ONLINE GROCERY PLATFORM

Dissertation Submitted in Partial fulfillment of the Requirement for the Award of the Degree of

Master of Computer Applications

Semester IV
Jan - May, 2021-23

Under The Guidance of
Dr. Chaitali Uikey

Submitted By
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Devi Ahilya Vishwavidyalaya, Indore, M.P.

2021-2023

School of Computer Science & IT
Devi Ahilya Vishwavidyalaya, Indore, M.P.

DECLARATION

I hereby declare that the project titled *" Online Grocery Platform"* submittedby me for the partial fulfillment of the requirement for the award of *Master of Computer Applications* to *School of Computer Science & IT, Devi Ahilya Vishwavidyalaya, Indore,* comprises my own work and due acknowledgement has been made in text to all other material used.

Signature of Student: ……

Date: 03/06/2023

Place:……

School of Computer Science & IT
Devi Ahilya Vishwavidyalaya, Indore, M.P.

CERTIFICATE FROM GUIDE

It is to certify that the project entitled *"Online Grocery Platform"*, submitted by Mr. Roshan Chouhan to the *School of Computer Science & Information Technology, Devi Ahilya Vishwavidyalaya, Indore* has been completed under my supervision and the work is carried out and presented in a manner required for its acceptance in partial fulfillment for the award of the degree of *Master of Computer Applications.*

Project Guide

Signature: ……..

Name: **Dr. Chaitali Uikey**

Date: ……..

School of Computer Science & IT
Devi Ahilya Vishwavidyalaya, Indore, M.P.

CERTIFICATE

It is to certify that I have examined the project entitled *"Online Grocery Platform"*, submitted by Mr.Roshan Chouhan to the *School of Computer Science & Information Technology, Devi Ahilya Vishwavidyalaya, Indore* and hereby accord our approval of it as a study carried out and presented in a manner required for its acceptance in partial fulfillment for the award ofthe degree of *Master of Computer Applications*.

Internal Examiner

Signature**:** _____

Name **:** _____

Date **:** _____

External Examiner

Signature**:** _____

Name **:** _____

Date **:** _____

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CHAPTER 1: INTRODUCTION

Introduction

The online grocery industry has witnessed significant growth in recent years, driven by advancements in technology and changing consumer preferences. Online grocery platforms have emerged as a convenient and time-saving solution for users and vendors alike. This project report aims to explore the concept, objectives, and benefits of an online grocery platform from the perspectives of both users and vendors..

Aim

The aim of this project is to create an online grocery platform that benefits both users and vendors. By leveraging the power of technology, the platform will transform the traditional grocery shopping experience into a seamless and efficient process. The objectives include improving convenience, saving time, and providing a wide range of product choices to users. For vendors, the aim is to offer an accessible platform to expand their customer reach, increase sales, and improve overall business efficiency.

The online grocery platform will incorporate features such as an intuitive user interface, personalized product recommendations, secure payment options, reliable delivery services, and effective inventory management tools for vendors. The project will focus on developing a robust infrastructure, implementing efficient algorithms, and ensuring data privacy and security.

Objectives

1. To develop an efficient online grocery platform that caters to the needs of users and vendors.
2. To provide a convenient and user-friendly interface for users to browse, select, and purchase groceries.
3. To offer vendors a digital platform to showcase their products and reach a wider customer base.

4. To streamline the grocery shopping process, eliminating the need for physical store visits and long queues.
5. To enhance the overall customer experience by ensuring prompt delivery and reliable customer support.

Introduction to project

In today's fast-paced world, where time is of the essence, the traditional way of grocery shopping can be a tedious and time-consuming task. However, with the advent of technology, online grocery platforms have emerged as a game-changer, revolutionizing the way people purchase their daily essentials. This project aims to delve into the world of online grocery platforms, focusing on the benefits and impact they have on both users and vendors..

Online grocery platforms provide users with the convenience of browsing and purchasing a wide range of products from the comfort of their homes. These platforms offer a user-friendly interface that allows users to explore various categories, compare prices, read product reviews, and make informed decisions. With just a few clicks, users can create personalized shopping lists orders. The seamless and hassle-free nature of online grocery platforms saves users valuable time and energy, enabling them to focus on other important aspects of their lives .

For vendors, online grocery platforms offer a tremendous opportunity to expand their customer base and reach new markets. By showcasing their products on these platforms, vendors can overcome the limitations of physical stores and geographical boundaries. They can display detailed product descriptions, attractive images, and promotional offers to attract customers. Additionally, vendors can efficiently manage their inventory, track sales data, and gain insights into consumer preferences, enabling them to make informed business decisions.

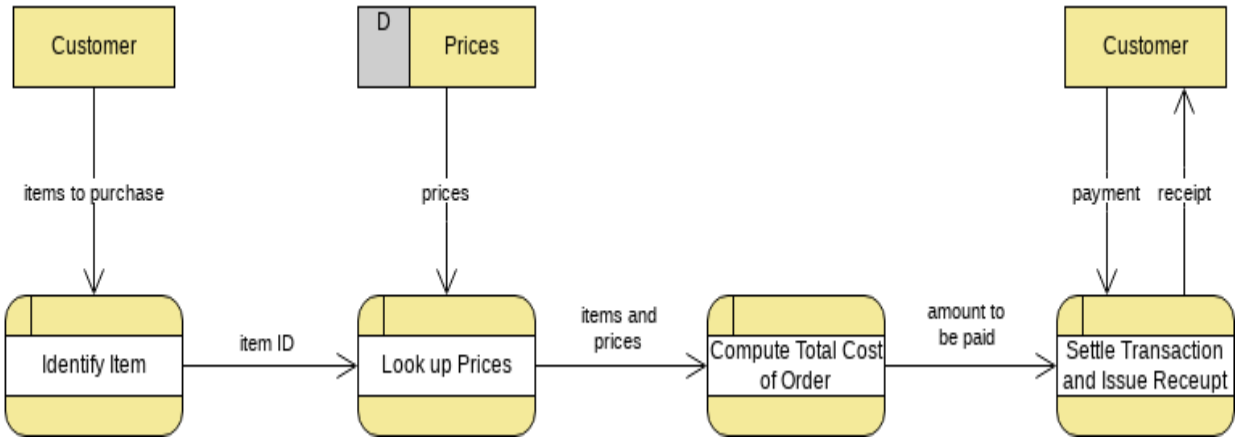


Fig. 1.1 user module block diagram

Scope of the project

1. **User Aspect**:

- User Registration and Authentication: Users can create accounts, log in, and manage their profiles.
- Product Browsing and Search: Users can browse through categories, search for specific products, apply filters, and sort results.
- Product Details and Reviews: Users can access detailed product information, view product images and feedback.
- Shopping Cart and Checkout: Users can add products to their cart, select delivery options, and complete the checkout process.
- Payment and Security: Users can make secure payments using various payment methods and have their personal and financial information protected.

2. Vendor Aspect:

- Vendor Registration and Authentication: Vendors can create accounts, verify their identities, and manage their profiles.
- Product Management: Vendors can list their products, provide descriptions and images, set prices, and manage inventory.
- Order Management: Vendors can view and manage incoming orders, update order

statuses, and communicate with users regarding order fulfillment by contect number.

- Sales Analytics: Vendors can access sales data, generate reports, and gain insights into their product performance and customer behavior.
- Inventory Management: Vendors can track their stock levels .

