# ‘‘E-COMMERCE APPLICATION FOR AGRICULTURE’’

**PROJECT SUBMITTED TO**

**ASPEE AGRIBUSINESS MANAGEMENT INSTITUTE**

**IN PARTIAL**

**FULLFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE**

**DEGREE OF**

**M.Sc. (ICT IN AGRICULTURE)**

**2013-14**

**SUBMITTED BY**

**VIREN M. PATEL**

**(04-1150-2012)**

**ASPEE AGRIBUSINESS MANAGEMENT INSTITUTE**

**NAVSARI AGRICULTURAL UNIVERSITY**

**NAVSARI – 396450**

**NAVSARI AGRICULTURAL UNIVERSITY**

**ASPEE AGRIBUSINESS MANAGEMENT INSTITUTE**

**NAVSARI - 396 450**

# CERTIFICATE – I

**Date: 07/ 07/ 2014**

This is to certify that **Mr. Viren M. Patel** has successfully completed the course work and examinations as required under the regulation for M.Sc. (ICT in Agriculture).

**Dr. J. D. Thanki**

**Dean**

**AABMI**

**NAVSARI AGRICULTURAL UNIVERSITY**

**ASPEE AGRIBUSINESS MANAGEMENT INSTITUTE**

**NAVSARI - 396 450**

# CERTIFICATE - II

**Date: 07/ 07/ 2014**

This is to certify that the Project work entitled "**E-Commerce Application For Agriculture"** submitted for the degree of M.Sc.(ICT in Agriculture) in the subject of ICT in Agriculture embodies bona-fide Project work carried out by **Mr. Viren M. Patel** under my guidance and supervision and that no part of this project work has been submitted for any other degree. The assistance, guidance and help received during the course of investigation have been fully acknowledged. The Report was also approved by the advisory Committee.

**Dr. J. D. Thanki**
**Dean**
**(AABMI )**

**Dr. Bankim L.Radadiya**
**Director of IT**
**( Major Advisor)**

**NAVSARI AGRICULTURAL UNIVERSITY**

**ASPEE AGRIBUSINESS MANAGEMENT INSTITUTE**

**NAVSARI - 396 450**

## CERTIFICATE - III

**Date : 07/ 07/ 2014**

This is to certify that the Project entitled "**E-Commerce Application For Agriculture"** submitted by **Mr. Viren M. Patel** to the Navsari Agricultural University , Navsari in partial fulfilment of the requirement for the degree of M.Sc.(ICT in Agriculture) Master of Science / Doctor of Philosophy in Agriculture /Horticulture / Forestry / Veterinary Sciences & Animal Husbandry in the subject of ICT in Agriculture after suggestions and recommendations by external examiner was discussed and defended by the candidate before the following members of the Advisory Committee. The performance of the candidate in the oral examination on this project has been found satisfactory. We therefore, recommend that the project may be approved.

Dr. Bankim L.Radadiya

**Major Advisor**

Approved

**Dr. J. D. Thanki** Mr. Rahul G. Thakkar

Principal / Dean Mr. Bhavesh Chaudhari

(Seal & Date) **Committee member**

**NAVSARI AGRICULTURAL UNIVERSITY**

**ASPEE AGRIBUSINESS MANAGEMENT INSTITUTE**

**NAVSARI - 396 450**

# CERTIFICATE - IV

**Date : 07/ 07/ 2014**

This is to certify that **Mr. Viren M. Patel** of ASPEE Agribusiness Management Institute, Navsari has made all corrections / modifications in the project entitled "**E-Commerce Application For Agriculture"** which were suggested by the External Examiner and the Advisory Committee in the oral examination held on _____.The final copies of the project duly bound and corrected were submitted on _____ are enclosed herewith for approval.

Principal / Dean

**Dr. J. D. Thank** ( Dr. Bankim L.Radadiya )

**APPROVED** (Seal & Date) Major Advisor

# DECLARATION

This to certify that the whole project work in partial fulfilment of requirement for the award of the degree of M.Sc.(ICT in Agriculture) in the subject of ICT in Agriculture is the result of **Dr. Bankim L. Radadiya**, **Director of IT,NAU** investigations done by undersigned under the direct guidance and supervision of **,** Navsari Agricultural University, Navsari and no part of the Project work has been submitted for any other degree so far.

Place : Navsari **Mr. Viren M. Patel**

Date: (Reg. No- 04-1150-2012)

**Countersigned by**

Dr. Bankim L.Radadiya

Director of IT

**Major Advisor**

# Acknowledgement

I express my unfathomable sense of pleasure towards Owner of **Jalaram Agro, Khargam** Who gives me a chance to work. He frequently came to motivate the entire trainee and provide such an extraordinary infrastructure and resources to work here. Moreover, i learned the lesson of "commitment to work" from him i memorize him for his cordial and gentle nature.

I express my deep sense of gratitude and indebtedness to my guide, **Dr. Bankim L. Radadiya** for accepting me to work under his training and supervision. He took prolonged interest in our work and directed to us toward the predefine goal. He has shown us a way to pursue excellence. He also provides basic knowledge of Accounting. He was witnessed our work every time and also help a lot. He has been a big factor of motivation in our project.

I also very much thankful to **Prof. Rahul Thakkar** and **Prof. Bhavesh Chaudhary** and all other Faculties of Aspee AgriBusiness Management Institute who have proved to be a constant motivation for the knowledge acquisition and the moral support during NAU curriculum.

Last but not least my heartily thanks is to my friends and batch mates, who have provided me with innumerable discussions on many technicalities and friendly tips.

I sincerely thank our Msc.(ICT) department for the academic advancement it has provide to me during the last two year and provided an opportunity for project training.

I would like to express my heartiest gratitude to my family and friends who has always guided me toward the path of success and those entire people who have directly or indirectly helped me in making this project work successful.

With Regards:

**Viren Patel**

# Abstract

A type of business model, or segment of a larger business model, that enables a firm or individual to conduct business over an electronic network, typically the internet. Electronic commerce operates in all four of the major market segments: business to business, business to consumer, consumer to consumer and consumer to business. It can be thought of as a more advanced form of mail-order purchasing through a catalog. Almost any product or service can be offered via ecommerce, from books and music to financial services and plane tickets.

Ecommerce has allowed firms to establish a market presence, or to enhance an existing market position, by providing a cheaper and more efficient distribution chain for their products or services. One example of a firm that has successfully used ecommerce is Target. This mass retailer not only has physical stores, but also has an online store where the customer can buy everything from Agriculture Products to Book makers to action figures.

*Enables more flexible working practices*, which enhances the quality of life for a whole host of people in society, enabling them to work from home. Not only is this more convenient and provides happier and less stressful working environments, it also potentially reduces environmental pollution as fewer people have to travel to work regularly.

*Connects people*. Enables people in developing countries and rural areas to enjoy and access products, services, information and other people which otherwise would not be so easily available to them.

*Facilitates delivery of public services*. For example, health services available over the Internet (on-line consultation with doctors or nurses), filing taxes over the Internet through the Inland Revenue website.

# Table Of Contents


**ACKNOWLEDGEMENT**…… I
**ABSTRACT**…….. II

**1. ABOUT COMPANY**
1.1 Company Profile…….…….. 1

**2. SYSTEM DESCRIPTION**
2.1 Project Profile……...……..…….. 3
2.2 Introduction…….……. 4
2.3 Features……..…….…..……. 5
2.4 Benefits……. 6

**3. ENVIRONEMENT DESCRIPTION**
3.1 Hardware Specification……..……... 8
3.2 Software Specification…….……. 9
3.3 Technology Used…….……. 10

**4. PROJECT PLANNING**
4.1 Scope & Objective……..…….. 27
4.2 Feasibility Study…….…….…..... 28
4.3 Requirement Analysis…..……. 31
4.4 Software Development Process Model …… 33

**5. SYSTEM ANALYSIS**
5.1 Data Flow Diagram …….. 41

**6. SYSTEM DESIGN**
6.1 Data Dictionary ……..……. 47

**7. SYSTEM IMPLEMENTATION**
7.1 Screen Shot……...……..…….. 51

**8. TESTING**
8.1 Test Cases……...… 73

**CONCLUSION**……. 80

**REFERENCES**…….. 81

# 1. About Company

## 1.1 Company Profile

| | |
|---|---|
| **Company Name** | Jalaram Agro |
| **Company Address** | Khergam,Chikhli,Dist-Navsari<br>Gujarat, India. |
| **Work Area** | Contract Farming, Green & Net House, Sales of Pesticide & Seeds, Agriculture Consultancy. |
| **Contact Number** | +91 08000927819 |
| **Website** | **www.agricareconsultancy.com** |

## Company's Information:

**Jalaram Agro & Consultancy** is located at Khergam,Chikhli,Dist-Navsati.

**Jalaram Agro & Consultancy** is a leading Agriculture Based Sales & Service Provider.who provide service regarding Agriculture products.

A clear perception of the growing requirement of the Agriculture world in the area of Agriculture has enabled **Jalaram Agro & Consultancy.** Which develop programs of specific relevance for the present and the future.

**Jalaram Agro & Consultancy** provides high quality on site services for Contact Farmin ,Green House,Net House,Seeds & Pestricide to the Farmer.

No doubt the Consultancy has been able to make a name for itself in a relatively short span of time only because of its ability and commitments to ensure customer satisfaction by rewarding quality work on right time and in a right manner.

The business philosophy of the **Jalaram Agro & Consultancy** is to lay emphasis on Human Values and Personal Relations Great stress is laid on proper communication, transparency and human relations, which forms an integral part of the Agriculture. At **Jalaram Agro & Consultancy**, we not only give ideas but we develop relationships.

## Company's Sales & Services

- **Jalaram Agro & Consultancy** offer a comprehensive range of services centered on Agriculture Products and maintenance, such as requirements, implementation and support. Clients can choose the services that meet their business requirements, and count on **Jalaram Agro & Consultancy** to make them work together smoothly.

- We are providing following services:
  - Green House
  - Net House
  - Pesticide
  - Seeds
  - Plants (Vegitable & Flower)
  - Landscape & Gardening
  - Contract Farming
  - Training
  - Agriculture Consultancy

## Company's Vision:

- To establish ourselves as a Premier in Agriculture Business. Build best Agriculture Solutions Provider in South Gujarat.

**"TO HELP OUR CUSTOMERS GAIN AND SUSTAIN A STRATEGIC BUSINESS ADVANTAGE BY PROVIDING WORLDCLASS TECHNOLOGY AND PROFESSIONAL SERVICES."**

# 2. System Description

## 2.1 Project Profile

| | |
|---|---|
| **Project Title** | E-Commerce |
| **Project Definition / Objective** | To Design, Develop, Test and Implement the "E-Commerce" in .Net Framework 4.0 |
| **Organization** | Jalaram Agro & Consultancy<br>Khergam,Chikhli |
| **Project Guide** | Dr.Bankim L.Radadiya |
| **Project By** | Viren Patel |
| **Front End** | Microsoft Visual Studio 2010 Ultimate |
| **Back End** | Microsoft SQL Server 2008 R2 |
| **Report** | Crystal Reports |
| **Documentation Generation tool** | Microsoft Word 2007, Visio 2007 |

## 2.2 Introduction

In reality e-commerce is a very simple method to be followed to buy products Online.

Electronic commerce is generally considered to be the sales aspect of e-business. It also consists of the exchange of data to facilitate the financing and payment aspects of business transactions. This is an effective and efficient way of communicating within an organization and one of the most effective and useful ways of conducting business. It is a Market entry strategy where the company may or may not have a physical presence.

E-Commerce is trading in products or services conducted via computer networks such as the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web at least at one point in the transaction's life-cycle, although it may encompass a wider range of technologies such as e-mail, mobile devices, social media, and telephones as well.

The wide range of business activities related to e-commerce brought about a range of other new terms and phrases to describe the Internet phenomenon in other business sectors. Some of these focus on purchasing from on-line stores on the Internet. Since transactions go through the Internet and the Web, the terms *I-commerce* (Internet commerce), *icommerce* and even *Web-commerce* have been suggested but are now very rarely used.Other terms that are used for on-line retail selling include *e-tailing*,*virtual-stores* or *cyber stores*. A collection of these virtual stores is sometimes gathered into a '*virtual mall*' or '*cybermall*'.

**Key drivers of e-business**

- Organisational culture – attitudes to research and development (R&D); its willingness to innovate and use technology to achieve objectives.
- Commercial benefits – in terms of cost savings and improved efficiency that impact on the financial performance of the firm.
- Skilled and committed workforce – that understands, is willing and able to implement new technologies and processes.

- Requirements of customers and suppliers – in terms of product and service demand and supply.
- Competition – ensuring the organisation stays ahead of or at least keeps up with competitors and industry leaders.

## 2.3 Features

- Admin can Add Agriculture Products & Tools for Sales.
- Users can get Login Password Through a mail and users can easily Update their Password and Profile.
- Easy Search Require Products like Seeds,Planter,Nursaty Tools etc.
- User can Create cart for shopping more products.
- Easily add/remove quantity and product from shopping cart.
- Search Product By Lower Price, Higher Price, and alphabetically.
- User can make comments and rating in any products.
- Most of the south Gujarat postal code are available for product buying.
- User can search product by their name.
- Admin can put the comments as they want to show to users.
- Admin can Active/Deactivate product to show users.
- Admin can show total no of pending order and daily pending orders.
- Purchase order made instant where transaction is made.
- Easy stock maintenance for the admin.
- User can change their address for different different order.
- Designs are very User Friendly so; it’s Easy to Understand to any user of
- On lost the Password Users Can get Password on their mail after submitting registered email.

## 2.4 Benefits

Following are the advantages and disadvantages of E-commerce.

## Advantages:

- Easy access to all of Agriculture Products and reports from a quick view dashboard.
- Multi-user access from any and all devices that connect to the Internet.
- Easy Purchase with less time and less delivery time.
- Admin can Active/Deactivate Users comments.
- All transaction of checkout can be made at single page so its reduce the time.
- Easily Update/Delete the Cart item Base on Selection Criteria.
- Users can also delete/update product from the cart.
- Admin can easily view new order & order history.
- Maintain stock availability can helps the admin.

### Other Benefits of E-Commerce

- *24/7 access*. Enables customers to shop or conduct other transactions 24 hours a day, all year round from almost any location. For example, checking balances, making payments, obtaining travel and other information. In one case a pop star set up web cameras in every room in his house, so that he could check the status of his home by logging onto the Internet when he was away from home on tour.

- *More choices*. Customers not only have a whole range of products that they can choose.

- *Improved delivery processes*. This can range from the immediate delivery of digitised or electronic goods such as software or audio-visual files by downloading via the Internet, to the on-line tracking of the progress of packages being delivered by mail or courier.

## Disadvantage

- Limited customer service. If you want to buy a computer and you're shopping online, there is no employee you can talk to about which computer would best meet your needs.
- No instant gratification. When you buy something online, you have to wait for it to be shipped to your home or office.
- No ability to touch and see a product. Online images don't always tell the whole story about an item. Ecommerce transactions can be dissatisfying when the product the consumer receives is different than expected.

# 3 Environment Descriptions

## 3.1 Hardware Specification

### Server Side: Hardware Requirement (Minimum):

| Hardware Type | **Name** |
|---|---|
| Processor | Intel Pentium IV 1.60 Ghz |
| Ram | 512 MB |
| Disc Space | 5 GB |

### User Side: Hardware Requirement (Minimum):

| **Hardware Type** | **Name** |
|---|---|
| Processor | Intel Pentium IV 1.60 Ghz |
| Ram | 512 MB |
| Disc Space | 5 GB |

## 3.2 Software Specification:

### Server Side : Software Requirement (Minimum):

| Software Type | Name and Version |
|---|---|
| Operating System | Windows XP or Later Ver. |
| Database System | Sql Server 2008 |
| Developing Software | Ms Visual Studio 2010 Ultimate |
| Web Browser | Mozilla Firefox 9.0 and Above |

### User Side : Software Requirement (Minimum):

| Software Type | Name and Version |
|---|---|
| Operating System | Windows XP or Later Ver. |
| Web Browser | Mozilla Firefox 9.0 and Above |

## 3.3 Technology Used :

The Microsoft .NET Compact Framework is an integral component on Window Mobile and Windows CE devices that enables us to build and run managed applications and use Web services. The .NET Compact Framework includes an optimized common language runtime (CLR) and a subset of the .NET Framework class library, which supports features such as Windows Communication Foundation (WCF) and Windows Forms. It also contains classes that are designed exclusively for the .NET Compact Framework.

### 3.3.1 What is .NET?

Several years ago Microsoft decided it was time to design a new platform from the ground up specifically for the post-internet world. The result is called .NET. It represents a turning point in the world of windows software for Microsoft platforms. Microsoft has staked their future on .NET, and publicly stated that, henceforth almost all their research and development will be done on this platform. It is expected that, eventually, almost all Microsoft products will be ported to the .NET platform.

It includes the .NET framework which encompasses the languages and execution platform, plus extensive class libraries providing rich built-in functionality. Besides the core .NET framework, the .NET initiative includes protocols to provide a new level of software integration over the internet, via a standard known as Web services.

- **.NET Features :**

The vision of Microsoft .NET is globally distributed systems, using XML as the universal glue to allow functions running on different Computers across an organization or across the world to come together in a single application.

Microsoft .NET also aim to make traditional business applications much easier to develop and deploy. Some of the technologies of the .NET framework, such as windows forms demonstrate that Microsoft has not forgotten the traditional business developer.

There is no simple answer to .NET. The way to cut through this confusion is to divide .NET into three main areas.

**1) The .NET Vision :**

The ideas that all devices will someday be connected by global broadband network (the internet), and the software become a service provided over this network.

**2) The .NET Framework :**

New technologies such as Asp.Net that makes .NET more than just a vision, providing concrete services and technologies so that developers can build applications to support the needs of users connected to the Internet today.

**3) The Window Server System :**

Server products, such as SQL2000 & BIZTALK 2000, which are used by .NET framework application but are not currently written using the .NET framework, server products will support .NET.

**Benefits Of .NET :**

- Make code clear.
- Improve development, scalability, security & reliability.
- Provide better support for different browsers & devices.
- Enable a new breed of web application.

## Asp.Net:

Asp.Net is a unified Web development model that includes the services necessary for us to build enterprise-class web applications with a minimum of coding. Asp.net is part of the .NET framework, and when coding Asp.Net application we have access to classes in the .NET framework. We can code your applications in any language compatible with the common language runtime (CLR). Including Microsoft Visual Basic,C#,Jscript.Net, and J#.

These languages enable us to develop Asp.Net applications that benefit from the common language runtime, type safety, inheritance, and so on.

## Asp.Net Includes:

- A page and controls framework
- The Asp.Net compiler
- Security infrastructure
- State-management facilities
- Application configuration
- Health monitoring and performance features
- Debugging support
- An XML Web service framework
- Extensible hosting environment and application life cycle management
- An extensible designer environment

## A page and controls framework:

The Asp.Net page and controls framework is a programming framework that runs on a web server to dynamically produce and render Asp.Net Web pages. Asp.Net Web pages can be requested from any browser or client device, and Asp.Net renders markup (such as HTML) to the requesting browser. As a rule, we can use the same page for multiple browsers, because Asp.Net renders the appropriate markup for the browser making the request. However, we can design our Asp.Net web page to target a specific browser, such as Microsoft Internet Explorer 6, and take advantage of the features of that browser. Asp.Net supports mobile controls for Web-enabled devices such as cellular phones, handheld computers, and personal digital assistants (PDAs).

Asp.Net Web pages are completely object-oriented. Within Asp.Net Web pages we can work with HTML elements using properties, methods, and events. The Asp.Net page framework removes the implementation details of the separation of client and server inherent in online applications by presenting a unified model for responding to client events in code that runs at the server. The framework also automatically maintains the state of a page and the controls on that page during the page processing life cycle. The Asp.Net page and controls framework also enables us to encapsulate common UI functionality in easy-to-use, reusable controls. Controls are written once, can be used in many pages, and are integrated into the Asp.Net Web page that they are placed in during rendering.

The Asp.Net page and controls framework also provides features to control the overall look and feel of our Web site via themes and skins. We can define themes and skins and then apply them at a page level or at a control level. In addition to themes, we can define master pages that we use to create a consistent layout for the pages in our application. A single master page defines the layout and standard behavior that we want for all the pages (or a group of pages) in our application. We can then create individual content pages that contain the page-specific content we want to display. When users request the content pages, they merge with the master page to produce output that combines the layout of the master page with the content from the content page.

## Asp.Net Compiler:

All Asp.Net code is compiled, which enables strong typing, performance optimizations, and early binding, among other benefits. Once the code has been compiled, the common language runtime further compiles Asp.Net code to native code, providing improved performance.

Asp.Net includes a compiler that will compile all our application components including pages and controls into an assembly that the Asp.Net hosting environment can then use to service user requests..

