# **Project report on**

# Cultive -Learn and Buy Plants Online

A Dissertation submitted to JNTU Hyderabad in partial fulfillment of the academic requirements for the award of the degree.

# **Bachelor of Technology**

in

# **Computer Science and Engineering**

Submitted by

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Under the esteemed guidance of

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# CMR COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution under UGC &JNTUH, Approved by AICTE, Permanently Affiliated to JNTUH, Accredited by NBA.) KANDLAKOYA, MEDCHAL ROAD, HYDERABAD - 501401.

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# CMR COLLEGE OF ENGINEERING & TECHNOLOGY

KANDLAKOYA, MEDCHAL ROAD, HYDERABAD – 501401

#### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



## **CERTIFICATE**

This is to certify that the Mini Project-1 report entitled "Cultive – Learn and Buy Plants Online" being submitted by LAXMI SHASHANK(18H51A05H3), RATHOD GOUTHAM(18H51A05H4), SHARNI REDDY ARJULA(18H51A05H5) in partial fulfillment for the award of Bachelor of Technology in Computer Science and Engineering is a record of bonafide work carried out his/her under my guidance and supervision.

The results embodies in this project report have not been submitted to any other University or Institute for the award of any Degree.

Dr. P Chandra Shaker Reddy Associate Professor Dept. of CSE Dr. K Vijaya Kumar Professor and HOD Dept. of CSE

# **ACKNOWLEDGEMENT**

With great pleasure I want to take this opportunity to express my heartfelt gratitude to all the people who helped in making this project work a grand success.

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## **DECLARATION**

We hereby declare that results embodied in this Report of Project on "CULTIVE-LEARN AND BUY PLANTS ONLINE" are from the work carried out by using partial fulfillment of the requirements for the award of B. Tech degree. We have not submitted this report to any other university/institute for the award of any other degree.

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## **ABSTRACT**

During the global pandemic, lockdown restrictions took effect, and panic buying cleared supermarket shelves, home gardening experienced a well-publicized boom. We all realized that these days' fruits, veggies are doing more harm than good because of the chemicals being used. Pandemic made us learn the importance of a healthy lifestyle and the demand for small space gardening, rooftop gardening has increased tremendously. But not everyone is an expert in growing plants. Plants need proper nutrition as well. Our project idea is called Cultive – Learn and Buy Plants Online, A one-stop destination for gardening. The main aim of our project is to provide a platform where the user can gain knowledge about plants, also can buy plants, gardening equipment, and many more. The slogan behind the idea is to make people realize gardening is not as hard as it seems if it is done in the right way with proper guidance.

# **CHAPTER 1**

**INTRODUCTION** 



# CHAPTER 1 INTRODUCTION

During the Pandemic gardening market got a huge demand and the demand for home gardening and rooftop gardening increased as people understood the importance of healthy lifestyle. According to Home Food Gardening: U.S. Market Trends & Opportunities by the market research firm Packaged Facts, 26% of surveyed American consumers agree that they are planting a food garden because of the pandemic. "As consumers have been staying at home more and looking to find new hobbies, many have taken up gardening for personal enjoyment or simply as a more productive way to spend their time," the report states. The rising popularity of gardening has created both challenges and opportunities for businesses catering to home gardeners. "Almost all seed catalogs are selling out — some as early as January," Knoblock observes based on her own shopping experience and hearing from other gardening enthusiasts in an online seed-starting class that she's taking. The Washington Post reports that seed companies were "shell shocked" by the huge volume of orders they experienced.

#### For example:

- Baker Creek Heirloom Seeds received 4,500 orders daily, twice the usual peak demand of spring, and was forced to close down its website and turn down new orders.
- Renee's Garden usually received a peak of 350 daily orders in the spring, but that number had skyrocketed to 2,000.

Seeds for vegetables, beans, and herbs have been in high demand, but opportunities to cross-sell other lawn & garden and outdoor living products also abound. That's because food gardeners are more likely to take on outdoor or home improvement projects, according to a Packaged Facts survey. "When you spend more time in your yard, it becomes like another room in your house," Knoblock explains. "You become more aware of the space and what you can do with it beyond just mowing your lawn, and you get more and more ideas for what you want to do next."

The Packaged Facts survey found that home gardening correlates with new installation of outdoor structures such as fire pits, landscaping paths, or patios.