3 . Admin Aspect:

- Platform Management: Admins have control over the overall functioning and configuration of the platform.
- User and Vendor Management: Admins can manage user and vendor accounts, verify identities, and handle any disputes or issues.
- Reporting and Analytics: Admins can access comprehensive reports and analytics on sales, user activity, and performance metrics.
- System Maintenance and Upgrades: Admins are responsible for ensuring the platform's stability, security, and regular updates.

CHAPTER 2: PROJECT PLANNING

1. **Define Project Goals and Objectives:**
   - Clearly define the goals and objectives of the online grocery platform project. This may include providing a convenient and user-friendly platform for customers to purchase groceries online, increasing sales and revenue, expanding the customer base, and enhancing customer satisfaction.

2. **Conduct Market Research:**
   - Conduct thorough market research to understand the target audience, competition, and market trends. Identify the needs and preferences of potential customers, and assess the demand for online grocery services in the target market.

3. **Identify Key Features and Functionalities:**
   - Determine the key features and functionalities that the online grocery platform will offer. This may include user registration and authentication, product catalog management, search and filtering options, shopping cart and checkout, payment integration, order management, delivery tracking, and customer support.

4. **Scope Definition:**
   - Clearly define the scope of the project by identifying the boundaries and limitations of the online grocery platform. Determine which features will be included in the initial release and any potential future enhancements.

5. **Develop a Project Timeline:**
   - Create a detailed timeline with specific milestones and deadlines. Break down the project into smaller tasks and assign estimated timeframes for completion. Consider dependencies between tasks and allocate resources accordingly.

CHAPTER 3: ANALYSIS

User Analysis:

1. **User Interface and Experience**

   - Evaluate how easy and enjoyable it is for users to navigate and use the platform. Look at the design, layout, and overall user-friendliness. Assess how easy it is for users to find what they're looking for ,for this I visit different website available on internet related to online grocery like ondoor , bigbasket, etc.

2. **Product Search and Variety:**

   - Assess how well the platform helps users search for products. Look at the effectiveness of search filters and the variety of products available. Evaluate how well the platform displays product details and user reviews.

3. **Ordering and Checkout Process:**

   - Evaluate how easy it is for users to place orders and complete the checkout process. Look at how users can add items to their cart, modify quantities, and choose delivery options. Assess the availability of different payment methods.

Vendor Analysis:

1. Vendor Onboarding and Management

- Evaluate how easy it is for new vendors to join the platform. Look at the process and requirements for vendors to sign up and get approved. Assess how the platform manages vendor information and communication..

2. Product Search and Variety:

- Check how vendors can add and manage their products on the platform. Look at how easy it is to update product information like descriptions, images, and prices. Assess how vendors can categorize their products..

3. Order Fulfillment and Management:

- Evaluate how vendors handle orders received through the platform. Look at the process of receiving, processing, and tracking orders. Assess how vendors are notified of new orders and how they coordinate with delivery services..

Analyzing the online grocery platform from the perspectives of vendors and users helps identify strengths and areas for improvement. This analysis helps optimize the user experience and enhance vendor satisfaction, contributing to the overall success of the platform.

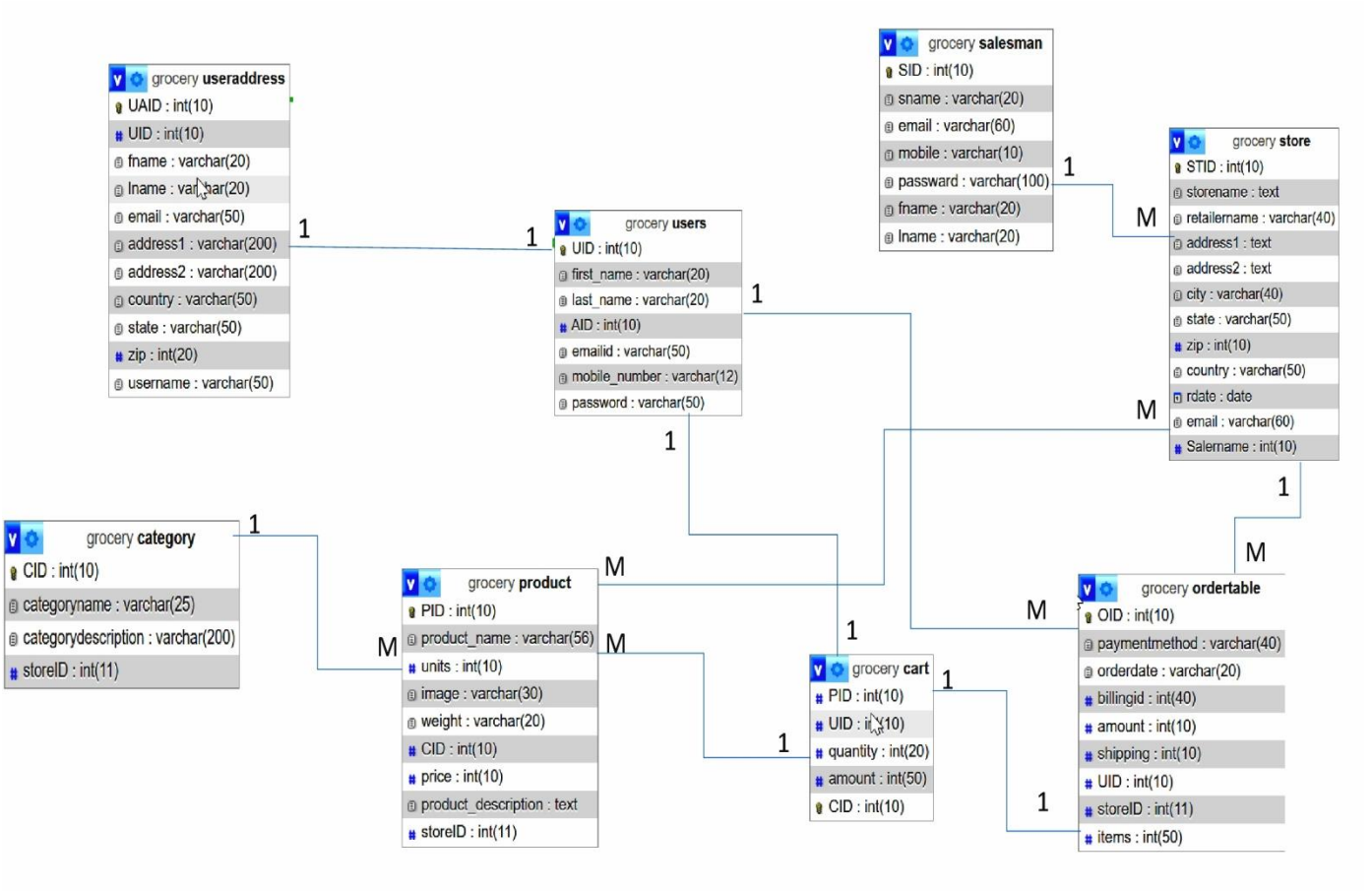
CHAPTER 4: SYSTEM REQUIREMENTS

The system requirements for an online grocery

1. **Hardware Requirements**:
    - Servers or cloud infrastructure with sufficient processing power, storage capacity, and memory to handle concurrent user requests and data storage.
2. **Operating System:**
    - Depending on the chosen technology stack, the platform may require an operating system that supports the selected programming languages and frameworks.
3. **Database Management System:**
    - A database management system (e.g., **MySQL**) to store and manage data related to users, vendors, products, orders, and other relevant information.
4. **Web Server**:
    - A web server (e.g., Apache) to handle incoming HTTP requests and serve web pages to users.
5. **Programming Languages:**
    - Depending on the chosen technology stack, programming languages **PHP** for server-side and client-side development.
6. **Front-end Technologies:**
    - **HTML**, **CSS**, and **JavaScript , Bootstrap** for designing and developing the user interface, ensuring cross-browser compatibility and responsiveness.

