SHOPCASE

A Major Project -II

Submitted in partial fulfillment of the requirements
for the degree of

BACHELOR OF TECHNOLOGY
(Computer Science & Engineering)

by

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under

RAJIV GANDHI PRODYOGIKIVISHWAVIDYALAYA, BHOPAL (M.P.)

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GLOBAL NATURE CARE SANGATHAN'S GROUP OF INSTITUTIONS, JABALPUR (M.P.)
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Certificate of HOD & Guide

This is to certify that the **Major Project - II** report entitled **ShopCase** submitted by **Shobhit Kumar Patkar, Shubhanshu Kushwaha, Kamni Vishwakarma, Rajeshwari Uikey** has been carried out under my guidance & supervision. The project report is approved for submission towards partial fulfillment of the requirement for the award of degree of **Bachelor of Engineering** in **Computer Science & Engineering** from "**Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (M.P).**

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DEPARTMENT OF COMPUTER SCIENCE &
ENGINEERING

Certificate of Internal & External Examiner

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Signature of Internal **Signature of External**

Date : **Date :**

Abstract

The e-commerce market in India is growing rapidly due to increased internet penetration, smartphone usage, and digitization of services. The COVID-19 pandemic has further accelerated this growth as people have turned to digital shopping solutions. However, small and medium-sized sellers, who constitute a majority of retailers in the country, continue to face various challenges. They are unable to make use of the benefits of online retailing due to lack of technical knowledge, motivation, marketing budget, and time constraints. They also find it hard to invest in the technology required for e-commerce and struggle with doing business in an environment where they cannot be seen.

To solve this problem and overcome these challenges, a platform called "ShopCase" has been created. It is designed to help shopkeepers create a website or web store easily and customize it according to their preferences. The platform provides tools to help them run their business efficiently, manage inventory, orders, and analytics. ShopCase allows small sellers and local businesses to build their brand, reach and retain customers, and sell their products online or in-person. With social media integrations and chat features, ShopCase enables sellers to communicate with their customers and gain customer insights. Overall, the platform aims to help small sellers increase their online presence and compete with other sellers who have a better online presence.

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Declaration

I / We hereby declare that the project entitled "**ShopCase**"" which is being submitted in partial fulfillment of the requirement for the award of the Degree of Bachelor of Technology in Computer Science and Engineering to **"RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL (M.P.)"** is an authentic record of our own work done under the guidance of Prof. Saurabh Kapoor, Department of Computer Science & Engineering, **Baderia Global Institute Of Engineering & Management, Jabalpur (M.P.)**

The matter reported in this Project has not been submitted earlier for the award of any other degree.

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Chapter 1

Introduction

Introduction

Introducing our new shopcase platform, designed to cater to the needs of local shopkeepers and businesses in nearby areas. Our platform aims to bring together all the local businesses in one place and provide them with a digital presence to showcase their products to a wider audience.

One of the key features of our platform is the ability to search for products or shops based on the user's requirements. Users can search for specific products they need or search for a particular shop by name. Our search feature is designed to return accurate results based on the user's search query. Additionally, we support various sorting filters to help users find what they are looking for quickly and efficiently.

Our platform is designed to be user-friendly, and we have ensured that the user interface is easy to navigate, making it easy for users to find the products or shops they need. We also have a rating and review system that allows customers to rate their experience with a particular shop, helping other users make informed decisions.

At Shopcase, we believe that our platform will help local businesses thrive by providing them with a digital presence, and help customers find what they need easily and quickly. We invite all local shopkeepers and businesses to join our platform and be a part of this exciting digital revolution.

1.1 Background

India is home to one of the fastest-growing e-commerce markets in the world driven by increased internet penetration, smartphone usage & digitization of services, the e-commerce market in India has progressed unimaginably in recent times. Accounting for 3.4% of the overall retail market, India's e-commerce market is expected to see 300-350 million shoppers by 2025.

As COVID-19 pandemic propelled the industry's progress with social distancing norms & continuous lockdowns forcing people to remain indoors & turn to digital shopping solutions. Due to which E-commerce players have also witnessed a dramatic rise in the demand for essential items during the pandemic & are racing to cater to consumers. Constituting a majority of the retailers in the country, small & medium sellers have been one of the worst-hit by the global outbreak of COVID-19.

In recent years, the e-commerce industry has grown significantly, and many traditional businesses are shifting towards online platforms to reach a wider audience. However, local shopkeepers and small businesses often find it challenging to compete with large e-commerce websites. Therefore, an e-commerce platform catering specifically to local shopkeepers and businesses in nearby areas can help them to reach their target audience and grow their business.

