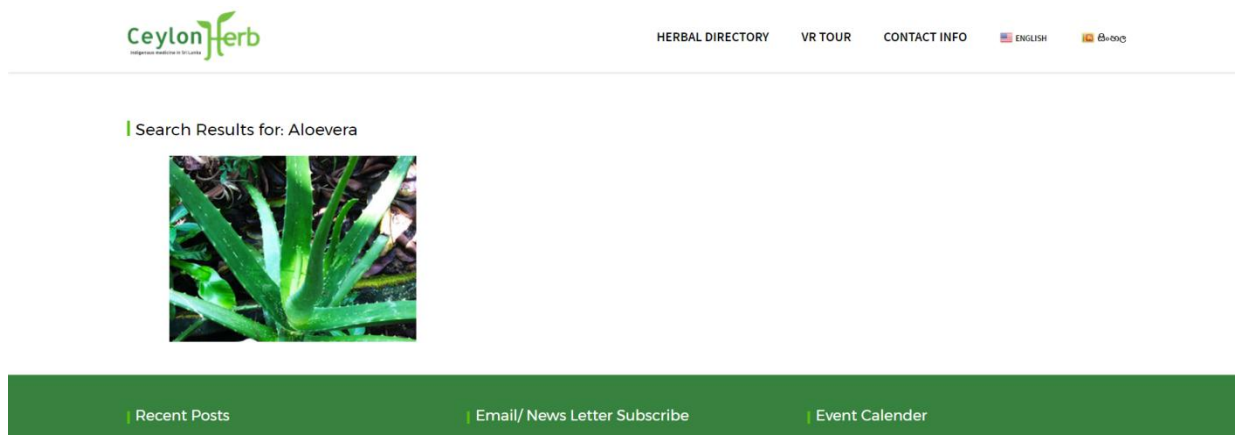
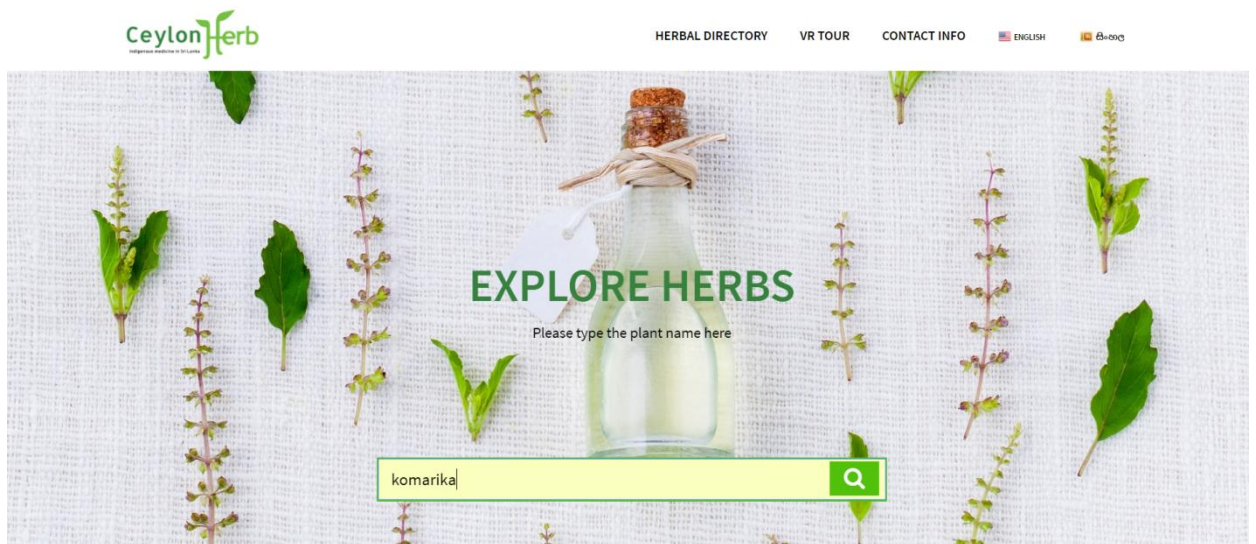


Figure 4.6: Search function –Actual website



Result page

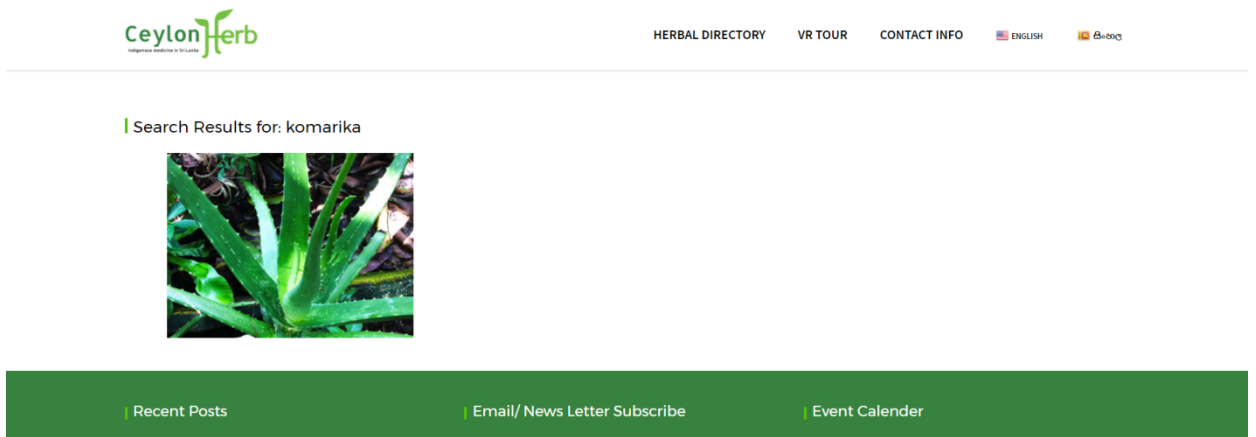


Figure 4.7: Search function –Actual website

2nd way: User can search by sickness name in search box

Then alphabetical ordered plants names listed page will appear to user. Plants details store in Database system.