CHAPTER 5: SYSTEM DESIGN

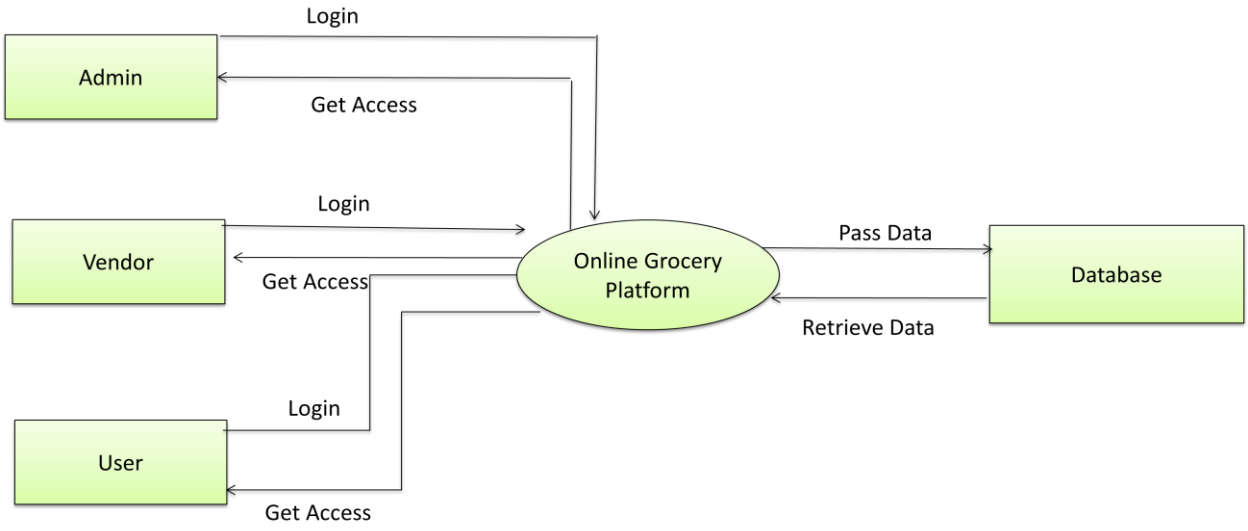
Entity relationship diagram



Data Flow Diagram(DFD)

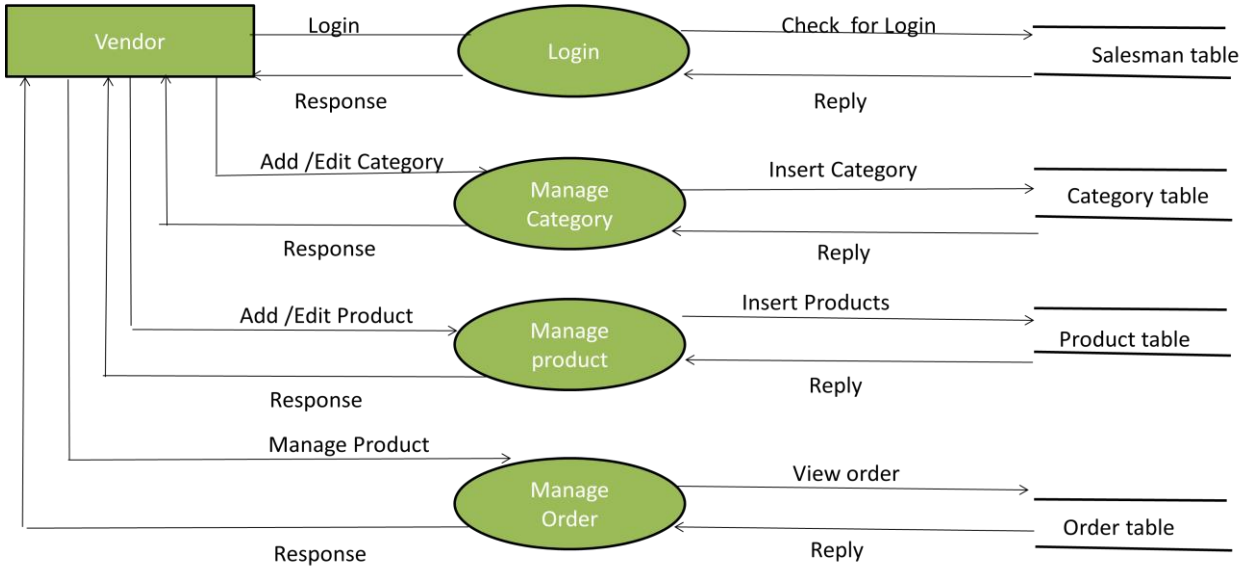
1. **Level-0**

The context level data flow diagram (dfd) is describe the whole system. The (o) level dfd describe the all user module who operate the system. Below data flow diagram of online shopping site shows the two user can operate the system Admin and Member user.



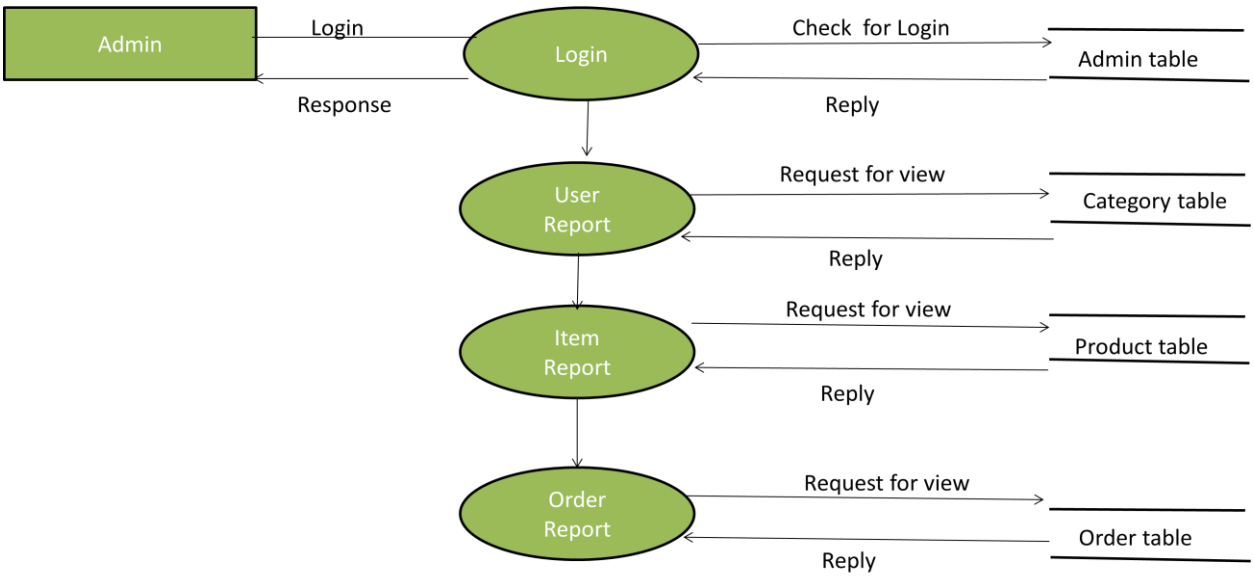
2. Level-1 Vendor Side DFD

The vendor side DFD describe the functionality of vendor, vendor is a owner of the website. vendor can first add category of item and then add items by category wise. and vendor can manage order .



