



Daffodil
International
University

Department of CIS
TITLE OF THE PROJECT
Farmer Shop

Supervised by
Mr.Md Sarwar Hossain Mollah.
Associate Professor and Head
Department of Computing & Information Systems
Faculty of Science & Information Technology
Daffodil International University

Submitted by
Kanta Hawlader
ID: 181-16-257

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APPROVAL

This Project titled “...**Farmer Shop**...”, Submitted by**Kanta Hawlader**..., ID No: ...**181-16-257**..... to the Department of Computing & Information Systems, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computing & Information Systems and approved as to its style and contents. The presentation has been held on- 23-08-2022.

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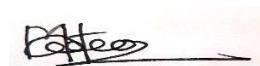
Mr. Md Sarwar Hossain Mollah
Assistant Professor and Head
Department of Computing & Information Systems
Faculty of Science & Information Technology
Daffodil International University

Chairman



Mr. Abdullah Bin Kasem Bhuiyan
Lecturer
Department of Computing & Information Systems
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Mr. Md. Mehedi Hasan
Lecturer
Department of Computing & Information Systems
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Dr. Saifuddin Md. Tareeq
Professor & Chairman
Department of Computer Science and Engineering
University of Dhaka, Dhaka

External Examiner

Declaration

I hereby declare that; this project has been done by me under supervision of **Mr.Md Sarwar Hossain Molla**, Associate Professor and Head Department of Computing & Information Systems, Faculty of Science & Information Technology of Daffodil International University. I am also declaring that this project or any part of there has never been submitted anywhere else for the award of any educational degree like, B.Sc., M.Sc., Diploma or other qualifications.

Supervised By



Mr.Md Sarwar Hossain Mollah.

Associate Professor and Head

Department of Computing & Information Systems

Faculty of Science & Information Technology

Daffodil International University

Submitted By



Kanta Hawlader

ID: 181-16-257

Department of CIS

Daffodil International University

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Dedication

First and foremost, I want to thank my Almighty for empowering me.

I'd like to dedicate my project to my parents. Without my parents' courage, support, and inspiration, I am nothing but a flaw. I'd like to dedicate this project to my two uncles because they guided and encouraged me to do it. They also gave me a lot of encouragement and emotional support as I pursued my higher education.

Abstract

Customers and farmers, Agriculture officers may get online information on crops, statistics, recent product pricing, warehouse management, immediate issue solutions, and new trends through the Agricultural Management System. The Agriculture Management System provides instant issue solutions, up-to-date product pricing, agricultural product warehouse management, and all the benefits of product purchase and sell. Crop trends function in such a way that consumers who access them will find them useful. Fertilizer, research institutions, and research, land availability, disease, soil density suited for associated crops, and statistical information about exports and warehousing are all key components of the Internet information system. Users may access data from anywhere in the form of statistical and PDF-format information retrieval, as well as quick issue solutions. Used to construct front edges as well as rear edges in **Python as programming language, Django Framework as backend development** and SQLite Server. A SQL Server is used to connect the front end with the back end. The Department of Agriculture can manage the agricultural information system. They'll be able to access it over the internet. Users will be assigned a login name and password in order to access the database. The project is under the central supervision and control of the government in the field of proper agricultural work and proper production in the field of agriculture as well as the solution of all agricultural problems, the price of a new product in any district, the sale of items. If there is any problem in the agricultural land using this system, the farmer will post for the solution of that problem and their post will reach the agriculture office. All the activities can be done in our system starting from sending the solution of the problem immediately. This would assure agricultural security while also increasing government revenue.

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CHAPTER-1(INTRODUCTION)

TOPICS OF CHAPTER-1

- Overview of this project
- Document of context

1.1 OVERVIEW OF THIS PROJECT

We frequently go shopping as part of daily living. But the reality is that we will occasionally find it too difficult to conduct necessary proper purchasing due to our busy lives. However, everyone wants to live a pleasant life, and the internet makes this possible for us. Most individuals enjoy making purchases online since they can receive several perks and benefits.

Online buying has so transformed the way we shop. Here, I'm going to create an online store for a little business called "Farmer shop." Farmer Shop is a modest e-commerce business that aims to lessen the time-consuming traditional shopping method used in our nation and to enable clients to directly purchase clothing or related items online. The business sells its goods at competitive costs and also operates an appealing website with high usability and functionality in an effort to give its clients secure, quicker, and better services. The users of this website will be divided into two categories: customers and administrators. By modifying the front-end website and the back-end database, the administrator will act as the service provider, with the clients benefiting from this website.

Customers will be able to find the things they want on the website based on their interests and financial capabilities. Directly purchasing a product from the sellers at fair pricing through this website would also help customers. Additionally, it will enable their clients to use "search" functions to locate their particular preferred models, brands, or goods. Customers can log in and register as authorized users of the system here as well. A consumer will be able to receive the most recent product information via email thanks to the authorization. The business also intends to offer a reliable way for customers to pay for any order, including cash on delivery. Customers will also benefit from the ability to purchase goods using a variety of devices, such as a laptop, desktop, tablet, smartphone, etc.

1.2 DOCUMENT OF CONTEXT:

To make it easier to understand, the entire project report has been broken up into a number of chapters and divided into sections. This text has 15 chapters, in addition to an Appendix A and a Bibliography.

- **Chapter-1: Introduction**

The project as a whole is briefly introduced in this chapter.

- **Chapter-2: Initial Research**

This chapter includes information regarding the project's purpose and goals, its history, all issue areas, and remedies, as well as a brief discussion of the development approach and methodology.

- **Chapter-3: Feasibility study**

A significant analysis of the project's viability and fit is presented in this chapter.

- **Chapter-4: Literature Review.**

This chapter discusses and analyzes the project's history, solutions, existing connected system analysis, and associated research topics.

- **Chapter-5: Tools and Methodology**

This chapter briefly discusses the methodology that will be utilized to build the project, as well as some popular methodologies, which methodologies will be appropriate for this project, and which methodologies will not be suited for this project.

- **Chapter-6: project Planning**

The entire project's successful planning is covered in this chapter.

- **Chapter-7: system Requirement analysis and specification**

This chapter covers all aspects of requirement analysis, including the methods used, as well as all specifications.

- **Chapter-8: System Engineering and build specification**

Engineering plans are covered in this chapter, along with a brief explanation of the various UML diagrams that were designed using the previously examined criteria.

- **Chapter-9: System development and implementation**

This chapter discusses the system's written codes, time boxing methodology, and breakdown of all problem modules, significant revisions to original design, test methodologies, and coding concepts.

- **Chapter-10: all System testing**

This chapter covers testing of all the new system's components as well as other things like test cases and test strategies.

- **Chapter-11: Critical appraisal and evaluation**

This chapter contains all analyses and assessments of my complete research.

- **Chapter-12: Lesson learn**

What I have learned from working on this project is covered in this chapter.

- **Chapter-13: Conclusion**

This chapter includes a quick description of the project's overall synopsis.

CHAPTER-2(INITIAL STUDY)

TOPICS -2:

- The project's history.
- The goals and objectives.
- The project's scope.
- Finding the issue's location
- Potential remedies
- Development methodology and approach.

2.1. THE PROJECT HISTORY.

A small e-commerce business called Farmer Shop is founded in Bangladesh in 2021. A small e-commerce business called Farmer Shop is founded in Bangladesh in 2021. The percentage of internet users has increased daily, and Bangladesh continues to hold the 147th spot out of 176 countries in the ITU's 2017 ICT development index, according to the ITU's annual report. However, the 2017 e-Cab (e-commerce Association of Bangladesh) report states that there are 700 e-commerce sites, 8000 Facebook pages, and 10 billion Taka worth of transactions occur annually on the e-commerce sites. The director of FS is therefore certain that a conventional and well-designed e-commerce website will be the preferable option to draw their customers and enable them to offer their goods at fair pricing. Both for the business and its customers, it will be a simpler and more effective way to buy and sell things. On the other side, customers or consumers will be

able to buy anything through the company's website over the internet 24 hours a day, 7 days a week, and will be able to have the best possible shopping experience.

2.2 THE GOALS AND OBJECTIVES.

The purpose of this project is to create an appealing e-commerce website that is highly practical and usable for both the business and its customers. Through this website, customers will be able to buy any things they desire from the comfort of their homes or from any other location at any time.

Additionally, it will benefit its clients because they will be able to find the things they want while saving a ton of time and money. The website will offer a better solution by researching all of the issues with similar existing websites, benefiting both the business and the users.

- The website will be dependable to all of its customers by offering a secure and effective user interface.
- Customers who are searching for a particular thing can easily get that particular item or band at fair costs or within their chosen budgets.
- By completing a brief registration process, the website will enable its users to become authorized users. Following that, each user will be allowed to make any purchases by logging into their individual accounts.
- It will also offer various kinds of effective search options to make it simple to locate a particular goods or items.
- The website will also offer admins a safe space to handle and keep up with all of the data in the system's backend database.
- Any customer who completes a transaction will be able to get an email confirming the order to the valid email address they provided.

2.3 THE PROJECT'S SCOPE.

The finished product will be a centralized location where all online shopping-related services will be provided for both customers and the business. The business will be permitted to sell its goods, which will be purchased directly from producers, at fair pricing, and customers will be free to spend their budgets on the goods they want. Customers will also be able to select or search for any product in relation to a product category, which will make it easier for them to locate any product

inside a certain category. The system will be able to preserve all documents and offer a secure environment for all users, including administrators and customers.

Following completion of the registration process:

- Each user must log into their own account in order to purchase any items or products, albeit they can add any item to their cart without logging into their account. The services that are primarily outside of scope are listed below.
- Manufacturers won't be allowed to sell any goods to the system directly. To give clients fair rates, however, every commodity must be purchased from merchants or producers, which is outside the purview of the system.
- Manufacturers and sellers are restricted to marketing their products outside of this system. There won't be a product return policy after a sale.
- After payment has been made, there will be no cancellation policy.
- Records for the Cart won't be accessible after logging out of the system.
- On this website, there isn't yet a banner for any form of advertising.

2.4 FINDING THE ISSUE'S LOCATION

The following list of potential issues with or restrictions on the present system is clear:

- The system's proper functionality and usefulness for the site might not be guaranteed.
- It could take a while to find a particular product that meets one's needs.
- No product that fit the user's budget or was reasonably priced could be found.
- No guarantee of complete control over the information in the current system can be made.
- Order information for a certain customer may frequently conflict with that customer's data. Then, it would be a grave error.
- It will not be able to store any client information and it will also be very difficult to provide service to a specific customer if anyone may buy nearly anything from the website without maintaining any authorization process.

- If orders are processed manually, the owner or manager may frequently be necessary to visit factories to supply order data in order to deliver them in a timely manner.
- Manually creating goods shipping documentation could need numerous attempts.
- For a paper-based data keeping policy, a lack of data can be a serious problem.
- If invoice production is done manually, it may take a while.

2.5 POTENTIAL REMEDIES

The suggested system will be an online-based e-commerce system with the following capabilities to effectively address the aforementioned issues:

- Every single user will be able to sign up and access the system.
- Each user will be able to buy any things or products from the provided product category lists after logging into the system.
- The user will also be able to identify a certain product that fits their budgets by using various "search" tools.
- The system database will record all data along with customer information, making it possible to match up each consumer with the specifics of their order.
- The planned system's administrators will be able to manage all of the data.
- A consumer will receive an email message when they place an order, which serves as an order confirmation.
- Admin will also receive information about each and every order and be able to control it.
- The status of any order, such as whether it is pending, in progress, or delivered, may also be saved by the administrator.

2.6 DEVELOPMENT METHODOLOGY AND APPROACH.

For the growth of a successful project, it is necessary to maintain a number of techniques:

1. Deciding on or creating a methodology that will work with the project's intended nature.

2. Creating a process that will provide a deeper knowledge of user requirements and necessitate adjustments should any requirements alter throughout the course of a project's development.
3. Apply to the chosen process correctly.

CHAPTER-3 (FEASIBILITY STUDY)

TOPICS OF CHAPTER-3:

A feasibility study is the first type of research that must be done while developing a project. Additionally, it will aid in comprehending the widest range of project success possibilities. It is a thorough analysis of all potential solutions to all issues, and it will be useful to identify alternative suggestions.

3.1 ECONOMIC FEASIBILITY STUDY:

A project can be successful if an economic feasibility study report is written properly. Therefore, the explanation of the cost and benefit analysis of the proposed project serves as the section's primary goal. The company's introduction to the online community through this website will be its biggest gain. The money that the business will make from the sale of goods on its website is referred to as its profit.

No	Cost name	Cost
1.	The total cost of hardware-	\$3,550.94
2.	The Total cost of Software and Licensing-	\$900.99
3.	The Total cost of Network-	\$789.86
4.	The Total cost of Web Hosting-	\$120.37
5.	The total other costs-	\$600
	Total Cost=	6000.15

Figure 1 all cost of details in this following tables.

According to my study, the entire price of the required hardware, software, web hosting, and licensing for this project is around \$6000.15 including VAT.

3.1.1 HUMAN RESOURCE:

Human resource is most important part of any thriving business. The corporate can get to recruit some versatile man power as my analysis once eating the web site on on-line marketplace. Once analyzing the wants of the corporate, I will be able to continually recommend to appoint ten vital men power for this new company.

STAFF	NO
Administrator-	03
Web site Administrator-	02
Technical Supporter-	01
Sale and Marketing	02
Account-	02
Total =	10

3.2.2 SYSTEM HARDWARE COST:

The table below includes all the information about the approximate hardware cost.

Laptop Model	Staff	No	Price	Total
Inspiron 15 5000 Series (Intel® Core™ i5 Processor)	Database Administrator	2	\$594.99	\$1189.98
Inspiron 15 3000 Series (Intel® Core™ i3 Processor)	Website Administrator	1	\$479.99	\$479.99
Inspiron 15 3000 Series (Intel® Core™ i3 Processor)	Technical Supporter	2	\$479.99	\$959.98
Inspiron 15 3000 Series (Intel® Core™ i3 Processor)	Sales and Marketing manager	1	\$479.99	\$479.99
Inspiron 15 3000 Series (Intel® Core™ i3 Processor)	Account Manager	1	\$479.99	\$479.99
Dell™ All in One Printer 978	For Each Staff	7	\$50.00	\$350.00
Total Hardware Cost =				\$3,939.93
Price is collected from www.dell.com				

Figure 2 Approximate hardware cost (Anon., n.d.)

3.1.3 (PROJECT)SOFTWARE AND LICENSING COST:

The details of the approximate required software and license fees are provided below:

1. Visual studio Professional 2010: **\$499.00**
License for: 1 user
Package: complete
2. Microsoft office professional plus 2010: **\$399.99**
License for: 1 user
Package: complete

Total Software and Licensing Cost: \$898.99

Prices are collected from www.microsoft.com

Figure 3 Approximate required software and license cost

3.1.4 (PROJECT) NETWORKING COST:

The following lists the necessary network hardware along with an approximation of their costs:

Router (NETGEAR DGN2200 Wireless Route)	: \$89.32 (Converted from Pound)
Switch (NETGEAR 8 Port Gigabit Compact Switch)	: \$55.07 (Converted from Pound)
Server (HP Proliant)	: \$610.66 (Converted from Pound)
Cable (HEWLETT PACKARD CAT 5e cable)	: \$20.83 (Converted from Pound)
Total Network Cost	: \$775.88

Prices are collected from www.misco.co.uk

Figure 4 Network equipment and their approximate price

3.1.5(PROJECT) WEB HOSTING COST:

Below is a detailed list of the items needed for this website hosting, along with their overall cost.

NO	List	Name	Duration	Price
1.	Web Hosting	Name of package: Premium	3 year	\$120.51
2	Name of domain	k.com	2 year	\$20.25
Total cost=				\$140.76

Figure 5 Website hosting and their total price

3.1.6 (PROJECT) OTHER COST:

The chart below shows additional necessary costs:

Cost Name	Cost
Training costs	\$300
Internet and phone line costs for network	\$100
Backup costs	\$100
Total Cost:	\$500

3.2 STUDY OPERATIONAL FEASIBILITY:

The most crucial factor in determining whether or not the proposed system is practically feasible is the operational feasibility study. A project can be deemed operationally feasible whenever it meets all of the end-users' genuine demands and expectations. It is also the capacity to support and make use of a project's fundamental operations. The proposed system first needs to be adequately justified before the operational feasibility of the system can be evaluated.

- Informational deficiencies include
- A lack of centralization, security, and correctness.

3.3 STUDY OF TECHNICAL FEASIBILITY:

The project's technical suitability can also be determined by conducting a technical feasibility study. It is a procedure for figuring out all technological presumptions, the project's architecture, and its design. Its main focus is on identifying all the technological tools that are most likely to meet the needs of the end user.

The following list of important technological aspects of the suggested system:

- Will be a platform for internet purchasing.
- An online project.
- The system will utilize "Asp.net MVC5" technology and run on the.NET server (IIS express).
- Must be hosted on a Windows server; nice coding architecture
- Backend coding will be done in Django.
- Html, CSS, Bootstrap4, Materialize CSS framework -- for creating structure and designing of website
- JavaScript- for client side manipulations like validations, verifications, alert messages.
- Python - as a programming language for server side manipulations like data validations, verifications, secure authentications, password hashing, middleware protections
- Django- as a backend framework using better software architecture.

CHAPTER-4 (LITERATURE REVIEW OF MY PROJECT)

TOPICS -4

- ❖ A conversation on e-commerce.
- ❖ Discussion regarding e-commerce domain issues.
- ❖ A discussion of the issues with e-commerce sites built on farms.
- ❖ Comparison of the top three options.
- ❖ Recommendation strategy

A review of the literature is a thorough summary of prior research on a particular subject. It entails compiling information and information as a survey through various relevant sources, such as a number of papers, books, journals, or other sources that should be associated with a certain field of study. The primary goal of the section on literature review is to study, assess, and elucidate these ranked areas in light of all pertinent information that has been gathered from various sources.

4.1 A CONVERSATION ON E-COMMERCE

4.1.1 About e-commerce?

Electronic commerce is known as e-commerce. It is often referred to as electronic business or e-business. It describes the practice of purchasing and selling goods online. It uses a method known as electronic fund and data transfer between several parties. It streamlines both the shopping process and business operations. With only a few clicks, anyone may make any type of purchase from an e-commerce website at any time in daily life.

4.1.2 ORIGIN:

About 40 years ago, electronic commerce was first offered. Electronic data interchange (EDI) and electronic fund transfers (EFT) were the two electronic methods initially used to carry out commercial transactions. E-commerce also made it easier for users to share company information and conduct transactions. However, prior to the 1970s, those technological techniques were not permitted.

When the internet was made accessible to everyone in 1991, e-commerce became a reality for the broader population. The general population started using the internet in 1994.

At that time, security protocols like HTTP and DSL were established to enable quick access and enduring connections over the internet.

In 2000, as more businesses from the US and Europe involved their services, e-commerce was growing in popularity. Since then, the definition of "e-Commerce" has altered to refer to the act of purchasing and selling products and services over a secure internet connection. (Josh Mady, 2018)

4.1.3 GROWTH:

With numerous new inventions and technology, it is currently expanding. With the use of modern technologies, it aids in the expansion of numerous businesses. Ratio of total retail e-commerce sales climbed by 0.7 percent year between 1998 and 2008 according to a 2006 sell's study. (jasongoldberg, feb 28,2022)

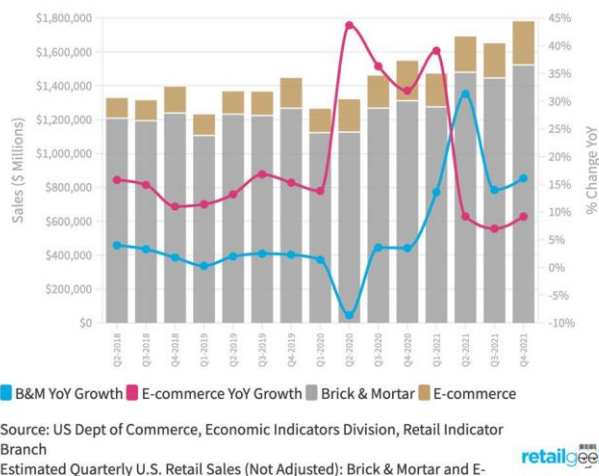


Figure 6 Total retail ecommerce sells as a percentage (goldenberg, 2022)

The number of expanding e-commerce businesses has exploded over the past 14 years, claims research from e-commerce specialist "Gray Hoover". (Rheude, 2021)

The following bar chart illustrates how the proportion of e-commerce enterprises has increased over the past 14 years:



Figure 7 Ratio of e-commerce companies

In 2020, the percentage of all retail e-commerce sales may approach \$5.0449 trillion, according to a study of global e-commerce revenues

The bar graph that illustrates global e-commerce revenues is provided here.

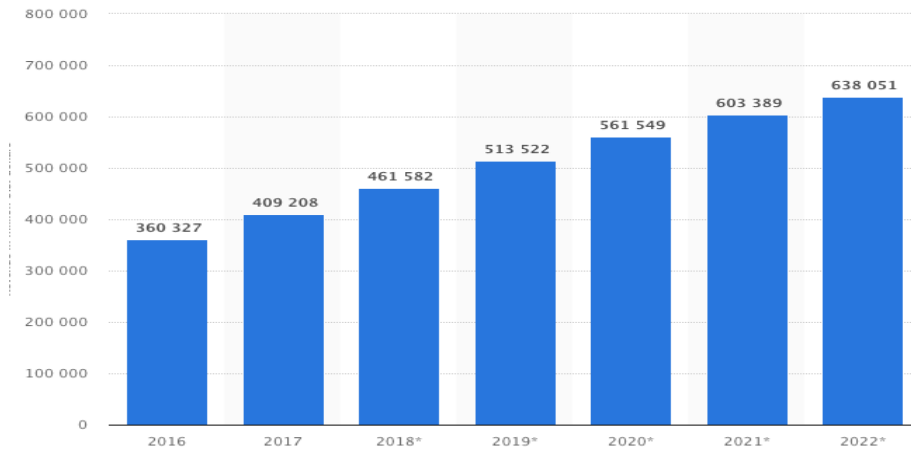


Figure 8 Global e-commerce revenues

RETAIL E-COMMERCE SALES WORLDWIDE, 2016-2021 (\$TN, %)

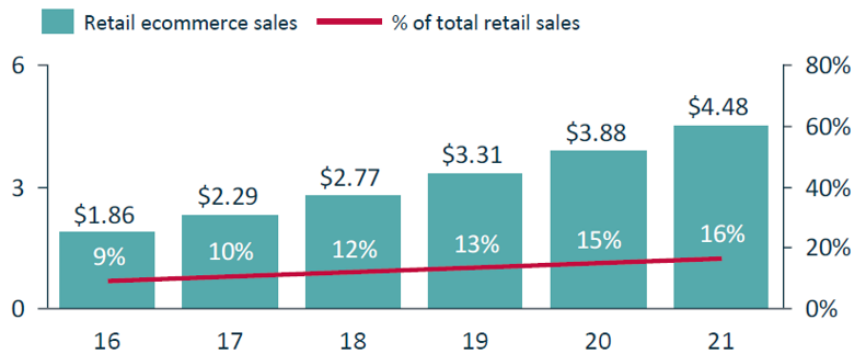


Figure 9 Bar chart of global e-commerce

4.1.4 BUSINESS MODEL:

A different business model for them can be classed as an e-commerce website. There are many different business models among them. The four main business models have been discussed.