Search Results for: fever



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- > Pomegranate tree – Delum
- > Chinese chaste tree – Nika
- > Long pepper – Thippili
- > Goose berry – Nelli

Email/ News Letter Subscribe

Name

Email *

Event Calendar

March 2017						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Figure 4.8: Search function –Actual website

- Event Calendar



Herbs with short, thick, branching subterranean stems. Leaves radical, 25-80 cm long, 3-10 broad at base, very fleshy, narrowly lanceolate, more or less flatadaxially, convex at the back, tapering to the apex and tipped by a spine, with distant spines along the margins. Inflorescences to about 110 cm tall; peduncle green, bearing few distant bracts. Flowers crowded, cernuous, bright orangish red. Capsule ovoid up to 1.5 cm long.

Grows in-southern Africa, Arabia, Sri Lanka, India, Morocco, Mauritania, Egypt, Australia, Barbados, Belize, Nigeria, Paraguay and the United States

Ayurvedic usage-Swelling, Burns, Skin diseases, Urinary disorders, Gastritis

Parts used to make Medicine-Leaves



Event calendar on web page



Herbs with short, thick, branching subterranean stems. Leaves radical, 25-80 cm long, 3-10 broad at base, very fleshy, narrowly lanceolate, more or less flatadaxially, convex at the back, tapering to the apex and tipped by a spine, with distant spines along the margins. Inflorescences to about 110 cm tall; peduncle green, bearing few distant bracts. Flowers crowded, cernuous, bright orangish red. Capsule ovoid up to 1.5 cm long.

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Ayurvedic usage-Swelling, Burns, Skin diseases, Urinary disorders, Gastritis

Parts used to make Medicine-Leaves



Hover event name



09 Ceylonherb web launch
Day of launch the ceylonherb website
From 10.00am until 11.00am
At Department of Ayurveda
Find out more...



Event short details popup

Figure 4.9: Event Calendar –Actual website

The event calendar is special feature in this website. Web admin will be update calendar with all events from backend.

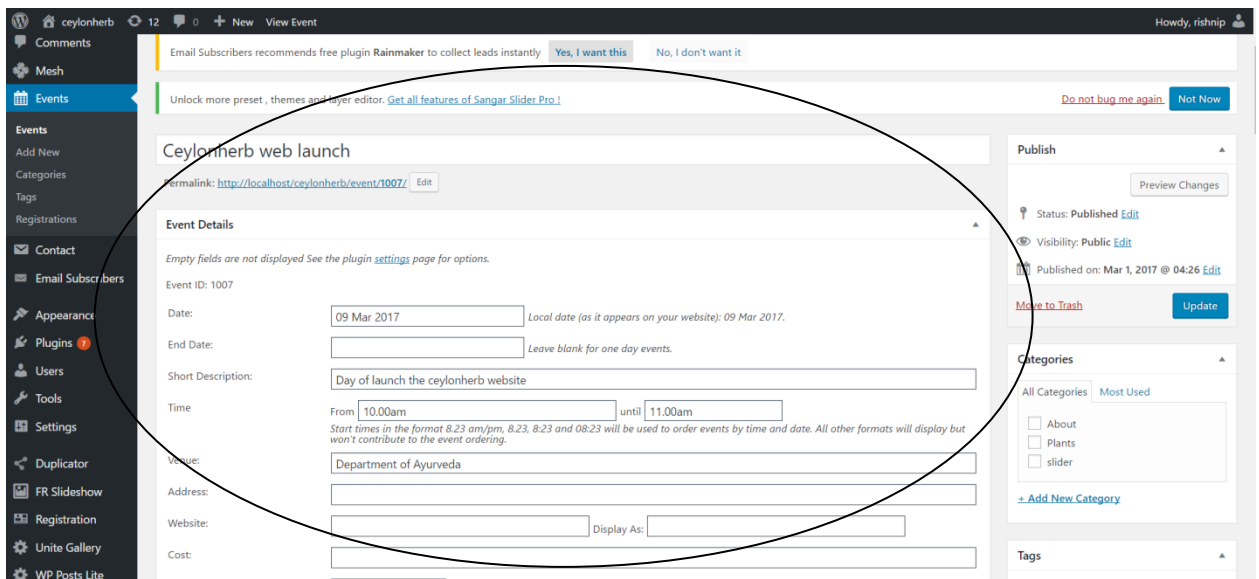


Figure 4.10: Event Calendar backend –Actual website

Web administrator can add event to event calendar and he can make how many places available, if there user need to register then, add register form and send confirmation note as well as. Those special facilities make no hassles for web administrator regarding update calendar.

User can get info about coming events regarding Ayurveda in advance by using this event calendar feature. Even they can book place and get confirmation about attending seminars or events. This is great feature for Ayurveda lovers in Sri Lanka or overseas.

- E-mail Subscription



Figure 4.11: E-mail Subscription –Actual website

The Email/ News Letter subscriber is non functional or soft goal of this www application. User only need name and valid email address for subscribe the email/news letter. Then, form will send confirmation email to user and user need to confirm it. The configurations proceed with php script in backend.