Gardeners may come into stores like Home Depot to purchase seeds and starter plants, but they may also be considering other projects that require much higher levels of investment (and potentially greater revenues for suppliers and retailers). However, food gardening consumers are more complex than one might assume. The stereotypical gardener is often depicted as an older silver-haired woman living in a rural setting, but the current reality is much different.

According to the Packaged Facts survey:

- Full-time workers and current students are most likely to have a food garden.
- Younger consumers, such as millennials, are more likely to have a food garden.
- Men are more likely to report having a food garden than women.
- Those living in the West and Northeast are most likely to report food gardening.
- Urban consumers are more likely to have a food garden, despite having more limited space.
- Those with children and people who are married or partnered are more likely to have a food garden.

To become a successful gardener, it is extremely important that you should be passionate about everything green and also love growing and nurturing plants. But, beyond that what other skills should you have to grow your garden. As a gardener you should have managerial skills to manage budgets, garden equipment, usage of garden machinery and material that you would need to carry out a specific task. Further, you should have time management skills, which will help you undertake other short and long-term gardening projects. Being a gardener, you are required to have knowledge of various machinery and tools, their design, correct usage, maintenance and repairs. You might also need to carry out regular maintenance on equipment to determine the time on maintenance and the type of repairs required. Having the knowledge of gauges, dials and other equipment indicators will also be needed to keep the tools in working condition. The demand for vertical gardening is growing in urban areas, where there is less space to perform gardening activities. This, in turn, is increasing the demand for gardening equipment. This doesn't only provide spectacular beauty, but also helps enlivening the ambiance. It also lowers indoor and outdoor temperature. Vertical gardening is suitable for cities, as it allows improved aesthetics of the area.



This eventually is projected to lead to the growth of the gardening tools market over the forecast period. The global gardening tools market is expected to reach US\$ 4.5 Bn by the end of 2019, progressing at a significant CAGR of 3.0% during 2019-2029. Europe and North America are anticipated to account for prominent value shares in the global market. The shears & pruning tools segment is expected to dominate the global gardening tools market throughout the forecast period. With Increase in demand for gardening and gardening does require knowledge, but there is no such platform or community specifically for gardeners to learn, buy and grow plants. So we have come with a solution called Cultive – Learn and Buy Plants Online, A one-stop destination for gardening. The main aim of our project is to provide a platform where the user can gain knowledge about plants, also can buy plants, gardening equipment, and many more. The slogan behind the idea is to make people realize gardening is not as hard as it seems if it is done in the right way with proper guidance.

## 1.1 OBJECTIVE:

Gardening requires knowledge about how to treat and grow different plants, treat diseases, etc. Though, there are many websites available on the internet where the user can gain knowledge and buy plants. However, there is no specific website available, that is completely dedicated to gardening enthusiasts to learn about plants, buy different plant products, attend workshops to gain knowledge, etc. Overall, the main aim is to provide a one-stop destination for gardening.

# **CHAPTER 2**

**BACKGROUND WORK** 



# CHAPTER 2 BACKGROUND WORK

#### 2.1 LITERATURE SURVEY:

This review of the scientific literature set out to demonstrate the strength of evidence for the benefits of gardening and food growing for physical and mental health and wellbeing. It shows that: .to improve physical health, regular involvement in gardening or community food growing projects, or formal horticultural therapy, can:

- Increase overall levels of physical activity and fitness, burn more calories and hence contribute to healthy weight management and reducing the risk of obesity.
- Increase healthy fruit and vegetable consumption, for adults that grow food, and among schoolchildren participating in food-growing activities at school as well as improving young people's attitudes to healthy eating.
- Reduce physical pain, and help with rehabilitation or recovery from surgery or other medical interventions.
- Help people cope with physically challenging circumstances, such as intensive cancer treatment or learning how to live with chronic conditions such as asthma or severe allergies. ..to improve mental health, for people with acute or persistent mental health problems, or especially difficult personal circumstances, regular involvement in gardening or community food-growing projects, or formal horticultural therapy, can:
- Contribute to improved social interactions and community cohesion.
- Reduce the occurrence of episodes of stress, and the severity of stress and associated depression.