## Security Infrastructure:

In addition to the security features of .NET, Asp.Net provides an advanced security infrastructure for authenticating and authorizing user access as well as performing other security-related tasks. We can authenticate users using Windows authentication supplied by IIS, or we can manage authentication using our own user database using Asp.Net forms authentication and Asp.Net client hip. Additionally, we can manage the authorization to the capabilities and information of our web application using Windows groups or our own custom role database using Asp.Net roles. We can easily remove, add to, or replace these schemes depending upon the needs of our application.

Asp.Net always runs with a particular Windows identity so we can secure our application using Windows capabilities such as NTFS Access Control Lists (ACLs), database permissions, and so on.

## State-Management Facilities:

Asp.Net provides intrinsic state management functionality that enables us to store information between page requests, such as customer information or the contents of a shopping cart. We can save and manage application-specific, page-specific, user-specific, and developer-defined information. This information can be independent of any controls on the page.

Asp.Net offers distributed state facilities, which enable us to manage state information across multiple instances of the same application on one computer or on several computers.

## Asp.Net Configuration:

Asp.Net application use configuration system that enable us to define configuration settings for our web server, for a web site, or for individual applications. We can make configuration settings at the time our Asp.Net applications are deployed and can add or revise configuration settings at any time with minimal impact on operational web applications and servers. Asp.Net configuration settings are stored in XML-based files. Because these XML files are ASCII text files, it is simple to make configuration changes to our web applications. We can extend the configuration scheme to suit our requirements.

## Health Monitoring and Performance Features:

Asp.Net includes features that enable us to monitor health and performance of our Asp.net applications. Asp.Net health monitoring enables reporting of key events that provide information about the health of an application and about error conditions. These events shows a combination of diagnostics and monitoring characteristics and offer a high degree of flexibility in terms of what is logged and how it is logged. For more information see Asp.Net Health Monitoring Overview.

Asp.Net supports two groups of performance counters accessible to our applications:

The Asp.Net system performance counter group

The Asp.Net application performance counter group

## Debugging Support:

Asp.Net takes advantage of the run-time debugging infrastructure to provide cross-language and cross-computer debugging support. We can debug both managed and unmanaged objects, as well as all languages supported by the common language runtime and script languages. In addition, the Asp.Net page framework provides a trace mode that enable us to insert instrumentation messages into our Asp.Net WebPages. For more information see what's new in Asp.Net Tracing.

## XML Web Services Framework:

Asp.Net supports XML Web services. An XML Web service is a component containing business functionality that enables applications to exchange information across firewalls using standard like HTTP and XML messaging. XML Web services are not tied to a particular component technology or object-calling conventions. As a result, programs written in any language, Using any component model, and Running on any operating system can access XML Web services. For more information, see XML Web services using Asp.Net.

## Extensible Hosting Environment and Application Life-Cycle Management:

Asp.Net includes an extendible hosting environment that controls the life cycle of an application from when a user first accesses a resource (such as page) in the application to the point at which the application is shut down. While Asp.Net relies on a Web server (IIS) as an application host, Asp.Net provides much of the hosting functionality itself. The architecture of Asp.Net enables us to respond to application events and create custom HTTP handlers and HTTP modules.

## Extensible Designer Environment:

Asp.Net includes enhanced support for creating designer for web server controls for use with a visual design tool such as visual studio. Designer enable us to build a design-time user interface for a control, so that developers can configure our control's properties and content in the visual design tool.

## Overview of C#

C# is one of the families of languages that Microsoft has designed to be part of its .NET framework. C# is part of the .NET Common Language Infrastructure (CLI). The CLI is a framework that enables the multiple .NET language to talk to each other, and is specifically designed for strongly type's languages. The CLI is compromised of the Common Intermediate Language (CIL) – a common machine independent language into which all .NET applications are "compiled", the Common Type System (CTS) – a set of types that can be used interchangeably between the .NET languages and the Virtual Execution System (VES) – which just-in-time compiles the CIL into native assembly code. The complete set of rules that enable all .NET language to talk to each other is called the Common Language System (CLS). A compiled C# program also contains a block of metadata (data about the program itself) called a manifest. This metadata allows reflection and effectively eliminates the need for the registry.

C# is one of the languages that can be used to create applications that will run in the .NET CLR. It is an evolution of the C and C++ languages and has been created by Microsoft specifically to work with the .NET platform.

## Advantages:

It has many advantages over other development languages. Here's a list of these advantages:

- Runtime distribution requirement are larger than Visual Basic.
- Removes the complexity of the windows API forms for the programmer.
- Excellent for web applications.

- Allows us to create Active-X controls, to reuse third party control and components.
- Can integrate with the internet on both the server side and client side.
- Used by most of the office suite tools as their macro language, with the rest to follow.
- Can run or serves either on the same machine or remotely on other computer. This allows for true distributed processing.

## Disadvantages:

Although it has many advantages, it still has a few disadvantages. Most of these are related to some limitation of visual C# in getting at real low-level functionality in hardware and the operating system. The following is a list of some of these disadvantages:

- Larger capacity hard disk
- Memory more occupied on RAM
- Has a longer learning curve and development time than Visual Basic
- Visual Development Environment can be used only with GUI operating system such as windows based applications

## 3.3.2 SQL Server 2008 Management Studio R2:

Microsoft released the final version of SQL Server 2008 R2 Express Edition on April 21, 2010.

The following are the editions of SQL Server Express 2008 R2 and their key features:

Express with Advanced Services - Database Engine, Full Text Search, Reporting Services, Business Intelligence Development Studio, SQL Server Management

Studio Express with Tools - Database Engine and SQL Server Management Studio

SQL Server Express - Database Engine

## Features of SQL 2008 R2 :

### Report Builder 3.0

Report Builder is a tool set for developing rich reports that can be delivered over the web. Some of the features of Report Builder include the ability to create reports containing graphs, charts, tables, and printing controls. In addition, Report Builder also supports drill downs and sorting. If you are familiar with the third party tool Crystal Reports, then we have good idea of what to expect from Report Builder.

New features in SQL 2008 R2 / Report Builder 3.0 include: Map Layers, which can hold spatial and analytical data and will integrate with Microsoft Virtual Earth. Indicators, these are gauges used to show the state of one value. Report Parts, this object can be reused or shared between multiple reports. Aggregate Calculating, this allows us to calculate the total value of other aggregate calculated totals.

### SQL Server 2008 R2 Data centre

The new Data centre edition of SQL Server 2008 R2 is targeted towards Enterprise Edition users who require a greater performance platform. The new edition will support 256 logical processors, high numbers of instances, and as much memory as the operating system will support.

### SQL Server 2008 R2 Parallel Data Warehouse

Another new SQL Server edition, Parallel Data Warehouse, formally codenamed “Madison”, specializes in handling extremely large amounts of data. This new version uses massively parallel processing to spread large tables over multiple SQL nodes. The multiple nodes are handled by a propriety Microsoft technology called Ultra Shared Nothing. This new technology is described as a Control Node spreading queries to Computer Nodes, evenly distributed, then collecting the results.

### Stream Insight

New in SQL Server 2008 R2 is component called Stream Insight. This interesting component allows streaming data to be analyzed on the fly. Meaning the data is processed

directly from the source stream prior to being saved in a SQL Server table. This could be extremely handy if you're running a real time system and need to analyze data but can't afford the latency of a committed write to a table first. Examples usually cited for this application include stock trading streams, click stream web analytics, and industrial process controls. Multiple input streams can be simultaneously monitored.

**Master Data Services**

Master Data Services (MDS) is both a concept and a product. The concept of a Master Data Service is that there is a central data gate keeper of core business data. Data items such as customer billing addresses, employee/customer names, and product names should be centrally managed so that all consuming applications have the same information. The Microsoft example given is a company that has a customer address record in the customer table but a different address in the mailing table. A Master Data Service application would ensure that all tables would have only one correct address. While an MDS can be a home grown application, SQL Server 2008 R2 includes an application and an interface to manage the central data.

**Power Pivot for SharePoint**

Power Pivot is an end-user tool that works in conjunction with SharePoint, SQL Server 2008 R2, and Excel 2010 to process large amounts of data in seconds. Power Pivot works like an Excel Pivot Table, and includes analytical capabilities.

**Data-Tier Application**

A Data-Tier Application (abbreviated as DAC –no idea what the C stands for, and not to be confused with the Windows Data Access Components also abbreviated as DAC ) is an object that stores all the needed database information for a project, such as login, tables, and procedures into one package that can be consumed by Visual Studio. By creating a Data-Tier Application, a SQL Server package version could be saved with each Visual Studio build of your application. This would allow application code builds to be married to a database build in an easily managed way.

**Unicode Compression**

SQL Server 2008 R2 uses a new algorithm known as Simple Compression Scheme for Unicode storage. This reduces the amount of disk spaced used by Unicode characters. This new format happens automatically and is managed by the SQL Server engine so no programming changes are required of the DBA.

**SQL Server Utility**

The new SQL Server Utility is a repository object for centrally controlling multiple SQL Server instances. Performance data and configuration policies can be stored in a single Utility. The Utility also includes an Explorer tool where multi-server dashboards can be created.

**Multi Server Dashboards**

While the SQL Server Management Studio could always connection to multiple servers, each was managed independently with no central view of all of them. Now with SQL Server 2008 R2, Dashboards showing combined server data can be created.

- **Third Party Tools**

## What is Ajax?

Ajax is a stand for Asynchronous JavaScript and XML. It is a combination of different technologies, used for building rich and responsive user interfaces. It is based on JavaScript and HTTP requests. The benefits of using Ajax in your applications include:

- Faster page renderings and support for partial page updates
- Rich and, responsive user interfaces
- Reduced consumption of server resources

ASP.NET Ajax is a free framework that comes from Microsoft and can be used to design and implement the next generation of cross- browser Web applications with rich and responsive user interfaces.

## ASP.NET Ajax 4.0

Now that we have had a quick look at what Ajax is and what its features are, let's develop deep into what ASP.NET Ajax 4.0 has in store for us. The "ASP.NET AJAX 4.0 Preview 4 Release Notes and ReadMe" document available at CodePlex states: "The AJAX functionality in ASP.NET 4.0 Preview 4 enables new client data scenarios for page and component developers that allow JSON data from the server to be rendered as HTML in a highly manageable and efficient way." ASP.NET Ajax 4.0 has in it many interesting features. Before we begin looking at those features, let's first know what the compatible browsers are. Microsoft ASP.NET Ajax 4.0 is supported on a wide variety of web browsers. These include:

- Microsoft Internet Explorer 6, 7 and 8 RC1
- Mozilla Firefox 2 and 3 above
- Apple Safari 3 above
- Opera 9.6 above

## New Ajax Enhancements in ASP.NET 4.0

AJAX 4.0 provides many flexible features - we will look at those features in this section. Here is a list of the enhancements made to the Preview 4 release of ASP.NET 4.0 for providing Ajax support:

- Support for Live data binding
- Support for Client-side template rendering
- Support for declarative instantiation of client components
- Support for using the Observer pattern on JavaScript objects and arrays
- Support for invoking ADO.NET Data Services and Data Contexts
- Support for the Data View control

## Advantages to using AJAX

1- There are quite a few advantages to AJAX, but all of them center around the above point: usability. AJAX provides a way for the user to interact with a website without refreshing, and furthermore, without any browser plug-ins.

2- There's currently a war going on, many people may be missing this, but it's a war none the less. The war is between Adobe and Microsoft, namely Flash and Silverlight. These two technologies require the browser to have a "plug-in" in the browser, much like Java, in order to run their interactive applets. While this was a big thing in the 90s to get an interactive webpage, AJAX only requires a browser as it relies on the Java script DOM which is present in all major browsers already. So, why develop an application that can only work on X% of the browser population, when it can work on 100%? Of course, this is a bit of a discussion because Flash has been put on almost all computers nowadays. I'll leave that discussion alone.

3- The next advantage to AJAX is bandwidth saving. When an application uses AJAX to communicate with the server, only the required information is transmitted to/from the server instead of a full transmission, or "post back", which would post the full contents of the HTML form back to the server. While bandwidth considerations are currently not a huge issue, it does help to save what you can.

## Disadvantages of using AJAX

1- One big disadvantage of using AJAX is security. Often times developers do not put checks on the data coming into the server - they assume that it's coming from their own website. Unfortunately, this is subject to injection attacks. Furthermore, there is several ways to "fake" how the data is coming in, making detection all but impossible.

2- AJAX does not play well in encrypted environments. AJAX relies on plain text transmission (nothing but text can be transmitted through AJAX anyways), and so encrypted this stream and having the server-side program deal with it presents a large problem.

3- Related to the fact that transmission through AJAX occurs through text is the fact that it also goes through the regular HTTP handler (you can say "web server" instead). Because of this it's not able to setup it's own stream (think: YouTube) and stream videos through it. Of course, that is where Flash dominates anyways.

4- The last disadvantage is time. Building an AJAX application from scratch is actually fairly easy, but it does take longer than building one that uses standard post-backs. As well, the developers require a fairly good knowledge of JavaScript to be able to make it usable. While there are quite a few packages out there now to make this a lot easier, a lot of them don't provide the kind of customization that I would like to see. Perhaps I'm alone on that.

### 3.3.3 Crystal Reports

Crystal Reports is designed to work with your database to help you analyze and interpret important information. Crystal Reports makes it easy to create simple reports, and, it also has the comprehensive tools you need to produce complex or specialized reports.

- **Create any report you can imagine**

Crystal Reports is designed to produce the report you want from virtually any data source. Built-in report experts guide you step by step through building reports and completing common reporting tasks. Formulas, cross-tabs, subreports, and conditional formatting helpmake sense of data and uncover important relationships that might otherwise be hidden. Geographic maps and graphs communicate information visually when words and numbers are simply not enough.

- **Extend reporting to the Web**

The flexibility of Crystal Reports doesn't end with creating reports—your reports can be published in a variety of formats including Microsoft Word and Excel, Email and even over theWeb. AdvancedWeb reporting lets othermembers of your workgroup view and update shared reports inside their web browser.

- **Incorporate reports into applications**

Application and web developers can save time and meet their users needs by integrating the report processing power of Crystal Reports into their database applications. Support for most popular development languages makes it easy to add reporting to any application.Whether it’s the webmaster in IT, the promotion manager inmarketing, the database administrator in finance or the CEO, Crystal Reports is a powerful tool designed to help everyone analyze and interpret the information that's important to them.

## ❖ Basic Functionality of Crystal Report

### Exporting Reports

If your application only sends reports to the printer, it is lacking the unctionality to make your data accessible to a variety of applications. Crystal Reports lets you export a report in many different formats so that different applications can read the data. For example, you can export report data to an Excel spreadsheet so that an end user can perform a statistical analysis on the data. The class has the properties that specify the exporting options.

### Referencing and Formatting the Report Objects

The Report Definition class is responsible for maintaining the collections of the basic report objects. These objects consist of the Areas collection, Sections collection and the Report Objects class. Each Section class contains the report objects that are within that section. You can modify the formatting properties of any of these objects. Changing Report Objects Every report can have many types of fields that are used to generate the report, but don't have to appear directly on the report. Some examples are grouping fields, parameter fields, and formula fields. Even though these fields may not be shown directly on the report, they are updateable during runtime and can be used to change the report's appearance. For example, you can change the grouping field so that the report sorts and summarizes in a new way.

### Changing Report Objects

Every report can have many types of fields that are used to generate the report, but don't have to appear directly on the report. Some examples are grouping fields, parameter fields, and formula fields. Even though these fields may not be shown directly on the report, they are updateable during runtime and can be used to change the report's appearance. For example, you can change the grouping field so that the report sorts and summarizes in a new way. The DataDefinition class manages the collections that control these aspects of the report. These collections are discussed in the appropriate chapters throughout the book.

## ❖ Crystal Report Viewer Object Model

Previewing reports is done with the Crystal Report Viewer control. The viewer can be used as an alternative to the Report Document class for modifying reports during runtime. It is a lightweight control and only exposes a few properties. You can use it when you only need want to perform basic tasks. To see the Crystal Report Viewer object model and how to program it, please refer to the hardcopy version of Crystal Reports .NET Programming.

# 4. Project Planning

## 4.1 Scope & Objective

### Scope:

After collecting all the detailed information from its user service are provided to the two kinds of its user with the following scope.

#### Admin (Core users)

- Can add/update and Active/Deactivate Agriculture products..
- Can insert, update or delete a entry from all the forms like Products,Nursary Tools etc.
- Can easily generate a various reports like Total Sales,User,Postal code for Delivery option, Item Stock wise etc.
- Can easily Active/Deactivate users comments and rating.

#### Users (Normal users)

- Can insert, update or delete Agriculture products from shopping cart.
- User can login and update their mailing address and make order.
- Can View order history and tracking order.

### Objective:

The purpose of this project is to develop e-commerce web application using a framework so much that it leads to consistent & rapid development approach. And also it should leads to less maintenance cost of Application.

The main objective is to be achieved through the creation of web application. E-commerce is to provide a way to Online Buying of Agriculture Product,so owner keep a track of daily order made across firm throughout different location. E-commerce is a web application which is developed to manage the transactions made of customers and suppliers by owner.

The main objective of our application is to be developed for our firm head for the end of the day he can analyzed the order.

## 4.2 Feasibility Study

As the name implies, a feasibility study is an analysis of the viability of an idea. The feasibility study focuses on helping answer the essential question of "should we proceed with the proposed project idea?" All activities of the study are directed toward helping answer this question.

A feasibility study is undertaken to determine the possibility or probability of either improving the existing system or developing a completely new system.

It helps to obtain an overview of the problem and to get rough assessment of whether feasible solution exists.

This is essential to avoid committing large resources to a project and then repent on it later.

If a project is seen to be feasible from the results of the study, the next logical step is to proceed with it. The research and information uncovered in the feasibility study will support the detailed planning and reduce the research time.

### Need for Feasibility Study

- Answer the question whether a new system is to be installed or not?
- Determine the potential of the existing system.
- Improve the existing system.
- Know what should be embedded in the new system.
- Define the problems and objective involved in a project.
- Avoid costly repairs at a later stage when the system is implemented.
- Avoid crash implementation of a new system.
- Avoid the '**Hardware Approach'** i.e. getting a computer first and then deciding how to use it.

There are three aspects in feasibility study portion of the preliminary investigation.

- Technical feasibility.
- Economic feasibility and
- Operational feasibility of the project.

## ❖ Technical Feasibility

Technical Feasibility determines whether the work for the project be done with the present equipment, current procedures, existing software's technology and available personnel?

If new technology is needed what alternatives are be needed in the present structure and work ethos?

This will require a close examination of the present system.

The technical feasibility should ask questions related to:

- Adequacy of available technology.
- Adequacy of hardware.
- Available of computer.
- Operating time and support facilities, etc.

Technical feasibility determines whether the technology needed for the proposed system is available and how it can be integrated within the organization. Technical evaluation must also assess whether the existing system can be upgraded to use the new technology and whether the organization has the expertise to use it.

The technical feasibility in the proposed system deals with the technology used in the system. It deals with the hardware and software used in the system whether they are of latest technology or not. It happens that after a system is prepared a new technology arises and the user wants the system based on that technology. Thus it is important to check the system to be technically feasible.

The minimum memory requirement is 256MB of RAM while 2GB is better to have for better performance. As far as software is concerned, Visual Basic 8.0 (Professional Version) should be installed on the server. There should be printer attached to the network for printing of Bills, purchase receipt, sales receipts and other reports.

## ❖ Economic feasibility

Economic feasibility looks at the financial aspects of the project. Economic feasibility concerns with the returns from the investments in a project. It determines whether it is worthwhile to invest the money in the proposed system. It is not worthwhile spending a lot of money on a project for no returns.

To carry out an economic feasibility for a system, it is necessary to place actual money value against any purchases or activities needed to implement the project.

The organization plans to acquire the necessary hardware and software requires for the system and there is no hindrance whether economical or otherwise towards its purchase. A brief description of the hardware and software required in the system is given below in the report.

## ❖ Operational feasibility

Operational feasibility covers two aspects. One is the technical performance aspect and other is the acceptance within the organization. Operational feasibility determines how the proposed system will fit in the current operations and what, if any job restructuring and retraining may be needed to implement the system.

In the system operational feasibility checks, whether the user who is going to use the system is able to work with the software with which the system is coded and also the mind of the user going to use the system. If the user does not understand or is able to work on the system further development is of waste.

## ❖ Schedule Feasibility

A project will fail if it takes too long to be completed before it is useful. Typically this means estimating how long the system will take to develop, and if it can be completed in a given time period using some methods like payback period.

### ❖ Pre-Feasibility Study

A pre-feasibility study may be conducted first to help sort out relevant alternatives. Before proceeding with a full-blown feasibility study, you may want to do some pre-feasibility analysis of your own. If you find out early-on that the proposed business idea is not feasible, it will save you time and money. However, if the findings lead you to proceed with the feasibility study; your work may have resolved some basic issues. A **consultant** may help you with the pre-feasibility study, but you should be involved. This is an opportunity for you to understand the issues of business development.

