Software Requirements Specification for

Version 1.0 approved

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GROUP-6
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I. Project Description:

A. Project Overview:

E-commerce is fast gaining ground as an accepted and used business paradigm. More and more business houses are implementing web sites providing functionality for performing commercial transactions over the web. It is reasonable to say that the process of shopping on the web is becoming commonplace. The objective of this project is to develop a general purpose e-commerce store where products like agro-product can be bought from the comfort of home through the Internet. An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order. At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option. The Agro-based e-commerce site is a system where sellers can sell grocery items like vegetables, fruits and buyers can buy. Buyer also sees the price, delivery time, and the location of the products.

B. Purpose:

1. The User Business:

The business of the user is agro- product based where he wanted to sell vegetables, fruits, and other agricultural products that needs in daily basis.

2. Goals of the project:

This document is the Software Requirements Specification (SRS) for the Agro Based e-commerce system. It contains detailed functional, non-functional and support requirements. The requirements contained in the SRS are dependent, uniquely numbered and organized by topic. Here buyers can buy groceries from their home and pick it up without wasting time and sellers also sell their product very easily. The system is convenient and flexible to be used. Buyer can see the rating of the product from the previous customer of a specific product. Also know the delivery time of the product. It also saves time, efforts, money and resources

C. The Scope of the Work:

1. The Current Situation:

We have the user story that tells that the user needs an e-commerce system where he can sell products and buyer can buy products.

2. The Context of the work:

Registration, Login, Upload Products, View Products, Add to cart, Place order and Delivery.

3. Domain Analysis:

We should research existing ecommerce sites like daraz, chaldal etc. So that we can know that how we can improve.

In any domain (horizontal/vertical) specific framework development, domain analysis helps out in identifying the features to be targeted and also the extensibility requirements for the framework.There are formal approaches like FODA etc., This is one of my practical exercises in which the Ecommerce Domain Analysis is presented.

4. Product Features and Prioritization:

The system is convenient and flexible to be used. It saves both seller and customer's time, efforts, money and resources.

D. Product Scenarios:

1. Product Scenarios List:

- SignUp/Login/Logout
- Search and view products.
- Add to wishlist or cart
- Place order and track order
- Upload products
- Change order status
- Deliver Products

2. Individual Product Scenarios:

- Product: Name, Price, Quantity
- Cart: Products, Quantity, Price
- WishList: Products, Price
- Customer/Seller: Name, ContactNo, Addresses
- Orders: Status like delivered/cancel/processing.

E. Stakeholders:

Seller: Seller can sell their product and make profit.

Buyer: The largest user group of the system. The buyer can buy the product.

System Operator: System Operator will directly interact with this software.

Developers: We selected developers as stakeholders because they develop this system and work for further development.

II. Requirements:

A. Use Cases:

1. User Classes and Characteristics:

The users of Agro-Product e-commerce system will be new visitor, customer, seller, developer.

The new-visitor should be able to do the following functions:

- See products in homepage.
- Search by product name or category.
- Create a customer account for buying products.

The customer should be able to do the following functions:

- Login to the system by unique email and password.
- See products in homepage.
- Search by product name or category.
- Add to Wishlist or add to cart products.
- Make orders and buy products.
- Gets logout from the system.

The seller should be able to do the following functions:

- Login to the system by unique email and password.
- Create categories and upload products and edit products.
- Control the orders made by customers.
- Gets logout from the system.

The developer should be able to do the following functions:

- Make changes or fix bugs in future.
- Add more features according requirements.

2. User Story:

A user who has internet connection and a computer then he can visit the system, see the products and their details, he can create new account. After logging in by using unique email and password he can add products to Wishlist or Cart and make order by giving delivery address.

The seller can login by using email and password. Seller can see the orders, modify order status, create categories, upload, edit products and gets logout.

3. Use Case Diagram:

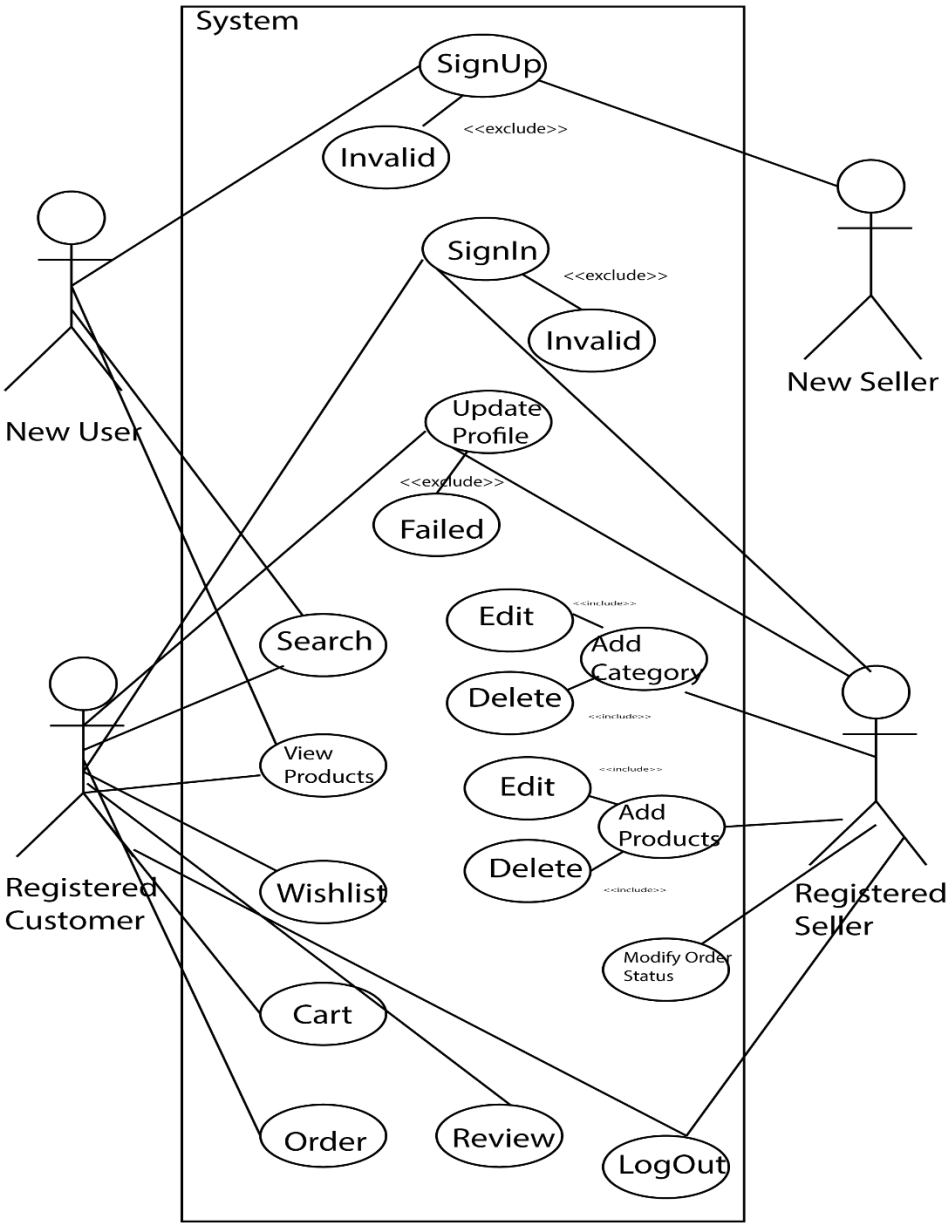


Fig: Use Case Diagram

4. Product Use Case List:

Actor	Actor's Goal	Use Case Name
New User	Search products and see details	Search (UC-1)
New User	SignUp to buy the products	SignUp (UC-2)
Registered Customer	Login to buy the product	Login (UC-3)
Registered Customer	Search products and see details	Search (UC-1)
Registered Customer	Add products to Wishlist and edit	AddToWishList (UC-4)
Registered Customer	Add products to cart and edit	AddToCart (UC-5)
Registered Customer	Placing order to buy products	Make Order (UC-6)
Registered Customer	Logging out after placing order	LogOut (UC-7)
New Seller	SignUp to sell the products	SignUp (UC-2)
Registered Seller	Login to sell the product	Login (UC-3)
Registered Seller	Add Category, edit and delete them	Control Category (UC-8)
Registered Seller	Add Products, edit and delete them	Control Products (UC-9)
Registered Seller	Update order status	UpdateOrder (UC-10)
Registered Seller	Logging out	LogOut (UC-7)

5. Individual Product Use Cases:

5. 1 SignUp

Use Case: SignUp

Primary Actors: New User, New Seller.

Goal in context: To register in the system

Precondition: Must have internet connection and an email.

Scenario:

1. Visit to signup page.
2. Enter email and choose password.
3. Hit register button and visits to login page.

Exception:

1. Email has already been used, try another.
2. No internet connection.

Priority: Essential, must be implemented.

Secondary Actor: System

5.2 Login

Use Case: Log In

Primary Actors: Registered User, Registered Seller.

Goal in context: To enter the system

Precondition: Must be registered

Triggers: Need to log in first in the system

Scenario:

1. Visit the login page

2. Enter user id and password

3. Press the login bottom

4. Enter the system

Exception:

1. Invalid user id

2. Wrong password

3. User id blocked

Priority: Essential, Must be implemented

Secondary Actor: System.

5.3 Logout

Use Case: Log out

Primary Actors: Registered User, Registered Seller.

Goal in context: To exit from the system

Precondition: Must be logged in

Triggers: Need to log out from the system

Scenario: Click the logout button

Priority: Essential, must be implemented

Secondary Actor: System

Open issues: Connection problem

5.4 Search

Use Case: Search

Primary Actors: Customer

Goal in context: To find products

Precondition: Must put search keyword

Scenario: Click the search button

Priority: Essential, must be implemented

Secondary Actor: System

5.5 AddToWishList

Use Case: AddToWishList

Primary Actors: Registered User.

Goal in context: Add products to wishlist

Precondition: Must be logged in

Scenario: Click the AddToWishList button

Priority: Essential, must be implemented

Secondary Actor: System, Products

5.6 AddToCart

Use Case: AddToCart

Primary Actors: Registered User.

Goal in context: Add products to cart

Precondition: Must be logged in, products quantity must>0.

Scenario: Click the AddToCart button

Alternate: Product doesn't exist.

Priority: Essential, must be implemented

Secondary Actor: System, Products

5.7 Place Order

Use Case: PlaceOrder

Primary Actors: Registered User.

Goal in context: Place Order

Precondition: Must be logged in, Cart has products.

Scenario: Click the PlaceOrder button

Alternate: Order cannot be placed.

Priority: Essential, must be implemented

Secondary Actor: System, Products

5.8 ControlCategory

Use Case: ControlCategory

Primary Actors: Registered Seller.

Goal in context: Add Category and edit them

Precondition: Must be logged in

Scenario: Click the Addnew or Edit button

Priority: Essential, must be implemented

Secondary Actor: System

5.9 ControlProducts

Use Case: ControlProducts

Primary Actors: Registered Seller.

Goal in context: Add Products and edit them

Precondition: Must be logged in

Scenario: Click the Addnew or Edit button

Priority: Essential, must be implemented

Secondary Actor: System

5.10 ModifyOrder

Use Case: ModifyOrder

Primary Actors: Registered Seller.

Goal in context: Modifying order status

Precondition: Must be logged in

Scenario: Click the edit button and edit

Priority: Essential, must be implemented

Secondary Actor: System, Products and Customer.