- Reduce reliance on medication, self-harming behaviour, and visits to psychiatric services, whilst also improving alertness, cognitive abilities and social skills.
- Alleviate symptoms of dementia and Alzheimer's disease, such as agitation and aggressive behaviour, which can in turn improve circumstances for carers.
- •Provide productive manual activity and beneficial social interaction for people tackling drug and alcohol dependency.
- Help people manage the distress associated with mentally challenging circumstances, such as making the end of life more peaceful, sociable and enjoyable for hospice patients.

The demand for gardening market has been increasing rapidly.

The global gardening equipment market size was valued at USD 74.1 billion in 2015 and is expected to witness significant growth owing to its growing adoption in the residential and commercial construction industries. Furthermore, technological advancements to save time, energy, and cost such as the advent of robotic lawn mower is expected to open new avenues for industry growth over the projected period.

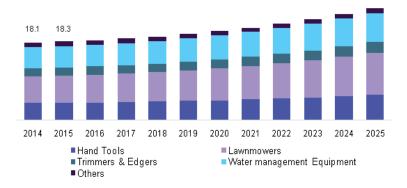


Fig 2.1.1 U.S. gardening equipment market by product, 2014 - 2025 (USD Billion)



The growing demand for lawn tools in landscaping services in the U.S. is expected to be a key driver for industry growth over the forecast period. These tools are primarily used for cutting, trimming, aligning, and maintaining the health of the lawns. As a result, they are likely to gain high demand from golf courses, sports fields and public parks over the forecast period.

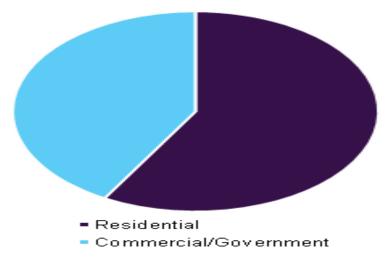


Fig 2.1.2 Gardening equipment revenue share by end-use, 2015

Product Insights: The gardening products industry is highly attractive and can be noted as a mature market with stable growth. The lawnmowers product segment is projected to remain the largest and fastest-growing segment over the forecast period. This may be credited to the widespread use of lawnmowers for lawn and garden maintenance in household backyards, public parks, and sports fields. The hand tools category is further segmented as hoe, weeder, and shears & snips. These products are first purchased by the individuals as a part of the basic tool kit. Repeated purchases are a major factor expected to spur the hand tools segment growth.



Evolving social lifestyles of the increasing base of a prosperous middle-class population is augmenting the purchase of tools. Surging technological advancements has led the adoption of lawnmowers and water management tools for huge government and commercial complexes. Thus, owing to the aforementioned applications, the industry is projected to gain traction in the near future.

Regional Insights: North America held the largest market share in 2015 and accounted for over 30% of the industry share. However, Asia Pacific is projected to be the fastest-growing market for lawn tools and is anticipated to grow at a CAGR of over 4.0% from 2016 to 2025.

Strong GDP growth coupled with the rise in disposable income in the developing countries is expected to drive the demand over the next nine years. Furthermore, the availability of low-cost labor in this region makes it economical to produce garden care tools.

Improved standards of living have led to the espousal of garden care as a hobby by many youths and retired personnel. Further, upsurge in new housing construction along with the rebound in home remodeling activity is anticipated to fuel the growth.

Latin America and Middle East & Africa are expected to offer growth avenues towards the end of the forecast period owing to the rise in disposable income and improving the construction industry. Further, the increasing rate of the espousal of gardening as a hobby will further spur the equipment demand over the next few years

#### **2.2 IDENTIFIED PROBLEMS:**

Amazon and Flipkart are some of the E-Commerce sites which provide plant seeds, fertilizers, Pots and pesticides but they do not provide the information regarding how to grow and maintain the plants according to its particular season.

#### **DRAWBACKS**

- Too many websites provide different information which sometimes may be misleading
- ➤ E-commerce sites do sell products related to plants but do not provide any information regarding the use. For example: Amazon does sell plants seeds but doesn't tell how to take care of those plants, fertilizers that are required for specific plant.
- ➤ There is no website available that is completely focused on gardening domain and that provide all these features.