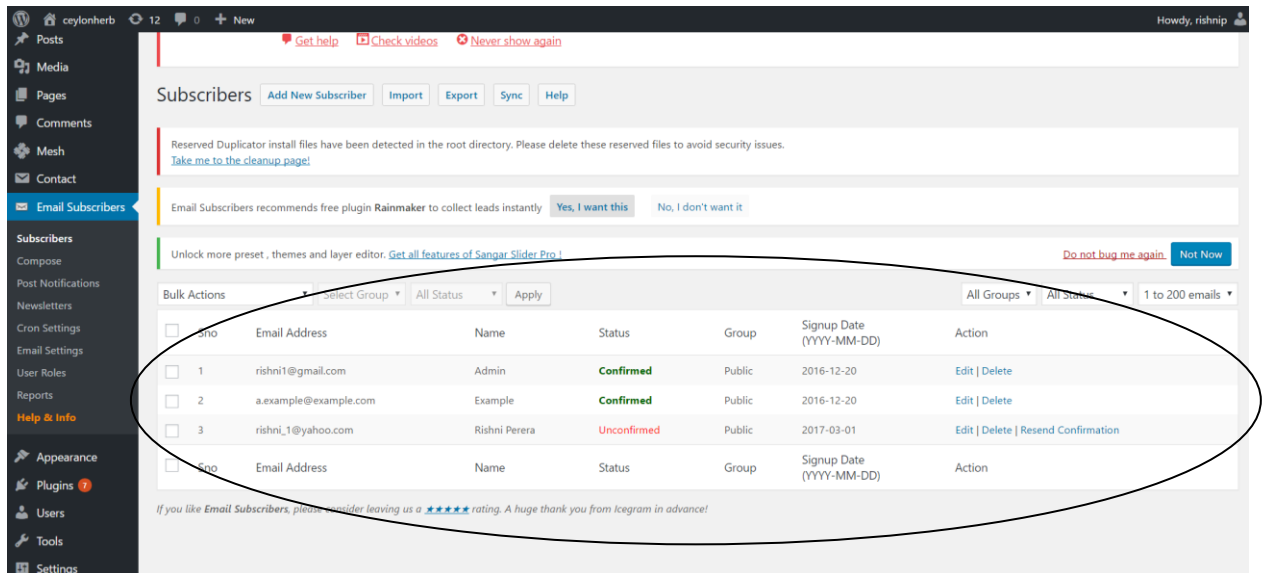


Figure 4.12: E-mail Subscription backend –Actual website

Web administrator could find how many users register for email/ newsletters, who are unconfirmed or emails details from here. Furthermore, admin can prepare report based data from here as well as.

- Data analysis and Report generation

Google analytic counter will be analysis and give detail report including visitors and register users overviews, how many are use videos and how many are download videos likewise. This report can be print or check online by authorized people. SEO friendly feature lead to more users' attraction and this site will be show in first few places in Google search. Now there are no more hassle to web administrator to analysis data and create detail report for www application usage.

- Multilingual (English/ Sinhala)

This multimedia based website for Sri Lankan indigenous medicine. Then, majority of Sri Lankans prefer read site by their mother language of Sinhala language. Then, this website has that facility and it's more user-friendly. Currently website use GTranslate plug-in for convert mother site to sub languages. Modification of Sinhala language and Tamil language will add in future development of current site.