6. Activity Diagram:

6.1 SignUp:

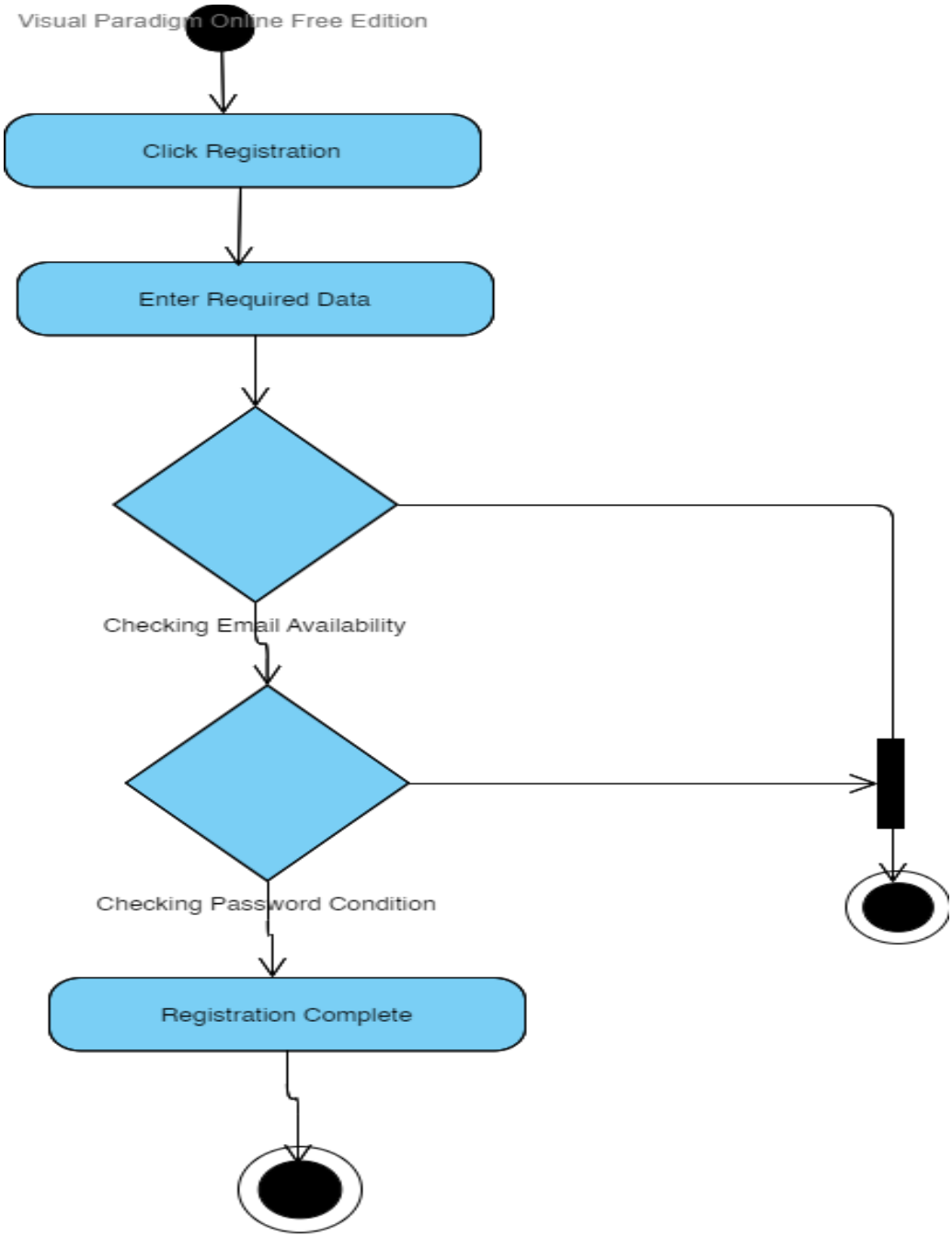


Fig: SignUp Activity Diagram

6.2 Login:

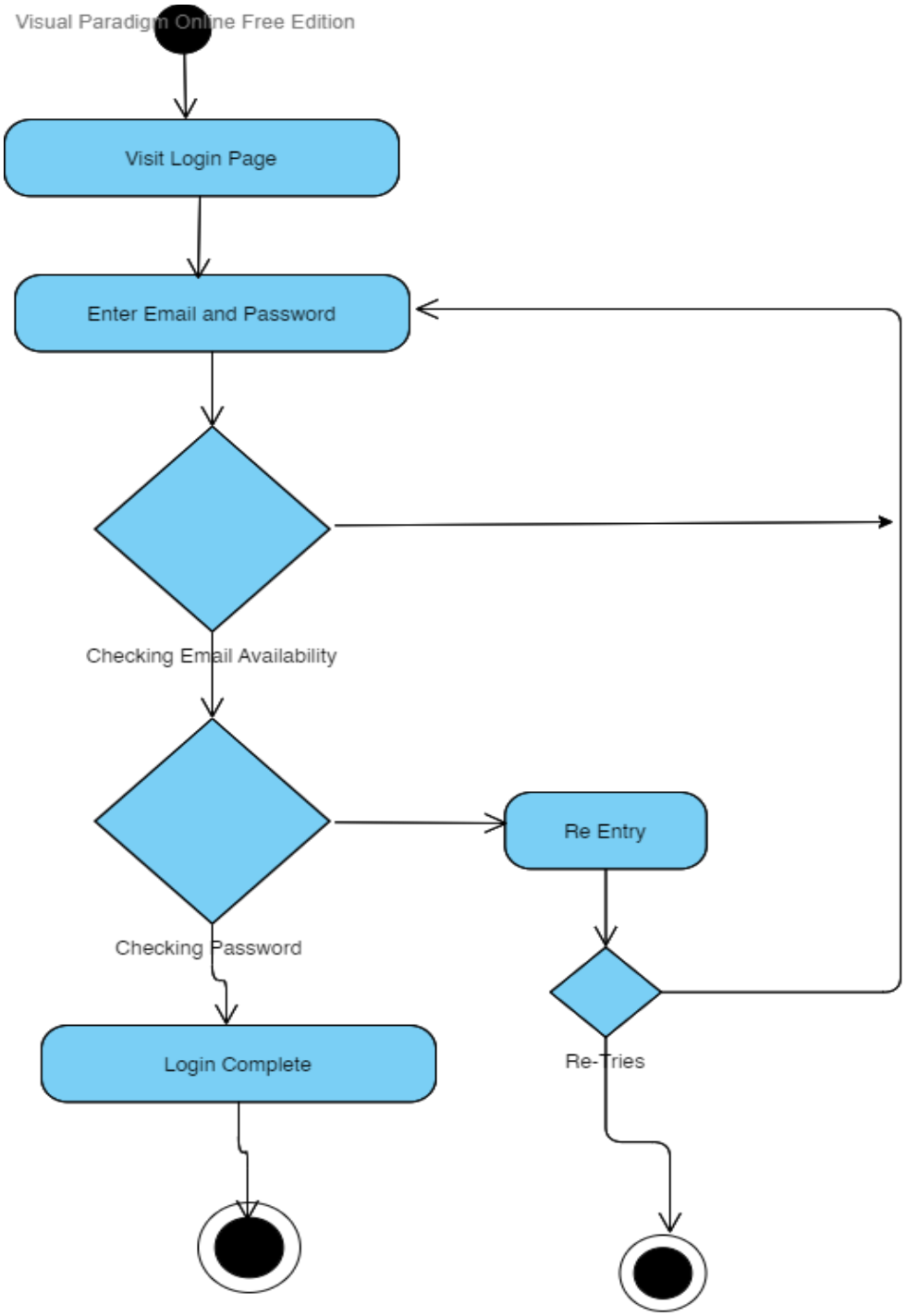


Fig: Login Activity Diagram

6.3 LogOut:

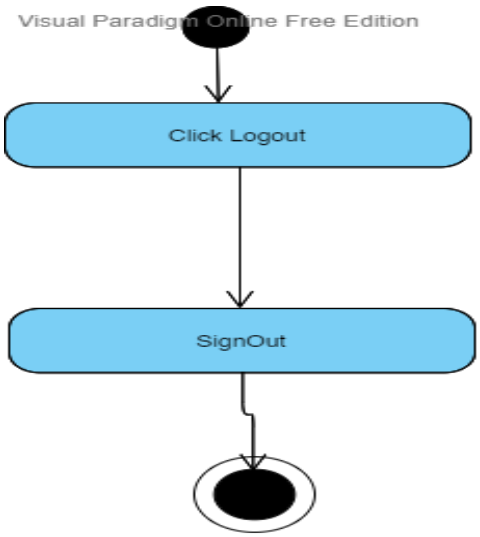


Fig: LogOut Activity Diagram

6.4 Search:

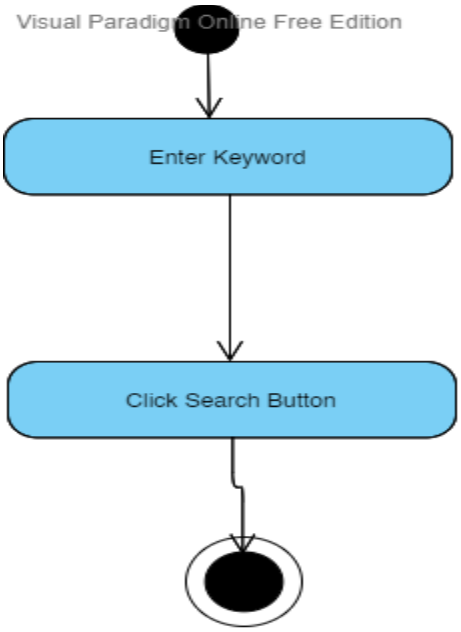


Fig : Search Activity Diagram

6.5 AddToWishList:

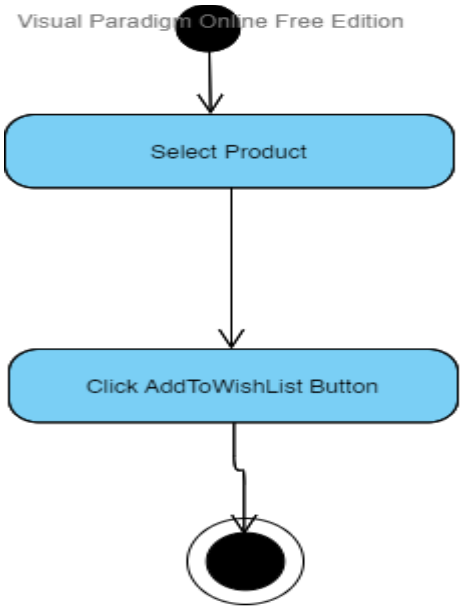


Fig: AddToWishList Diagram

6.6 AddToCart:

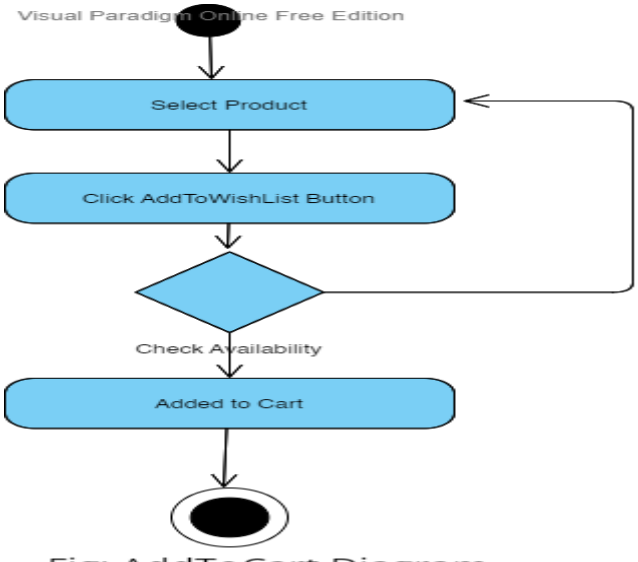


Fig: AddToCart Diagram

6.7 Place Order:

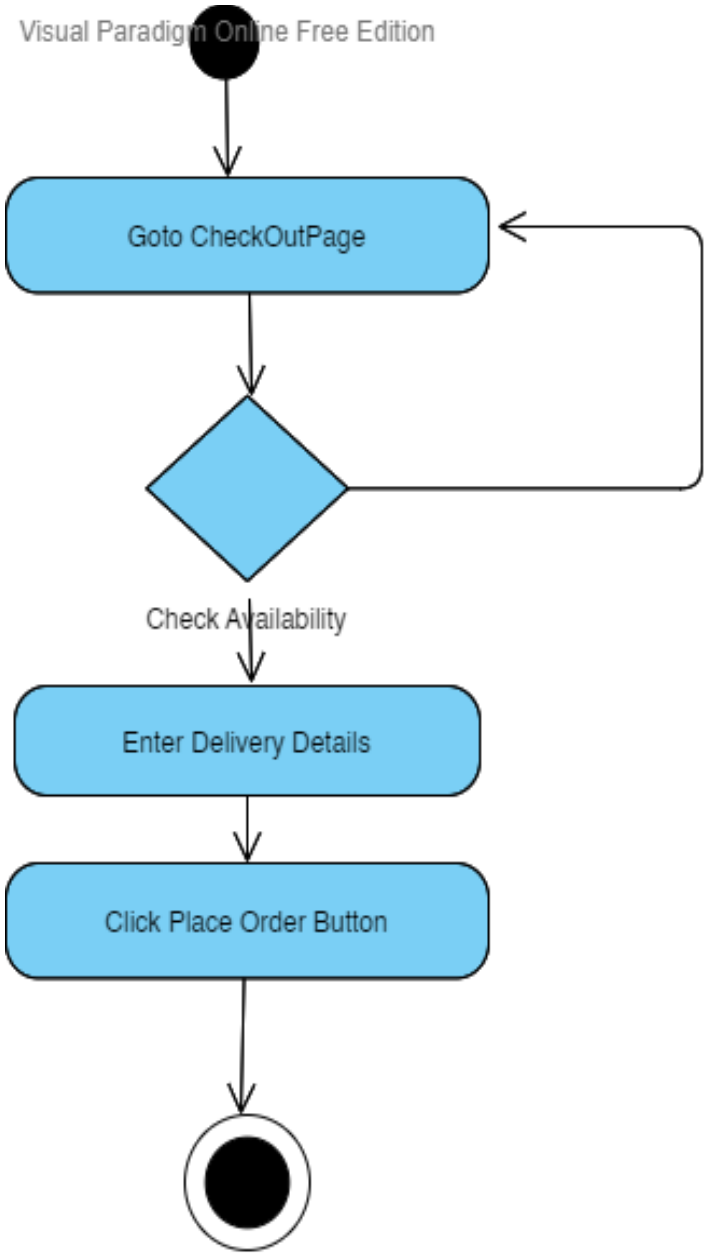


Fig: PlaceOrder Diagram

6.8 Control Category:

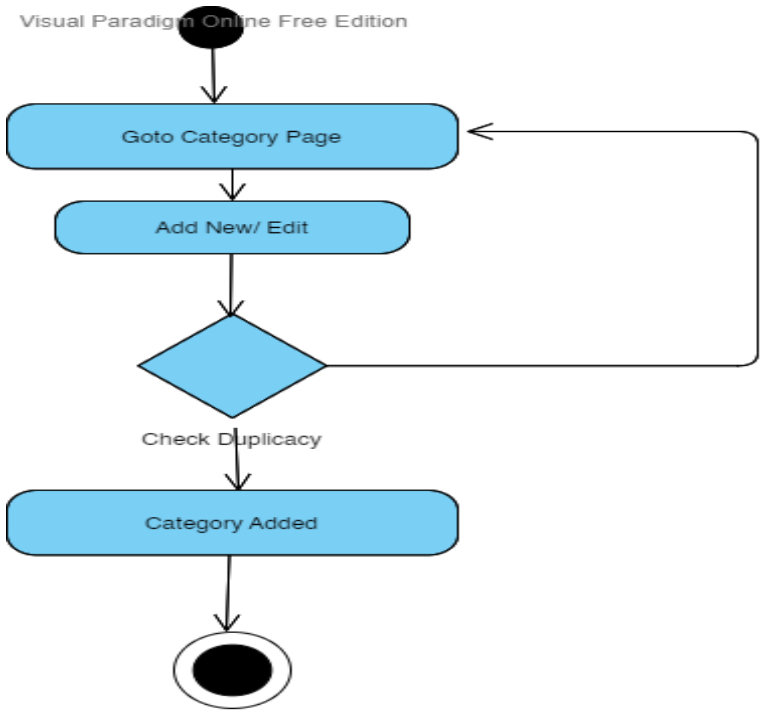


Fig: Category Diagram

6.9 Control Product:

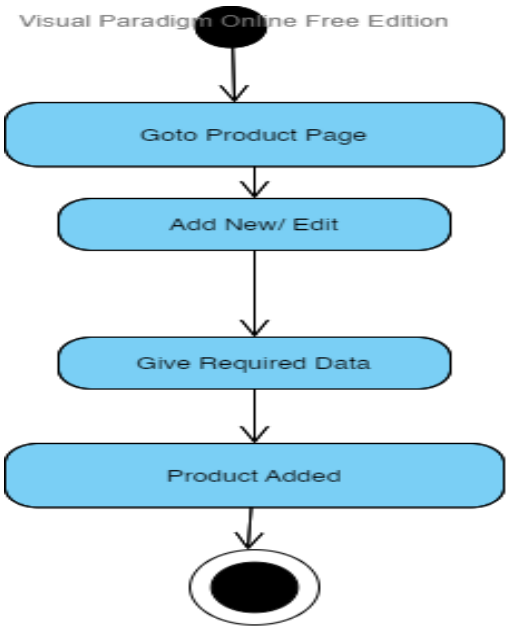


Fig: Product Diagram

6.10 OrderStatus:

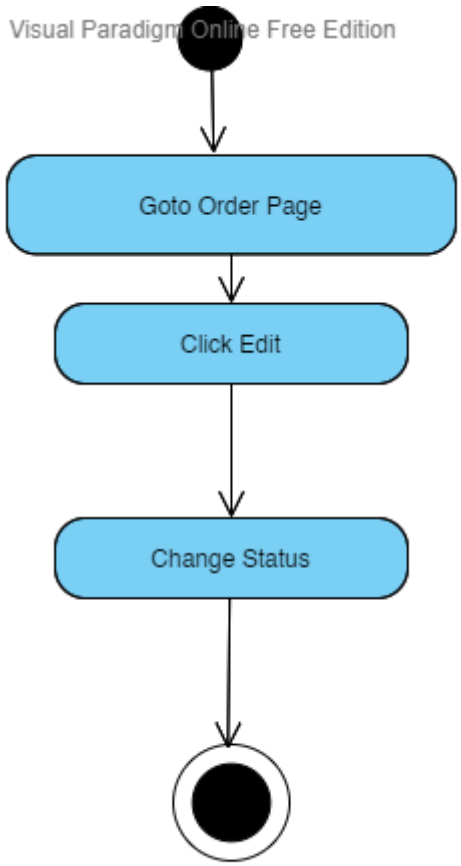


Fig: OrderStatus Diagram

B. Operating Environment:

Operating environment for Agro-Product E-Commerce System is as listed below:

- Operating System: Windows, MacOs, Linux
- Database: SQL Server
- Platform: Web.

C. Design and Implementation Constraints:

The constraints for design and implementation are:

- It must be needed to internet access.
- Language is only English.
- We used SQL server for database
- Visual studio 2019 and Asp.net is used
- HTML, CSS and Bootstrap4 are used.

D. Assumption and Dependency:

It is assumed that the user is familiar with an internet browser and also familiar with handling the keyboard and mouse. Since the application is a web-based application there is a need for the internet browser. It will be assumed that the users will possess decent internet connectivity.

E. System Features:

E.1 Customer:

* Authentication

* Search Products

* Add products to Wishlist

* Add products to cart

* Visit checkout page

* Provide Delivery address and place order.

E.2 Seller:

* Authentication

* Create Category and edit them

* Create Products and edit them

* Modify user order status and deliver the products.

F. External Interface Requirements:

1. **User Interface-**
   - Admin can View, Edit and Delete everything on the product.
   - User can view the whole information.
2. **Hardware Interfaces-**
   - Operating system : Windows
   - Hard disk :40 GB RAM: 512 MB.
   - Processor : Pentium(R)Dual-core CPU

3. **Software Interfaces-**

- Notepad ++
- SQL server
- Visual Studio
- DB-Diagram

4. **Communications Interfaces-**

The Customer must connect to the Internet to access the Website:

- Dialup Modem of 52 kbps.
- Broadband Internet.
- Dialup or Broadband Connection with an Internet Provider.

F. Non-Functional Requirements:

1. Performance Requirements-

There is no performance requirement in this system because the server request and response is depended on the end user internet connection**.**

1. Security Requirements-

- System will use secured database.
- Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
- System will have different types of users and every user has access constraints.

2. Safety Requirements-

The database may get crushed at any certain time due to virus or operating system failure. There for it is required to take the database backup so that the database is not lost. Proper UPS/ Inverter facility should be there in case of power supply failure.

3. **Maintainability Requirements -**

Maintainability defines the time required for a solution or its component to be fixed, changed to increase performance or other qualities, or adapted to a changing environment. Like reliability, it can be expressed as a probability of repair during some time. For example, if you have 75 percent maintainability for 24 hours, this means that there's a 75 percent chance the component can be fixed in 24 hours.