Below is a description of them:

Business-to-Business (B2B) transactions between two or more firms take place electronically under this business model.

B2B E-commerce

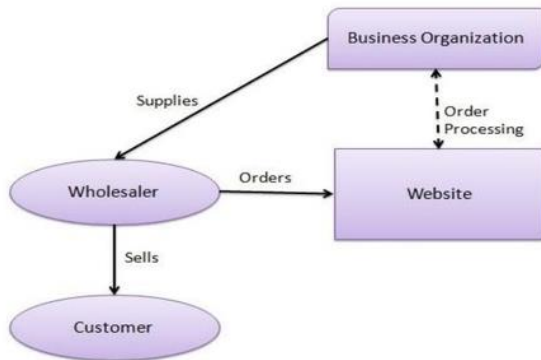


Figure 10 B2B business model

❖ Business-to-Consumer (B2C)

The electronic exchange of goods or services between businesses and clients constitutes this business model.

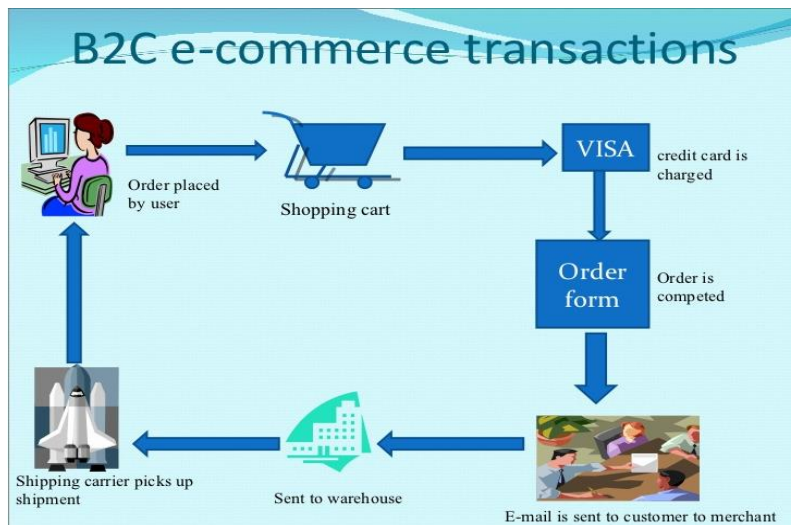


Figure 11 B2C business model

- Consumer-to-Consumer (C2C)

The electronic exchange of goods or services between two or more consumers constitutes this business model.

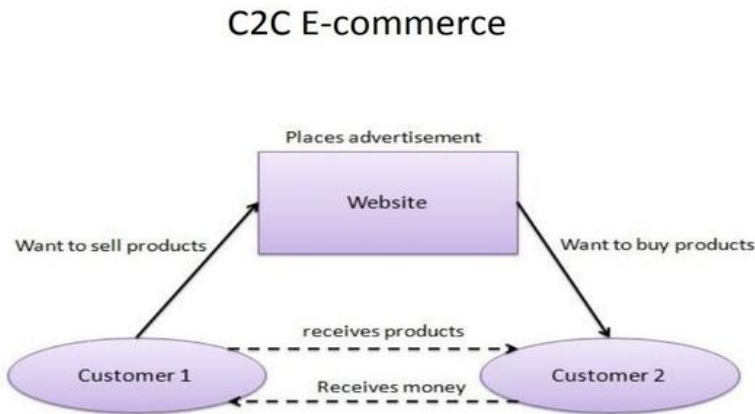


Figure 12 C2C business model

- Consumer-to-Business(C2B)

This business model entails electronic transactions for the sale of products or services, primarily between individuals and businesses or organizations.

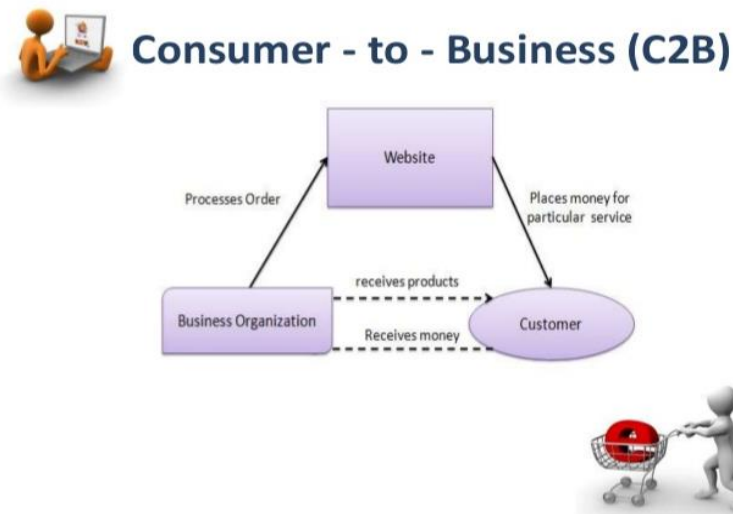


Figure 13 C2B business model

4.2 DISCUSSION REGARDING E-COMMERCE DOMAIN ISSUES.

E-commerce companies are gaining enormous global prominence in today's modern culture.

But this has also brought about an increase in complexity. Based on my investigation, I will describe the issues with the e-commerce domain in this part. Over the past few years, the global e-commerce income has grown too quickly. In 2020, it's anticipated that total revenue may approach \$5.449 trillion. The data is displayed in a bar chart below.

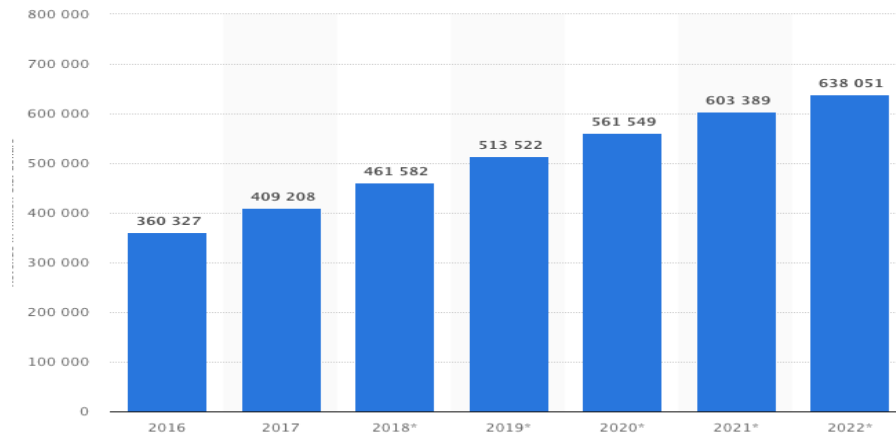


Figure 14 Growing rate of revenues

China will emerge in first place if we consider the overall income generated by eCommerce sites by each country as well as the growth.

Country-by-country ecommerce growth

Calculated by 2018 to 2023 ecommerce revenue (projected)

	2018	2023	Five-year growth
China	\$636.1B	\$1,086.1B	70.7%
United States	\$504.6B	\$735.4B	45.7%
France	\$49.4B	\$71.9B	45.6%
Australia	\$18.6B	\$26.9B	44.6%
Russia	\$17.2B	\$24.8B	44.2%
Canada	\$39.9B	\$55.4B	38.8%
Germany	\$70.3B	\$95.3B	35.6%
United Kingdom	\$86.5B	\$113.6B	31.3%
Japan	\$81.7B	\$103.6B	26.8%
South Korea	\$63.7B	\$80.2B	25.9%

Figure 15 Country wise growth

The largest e-commerce market in the world is located in China. China has had a faster rate of e-commerce market expansion than any other nation in the globe. A survey indicates that China earns close to \$668.10 billion annually from its online marketplaces. USA has earned the second spot at this rank, behind China. Similar to China, the United States has a wide variety of e-commerce marketplaces and generates substantial revenue from them. The United States derives over 506.04 billion dollars a year from its online marketplaces. Every country has to deal with a number of issues in order to create, run, or preserve these markets.

4.2.1 WORTHINESS:

Trust is a crucial factor when buying anything online. Since everyone wants to purchase superior goods. Since e-commerce operates on a virtual platform, earning the trust of customers is crucial. Before purchasing any item from the website, users can only view the product photos. When they physically get that particular goods, only they can see it. They might have believed at the time that the product quality couldn't compare to the image quality of the actual order. Therefore, it may be a major reason for losing customers' trust.

Solutions:

Certain procedures can be followed or upheld in order to build people's trust in one another.

Below is a description of them:

- Product deliveries can occasionally be delayed, and customers might not be able to monitor their order.
- One tracking system that enables customers to track their products' locations and delivery dates can be created to address this issue.
- The option of exchanging the product can be offered because it will be a terrific way to win them over.
- Because consumers are frequently dissatisfied with their purchases or believe that the advertisement does not accurately represent the item,

4.2.2 THE ISSUES OF PRODUCT QUALITY:

Everyone desires higher-quality goods. The primary focus of any e-commerce company is its products. So, for every e-commerce firm, offering improved quality of the product is a major difficulty. Additional aspect is that a product may occasionally be damaged during delivery, and the customer may be responsible for the cost of repair.

Solutions:

- Product quality standards can be upheld.
- Price and quality are frequently correlated, and most consumers prefer to purchase items of high quality at reasonable costs.
- It occasionally might hurt their budgets.
- There will be two alternative solutions against those difficulties.
- Giving clients the option to select any product based on their preferred budgets.
- Establishing rules and regulations to ensure that product prices and quality are reasonable.

4.2.3 FAILURE OF DIGITAL PAYMENT:

Customers typically use different digital wallets, including credit, debit, and net banking, to make their online payments. For any customer, though, the failure of digital payments would be annoying. This kind of problems would frequently be caused by a slow internet connection.

Solutions:

- As money refunding wouldn't be a rapid procedure, there may be a policy for the website that "it may take 7-10 working days for handling this issue," and this can be clearly indicated in the website.
- Technical difficulties must be resolved by the owner promptly.

4.2.4 SPEED OF WEBSITE IS SLOW:

Potential customers typically want to browse and investigate various products according to their category.

The website's sluggish loading speed would then be a major source of frustration for any user.

If this occurs, the consumer may leave the website without having to wait to purchase the desired item.

Then, they'll go to a competitor's website.

- The owner must ensure that the website loads quickly.
- Several internet tools can be utilized to determine how to increase website loading speed.

4.2.5: SECURITY ISSUES:

The most crucial aspect of every online transaction is internet security. Information on customers is extremely essential to any business. If a customer's information is compromised, the business will lose that customer's confidence and reputation.

Solutions:

- A secure domain must host the website, and private domains have a number of usable subdomains.
- Steer clear of shared hosting for your website because it increases the risk of data loss.

4.2.6 QUESTIONABLE SERVICE:

Customer experience is a crucial component of any successful e-commerce business. Customer service can occasionally be very challenging for some people. It can damage the company's reputation.

Solutions:

Those working for the organization who interact with consumers must be capable of answering all of their questions and offer suitable answers.

4.2.7 RETURN METHOD:

Unwelcoming chargebacks can seriously harm a company's brand as well as drive away customers.

Solutions:

- Since online shopping or e-commerce is typically risky for consumers, a welcoming return policy for returned goods must be guaranteed.

4.3 A DISCUSSION OF THE ISSUES WITH E-COMMERCE SITES BUILT ON FARMS.

Farm product-related e-commerce sites are widely available on the online market. I have looked into numerous articles and websites that are related to this one, but the majority of them share the same issues as those mentioned above.

However, there are some additional issues that are exclusive to my website, and they are detailed below:

4.3.1 IMAGE PROCESSING IS INCORRECT:

Product photos are a crucial component of any farm product-based e-Commerce website's ability to accurately identify any product. The product photos are the first thing a buyer would notice when they visit any e-commerce site.

Therefore, the quality of all product photos is a crucial component of maintaining the brand of any ecommerce platform. Another issue is that customers who shop for goods online will not be able to locate them in stores. In that situation, they must inspect the item before purchasing it.

Solutions:

- It is essential to guarantee the high quality of all product photos.
- The requirement that visuals be pertinent to the specific item or the product itself is another important option.

4.3.2 PRODUCTS SCANNING CONCERNS:

The ability to search for products is the most important feature of any e-commerce website. Without these features, customers won't be able to locate the specific product they need. Another problem is that occasionally individuals can't find any products in their preferred price range. They would then need to hunt for their desired item in a different store. And this will also be a major reason why customers lose interest.

Some Solution:

- In that situation, the best course of action would be to use the website's suitable search function to locate any goods that matched the needs.
- There should be a single location where customers can find products based on their budget.

4.3s.3 ISSUES WITH ORDER VERIFICATIONS:

After conducting research on the subject, I discovered that every e-commerce website that sells clothing had a number of order confirmation procedures. This is also a crucial component since without it, the consumer would be unable to determine whether or not their order had been placed.

Some Solutions:

- The website can use an email confirmation method, and phone calls could be conducted to inform a particular consumer that their order has been confirmed.

4.4 COMPARISON OF THE TOP OPTIONS.

I will compare a few of the top online shopping and e-commerce sites that are well-known in the internet community in this part. After doing some investigation, I want to identify any gaps in those solutions. Then, I'll make a list of everything that is lacking, which will enable me to compare its strengths and weaknesses. Finding all suitable solutions related to online purchasing is the section's actual goal.

The URL of this well-known e-commerce site focused on online shopping is as follows:

1. <https://www.daraz.com.bd/>(Bangladesh)
2. <https://www.alibaba.com/> (USA)
3. <https://www.amazon.com/> (USA)
4. <https://www.khaasfood.com/>

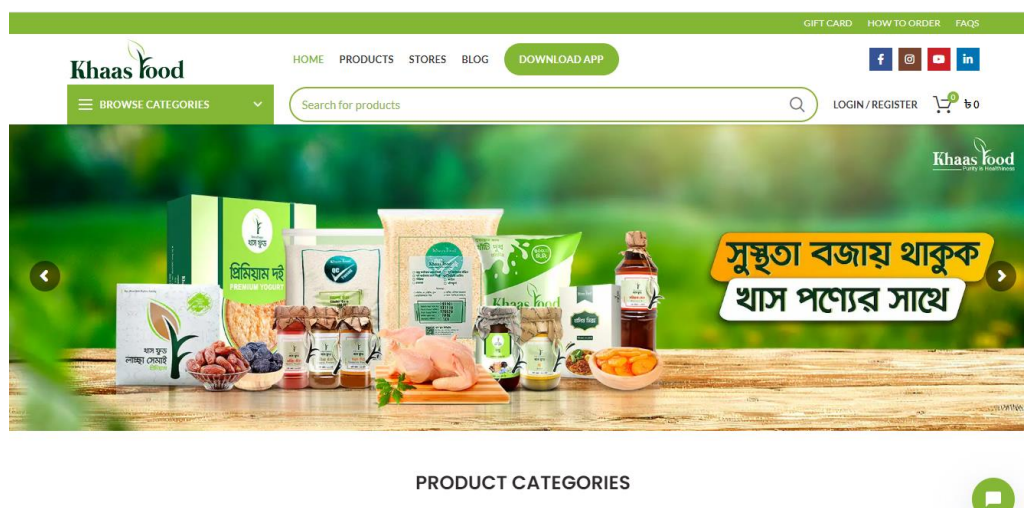


Figure 16 Khaas food

5. <https://myorganicbd.com/>



Figure 17 my organic BD

6. <https://naturals.com.bd/>

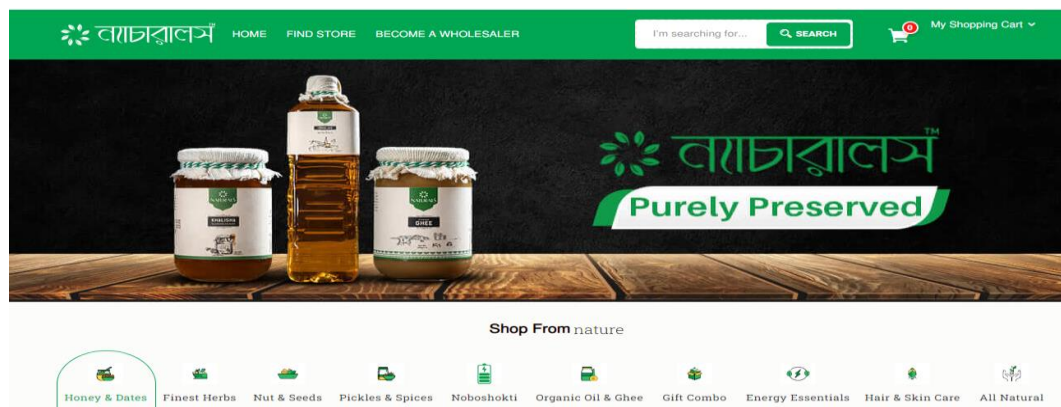


Figure 18 Naturals.com

7. <https://www.agriculture.com/weather/news?page=1>



Figure 19 Weather News

4.4.1 FEATURES:

❖ **Amazon.com**

- The product categories are filtered as featured categories and shown at the bottom of the home page.

❖ **Daraz.com**

- Each item on Daraz.com belongs to a specific category.
- The most crucial aspect of product categorization is that each category name be used correctly.

❖ **Alibaba.com:**

- Made use of excellent product photos.
- Products are acceptable for inspection.
- Products are sorted according to categories like new releases and top sellers.

❖ **Khaasfood.com:**

- Categories products for choosing items.
- Searching store in map by location name.
- FaQ functionality.
- Blog as advertising products and product's benefits.
- Login and register functionality.
- Order tracking functionality.
- Add to cart functionality.
- Checkout functionality.

❖ **myorganicbd.com:**

- Blog of different products.
- Login and register functionalities.
- Shop as a full ecommerce part.
- Email subscriptions for users.
- Shipping and delivery functionalities.

4.4.2 SOME LIMITATIONS OF THOSE SITES:

❖ **Alibaba.com**

- There was no highlight for the special browsing option on
- Customers will find this website's return policy challenging.

❖ **Daraz.com**

- There was no unique scrolling option.

In that situation, users would need to scroll the entire page if they went to the bottom of the website and wanted to return to the top.

- There is no intuitive navigation bar.
- The homepage does not filter any featured categories.
- On the main page, various product types appear one after another without any category names being mentioned.
- There are no pagination options on the home page.
- The menus in the navigation section are kept very tiny.
Customers will have a lot of trouble with it.
- The servings on the product are of a medium size.

❖ **Amazon.com.**

- Therefore, it could be difficult to discover that button.
- There is no physical cash payment option available.

CHAPTER-5(TOOLS AND METHODOLOGY)

TOPICS -5

- ❖ Methodology of Choice
- ❖ Development Approach
- ❖ Methodology Techniques
- ❖ Choice of development technology

The choice of an appropriate methodology and proper application of that methodology are key components of any successful real-world system development. For an effective software development life cycle, a number of techniques are available. These include waterfall, SSADM, DSDM, RAD, and others. The developer can complete each successful stage of the system

development lifecycle by using an appropriate methodology. This chapter's main discussion points are the selection of an appropriate methodology or structure for all of this system development, the benefits of using it, a portion of that methodology, the tools and technologies that will be employed here, and the justifications behind their selection.

5.1 METHODOLOGY OF CHOICE:

There are numerous techniques and frameworks available, including DSDM, SSADM, RAD, agile waterfall, and others. They are typically employed to ensure the success of any system development lifecycle. Another reality is that the type of project that will be built will determine the appropriate methodology to use.

Here, I'm going to talk about some methods that is briefly described below:

5.1.1 AGILE:

Many software development businesses throughout the world adopt the well-liked software development process known as "agile."

This methodology's primary objective is to generate the final, successful software solution as quickly as possible. This methodology placed a lot of emphasis on the fusion of incremental and iterative processes. The core product is divided into multiple smaller incremental builds using this process. The application of these builds follows as an iterative process, which primarily takes place inside a cross-functional team. Agile is an SDLC exemplar (Software development lifecycle). The software industry offers a number of agile approaches, including DSDM (Dynamic Systems Development Method), scrum method, crystals method, and XP etc.