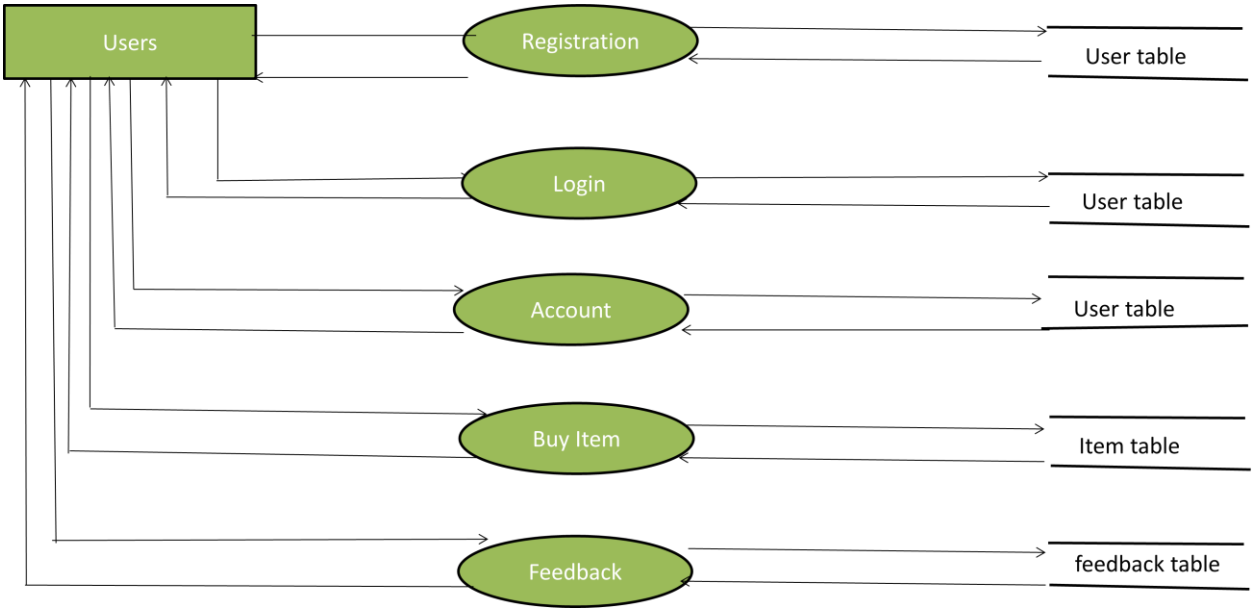
3. Level-1 Admin Side DFD

The Admin side DFD describe the functionality of Admin, Admin is a owner of the website. Admin can first add category of item and then add items by category wise. and admin can manage order and payment detail.

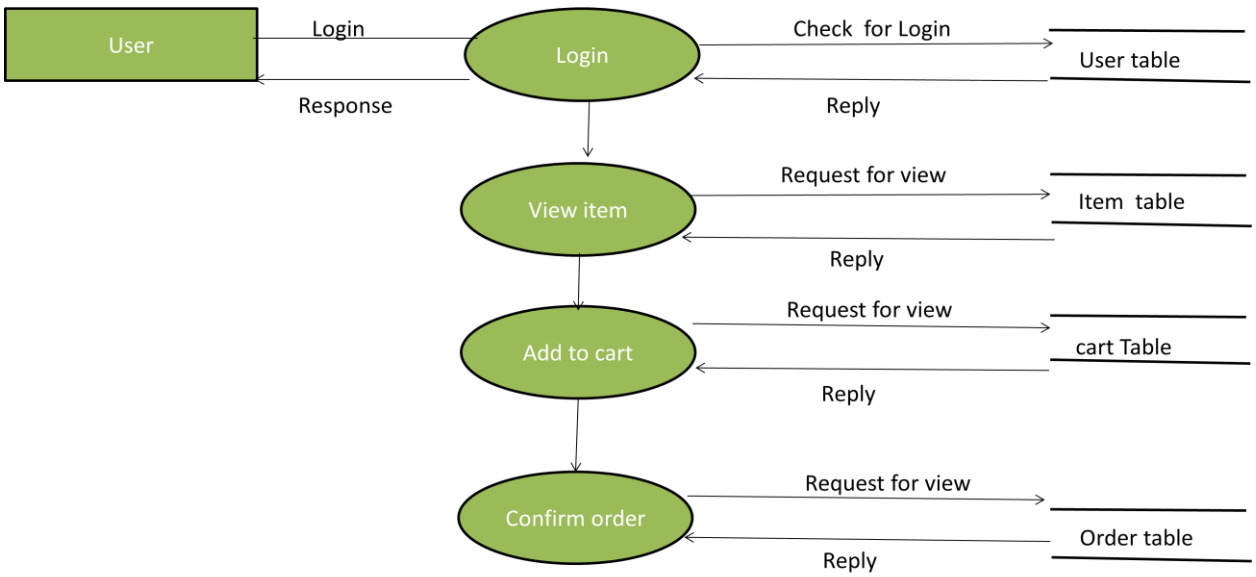


4 . Level-1 – User side Data flow Diagram

The user is all people who operate or visit our website. User is a customer of a website. User can first select product for buy, user must have to register in our system for purchase any item from our website. after register he can login to site and buy item by making online payment through any bank debit card or credit card.



5. 2nd level – User side DFD



CHAPTER 6: SOFTWARE DEVELOPMENT METHODOLOGY

Project Methodology

The Systems Development Life Cycle (SDLC) provides the foundation for the processes used to develop an information system. A *methodology* is a formalized approach to implementing the SDLC (i.e., it is a list of steps and deliverables). There are many different systems development methodologies, and they vary in terms of the progression that is followed through the phases of the SDLC. Some methodologies are formal standards used by government agencies, while others have been developed by consulting firms to sell to clients. Many organizations have their own internal methodologies that have been refined over the years, and they explain exactly how each phase of the SDLC is to be performed in that company

Agile Development

Agile project management is an iterative development methodology that values human communication and feedback, adapting to change, and producing working results.Agile is iterative, meaning that it is done in pieces (sprints), with each sprint building and improving off the lessons from the previous sprint. This is where that term Scrum comes into play. Scrum methodology is a workflow framework made up of sprints and reviews used to promote Agile project management.

Agile methodology is all about efficient communication over documentation, convoluted email chains, or excessive meetings producing tangible, working results after each iteration.

The four core values outlined in the Agile Manifesto are:

- **Individual interactions are more important than processes and tools.** People drive the development process and respond to business needs. They are the most important part of development and should be valued above processes and tools. If the processes or tools drive development, then the team will be less likely to respond and adapt to change and, therefore, less likely to meet customer needs.
- **A focus on working software rather than thorough documentation.** Before Agile, a large amount of time was spent on documenting the product throughout development for delivery. The list of documented requirements was lengthy and would cause long delays in the development process. While Agile does not eliminate the use of documentation, it streamlines it in a way that provides the developer with only the information that is needed to do the work -- such as user stories. The Agile Manifesto continues to place value on the process of documentation, but it places higher value on working software.
- **Collaboration instead of contract negotiations.** Agile focuses on collaboration between the customer and project manager, rather than negotiations between the two, to work out the details of delivery. Collaborating with the customer means that they are included throughout the entire development process, not just at the beginning and end, thus making it easier for teams to meet the needs of their customers. For example, in Agile software development, the customer may be included at different intervals for demos of the product. However, the customer could also be present and interacting with the teams on a daily basis, attending all meetings and ensuring the product meets their desires.
- **A focus on responding to change.** Traditional software development used to avoid change because it was considered an undesired expense. Agile eliminates this idea. The short iterations in the Agile cycle allow changes to easily be made, helping the team modify the process to best fit their

needs rather than the other way around. Overall, Agile software development believes change is always a way to improve the project and provide additional value.