4. **Usability Requirements -**

Usability is yet another classical nonfunctional requirement that addresses a simple question: *How hard is it to use the product?* Defining these requirements isn't as easy as it seems. There are many types of usability criteria.

5. **Reliability Requirements -**

This quality attribute specifies how likely the system or its element would run without a failure for a given period of time under predefined conditions. Traditionally, it's expressed as a probability percentage. For instance, if the system has 85 percent reliability for a month, this means that during this month, under normal usage conditions, there's an 85 percent chance that the system won't experience critical failure.

6. **Look and Feel Requirements-**

The look and feel requirements describe the intended spirit, the mood, or the style of the product's appearance. These requirements specify the intention of the appearance, and are not a detailed design of an interface. This requirement does not say the company logo must be prominent, nor does it talk about the colors to be used.

7. **Cultural and Political Requirements-**

Cultural and political requirements are special factors that would make the product unacceptable because of human customs, religions, languages, taboos, or prejudices. These requirements can originate from almost any aspect of human behavior.

8. Operational Requirements-

Operational requirements pertain to the scenarios within which the product will operate. Operational requirements usually cover the following concerns:

- Mission profiles
- Infrastructure needed
- Logistics and maintenance
- Responsible party for generating the requirements
- Environment

10.Legal Requirements-

Legal Requirements means any treaty, convention, statute, law, regulation, ordinance, license, permit, governmental approval, injunction, judgment, order, consent decree or other requirement of any governmental authority, whether federal, state, or local.

III. System Design and Analysis:

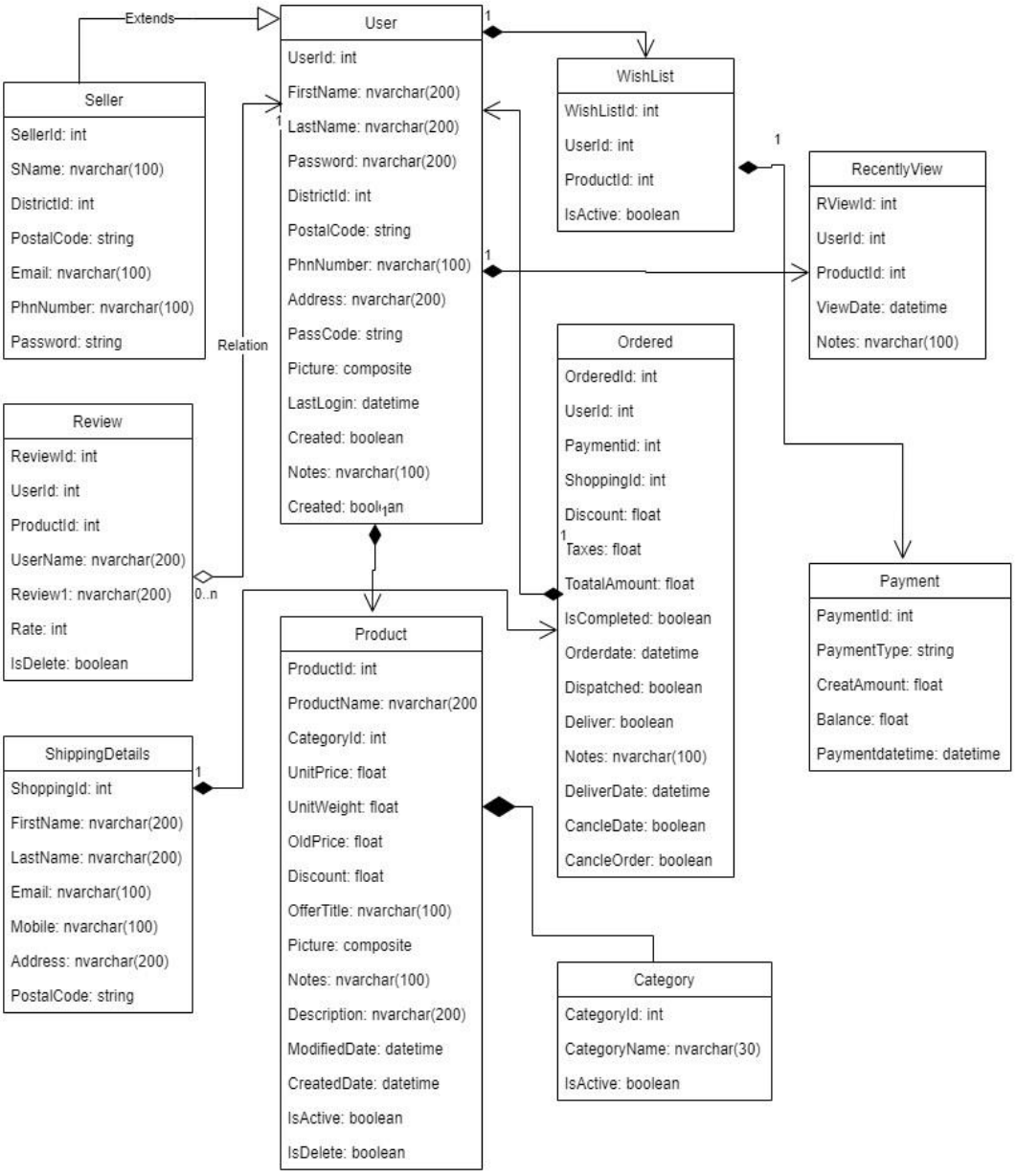
A. System Design:

1. Design Goals:

The primary goal of e-commerce is to reach maximum customers at the right time to increase sales and profitability of the business. Functions of e-commerce include buying and selling goods, transmitting funds or data over the internet.

B. Proposed Software Architecture:

1. Class Diagram:



2. Class Responsibility Collaborator (CRC):

- CRC card are usually created from index cards. Members of a brainstorming session will write up one CRC card for each relevant class of their design. This card is partitioned of three areas:
- On top of the card, the class name.
- On the left, the responsibilities of the class.
- On the right, collaborators with which this class interacts to fulfill the responsibility.

CRC Components:

Class Name	
Responsibility • Operations may go across several line	Collaborators • Partners • Components

User	
UserId FirstName LastName Password PostalCode Addresss PhnNumber Picture Created	Seller Wishlist Review RecentlyView Ordered

Seller	
SellerId SName District Email PhnNumber Password PostalCode	User

WishList	
WishlistId UserId ProductId IsActive	Products User

Review	
RViewId UserId ProductId ViewDate Notes	User Product

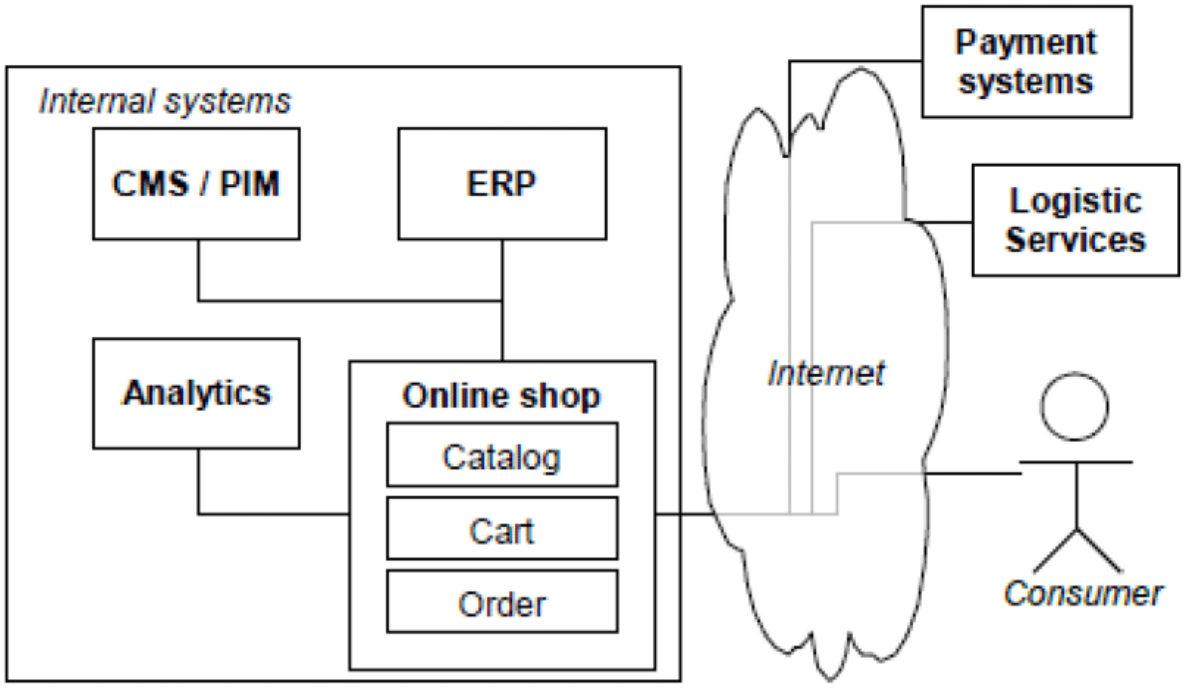
Payment	
PaymentId PaymentType Balance CreatAmount	User WishList

Ordered	
OrderId UserId PaymentId ShoppingId Taxes Deliver DeliverDate CancelOrder	User Payment Shopping

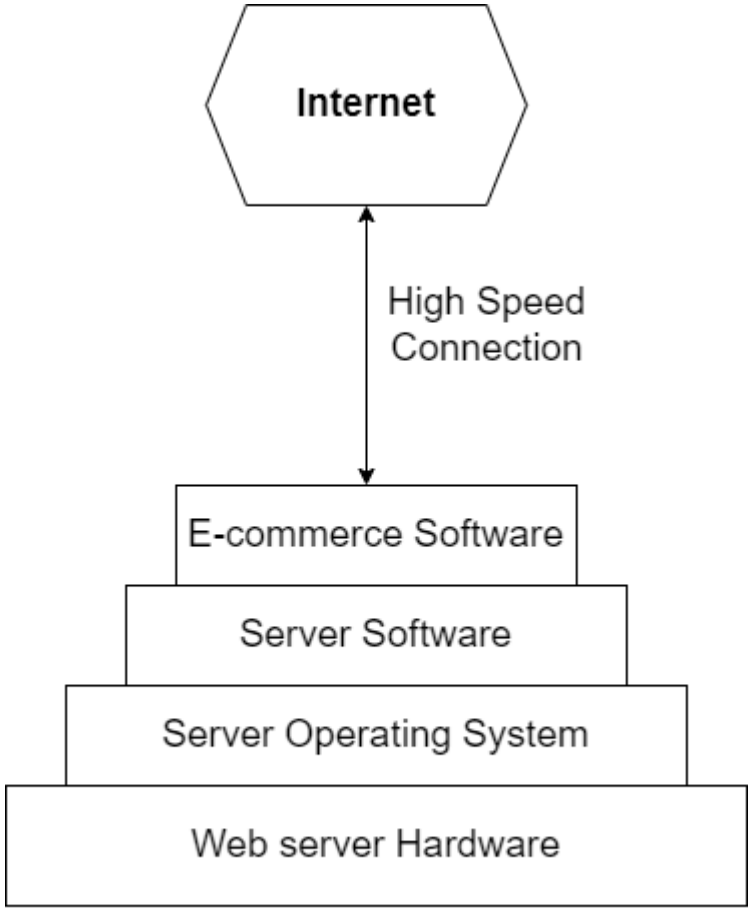
Products	
ProductId ProductName CategoryId UnitPrice Discount Picture	User Seller Category

ShippingDetails	
ShippingId FirstName LastName Email Address Mobile	Order User Seller

3. Subsystem Decomposition:



4. Hardware / Software mapping:



Hardware/Software Mapping

5. Data Dictionary:

User:

AttributeName	Format	Field Size	Example
UserId	int	100	32
FirstName	nvarchar	100	Rasel
LastName	nvarchar	100	Hossain
Password	string	100	1234
Address	nvarchar	100	Dhaka
PhnNumber	int	100	017……
Picture	composite	100	-
Created	datetime	10	10/10/21

Seller:

AttributeName	Format	Field Size	Example
SellerId	Int	100	02
SName	nvarchar	100	Rana
District	nvarchar	100	Jhenaidah
PhnNumber	int	100	017……
Password	string	100	1234
PostalCode	int	10	7300

WishList:

AttributeName	Format	Field Size	Example
WishlistId	Int	100	02
UserId	Int	100	03
ProductId	int	100	04

IsActive	bool	3	Yes

Review:

AttributeName	Format	Field Size	Example
ReviewId	Int	100	02
UserId	int	100	04
ProductId	Int	100	10
ViewDate	Datetime	100	12/12/2021
Notes	nvarchar	300	something

Payment:

AttributeName	Format	Field Size	Example
PaymentId	Int	100	02
PaymentType	String	100	-
Balance	Float	100	100
CreateAmount	bool	3	Yes

Ordered:

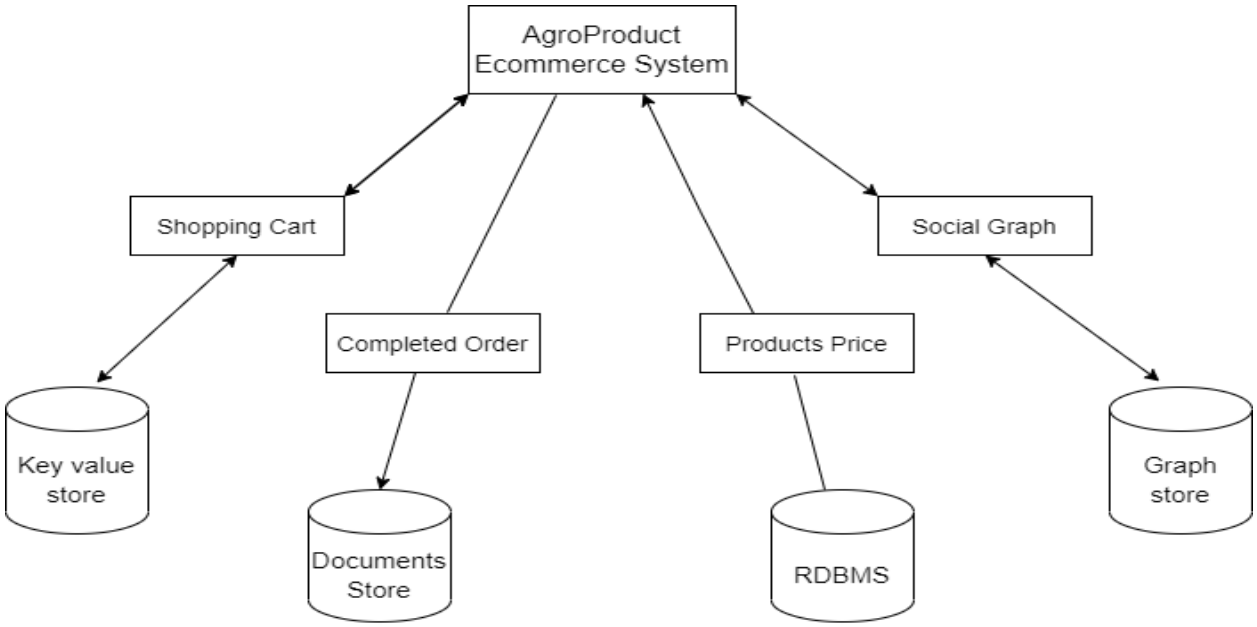
AttributeName	Format	Field Size	Example
OrderedId	Int	100	02
UserId	int	100	03
PaymentId	Int	100	12
ShoppingId	Int	100	14
Taxes	Int	100	120
DeliverDate	Datetime	20	12/12/2021

CancelOrder	Bool	3	Yes

Products:

AttributeName	Format	Field Size	Example
ProductId	Int	100	02
ProductName	nvarchar	100	Rana
CategoryId	Int	100	04
UnitePrice	Float	100	100
Discount	Int	100	20
Price	int	10	50

6. Persistent Data Management:



Fig; Presistant Data Management Diagram

7. Access control and Security:

Security encapsulates all measures taken to protect vital business assets and keep data away from unauthorized or malicious hands.

Without proper security measures, online retailers and their customers are at risk of falling victim to fraud, data breaches, and other such threats. Additionally, E-Commerce security breaches impact the finances of a business and cause damage to company reputation and consumer brand trust.