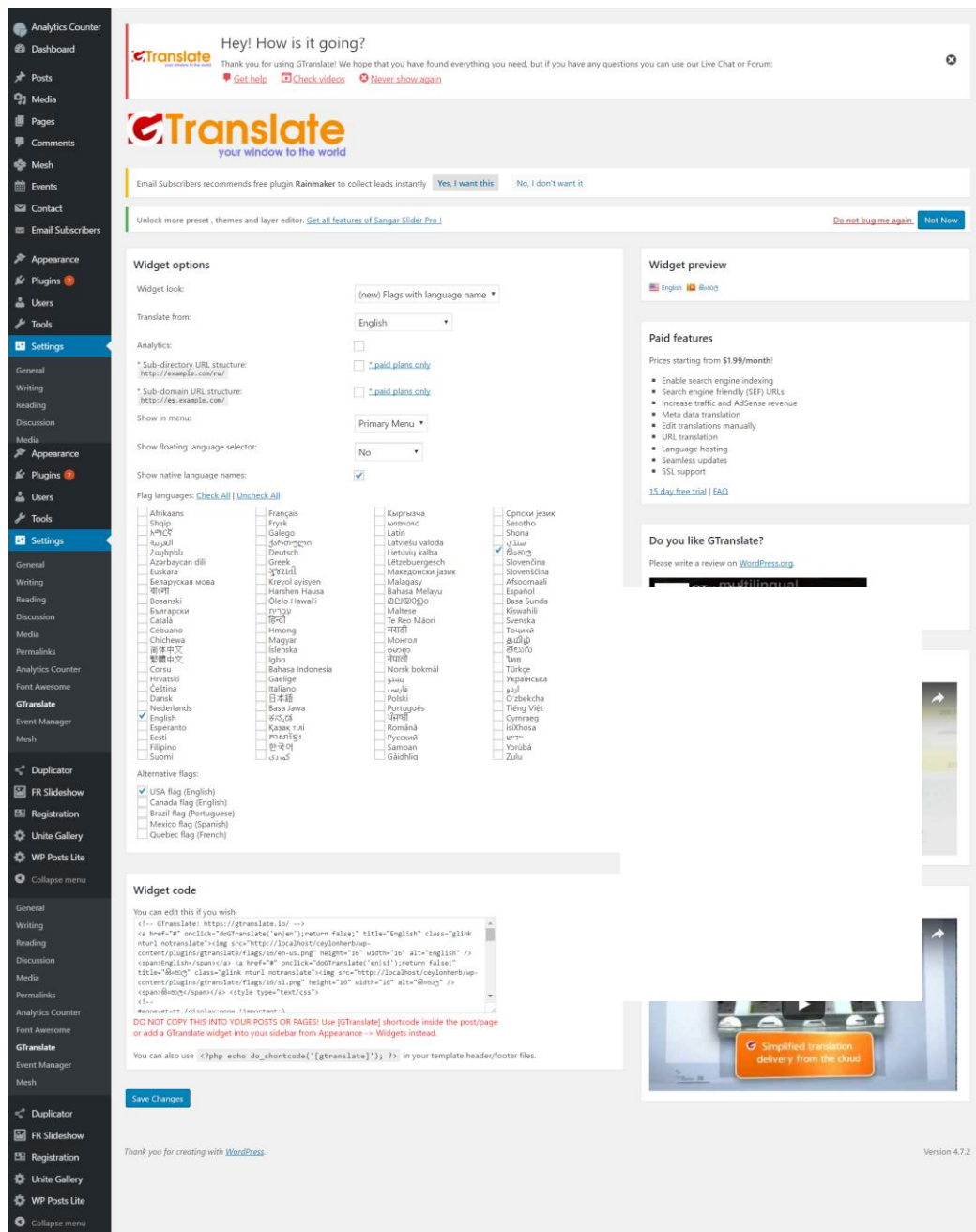


Figure 4.13: Multilingual backend –Actual website

Sinhala language pages

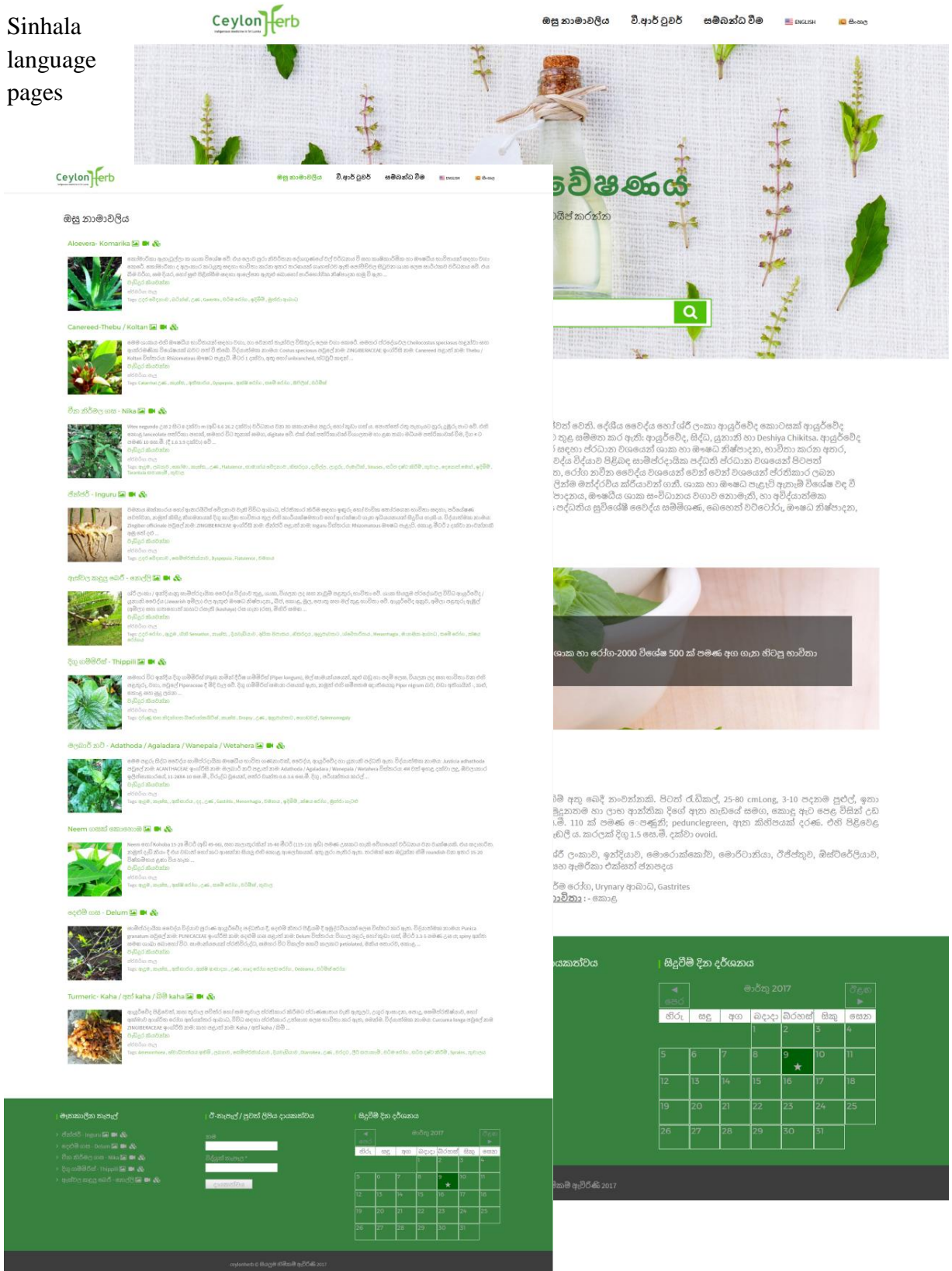


Figure 4.14: Sinhala translate pages –Actual website

- Backend

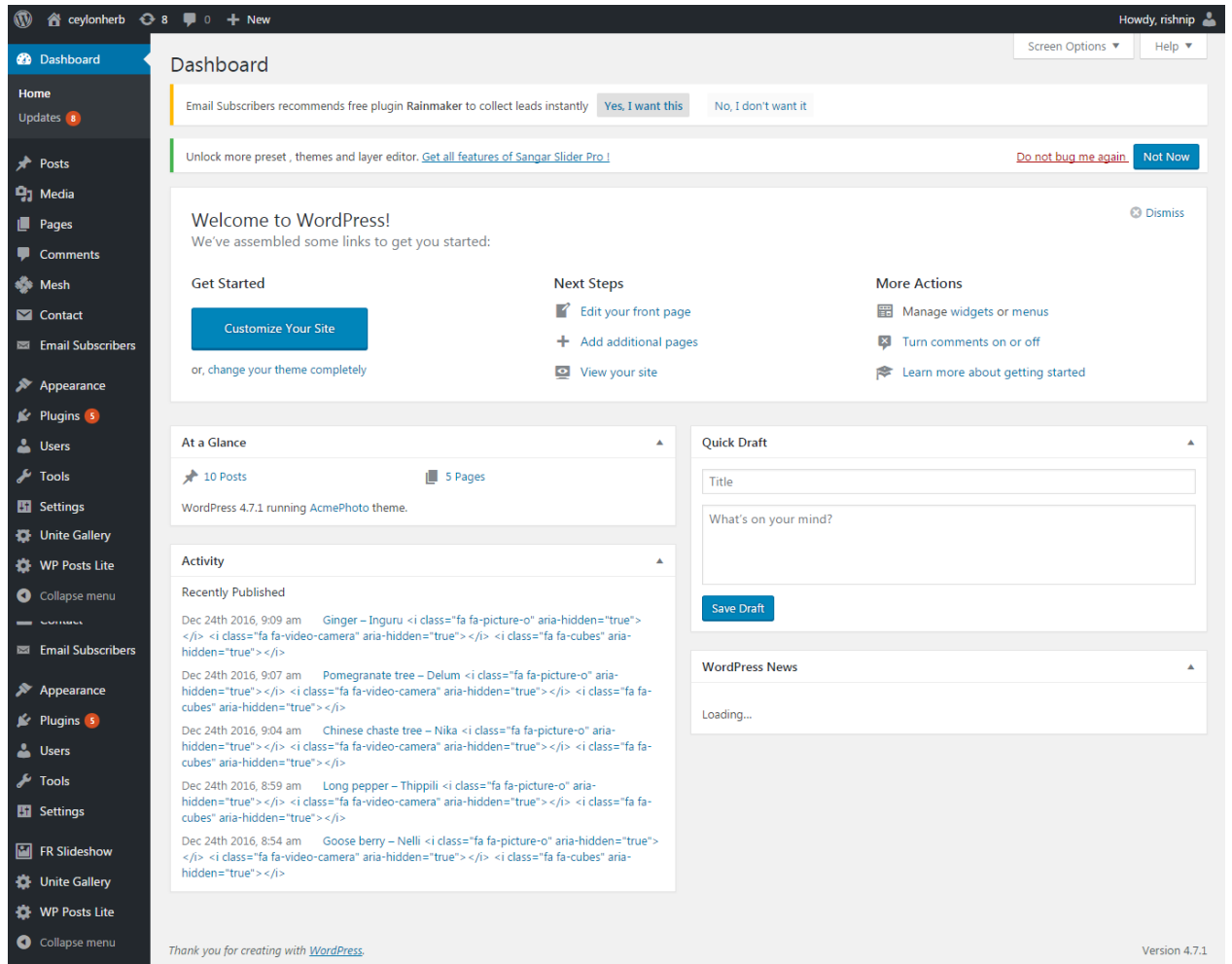


Figure 4.15: Admin backend –Actual website

This is the backend of website. Administer login to there and do all the tasks like upload multimedia contents, create posts, update event calendar, confirm email/news letter subscriptions and front-end UI updates. All the data save in database though this backend. There are creative common license plug-ins used for make performance in high level and hassle free for web administrator. All this task handle by authorized person and that person no need special technical knowledge for update website through this backend. This is content management system website (CMS). However, Knowledge of web languages such as HTML5,CSS3, PHP and MySQL will be added advantage.

4.2.3 Multimedia

- Image Gallery

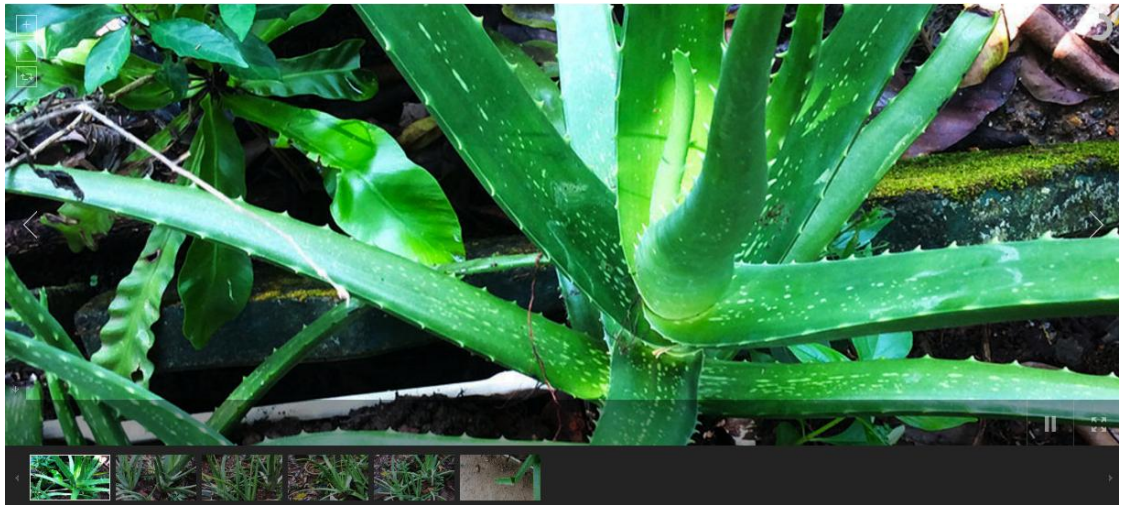


Figure 4.16: Image gallery sample –Actual website