### ❖ Reasons to Do a Feasibility Study

- Gives focus to the project and outline alternatives
- Narrows business alternatives
- Surfaces new opportunities through the investigative process
- Identifies reasons not to proceed
- Enhances the probability of success by addressing and mitigating factors early on that could affect the project
- Provides quality information for decision making
- Helps to increase investment in the company
- Provides documentation that the business venture was thoroughly investigated Helps in securing funding from lending institutions and other sources.

## 4.3 Requirement Analysis

To develop any accounting site it is most important to identify the user requirements in very specific manner. Also to function properly, all interfaces of proposed system with surrounding system must be identified. The correct system is that satisfies all users' requirements. Therefore, it is very important to analyze the existing system and to documents the web application requirements specifications for proposed system, which in turn provides the base for development of proposed system.

First step in development of any system is requirement analysis. We start with system study and analysis. During this phase, initially we stared with studying the system specification documents to understand the system & unveil the basic system elements involved.

Our project guide conducted series of communication to impact as the required knowledge about system. This communication helped us to have clear idea about expected system.

The process of requirements analysis is carried out in three steps:

- Requirements anticipation
- Requirements investigation
- Requirements specification

## • Requirements Anticipation

Requirements Anticipation is very important of the system designing; it is to predict the feature requirements based on the previous experience of user aptitude.

- A proper assessment was done regarding the possible future enhancements of the system.

## • Requirements investigation

Requirement Investigation is an actual study of the system, which is currently used in firm.

- Interviewing

For Accounting Application, We communicate with our external project guide Mr. Kaushik Chauhan.

- Questionnaire
  - ✓ What is the purpose to make website?
  - ✓ What all feature do company need in website?

- Answers
  - ✓ The main purpose to make website is to manage the accounting of the company.
  - ✓ Company requires the first of all the security of the website should be high and the data loss should not occur.

- Observing

By discussions and questionnaire, We were able to get a lot of information for proposed system. We have also observed the delay & correctness on the basis of the work load and bottlenecks.

## 4.4 Software Development Process Model

The most important task in creating a software product is extracting the requirements or requirement analysis. Customers typically have an abstract idea of what they want as an end result, but not what software should do. Incomplete, ambiguous, or even contradictory requirements are recognized by skilled and experienced software engineers at this point. Frequently demonstrating live code may help reduce the risk that the requirements are incorrect.

Once the general requirements are gained from the client, an analysis of the scope of the development should be determined and clearly stated. This is often called a scope document. Certain functionality may be out of scope of the project as a function of cost or as a result of unclear requirements at the start of development. If the development is done externally, this document can be considered a legal document so that if there are ever disputes, any ambiguity of what was promised to the client can be clarified.

A software development process is a structure imposed on the development of a software product. Synonyms include software life cycle and software process. There are several models for such processes, each describing approaches to a variety of tasks or activities that take place during the process.

## Software Development Activities:

The activities of the software development process are represented in the given model. There are several models to represent this process. But, in case of our project, we employed the agile process model (it automatically got employed). The steps in this model are same as the steps that we took to build our software.

According to us, employing agile model in the building of any software project will always lead to the correct and easy path. Though employing this model is a bit difficult, Because the requirements continuously keep on changing. The developers need to have depth of patience to accept any new changes at any time in the development process.

## Agile Process Model

Agile software development is a group of software development methods based on iterative and incremental development, where requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development and delivery, a time-boxed iterative approach, and encourages rapid and flexible response to change. It is a conceptual framework that promotes foreseen interactions throughout the development cycle.

- Individuals and Interactions – in agile development, self-organization and motivation are important, as are interactions like co-location and pair programming.
- Working software – working software will be more useful and welcome than just presenting documents to clients in meetings.
- Customer collaboration – requirements cannot be fully collected at the beginning of the software development cycle, therefore continuous customer or stakeholder involvement is very important.
- Responding to change – agile development is focused on quick responses to change and continuous development.

**Twelve principles underlie the Agile process, including:**

- Customer satisfaction by rapid delivery of useful software
- Welcome changing requirements, even late in development
- Working software is delivered frequently (weeks rather than months)

- Working software is the principal measure of progress
- Sustainable development, able to maintain a constant pace
- Close, daily co-operation between business people and developers
- Face-to-face conversation is the best form of communication (co-location)
- Projects are built around motivated individuals, who should be trusted
- Continuous attention to technical excellence and good design
- Simplicity
- Self-organizing teams
- Regular adaptation to changing circumstances

There are many specific agile development methods. Most promote development, teamwork, collaboration, and process adaptability throughout the life-cycle of the project.

Agile methods break tasks into small increments with minimal planning and do not directly involve long-term planning. Iterations are short time frames that typically last from one to four weeks. Each iteration involves a team working through a full software development cycle, including planning, requirements analysis, design, coding, unit testing, and acceptance testing when a working product is demonstrated to stakeholders. This minimizes overall risk and allows the project to adapt to changes quickly.

Stakeholders produce documentation as required. Iteration might not add enough functionality to warrant a market release, but the goal is to have an available release (with minimal bugs) at the end of each iteration. Multiple iterations might be required to release a product or new features.

Team composition in an agile project is usually cross-functional and self-organizing, without consideration for any existing corporate hierarchy or the corporate roles of team members. Team members normally take responsibility for tasks that deliver the functionality iteration requires. They decide individually how to meet iteration's requirements.

Agile methods emphasize face-to-face communication over written documents when the team is all in the same location. Most agile teams work in a single open office (called a bullpen), which facilitates such communication. Team size is typically small (5-9 people) to simplify team communication and team collaboration. Larger development efforts can be delivered by multiple teams working towards a common goal or on different parts of an

effort. This might require a coordination of priorities across teams. When a team works in different locations, they maintain daily contact through videoconferencing, voice, e-mail, etc.

Most agile implementations use a routine and formal daily face-to-face communication among team members. In a brief session, team members report to each other what they did the previous day, what they intend to do today, and what their roadblocks are. This face-to-face communication exposes problems as they arise.

The agile model is shown below, where developers are to follow the following steps:

1. Requirements specification i.e. Verification or Analysis
2. Design
3. Construction i.e. implementation or coding
4. Integration
5. Testing and debugging i.e. validation
6. Installation i.e. deployment
7. Maintenance

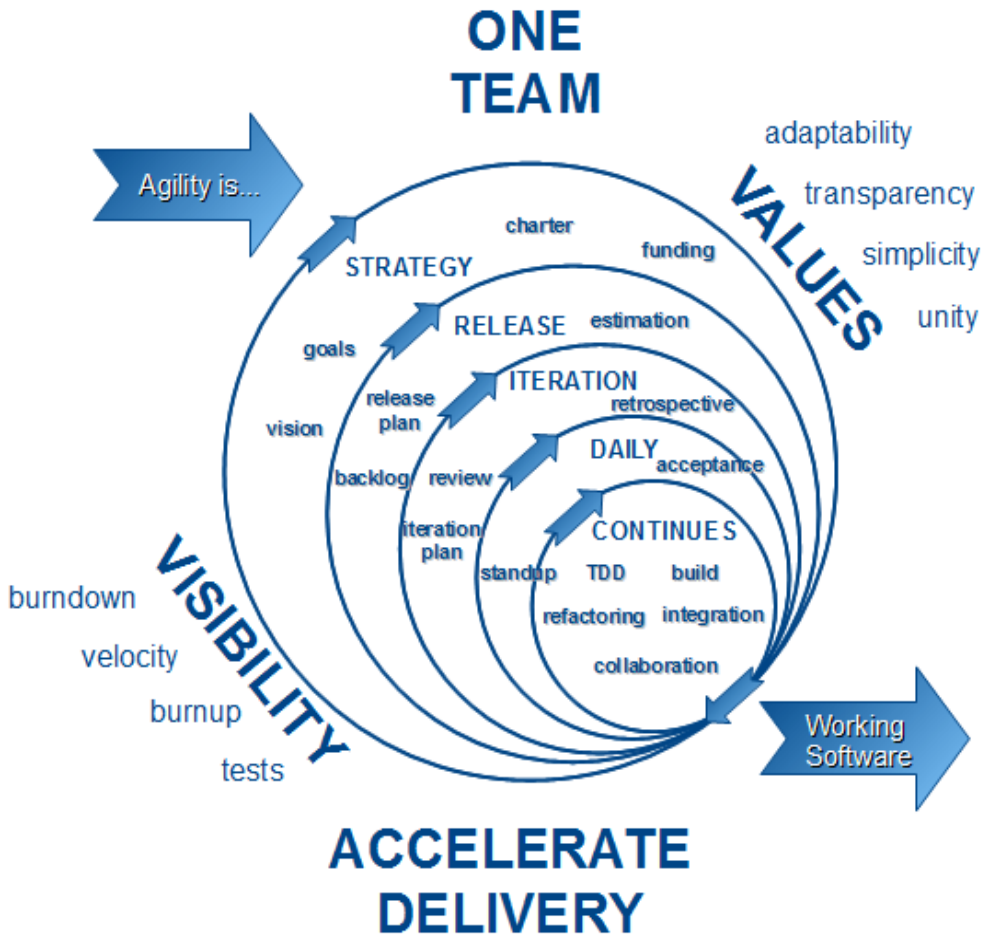
There is a misconception that the process has no provision for correcting errors in early steps (for example, in the requirements). In fact this is where the domain of requirements management comes in, which includes change control. The counter argument, by critics to the process, is the significantly increased cost in correcting problems through introduction of iterations. This is also the factor that extends delivery time and makes this process increasingly unpopular even in high risk projects.Each step is briefly explained below with its use and need.

## 1. Specification:

Specification is the task of precisely describing the software to be written, possibly in a rigorous way. In practice, most successful specifications are written to understand and fine-tune applications that were already well-developed, although safety-critical software systems are often carefully specified prior to application development. Specifications are most important for external interfaces that must remain stable. A good way to determine whether the specifications are sufficiently precise is to have a third party review the documents making sure that the requirements and Use Cases are logically sound.

## Architecture

The architecture of a software system or software architecture refers to an abstract representation of that system. Architecture is concerned with making sure the software system will meet the requirements of the product, as well as ensuring that future requirements can be addressed. The architecture step also addresses interfaces between the software system and other software products, as well as the underlying hardware or the host operating system.




[Figure 4.4.1 Agile Process Model]

## 2. Design:

Documenting the internal design of software for the purpose of future maintenance and enhancement is done throughout development. This may also include the authoring of an API, be it external or internal.

## 3. Implementation:

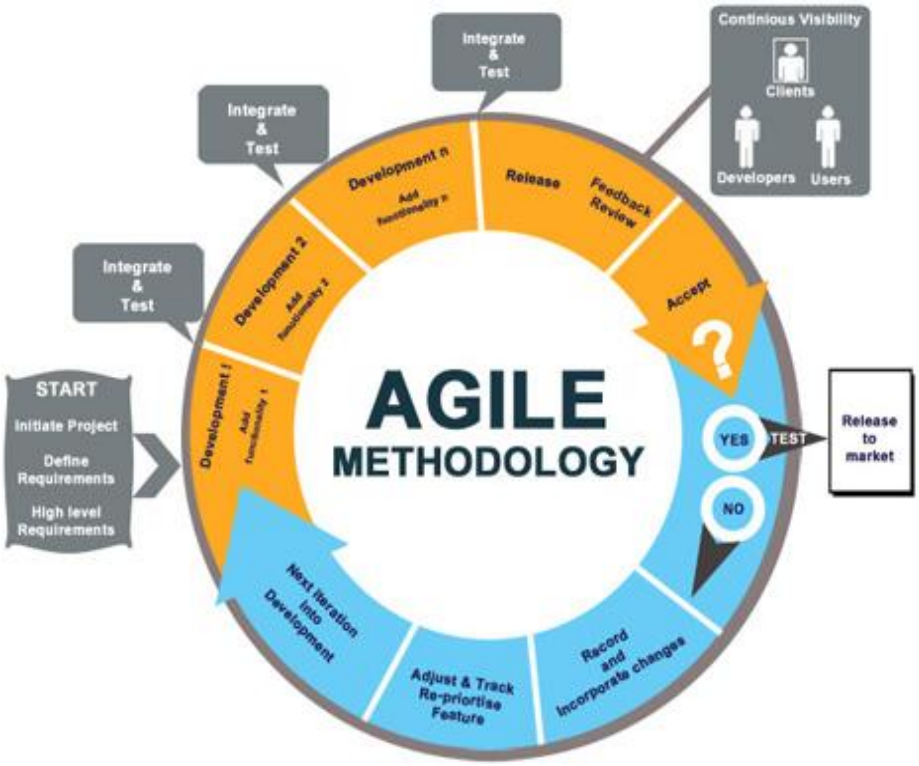
Implementation is the part of the process where software engineers actually program the code for the project.

## 4. Testing:

Software testing is an integral and important part of the software development process. This part of the process ensures that bugs are recognized as early as possible.

## 5. Deployment:

Deployment starts after the code is appropriately tested, is approved for released and sold or otherwise distributed into a production environment.




[Figure 4.4.2 Agile Development Methodology]

## 6. Training and Support:

Software Training and Support is important because a large percentage of software projects fail because the developers fail to realize that it doesn't matter how much time and planning a development team puts into creating software if nobody in an organization ends up using it. People are often resistant to change and avoid venturing into an unfamiliar area, so as a part of the deployment phase, it is very important to have training classes for new clients of your software.

## 7. Maintenance:

Maintenance and enhancing software to cope with newly discovered problems or new requirements can take far more time than the initial development of the software. It may be necessary to add code that does not fit the original design to correct an unforeseen problem or it may be that a customer is requesting more functionality and code can be added to accommodate their requests. It is during this phase that customer calls come in and you see whether your testing was extensive enough to uncover the problems before customers do.

## 5. Data Flow Diagram

The data flow diagrams (DFD) are pictorial or graphical representation of the outline of the system study. The data flow diagram covers all the processes and data storage area which takes place during any transaction in the system. The data flow diagrams are functionally divided into context level, Zero level, and First level and Second level data flow diagrams.

A data-flow diagram (DFD) is a graphical representation of the "flow" of data through an information system

A data-flow diagram can also be used for the **visualization** of **data processing** (structured design).

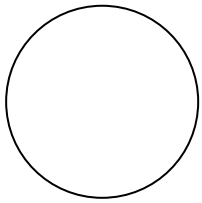
In the late 1970s *data-flow diagrams (DFDs)* were introduced and popularized for structured analysis and design (**Gane** and **Sarson** 1979). DFDs show the flow of data from external entities into the system, showed how the data moved from one process to another, as well as its logical storage. Using the **Gane** and **Sarson** notation. There are only four symbols:

Squares representing *external entities*, which are sources or destinations of data.

- Rounded rectangles representing *processes*, which take data as input, do something to it, and output it.
- Arrows representing the *data flows*, which can either, be electronic data or physical items.
- Open-ended rectangles representing *data stores*, including electronic stores such as databases or XML files and physical stores such as or filing cabinets or stacks of paper.

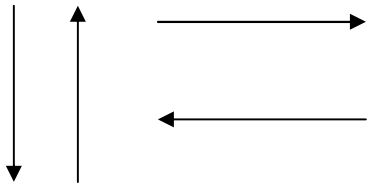
**Symbols used in DFDs:**

(1) **Process:** Here flow of data is transformed. E.g. Forms Distribution, Preparing Merit list, etc.

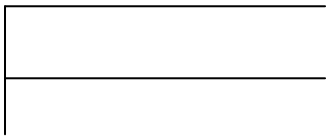


(2) **External Entity:** A source or destination of data, which is external to the system. E.g. Student, Committee etc.

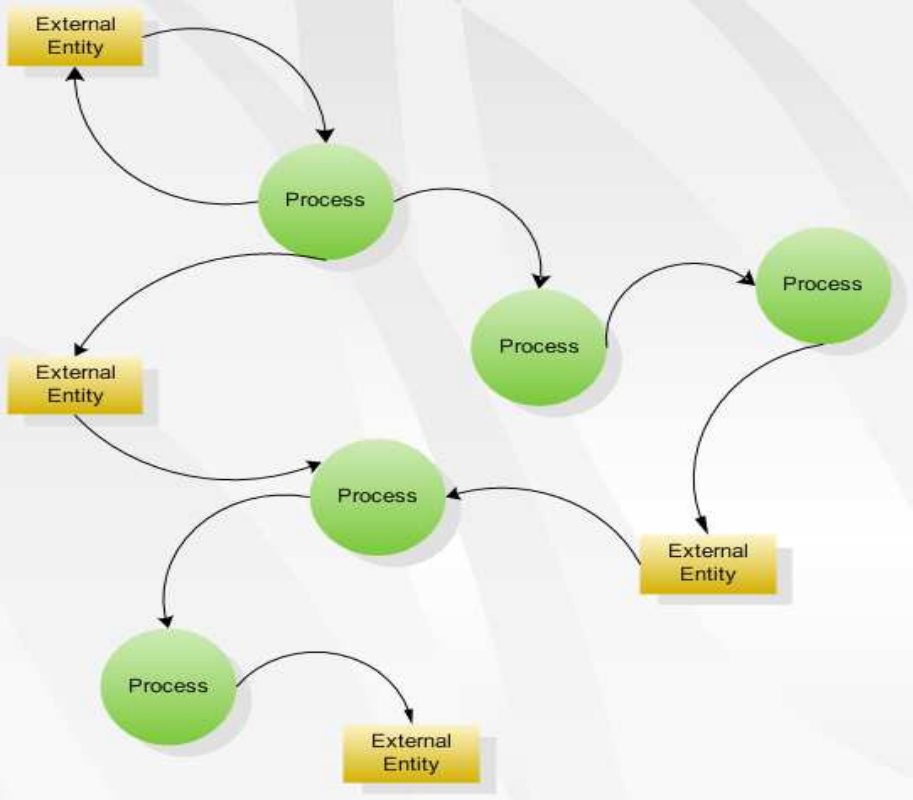
(3) **A data flow:** It is packet of data. It may be in the form of document, letter etc.



(4) **Data store:** Any store data but with no reference to the physical method of storing.



**Construct detailed data-flow diagram**.




**DFD**

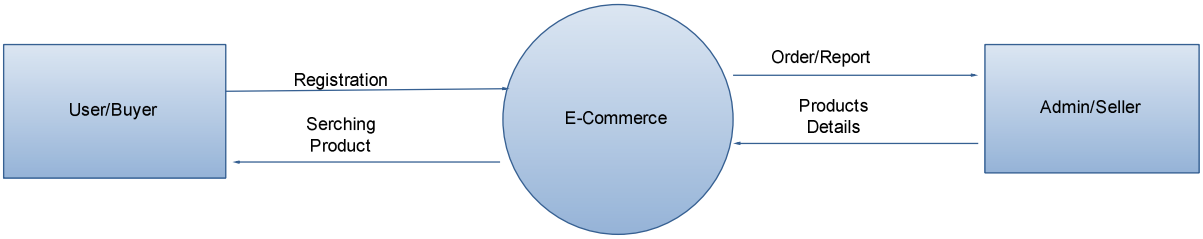
- The list of all events is made.
- For each event a process is constructed.
- Each process is linked (with incoming data flows) directly with other processes or via data stores, so that it has enough information to respond to a given event.
- The reaction of each process to a given event is modeled by an outgoing data flow.