8. Boundary Conditions:

The Boundary Conditions Page is where boundary conditions are applied to the boundaries of a Mesh. There are a number of prerequisites for applying boundary conditions:

- The Skeleton to which the Mesh belongs must have boundaries defined in it. Boundaries are automatically defined at the exterior edges and corners of all Skeletons when they're first created, so this isn't usually a problem. Boundaries cannot be defined directly on Meshes; they must be defined on Skeletons.
- The Fields to which the boundary conditions apply must have been defined in the Fields & Equations Page.
- The Equations to which the boundary conditions apply must have been activated in the Equations Page.

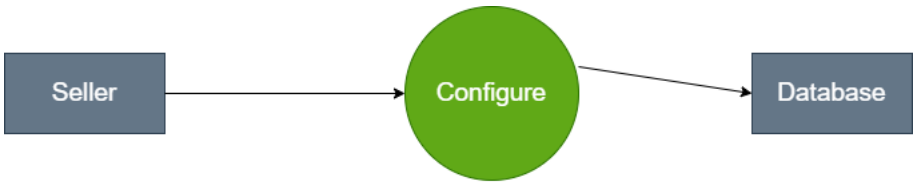
2. Data Flow Modeling:

A data flow model is diagrammatic representation of the flow and exchange of information within a system. Data flow models are used to graphically represent the flow of data in an information system by describing the processes involved in transferring data from input to file storage and reports generation

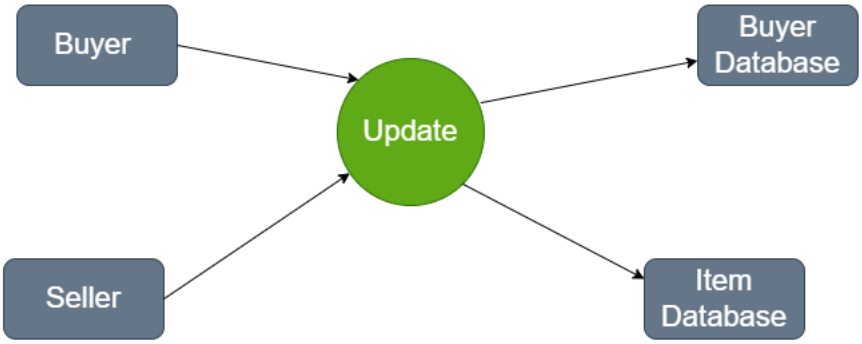
Data Objects are represented by labeled arrow and transformation are presented by circles.

Fig: Level 0 for online Shopping System

Fig: Level 1.1 (Buyer) for online Shopping System



Level 1.2 (Seller) for online Shopping system



Level 1.3 for Online Shopping System

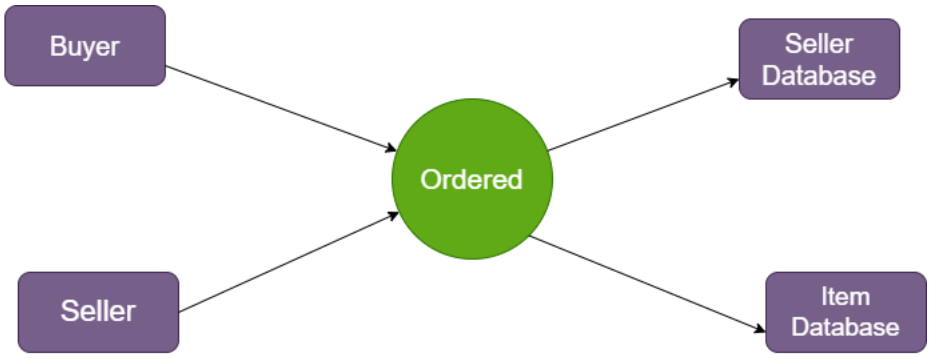


Fig: Level 1.4 for online Shopping System

Fig: Level 1.5 for online Shopping System

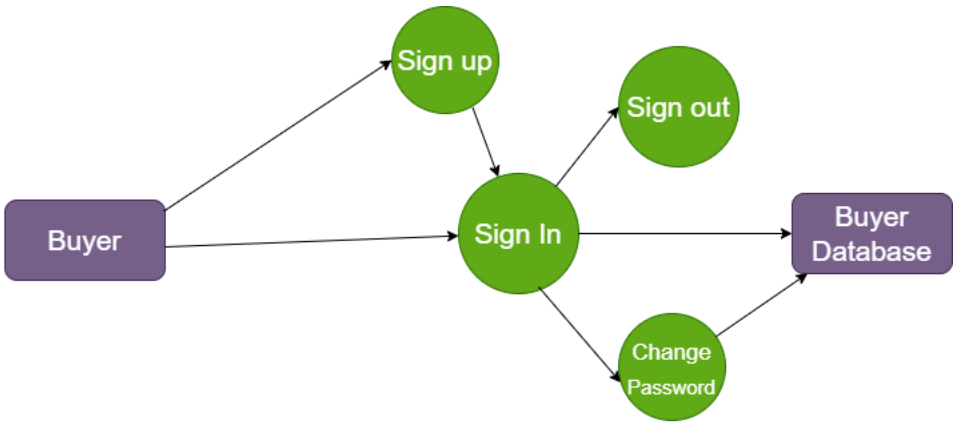


Fig : Level 2.1 (Buyer) for Online Shopping System

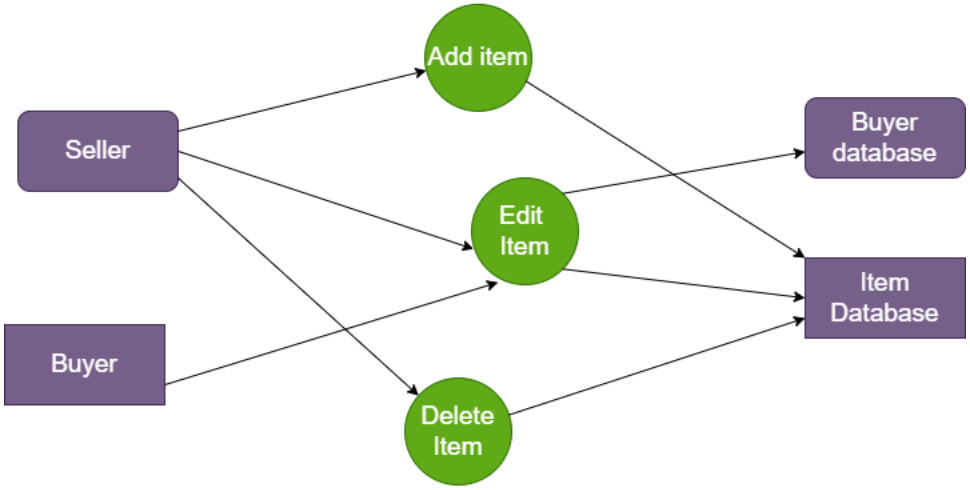


Fig : Level 2.2 for Online Shopping System

F. Data Modeling:

Data modeling in software engineering is the process of creating a data model by applying formal data model descriptions using data modeling techniques. Data modeling is a technique for defining business requirements for a database.

1. E-R Diagram:

ER diagram Of our project is below:

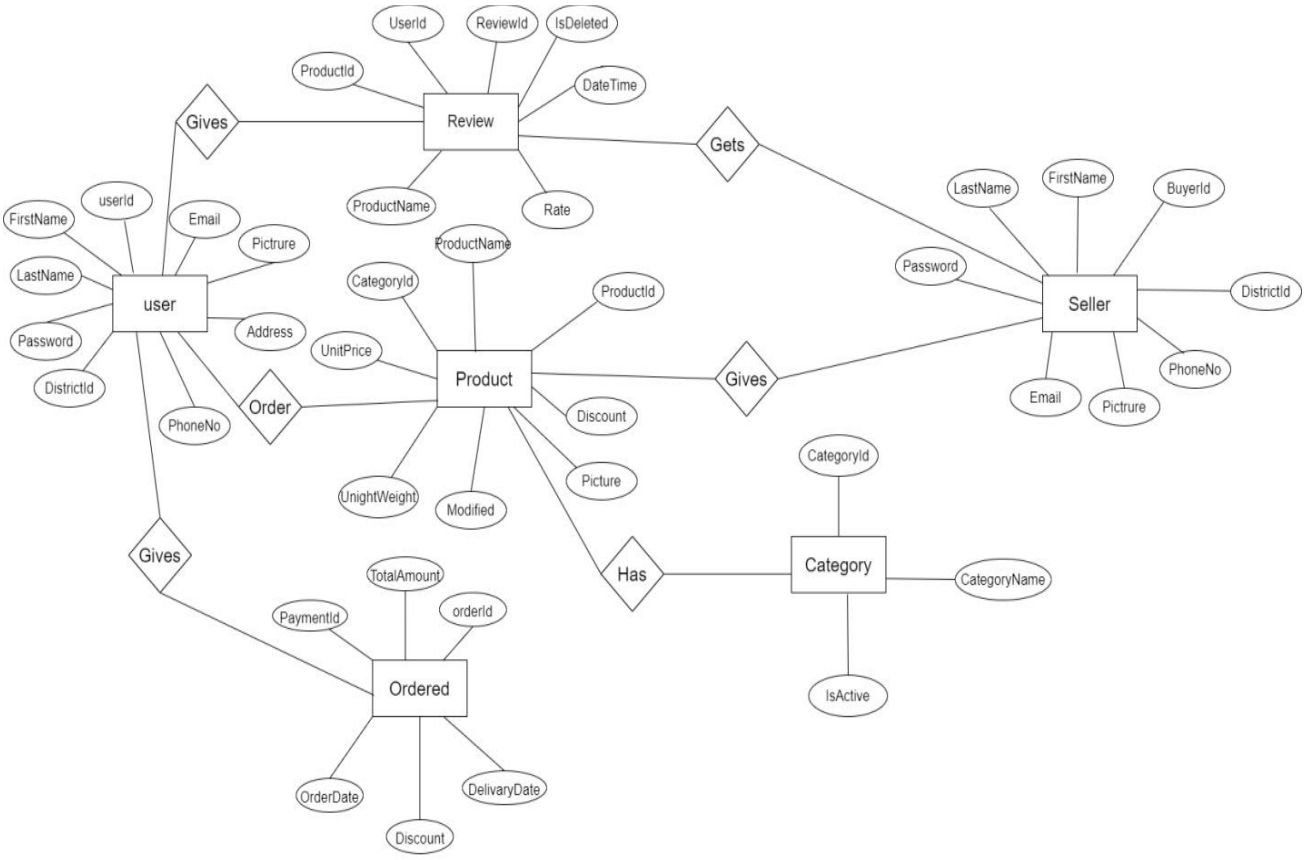


Fig: ER Diagram of AgroProduct E-Commerce System

2. Schema Diagram:

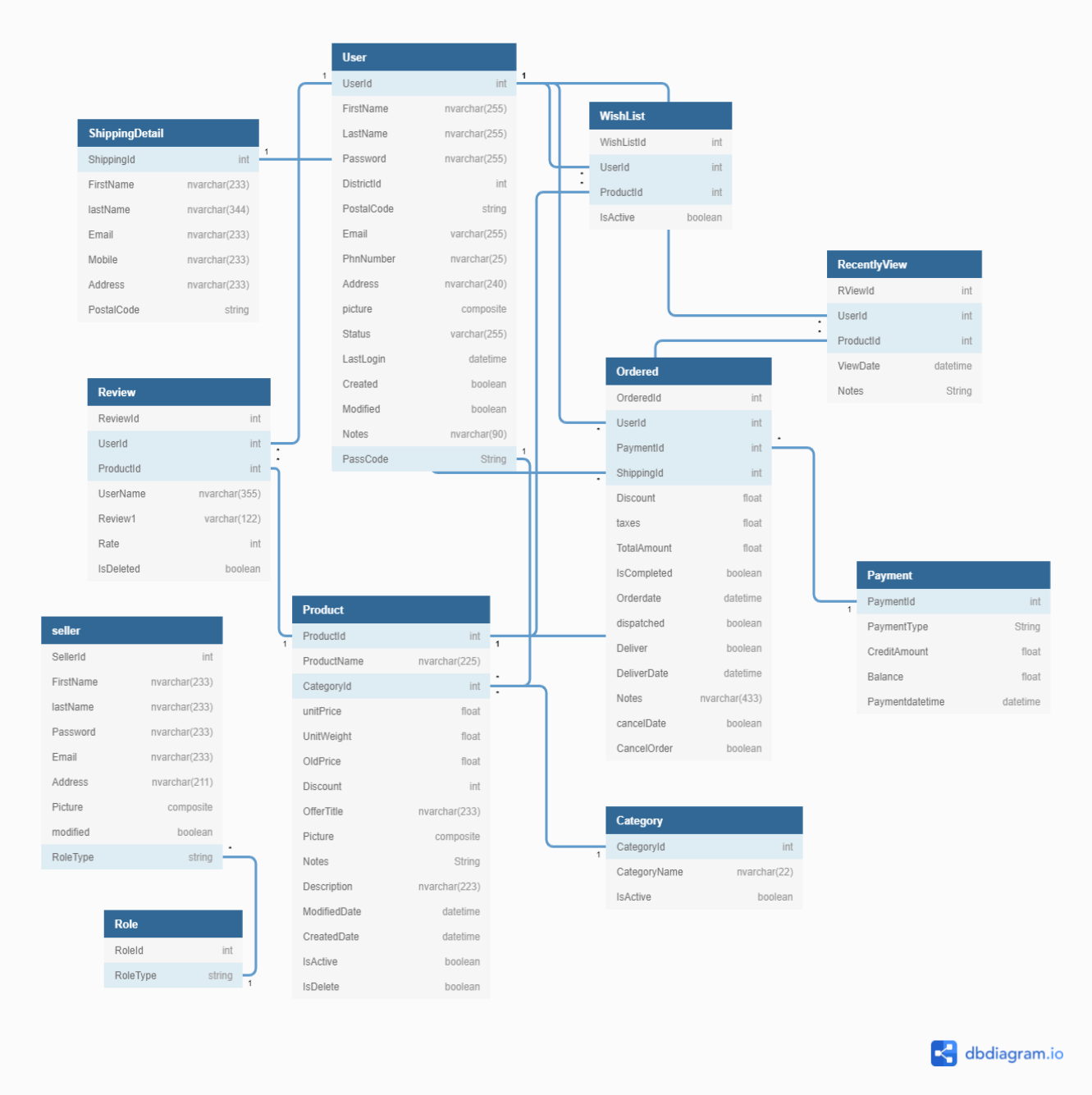


Fig: Schema Diagram

3. Database table Structure:

The Project may use many table

1. User

2. Product

3. Seller

4. Ordered

5.Category

6. Review

7. Payment

8. RecentlyView

9. Wishlist

10. ShippingDetails

User Table:

Field name	Data Type
User_id	Int
Name	String
Password	String
DistrictId	Int
PostalCode	Int
Email	String
PhnNumber	Int
Address	String
Picture	Image
Status	String
Created	Boolean
Notes	String

PassCode	String

Product Table:

Field Name	Data Type
ProductId	Int
CategoryId	Int
UnitPrice	Float
OldPrice	Float
Discount	Int
OfferTitle	String
Picture	Image
Notes	String
Description	String
CreatedDate	Datetime
IsActive	Boolean
IsDelete	boolean

Seller Table:

Field name	Data Type
Seller_id	Int
Name	String
Password	String
DistrictId	Int
PostalCode	Int
Email	String
PhnNumber	Int

Ordered Table:

Field Name	Data type
OrderedId	Int
UserId	Int
PaymentId	Int
ShippingId	Int
Discount	Int
Taxes	Int
TotalAmount	Float
OrderDate	DateTime
IsDeliver	Boolean
DeliverDate	Datetime
Notes	String
CancelDate	DateTime
CancelOrder	Boolean

Category Table:

Field Name	Data Type
CategoryId	Int
CategoryName	String
IsActive	Boolean

Review Table:

Field Name	Data Type
ReviewId	Int
UserId	Int
ProductId	Int
UserName	String
Review1	String
Rate	Float
IsDeleted	Boolean

RecentlyView Table:

Field Name	Data Type
RviewId	Int
UserId	Int
ProductId	Int
ViewDate	DateTime
Notes	String

Payment Table:

Field Name	Data Type
PaymenyId	Int
PaymentAmount	Float
CreditAmount	Float
Balance	Float
PaymentDateTime	DateTime

ShippingDetails Table:

Field Name	Data Type
ShippingId	Int
Name	String
Email	String
Mobile	Int
Address	String
PostalCode	Int

WishList table:

Field Name	Data Type
WishListId	Int
UserId	Int
ProductId	Int
IsActive	Boolean

3. Behavioral Modelling:

1. Sequence Diagram:

A sequence diagram is a type of interaction diagram because it describes how—and in what order—a group of objects works together. These diagrams are used by software developers and business professionals to understand requirements for a new system or to document an existing process.