This www application mainly based multimedia and not just information about indigenous medicine. Every plant in herbal directory have image gallery and it includes high quality resolution images. However, it's not affect to the website performance anyhow. All the images taken by high quality camera and did color correction with using Adobe Photoshop, Light Room, Davinchi code. Then, open source gallery plug-in used to create and add images in to the gallery without any performance issues. The Image gallery up the user experience level in this web application. Because there is no similar subject website include like this image gallery.

- Video

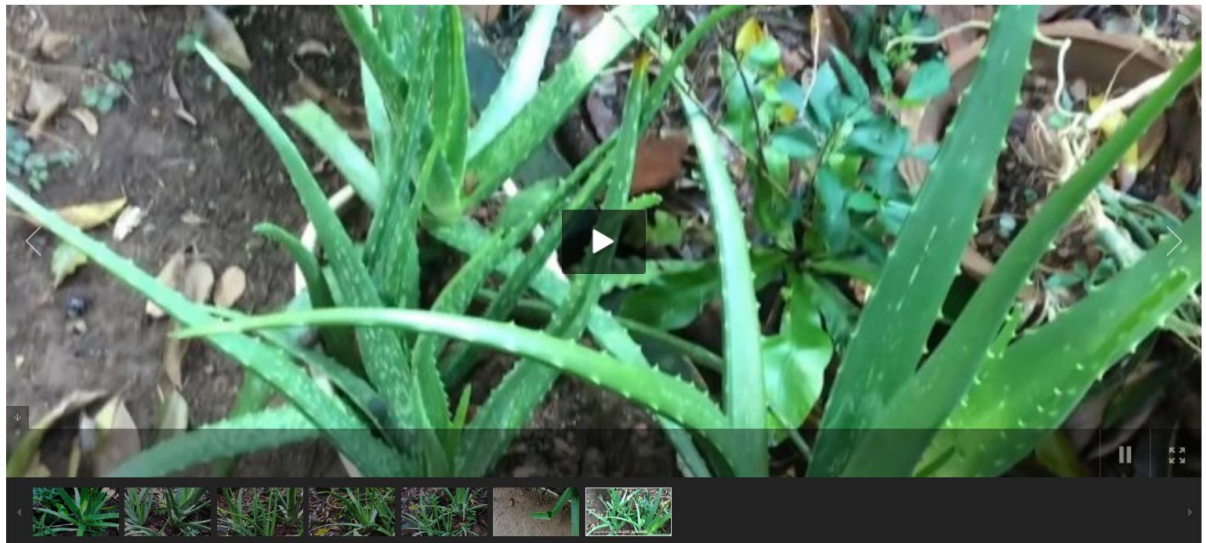


Figure 4.17: Video gallery sample –Actual website

The video gallery of medicinal plant main multimedia feature of this multimedia based website. Videos are high quality and give full view of medicinal plant well. Background narration goes some of most important and popular medicinal plants also. These videos are shot by own self and edited in Adobe Premier and After Effects. However, this is documentary type video and not much more effects as well as. All sounds edited in Adobe audition. All sounds, images and title clips are under creative common license.