There are several common modeling rules that I follow when creating DFDs:

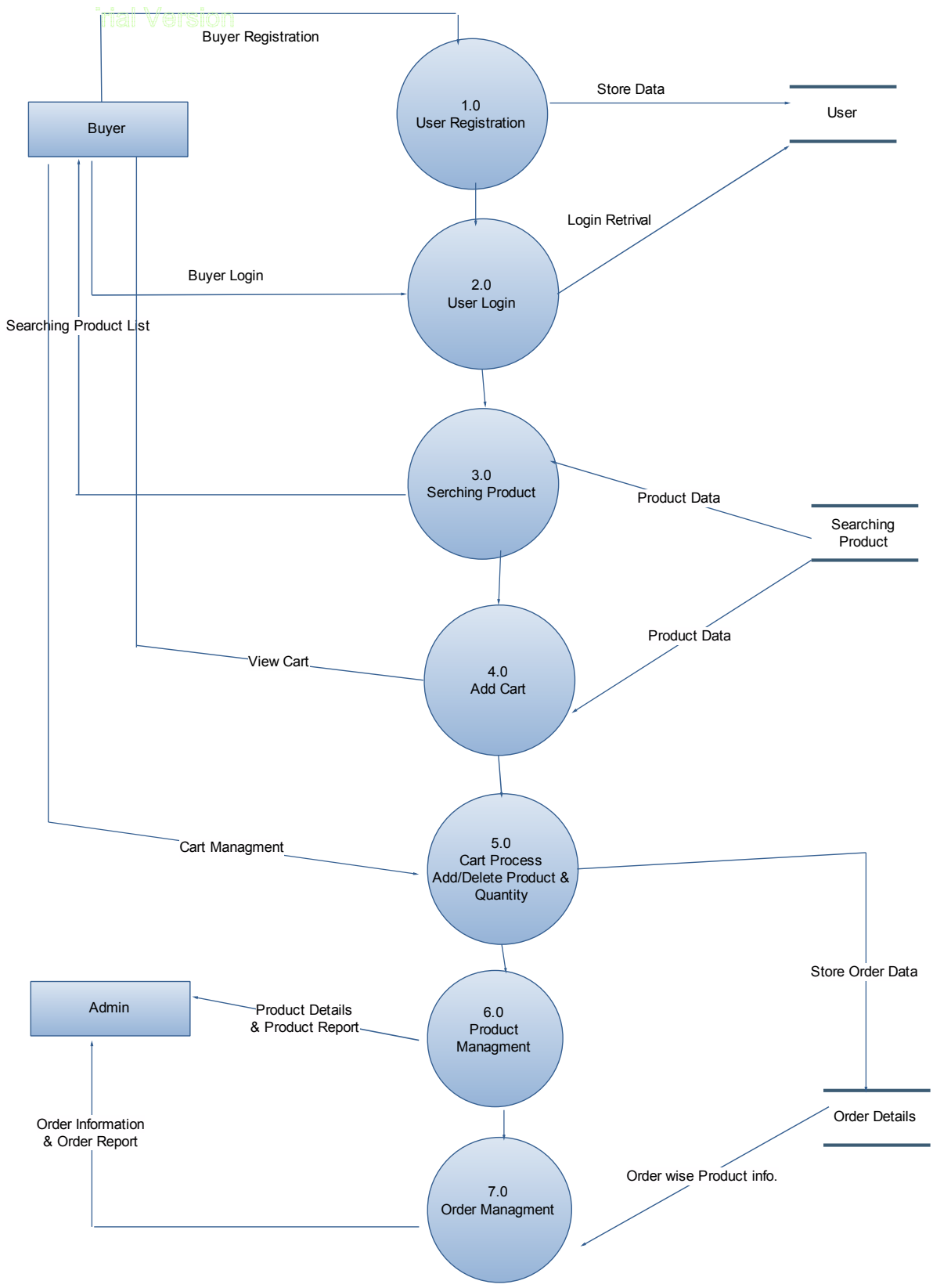
- All processes must have at least one data flow in and one data flow out.
- All processes should modify the incoming data, producing new forms of outgoing data.
- Each data store must be involved with at least one data flow.
- Each external entity must be involved with at least one data flow.

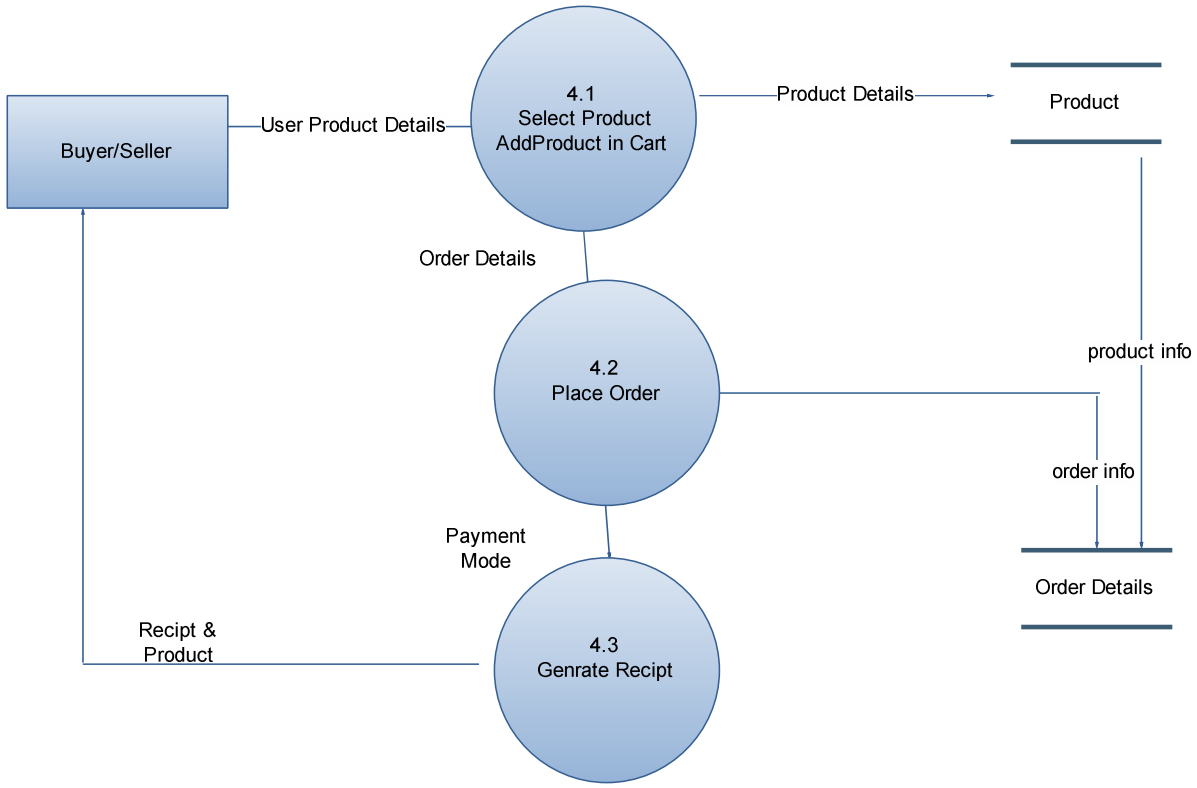
A data flow must be attached to at least one process

## 0 Level Data Flow Diagram of E-Commerce



# 1st Level Data Flow Diagram of E-Commerce




Buyer/Seller
User Product Details
4.1
Select Product
AddProduct in Cart
Product Details
Product
Order Details
4.2
Place Order
product info
order info
Payment
Mode
Order Details
Recipt &
Product
4.3
Genrate Recipt

# 6. System Design

## 6.1 Data Dictionary:

The data dictionary of any system is an integral component of structure analysis, since data flow diagrams by themselves do not fully describe the subject under investigation about the system.

A data dictionary is a catalog a repository of the elements in the system. These elements center on data and the way they are structured to meet user requirements and organization needs. This step of creating a data dictionary is simultaneous with the process of making data flow diagram(s). Here all the data fields in their respective tables are allotted so as to access these data in the system. The data tables are created in a back-end tool like Microsoft Access, Oracle, FoxPro, etc. Here in the Department information System we are using tables created in Oracle8.0 as it is the back-end tool used in the system.

The data dictionary consists of different major elements like Data Elements, Data Store, Data Flow, Processes and other External entities used in the system. The data dictionary stores details and description of these elements.

It is developed during data flow analysis and assists the analysts involved in determining the system requirements. Analysts use data dictionary for the following important reasons:

To manage the details in large system.

- To communicate a common meaning for all system elements.
- To document the features of the system.
- To facilitate analysis of the details in order to evaluate the characteristics and determine where system changes should be made.
- To locate errors and omissions in the system.

The Data Dictionary contains different types of descriptions for the data flowing through the system:

Data Elements is the most fundamental level which is also considered as the building block for all other data in the system. It refers to all the different data used like fields, data item, etc. to make the system fully functional irrespective to the table used in the system. Here all the different type of fields used to make table are written sequentially without referring to the tables. This process helps in the process of Normalization of tables.

Next to Data Elements comes the Data storage which provides the information of where and how each data element is stored in which table and also give information of any constraints

This step also gives knowledge of different data types used for different field and their size. All the normalized tables are showed in data storage.

Data Flow stage shows the flow of data in the system. This step is can be already seen in the data flow diagrams above in this document. This step refers to all the data flow paths were transactions are done in the computerized system.

The data flow step also includes different processes used in the system and it is followed by External Entities used in the system.

**Table Name: -** register
**Description: -** This table is used for register account to the website.

| Field Name | Data Type | Allow Null | Description |
|---|---|---|---|
| usid | int (primary key) | No | User id |
| fnm | varchar(100) | Yes | First Name |
| mnm | varchar(100) | Yes | Middle Name |
| lnm | varchar(100) | Yes | Last Name |
| unm | varchar(100) | Yes | User Name (Email) |
| pass | varchar(100) | Yes | Password |
| hno | varchar(100) | Yes | House Number |
| hnm | varchar(100) | Yes | House Name |
| streetnm | varchar(100) | Yes | Street Name |
| localnm | varchar(100) | Yes | Local Area Name |
| stat | varchar(100) | Yes | State |
| city | varchar(100) | Yes | City |
| pin | varchar(10) | Yes | Pin code |

**Table Name :-** agritool
**Description :-** This table is used for Inserting Agriculture Products.

| Field Name | Data type | Allow Null | Description |
|---|---|---|---|
| tid | int(primarykey) | No | Product id |
| tnm | varchar(100) | Yes | Product Name |
| cat | varchar(15) | Yes | Product Category |
| detail | varchar(200) | Yes | Product Details |
| pr | int | Yes | Product Price |
| delpr | varchar(25) | Yes | Delivery Price |
| season | varchar(25) | Yes | Season for Growing Seeds |
| pack | varchar(25) | Yes | Quantity in Packet |
| gtime | varchar(25) | Yes | Germination Time |
| st | varchar(25) | Yes | Status for Active/Deactive |
| stock | int | Yes | Available Stock |
| img | image | Yes | Product Image |

**Table Name :-** pincode
**Description :-** This table is used for storing pincodes for where delivery is available.

| Field Name | Data Type | Allow Null | Description |
|---|---|---|---|
| pid | int (primary key) | No | Pin code id |
| pin | int | No | Pincode |
| anm | varchar(100) | Yes | Area Name |
| ddays | varchar(50) | No | Delivery Days |

**Table Name :-** neworder
**Description :-** This table is used for creating dynamic ledger list.

| Field Name | Data Type | Allow Null | Description |
|---|---|---|---|
| oid | int | No | Order id |
| tid | int | No | Product id |
| qty | int | No | Product Quantity |
| st | int | No | Product Status |
| usid | int | No | User Id |
| total | int | No | Total of Product |
| orddt | varchar(50) | No | Order Date |
| deldt | varchar (50) | No | Delivery Date |
| cstat | varchar (50) | No | Current Status |
| pcode | varchar (50) | No | Pincode |
| delamt | varchar (50) | No | Delivery cost |

**Table Name :-** custreview
**Description :-** This table is used for Inserting Customer Review/Comments for Product.

| Field Name | Data Type | Allow Null | Description |
|---|---|---|---|
| rid | int | Yes | Review id |
| tid | int | No | Product id |
| unm | varchar(50) | Yes | User Name |
| comment | varchar(200) | No | Comments |
| dt | varchar(50) | No | Date |
| rate | int | No | Rating for Product |
| st | varchar(20) | No | Status Active/Deactive |

**Table Name :-** pcode
**Description :-** This table is used for Inserting Promotion code for Product Buying.

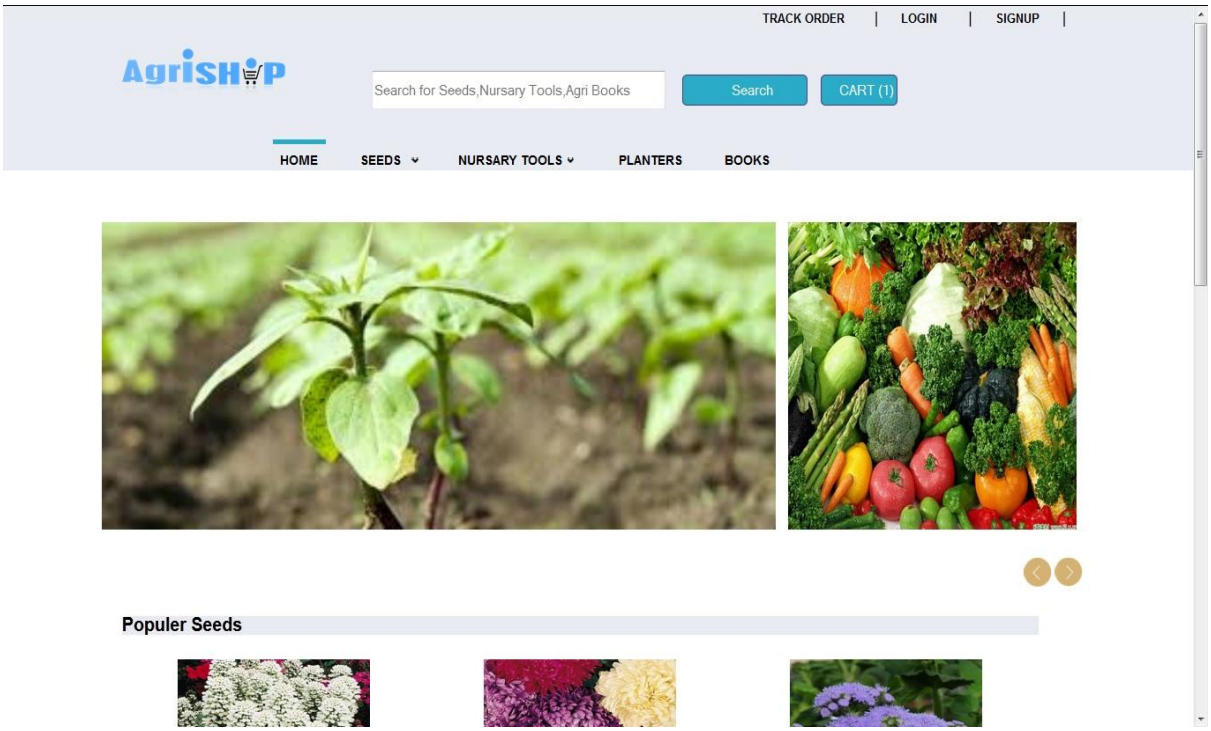
| Field Name | Data Type | Allow Null | Description |
|---|---|---|---|
| pid | int | No | Promotion code id |
| code | varchar(50) | No | Promotion code |
| dis | int | No | Discount % |
| st | int | No | Status Active/Deactive |

# 7. System Implementation

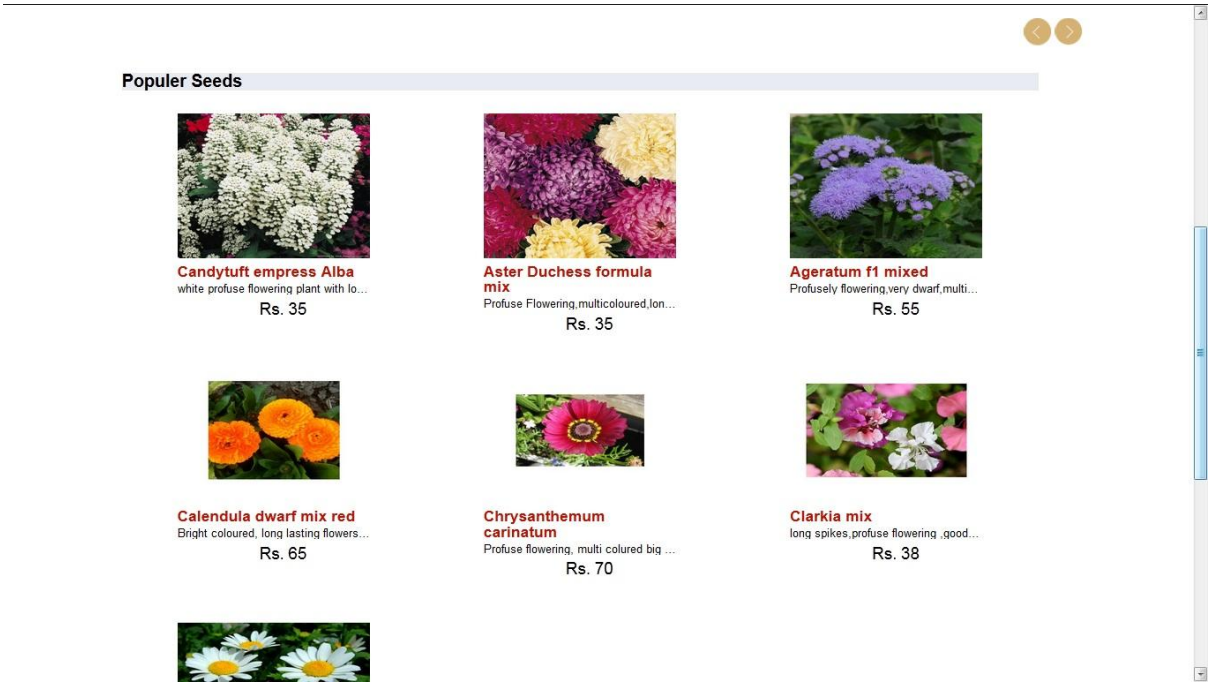
## 7.1 Screenshots:

## User Side

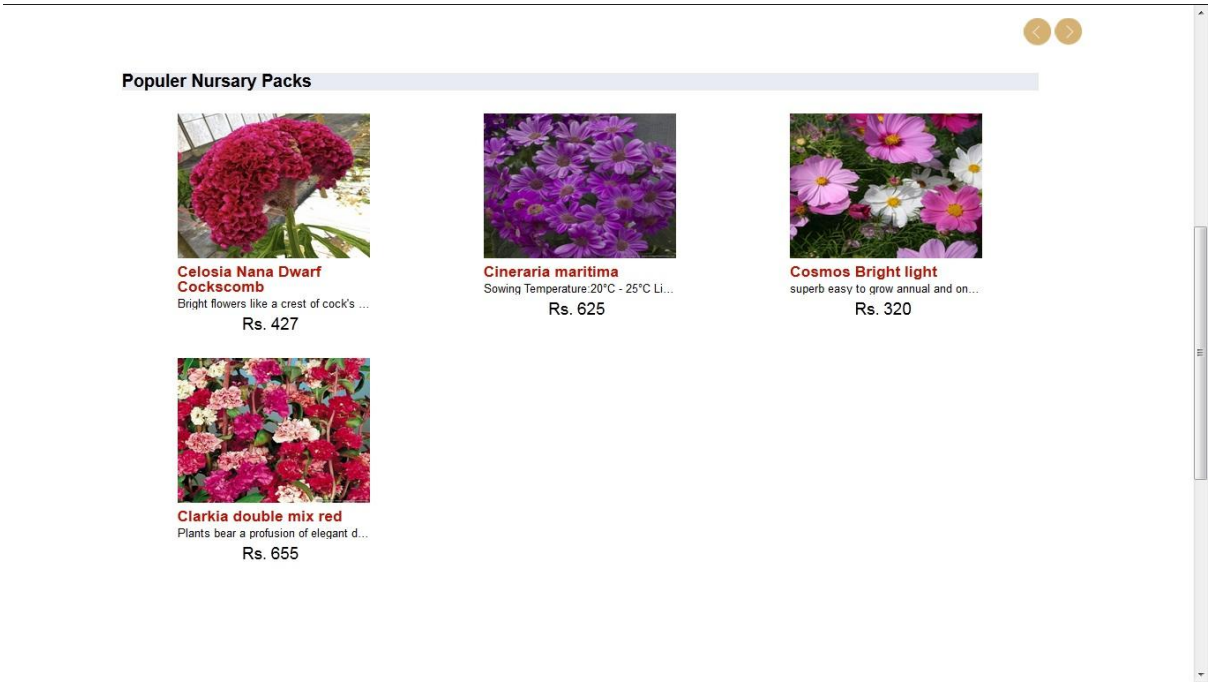
**Home Page**




[Home page 1.1 AgriShop]