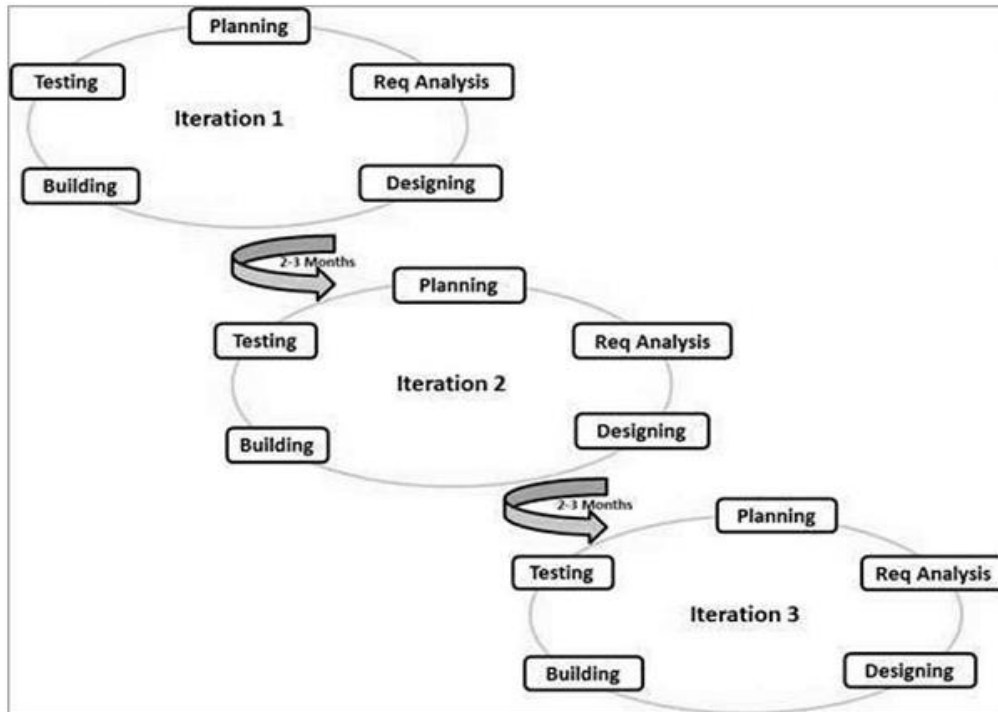


Figure 20 Agile Methodology (Anon., n.d.)

5.1.2 DYNAMIC SYSTEM DEVELOPMENT METHOD:

In 1994, DSDM was established.

It is an agile development approach.

The dynamic system development method is what it stands for.

RAD is the primary topic of DSDM (Rapid Application Development). More governance and disciplines can be implemented thanks to the new iterative working environment. Eight DSDM Astern principles form the foundation of the DSDM concept.

The success of DSDM actually followed by this philosophy that “Any project must be attach to clearly defined strategic goals and also focused upon early delivery of real benefits of a business”. (Render, n.d.)

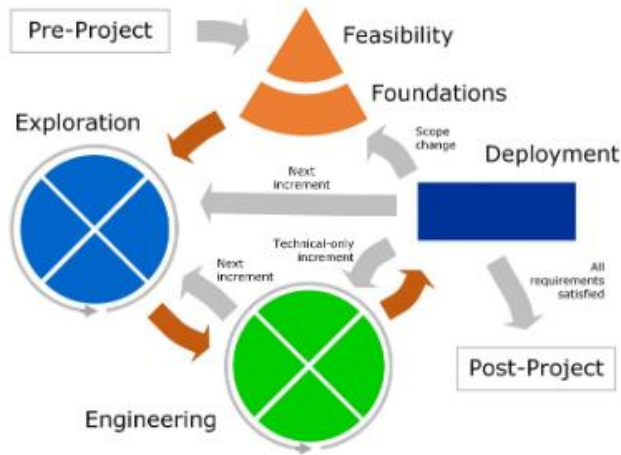


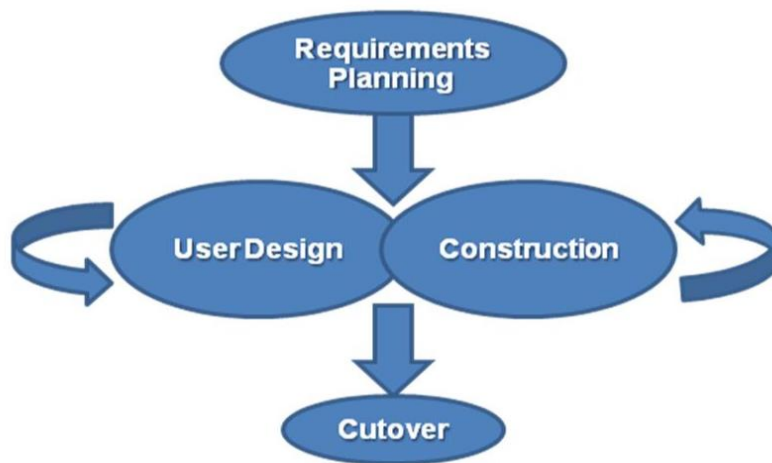
Figure 21 DSDM iterative phase (Render, n.d.)

5.1.3 RAPID APPLICATION DEVELOPMENT METHODOLOGY:

RAD is a technique used in agile development. Rapid Application Development Methodology is what it stands for. It focuses mostly on fast prototyping and an iterative development approach with minimal preparation. Here, prototypes of all functional components are being constructed concurrently. A prototype is a functioning working model that functions similarly to a single component of software. To create a finished product more quickly, these prototypes are combined. Since there is no preplanning for the development phases, incorporating changes within this development lifecycle is more simpler.

The stages of the rapid application development lifecycle are:

- Requirement planning
- user description
- Construction
- And cut over. (team, n.d.)



/

Figure 22 Rapid application Development (team, n.d.)

5.2.4 SYSTEM DEVELOPMENT LIFECYCLE:

System and application development is referred to as SDLC. High-quality software is designed, developed, and tested using the SDLC process. The goal of this project cycle is to create software of the highest possible quality quickly and affordably.

The following image depicts the SDLC phases:

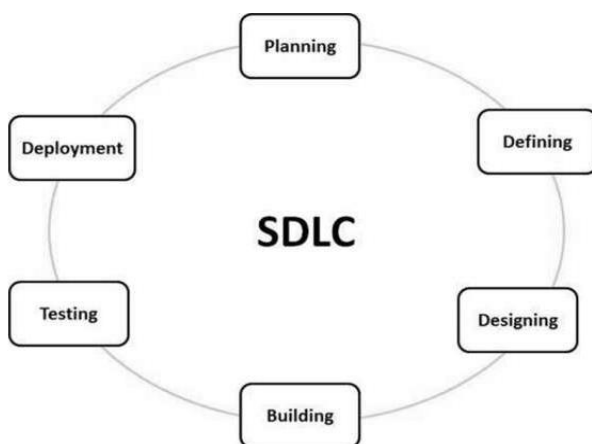


Figure 23 SDLC phase (Anon., n.d.)

5.2 APPROACH TO DEVELOPMENT:

The secret to a good project development is choosing an appropriate methodology as the basis for the proposed project. There are methodologies that forbid iteration. Iteration is important in this situation because user requirements can change during the phase of development. In this case, I must first prioritize the user needs before choosing a methodology that generally supports iterations and aims to keep user involvement throughout the whole development life cycle. As a result, I chose the Dynamic System Development Method (DSDM), which allows for quick application development as well as iteration throughout the development life cycle. However, live user interaction is crucial for adhering to the DSDM process, and it might be impossible for me to do so at every point of the development life cycle. Because of the aforementioned issues, I believe it won't be appropriate for my project. So, in this case, I've gone with a hybrid approach that essentially combines SDLC and DSDM .

5.2.1 THE JUSTIFICATIONS FOR THE SELECTION OF THESE TWO METHODOLOGIES:

1. Dynamic system development method (DSDM) helps iterations happen while a project is being developed.
2. Dynamic system development method (DSDM) encourages quick development.
3. Dynamic system development method (DSDM) encourages end-user participation across the entire development lifecycle.
4. Dynamic system development method (DSDM) encourages all forms of user group participation.
5. The entire job will be broken up into multiple manageable portions.
6. System requirements and all other business needs will be priority.
7. These techniques will also help the completion of the project on schedule.
8. The genuine strategy will be centered on the real business needs.
9. This framework will provide the best software product at the lowest price.
10. By adhering to this framework, it would be possible to manage the entire project development with ease.

5.3 METHODOLOGY TECHNIQUES:

The customers play a part in the lifecycle of this project development. I must therefore justify and rank all user requirements and needs. Following are the five main core techniques used in this process.

The list of them is below:

5.3.1 PRIORITIZATION OF MOSCOW:

It's a well-known method for examining and ranking all system needs. It aids in correctly acquiring information of all prioritized company requirements. It is often referred to as MoSCow methodologies or MoSCow analysis. The acronym MoSCow stands for needs that must, should have, would have, could have, or won't exist.

Prioritization of requirements will look like this:

SL. No	Requirements	Priority
01	Role based secured login and registration.	Must Have
02	Add to cart functionality for product selling.	Must Have
03	Checkout functionality for product selling with cost calculations.	Must Have
04	Checkout functionality for product selling with cost calculations.	Should Have
05	Categories blog for each topic providing Agricultural solutions.	Must Have

06	Profile for each register farmer, Agriculture officer and client with profile setting functionality.	Could Have
07	A useful weather application for weather detection.	Must Have
08	Managing all Admin tasks.	Must Have
09	Creating comments for each blog post.	Should Have
10	Providing shipping address for product receive.	Should Have
11	Product details with specific farmer profile.	Could Have
12	Product categorization for specific type of product selling.	Should Have
13	Stock availability.	Should Have

5.3.2 WORKSHOP WITH FACILITATION:

The method entails getting user requirements directly from the users themselves. I'm going to compile user needs right here. It is a very important component for both users and system developers. It helps to lessen uncertainty among system users and system developers as well as the possibility of making mistakes.

5.3.3 PROTOTYPING OF THE SYSTEM:

At the beginning of the system development lifecycle, prototyping is also the most crucial strategy for understanding any system, both for system users and system developers. In this section, the

developer must create a prototype of the system in accordance with the needs of the users. Interviews and questionnaires can be used to gather these user requirements. Following the presentation of the prototype to users, it will be simple to compile a list of all user comments and suggestions about each component of the suggested system. The current system can be improved if it is developed in accordance with user needs.

I have included all of the project's prototypes in the Appendices section.

5.3.4 ENGINEERING AND ANALYSIS OF THE SYSTEM:

The prototype can also be used in conjunction with this method to adequately examine the system. System developers will find it useful to comprehend the development process. In-depth examination of the proposed model using the necessary UML diagrams or other diagrams will be accomplished using this technique. The early stages of development will benefit from it.

The illustration below illustrates each modeling perspective:

WHAT	The information within the solution area, data, relationships and business rules.
HOW	The functions, features and processes within the solution area.
WHERE	The locations at which the business operates, in relation to the solution area.
WHO	The people: customers, users, stakeholders.
WHEN	The events of importance to the business (times and scheduling).
WHY	The business objectives and strategy, as related to the project.

Figure 24 viewpoints of all key in this model

5.3.5 TIME BOXING

It is the process of allocating time to various system development operations. In this case, a time box is the measurement of duration for a certain activity. Time boxing's main objective is to define any action inside its allotted amount of time. The most important aspect of every system development is time boxing, which helps determine how much time each job will take.

The core and primary phases of DSDM Aten are all the five phases listed above.

Task name	Start time	Duration	End Time
1. Initial Study	01-04-2022	14 days	14-04-2022
1.1 Identify the project		3	
1.2 Justify the project		4	
1.3 Find out the solution		6	
1.4 The aims and objectives		2	
2. Requirements gather and analysis	15-04-2022	10	25-04-2022
2.1 Feasibility study		2	
2.2 Use case		2	
2.3 Functional requirement		2	
2.3 System architecture		2	
2.4 Initial Class diagram		2	
3. Design	26-04-2022	15	11-05-2022
3.1 UI design		5	
3.2 Database Design		2	
3.3 Class Diagram		2	
3.4 Behavioral Model		2	
3.5 Collaboration Diagram		4	
4. Implementation	12-05-2022	20	31-05-2022
4.1 Programming Language defining		2	
4.2 Implementation		18	
5. Testing	01-06-2022	6	06-06-2022
6. Documentation	07-06-2022	15	21-06-2022

Figure 25 Time Box

5.4 CHOICE OF DEVELOPMENT TECHNOLOGY:

A few facts must be taken into account before choosing the best tools and technologies. This method also depends on the size and complexity of the system. The system developer's experience is another factor that influences this strategy.

Below, we talk about each of these elements.

5.4.1 POSSIBLE RESOURCES:

The suggested system will be an online-based e-commerce website for purchasing and selling various kinds of clothes or related things over the internet, as was indicated in the initial study portion. Several software tools are accessible to construct any e-commerce website. The most widely used web technologies include Ruby, Asp.net, Python, Java, and more. The accessible procedural programming for creating any system are java and python. A number of well-known IDEs are available to run Java programs. These are "Eclipse" and "NetBeans," both of which are available without charge. There are also various open-source IDEs like "PyCharm," "Atom," etc. enabling developing applications in the Python programming language. However, Python technology is really simple. Visual basic studio isn't an "IDE" that is completely free. However, there are three further editions available for download: "Community," "Professional," and "Enterprise." The developer is knowledgeable with asp.net technologies, nevertheless. The software industry uses the Django framework frequently to create web-based applications. One unique feature of Visual Studio is the combination of numerous modern ".net" technologies with this Integrated Development Environment (IDE) for developing any type of application. Another significant and vital feature is that the Microsoft organization is responsible for providing the .net framework as well as all default-proof safeguards. It is also incredibly simple to complete any project using the .net framework quickly. On the opposite hand, the "Asp.net mvc5" framework will be used by the developer to create this product. This is a modern tech that Microsoft has made available for quickly creating any application using many new technologies. The framework's MVC coding architecture and ORM features are another factor in the decision to use this software. Here, the conventional coding architecture is MVT, and Object Relation Mapping or ORM is utilized for database setup and configuration. For database-related operations, the Entities framework and the Identity framework must be used by the developer in order to adhere to this design. Additionally, this framework offers a few standard extra features like account password hashing, secured login, logout, and registration, high user authentication security, and role-based registration that is simple to implement.

These technologies have opted to create this website for the following reasons.

5.4.2 RAPID DEVELOPMENT

Any real-life project development lifecycle has a critical necessity for rapid development. Because each development lifecycle follows a specific timeline, it is crucial to produce products on time. The "Django MVT" framework was used by the developer to complete this project on schedule. Due to the framework's usefulness and standardized code architecture.

5.4.3 BUSINESS PREDICTIONS:

The company is a tiny business, and the preceding chapter covered how they don't yet have any IT platform but wish to build an e-commerce website to expand their reach online. It follows that the ultimate software product must satisfy all business criteria. As a result, there are some restrictions placed on the development tools that can be used for this system. Businesses may not have enough money and, as a tiny and newly established business, lack extensive expertise of the e-commerce website. So initially they might not want to purchase a new name or host. They must rely on outside companies to operate that new website.

5.4.4 SELECTED DEVELOPMENT TOOLS:

- **Framework:** This website was created using the Django backend framework. This project will adhere to industry standards by using the MVC code pattern. HTML, CSS, Bootstrap4, and the Materialize CSS framework are used to create and design websites.
- **Programming:** Python will be used for the backend program. Python is a programming language that can be used for server-side operations such middleware security, password hashing, and data validations and verifications. JavaScript is used for client-side modifications like alert messages and alert validations.
- Internet information service transit will indeed be utilized as the server for SQL light.
- **Database:** Utilizing ORM technology, the database will be built using all entity classes. It will also be setup in "Entity framework," and user roles will be developed using "Identity framework."

CHAPTER-6(PROJECT PLANNING)

TOPICS -6

- ❖ Organization of project
- ❖ Work breakdown of project
- ❖ Gantt chart of project
- ❖ How to manage risk of this project
- ❖ How to assure quality of this project

The development and proper implementation of a project depend greatly on the project plan. Based on the project's requirements and also from a business standpoint, a project plan is created. A defined project plan is created for the "farmer shop" company project, which is discussed below.

6.1 Organization of project

This research was created for academic purposes, but it will eventually be used in the real world, hence it was based on a real company requirement. Below is a list of this project's organizational details.

- **Project Developer** – Because this project is academic in nature, there is only one developer employed here. The individual working on this project is also analyzing the system requirements, creating a project strategy, and testing each stage of the project.
- **Supervisor** - A key player in this project is the project supervisor. Throughout the development process, he gives the developer the appropriate direction. In order to improve the system, he also makes the essential suggestions.
- **Firm owner** - Although this project was not created for a specific company, it did draw its requirements from a real one. The business, a network of clothes stores, needs to create an online store, so the developer gathers their information and begins working on the system.
- **The company's office manager**- is a crucial user of the suggested system. Being an educational project, the developer here assumes the position of corporate director. He collects all of the specifications from actual businesses, but once the design process is complete, he will test all of the application's features.

6.2 Work Breakdown of project

The activities for the entire project are broken down into smaller phases. Although there are many ways to divide up project activities, the most popular ones are listed here. The work package is a sizable and distinct chunk of work that takes a year to complete. It may also include

numerous necessary activities. It requires between two and six months to complete the tasks after allocating the necessary personnel. The tasks may depend on other work-related activities. The deliverables are the project's important results. Milestones are a project's progression. Turning points are when a project reaches them. An example of a milestone would be the delivery of a project's full requirements, such as a report from an e-commerce site.

6.3 Gantt chart of project

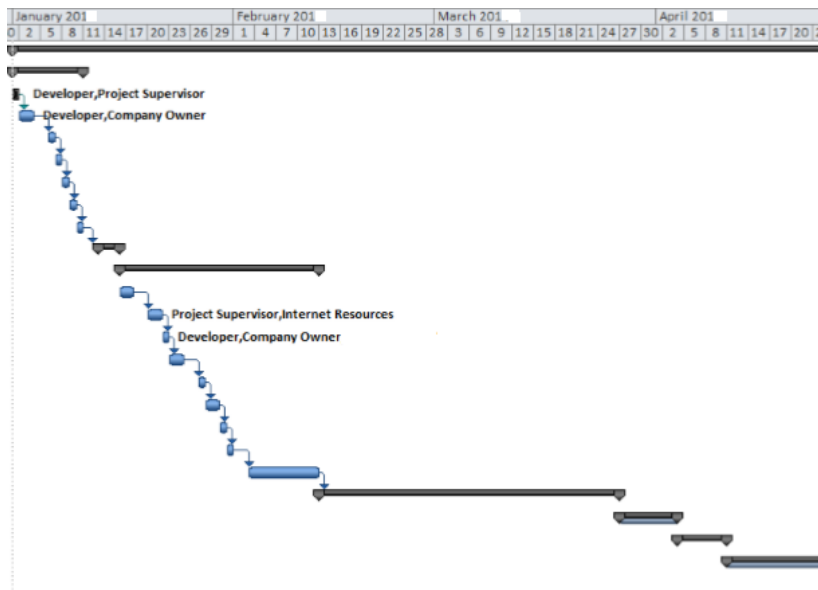


Figure 26 Gantt chart

6.4 How to manage risk of this project

It is crucial to identify the major project risks and create a plan to mitigate them while preparing to develop a project.

The main risk factors that could happen during development include:

- Modified requirements
- Limited access to necessary hardware
- Project cancellation by firm management
- Delays in project specification
- Ineffective project acceptance testing

To avoid the risks stated, the following steps should be taken.

- Plan ahead for changing requirements.
- Manage more workstations during project development
- And agree with business management on what will happen if work on the project is canceled.
- Create an easy-to-understand system.

6.5 How to assure quality of this project

Build quality is crucial to the development of any project. It will guarantee a high standard of system. Some guidelines that will be adhered to while the proposed project is being developed are provided below.

❖ Standards of Documentation:

What will those documents look like and what will they contain?

- Will they have conventional but unique elements
- Usual format

What documents must be produced in standard format?

- A user manual explaining how to operate the system
- Test results
- A project schedule, etc.

❖ Standards of coding:

- Use logical comments when coding
- Adhere to accepted coding conventions
- And make use of trustworthy variable
Method and class.

❖ Standards of testing:

- Evaluate the program more and more often to assure system standard.
- Follow suitable procedures for the proposed system code
- Test the whole system by end user directly
- Submit standard testing reports

❖ **Functions of program**

- System function of Order
- System Cart function
- System Inventory process
- System Order status function
- Generate Report
- CRUD process of Category (add, update and delete) function
- CRUD Product (add, update and delete) function
- Make sure all 'must have' needs are implemented.

CHAPTER-7(ANALYSIS AND SPEFICATION OF REQUIREMENTS)

TOPICS -7

- ❖ **Research techniques for establishing facts.**
- ❖ **System Rich picture**
- ❖ **Requirements of all Functional and non-functional**
- ❖ **Stand-alone or web-based**
- ❖ **MoSCow prioritization are all required.**

The system's requirements and specifications are analyzed at this stage. The conditions that must be met in order to create or modify a functional system are identified together with all the system requirements.

7.1 RESEARCH TECHNIQUES FOR ESTABLISHING FACTS.

To find the most effective and appropriate approach for gathering data and developing this project, methodology study is carried out. Information can be gathered using a variety of techniques, including Internet research, interviews, site visits for field research, questionnaires, and workplace observation. Although not every approach of fact-finding is appropriate in every circumstance.

Interviewing, questionnaires, field experiments, and observation are some of the approaches used in this instance to obtain information.

7.1.1 INTERVIEWING

In this section, most of the criteria are gathered. A series of interviews were scheduled with the company's CEO and a few key personnel from the HR division. The goal of the interview is to learn how the present system functions, what its flaws are, identify the stakeholders, and learn what they anticipate from the new system. Several depth interviews are used to determine all of the system requirements.

7.1.2 OBSERVATIONS

It's also a helpful method for learning more about how this project is progressing. By visiting the firm office and taking note of the current users, business practices, status of the industry, needs, etc., the developer must gain information about the current project. Understanding the requirements of their users as well as the overall current business environment will be useful to the developer.

7.1.3 QUESTIONNAIRE SURVEY

Surveys are a crucial component of data collection. Through the use of questionnaires, surveys are done with the stakeholders. The survey must be attended by each and every stakeholder, and they must all respond to the survey's questions.

7.1.4 SYSTEM RICH PICTURE:

The detailed image shows both the new system's concept and the entire environment of the old system. Conflicts are involved, as well as all of the major players and how they affect the environment, the process, the thoughts, or the problems.

7.1.5 QUALITY AND VALUE AND THEIR EFFECTS ON THE ENVIRONMENT ARE DISCUSSED:

- Admin – The administration is in charge of running and maintaining the entire business.
- A farmer is a specific type of supplier.
- User 1: This individual prefers to shop online for goods because of a tight budget.
- Wholesaler - A wholesaler is a guy who purchases more products from a firm at once and won't purchase more items online at once with the intention of reselling them.
- User 2: Individuals or groups who prefer to purchase their chosen goods both locally and directly from reputable farmers.

7.1.6 WHAT EACH ACTOR DOES:

❖ Admin:

- Maintain and oversee the entire business.
- Request and buy products straight from the grower.
- Acquire orders and sell goods to clients.
- Control a blog.