Selecting A Methodology

The methodology that is used in this project is **Agile Development Methodology**. I use this methodology because it is an iterative approach to product delivery that builds incrementally from the start of the project, instead of trying to deliver the entire product at once near the end. Other benefits that we discovered by using this methodology for our project are listed below -

- **Increased project control :** Team members have control throughout the project with more opportunities to test and adapt.
- **Higher product quality :** Because testing is integrated throughout the project development process, the team can perform regular checkups and find areas of improvement.
- **Reduced risk :** Agile project management virtually eliminates the chances of absolute project failure. Working in sprints allows teams to develop a working product from the beginning or fail fast and take another approach.
- **Better visibility into project performance :** Agile project management lets team members know how the project is progressing. Frequent Scrum meetings and sprint reviews provide increased transparency to everyone on the team.
- **Increased project control :** Team members have control throughout the project with more opportunities to test and adapt.
- **Better project predictability :** Breaking up the project into shorter sprints allows project managers to predict the exact cost, timeline, and resource allocation necessary for each sprint.

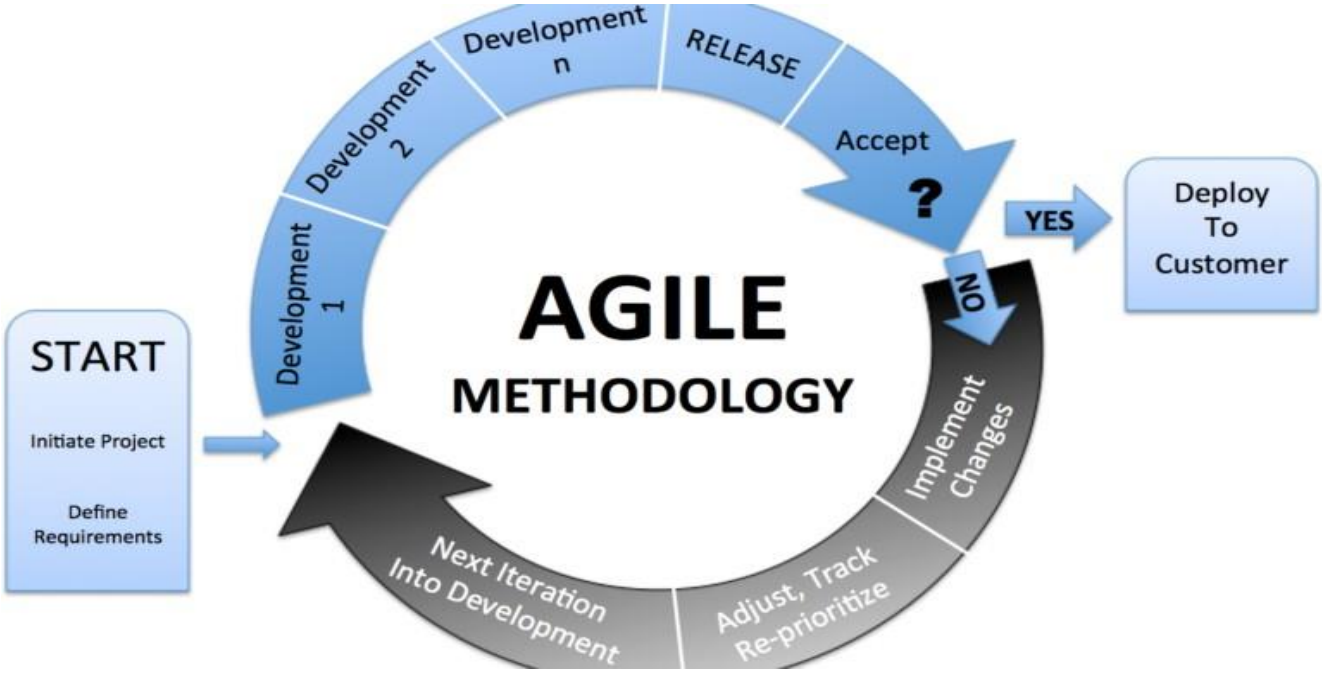


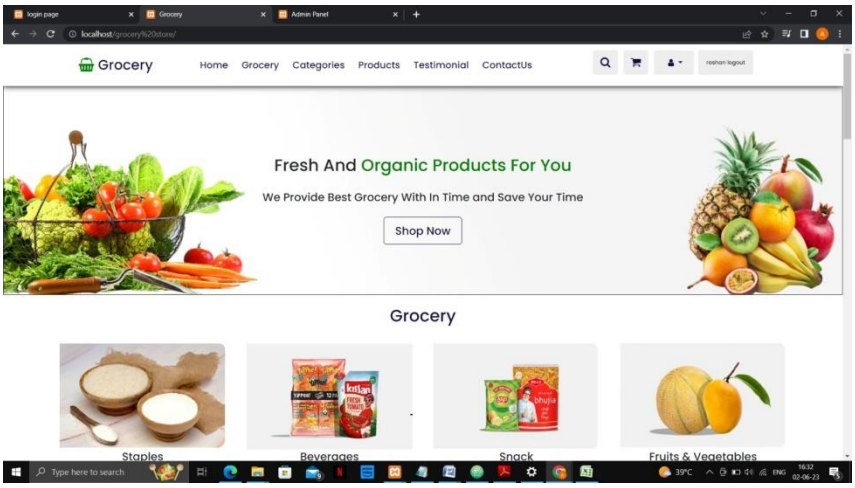
Fig. 6.4 Agile development model diagram

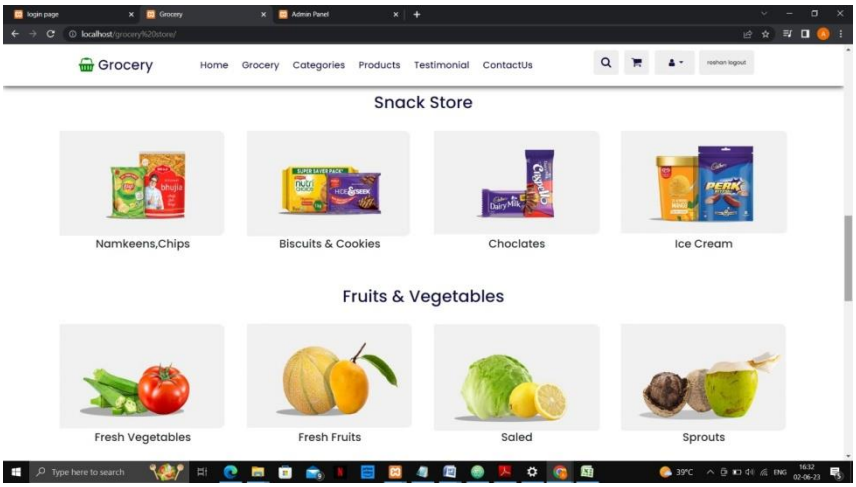
Within Agile methodology we have used **Extreme Programming technique (XP).** The Extreme Programming technique is very helpful when there are constantly changing demands or requirements from the customers or when they are not sure about the functionality of the system. It advocates frequent "releases" of the product in short development cycles, which inherently improves the productivity of the system and also introduces a checkpoint where any customer requirements can be easily implemented. XP develops software keeping customers in the target.