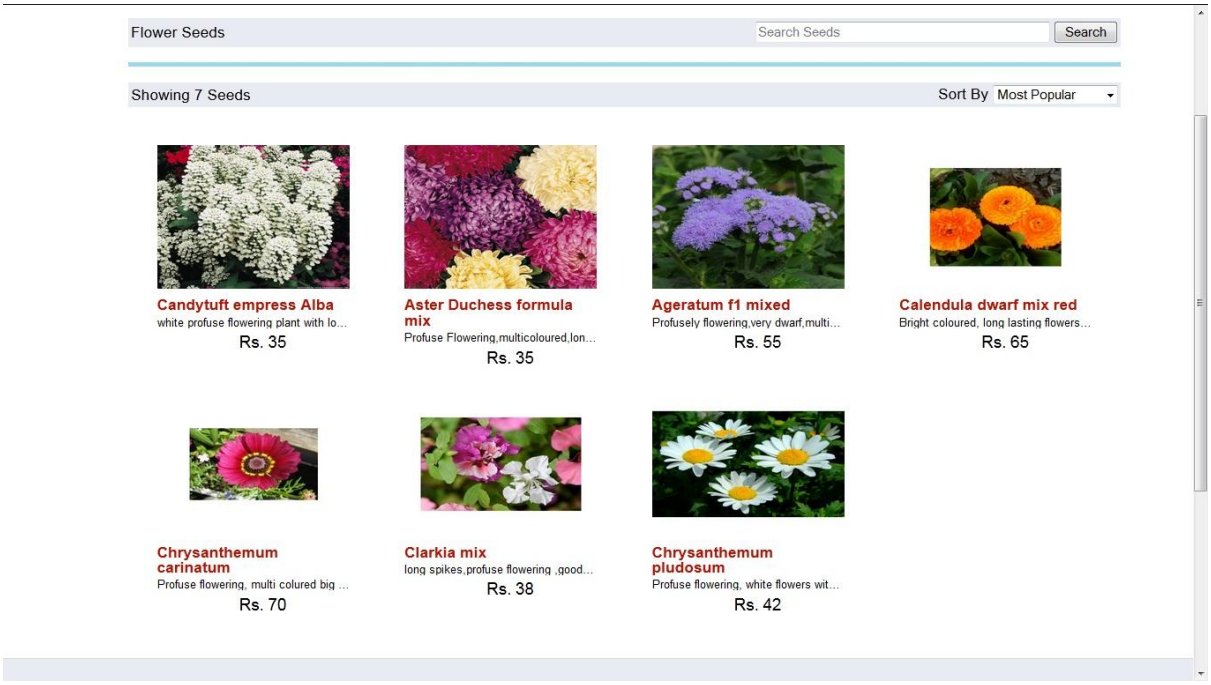



[Home Page 1.2 Popular Seeds]

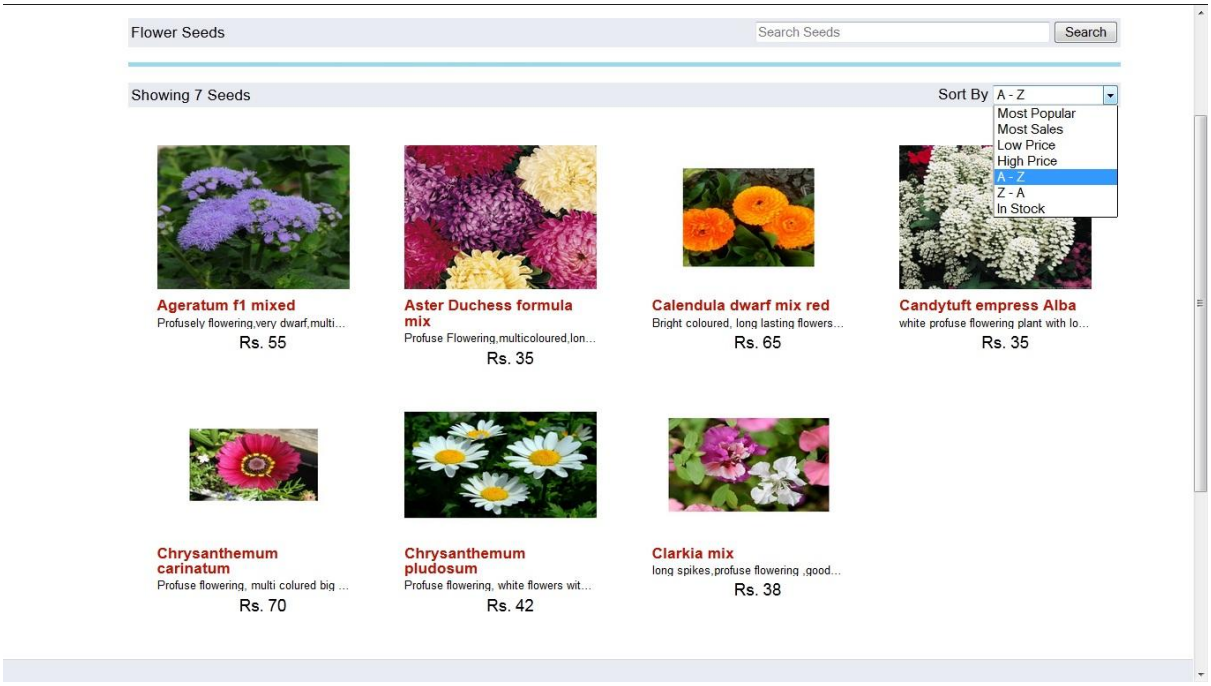



[Home Page 1.3 Popular Nursery Packs]

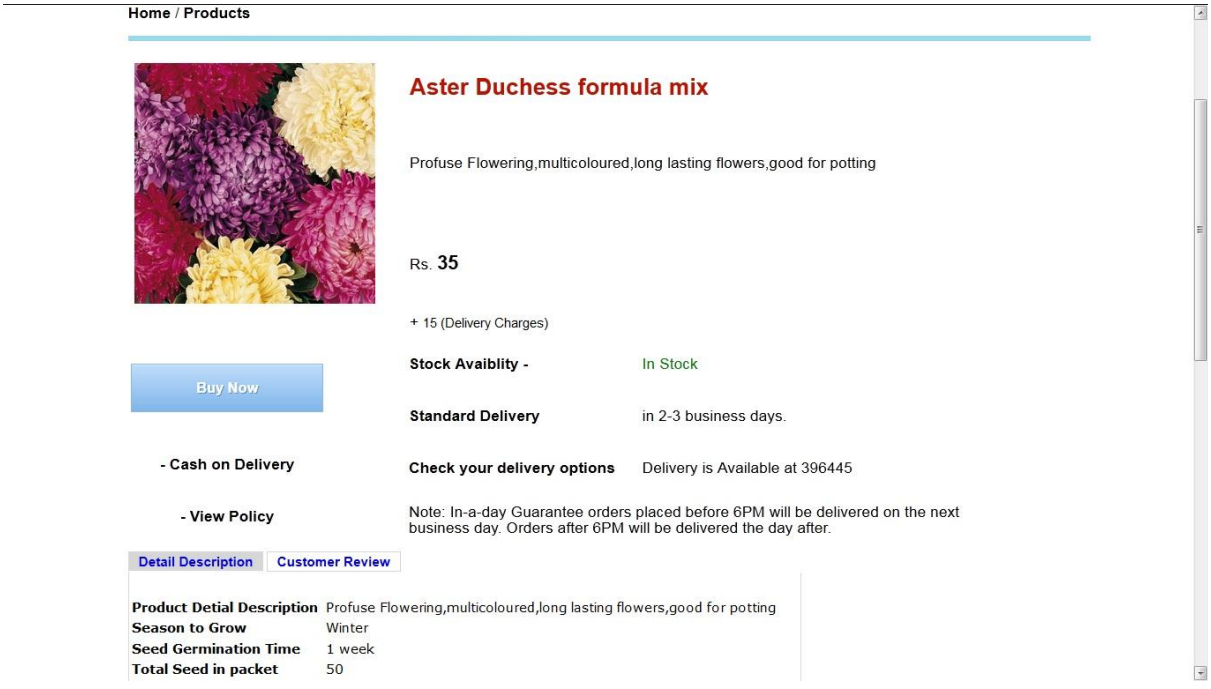
## Seed Menu



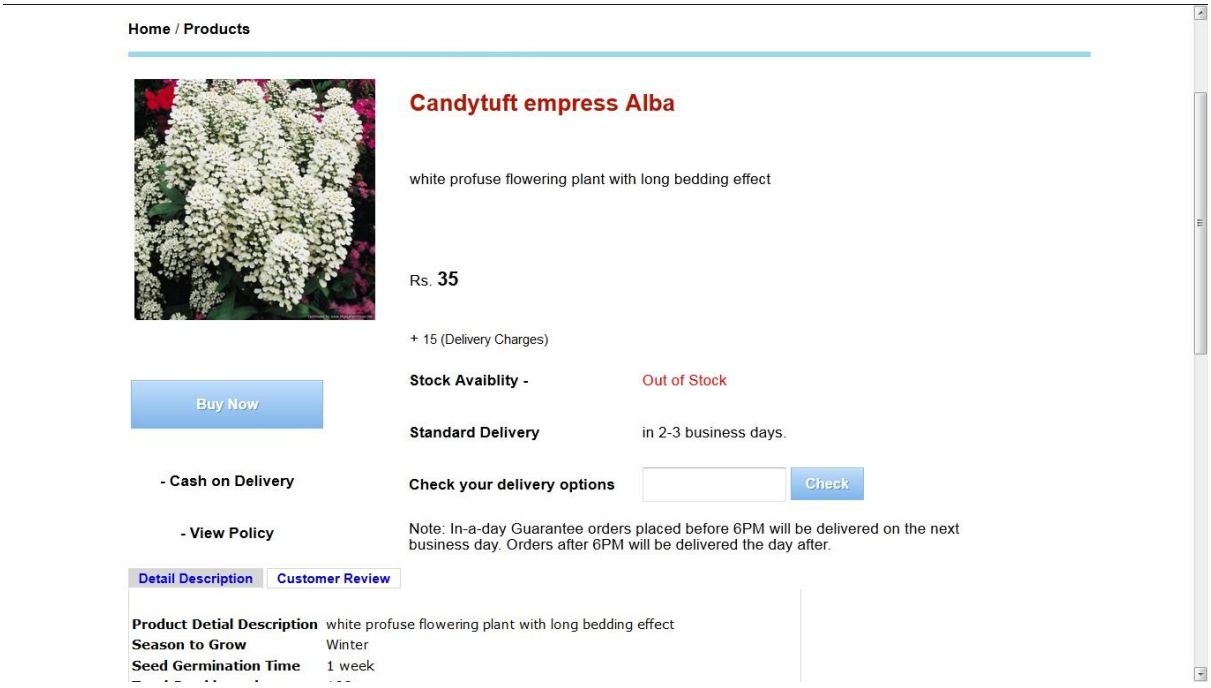

[Seeds 2.1 Flower Seeds]



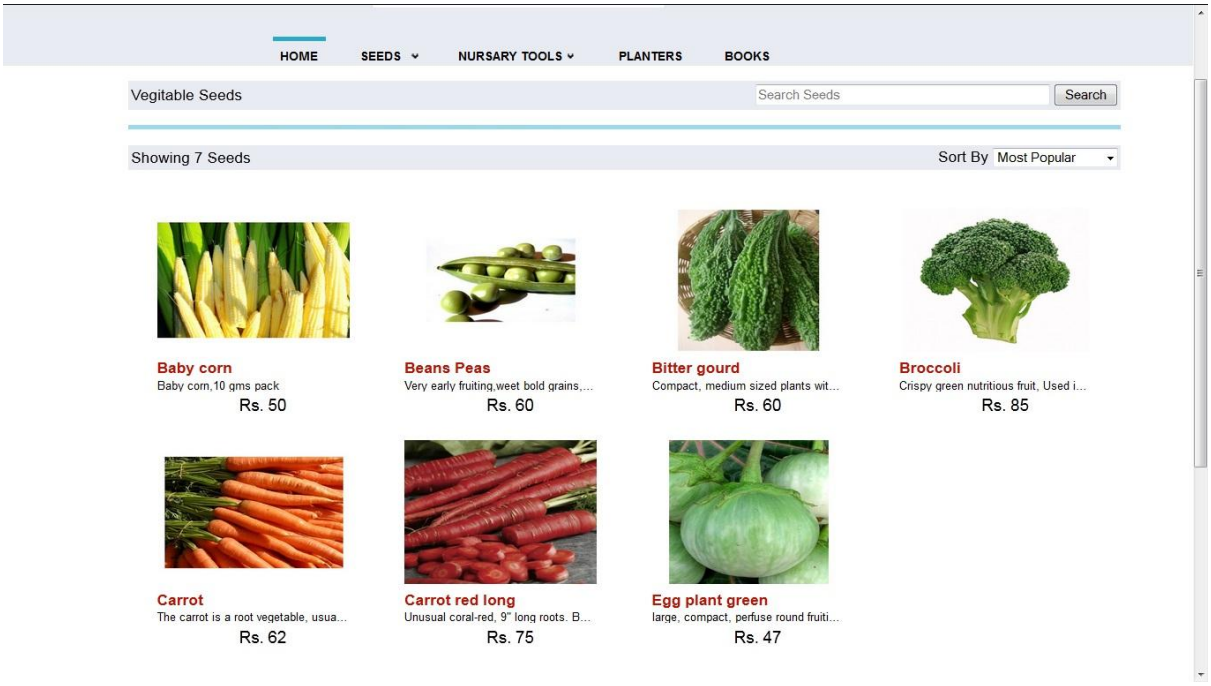

[Seed 2.2 Sorted By Products]



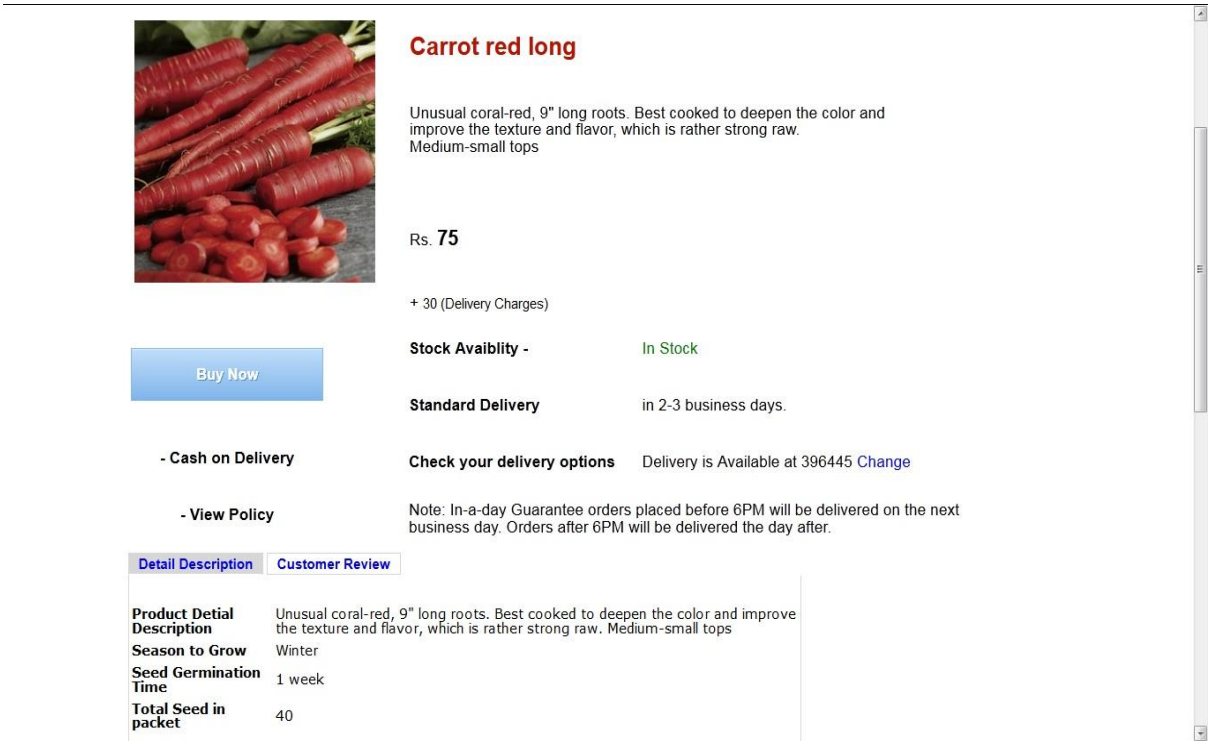

[Seed 2.3 Flower Seed View]



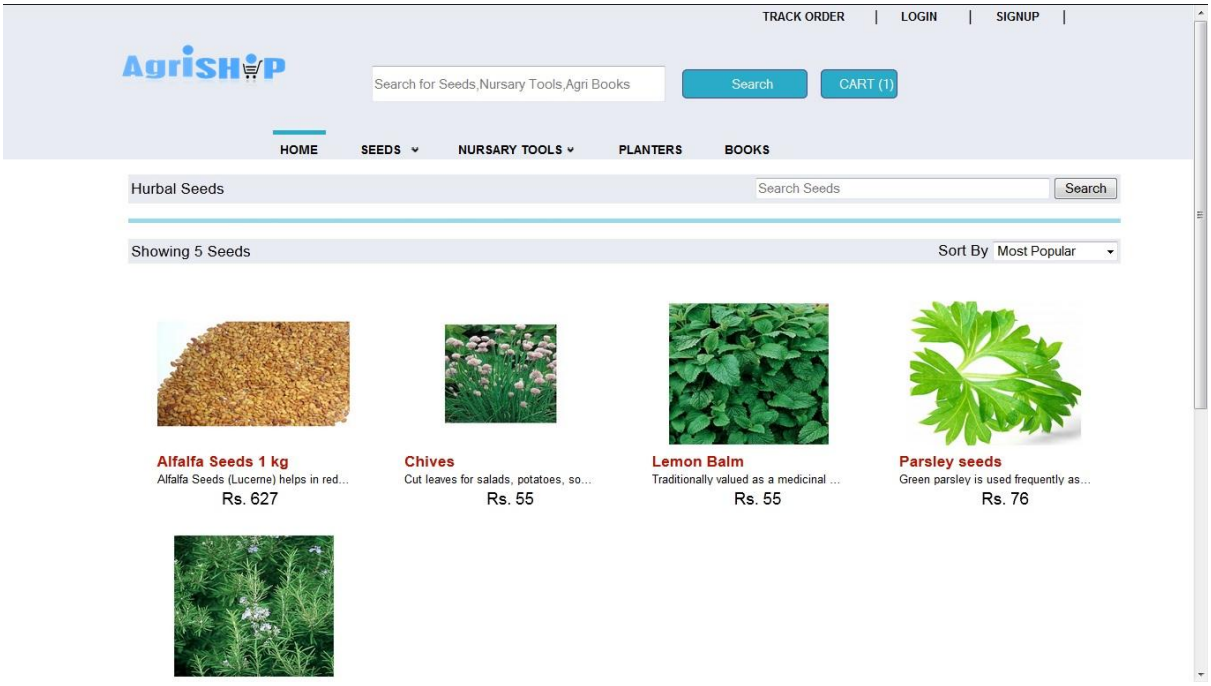

[Seed 2.4 Flower Seed Out of Stock]



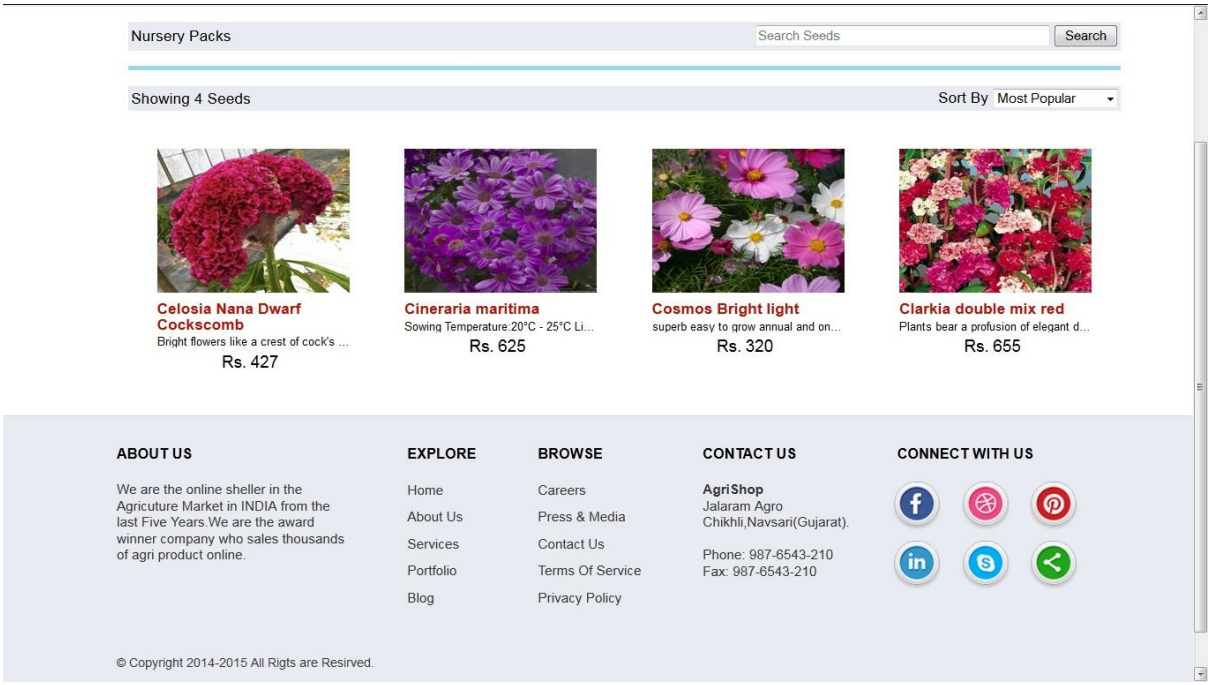

[Seed 2.4 Vegetable Seeds]