Our project is about Online Asgro Shopping System. The Sequence diagram of our project:

Sequence Diagram of Registration:

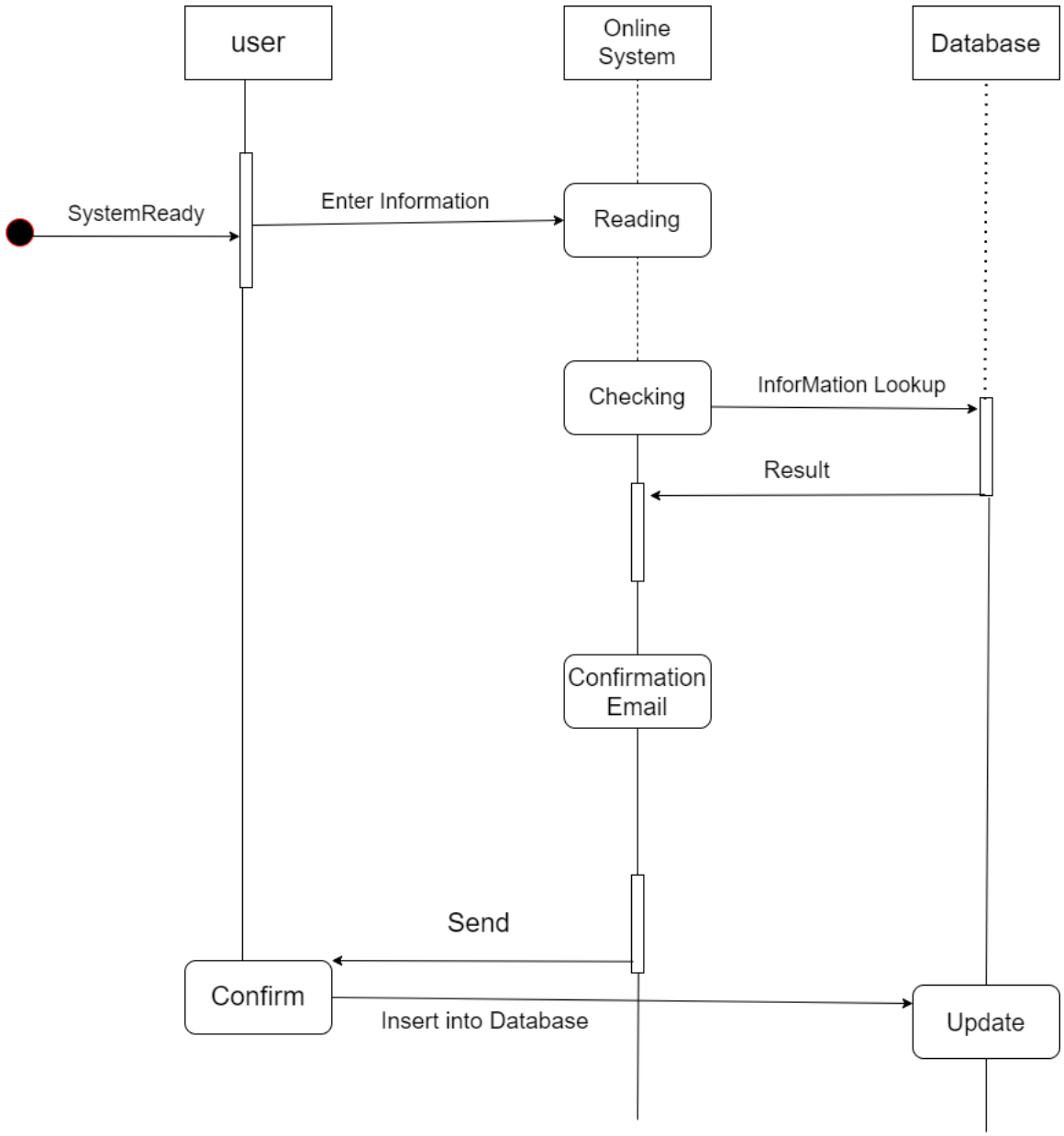


Fig: Sequence Diagram (Registration)

Sequence Diagram of Sign In:

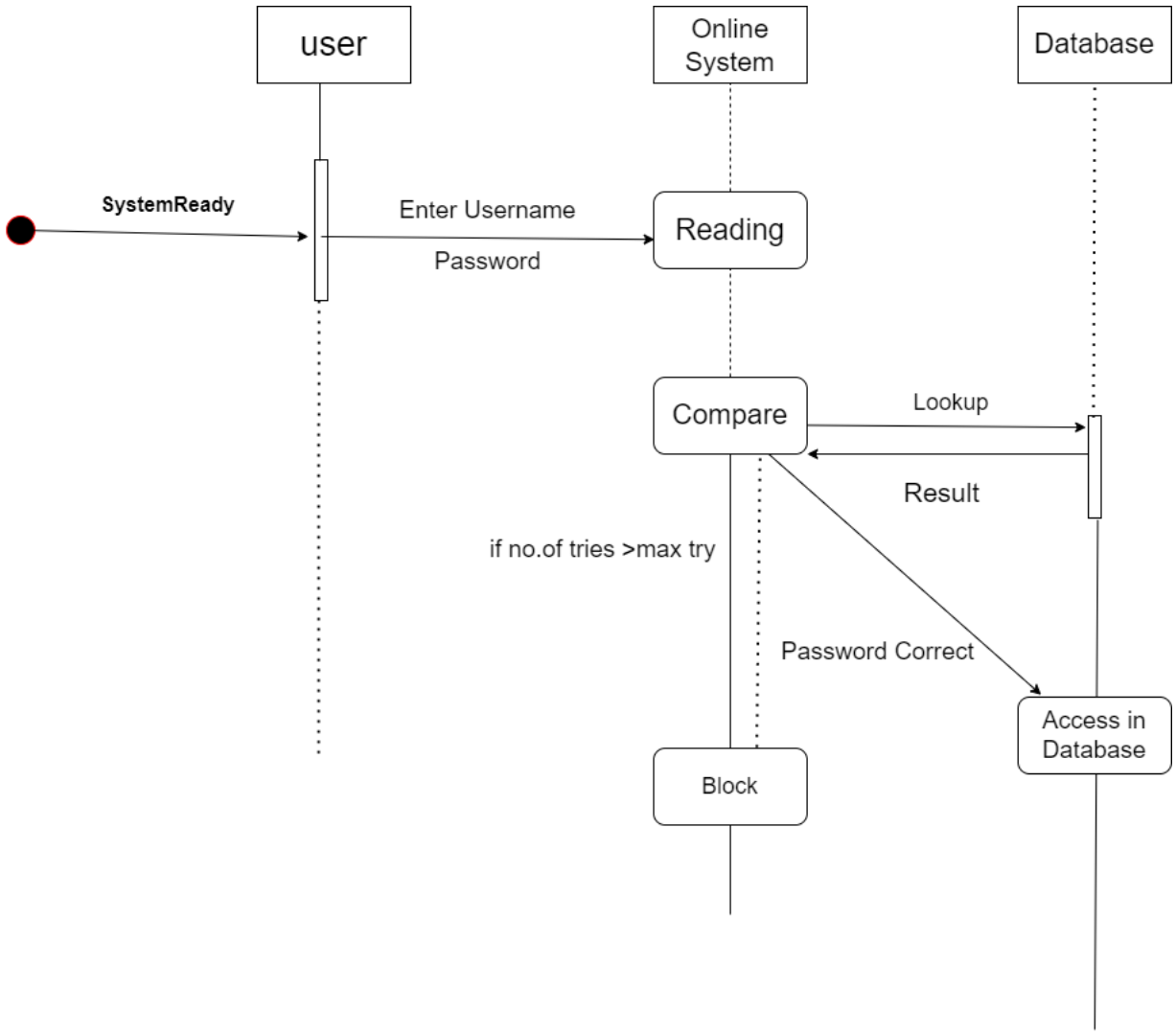


Fig: Sequence Diagram (Sign In)

Sequence Diagram of Updating Product:

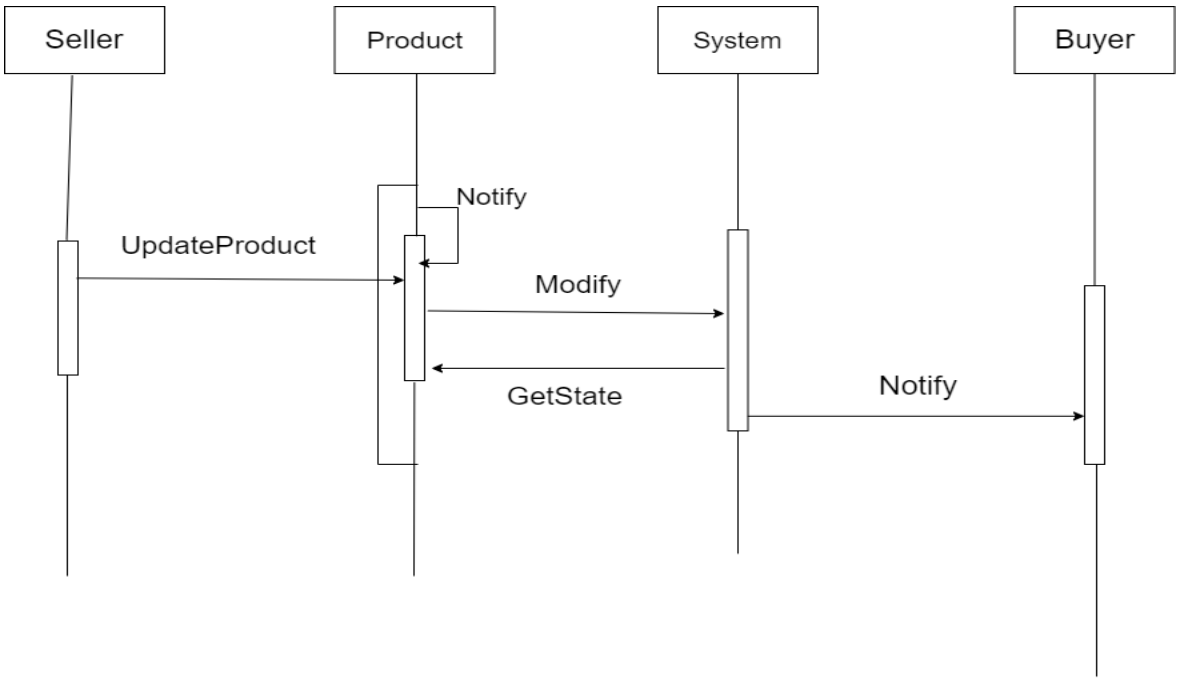


fig: Sequence Diagram (Updating Product)

Sequence Diagram of Adding to cart:

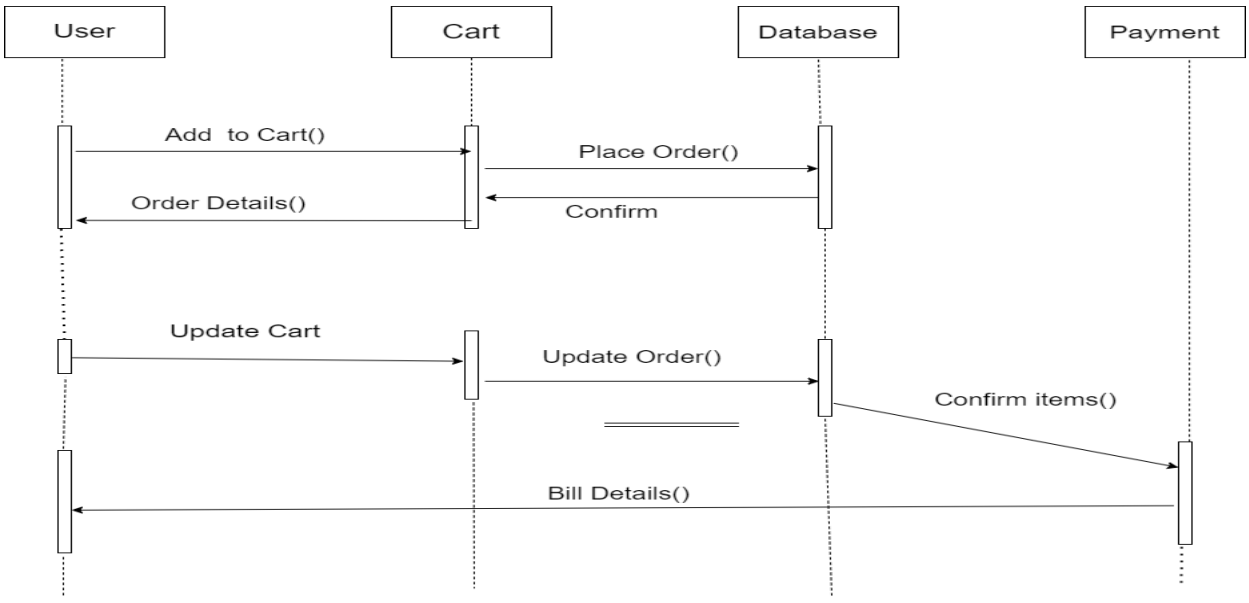


fig:Sequence Diagram of Adding to Cart

2. State Diagram:

Statechart diagram is one of the five UML diagrams used to model the dynamic nature of a system. They define different states of an object during its lifetime and these states are changed by events. Statechart diagram describes the flow of control from one state to another state.