First transferred short videos to Adobe Premier and then import Adobe AfterEffects. The AfterEffect project setting used standard web video ratio aspects like 16:9, Frames 24 and length 30-45seconds. These settings are very useful for SEO and user attraction. All the editing video clips, color corrections, add effects and sounds done in Adobe AfterEffects. Then rendered with standard web video format H.264 format and uploaded to YouTube in online. Because of video size larger than standard size of WordPress media file. Then, embedded Youtube video link in to the gallery and it will play smoothly without any effect to the website performance.

The medicinal plants location is Department of Ayurveda and all video shots taken by under permission as well as.

- 3D animation

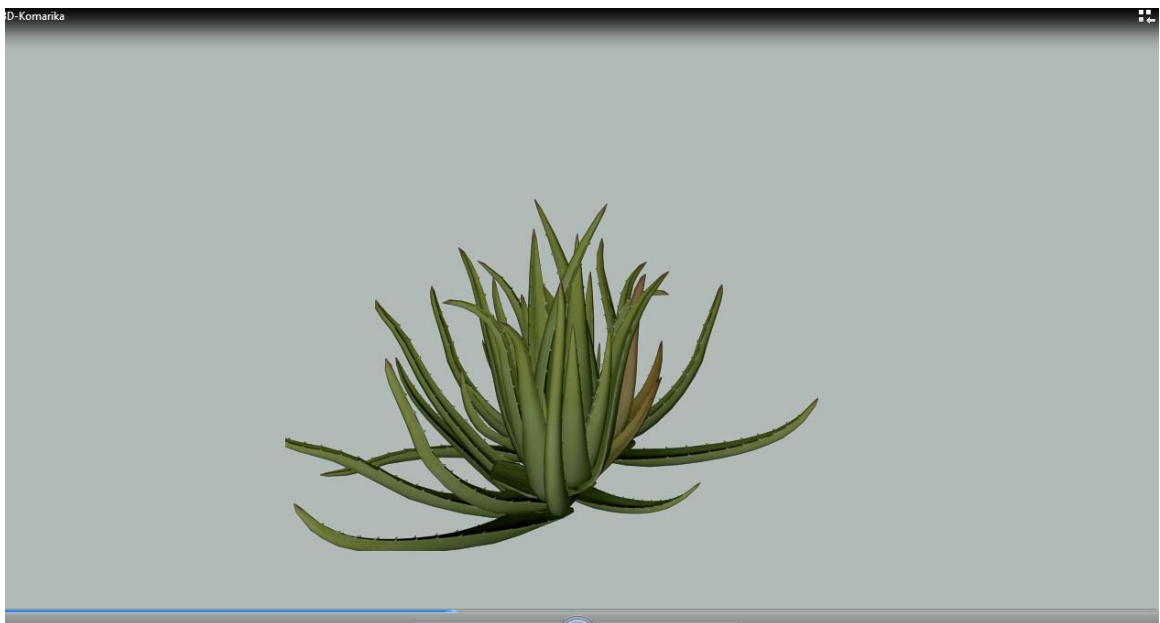


Figure 4.18: 3D view gallery sample –Actual website

The 3D view of plant is very interesting multimedia gallery. It shows how plant look in 3D view. All of this medicinal plants model and animation in 3D studio Max software. Rendering medicinal plants took some time and required high end hardware requirements. There is no any similar website includes 3D view of plant and this feature only in here.

- Virtual Reality Experience

The main multimedia feature including interactivity is VR tour in this multimedia based www application.

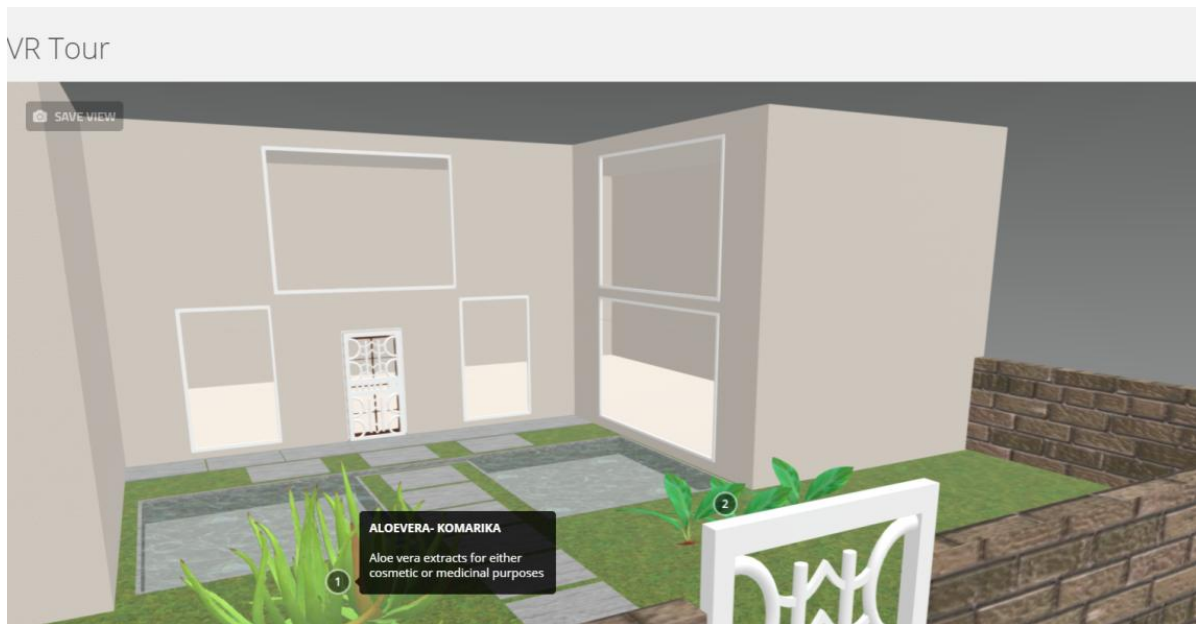


Figure 4.19: VR tour –Actual website

First Method: This VR tour creation is very new as a developer and used 3D studio max, VRML for VR creation. The “Cortona 3D view” plug-in used for view of 3D in web browser. The HTML language used to connect WordPress. However, this VR tour can experience in IE and Mozilla Firefox web browsers only. Because Google Chrome stopped the support third party extensions in recently. The “Cortona 3D view” pluin had issue to render materials of scene and used second method for current VR tour creation.