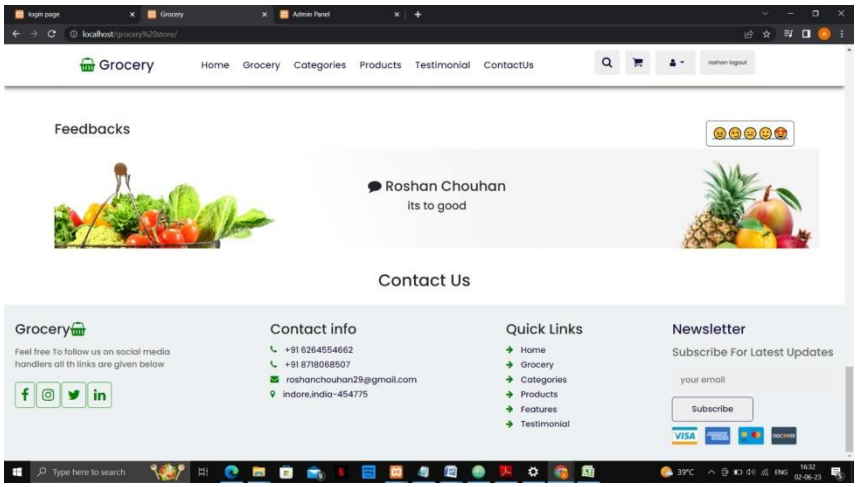
CHAPTER 7: SYSTEM IMPLEMENTATION

System Implementation uses the structure created during architectural design and the results of system analysis to construct system elements that meet the stakeholder requirements and system requirements developed in the early life cycle phases. These system elements are then integrated to form intermediate aggregates and finally the complete system of interest.

1. User page



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Contact info
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+91 8718068507
roshanchouhan29@gmail.com
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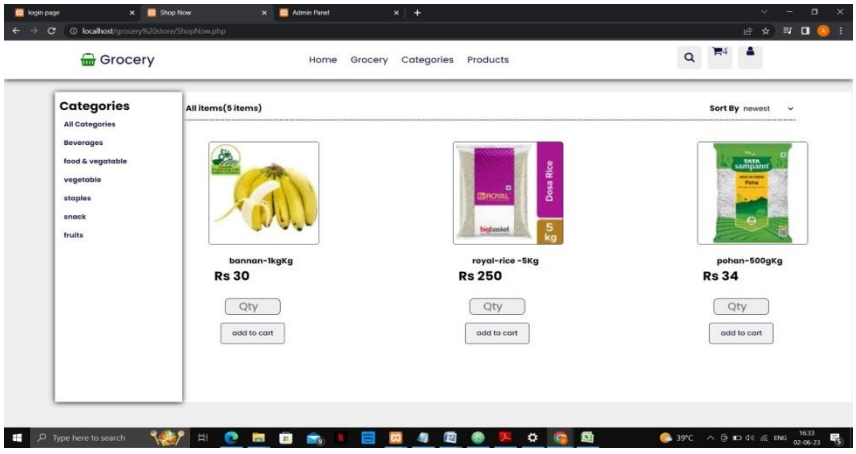
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Sort By newest
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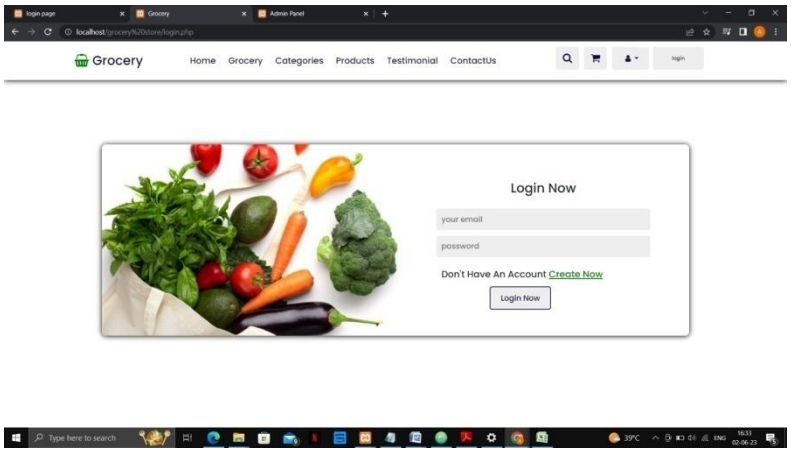
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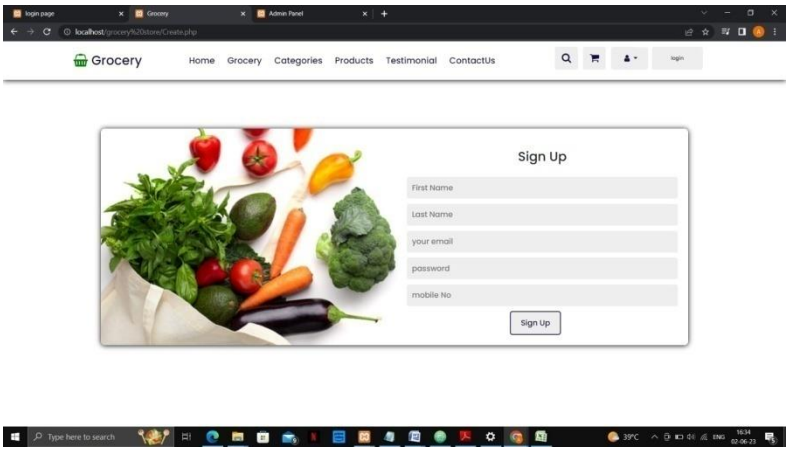
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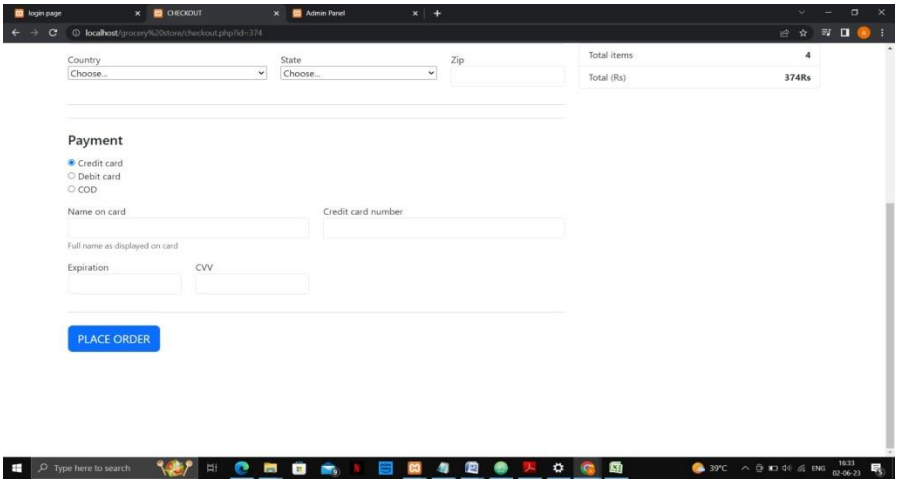
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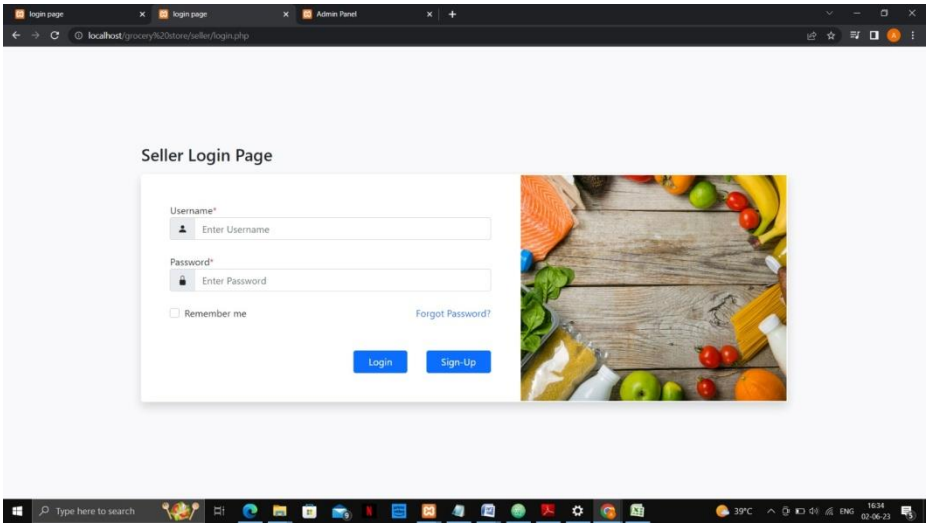
PLACE ORDER