# **CHAPTER 3**

# PROPOSED SYSTEM



## **CHAPTER 3**

# PROPOSED SYSTEM

## 3.1 SOFTWARE REQUIREMENTS

➤ **FRONT END**: HTML, CSS, BOOTSTRAP, JAVASCRIPT

**BACKEND**: MONGODB, NODEJS, EXPRESSJS

> PAYMENT GATEWAY: RAZORPAY

#### HTML:

The Hyper Text Markup Language, or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets(CSS) and scripting languages such as JavaScript. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as <img /> and <input /> directly introduce content into the page. Other tags such as surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page. HTML can embed programs written in a scripting language such as JavaScript, which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), former maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.



#### CSS:

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file which reduces complexity and repetition in the structural content as well as enabling the .css file to be cached to improve the page load speed between the pages that share the file and its formatting. Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device. The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable. The CSS specifications are maintained by the World Wide Web Consortium (W3C). Internet media type (MIME type) text/css is registered for use with CSS by RFC 2318 (March 1998). The W3C operates a free CSS validation service for CSS documents. In addition to HTML, other markup languages support the use of CSS including XHTML, plain XML, SVG, and XUL

#### **BOOTSTRAP:**

It is an open-source and free CSS framework, which helps in directing a responsive device-friendly mobile-first front-end web page development tool. Bootstrap includes the CSS (Cascading Style Sheets), and an optional JavaScript supported design template (plug-ins) that deals with typography, implementation of buttons, forms, and various other components user interface. This framework helps in faster web development and supports developers in creating responsive web pages faster.



#### Benefits of Bootstrap:

- It produces less cross-browser bugs.
- It is a consistent framework supported by all the browsers plus CSS based compatibility fixes.
- It is a lightweight and hence widely used framework for creating responsive sites.
- Looks, structure, and styles can be customized as per requirement.
- A simple and effective grid system.

#### **JAVASCRIPT**

JavaScript (often shortened to JS) is a lightweight, interpreted, object-oriented language with firstclass functions, and is best known as the scripting language for Web pages, but it's used in many non-browser environments as well. It is a prototype-based, multi-paradigm scripting language that is dynamic, and supports object-oriented, imperative, and functional programming styles. JavaScript runs on the client side of the web, which can be used to design / program how the web pages behave on the occurrence of an event. JavaScript is an easy to learn and also powerful scripting language, widely used for controlling web page behavior. Contrary to popular misconception, JavaScript is not "Interpreted Java". In a nutshell, JavaScript is a dynamic scripting language supporting prototype based object construction. The basic syntax is intentionally similar to both Java and C++ to reduce the number of new concepts required to learn the language. Language constructs, such as if statements, for and while loops, and switch and try ... catch blocks function the same as in these languages (or nearly so). JavaScript can function as both a procedural and an object oriented language. Objects are created programmatically in JavaScript, by attaching methods and properties to otherwise empty objects at run time, as opposed to the syntactic class definitions common in compiled languages like C++ and Java. Once an object has been constructed it can be used as a blueprint (or prototype) for creating similar objects.



JavaScript's dynamic capabilities include runtime object construction, variable parameter lists, function variables, dynamic script creation (via eval), object introspection (via for ... in), and source code recovery (JavaScript programs can decompile function bodies back into their source text.

#### **NODEJS**

Node.js is a server-side platform built on Google Chrome's JavaScript Engine (V8 Engine). Node.js was developed by Ryan Dahl in 2009 and its latest version is v0.10.36. Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux. Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent. Node.js = Runtime Environment + JavaScript Library Following are some of the important features that make Node.js the first choice of software architects.

- Asynchronous and Event Driven All APIs of Node.js library are asynchronous, that is, non-blocking. It essentially means a Node.js based server never waits for an API to return data.
   The server moves to the next API after calling it and a notification mechanism of Events of Node.js helps the server to get a response from the previous API call.
- Very Fast Being built on Google Chrome's V8 JavaScript Engine, Node.js library is very fast in code execution.
- Single Threaded but Highly Scalable Node.js uses a single threaded model with event looping. Event mechanism helps the server to respond in a non-blocking way and makes the server highly scalable as opposed to traditional servers which create limited threads to handle requests. Node.js uses a single threaded program and the same program can provide service to a much larger number of requests than traditional servers like Apache HTTP Server.
- No Buffering Node.js applications never buffer any data. These applications simply output the data in chunks.