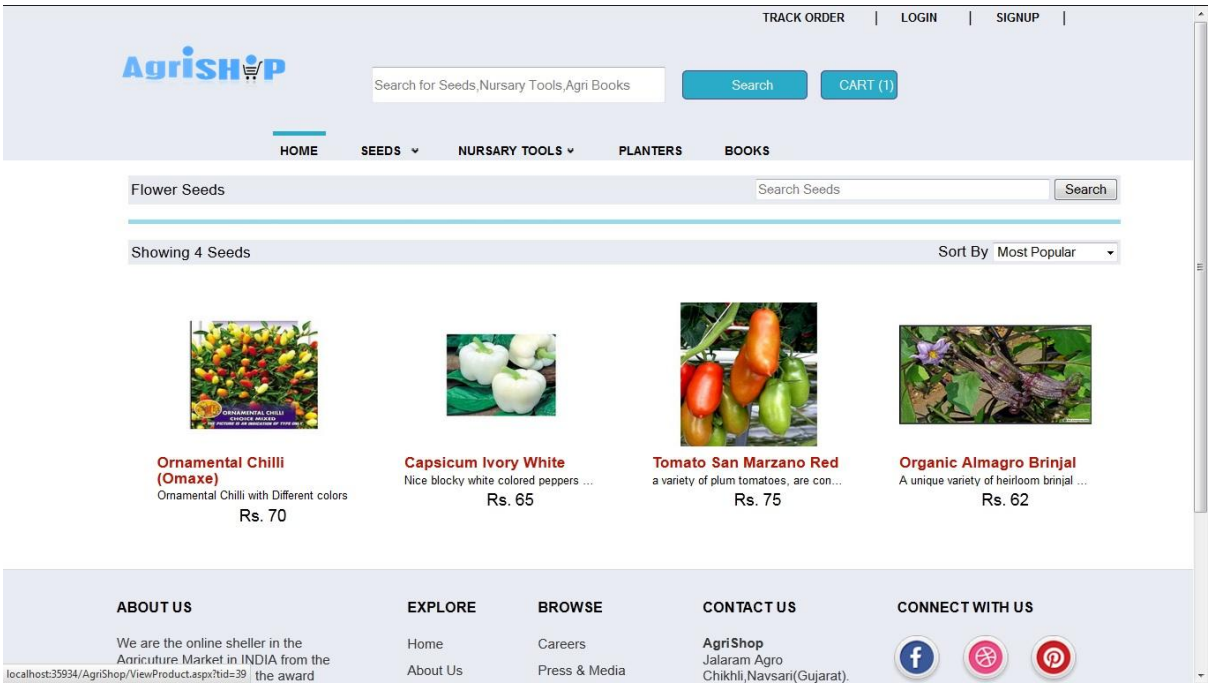

[Seed 2.5 Vegetable Seeds View]




[Seed 2.6 Herbal Seeds]

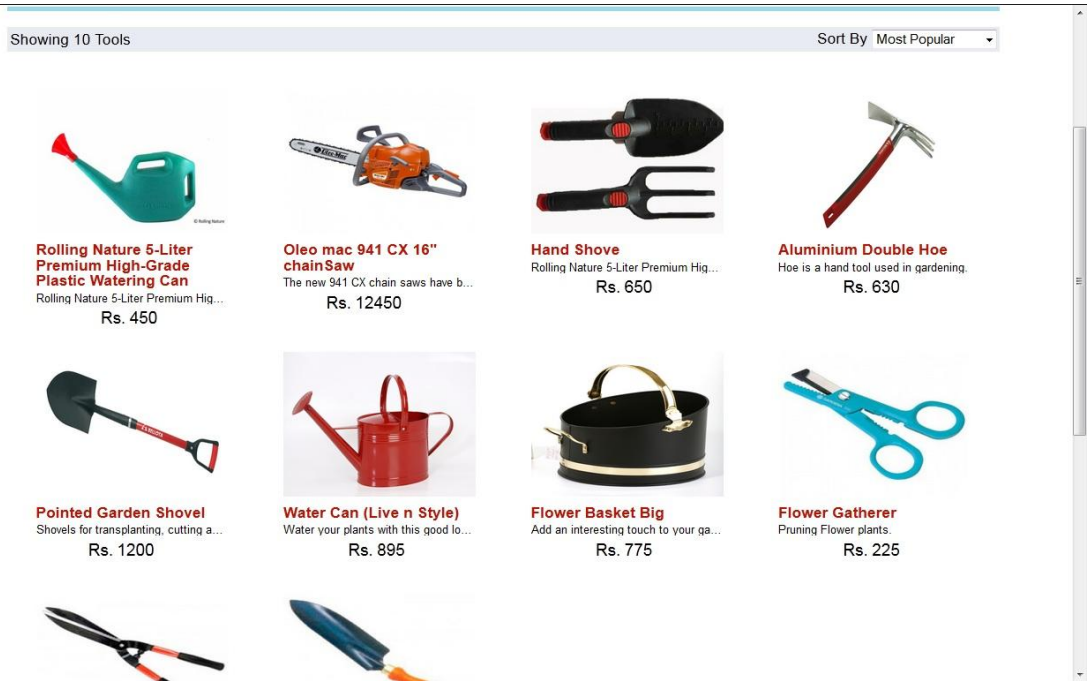



[Seed 2.7 Nursery  packs]

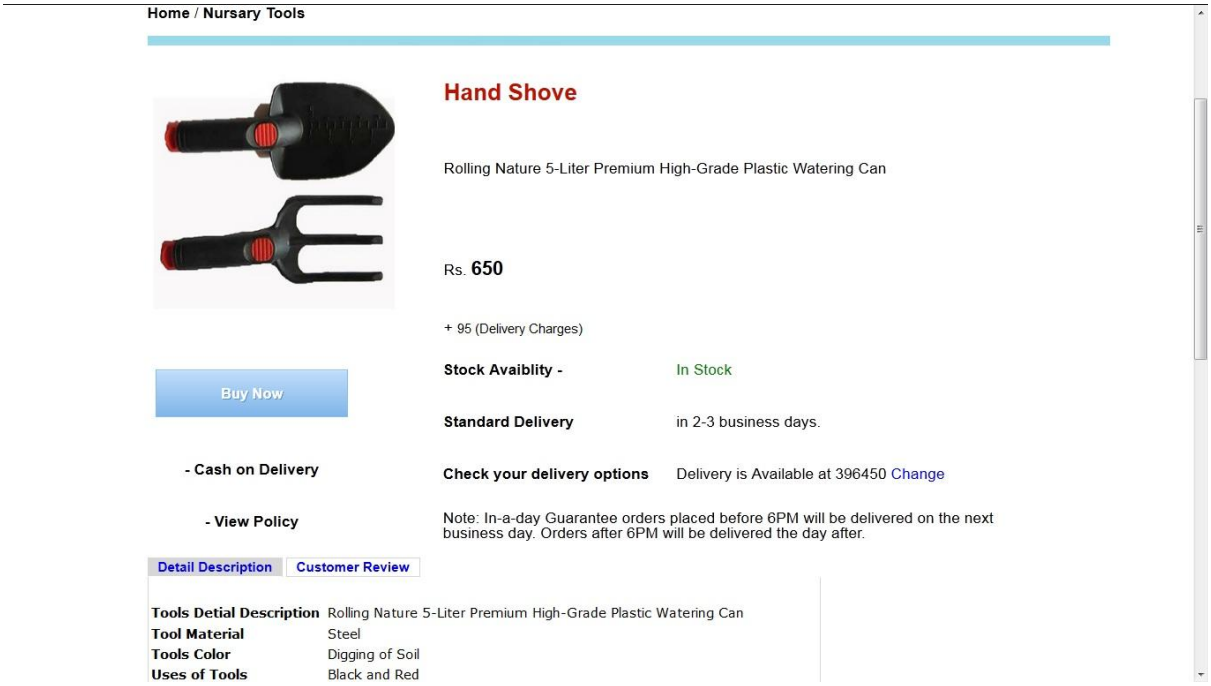



[Seed 2.7 Exotic Seeds]

## Nursery Tools

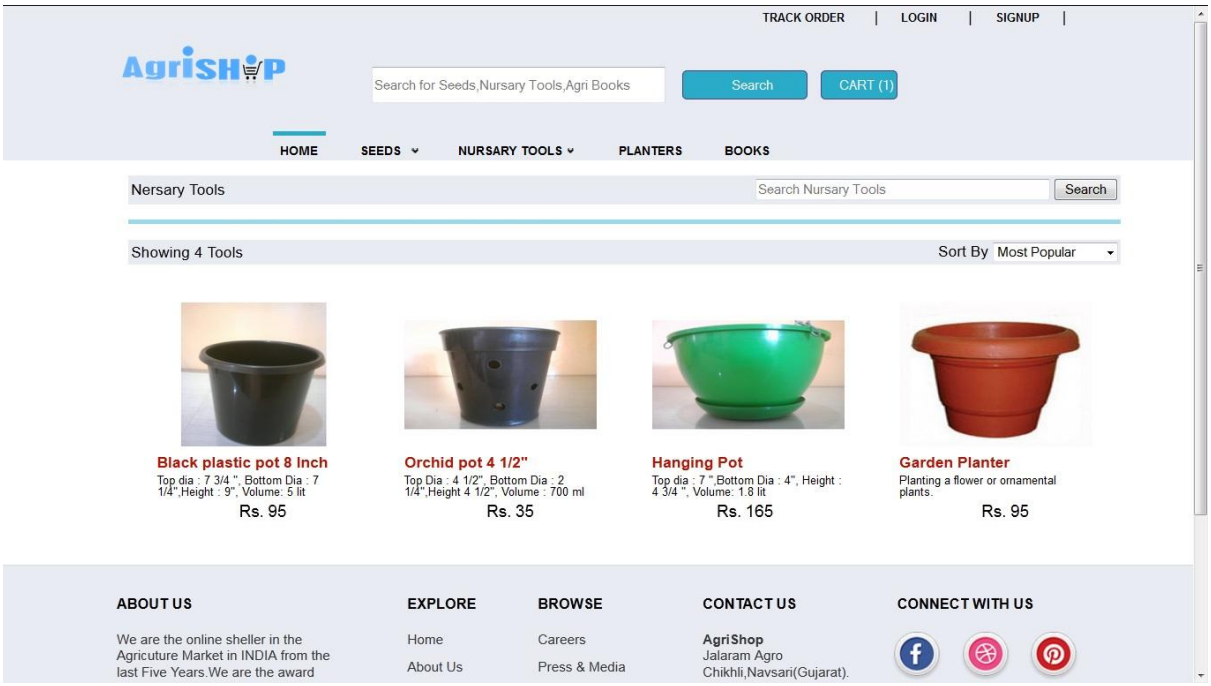



[Nursery Tools 3.1 Hand Tool]



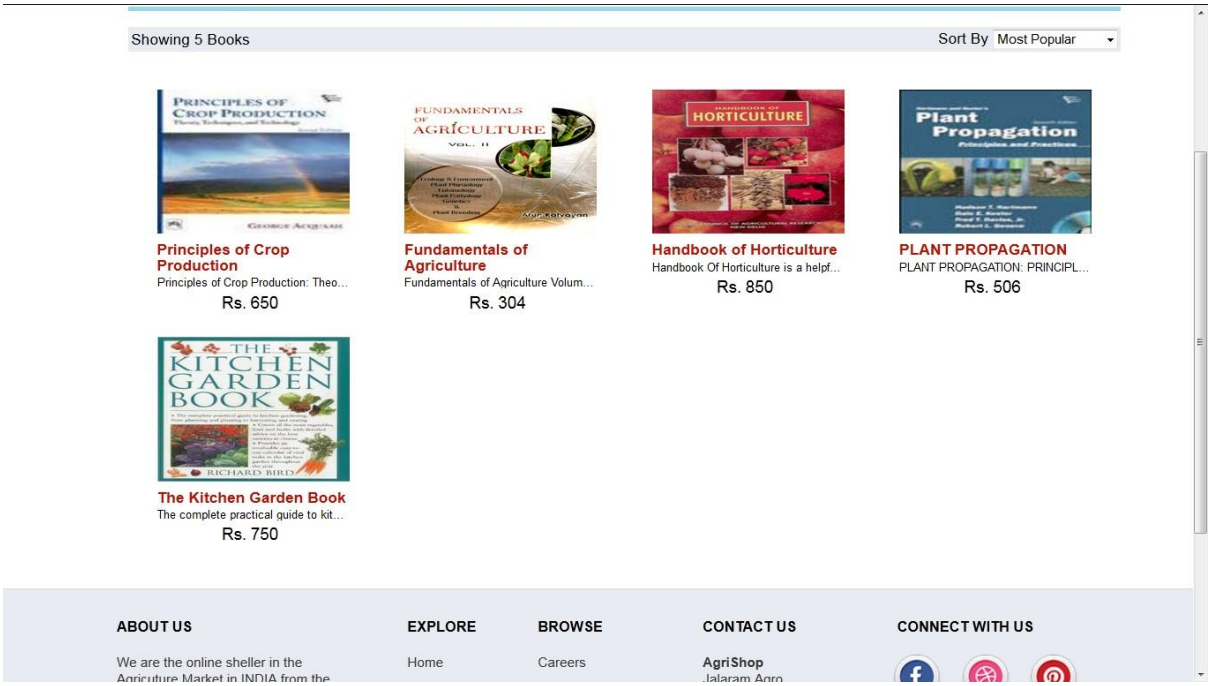

[Nursery Tools 3.2 View Nursery tool]

## Planters



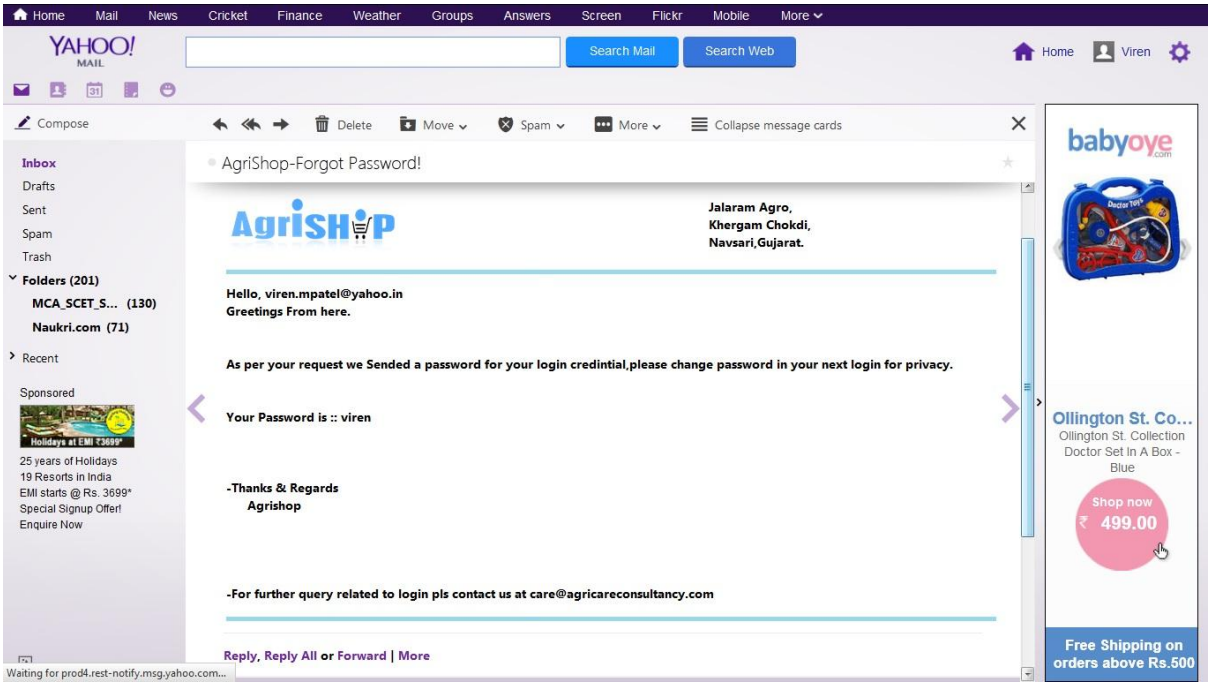

[Planter 4.1 View Planters]

## Books



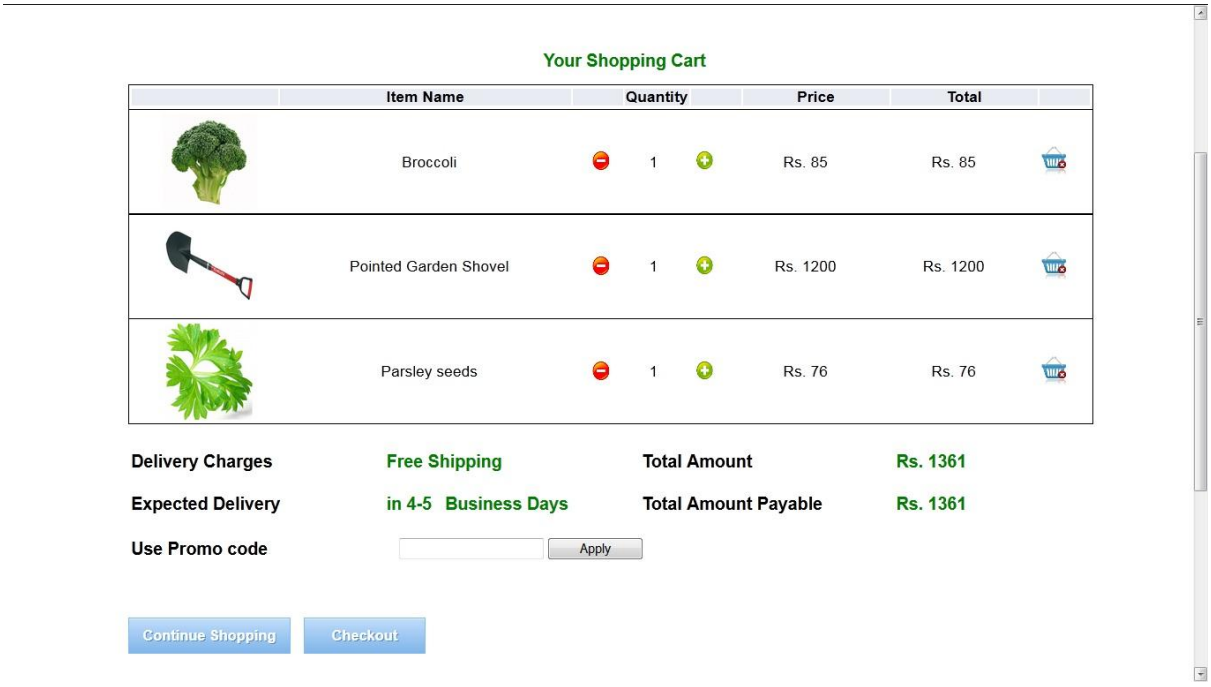

[Books 5.1 View Books]

[Books 5.2 View Books]

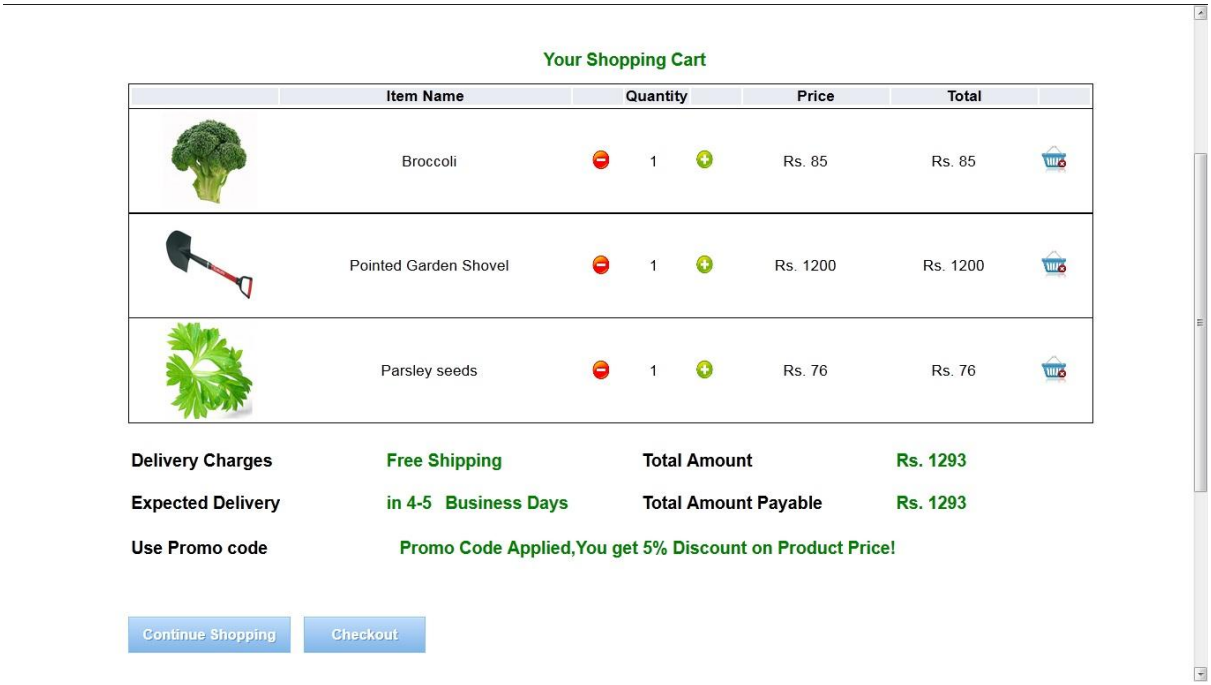



[Forgot Password Email to User]