1.2 Objective

The objective of this e-commerce platform “shopcase” is to make online shopping user-friendly and convenient for customers while supporting local businesses. The platform allows customers to search for nearby shops and products, bridging the gap between online and offline shopping. It also provides a centralized platform for local shopkeepers to establish an online presence, saving time for customers who prefer in-person shopping and ensuring product quality and satisfaction. The platform provides information on nearby shops, products, arrivals, offers, and provides online presence to shops, whether they offer online delivery or not.

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1.3 Purpose, Scope and Applicability

1.3.1 Purpose

The objective of this “shopcase” platform is to provide a platform for local businesses and small sellers in developing countries to reach their target audience and sell their products online. The platform aims to promote economic growth and provide customers with a convenient way to shop for products in their nearby areas. The platform will act as a marketplace, where customers can browse and search for specific items or services they need. It will also provide an opportunity for small sellers who do not have a physical store or retail space to sell their products online, offering customers variety and quality assurance at an affordable price.

1.3.2 Scope

The e-commerce platform will be designed for local shopkeepers and businesses in nearby areas who struggle to compete with larger online platforms. It allows them to establish an online presence and show their products to customers. Customers will be able to search for products or shops by location, product category, or shop name. The platform will also support various sorting filters, such as price, distance, and popularity. Customers will be able to browse products, add them to their cart, and make payments securely. It can be accessible from anywhere where proper internet is available and users have proper login credentials.

This e-commerce platform has two types of users - Customers and Admin (Shopkeepers or Vendors). Customers can use the application to view the availability of products in their city, eliminating the need to physically visit shops. The Admin will update product information for customers to know which shops have the desired products and It provides analyzed data on the most searched products in the city. The platform saves time and effort for customers and helps vendors compete with larger online platforms.

This platform solves the problem of customers who waste time and effort wandering around the city to find desired products. By allowing customers to easily explore the entire city from the comfort of their own home, the platform can analyze demand for products and provide information to vendors about what products are popular in the city. If a product is not currently available in the city, the platform can detect the need and work to suggest and make the product available. The ease and convenience of this platform increase the chances of it being accepted in the market in a particular city.

Shopkeepers who want to facilitate online delivery can either make their own arrangements or register for delivery services.

1.3.3 Applicability

This platform is designed to be a one stop shop for all the needs of a small seller or local business owner(who owns the shops or not whether they provide online delivery or not). The platform can be used by local shopkeepers and businesses in various industries, such as grocery stores, pharmacies, clothing stores, and more. The platform can be customized to cater to the specific needs of each business, such as inventory management, order fulfillment, payment processing and analytics , etc. The platform can also be integrated with various marketing tools to help businesses promote their products and attract more customers. It can provide them with an opportunity to showcase their products and services, sell them in-person as well as offer their services online.

Chapter 2

Survey of Technologies

2.1 Technology used

2.1 MongoDB

MongoDB is a popular NoSQL database that is used to store and manage large volumes of unstructured and semi-structured data. It is highly scalable and can handle large amounts of data with ease. MongoDB is known for its flexibility, allowing for the addition and removal of fields without having to alter the existing data structure. It also supports replication and sharding, making it a good choice for applications that require high availability and fault tolerance. MongoDB's query language is based on JSON and is highly expressive and powerful, allowing for complex queries to be executed with ease. MongoDB is a popular choice for modern applications that require high performance, scalability, and flexibility. Here are some key features and benefits of using MongoDB:

Features:

- Flexible document data model
- Dynamic schema
- High availability and horizontal scalability
- Rich query language
- Secondary indexes
- Automatic sharding and replication
- MapReduce for large-scale data processing
- Support for geospatial indexing and querying
- Integrated text search
- Document validation and indexing

Benefits:

- High performance and scalability: MongoDB's architecture allows for high read and write throughput, and the ability to scale horizontally across multiple servers.
- Flexible data model: MongoDB's flexible document data model allows for easy and efficient storage of complex data structures.
- Easy development and integration: MongoDB integrates easily with popular programming languages, frameworks, and tools.

- Automatic sharding and replication: MongoDB's automatic sharding and replication features help ensure high availability and fault tolerance.
- Rich query language: MongoDB's query language provides powerful and flexible ways to query data.