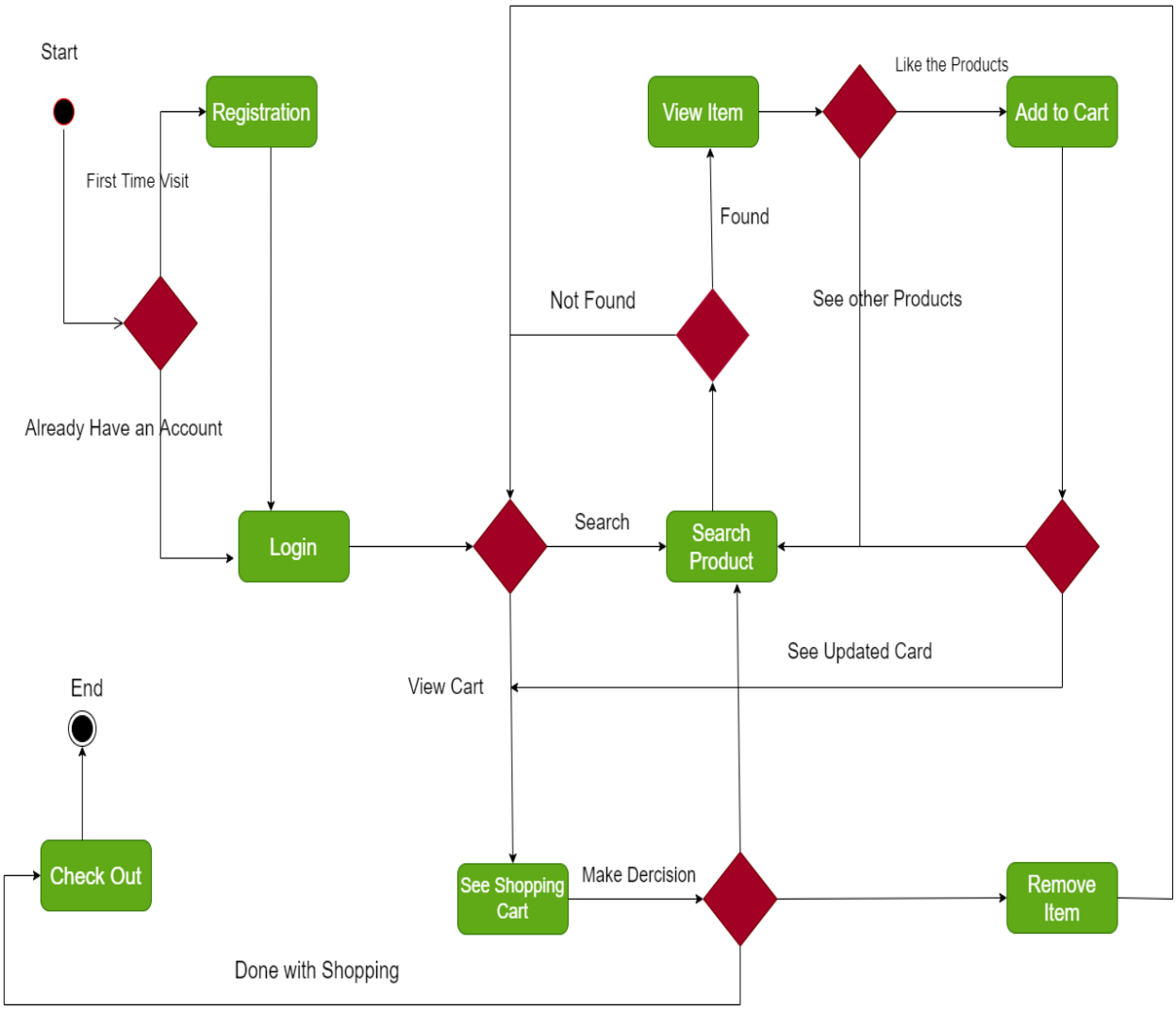
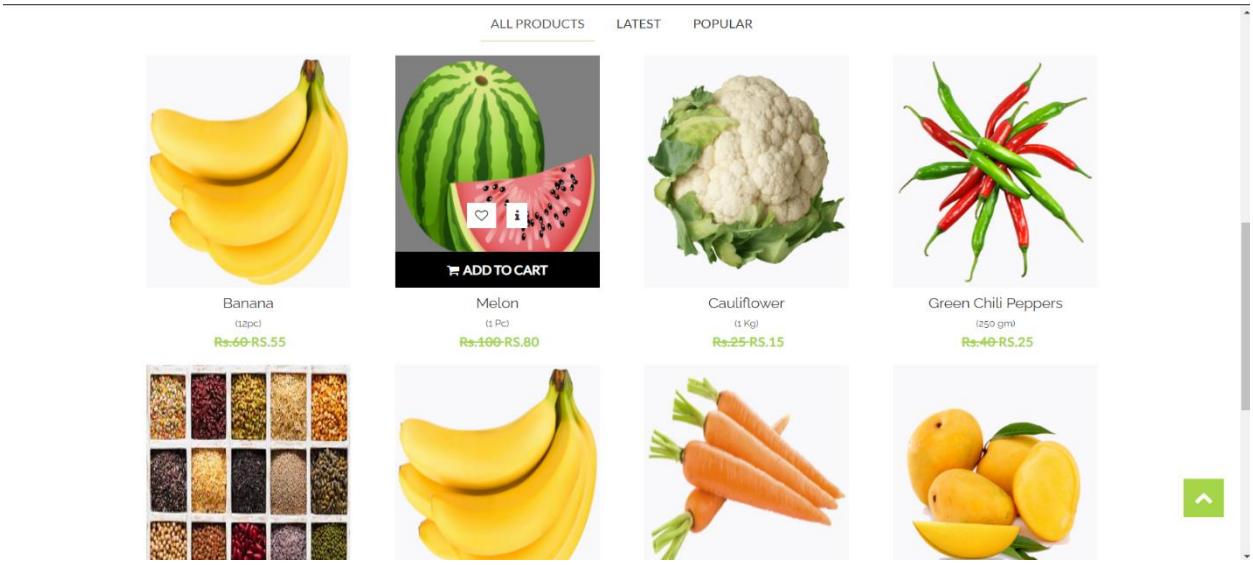
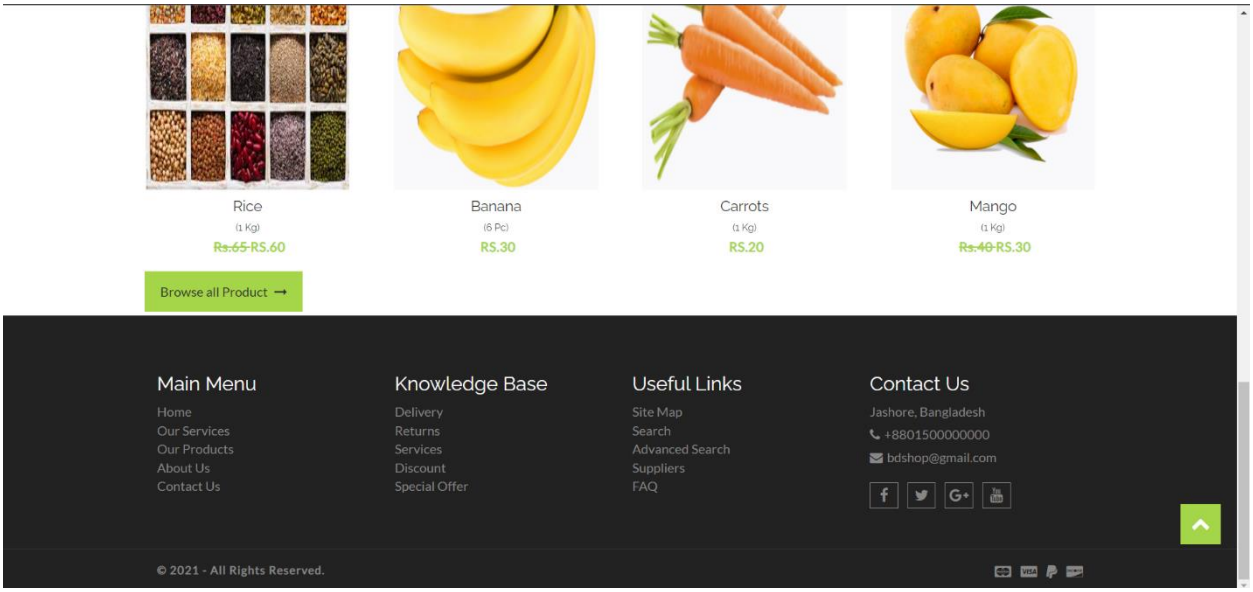


Fig: State Diagram of Online Agro Shopping System

IV. Implementation:

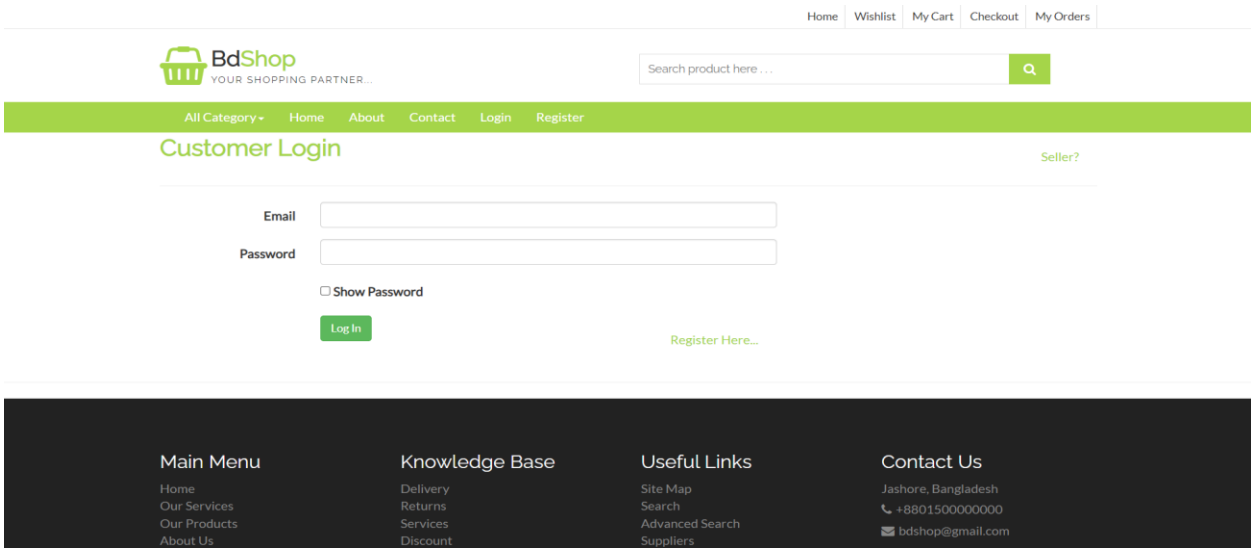
1. Home Page:





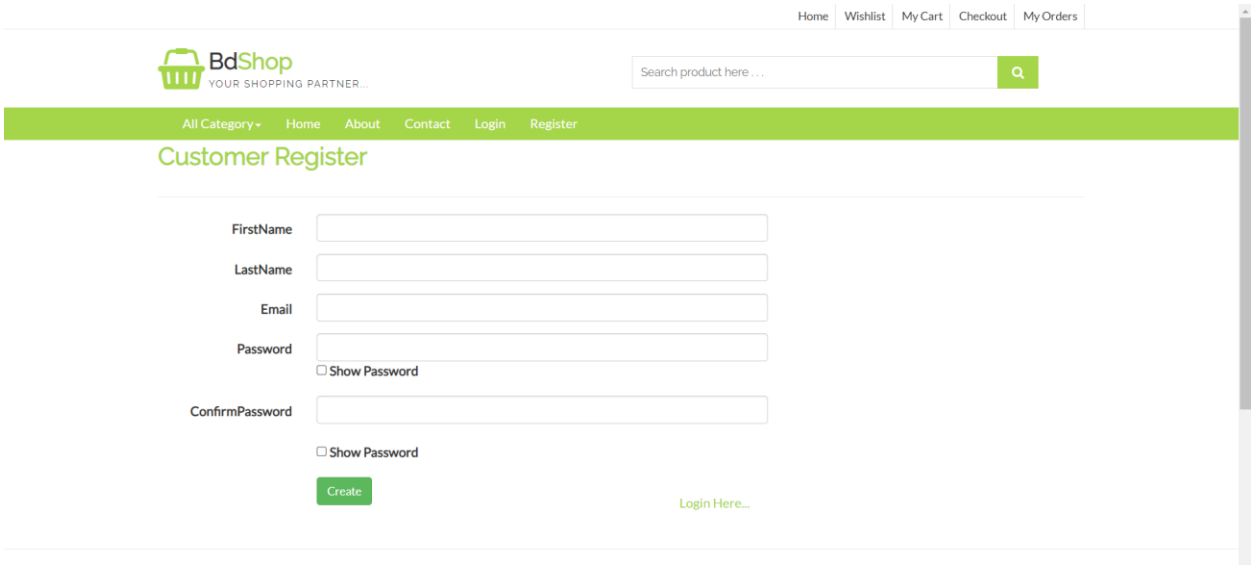
In this page, al user can visit and can see products and search. Moreover, product can be access by category and other essential button like login, registration, cart, wishlist will be here. The footer will show important links and addresses.

2. Customer Login Page:



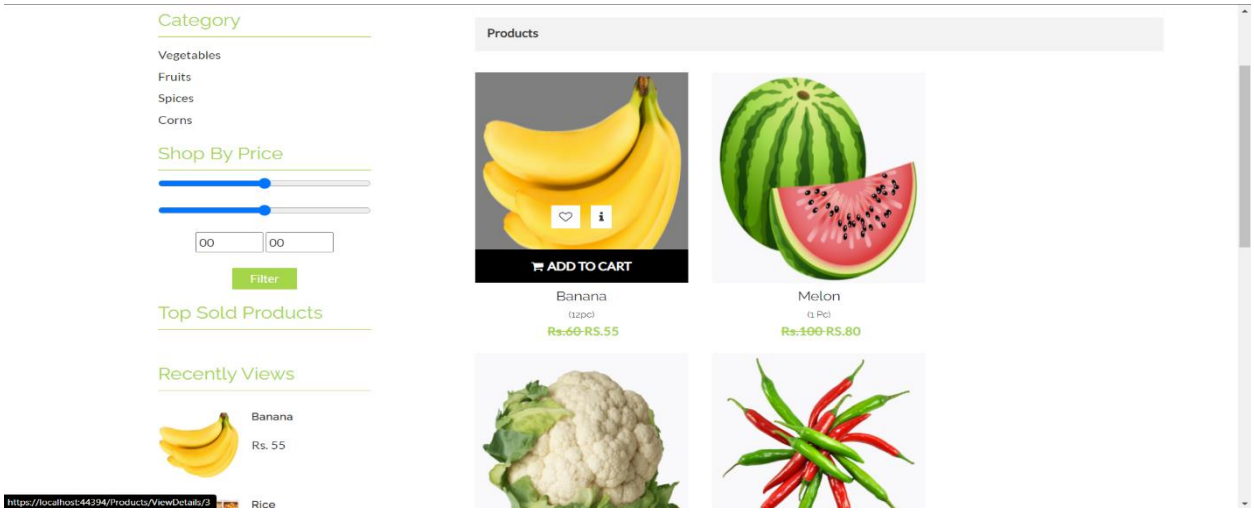
By using the page a registered customer can login to his account and buy products.

3. Customer Register:



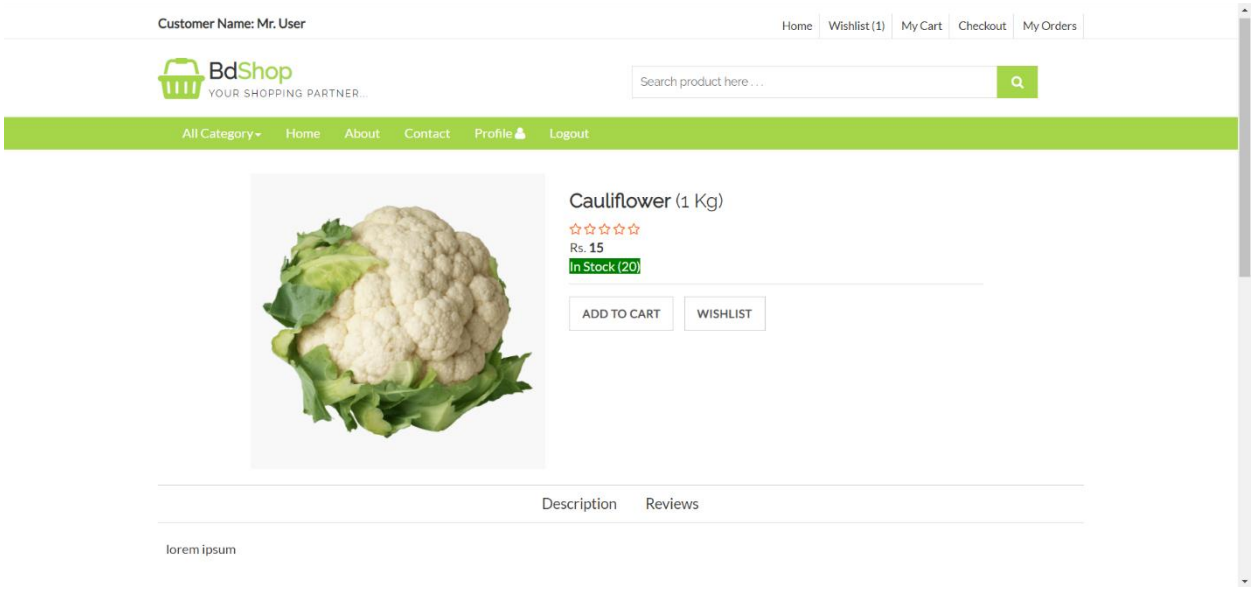
By using this page a new user can be a registered user and buy products.

4. All Products Page:



All the products will appear in this page. Moreover product can be access by category or price range as well as recent views products will appear here product detail, add to wishlist and add to cart button will be here.

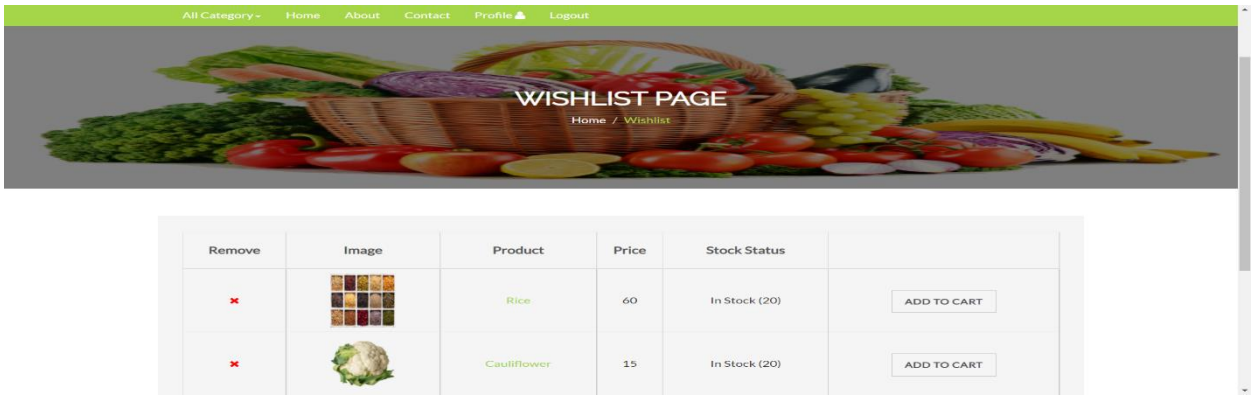
5. Product Details:



In this page all the details of a particular product will appear like Product name, price, quantity, ratings, description etc.