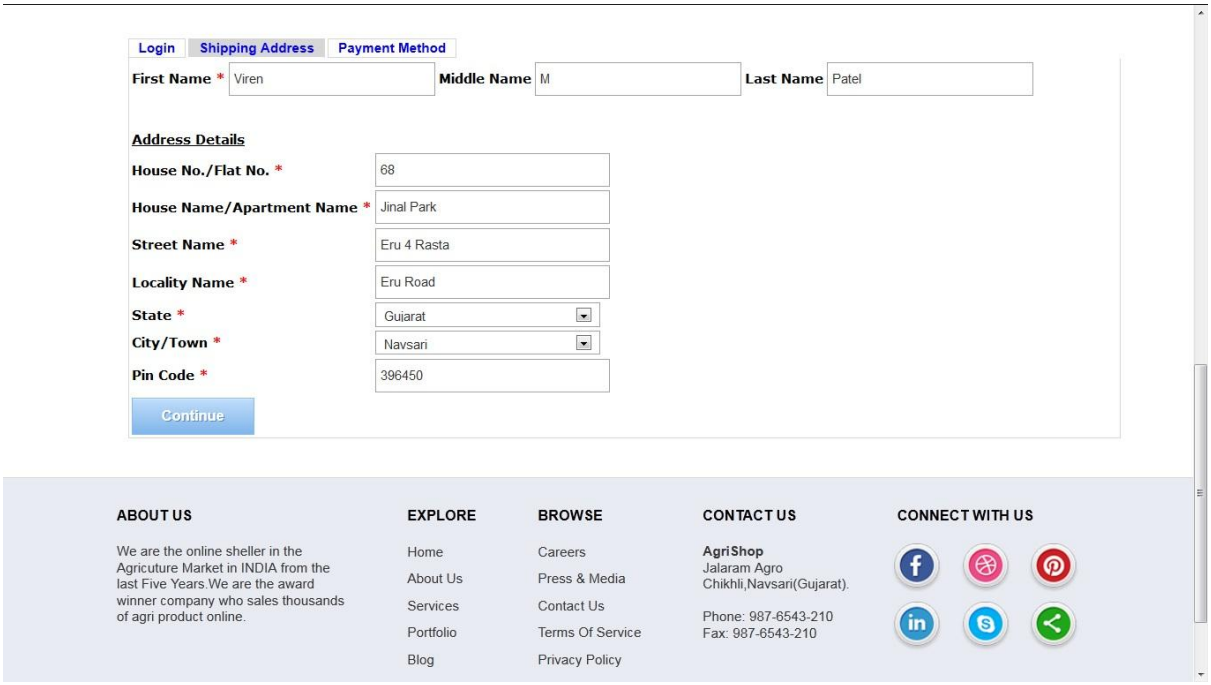
## User Cart



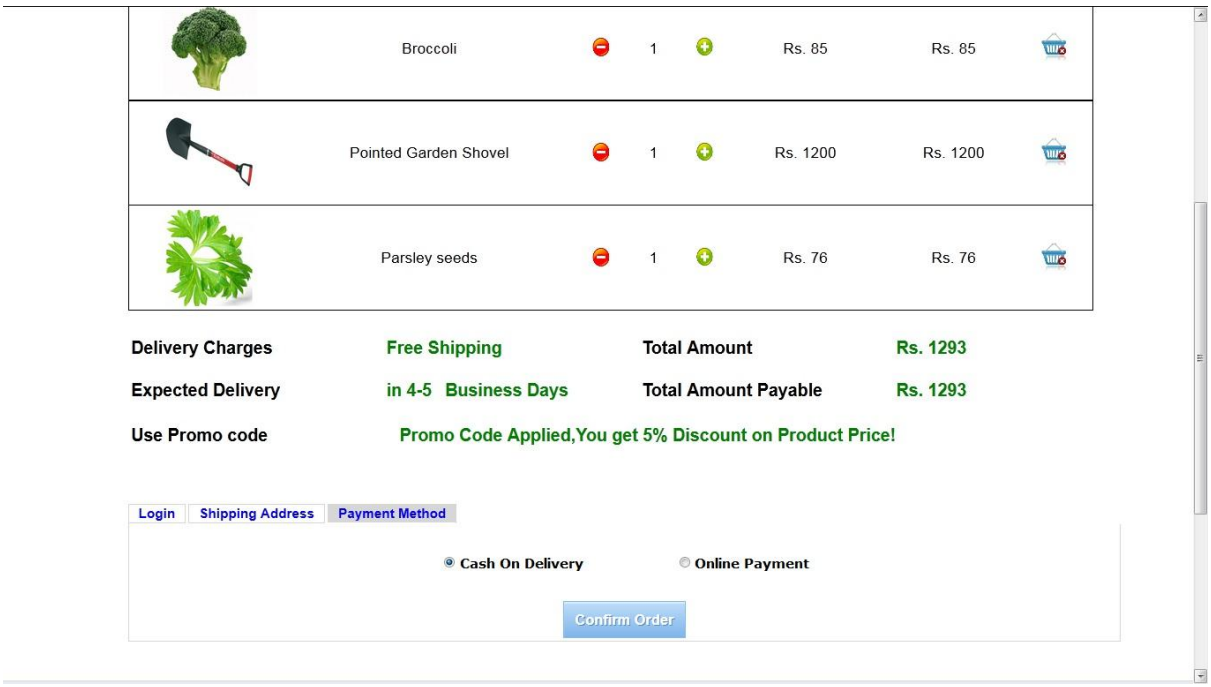

[User Cart 6.1 Shopping Cart]




[User Cart 6.1 Promo code Details]

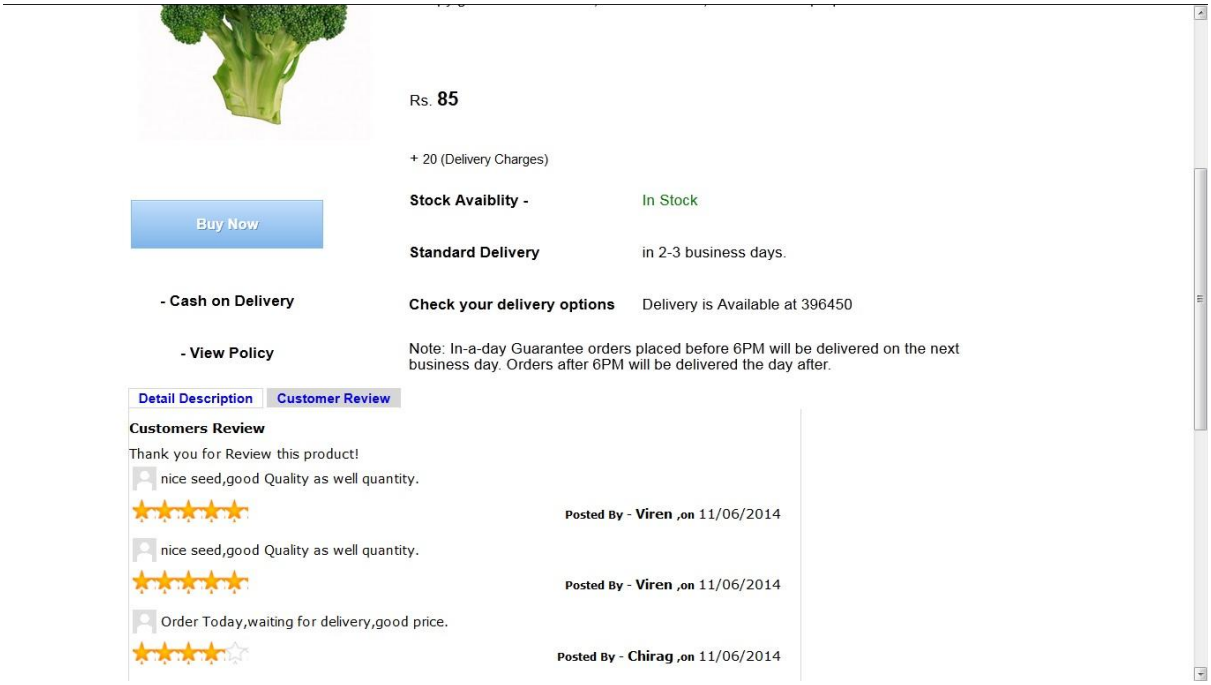



[User Cart 6.2 User Address]

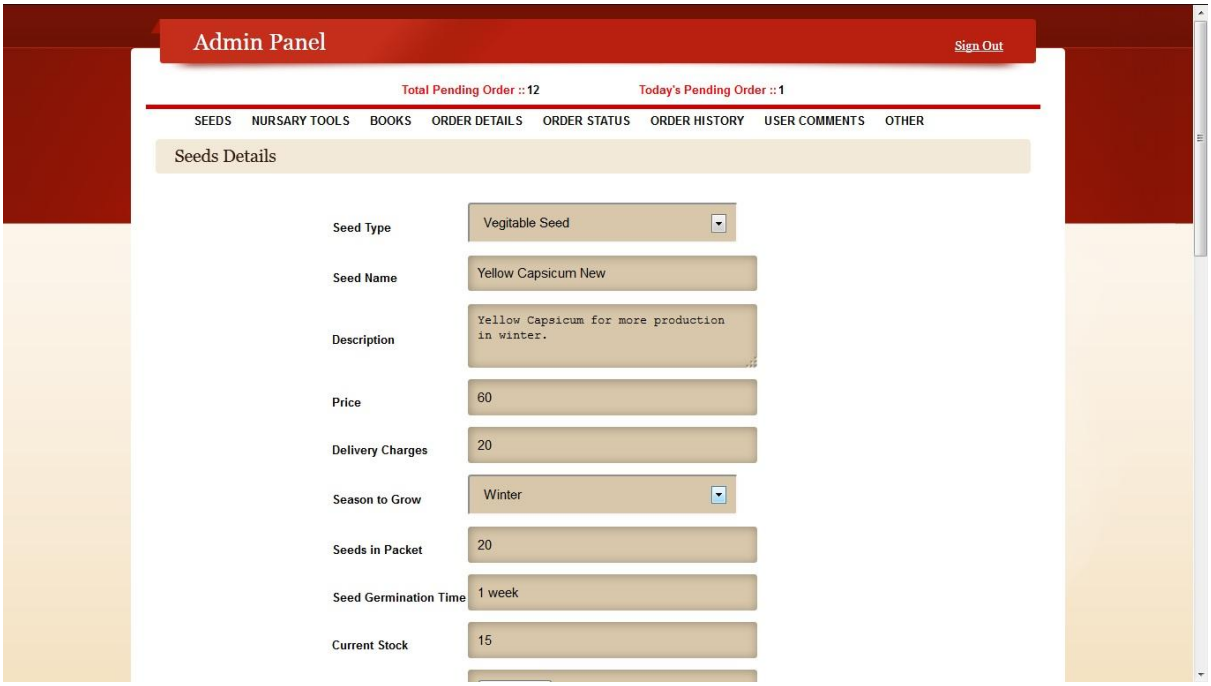



[User Cart 6.4 User Confirmation]

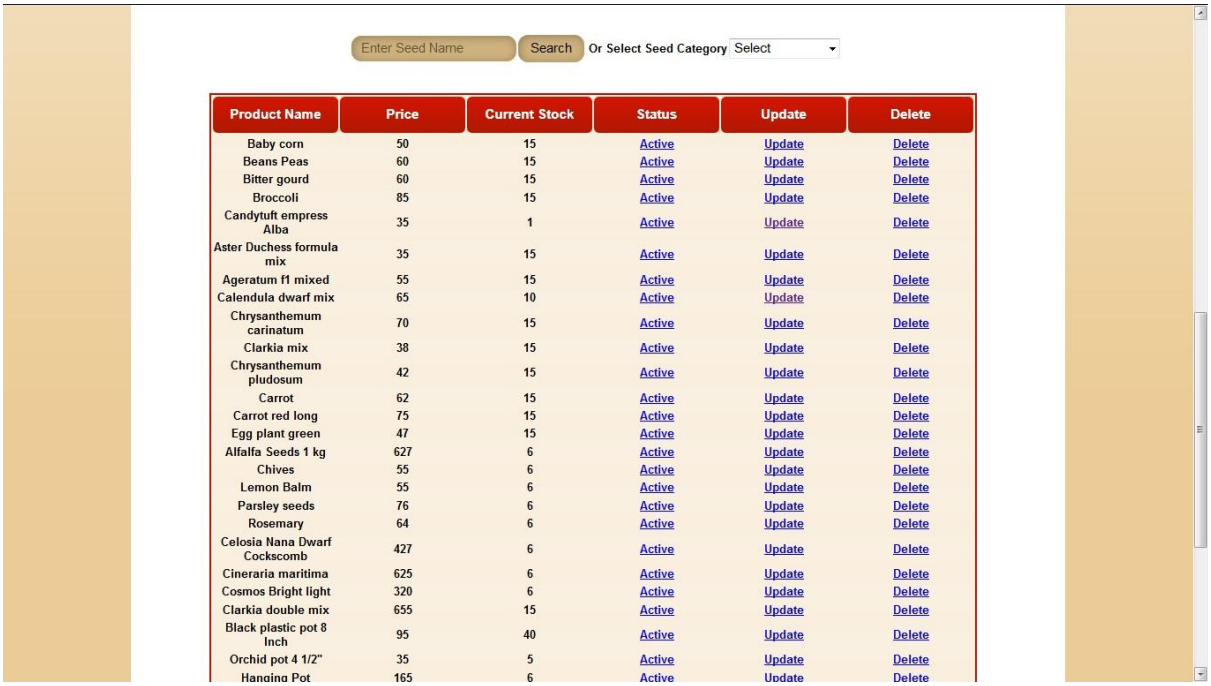
# Customer Review and Rating



# Admin Side

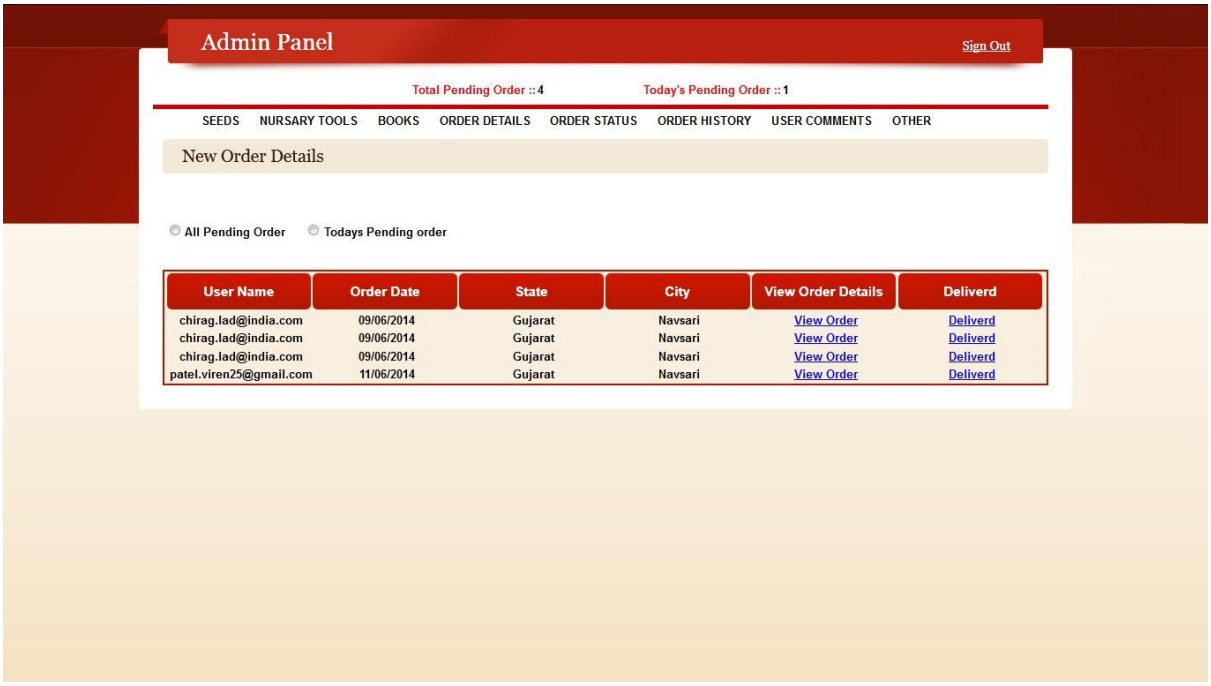



[Add Seed Details]




| Product Name | Price | Current Stock | Status | Update | Delete |
|---|---|---|---|---|---|
| Baby corn | 50 | 15 | Active | Update | Delete |
| Beans Peas | 60 | 15 | Active | Update | Delete |
| Bitter gourd | 60 | 15 | Active | Update | Delete |
| Broccoli | 85 | 15 | Active | Update | Delete |
| Candytuft empress Alba | 35 | 1 | Active | Update | Delete |
| Aster Duchess formula mix | 35 | 15 | Active | Update | Delete |
| Ageratum f1 mixed | 55 | 15 | Active | Update | Delete |
| Calendula dwarf mix | 65 | 10 | Active | Update | Delete |
| Chrysanthemum carinatum | 70 | 15 | Active | Update | Delete |
| Clarkia mix | 38 | 15 | Active | Update | Delete |
| Chrysanthemum pludosum | 42 | 15 | Active | Update | Delete |
| Carrot | 62 | 15 | Active | Update | Delete |
| Carrot red long | 75 | 15 | Active | Update | Delete |
| Egg plant green | 47 | 15 | Active | Update | Delete |
| Alfalfa Seeds 1 kg | 627 | 6 | Active | Update | Delete |
| Chives | 55 | 6 | Active | Update | Delete |
| Lemon Balm | 55 | 6 | Active | Update | Delete |
| Parsley seeds | 76 | 6 | Active | Update | Delete |
| Rosemary | 64 | 6 | Active | Update | Delete |
| Celosia Nana Dwarf Cockscomb | 427 | 6 | Active | Update | Delete |
| Cineraria maritima | 625 | 6 | Active | Update | Delete |
| Cosmos Bright light | 320 | 6 | Active | Update | Delete |
| Clarkia double mix | 655 | 15 | Active | Update | Delete |
| Black plastic pot 8 Inch | 95 | 40 | Active | Update | Delete |
| Orchid pot 4 1/2" | 35 | 5 | Active | Update | Delete |
| Hanging Pot | 165 | 6 | Active | Update | Delete |

[List of Product]




| User Name | Order Date | State | City | View Order Details | Deliverd |
|---|---|---|---|---|---|
| chirag.lad@india.com | 09/06/2014 | Gujarat | Navsari | View Order | Deliverd |
| chirag.lad@india.com | 09/06/2014 | Gujarat | Navsari | View Order | Deliverd |
| chirag.lad@india.com | 09/06/2014 | Gujarat | Navsari | View Order | Deliverd |
| patel.viren25@gmail.com | 11/06/2014 | Gujarat | Navsari | View Order | Deliverd |

[New order List]

http://localhost:35934/AgriShop/Admin/orderdetail.aspx?oid=2

AgriSHOP

Jalaram Agro,
Khergam Chokdi,
Dist-Navsari,Gujarat.