Second Method: The 3D studio max scene exported as a.obj with materials .mtl. Then, scene .obj and .mtl file with textures made .zip format. Then, it uploaded on sketchfab.com for VR creation. Then, plant code added for identifies the plant. That VR tour file shared link copy on to the VR tour page in ceylonherb website. This method allows any user to feel VR and interactive experience in any web browser.

Chapter 5: Evaluation and Testing

5.0 Introduction

It is important to be able to assess the quality of a website. This stage of testing and evaluation is very important stage in software life cycle model and most of modern website conduct testing and evaluation from design or implementation stage to until delivery or post delivery like agile development model. When using a website for a resource, it is mainly the quality of the information that must be assessed. But, when create a website or judging someone else's website, a number of different factors must be considered. [6]

5.1 Objectives of Testing

- Accessibility

It is important that a website be as universally accessible as possible. For a website to be highly accessible, it will load quickly, and be viewable in different browsers, operating systems and monitor resolutions. It will also provide access to people with disabilities and from different levels of educational and cultural backgrounds.

- Design

The design of a website is a very important element to consider when judging overall quality. Good websites have a design that is visually appealing, readable, colour scheme, easy to navigate and reinforces the purpose of the site while giving it a unified look and feel. UI/UX play main role in testing and evaluation.

- Content

Use the Criteria for Assessing the Quality of Information.

- Technological aspects and interactivity

You can judge a site on how the technologies used add to (or detract from) the purpose of the site. The site should use new technologies and the multimedia nature of the Web to allow user interactivity and make the experience different from reading a book, listening to the radio or watching a TV show. Messages, videos, audio, game, 3D, VR, event calendar, email subscription and search technologies are just few of the ways technology can be used to make a website more interactive.

- Creativeness/ Originality

Creative and original websites can be more fun to use because of their novelty and ingenuity. A good website is distinguishable from other websites, and should give you something that you can't find elsewhere. It should be distinct and memorable and give a good over-all impression.

5.2 Test Cases

Three test cases used for testing purpose based above objectives of testing. These test cases covered all functional, non functional and multimedia though website. User gave satisfactory level of test steps and expected results in -5 to +5.

Test Case 01: Visit ceylonherb website home page in web browser

		User Feedback (-5 to +5)
Test case ID	01	
Title	Visit ceylonherb homepage	
Pre condition	Internet connection	
Test Steps	<ol style="list-style-type: none"> 1. Type ceylonherb on web browser & Homepage load 2. Use navigation menu 	
Expected results	<ol style="list-style-type: none"> 1. Easy navigation menu 2. No any issue to load page in any web browser 3. Well design and content 	

Table 1: Test Case 01

Test Case 02: Search medicinal plant

		User Feedback (-5 to +5)
Test case ID	02	
Title	Search medicinal plant	
Pre condition	Already in home page	
Test Steps	Type the medicinal plant by local/English/Scientific name on search bar	
Expected results	Search result page	

Table 2: Test Case 02**Test Case 03: VR Tour**

		User Feedback (-5 to +5)
Test case ID	03	
Title	VR tour	
Pre condition		
Test Steps	1. Go to VR tour page & Begin tour 2. Touch plant & Get name of medicinal plant	
Expected results	Full VR Experience	

Table 3: Test Case 03

5.3 Evaluation of ceylonherb multimedia based www application

The professional questioner builder used for create questioner (Appendices-A) and Google form used for distribute survey questioner though online. Furthermore, Alpha Testing and Beta Testing used for evaluation purpose in this website as well as.

5.3.1 Alpha Testing

Alpha testing is simulated or actual operational testing by potential users/customers or an independent test team at the developers' site. Alpha testing is often employed for off-the-shelf software as a form of internal acceptance testing, before the software goes to beta testing.[6]

Following Alpha testing results among the close group and 10 MIT students participated this testing. The below Table 04 shows average of each test cases steps and expected results.

	Test Step01	Test Step02	Expected Result 01	Expected Result 02	Expected Result 03
Test Case 01	2.3	3	4	3	3
Test Case 02	3	-	3	-	-
Test Case 03	3.5	2	4	-	-

Table 4: Alpha Testing

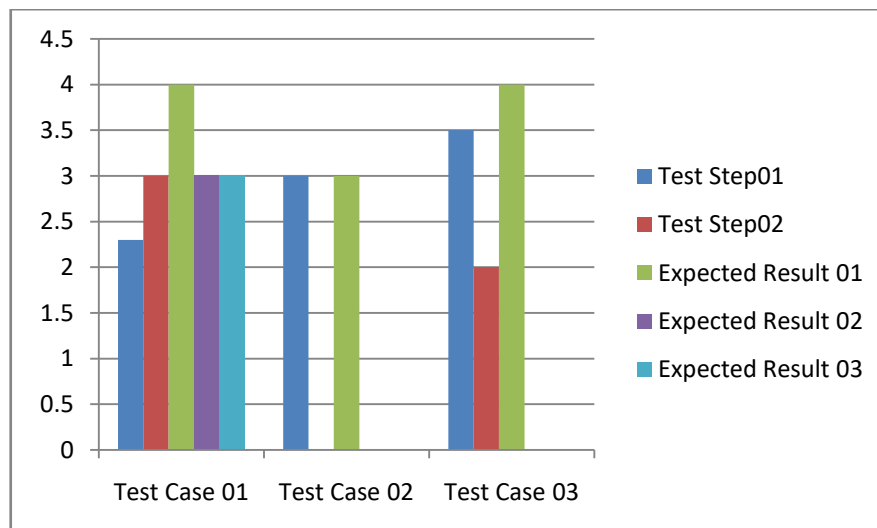


Figure 5.1: Alpha testing results Chart

5.3.2 Beta Testing

Beta testing comes after alpha testing and can be considered a form of external user acceptance testing. Versions of the software, known as beta versions, are released to a limited audience outside of the programming team known as beta testers. The software is released to groups of people so that further testing can ensure the product has few faults or bugs. Beta versions can be made available to the open public to increase the feedback field to a maximal number of future users and to deliver value earlier, for an extended or even indefinite period of time (perpetual beta)[6]. Following Beta testing results among the 10 real users from Department of Ayurveda. All participants had basic IT knowledge like go Internet and search website likewise. The below Table 05 shows average of each test cases steps and expected results.