## **EXPRESS JS**

Express is a minimal and flexible Node.js web application framework that provides a robust set of features to develop web and mobile applications. It facilitates the rapid development of Node based Web applications. Following are some of the core features of Express framework –

- Allows setting up middle wares to respond to HTTP Requests.
- Defines a routing table which is used to perform different actions based on HTTP Method and URL.
- Allows to dynamically render HTML Pages based on passing arguments to templates.

## **MONGODB**

MongoDB is an open source NoSQL database management program. NoSQL is used as an alternative to traditional relational databases. NoSQL databases are quite useful for working with large sets of distributed data. MongoDB is a tool that can manage document-oriented information, store or retrieve information.MongoDB supports various forms of data. It is one of the many nonrelational database technologies that arose in the mid-2000s under the NoSQL banner -- normally, for use in big data applications and other processing jobs involving data that doesn't fit well in a rigid relational model. Instead of using tables and rows as in relational databases, the MongoDB architecture is made up of collections and documents.Organizations can use Mongo DB for its ad-hoc queries, indexing, load balancing, aggregation, server-side JavaScript execution and other features.

#### PAYMENT GATEWAY

Razorpay is the one of the best payment solution in India that allows businesses to accept, process and disburse payments with its product suite. It gives you access to all payment modes including credit card, debit card, net banking, UPI and popular wallets including JioMoney, Mobikwik, Airtel Money, FreeCharge, Ola Money and PayZapp



Razorpay Manage your marketplace, automate NEFT/RTGS/IMPS bank transfers, collect recurring payments, share invoices with customers - all from a single platform.

## **3.2 IMPLEMENTATION:**

- If user is a new user, then user can register through signup button provided in the home page or else can login through login button.
- Home page displays all the information about the website and the features about the website.
- Learn Page consists of number of articles that user can access from and gain knowledge about gardening.
- Workshop page displays the upcoming workshops and also details like what the workshop is about and all.

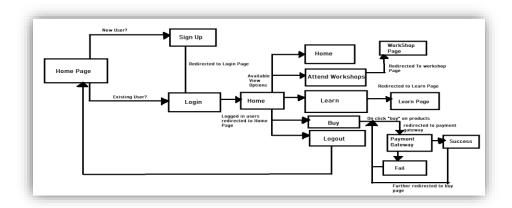


Fig: 3.2.1 Block Diagram of Cultive

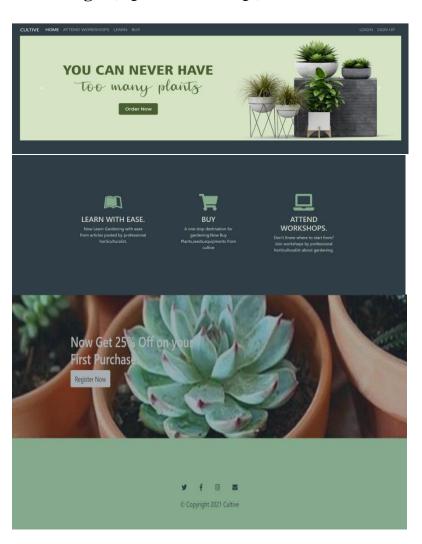
• Buy Page consists of number of products ranging from gardening equipments to plants seeds. The Payment gateway used is razor pay



• As soon as the user logins the Logout and the user name is displayed on the Home page. The user can logout from the page using logout button.

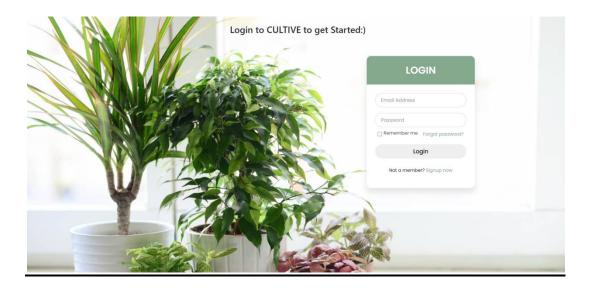
## 3.3 RESULT

Home Page: (Fig: 3.3.1 Home Page)