Retail Invoice

**Customer Address**

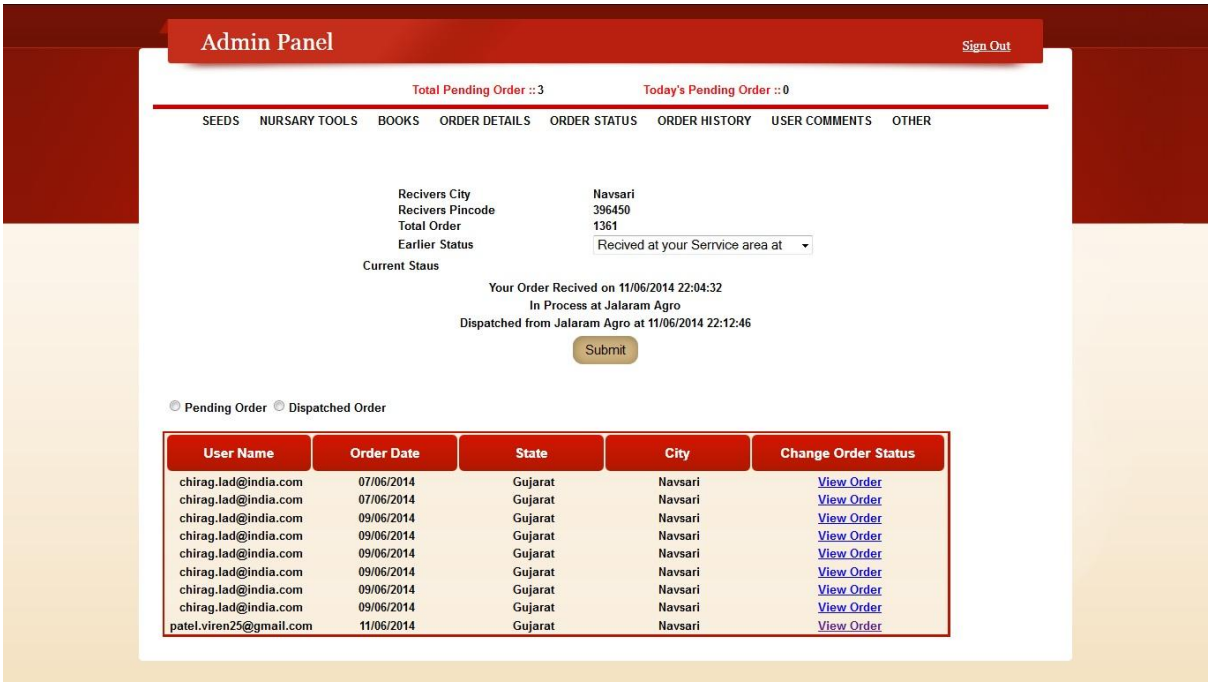
Viren M Patel
68
Jinal Park
Eru 4 Rasta
Eru Road
Navsari , Gujarat , 396450

**Your Order Details**

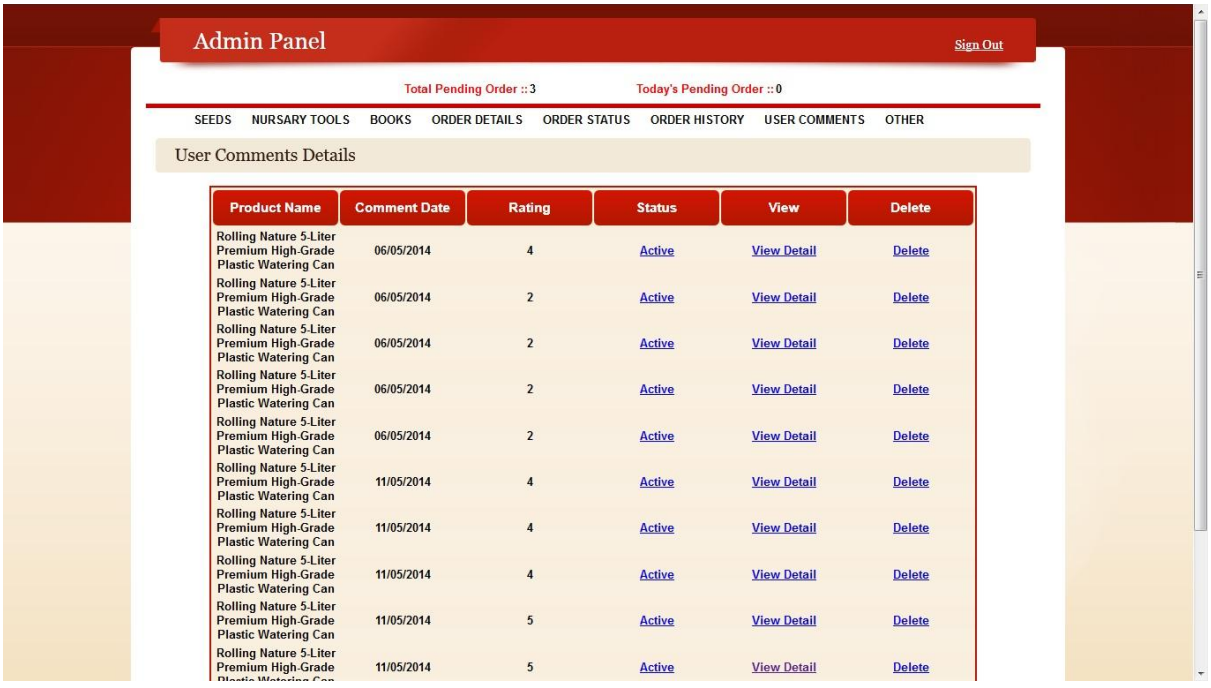
| Product Name | Quantity | Price | Total Price |
|---|---|---|---|
| Calendula dwarf mix red | 4 | 65 | 260 |
| Tomato San Marzano Red | 4 | 75 | 300 |

| | |
|---|---|
| **Total Amount ::** | 560 |
| **Promocode ::** | - |
| **Discount Amount ::** | - |
| **Delivery Charges ::** | Free Shipping |
| **Total Amount Payable::** | 560 |

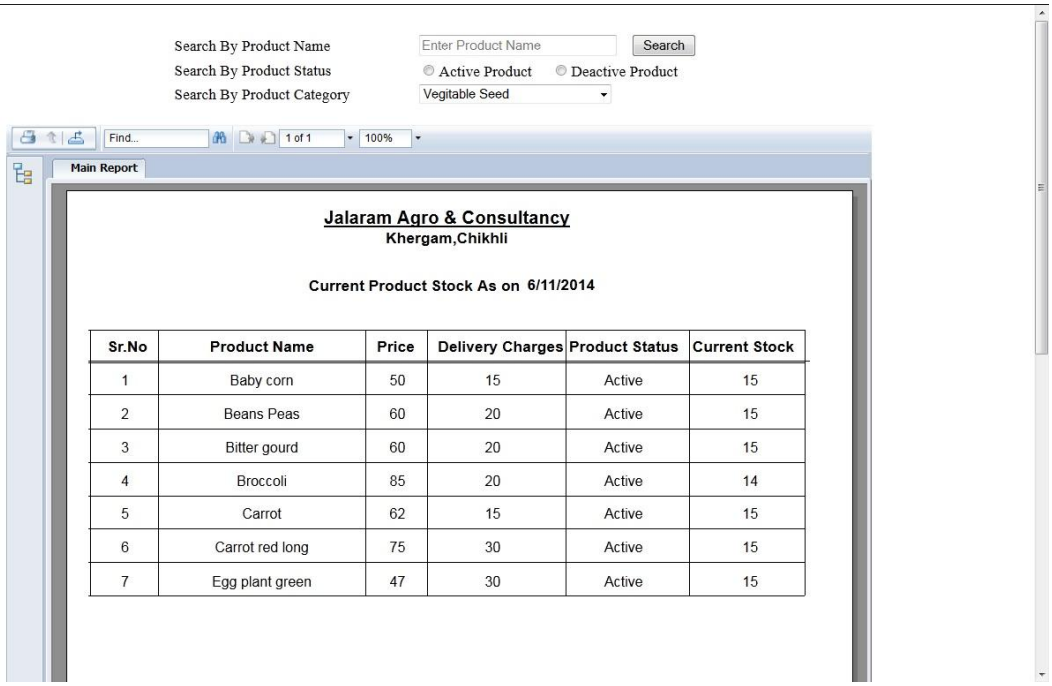
[Order Receipt]




[Order Tracking Details]

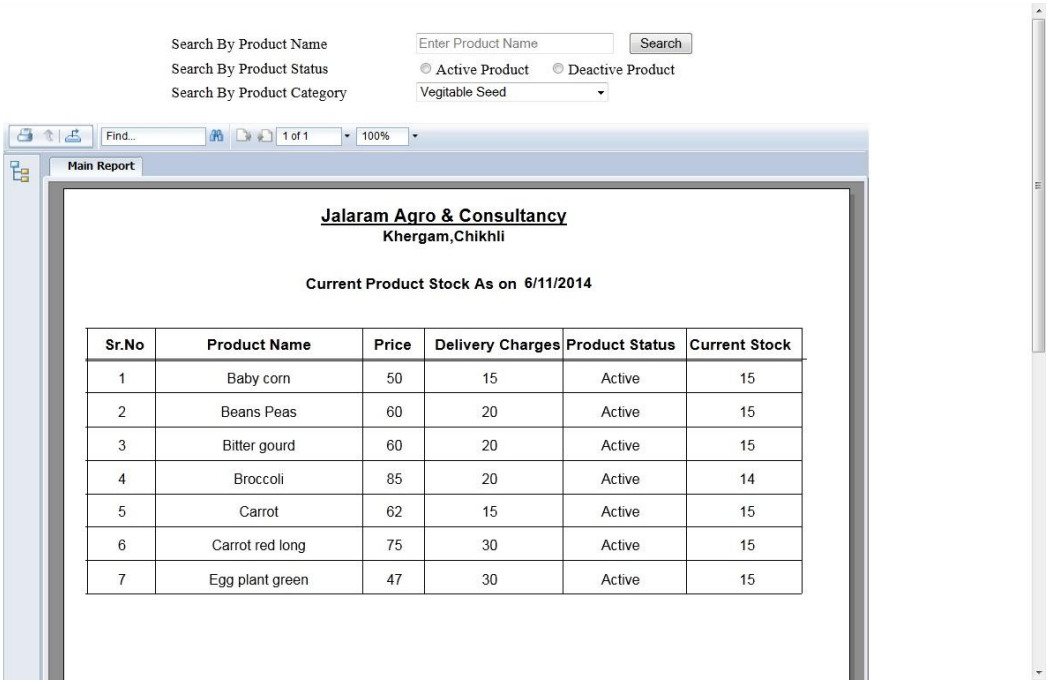



[Product Review and Rating Details]




| Sr.No | Product Name | Price | Delivery Charges | Product Status | Current Stock |
|---|---|---|---|---|---|
| 1 | Baby corn | 50 | 15 | Active | 15 |
| 2 | Beans Peas | 60 | 20 | Active | 15 |
| 3 | Bitter gourd | 60 | 20 | Active | 15 |
| 4 | Broccoli | 85 | 20 | Active | 14 |
| 5 | Carrot | 62 | 15 | Active | 15 |
| 6 | Carrot red long | 75 | 30 | Active | 15 |
| 7 | Egg plant green | 47 | 30 | Active | 15 |

[Product Stock Report]




| Sr.No | Product Name | Price | Delivery Charges | Product Status | Current Stock |
|---|---|---|---|---|---|
| 1 | Baby corn | 50 | 15 | Active | 15 |
| 2 | Beans Peas | 60 | 20 | Active | 15 |
| 3 | Bitter gourd | 60 | 20 | Active | 15 |
| 4 | Broccoli | 85 | 20 | Active | 14 |
| 5 | Carrot | 62 | 15 | Active | 15 |
| 6 | Carrot red long | 75 | 30 | Active | 15 |
| 7 | Egg plant green | 47 | 30 | Active | 15 |

[Product Stock Report By Category]

# 8. Testing

The testing process can be divided into three phases. These are listed below:-

## Planning

The planning phase provides an opportunity for the tester to determine what to test and how to test it.

## Acquisition

The acquisition phase is the time during which the required testing software is manufactured, data sets are defined and collected, and detailed test scripts are written.

## Execution and Evaluation

During the execution and evaluation phase the test scripts are executed and the results of that execution are evaluated to determine whether the product passed the test or not.
Testing should therefore,

- Validate performance
- Detect errors
- Identify inconsistency
- Point out appropriate handler

## Testing Strategies and Techniques Used:

The project test plan should describe the overall strategy that the project will follow for testing the final application and the products leading up to the completed application. Strategic decisions that may be influenced by the choice of development paradigms and process models include:

## When to test?

The test plan should show, how the stages of the testing process, such as component, integration and acceptance, correspond to stages of the development process. For us, as we have adopted an agile, iterative and incremental development strategy, incremental testing is

a natural fit. This approach provides for earlier detection of faults and feedback into development.

## Who will test?

The test plan should clearly assign responsibilities for the various stages of testing to project personnel. The independent tester brings a fresh perspective to how well the application meets the requirements. Using such a person for the component test requires a long learning curve which may not be practical in a highly iterative environment. The developer brings knowledge of the details of the program but also a bias concerning his/her own work. So, we tested the software by our own self.

## What will be tested?

The test plan should provide clear objectives for each stage in the testing process. The amount of testing at each stage will be determined by various factors. For example, the higher the priority of reuse in the project plan, the higher should be the priority of component testing in the testing strategy. Component testing is a major resource sink, but it can have tremendous impact on quality.

## Planning the Process of Testing:

Test planning involves following steps:-

- Estimate the size and cost of the testing efforts
- Allocate the resources
- Schedule test activities in accordance with other development work

## Test case selection:

If the system were to be tested by white box testing strategy, it would have employed an in depth testing to code; path oriented testing or logical driven testing. A common goal of white-box testing is to have test case to exercise every path through a program. As we all know that exhaustive testing is not possible, as in tracing each and every path and each and every loop of the system, we didn't use white box testing strategy. This would have become exhaustive for us, at this stage.

So, the presented system "Online Accounting Management System" is tested using black box testing, which is based on the external structure of the system. But, as the process of development was done by us, white box testing was also done to some extent during development.

## Black Box Test Case Selection:

The purpose of any security testing method is to ensure the robustness of a system in the face of malicious attacks or regular software failures. Black Box Testing, also known as Behavioral Testing, is a software testing method in which the internal structure/design/implementation of the item being tested is not known to the tester. These tests can be functional or non-functional, though usually functional.

This method is named so because the software program, in the eyes of the tester, is like a black box; inside which one cannot see.

Black Box Testing attempts to find errors in the following categories:

- Incorrect or missing functions
- Interface errors
- Errors in data structures or external database access
- Behavior or performance errors
- Initialization and termination errors

We gave our system to some unknown users, who didn't have knowledge about the internal structures of the website. They tested the web pages by using the browser and providing inputs (clicks, keystrokes). They verified the outputs against the expected outcome. Like this, our system was tested.

## Black Box Testing Techniques:

Following are some techniques that can be used for designing black box tests.

- Equivalence partitioning: Equivalence Partitioning is a software test design technique that involves dividing input values into valid and invalid partitions and selecting representative values from each partition as test data.

- Boundary Value Analysis: Many systems have tendency to fail on boundary. So, testing the boundary values of application is important. Boundary Value Analysis is a software test design technique that involves determination of boundaries for input values and selecting values that are at the boundaries and just inside/outside of the boundaries as test data. E.g.: testing the values of the variables min-1, min, min+1, max-1, max, max+1, and typical values.

- Cause Effect Graphing: Cause Effect Graphing is a software test design technique that involves identifying the cases (input conditions) and effects (output conditions), producing a Cause-Effect Graph, and generating test cases accordingly.

- Error Guessing: This is purely based on previous experience and judgement of the tester. Error guessing is the art of guessing where errors can be hidden. For this technique, there are no specific tools, writing the test cases that cover all the application paths.

Black Box testing method is applicable to all the levels of the software testing process:

1. Unit Testing
2. Integration Testing
3. System Testing
4. Acceptance Testing

The higher the level, and hence the bigger and more complex the box, the more black box testing method comes into use.

## 1. Unit Testing

In computer programming, unit testing is a software verification and validation method where we gained confidence that individual units of source code are fit for use. A unit is the smallest testable part of an application.

Unit testing can be done by something as simple as stepping through code in a debugger; modern applications include the use of a test framework.

Ideally, each test case is independent from the others: substitutes like method stubs, mock objects, fakes and test harnesses can be used to assist testing a module in isolation. Unit tests are typically written and run by software developers to ensure that code meets its requirements and behaves as intended. Its implementation can vary from being very manual (pencil and paper) to being formalized as part of build automation.

The benefits of unit testing are:-

- It facilitates change
- It simplifies integration
- Helps in documentation
- Helps in design

Following software components were considered for unit testing:-

- User authentication
- User interaction forms
- Database interaction
- Reports

## 2. Integration Testing

Integration testing (sometimes called Integration and Testing, abbreviated I&T) is the activity of software testing in which individual software modules are combined and tested as a group. It occurs after unit testing and before system testing.

Integration testing takes as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for system testing.There are two types in Integration Testing. These are:-.

### Bottom-Up testing :

An approach to integrated testing where the lowest level components are tested first then used to facilitate the testing of higher level components. The process is repeated until the component at the top of the hierarchy is tested.

All the bottom or low-level modules, procedures or functions are integrated and then tested. After the integration testing of lower level integrated modules, the next level of modules will be formed and can be used for integration testing. This approach is helpful only when all or most of the modules of the same development level are ready. This method also helps to determine the levels of software developed and makes it easier to report testing progress in the form of a percentage.

### Top-Down testing :

An approach to integrated testing where the top integrated modules are tested and the branch of the module is tested step by step until the end of the related module.

The main advantage of the Bottom-Up approach is that bugs are more easily found. With Top-Down, it is easier to find a missing branch link.

## 3. System Testing

System testing of software is the testing conducted on a complete, integrated system to evaluate the system's compliance with its specified requirements. System testing falls within the scope of black box testing, and as such, should require no knowledge of the inner design of the code or logic.

As a rule, system testing takes, as its input, all of the "integrated" software components that have successfully passed integration testing and also the software system itself integrated with any applicable hardware system(s). The purpose of integration testing is to detect any inconsistencies between the software units that are integrated together (called assemblages) or between any of the assemblages and the hardware. System testing is a more limiting type of testing; it seeks to detect defects both within the "inter-assemblages" and also within the system as a whole.

## Operational acceptance testing:

Also known as operational readiness testing, this refers to the checking done to a system to ensure that processes and procedures are in place to allow the system to be used and maintained. This may include checks done to back-up facilities, procedures for disaster recovery, training for end users, maintenance procedures, and security procedures.

## Alpha and beta testing:

Alpha testing takes place at developers' sites, and involves testing of the operational system by internal staff, before it is released to external customers. Beta testing takes place at customers' sites, and involves testing by a group of customers who use the system at their own locations and provide feedback, before the system is released to other customers. The latter is often called “field testing”.

## 4. Acceptance testing :

Acceptance testing is black-box testing performed on a system prior to its delivery. It is also known as functional testing, black-box testing, release acceptance, QA testing, application testing, confidence testing, final testing, validation testing, or factory acceptance testing.In software development, acceptance testing by the system provider is often distinguished from acceptance testing by the customer (the user or client) prior to accepting transfer of ownership. In such environments, acceptance testing performed by the customer is known as user acceptance testing (UAT). This is also known as end-user testing, site (acceptance) testing, or field (acceptance) testing.

A smoke test is used as an acceptance test prior to introducing a build to the main testing process.

## Test Completion:

- Black box test coverage targets are met.
- Rate of error discovery reduced to the targeted value.
- Measured reliability of the system, so that it achieves its target values.

# Conclusion:

E-commerce has an impact on three major stakeholders, namely society, organizations and customers (or consumers). There are a number of advantages, which include cost savings, increased efficiency, customization and global marketplaces. There are also limitations arising from e-commerce which apply to each of the stakeholders. These include information overload, reliability and security issues, cost of access, social divisions and difficulties in policing the Internet. Successful e-commerce involves understanding the limitations and minimizing the negative impact while at the same time maximizing the benefits.

- E-commerce allows for **higher profit margins** as the cost of running a business is markedly less.Another advantage provided by e-commerce is that it allows for **better and quicker customer service**.
- Using E-Commerce, organization can expand their market to national and international markets with minimum capital investment. An organization can easily locate more customers, best suppliers and suitable business partners across the globe.
- E-Commerce helps organization to reduce the cost to create process, distribute, retrieve and manage the paper based information by digitizing the information.
- E-commerce improves the brand image of the company.
- E-commerce helps organization to provide better customer services.
- E-Commerce helps to simplify the business processes and make them faster and efficient.
- E-Commerce reduces paper work a lot.
- E-Commerce increased the productivity of the organization. It supports "pull" type supply management. In "pull" type supply management, a business process starts when a request comes from a customer and it uses just-in-time manufacturing way.

# References:

The Project "E-Commerce" is a great part of success for my professional work. This project has been prepared by using many sources of information. We are very much thankful to all those, who were involved in our project development. These are listed below:-


- 'ASP.NET the Complete reference'

  [ Author Name : Mathew MacDonald, Publish Year : 2002 ]

- 'Programming in C# 4.0'

  [Author Name : Ian Griffiths, Matthew Adams & Jesse Liberty,

  Publish Year : 2010]

- Microsoft SQL Server 2008: A Beginner's Guide
  [Author Name : Dusan Petkovic, Publish Year : 2008]
- 'Crystal Reports The Complete Reference'
  [Author Name : Brian Bischof, Publish Year : 2004]
- 'Financial, Cost and Management Accounting'
  [ Author Name : Dr. P. Periasamy, Publish Year : 2008 ]
- 'Software Engineering" A Practitioners Approach'
  [ Author Name : Roger S. Pressman, Publish Year : 2010]