Vendor page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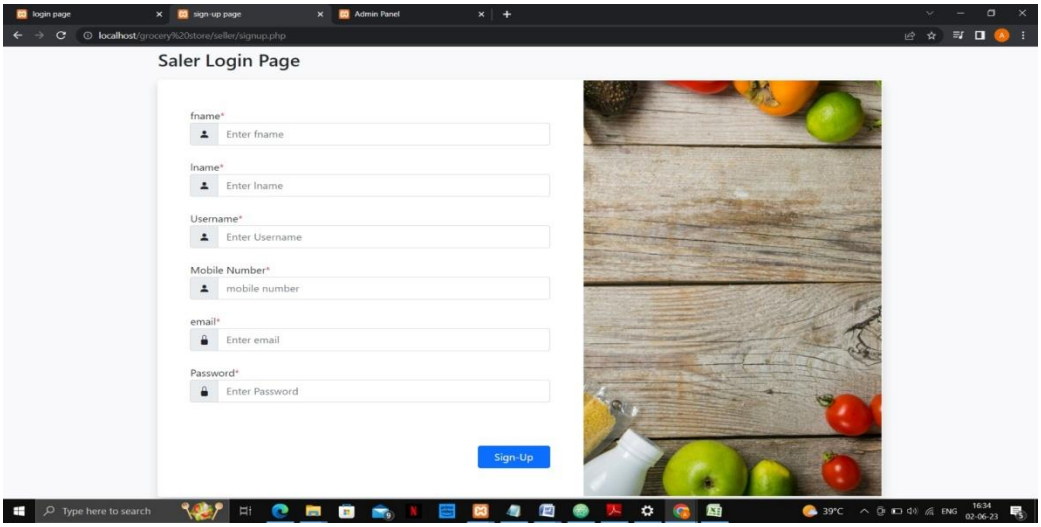
login page
sign-up page
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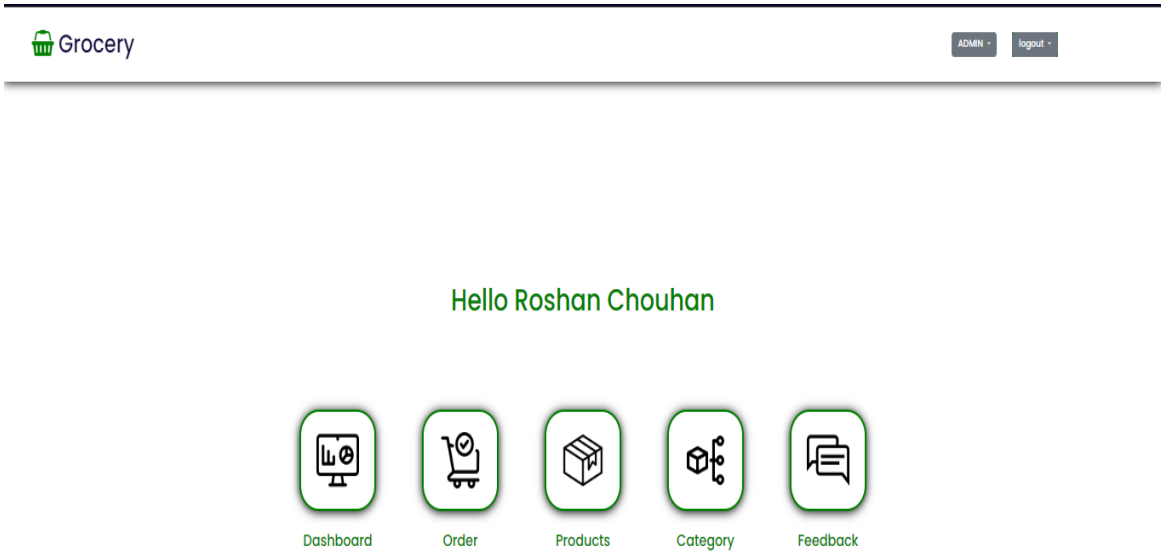
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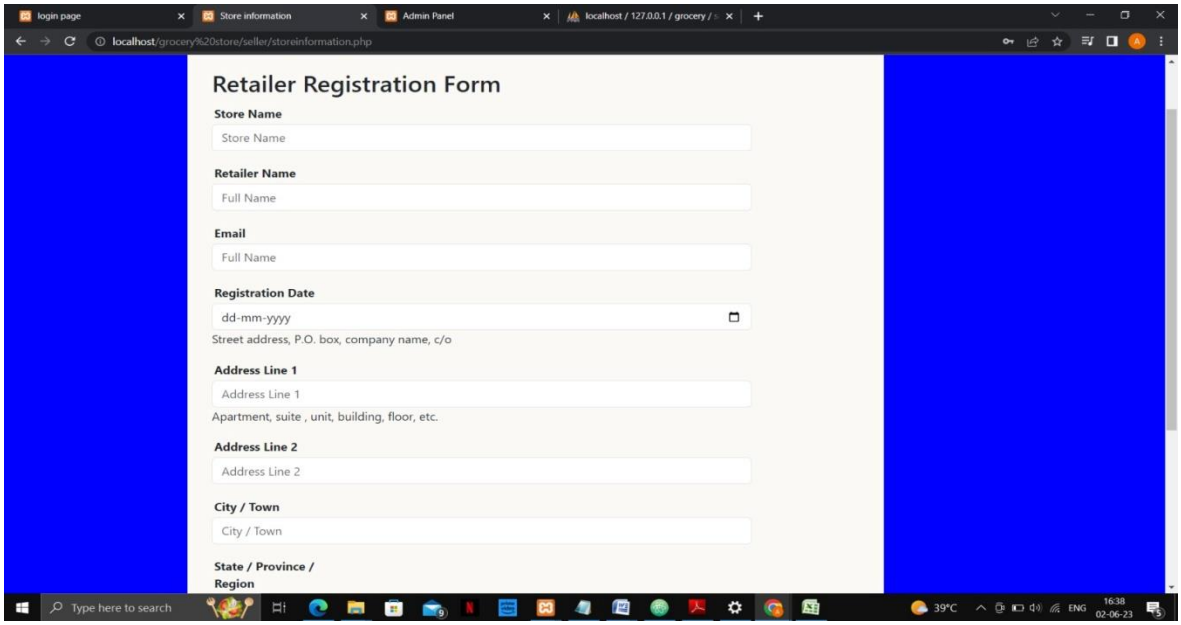
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Retailer Registration Form
Store Name
Store Name
Retailer Name
Full Name
Email
Full Name
Registration Date
dd-mm-yyyy
Street address, P.O. box, company name, c/o
Address Line 1
Address Line 1
Apartment, suite , unit, building, floor, etc.
Address Line 2
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City / Town
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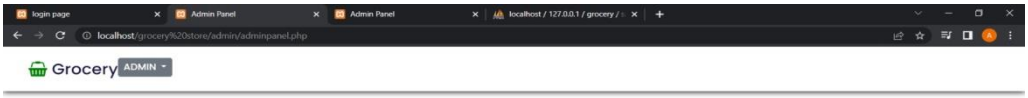
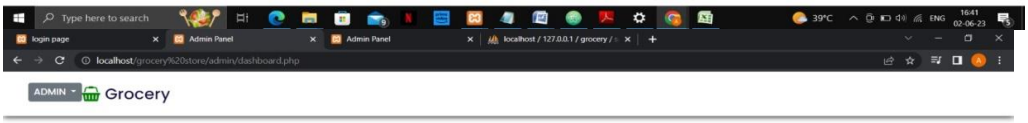
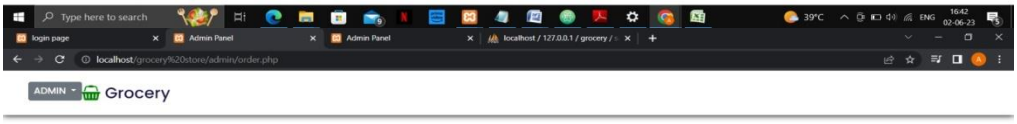
Admin page