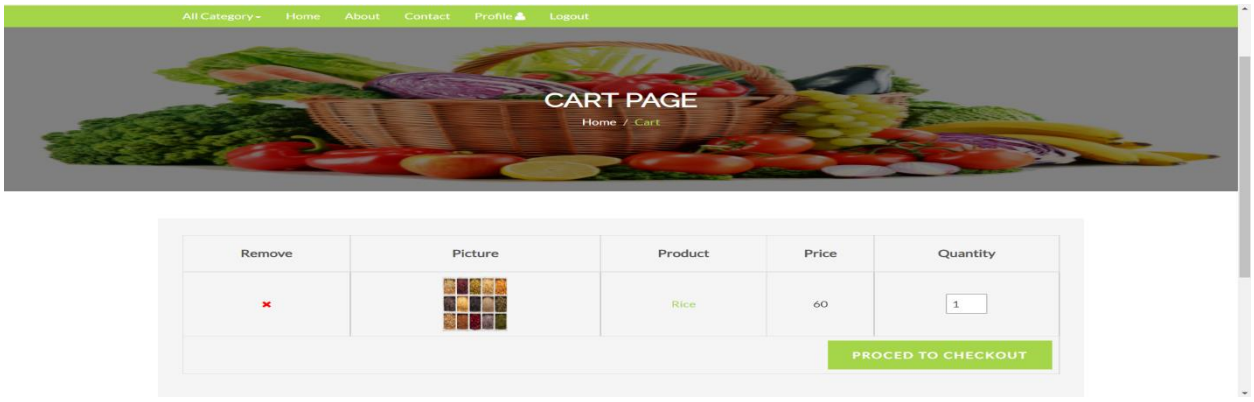
User can add product to wishlist or cart from here also and can give ratings of the product.

6. Wishlist:



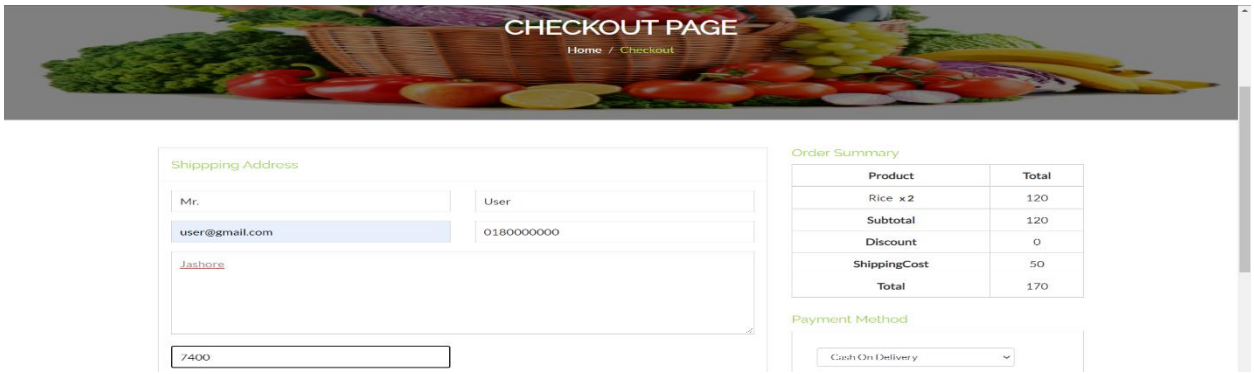
All the products which are added to wishlist will appear here and user can add to cart from here also.

7.Cart:



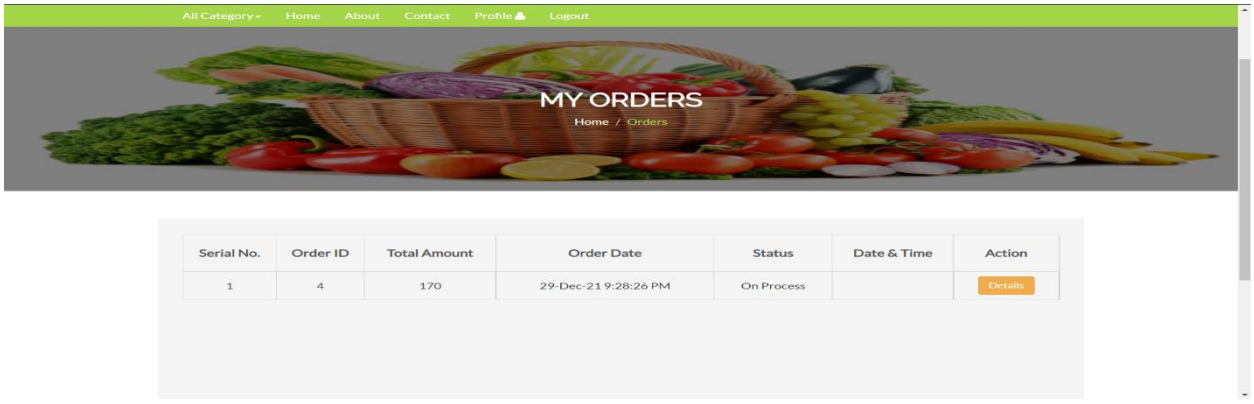
In this page all the products added to cart will appear. User can change the quantity of the products from here and goes to check out page.

8.CheckOut:



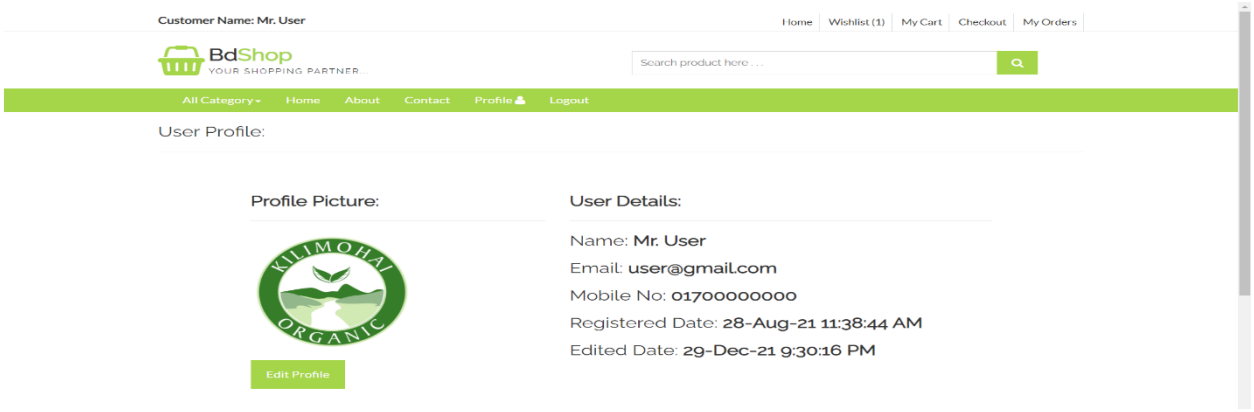
In this page user can see cart summary, total cost with delivery fee and gives the delivery address and can place order.

9. MyOrders:



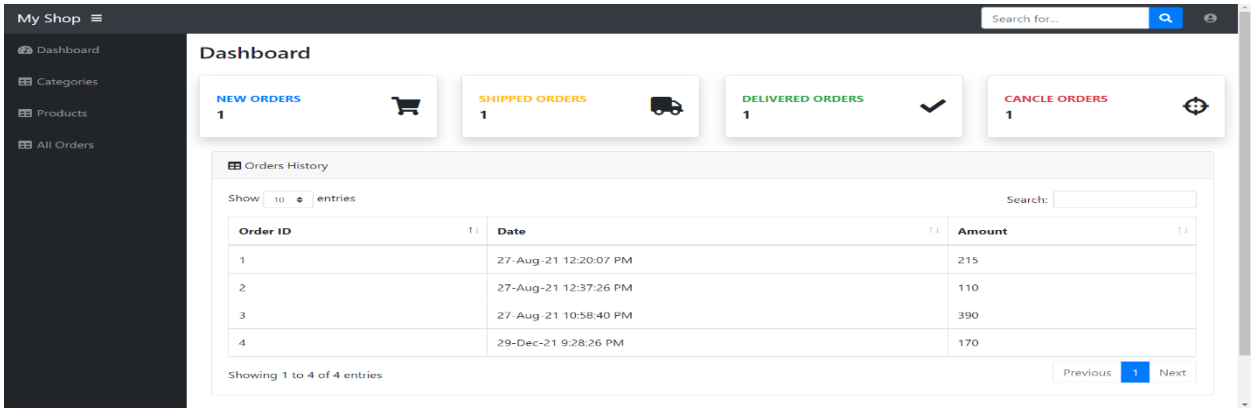
The user can check the previous order made by him and can check his current orders status.

10. Profile:



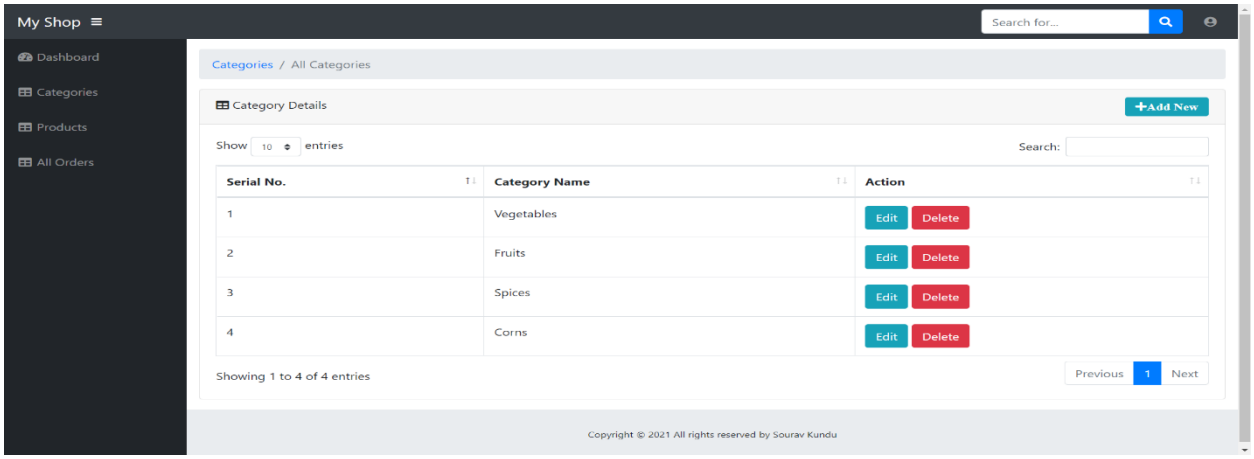
In this page, User can see his details and can change his details as well.

11.Seller Dashboard:



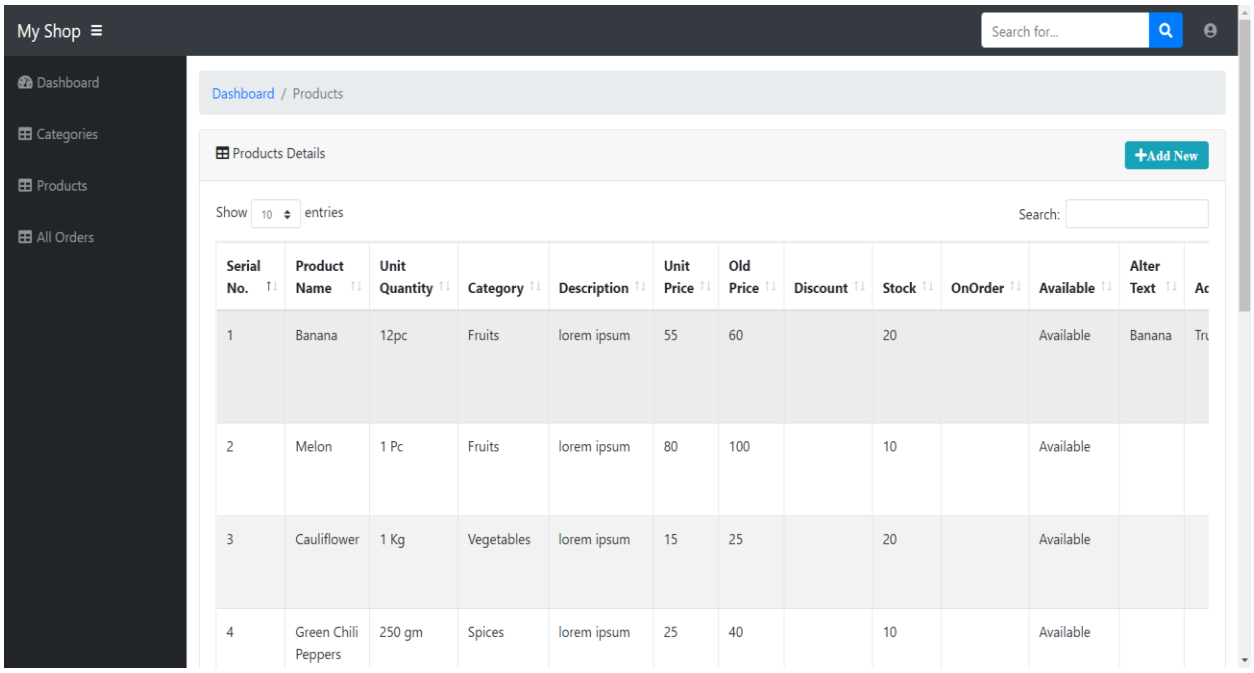
Here, the seller can see total order status in a nutshell and can get some button for further use.

12. Category:



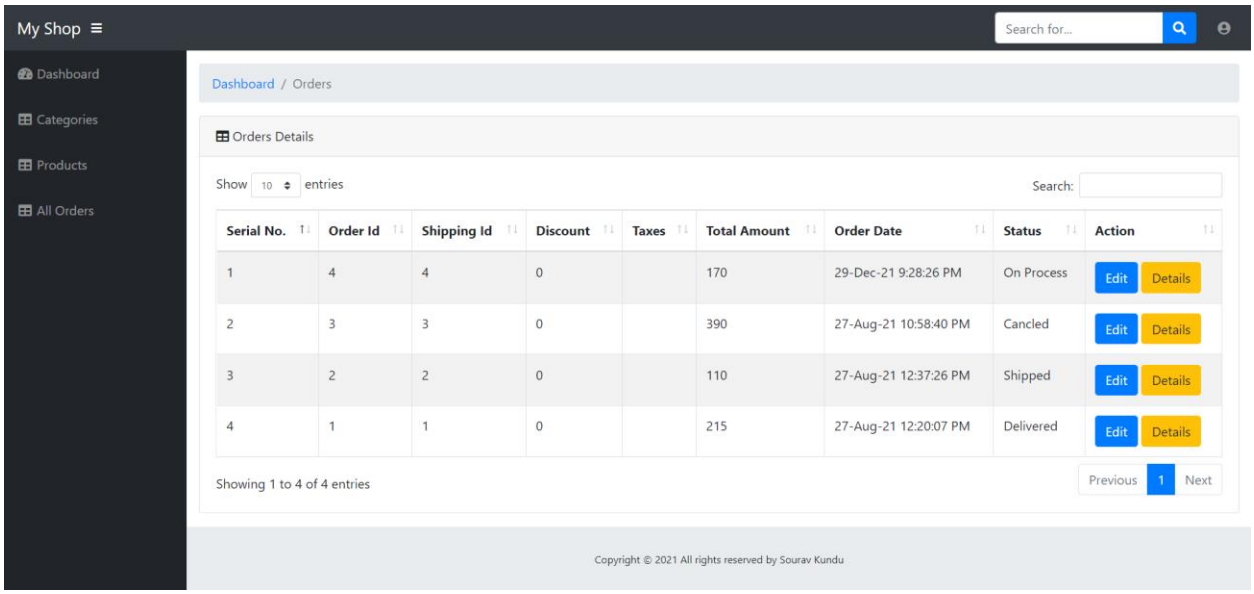
Here seller can see all the categories as well as add new category also and makes any edit of category.

13. Products:



Here, seller can see all the products details and can add, edit products as per needed.

14. Orders:



In this page all the orders will appear and the seller can edit the status of the orders after each process like shipping, delivered or canceled.