❖ Farmer:

- Provide organic products.
- Sell more items at once in response to customer or business demands.
- Reliable in terms of product quality.

❖ (First User)Wholesaler:

- Use this website to buy from farmers the most things possible at the best prices.
- Also market those goods to their established clientele (local retailer).
- Enjoy shopping at online farmer's markets.
- Have a preference for spending their intended budget on more high-quality goods.

7.1.7 CONFLICTS:

- The farmer experiences issues with the online market place, but the administrator is curious about it. The farmer experiences difficulties selling things online and is uninterested in doing so. They also have no problems with it. However, the administrator plans to invent a fresh website to market their goods online.
- Farmers struggles with the online market, but the consumer or wholesaler is intrigued. Wholesalers want to purchase more goods from the company at once, but they also believe that using an online marketplace will make it easier for them to place orders and buy goods, whereas farmers have no interest in using an online marketplace to sell their goods.

7.2 SYSTEM RICH PICTURE

The detailed image shows both the new system's concept and the entire environment of the old system. Conflicts are involved, as well as all of the major players and how they affect the environment, the process, the thoughts, or the problems.

7.3 REQUIREMENTS OF ALL FUNCTIONAL AND NON-FUNCTIONAL

All of the system and non-requirements are identified during the requirement analysis. It is now time to list and justify the practical and non needs separately.

7.3.1 SYSTEM FUNCTIONAL REQUIREMENTS

- Create, update, view, and delete product categories
- Create, update, view, and delete goods
- Specifically Search Products
- Browse Products
- System Login
- System Register
- Add to Cart
- Checkout
- Management orders
- Management stocks
- Sending emails from the software to consumers

- Multiple user verification

7.3.2 SYSTEM NON-FUNCTIONAL REQUIREMENTS

System Non-functional requirements outline the operation of the system. It outlines the system's quality traits or qualities.

The following is a list of non-functional requirements:

- Confidentiality or security
- Data integrity
- Active user interface design
- Accessibility
- Durability
- Efficiency
- Adaptability
- And ease of maintenance.

7.4 STAND-ALONE OR WEB-BASED

The suggested remedy uses a web-based system that can be accessed 24/7 from any location. When using standalone software, the program is set up on the PCs of each client. This software platform is the greatest option because it is accessible to the general public and can be used by anyone. A solitary program can never remain online, and remote data accessibility is virtually unachievable.

7.5 MoSCoW PRIORITIZATION ARE ALL REQUIRED.

Must have	
1	Create, update, browse, and delete product categories.
2	Maintain products (CRUD) Include in cart
3	Include in cart

4	Checking out
5	System Registration
6	System Login
Should have	
1	Search for products and read their details
2	Sort commodities by categories, price.
3	Email confirmation for users
Could have	
1	Email order details to consumers
2	Web or Online payment service
3	User profile management
Would have	
1.	Customer reviews and comments System for tracking purchases
2.	Items monitoring system
3.	The use of instant messaging by online

7.5.1 SYSTEM JUSTIFICATION:

Must have: The stated must-have needs are crucial for the system because, without them, the system cannot carry out the functions for which it was designed.

- Managing product categories and products is crucial for any e-commerce business. due to the lack of upgrading the product stock or uploading any new products to the system.
- Customers won't be able to examine or look up any goods they want to purchase.
- The capability to add items to a cart is also crucial.
- Customers can do this to add a certain item to their shopping cart so they can order their food. A must-have feature is check out, which enables users to confirm their orders for delivery.
- Registration page is crucial so that users can build their accounts by entering personal information such as their name, email address, location, etc.
- In order to safeguard user data and payment information, registered user is a need.

Should have: this features are just as crucial to the system as must-have features, but they are less crucial.

- In order to place an order, clients will be able to find products and review product details.
- Price-based product filtering
- Users may now find goods within a specific price range thanks to this.
- Primary email verification is crucial to confirming that a user is legitimate.

Could have:

- Although cash on delivery is an option, the system might provide an online payment option.
- Users could also read and edit the information on their profiles.
- Order information can also be sent to customers via email.

Would have:

The characteristics that would be added to the system to make it more unique but are less critical than other requirements are referred to as "would have" requirements.

- The system might be made more functional and effective by adding more comment sections and product ratings.
- It will close the information gap between clients and business owners (admin).

- To efficiently deliver the product to the consumer, an item monitoring system could be included.
- It will benefit both the business and the customers.
- Customers will also gain from being able to follow the progress of their orders.
- The option for instant messaging and chatting can also be developed and will be a unique tool for bridging the communication gap between clients and customers.

CHAPTER-8 (SPECIFICATIONS FOR SYSTEM ENGINEERING AND BUILD)

TOPICS 8

The logical, behavioral, and structural models of the upcoming system are presented in this chapter. This chapter's major goal is to convert the requirement specification into a design specification. Even during system engineering phase, this same new system modules are first listed, followed by the creation of use case diagrams, activity diagrams, sequence diagrams, and detailed class diagrams.

8.1 THE EQUIPMENT NEW SYSTEM

The operation of the new system is described by the new system modules. For a smoother work flow during the development process, all those functionalities have been split into a few high level modules.

Here is a list of these modules:

- System User verification
- Registration of users
- email confirmation and User login

Product category management:

- Category addition
- Category editing
- Remove the category

Control product:

- Include products and classify them.

- Update product information, such as price, stock, etc. Remove or delete products.

System blog management:

- Manage blog
- Add category

Place in cart:

- Find and sort products.
- Then add the item to your shopping basket to place an order.

Look into (checkout):

- Accept or reject the order.
- Display all items in the shopping cart.
- System automatically email customers with order information.

Create a report:

- The administrator should create a report on purchases

8.2 SYSTEM ACTIVITY DIAGRAMS

The business process carried out by the system is represented by the activity diagram. The operation of the business will be demonstrated using the activity diagram.

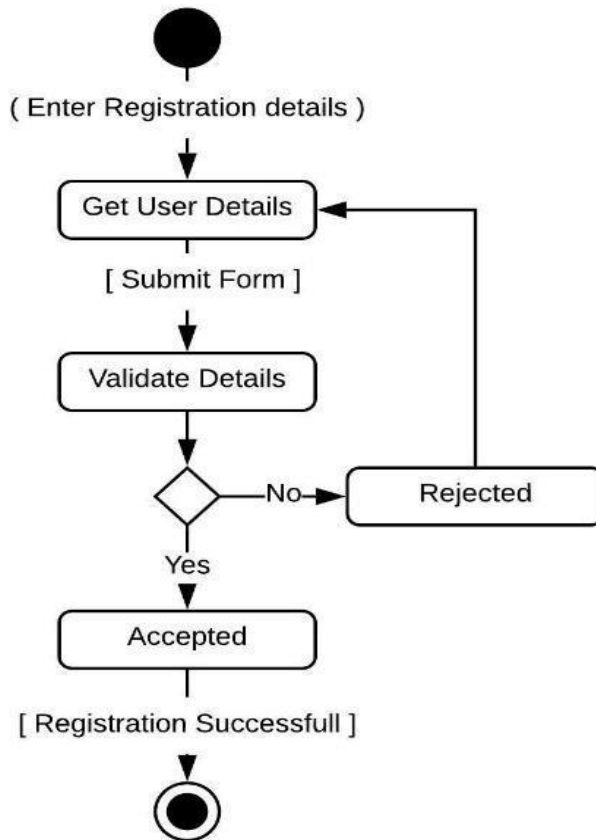


Figure 27 the system's registration procedure is depicted in the picture below.

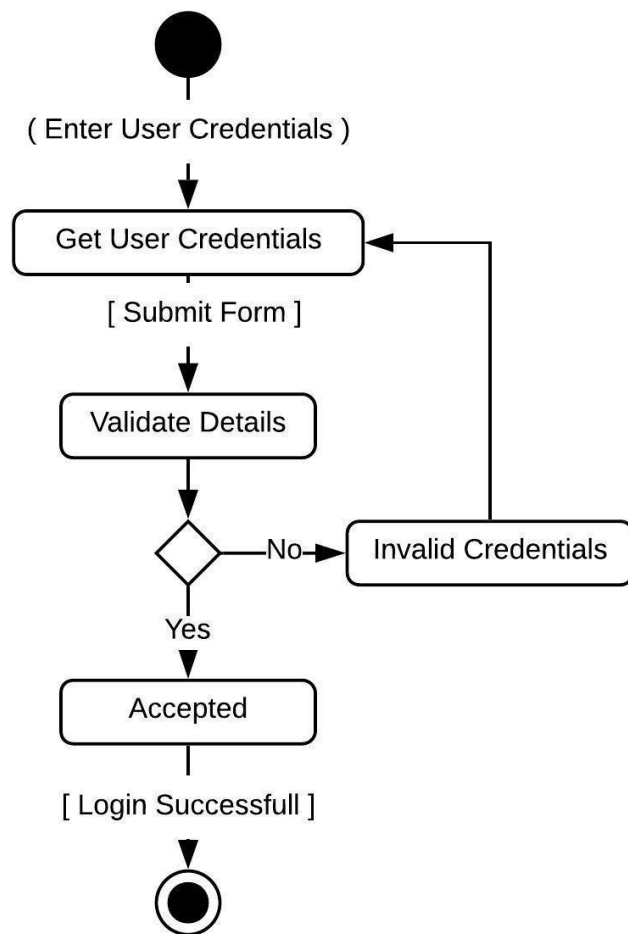


Figure 28 the system login procedure is depicted in the diagram below.

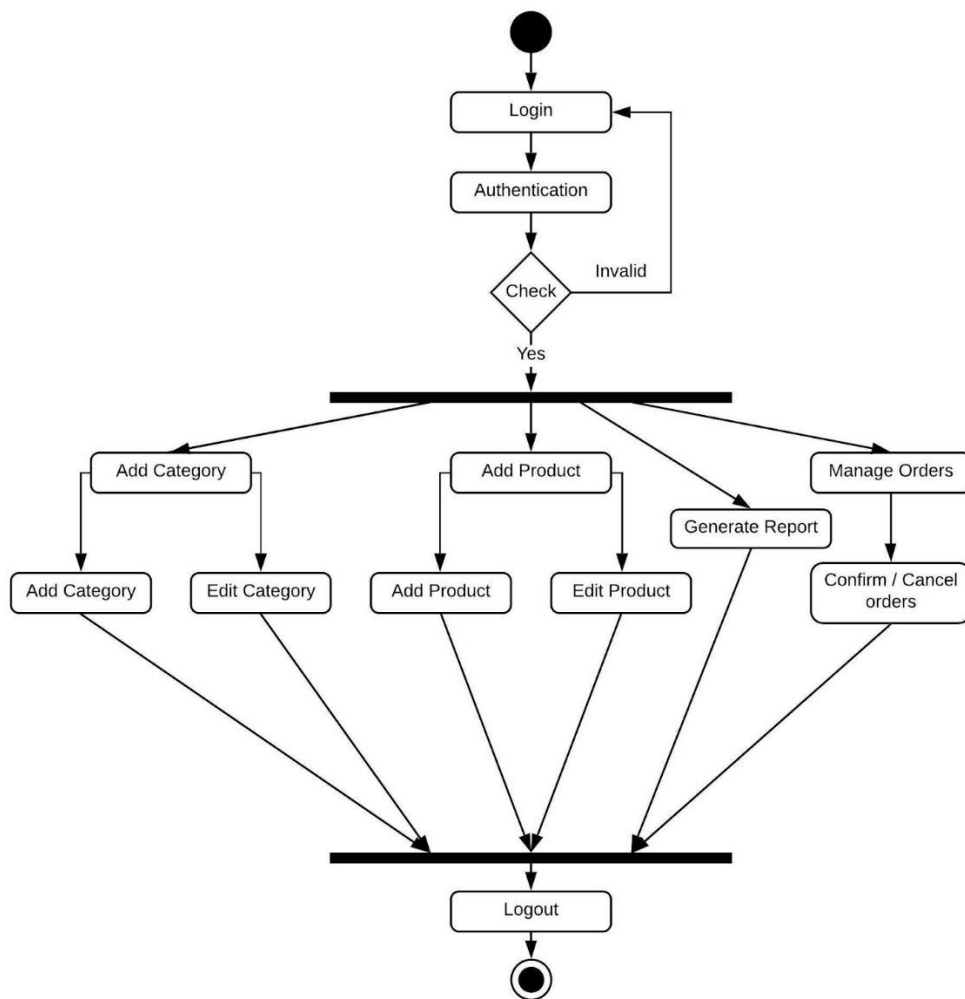


Figure 29 the graphic below depicts the tasks carried out by the administrator

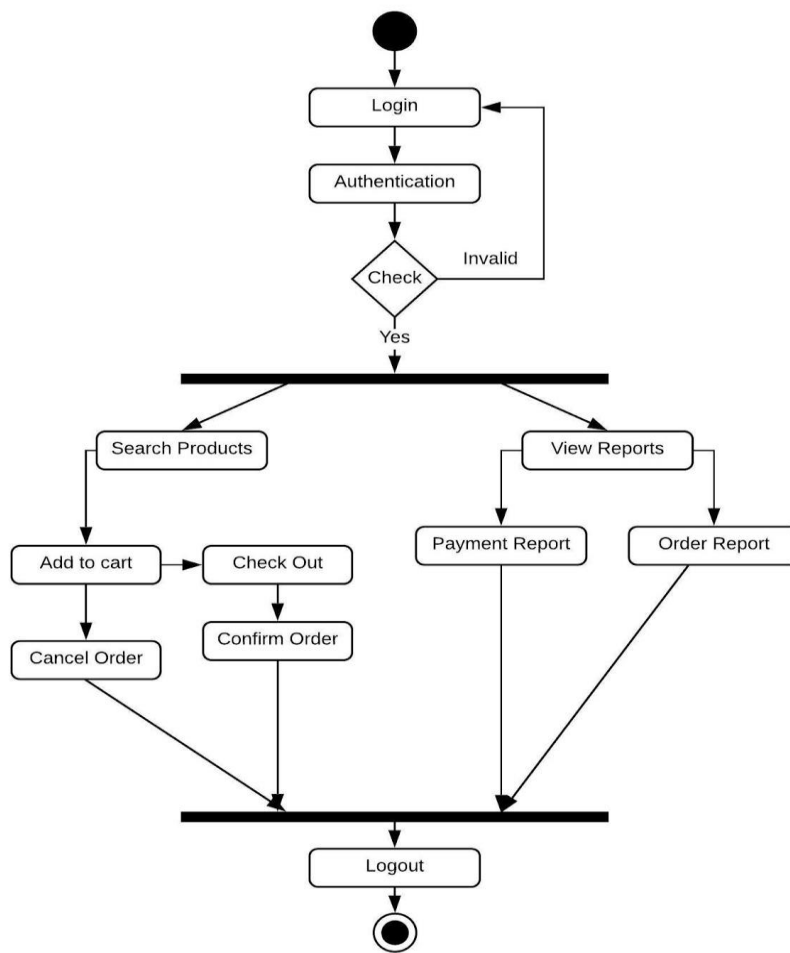


Figure 30 the figure below shows how the customer's tasks are displayed.

Agriculture officer and admin activity:

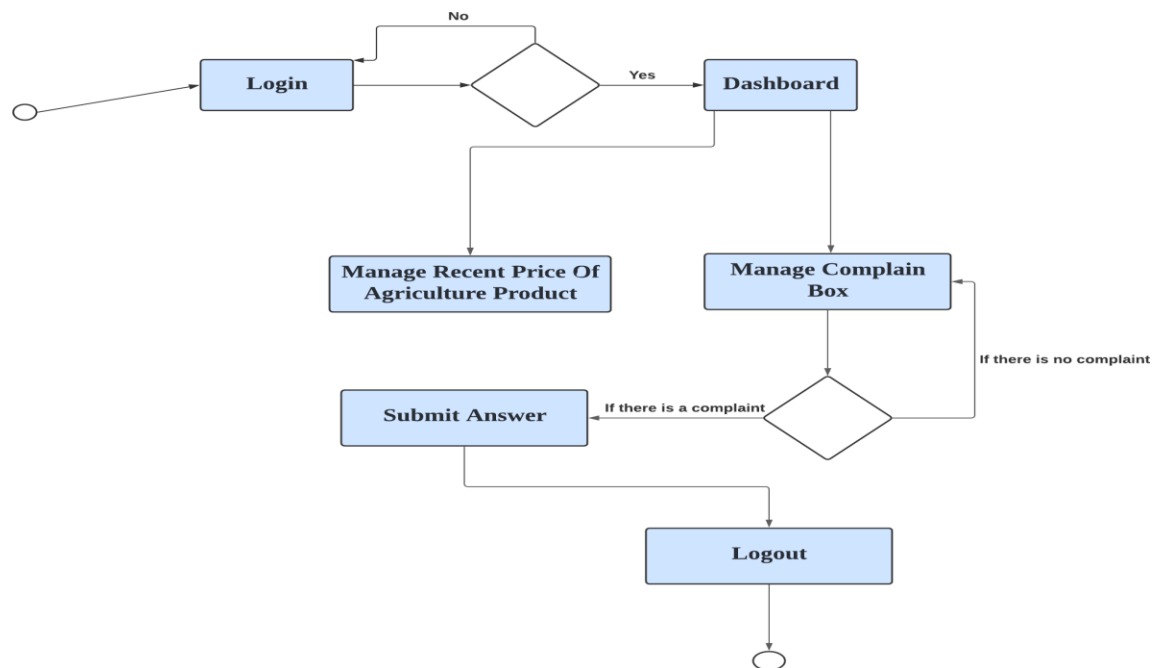
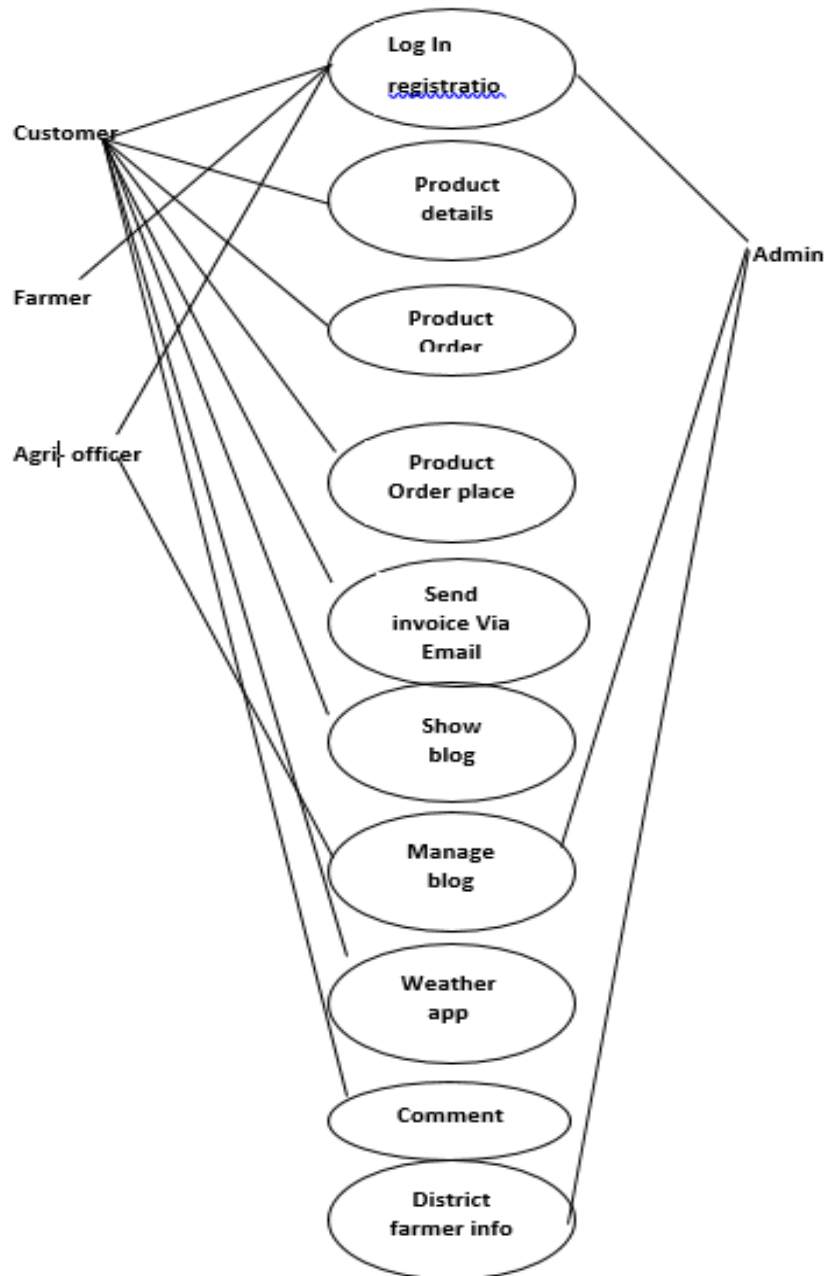


Figure 31 Administrator and agriculture officer activity:

8.3 SYSTEM USE CASE MODEL

The system's functionality and the people who carry it out are depicted in the use case diagram.

8.3.1 FARM MARKET SYSTEM FORMAL USE CASE DIAGRAM



Use Case ID	Primary actor	Use Cases
UC-1	Admin, Customer	Registration
UC-2	Admin, Customer	Login
UC-3	Admin	Manage product category
UC-4	Admin	Manage blog
UC-5	Admin	Manage products
UC-6	Admin, Customer	View, search and filter products
UC-7	Admin, Customer	Add to cart
UC-8	Admin, Customer	Check out
UC-9	Admin	Manage Orders

Table 1 The tables below describes the use case diagram.

Use Case ID:	UC-1
Use Case Name:	Registration
Actor:	Admin, Customer
Pre-conditions:	Users must be registered in order to use all the features of the system.
Normal flow:	1. User fills in the registration form. 2. If the form data are correct then user submits the form. 3. If form data is invalid then a error message is shown. 4. Users data is stored in database and redirected to the login page.

Table 2 Below is a primary scenario for each use case.

Use Case ID:	UC-2
Use Case Name:	Login
Actor:	Admin, Customer
Pre-conditions:	User must login with valid credential to use the system.
Normal flow:	1. User put in their credentials using the login form. 2. If credentials match then login is successful. 3. Else error message will be shown. 4. When admin logs in to the system the different interface is shown.