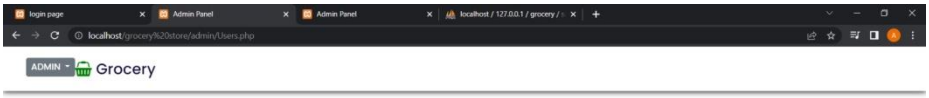






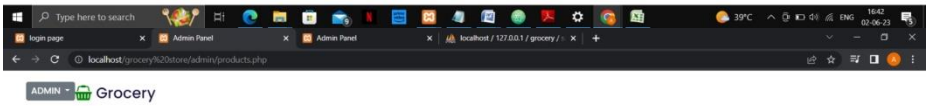
Order Table

OID	Payment_Method	Order_Date	Total Items	Amount	Shipping_id	User_Name
7	CREDIT CARD	2023-06-01	0	330	1	Roshan
8	CREDIT CARD	2023-06-01	0	210	1	Roshan
9	CREDIT CARD	2023-06-01	3	240	1	Roshan
10	CREDIT CARD	2023-06-01	3	240	1	Roshan
11	CREDIT CARD	2023-06-02	4	270	1	Roshan
12	Debit Card	2023-06-02	1	60	4	Parul
13	CREDIT CARD	2023-06-02	3	314	5	Sakshi
14	CREDIT CARD	2023-06-02	4	524	1	Roshan



Users Table

UID	First Name	Last Name	Address	Email Id	Mobile Number	Password	Actions
5	Sakshi	Dapkaraji		Sakshi@Gmail.Com	9174721062	831e31dac8811d89bb1cbfc384414aaf	
4	Parul	Paliwal		Parul@Gmail.Com	9174721062	6db9a4747b3aaff53384dcc817ba4434	
3	Aditya	Tapkir		Aditya@Gmail.Com	6264554662	057829fa5a65fc1ace408f490be486ac	
1	Roshan	Chouhan		Roshanchouhan29@Gmail.Com	2147483647	D6dfb33a2052663df81c35e5496b3b1b	



Products Table

PID	Product Name	Units	Picture	Weight	Category Id	Price	Product Description	Actions
2	Bannan	100Unit		1kg	3	Rs.30	Fresh	
4	Royal-Rice	100Unit		5	3	Rs.250		
5	Pohan	100Unit		500g	3	Rs.34		
6	Rich Bran Oil	30Unit		1L	6	Rs.134	Staples	
7	Upma	100Unit		500g	7	Rs.300		

CHAPTER 8: SYSTEM TESTING

System Testing is a level of software testing where complete and integrated software is tested. The purpose of this test is to evaluate the system's compliance with the specified requirements. This can also be stated as the process of validating and verifying that a software program is working as expected and is meeting the technical as well as business requirements. As the objectives indicated, the product of this study is the requirement capture and analysis rather than system design and implementation. Therefore, we cannot judge directly from the outcome from the first phase of the system development whether the development is successor or not. Great a lot of work is left to the future system developers and programmers. A more sensible way of evaluating this kind of product will be assessing the way of carrying out the investigation and analysis in order to find out whether theoretical methodologies are appropriately used in practice and whether it can be improved.

There are many types of testing software viz., unit testing, black box testing, performance testing, stress testing, regression testing, white box testing etc., I have conducted unit testing for our system which is described below:-

Unit Testing

Unit testing refers to those tests that verify the functionality of a specific section of the code, usually at the function level. In an object oriented environment this is usually at the class level and the unit tests include the constructors and the destructors. The primary goal is to take the smallest piece of testable software, isolate it from the rest of the code and check if it is behaving exactly as expected. Each unit is tested separately before integrating them into modules to test the interfaces between modules.

Test cases and Results

Sr no.	Test Scenario	Test Data	Expected Results	Actual Results	Pass/ Fail
1.	Test Valid login	id=roshan@gmail.com password=roshan	Admin/Vendor/Users should login into the system	Login successfully	Pass
2.	Test invalid login	id=92a@ password=1234	Admin/Vendor/Users should login into the system	Invalid user	Fail
3.	Check size of product image	pdf,jpeg,png	Attachment should be of size 2MB	Notice upload Successfully	Pass
4.	Search product	categories	Categories item should disply	product' details	Pass
5.	Add to cart	User id	Item add	items details	Pass
6.	Add product	enter product detail	Upload data on database	Upload successful	Pass
7.	Add categories	enter category and category description	Categoryname Should Be unique	upload	Pass

CHAPTER 11- CONCLUSION

The implementation of an online grocery platform is a transformative step that can revolutionize the way people shop for groceries. In this report, we have explored the key features, benefits, and impact of online grocery platforms. We have also discussed the critical aspects of system implementation to ensure the success of such platforms.

Online grocery platforms offer unparalleled convenience, time savings, wider product selections, and cost savings for consumers. They provide a seamless shopping experience, personalized recommendations, and flexible delivery options. These platforms have reshaped consumer expectations and demands, challenging traditional brick-and-mortar retailers to adapt and stay competitive.

To successfully implement an online grocery platform, careful planning and collaboration are essential. Conducting a needs assessment, evaluating technology infrastructure, and selecting a reputable vendor or development team lay the foundation for a successful implementation. System design and development, along with agile methodologies, enable the creation of a user-friendly, scalable, and customizable platform.

Testing and quality assurance ensure that the platform performs optimally and meets the organization's requirements. Training and user adoption strategies are crucial for widespread acceptance and effective usage of the platform. Ongoing support, continuous improvement, and regular maintenance ensure the platform's stability, security, and user satisfaction.

The online grocery market continues to grow, and the implementation of online grocery platforms plays a significant role in this transformation. As organizations adapt to the changing retail landscape, investing in robust system implementation will enable them to offer an enhanced shopping experience, stay ahead of the competition, and meet the evolving needs of consumers.

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Sincerely

Roshan Chouhan(2111453)

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