	Test Step01	Test Step02	Expected Result 01	Expected Result 02	Expected Result 03
Test Case 01	3.3	4	4	3	3
Test Case 02	3	-	3	-	-
Test Case 03	3.5	3	4	-	-

Table 05: Beta Testing

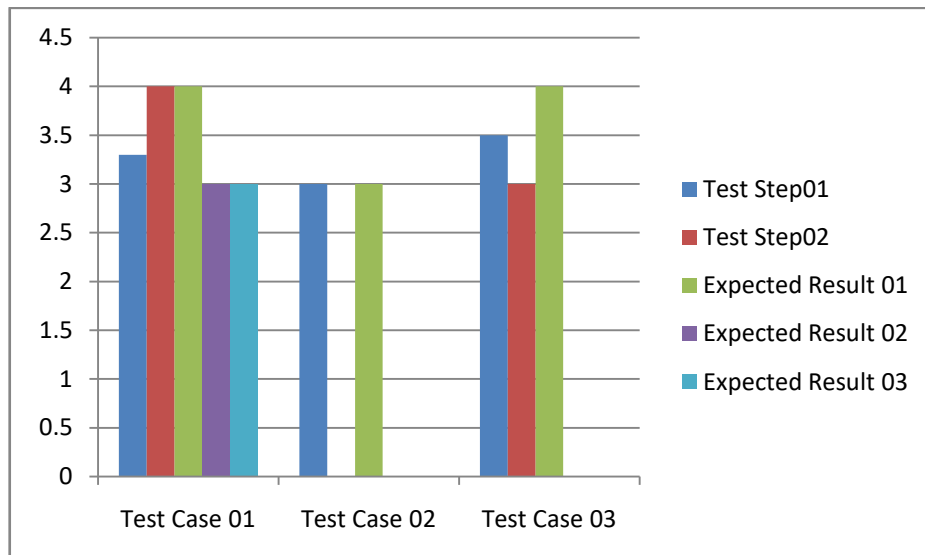


Figure 5.2: Beta testing results Chart

5.4 Summary

In conclusion of Alpha and Beta testing result shows overall of this multimedia www application ready to deployment and it can be develop in future as well as. The top findings thought this survey are;

- **This is an exciting new idea**

Users continually commented on how exciting and cool this concept. Eg. VR tour

- **This web application exchange good service with some adjustment**

User commented positively about search tool, navigation menu and multimedia. However, some of user not happy about Sinhala converted content.

- **The work flow of site very clear**

User commented positively about flow of site such as navigation structure and web structure. But some of were unhappy about use logo to go back home page.

- **Need guide for user regarding VR experience**

User suggested user guide for VR tour. Because all of are not familiar with Virtual reality.

Chapter 6: Conclusion and Future work

6.0 Lessons and Experience in this project

While development of this multimedia based www application, knowledge of Software development cycle, multimedia theories and hardware used in vast. Specially, virtual reality is new subject and learnt how to create VR experience. Testing and evaluation part gave good experience like how to handle evaluation about web application as well as.

6.1 Conclusion

The indigenous medicine is one of part in Sri Lankan Ayurveda and its still live treatment method in Sri Lanka. There are lots of written books, articles on news papers about medicinal plants which are used in indigenous medicine. However, we are live in digital era and only few materials could find through internet about this medicinal plants. To fill up this gap created multimedia based www application called “ceylonherb”. The ceylonherb website is not just information site and its interactive multimedia featured website.

The “ceylonherb” website includes medicinal plants with multimedia galleries, VR experience, search function, email subscription, event calendar and multilingual features. There is no any online active website including all of these features. When testing and evaluation process found user really attractive this site and gave very good rate. There are some areas need to improve or add new features. Some of changes need to in future like Sinhala converted text needs to correct and add more interactivity in VR tour. Furthermore current website herbal directory include only most popular medicinal plants can find surround your home. Users recommend add more medicinal plants info.

In conclusion, Ceylonherb is multimedia based www application fulfilled the gap of digital world and most informational with multimedia website in now a days.

6.2 Future Work

Currently this website focus only most popular 10 medicinal plants surround your home. It will add more medicinal plants info and multimedia galleries in future. There are limit of languages and some text are not show accurately. It will correct and add Tamil language as well as.

Current website is mobile friendly and separate mobile app will develop in future work stage. It will combine VR tour plant code to identify plant and GPRS system will use to find place of plant in garden. GPS code and scanned code will be use in mobile app stage. This mobile app will be more based on Department of Ayurveda requirements.

Interactivity activity like lesson or game about usage of plant will add more in future work stage as well as. Then, current website will be more interactive than now.

References

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Appendices

Appendices A - Survey Questioner

Appendices B - Video narration

Most of video narrations like below sample narration. First, introduce the medicinal plant for viewer. Then, briefly discuss usage of plant.

Eg:

Narration 01- Komarika

The Komarika or Aloe vera plant grow in whole year and it using as a medicinal plant or beauty cultural plant. The Alovera plant leaf liquid use for treat burns, skin diseases or urine trouble. This shows how look like cut Komarika/Aloe vera leaf.

ceylonherb web evaluation survey questioner

This survey questioner created for ceylonherb web site evaluation. This survey results will be used for MIT(MM) 2017 final project in University of Colombo. Thank you very much for participation in this survey.

* Required

1. How universally accessible is the site? *

Check all that apply.

- It load quickly.
- It view-able in different browsers.
- It view-able in different operating systems.
- Can it be understood by people with various levels of education and/or from different cultural backgrounds.

2. How you Rate accessible the web site *

Mark only one oval.

0	1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Is the site well-designed? *

Check all that apply.

- An over-all integration of design throughout the website best.
- The design allow for easy navigation.
- The use of colors, fonts, spacing, layers, tables, borders, dividers and backgrounds applicable.
- The page design doesnt overwhelming or confusing.

4. How you Rate design of web site *

Mark only one oval.

0	1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Does the site contain high quality content? Please Rate. *

Mark only one oval.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. How is the website technology usage and interactivity? *

Check all that apply.

- The way in which technologies are used fit with the purpose of the site.
- Multimedia aspects of the Web emphasized.
- Interactive technologies used.
- The site technologically impressive.

7. How you rate the technology and interactivity experience about this website? *

Mark only one oval.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. How original/creative is the site? *

Check all that apply.

- The website is unique.
- The site offer things not found elsewhere.
- The site distinct and memorable.
- All materials are original.

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