Table 3 admin, customer login

Use Case ID:	UC-3
Use Case Name:	Manage product category
Actor:	Admin
Pre-conditions:	Logged in admin can view, add, edit or delete product category.
Normal flow:	1. Admin fills the category form 2. Submits the form to add category data to the database. 3. Category can also be edited by clicking the update button. 4. Category can be deleted by clicking the delete button in the category page.

Table 4 manage product category

Use Case ID:	UC-4
Use Case Name:	Manage products
Actor:	Admin
Pre-conditions:	Logged in admin are able to view, add, update or delete products.
Normal flow:	1. Admin fills the add product form and assign the product to a certain category. 2. Submits the form to add product data to the database. 3. Product data can be updated by clicking the update button. 4. Product stock can be updated form the update page. 5. Products can also be deleted by clicking the delete button.

Table 5 Manage product table

Use Case ID:	UC-5
Use Case Name:	View, search and filter products
Actor:	Admin, Customer
Pre-conditions:	All the users are able to search, view and filter products.
Normal flow:	1. All the users are able to search and view product details from the product page. 2. User can search product from different category by using the category dropdown. 3. Price slider can be used to filter products in a specified price range.

Table 6View, search and filter products

Use Case ID:	UC-6
Use Case Name:	Add to cart
Actor:	Admin, Customer
Pre-conditions:	Logged is user are able to add products to their cart.
Normal flow:	1. Users can add products to their cart which they wish to buy. 2. From the cart page they can also cancel orders.

Table 7View, search and filter products

Use Case ID:	UC-7
Use Case Name:	Check out
Actor:	Admin, Customer
Pre-conditions:	Logged in users can check out and confirm the order.
Normal flow:	1. Users can check out and confirm their order. 2. The system will automatically send email to customer with their order details.

Table 8 Checkout

Use Case ID:	UC-8
Use Case Name:	Manage Orders
Actor:	Admin
Pre-conditions:	Logged in admins are able to manage their orders.
Normal flow:	1. The admin are able to view order and customer details. 2. Admin can update order status to pending, dismiss or done. 3. Then admin is able to generate a report from the system.

Table 9 Manage Orders

8.4 SYSTEM CLASS DIAGRAM

An essential component of structural modeling is the class diagram. The classes, attributes, methods, and relationships between the classes are represented in class diagrams. The databases and classes will be built in accordance with the class diagram during the implementation phase. The system's class diagram is shown in the diagram below.

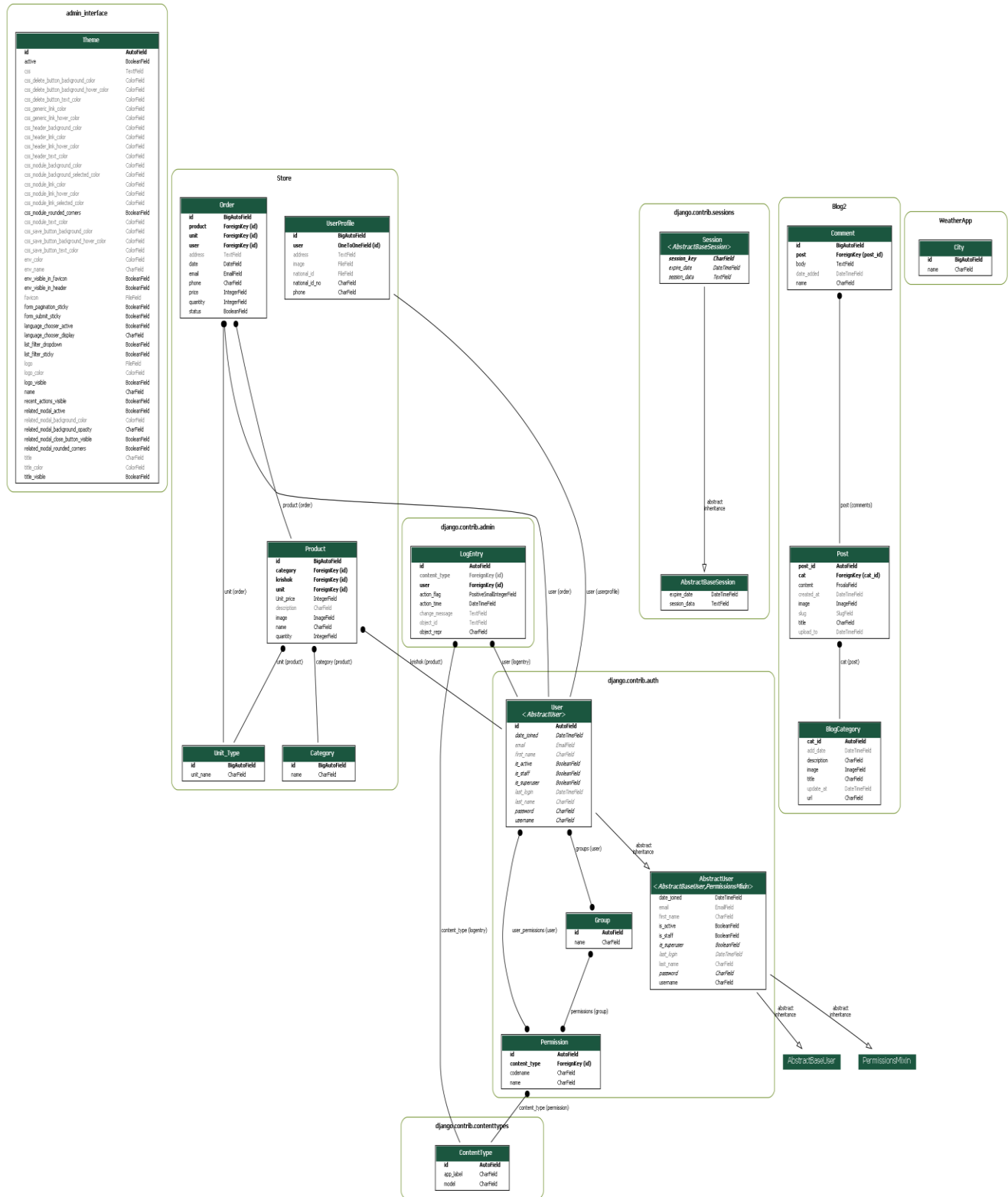


Figure 32 Diagram illustrating the present system's classes

8.5 SYSTEM SEQUENCE DIAGRAM

The functional model of the suggested system is included in this section. A sequence diagram's objective is to display the interior information about the business process and to explain how each component collaborates with the use case. Each use case has a sequence diagram that depicts how various objects work together to complete the use case. The sequence maps are shown in the section below.

➤ System registration:

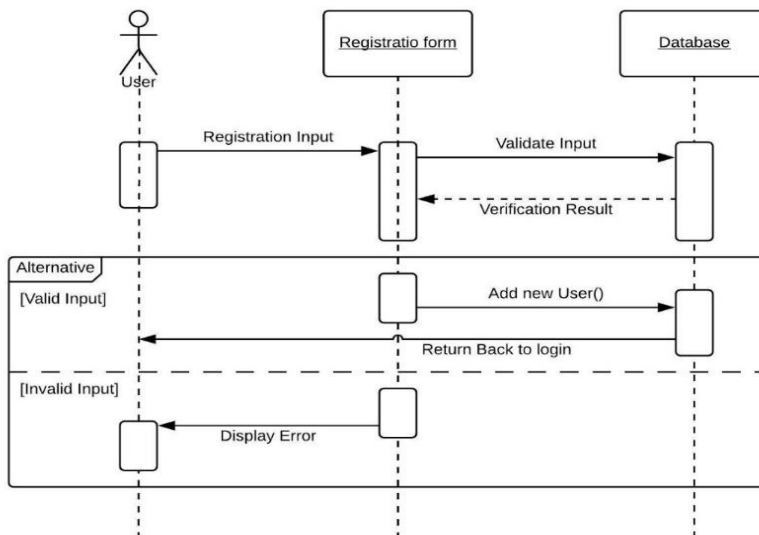


Figure 33 Registration

➤ System Login:

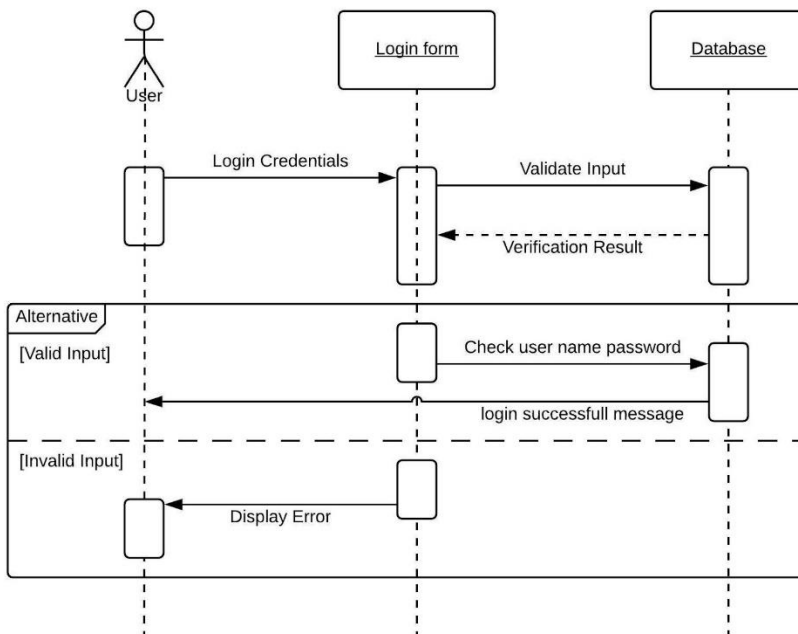


Figure 34 System login

➤ **Administration:**

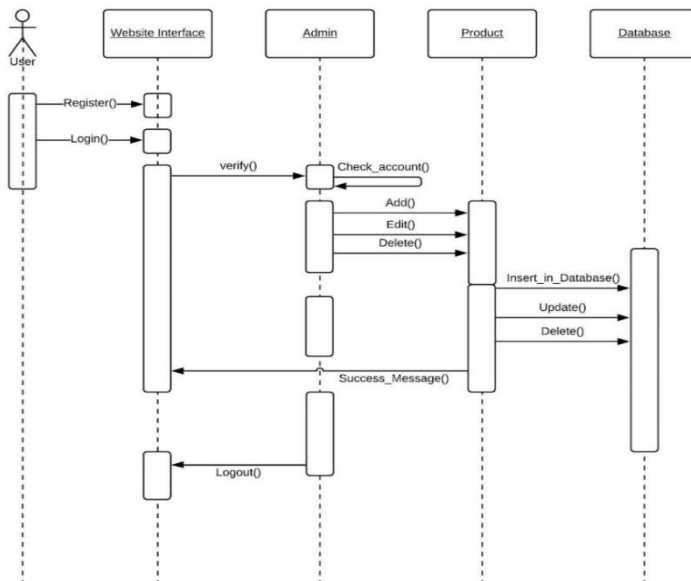


Figure 35Admin

➤ **System user or customer:**

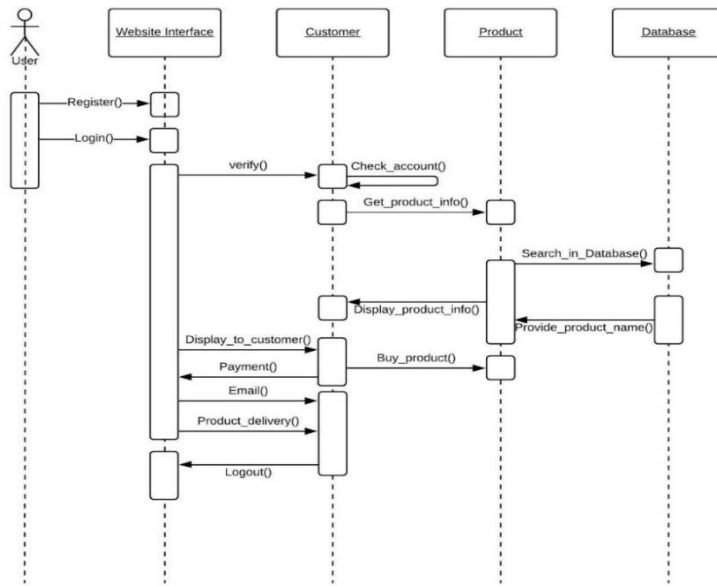


Figure 36 System user or customer

8.6 THE SYSTEM DEPLOYMENT DIAGRAM

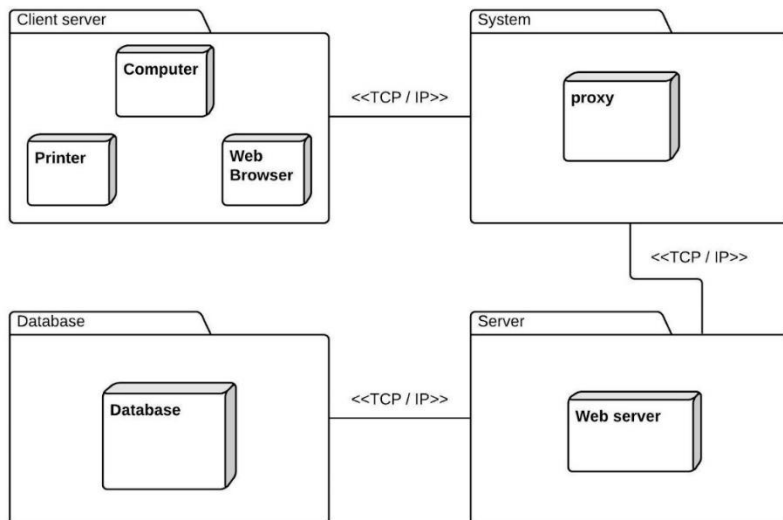


Figure 37 Deployment

8.7 ASPECTS OF USABILITY TO THINK ABOUT

It is crucial to optimize user engagement with the system when developing it by taking usability factors into account.

The following are a few topics to think about:

- **Usability:** The program should be simple to use and friendly to new users.
- **Efficiencies or Productivity:** Every system is supposed to carry out its intended function while maintaining high quality and making few mistakes.
- **Validation:** Validation checks are crucial because they ensure that users submit accurate data and stop incorrect data from being inserted into the database.
- **Learnability:** The program should be simple to understand. Even a novice user ought to be able to operate the system flawlessly, according to the developer.

8.8 THE PRINCIPLES OF UI DESIGN

The following list of UI design principles should be taken into account:

- **User-centered design:** This principle can be implemented by building the system in accordance with user requirements.
- **Attractive UI design:** The initial impression is often the greatest, thus the UI design must be appealing. An attractive, expertly designed, and functional user interface can increase system usage.
- **Software Standardization:** To avoid having to teach users how to use a newer version again, a common design pattern should be adopted.

8.9 DESIGN OF SYSTEM INTERFACE

The current system's user interface design is shown below:

Login and registration page:

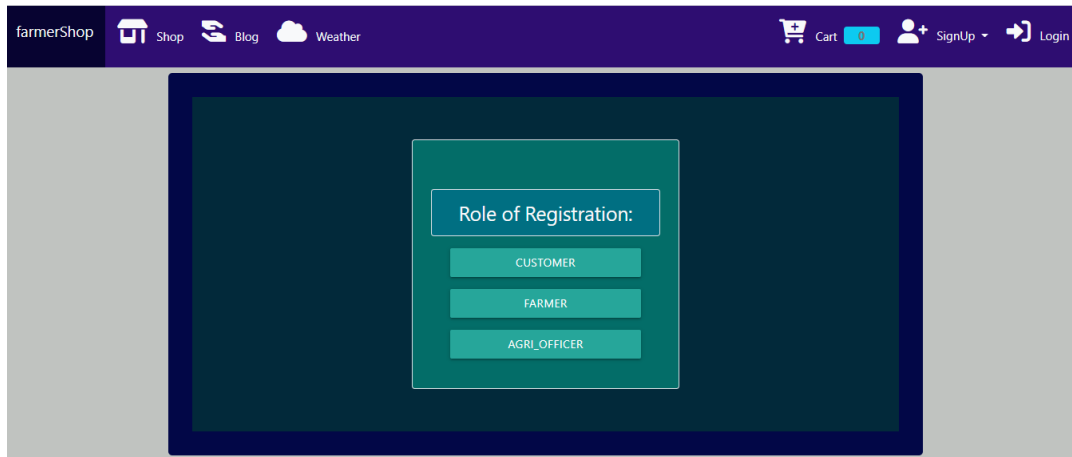


Figure 38 Login and registration page

The image displays a 'Customer Registration' form. At the top is a header image of a person with a blue double-headed arrow. Below this is a title 'Customer Registration'. The form contains several input fields: 'Username' (with placeholder text 'Username'), 'First Name' (with placeholder text 'First Name'), 'Last Name' (with placeholder text 'Last Name'), 'Email' (with placeholder text 'xyz@gmail.com'), 'Password' (with placeholder text '*****'), and 'Confirm Password' (with placeholder text '*****'). At the bottom of the form is a large green button labeled 'CREATE AN ACCOUNT'.

Figure 39 Customer registration

Username*

This field is required.

Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.

First name*

This field is required.

Last name*

This field is required.

Email*

This field is required.

Password*

This field is required.

Your password can't be too similar to your other personal information.
Your password must contain at least 8 characters.
Your password can't be a commonly used password.

Address

National id no*

This field is required.

Phone*

This field is required.

Image

Choose File No file chosen

National id

Choose File No file chosen

Figure 40 Registration

Username*

This field is required.

Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.

First name*

This field is required.

Last name*

This field is required.

Email*

This field is required.

Password*

This field is required.

Your password can't be too similar to your other personal information.
Your password must contain at least 8 characters.
Your password can't be a commonly used password.
Your password can't be entirely numeric.

Address

National id no*

This field is required.

Phone*

This field is required.

Image

Choose File No file chosen

National id

Choose File No file chosen

Figure 41 Agriculture officer registration form

Category UI page:

Product category:

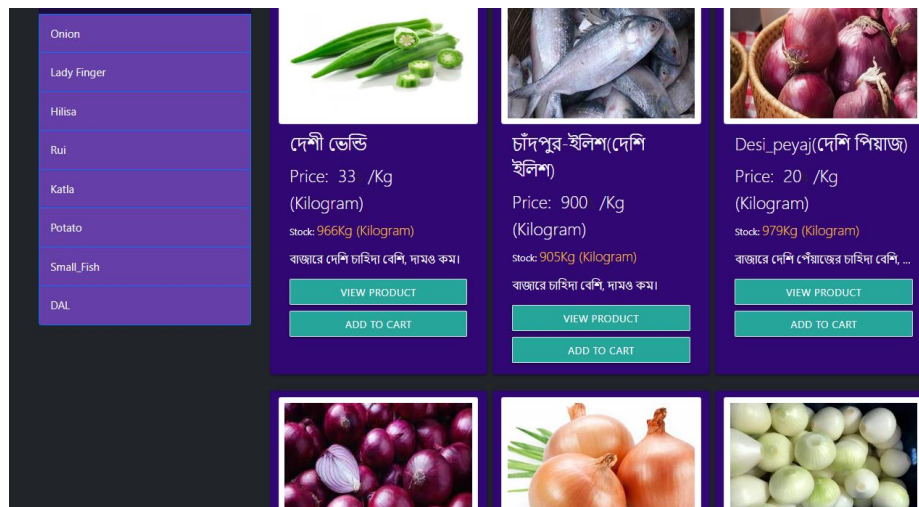


Figure 42 Product category

Blog category:

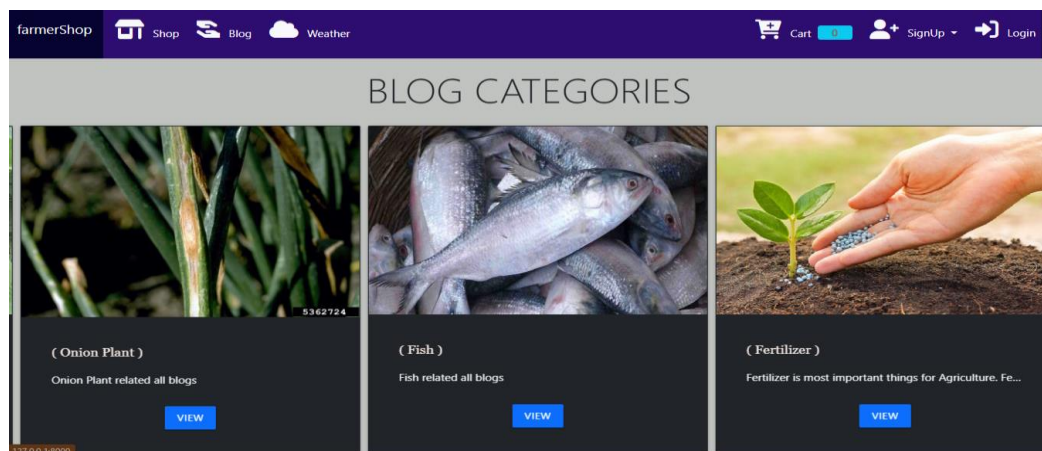
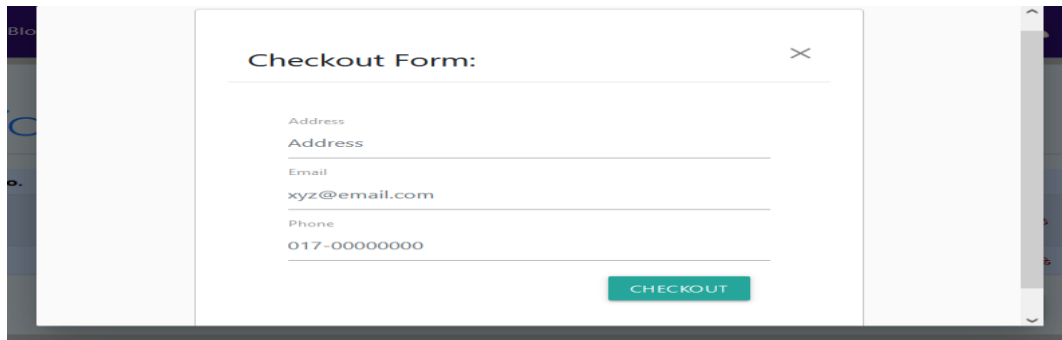


Figure 43 blog category

Checkout form UI:



Checkout Form: ✕

Address

Address

Email

xyz@email.com

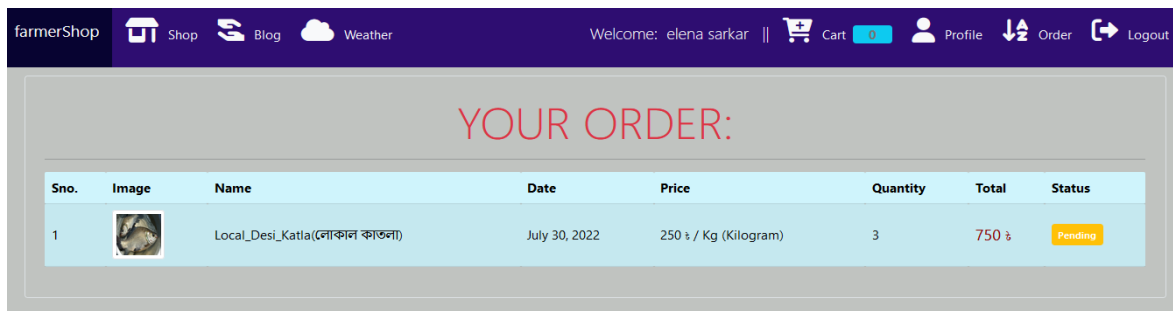
Phone

017-00000000

CHECKOUT

Figure 44 Check out UI

Order page UI:



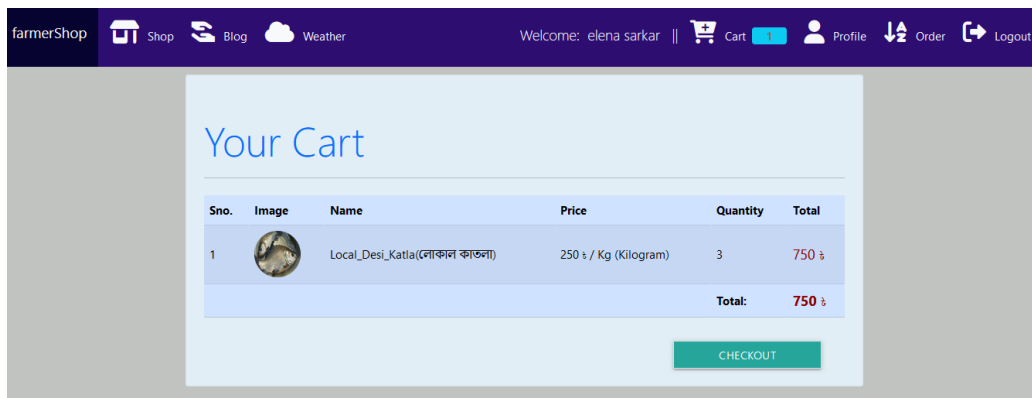
farmerShop Shop Blog Weather Welcome: elena sarkar || Cart 0 Profile Order Logout

YOUR ORDER:

Sno.	Image	Name	Date	Price	Quantity	Total	Status
1		Local_Desi_Katla(লোকাল কাতলা)	July 30, 2022	250 ₳ / Kg (Kilogram)	3	750 ₳	Pending

Figure 45 UI of the order page

UI of cart page:



farmerShop Shop Blog Weather Welcome: elena sarkar || Cart 1 Profile Order Logout

Your Cart

Sno.	Image	Name	Price	Quantity	Total
1		Local_Desi_Katla(লোকাল কাতলা)	250 ₳ / Kg (Kilogram)	3	750 ₳
Total:					750 ₳

CHECKOUT

Figure 46 UI of cart page

UI of shop page:

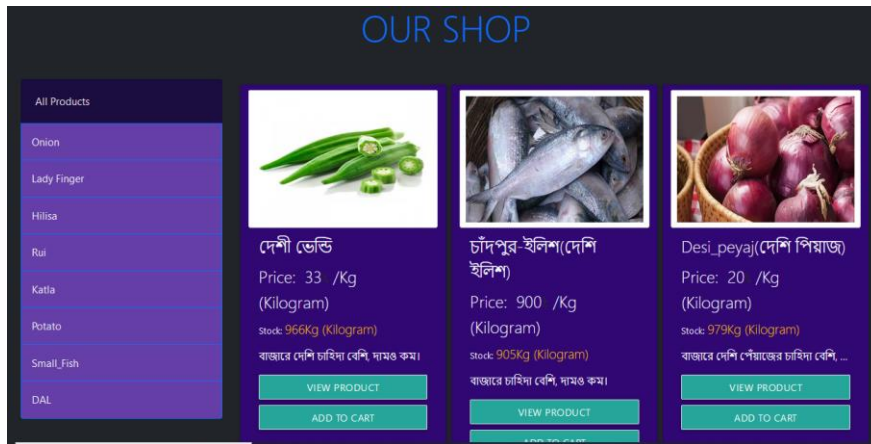


Figure 47 UI of shop page

UI of Customer page:

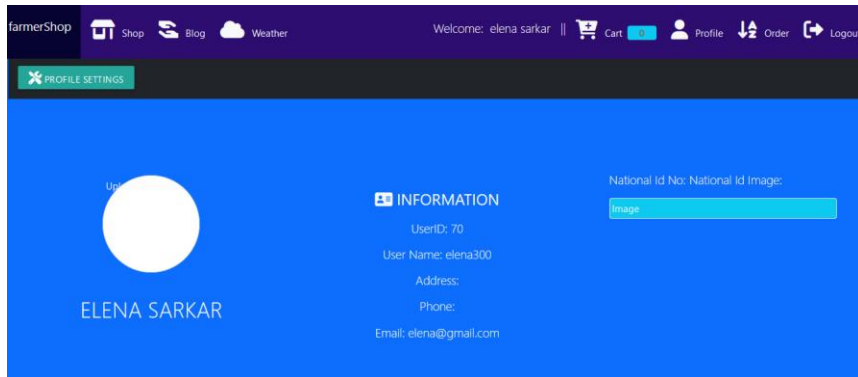


Figure 48UI of customer page

Profile settings UI:



elena300
elena@gmail.com

Username:
elena300

Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.

First name:
elena

Last name:
sarkar

Email:
elena@gmail.com

Password:
No password set.
Raw passwords are not stored, so there is no way to see this user's password, but you can change the password using [this form](#).

Address:

National id no:

Phone:

Image: Currently: [upload/pkrishokImage](#)
[/blank.png](#) Clear
Change:
 No file selected.

National id: Currently: [upload/IDImage](#)
[/blank.png](#) Clear
Change:
 No file selected.

Figure 49 Profile setting UI



TOPICS 9

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9.1 TOOLS FOR DEVELOPMENT:

The most crucial component of any system is selecting the appropriate tools. The system's efficiency and competence depend on the development tools that are used. "Python technology" has been used in the system's development. Python is a framework for web-based applications, and Django seems to be the core programming language. The web pages are designed and structured using HTML and CSS, and they are made dynamic using JavaScript and jQuery. The back - end database server is a SQL local server. The program will function on the Microsoft-developed IIS Express web server. For designing this app, I'm using "visual studio 2019 enterprise edition" and "sublime text 3."

9.2 SYSTEM TIME BOXING:

A crucial strategy for creating a web-based system is time boxing. The method will be useful for quickly producing a fully functional software product. This section's initial responsibility is to list all of the system's tasks. After that, I divided each major work into a number of smaller ones and allotted time for each of them. The complete method will be applied in an iterative fashion. Due to its exploratory approach, it will be simple to go back and make modifications where they may be necessary. I have four weeks to complete this project. Therefore, the project shouldn't take longer than four weeks to finish.

I created a timetable for all of the tasks in my entire project with this in mind. It will begin on February 12 and run until June 20, 2022. The following table contains the time boxing schedule:

Timebox	Date	Deliverables
1	12 th feb, 2022 to 18 th feb, 2022	1. Database design and development 2. Breakdowns of all main activity into smaller tasks. 3. Basic layout designing and development + CRUD operations with proper UI designing + testing 4. Role based Login, Logout functionality+ registration functionality + Testing

		5. Product page design and development + Category page design+ development +CRUD operation of those pages+ testing 6. Testing of all above tasks.
2	19 th October, 2022 to 21 th October, 2022	1. Add to cart functionality making + testing 2. Home page designing properly. 3. Home page product filtering+ testing 4. Featured Category filtering in home page+ testing 5. Home page pagination functionality+ testing 6. Testing all above tasks.
3	22 th feb,2022 to 29 th feb,2022	1. Shopping page designing properly + Product Search option + testing 2. Product filtering in shopping page + testing+ pagination creation +testing 3. Shopping page add to cart functionality + Product filtering as price + testing 4. Making a slider for price filtering of products + testing 5. Testing all above tasks.

4	6 th march,2022 to 17 th march,2022	1. Checkout page designing+ Invoice creation as the total product in cart + testing 2. Order page design +Development + testing 3. Order placement functionality creation + testing 4. Order detail functionality creation+ Order status making + testing 5. Testing all above tasks.
5	18 th march,2022 to	6. Email sending functionality + testing 7. Validation of all pages + testing

	15 th april, 2022	8.	Testing all above tasks.
		9.	Admin login + Dashboard design and development+ testing
		10.	Testing all above tasks.

9.3 DISCUSSION OF ALL PRIMARY TASKS:

Therefore, I've divided the system's primary functions into a number of more manageable chores. This method is helpful for the system development lifecycle's iterative approach. It makes it easier to design this system.

The following list includes potential breakdowns of all the system's primary tasks:

9.3.1 SYSTEM SECURITY AND USER IDENTIFICATION

Possible subtasks for this task include:

- UI design for login, registration, and logout options
- User to login and logout functionality based on role.
- Create registration process, add password-forget functionality, and test that all features are operational.

9.3.2 TO ENSURE THAT ALL SERVICE DATA IS AVAILABLE

Possible divisions of this assignment are as follows:

- Design the UI for the relevant page and implement CRUD operations
- Design the UI for the product page and create CRUD operations.
- Design the UI for the Order page and create CRUD operations.
- Verifying that all of the aforementioned pages' capabilities are operational.

9.3.3 CREATE FUNCTIONALITIES FOR ITEM ADD TO CART

Potential divisions of this assignment include:

- Adding "product views" functionality to the Shop page's UI design.
- Add "product views" functionality to the Home page's UI design.
- Add "ADD TO CART" functionality to the shop page for each product.
- Add "ADD TO CART" functionality to the home page for each product.
- Verifying that every function on all of the aforementioned pages is operational.

9.3.4 CREATE FUNCTIONALITIES FOR ORDER PLACEMENT

Potential divisions of this assignment include:

- UI checkout page design + "Invoice views" functionality.
- Create the Order page's UI and add "Order details views" functionality to it.
- Creating an order placement button with capabilities for admins to place orders.
- Add "Email" feature to the checkout page's order confirmation form.
- Create order page feature for order status.
- Verifying that every function on all of the aforementioned pages is operational.

9.3.5 IMPLEMENT PRODUCT FILTERING TECHNIQUES

This assignment could be broken down as follows:

- Develop the UI design for the "Product filtering choices" section of the home page.
- Create the user interface (UI) for the "Product Filtering choices" on the shop page and develop all of the product filtering features here.
- Design the user interface (UI) for the "Price filtering options" on the shop page and implement all price filtering features here.
- Verifying that every function on all of the aforementioned pages is operational.

9.3.6 CONSTRUCT SEARCH OPTIONS

This assignment might be broken down as follows:

- Develop the UI design for the "search options" at the "home" page and all of the product search features.
- Design the user interface (UI) for the "Product search options" section of the "shop" page.
- Design the user interface (UI) for the "Price search choices" on the "product" page and implement all price search features there.
- Design the user interface (UI) for the "Price search options" section on the "Category" page. Develop Effective all pricing search functionalities here and create the user interface for the "Price search choices" at the "Order" page.
- Verifying that every function on all of the aforementioned pages is operational.

9.3.7 VERIFYING THE VALIDITY OF EVERY FUNCTION

Possible divisions of this task include:

- Verifying all of the information on the "home" page.
- Verifying every validation on the "shop" page.
- Verifying every validation on the "product" page.
- Verifying every validity on the "category" page
- Verifying every validity on the "order" page.
- Verifying every validation on the "Dashboard" page
- Verifying every validity in the "BLOG" page.
- Verifying every validity on the "WEATHER" page.
- Verifying that every function on all of the aforementioned pages is operational.

9.3.8 ADD PAGING FUNCTIONALITY

The following are the possible splits of this task:

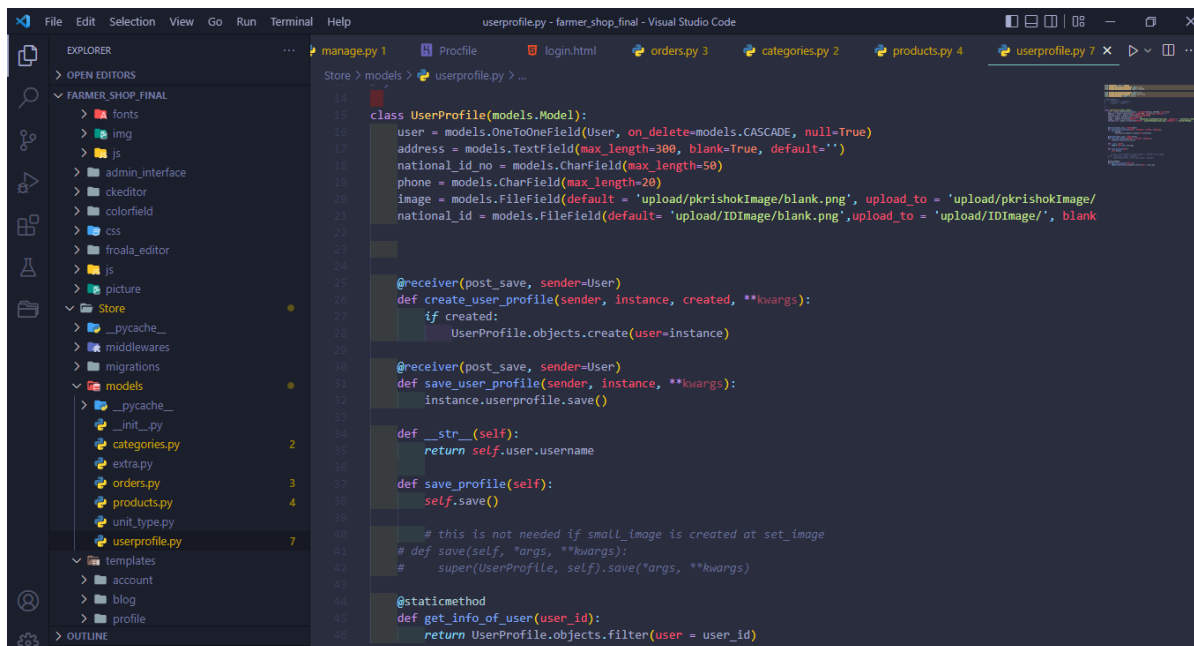
- Add all pagination features to the "home" page.

- Verifying all pagination features on the "shop" page.
- Verifying all pagination features on the "product" page.
- Verifying all pagination features on the "category" page.
- Verifying all pagination features on the "order" page.
- Verifying all pagination features on the "BLOG" page.
- Verifying all pagination features on the WEATHER page.
- Verifying that every function on all of the aforementioned pages is operational.

9.4 SAMPLE CORE MODULE CODING:

The section contains a few examples of written code from my project, which are provided below:

Profile:



```

class UserProfile(models.Model):
    user = models.OneToOneField(User, on_delete=models.CASCADE, null=True)
    address = models.TextField(max_length=300, blank=True, default='')
    national_id_no = models.CharField(max_length=50)
    phone = models.CharField(max_length=20)
    image = models.FileField(default='upload/pkrishokImage/blank.png', upload_to='upload/pkrishokImage/')
    national_id = models.FileField(default='upload/IDImage/blank.png', upload_to='upload/IDImage/', blank=True)

    @receiver(post_save, sender=User)
    def create_user_profile(sender, instance, created, **kwargs):
        if created:
            UserProfile.objects.create(user=instance)

    @receiver(post_save, sender=User)
    def save_user_profile(sender, instance, **kwargs):
        instance.userprofile.save()

    def __str__(self):
        return self.user.username

    def save_profile(self):
        self.save()

    # this is not needed if small_image is created at set_image
    # def save(self, *args, **kwargs):
    #     super(UserProfile, self).save(*args, **kwargs)

    @staticmethod
    def get_info_of_user(user_id):
        return UserProfile.objects.filter(user = user_id)
  
```

Figure 50 Code of Profile

Weather app:

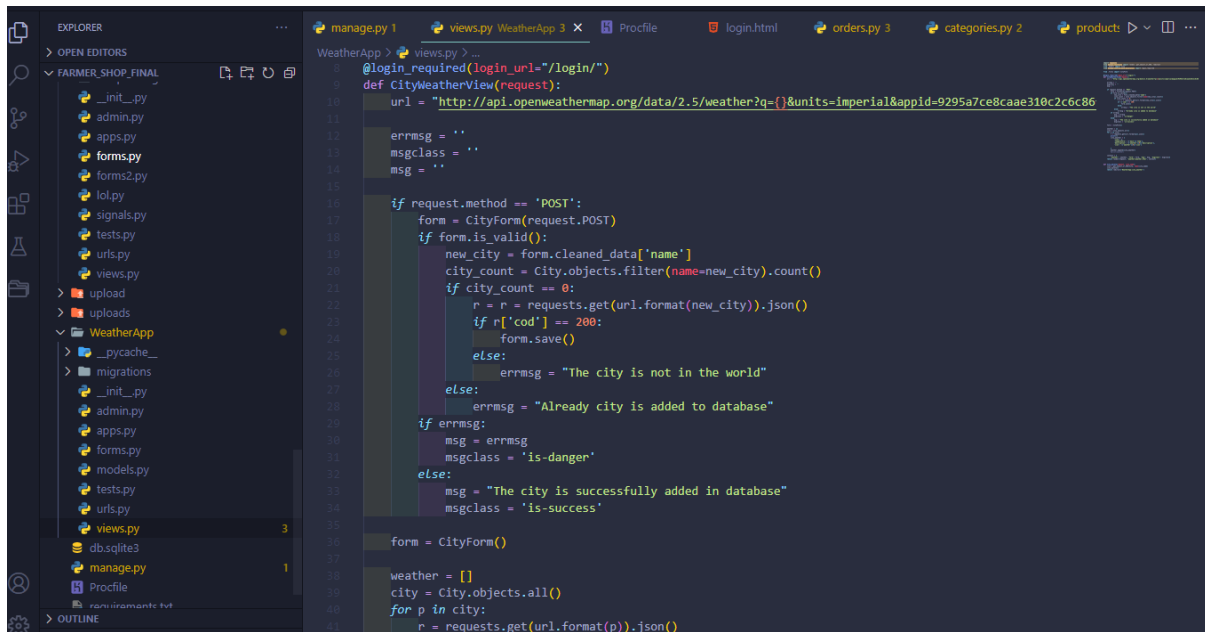


Figure 51 Code of Weather app

Blog:

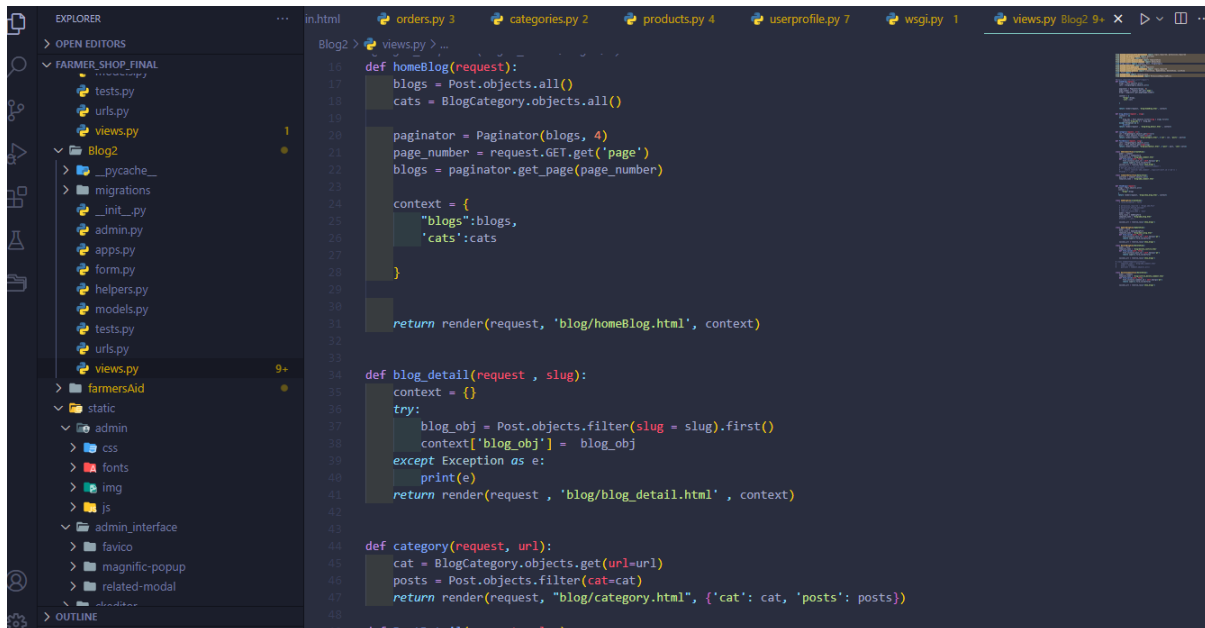


Figure 52 Code of blog

Cart and Checkout:

```

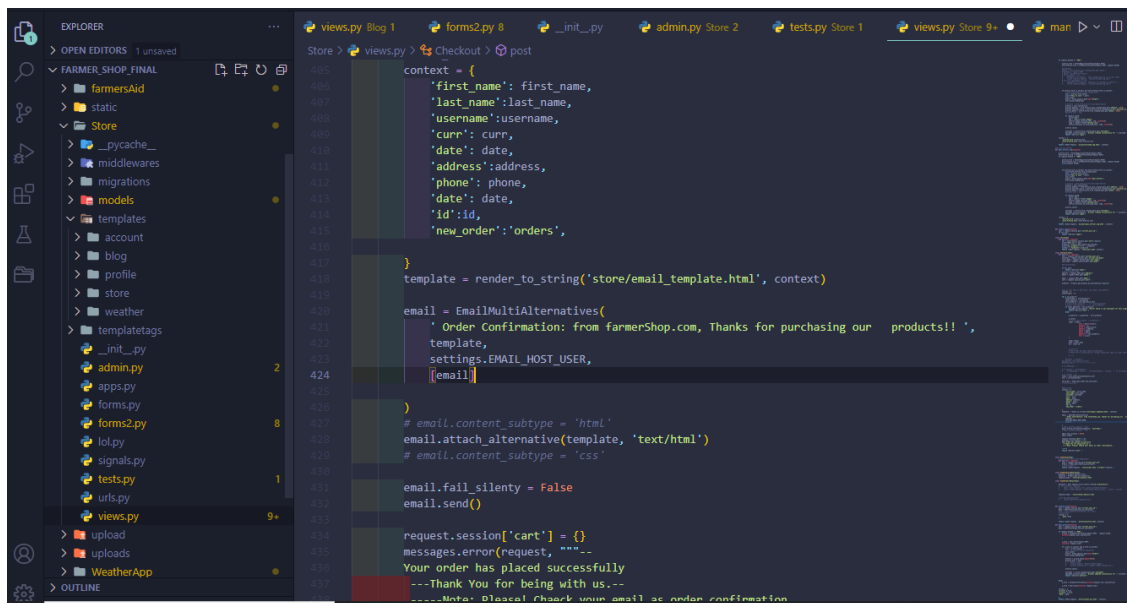
class Cart(View):
    def get(self, request):
        ids = list(request.session.get('cart').keys())
        print("here is:--",ids)
        products = Product.get_product_by_ids(ids)
        print('All products:---->> ', products)
        context = {"products":products}
        return render(request, 'store/cart.html',context )

class Checkout(View):
    def post(self, request):
        user = request.session.get('current_user_id')
        username = request.session.get('current_username')
        first_name = request.session.get('full_name')
        last_name = request.session.get('last_name')

```

Figure 53 Code of cart and checkout

Email Invoice:



```

context = {
    'first_name': first_name,
    'last_name': last_name,
    'username': username,
    'curr': curr,
    'date': date,
    'address': address,
    'phone': phone,
    'date': date,
    'id': id,
    'new_order': 'orders',
}

template = render_to_string('store/email_template.html', context)

email = EmailMultiAlternatives(
    'Order Confirmation: from farmerShop.com, Thanks for purchasing our products!! ',
    template,
    settings.EMAIL_HOST_USER,
    [email])

# email.content_subtype = 'html'
email.attach_alternative(template, 'text/html')
# email.content_subtype = 'css'

email.fail_silently = False
email.send()

request.session['cart'] = {}
messages.error(request, """
Your order has placed successfully
---Thank You for being with us---
-----Note: Please! Check your email as order confirmation

```

Figure 54 Code of email and invoice

CHAPTER-10 (TESTING OF THE SYSTEM)

TOPICS -10

The development of any software must include testing. It is a process to determine whether each system function accurately produces the expected outputs or not. The ability to demonstrate that a software system satisfies all user needs is another crucial component of software development. Testing is required not only at the end of a system's development but also at each step to determine whether or not the stage's functions are functioning as intended. There are numerous testing methods available to demonstrate how various aspects of a system work, including acceptability testing, unit testing, validation testing, security testing, etc. Selecting a test method or procedure is crucial before creating a test plan.