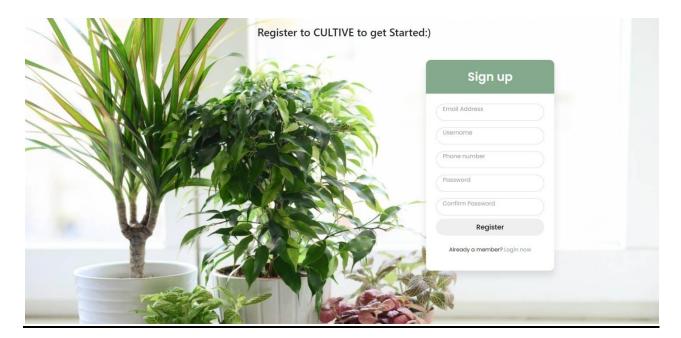




**Login Page:** (Fig: 3.3.2 Login Page)

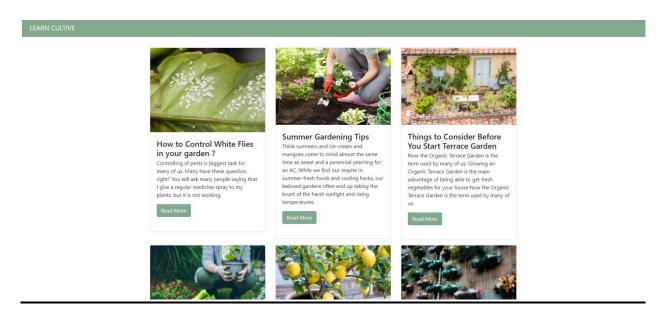


**Sign Up Page:** (Fig: 3.3.3 Sign Up Page)

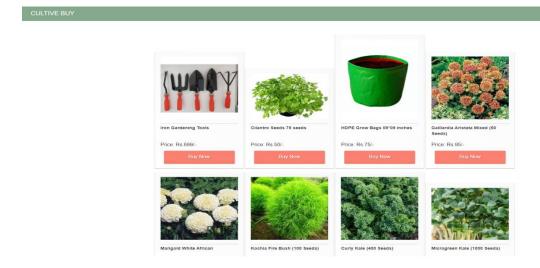




# **Learn Page:** (Fig: 3.3.4 Learn Page)

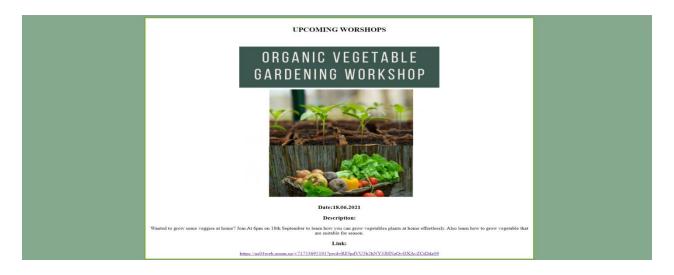


# Buy Page: (Fig: 3.3.5 Buy Page)

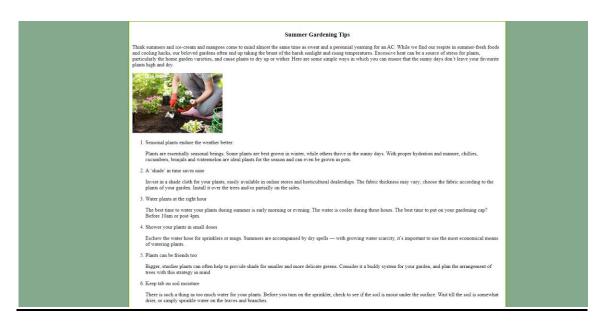




# Workshop Page: (Fig: 3.3.6 Workshop Page)



# Article Pages: (Fig: 3.3.7 Article Page)



# CHAPTER 4 CONCLUSION AND FUTURE WORK



# CHAPTER 4 CONCLUSION AND FUTURE WORK

## 4.1 CONCLUSION

Cultive is just a one stop destination for the gardening enthusiasts where the user can learn, buy, attend workshops and engage themselves with likeminded people who are having passion for gardening, etc. Out of much information that is available on the internet that may be misleading, user can learn and seek guidance from professional horticulturalists.

#### **4.2 FUTURE SCOPE**

Here are following features that are considered as future scope:

- To add a booklist where user can save favorite articles from learn page and can easily access from booklist
- To provide survey forms that will help the user to analyze the disease of the plant and treat them.
- To provide remainders for upcoming events and workshops that the user has registered.
- To provide booking appointments feature for users to book appointments with horticulturalists to seek guidance.



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**CSE**