By all these pages the system will be constructed and a seller can sell his products and a buyer can buy his desired products from the e-commerce system.

V. Test Plans:

Test plan is the document describing software testing scope and activities. It is the basis for formally testing any software/product in a project.

A.1 Features to be tested

Features to be tested includes a list of all functionalities to be tested that are within the scope of the test plan.

Feature to Test	Test Description
Register	Input all the required informations and proceed to register.
Customer login	Provide Username and Password and proceed to login.
Seller login	Provide Username and Password and proceed to login.
Checkout	Provide shipping address, Choose payment method
Adding to Wishlist	Check product, price, stock status, list of products and proceed to add to wishlist
Adding product	Provide all required informations and add product.
Filtering Search	Choose category, shop by price.
Adding to cart	Choose option to add product to cart.

Updating order status	Edit order status and update
Confirming order	Confirm order

A.2 Features not to be tested

Features not to be tested includes list of all the elements which will not be part of test.

Feature	Description/Reason
View Order status	Used before and stable
Editing User profile	Stable
View My Orders	Orders list
Browse products	Stable
View Thank You	Tested and stable
View Dashboard	Stable

B. Pass/Fail Criteria

The test process will be completed if at least 85% test is passed. All functionalities should be covered in those tests and most defects will be detected and fixed. Minor defects can be ignored but it must be assured that those minor defects don't lead to any severe defects.

C. Approach

C.1 Testing Levels

The testing approach for AgroShop website project is Master Testing Plan (MTP). This consists of unit testing, system/integration and acceptance test levels. The unit testing and system/integration testing will be done by our team members. Acceptance testing will be done by the end users with the assistance of our team members. Program will enter into acceptance test after most of the major defects have been fixed.

C.2 Test Tools

1. Microsoft Visual Studio

D. Requirement Traceability

Requirements traceability is the capability of a requirements management process or tool which enables the process participant or tool user to follow the life of a requirement both forwards and backwards. The requirement traceability for AgroShop shows whether the system meets its requirements.

Requirements	Solution component
Register users	SignUp (UC-2)
Authenticate users	Login (UC-3)
Add products	Control Products (UC-9)
Show products with prices	Search (UC-1)
Search products	Search (UC-1)
Order products	Make Order (UC-6)
Update Order Status	UpdateOrder (UC-10)

E. Suspension and resumption

E.1 Suspension

In general, testing will only stop if somehow the website becomes unavailable. But certain portion of tests may be suspended or skipped if prerequisite tests have previously failed.

Critical path deadline is missed so that the client will not accept delivery even if all testing is completed. A specific holiday shuts down both development and testing.

E.2 Resumption

In case of website's unavailability, testing will resume after access to the website is re-established and the skipped test cases can be tested after the related failed cases are fixed.

The contract is renegotiated with the client to extend delivery. The holiday period ends.

F. Testing materials (hardware/software requirements)

Hardware requirements:

1. CPU: for web 1.6 GHz, for web and database 4 x 1.6 GHz CPU
2. RAM: 4GB
3. Minimum database space: 10GB
4. CPU: Quad 2GHz+ CPU
5. RAM: 6GB
6. Minimum database space: 10GB

Software requirements:

1. MS SQL
2. MySQL
3. MS Visual Studio
4. OS: Windows, Linux, Mac, Android.

G. Test Cases

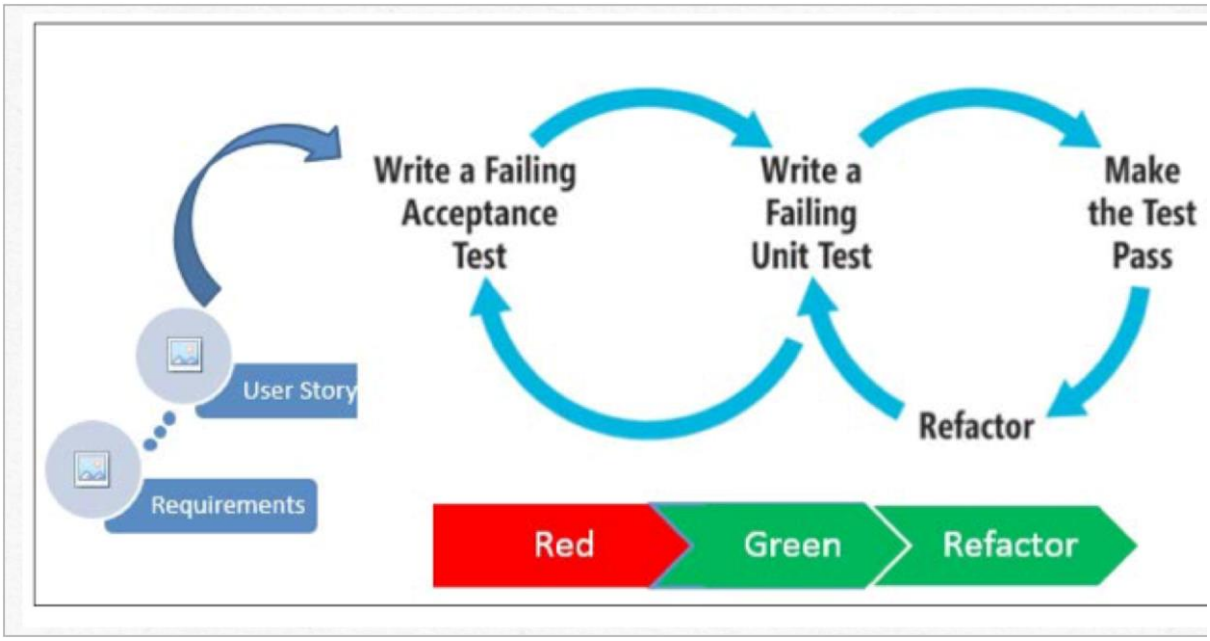
A test case is a document, which has a set of test data, preconditions, expected results and postconditions, developed for a particular test scenario in order to verify compliance against a specific requirement.

Scenario	Test step	Expected Result	Actual Outcome
Ensure all links are working properly	Have users click on various links on the page	Links will take users to another web page accordignto the on-page URL	Pass
Adding new products	Have users provide informations of new products and click Add Product button	Add a new product	Pass
Placing Order	Checkout a product and confirm order	Order placed	Pass
Updating order status	Edit order status on dashboard and click on update button	Order status updated	Pass

H. Testing Strategy

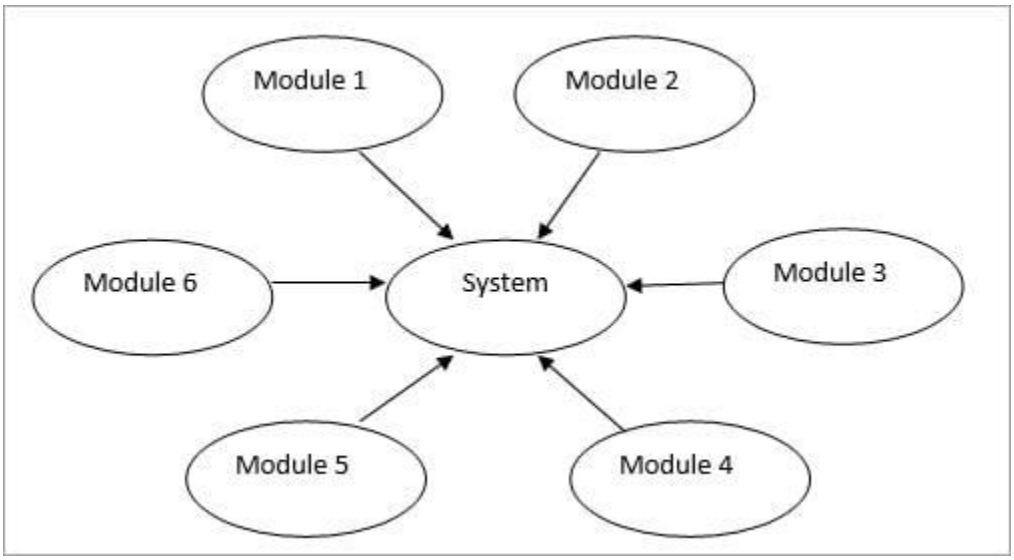
Unit Test

Unit testing is to verify that individual units of code works as they are expected.



Integration Test

Integration testing is the second level of the software testing process after unit testing. Integration testing is to test the modules when integrated to verify that they work as expected.



Performance test

Performance testing determines the performance of the system under real life-based load conditions.

VI. Project Issues:

A project issue is a problem that has been encountered in executing project activities. This problem impairs a project's ability to successfully complete.

A project issue is almost always one of these:

A difficulty in completing a work item/task that is already on the project's plan, or

The discovery that a work item/task (that is necessary for project success) was not identified or scheduled in the project plan

A. Task

Server Issues

When using external Web hosting, the hosting company's servers may experience downtime. When the servers are down, your site is down, and when your site is down, you can't make sales, which translates into profit loss. To reduce the risk of server issues, choose a hosting company with backup servers, and make sure it guarantees at least 99.5 percent up-time for its regular servers.

Bandwidth Issues

Most hosting companies place a limit on the amount of bandwidth your e-business can use each month. Some e-businesses start small and do not require a lot of bandwidth, but the more your e-business grows, the more bandwidth you will likely need. If you anticipate that your business may eventually exceed the bandwidth allotment, choose a host that offers the option to upgrade to a dedicated server. A dedicated server is your own server with unlimited bandwidth. Otherwise, you will have to go through the hassle of moving your entire website to another host.

Dynamic IP Address Issues

The domain name for your business is assigned a “dynamic” Internet protocol address, or IP. An IP address is a series of numbers associated with your domain name. A dynamic IP address is shared with numerous other website owners, which decreases the stability of your e-business website. Dynamic IP addresses are always changing, which also decreases the stability of your site.

Static IP Address

To prevent a dynamic IP address problem, consider purchasing a “static” IP address, which is your own IP address -- it never changes, and is not shared. This results in more site stability. To purchase a static IP address, contact your Web hosting provider or Internet service provider. If purchasing through your ISP, request that the ISP associate the static IP address with your e-businesses domain name.

Security Issues

Hackers can break into your business website's database to steal confidential and proprietary information, along with customer data. Many customers have learned how to look for “security seals” on websites and will not make purchases from sites that are not secure. To prevent hacks and to increase customer confidence, secure your website by purchasing a secure socket layer, or SSL, certificate. Most Web hosting companies offer SSL certificates for an additional fee.

B. Risk

1. Online Security Breach

our e-commerce business is vulnerable to online security breaches and cyber-attacks.

Some of these online security risks can include phishing, website hacking, and unprotected web services.

There are many hackers who can breach the network of a company and access sensitive information.

Therefore, it is necessary that your e-commerce website security is very strong.

2. Client Disputes and Refunds

One of the biggest problems with online shopping in the e-commerce industry is that clients are now able to claim refunds on disputed orders. Most of the time dispute arises when the product never arrives, and the amount has been charged from customer's account.

Sometimes the customer gets charged twice and sometimes the product description does not match the actual product.

3. Violation of Intellectual Property

Violation of intellectual property is also one of the common security threats of e-commerce business.

Protection of IP is very important in the e-commerce industry and includes website logos, content, taglines, products and other images and icons.

Violation of copyright rules and intellectual property can cause you a huge loss.

4. Low SEO Ranking

Out of many e-commerce threats, SEO and digital marketing of your business can also become a serious risk.

Google keeps on changing its algorithms and it drastically affects your ranking.

Low SEO ranking means low traffic to your website which ultimately results in a smaller number of sales.

Therefore, you need to focus on the digital marketing of your e-commerce business too.

5. Poor Customer Service

Poor customer service or experience can be a serious turn off for the customers. Eventually, it can hurt your business.

It includes many loopholes ranging from your rude and unprofessional customer service agents to not up to date inventory management.

Wrong deliveries can also make you lose business.

6. Weak Authentication Methods

If you have weak and very basic authentication methods, then you are prone to more cyber-attacks.

If you are authenticating a user by ID and password only then there are chances that this information can be stolen.

You need strong authentication methods for your online security that can resist attacks.

C. Cost

We can't decide on a cost of the design process!

Even for the most experienced website designers, telling the cost of a project can become extremely difficult at times. Honestly, even you would find it impossible to exactly outline what your e-commerce site needs and what it does not at this moment. Getting a quote or estimation before beginning a website design project is a cost guide at best.

One way you can overcome the uncertainty of cost is by laying down a budget upfront. You simply need to prioritize desired features and functions as per cost to adhere to a particularly strict budget.

D. Ideas for solution

Even for the best of the best website designers in town, it can be impossible to point out exactly what your website needs from the first day. Even when you have a very clear idea of what your e-commerce site is supposed to look like, it can be impossible to determine all the components of the backend. Therefore, the costs, efforts and the to-do list of the entire e-commerce design project can vary considerably between two consecutive weeks.

Another downside of having rigid plans for the first leg of the development process is that you may never know what sort of changes your site may require later on. There are times when your developing business might call for changes in the choice of plug-ins and SEO needs. You might be working with the best Website Design Company in town yet getting the perfect list of functions and features for your e-commerce website can be quite difficult within the first few days.

One way to overcome this challenge is by being flexible about your requirements. Do not take the first list of plug-ins and optimization needs as the final one. Work with your design company to establish goals and prioritize them.

E: Project Retrospective

1.Before the Retrospective

Don’t rush into the nearest meeting room the day after the launch and rattle through a cobbled together agenda just to tick off: “project retrospective”. This is an opportunity to gain useful insights and learnings so a little planning will make all the difference.

2.What, When and Who?

Retrospectives happen at the end of a website project, after you’ve delivered the website to the client or your team. They don’t need to happen immediately after, but ideally, they should take place within a fortnight of finishing the project, so everyone still has the work fresh in their memory. Pick a time when everyone (or as many as possible) can participate, including the most relevant people in your team, your client’s team and all key decision makers and stakeholders.

4.Send Out Prep

A few days before the retrospective, put together an agenda for the meeting and circulate it amongst all the people who were involved in the project. This will give them the chance to reflect on the project and gather their thoughts in preparation for the retrospective. If you need anyone to bring anything in particular, now is the time to make that happen. It may be information on the budget, timeline, client feedback, or anything else that will be key to one or more of the agenda items.

5.During the Retrospective

However, you decide to deliver your retrospective, there are some key agenda items that are recommended as a minimum for the discussion:

Discuss what went well, giving praise to those responsible if it feels fair to do so.

Discuss what didn’t go well. What didn’t go to plan and what was changed? Be careful not to blame any specific individuals, but rather give constructive feedback if appropriate.

Identify what you can learn from both the highs and lows so that you can change or improve things on your next project.

Think if anyone else could gain value from hearing about your experiences, such as colleagues who weren’t on the project or workers in the industry who may enjoy reading your findings as a blog post.

F: Open Issue

1) 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.

2) No instant gratification: When you buy something online, you have to wait for it to be shipped to your home or office.

3) 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.

G: FUTURE ENHANCEMENT

PROJECT NAME:BD shop

1. BD shop would help each person to find any book via our website and get it at home it will save their time.

2. It would provide huge collection of books of all fields.

3. Students will also get audio/video series of courses, i.e., they can learn online/offline.

4. We will be providing some special courses both online and offline.

VII. Tools and Technology:

For this project we have used Asp.Net, C#, HTML, CSS, Bootstrap4 and SQL database management system.

Moreover, Visual Studio 2019, SQL Server 2018 are used and the operating system is Windows 10.

VIII. Learning During Project Training:

We have learnt a lot of things during the project, such as:

- How to work with a team.
- How to use open-source control system.
- Use case modeling.
- Requirement Gathering
- Model-View-Controller model
- How to take user story
- How to analysis user requirements

IX: Glossary:

1. DB:

a. DataBase.

b. Big memory address block which contains large set of data.

2. CRC:

a. Class Relationship Collaboration.

3. SRS:

a. Software Requirements Statement.

b. Statement clarifying the what a software project is supposed to be engineered to doc. Specifies the limits, constraints, and big-picture, abstract plan of the software engineering.

4. SQL:

a. Structured Query Language.

5. DFD:

a. Data Flow Diagram.

6. ER:

a. Entity Relationship.

7. JSON:

a. Java Script Object Notation.

X. References:

1. https://docs.google.com/document/d/1-UMdFO1bzaDfJ7fkr4SynqB2N3U2Y6UI

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3. https://www.cse.msu.edu/~chengb/RE-491/Papers/SRS-BECS-2007.pdf

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