10.1 TEST STRATEGY:

Before beginning a testing of any task, it is vital to complete a test plan. Determining the scope and risk of what needs to be evaluated and what doesn't, as well as adequately documenting every testing plan, are also advantageous. Now that the entire project has successfully progressed, it is essential to do proper testing. The entire testing process has been separated into testing phase and non-functional testing to make it easier. These two requirements will be followed when executing the testing plan.

10.1.1 CRITERIA FOR FUNCTIONAL TESTING:

System Unit tests:

- Verification of the product name's length.
- Verification of category name lengths.
- The entry of accurate data.

Module evaluation:

- Filling out the registration form's blank fields
- filling out the login form's blank fields.
- Verification of registration.

System testing for integration:

- Checking the functionality of logging in
- Checking the functionality of registering;

10.1.2 CRITERIA NON-FUNCTIONAL TESTING:**System Validation testing**

- User expectations test for the shop page.

System Security evaluation

- Unauthorized individuals cannot purchase any goods.

Usability evaluation

- Home page test.
- Shop page test.
- Item and price filtering testing.
- UI testing.

Testing of crossbows:

- Verifying whether an application supports various browsers.

10.2 TESTCASE AND TEST PLAN FOR USER ACCEPTANCE:

The testing phase is a collection of specifications for a single test, including information on inputs, all criteria that must be met, the testing process, anticipated outcomes, and actual outcomes. It determines whether or not that specific test meets the actual requirements. Each test case is created in this instance for each testing approach.

Test Plan for User Acceptance

The last phase of testing is user acceptance. It relates to and examines how the involved user performed during testing.

Test Case			
Testing type			
Testing description			
Testing preparation			
User name			
Assume role			
Steps all of testing	Expect the outcome	Find Actual outcome	Comment

10.3. (SOFTWARE) UNIT TESTING

The study aims to test each individual unit of source code is known as unit testing. The smallest testable portion of the whole source code or any program is referred to as a unit here.

Below are some examples of software unit testing.

10.3.1 A CASE STUDY OF UNIT-TEST-1:

Unit Test-1		Test Class: login		Designed by-	
				<u>Kanta Hawlader</u>	
Data source:		Objectives:		Tester:	
Data entered by user.		Form validation checking		<u>Kanta Hawlader</u>	
Test case	Description	Task	Expected result	Actual result	
1.	Validation of length of product name.	Insert Category's information: 1. Category name: Phone number	One validation message will be appear showing the minimum length of the category's name.	It's done successfully.	

Figure 55testing the length of numbers

10.3.2 A CASE STUDY OF UNIT-TEST-2:

Unit Test-1		Test Class: Product Controller		Designed by-	
				Kanta Hawlader	
Data source:		Objectives:		Tester:	
Data entered by user.		Form validation checking		Kanta Hawlader	
Test case	Description	Task	Expected result	Actual result	
1.	Validation of lengths of category name.	Insert product's information: 1. Product name: veg	One validation message will be appear showing the minimum length of the product's name.	It's done successfully.	

10.3.3 A CASE STUDY OF UNIT-TEST-3:

Unit Test-1		Test Class:category		Designed by-	
				Kanta Hawlader	
Data source:		Objectives:		Tester:	
Data entered by user.		Form validation checking		Kanta Hawlader	
Test case	Description	Task	Expected result	Actual result	
1.	Valid data entry checking	Insert Category's information: 1. Category name: "onion" And all fields is filled up with category information. 2. Then clicked on "save" button.	One validation message will be appear showing invalid data entry.	It's done successfully.	

PRODUCT'S DETAILS



Desi_peyaj(দেশি পিঁয়াজ)

Status	Price	Stock Availability	Stok Unit	Discount	Farmer's Name:
Active	20 t/Kg (Kilogram)	Available	979 Kg (Kilogram)	0%	Dipon45

PRODUCT DESCRIPTION:
বাজারে দেশি পেঁয়াজের চাহিদা বেশি, দামও কমা। সকল পণ্য গুণগত মানসম্পূর্ণ।



Go to Farmer Details : DIPON45



elena300
elena@gmail.com

Username: **elena300**

Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.

First name: **elena**

Please fill out this field.

Last name: **sarkar**

Email: **elena@gmail.com**

Password: **No password set.**
Raw passwords are not stored, so there is no way to see this user's password, but you can change the password using [this form](#).

Address: **8uty67674554455**

National id no:

Image: Currently: [upload/pkrishokImage/blank.png](#) Clear
Change: Browse... No file selected.

National id: Currently: [upload/IDImage/blank.png](#) Clear
Change: Browse... No file selected.

UPDATE INFO

Figure 56 Validation of invalid data entry.

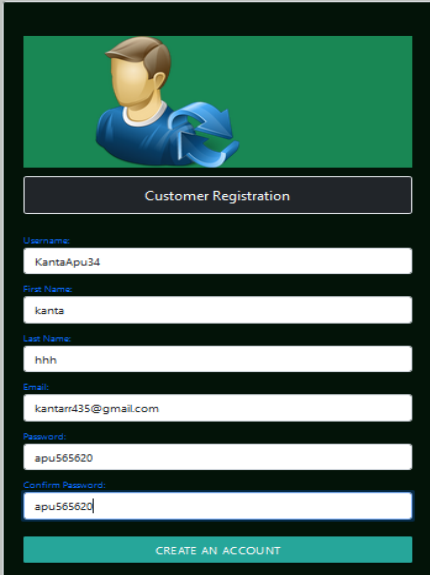
10.4 SYSTEM MODULE TESTING:

Module testing refers to testing each and every module that makes up the entire software. Module testing determines whether or not each module's functions are flawless.

The next section discusses some module testing for the current project:

10.4.1 TEST CASE OF MODULE-TEST-1:

Module-test-1		Test Function: <u>customer_reg</u>		Designed by- <u>Kanta Hawlader</u>	
Data source: Data entered by user.		Objectives: Customer Registration information saving.		Tester: <u>Kanta Hawlader</u>	
Test case	Description	Task	Expected result	Actual result	
1.	All fields are fill up correctly and then click on save button.	1. All fields are fill up correctly 2. Click on “Register” button	Success message will be appeared.	It's done successfully.	



Customer Registration

Username:

First Name:

Last Name:

Email:

Password:

Confirm Password:

CREATE AN ACCOUNT



elena300
elena@gmail.com

Username:
elena300

Required. 150 characters or fewer. Letters, digits and @/./+/-/_ only.

First name:
elena

Last name:

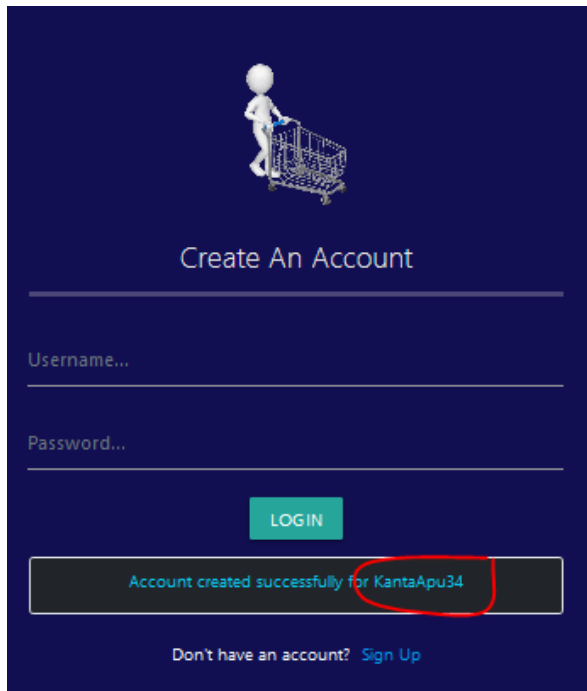
Please fill out this field.
elena@gmail.com

Password:
No password set.
Raw passwords are not stored, so there is no way to see this user's password, but you can change the password using [this form](#).

Figure 57 validating the validity of blank fields.

10.4.2 TEST CASE OF MODULE-TEST-2:

Module-test-2		Test Class: Account Controller		Designed by- Kanta Hawlader	
Data source: Data entered by user.		Objectives: Login form validation checking.		Tester: Kanta Hawlader	
Test case	Description	Task	Expected result	Actual result	
1.	Blank field submission of login form	1. Insert information of Login form and also kept one blank field. 2. Click on "Login" button	Error message will be appeared.	It's done successfully.	



Create An Account

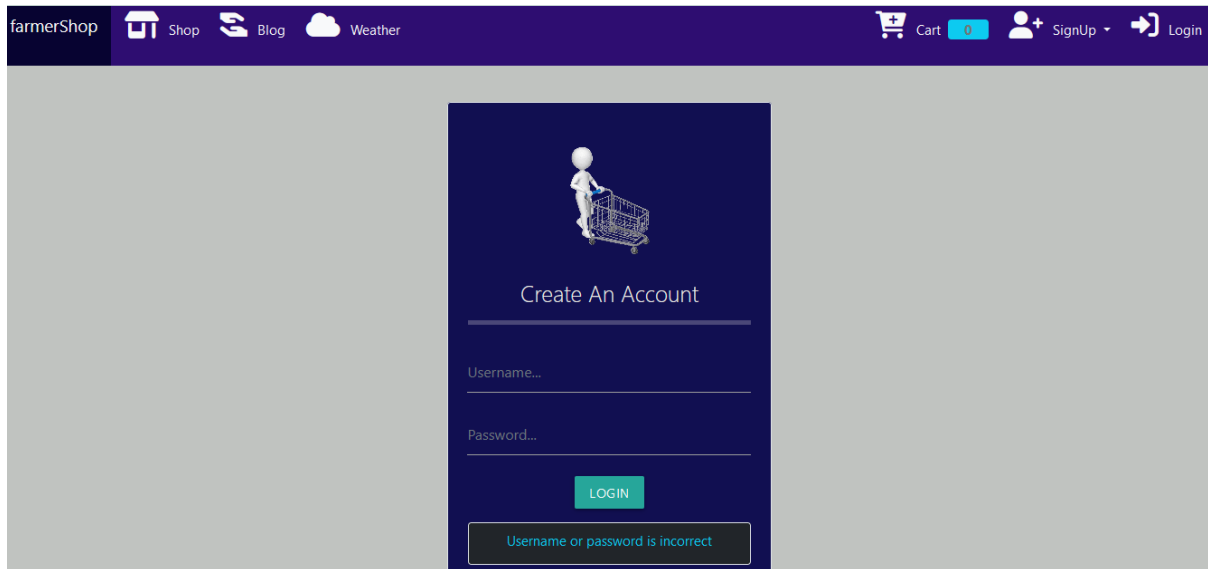
Username...

Password...

LOGIN

Account created successfully for KantaApu34

Don't have an account? [Sign Up](#)



farmerShop Shop Blog Weather Cart 0 SignUp Login

Create An Account

Username...

Password...

LOGIN

Username or password is incorrect

Figure 58 checking for empty fields on the login form.

10.4.3 TEST CASE OF MODULE-TEST-3:

Module-test-2		Test Class: registration		Designed by- <u>Kanta Hawlader</u>	
Data source: Data entered by user.		Objectives: Registration function checking.		Tester: <u>Kanta Hawlader</u>	
Test case	Description	Task	Expected result	Actual result	
1.	Registration checking.	1. Insert all fields of “Registration form”. Where Email: angel@gmail.com 2. Click on “Register” button.	Registration will be done successfully.	It’s done successfully.	

The image displays two parts of the Farmer's Shop website. The top part is a 'Customer Registration' form with a green header and a user icon. The form fields are as follows:

Field	Value
Username	KantaApu34
First Name	kanta
Last Name	hjh
Email	kantam435@gmail.com
Password	apu565620
Confirm Password	apu565620

A green 'CREATE AN ACCOUNT' button is at the bottom of the form.

The bottom part of the image shows the main homepage of 'FARMER'S SHOP'. The header is purple and contains navigation links: Shop, Blog, Weather, and a welcome message 'Welcome: elena sarkar'. It also includes icons for Cart (0), Profile, Order, and Logout. The main content area is dark blue and features the text 'FARMER'S SHOP', '30% DISCOUNT UPTO 50KG', '100% ORGANIC PRODUCT FROM LOCAL FARMERS', and 'OUR SHOP'.

Figure 59 checking the registration function 2.

10.5 SYSTEM INTEGRATION TESTING:

Integration testing is the term for testing integrated modules. In a software's source code, a few modules or functions are combined.

Following are some integration tests of the present software:

10.5.1 TEST CASE OF INTEGRATION-TEST-1:

Module-test-2		Test Class: Account Controller		Designed by- Kanta Hawlader	
Data source:		Objectives:		Tester:	
Data entered by user.		"Login" functionality checking.		Kanta Hawlader	
Test case	Description	Task	Expected result	Actual result	
1.	"Login" functionality checking.	2. Insert all fields of "login form". Where user name = elena300 Password: @kanta430 2. Click on "Save" button.	Login will be successful.	It's done successfully.	

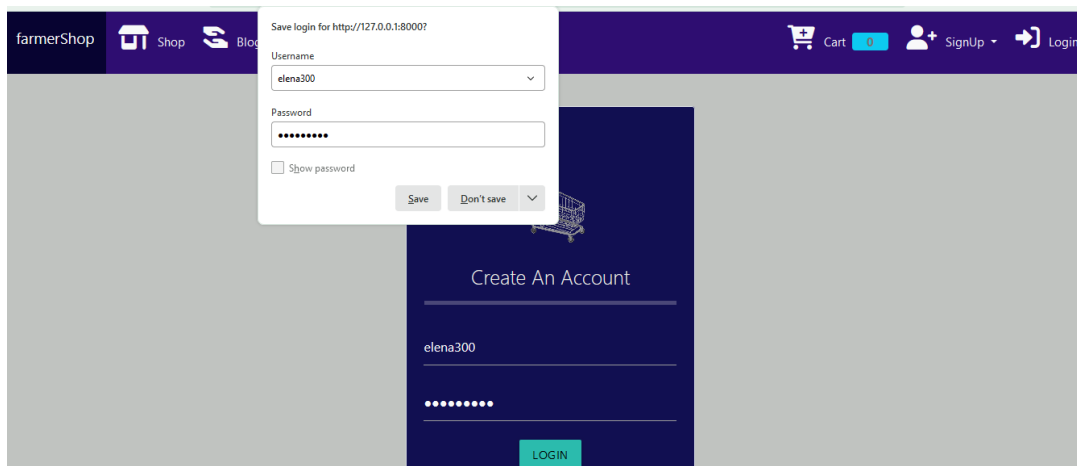
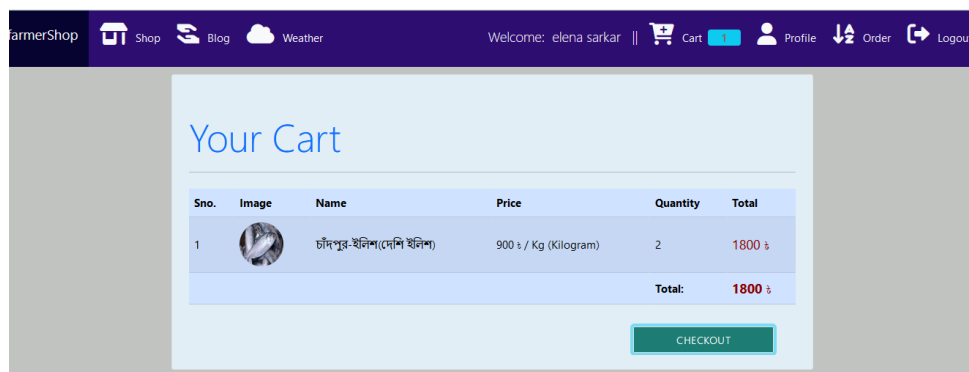


Figure 60 Login function integration testing.

10.5.2 TEST CASE OF INTEGRATION-TEST2:

Module-test-2		Test Class: Shop		Designed by-	
		to order		<u>Kanta Hawlader</u>	
Data source:		Objectives:		Tester:	
Data entered by user.		“Place Order” checking.		<u>Kanta Hawlader</u>	
Test case	Description	Task	Expected result	Actual result	
1.	“Order placing” functionality checking.	1. Add some product to cart. 2. Click on “Cart button”/ go to checkout page 3. Click on “Place order” button.	Order will be placed successfully and then “Shop” page will come to user for shopping more items.	It's done successfully.	



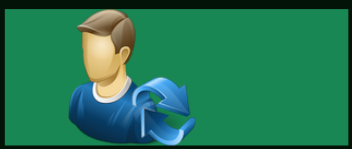
farmerShop	Shop	Blog	Weather	Welcome: elena sarkar	Cart	Profile	Order	Logout
------------	------	------	---------	-----------------------	------	---------	-------	--------

YOUR ORDER:							
Sno.	Image	Name	Date	Price	Quantity	Total	Status
1		Local_Desi_Katla(মাকান কাঠনা)	July 30, 2022	250 ₳ / Kg (Kilogram)	3	750 ₳	Pending

Figure 61 Integration testing

10.5.3 TEST CASE OF INTEGRATION-TEST-3:

Module-test-2		Test Class: Account registred		Designed by- Kanta Hawlader	
Data source:		Objectives:		Tester:	
Data entered by user.		Registration function checking		<u>Kanta Hawlader</u>	
Test case	Description	Task	Expected result	Actual result	
1.	"Registration function" checking.	1. Fill out all fields of "Registration" form 2. Then click on "Register" button.	After successful registration, home page will appear to user.	It's done successfully.	



Customer Registration

Username:
KantaApu34

First Name:
kanta

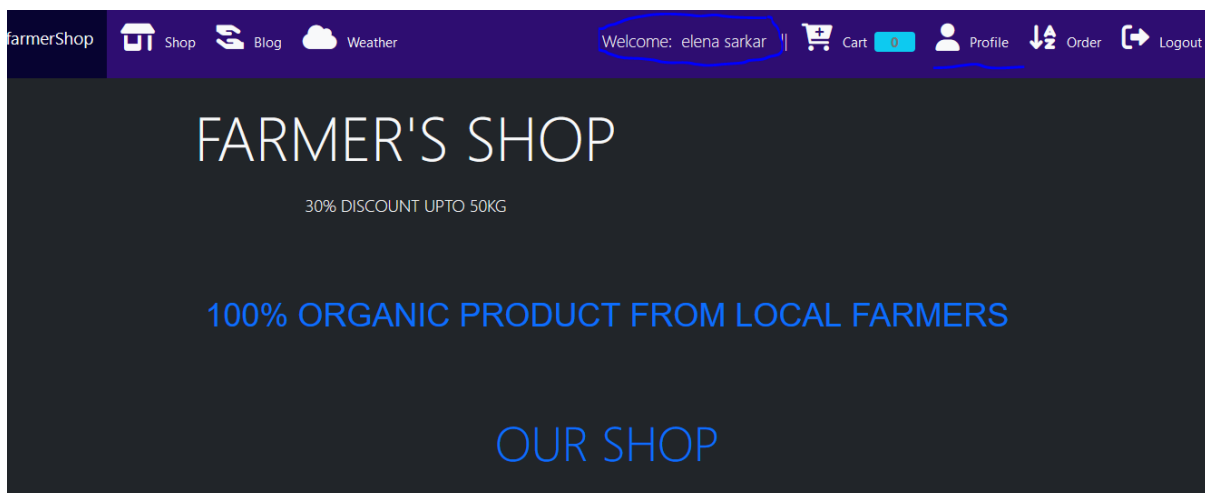
Last Name:
hjh

Email:
kantam435@gmail.com

Password:
apu565620

Confirm Password:
apu565620

CREATE AN ACCOUNT

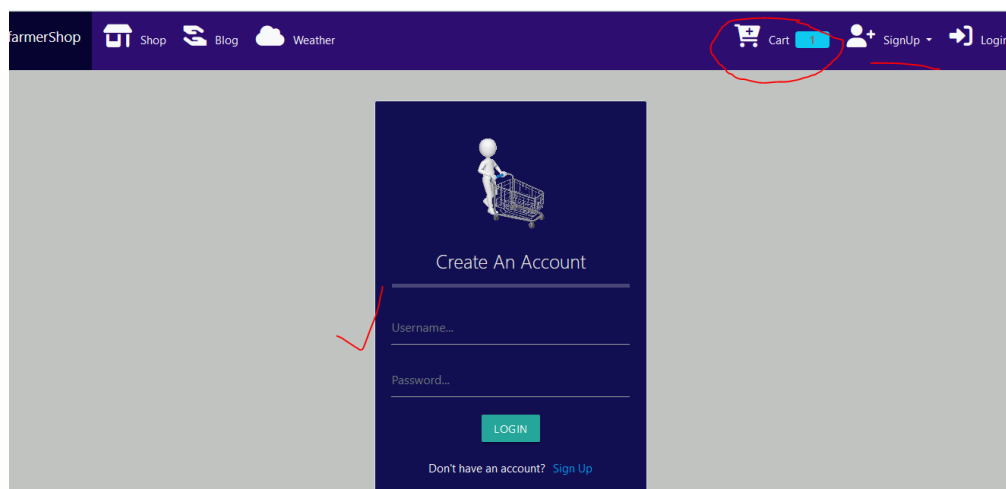


10.6 SYSTEM SECURITY TESTING:

The system's vulnerabilities are assessed during security testing against all risks and threats. Losing the security of any software could result in a significant loss. So, testing is a very crucial process. It ensures the stability of the system.

10.6.1 TEST CASE OF SECURITY-TEST-1:

Module-test-2		Test Class: Shop		Designed by- Kanta Hawlader	
Data source: Data entered by user.		Objectives: Security checking of application		Tester: Kanta Hawlader	
Test case	Description	Task	Expected result	Actual result	
1.	Unauthorized person cannot buy any product.	1. Choose some product to "cart". 2. Try to buy that product.	In that case, after clicking on "Cart" icon it will redirect me to login page.	It's done successfully.	



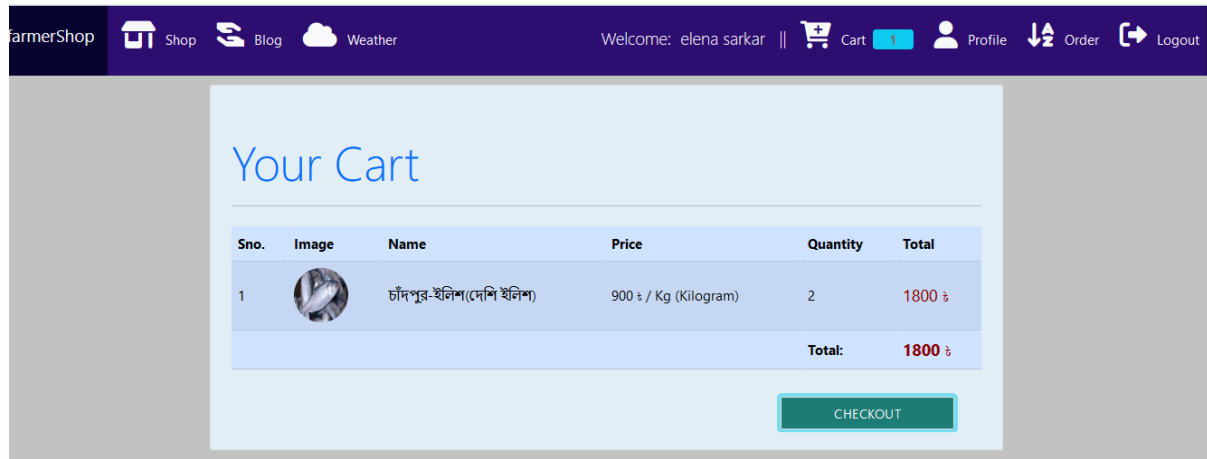
10.7 SYSTEM ACCEPTANCE TESTING:

All user acceptability requirements for a system are evaluated and justified during acceptance testing. This criterion entails evaluating business compatibility testing in accordance with user requirements.

The following list of project acceptance tests:

10.7.1 TEST CASE OF ACCEPTANCE-TEST-1:

Module-test-2		Test Class: Add to cart		Designed by-	
				<u>Kanta Hawlader</u>	
Data source:		Objectives:		Tester:	
Data entered by user.		User acceptance checking of application		<u>Kanta Hawlader</u>	
Test case	Description	Task	Expected result	Actual result	
1.	Test of shop page as user expectation.	1. Go to shop page. 2. Try to add a product to cart.	In that case, user will be able to add product to cart. Price filtering will work also, product type filtering will also work.	Every function has working perfectly.	



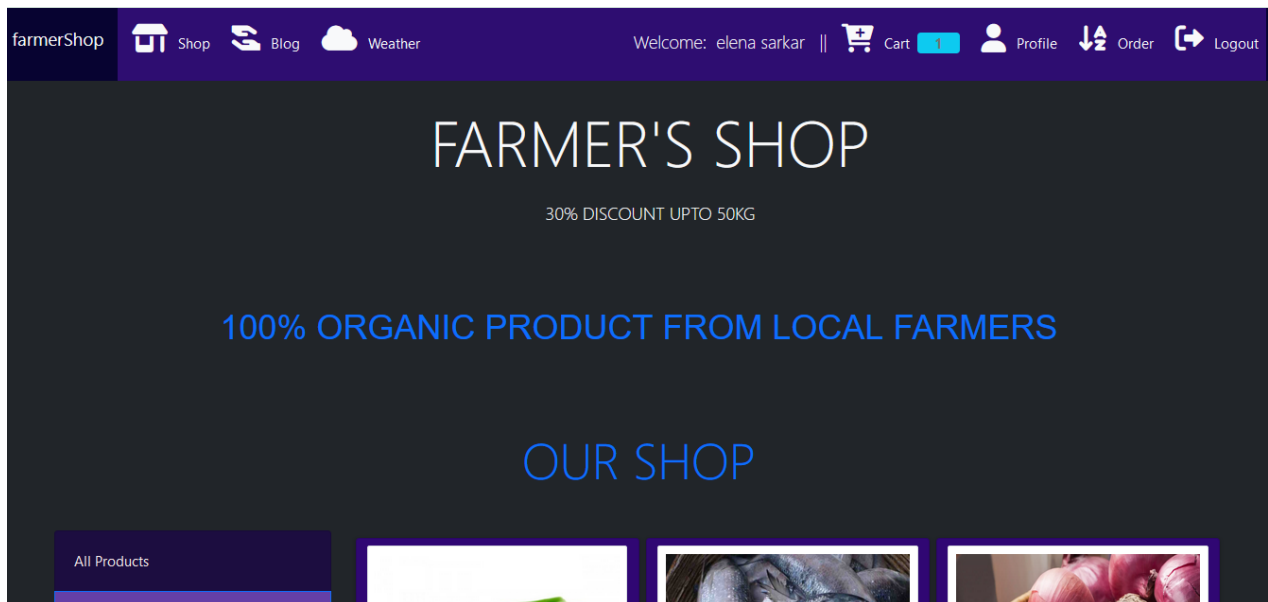
10.8 SYSTEM USABILITY TESTING:

Usability testing is a technique to confirm how user-friendly the current system is and to assess how satisfied users actually are with it.

Below are some results of usability testing for the suggested system:

10.8.1 TEST CASE OF USABILITY-TEST-1:

Module-test-2		Test Class: Account Controller		Designed by-	
				<u>Kanta Hawlader</u>	
Data source:		Objectives:		Tester:	
Data entered by user.		Usability checking of application		<u>Kanta Hawlader</u>	
Test case	Description	Task	Expected result	Actual result	
1.	Test of home page.	1. Go to home page. 2. Try to go anywhere like shop page, purchase some product,	In that case, user will be able to add product to cart. View category by product filtering and all available features will be useful and friendly to any user.	Every function has working perfectly.	



 Indian_Peyaj (ভারতীয় পেঁয়াজ) Price: 5 /Kg (Kilogram) Stock: 1230Kg (Kilogram) India is the second largest onion gr... VIEW PRODUCT ADD TO CART	 Pakistani_Peyaj (পাকিস্তানি পেঁয়াজ) Price: 34 /Kg (Kilogram) Stock: 1334Kg (Kilogram) The onion, also known as the bulb ... VIEW PRODUCT ADD TO CART	 China_peyaj Price: 46 /Kg (Kilogram) Stock: 1214Kg (Kilogram) Chinese onion or Allium chinense is... VIEW PRODUCT ADD TO CART
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farmerShop
Shop
Blog
Weather
Welcome: elena sarkar
Cart
Profile
Order
Logout

FARMER'S SHOP

30% DISCOUNT UPTO 50KG

100% ORGANIC PRODUCT FROM LOCAL FARMERS

OUR SHOP

All Products



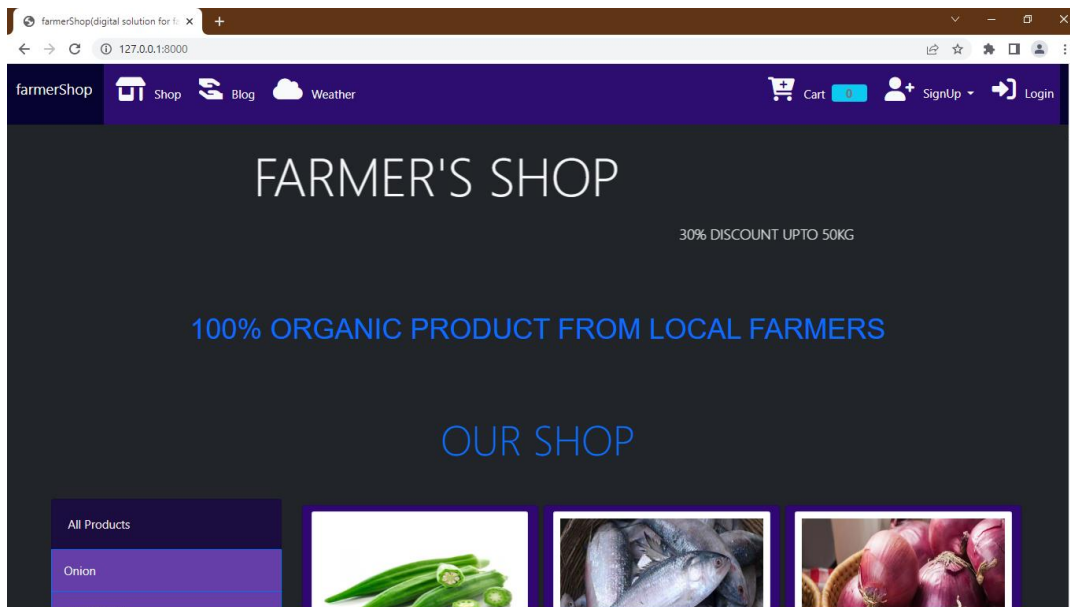

10.9 SYSTEM CROSS BROWSER TESTING:

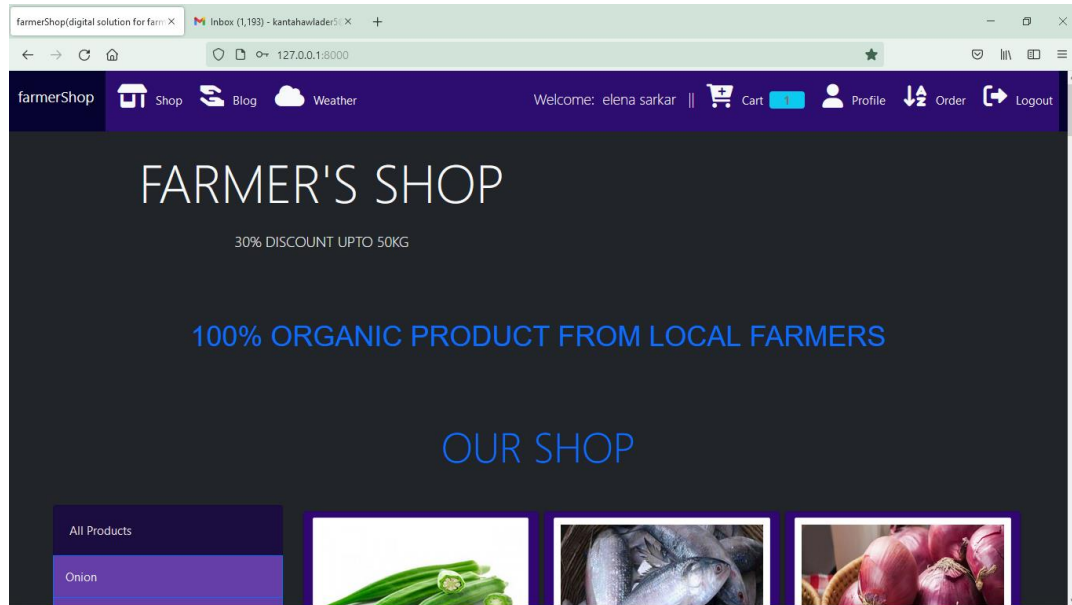
It is crucial to test a web application to see if it functions properly across different browsers. Consequently, it is a crucial testing tactic. Cross-browser testing determines whether the system functions flawlessly on several browsers or not. The software has undergone testing for it.

Below are the test case and the outcome:

10.9.1 TEST CASE OF CROSS BROWSER-TEST-1:

Module-test-2		Test Class: Account		Designed by- Kanta Hawlader	
Data source:		Objectives:		Tester:	
Data entered by user.		Checking application supports different browser or not		Kanta Hawlader	
Test case	Description	Task	Expected result	Actual result	
1.	Checking application supports different browser or not	1. Run application on "Google chrome" browser 2. Run on "Microsoft edge" browser also.	In that case, user will be able to add product to cart. View category by product filtering and all available features will be useful and friendly to any user.	Every function has working perfectly.	





CHAPTER-11(EVALUATION AND CRITICAL APPRAISAL)

TOPICS -11

I have covered all of the critiques and assessments of my complete project in this chapter. The following discussion will cover important subjects such as what is accomplished throughout development project, how well it is accomplished, what is not accomplished, what are the system's weaknesses, and what can be accomplished in the future.

I will now briefly touch on the subjects that are critiqued below:

11.1 SOFTWARE CRITICAL REVIEWS:

11.2.1 Strength of the application:

The fact that this system has complied with all important requirements is its key strength. Another crucial truth is that the finished item satisfies users and complies with all functional criteria. All are the goals.

- The aims of system development are mentioned below:

- The user has access to all products as well as category names.
- Any product can be chosen by the user and added to the basket.
- The user may purchase any item.
- System users have the ability to log in and out.
- The system's security has grown significantly.
- The category of a product can be updated, deleted, or added.
- The admin can see category specifics.
- The administrator has the ability to add, delete, and amend product information.
- The admin can see product specifics.
- A beautiful user interface has been built.
- Access control has advanced significantly.
- All necessary validations have also been built.
- Each page has its own pagination, which is developed.
- Various filter functionalities have also been built.
- Search features have been implemented for all necessary parts.
- A notification feature for emails is also being developed.

11.1.2 PROBLEMS FOUND AND SOLVED DURING DEVELOPMENT:

During the development period, I encountered a lot of issues, but I also resolved the majority of them.

Here are some of them:

- I struggled mightily during the development period to finish various product filtering functionalities, but I eventually found a solution.
- I had some difficulties while developing the "Add to cart" functionality, but I eventually found a solution.
- The sending of email notifications following product purchases was a different problem, which I have also resolved.
- While developing, I had some difficulties adding "Pagination" functionality to each page, but I eventually found a solution to this issue as well.
- Because the "Django" framework was unfamiliar to me, I initially had difficulty comprehending its intricate architecture. However, after resolving those issues, the framework no longer seems as complex to me, and I've learned how to use it to create fully functional projects.

11.1.3 PROJECT DEVELOPMENT GOING FORWARD:

The project is prepared to be launched in a production setting. However, there are a few extra features that might be added later. I've talked a little bit about those features.

Here are some of them:

- **Online/Digital payment system** – This feature is useful for any e-commerce system to conduct digital transactions online, and it may be implemented in the future.
- **The "Quick view" function:** it is a crucial tool for learning specific information about a product, and it could be added in future development.
- **All Product tracking system:** This feature is essential for any e-commerce website and is something that could be added in the future.
- **All Product shipping management:** Additional development may include the "product shipment management" system.
- **Online comment/Instant messaging** is a unique function that may be used for talking and as a "information desk."
- **Rating and remark the products-** a section for product ratings and comments may be included in the future as it will be crucial for all users to be aware of reviews of particular products.

11.2 THE PROJECT'S LEARNINGS:

❖ The Technology:

Through the course of working on this project, the developer learned numerous new technologies for creating an e-commerce website. A new Django framework has been learned by developers, along with how to use SOLite server, IIS Express, entity framework, and a variety of other libraries.

❖ System Methodology:

The developer initially intended to complete this project using the DSDM methodology, but after thoroughly reviewing the project's requirements, the developer realized that he or she would not be able to do so. Following that, developers created a hybrid technique by combining DSDM and SDLC. This new process was used by the developers, who completed the project effectively. Here,

developers have learnt about a variety of approaches as well as how to use them correctly and how to make them work for any project.

❖ **Errors that were made:**

During the system's database design, developers made certain significant errors. Then, developers opted to build the entire database architecture and development of the project using the ORM (Object Relation Mapping) technique of the "Django" framework employing "Entity framework and Identity framework." When the developer attempted to implement a mail function for delivering email notifications to any customer's email, a serious error was also produced. However, the developer already has fixed such errors.

❖ **Research limitation:**

During the research for this project, a few issues were discovered. There was no equivalent internet store that sold just textile products. However, because most online e-commerce business operations are the same, it wasn't a major issue. In addition to several linked papers and magazines concerning this subject, there are numerous internet stores.

CHAPTER-12(LEARNING OUTCOMES)

TOPICS-12

After finishing this assignment, I've learned a lot of important lessons. All of those things are discussed in this chapter. I encountered a few issues while developing this project, some of which are detailed in the previous chapter, "Critical reviews of the system," and I've discussed the remedies I found throughout that process in this chapter.

12.1 THE LESSON I'VE LEARNED:

I've acquired a great deal of knowledge that will help me in my job. My technological expertise will be greatly impacted by all these worthwhile things Overall, I've learned how to complete a real-world online project and how to create a better report for this project by conducting extensive research. Here, I'll outline a succinct discussion of those important subjects. Here, I learned how to conduct an appropriate analysis for a certain issue of a particular project and how to correctly

record them. After that, I discovered how to conduct a project's feasibility analysis in order to demonstrate if the project is possible or not. . Afterwards I learned how to conduct a thorough study to choose a methodology that would work best for that project and how to maintain or adhere to that methodology throughout the entire software development lifecycle. Following that, I learned the right development tools and methodologies as well as how to use them. But I was able to build this project successfully by using that process. It is currently operating faultlessly. However, one thing that stands out is that I picked up some new Django framework technologies here, like (Object Relation Mapping) ORM enabling database connection and creation and many other new technical skills that are motivating me to take on additional projects in the future.

CHAPTER-13(EPILOGUE)

TOPICS-13

This chapter contains the project document's executive summary. This section will also include a description of the project's genuine objective and the experience I have gained from studying the entire undertaking. This section includes all of the success elements for the entire project.

13.1 CONCLUSION OF PROJECT:

This concept is an online farmer's market. A single online marketplace exists where both farmers and consumers may sell and buy desired goods at competitive costs. This solution assists both our customers and the government in eliminating all middlemen and reducing the middle business system. Aside from offering farmers digital educational resources, agriculture officials. Using a weather app, a farmer can check the weather where they are currently working on their irrigation or farming. It is an online business platform for e-commerce. Only various goods relating to food can be purchased and sold on the website. Today, agriculture is a crucial component of the economy of our nation. This company is very well known worldwide. However, using Internet actually makes this process simpler. The internet makes doing business simple, and it is also far more profitable and effective than doing business locally. Because anything may be purchased by anyone at any moment online. Having in mind that the company wants to create an e-commerce platform for just organic farm-related products. The project is titled "Farmer Shop." The project developer has to evaluate all of the project's requirements at the outset. To build this project successfully and on schedule, the developer first had to determine whether it was feasible. After conducting extensive research on the subject, they had to choose an appropriate technique and follow it exactly. The developer then had to decide which technologies, such as Python, Django,

HTML, CSS, and Bootstrap, would be used to construct the project. Developers used a hybrid technique that combines the two widely used methodologies, SDLC and DSDM. The developer successfully constructed this fully functional project by using this innovative process. This project is currently running smoothly and is prepared for launch.

13.2 GOAL OF PROJECT:

The project's actual objectives are listed below:

- Create a safe online store with exclusively farm-fresh organic products.
- No third parties may interact with this business without the owner's permission.
- Close the buyer-seller communication gap.
- Offering higher-quality products at reduced prices to draw in customers.
- Establishing a shared market that sells solely farm-fresh goods.

13.3 THE PROJECT'S SUCCESS:

This project's primary success is its ability to function without error. This project's completion on schedule and perfect satisfaction of all user needs make it another success. However, this project might be made more useful by including a variety of contemporary e-commerce website features.

13.4 IN MY EXPERIENCE:

I have gained a lot of knowledge from working on this project, including how to conduct research, analyze data, determine whether a project is feasible, understand methodology and how to defend different approaches when selecting the best one, obey and preserve a research methods for software development, work with the Python Django framework, and much more.

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