When considering using MongoDB for an ecommerce platform, its flexibility and scalability make it a strong contender. Its ability to store complex data structures and handle large amounts of data make it well-suited for ecommerce applications. Additionally, MongoDB's built-in support for geospatial indexing and text search can be useful for implementing location-based and search features.
However, it's important to consider factors such as data consistency, security, and backup and recovery options when choosing a database for an ecommerce platform. MongoDB offers features such as atomic operations and transactions, access control, and backup and recovery options, but it's important to ensure that these features meet the specific needs of the ecommerce platform.

2.2 Express

Express is a fast and minimalist web framework for Node.js that is used to build web applications and APIs. Express supports middleware, which allows developers to add functionality to their applications such as authentication, logging, and error handling. Express is known for its simplicity and ease of use, making it a good choice for developers who want to build web applications quickly and efficiently. It provides a variety of features that help developers to create robust, scalable, and secure web applications. Here's a survey of some of the key technologies associated with Express:

- Middleware: Express makes use of middleware to handle HTTP requests and responses. Middleware functions can be used to handle tasks such as authentication, logging, and error handling. There are a wide range of middleware modules available in the npm ecosystem, making it easy to extend and customize the functionality of Express.
- Routing: Express provides a simple and flexible routing system that allows developers to create routes for handling different HTTP requests. Routing in Express is based on the HTTP methods (GET, POST, PUT, DELETE, etc.) and URL patterns, making it easy to map incoming requests to the appropriate handler functions.

- Templating Engines: Express supports a variety of templating engines such as EJS, Pug, Handlebars, and many others. Templating engines allow developers to generate dynamic HTML content by embedding data into HTML templates.
- Security: Express provides a variety of security features such as HTTPS support, CSRF protection, and built-in middleware for handling common security tasks. It also supports third-party middleware such as Passport.js for handling authentication and authorization.
- Performance: Express is designed to be fast and lightweight, with a minimal overhead. It is optimized for handling a large number of requests and supports features such as clustering and load balancing.
- Testing: Express supports a variety of testing frameworks such as Mocha, Chai, and Supertest. These frameworks allow developers to write automated tests for their applications and ensure that they are functioning correctly.

Overall, Express is a powerful and flexible web framework that provides a wide range of features for building robust and scalable web applications. Its simplicity and ease of use make it a popular choice among developers, and its large ecosystem of middleware and plugins makes it easy to extend and customize to suit different use cases.

2.3 React

React is an open-source JavaScript library popular for building user interfaces. It was developed by Facebook and released in 2013. React allows developers to create reusable UI components and build complex and dynamic UIs with ease, using a declarative syntax and component-based approach.

React's virtual DOM allows for fast rendering and efficient updates, making it a good choice for applications that require a high degree of interactivity. React also has a large ecosystem of third-party libraries and tools, making it easy to integrate with other technologies and services. React is widely used in modern web development due to its efficiency, flexibility, and scalability. Some of the key features of React include:

1. Virtual DOM - React uses a virtual DOM, which is a lightweight copy of the actual DOM. When changes are made to the UI, React updates the virtual

DOM first and then updates the actual DOM. This makes React much faster and more efficient than other UI libraries.

2. Component-Based Architecture - React uses a component-based architecture that allows developers to build complex UIs using smaller, reusable components. This makes it easier to manage the code and maintain the application.
3. JSX - React uses JSX, which is a syntax extension that allows developers to write HTML-like code within JavaScript. This makes it easier to build and maintain UI components.
4. One-Way Data Binding - React uses one-way data binding, which means that data flows in one direction from the parent component to the child component. This makes it easier to manage the state of the application and avoids data inconsistencies.

Some of the popular tools and frameworks used with React include Redux, React Router, and Next.js. Redux is a state management library that allows developers to manage the application state in a predictable and efficient way. React Router is a routing library that allows developers to handle the navigation between different pages in the application. Next.js is a server-side rendering framework for React that allows developers to build SEO-friendly and scalable applications.

Overall, React is a powerful and efficient UI library that is widely used in modern web development. Its component-based architecture, virtual DOM, and one-way data binding make it easier to build complex UIs and manage the state of the application. The popularity of React has led to the development of many tools and frameworks that make it even more powerful and efficient.

2.4 Node js

Node.js is an open-source, cross-platform, and asynchronous runtime environment that executes JavaScript code outside of a web browser. It is built on the Google V8 JavaScript engine and is designed to build scalable network applications, particularly server-side applications. Node.js is widely used in web development, particularly for building back-end services and APIs.

1. Node.js has a number of advantages that make it a popular choice for web development. Firstly, it is lightweight and fast, thanks to its non-blocking I/O model and event-driven architecture. This means that Node.js can handle large numbers of concurrent connections with minimal resources, making it ideal for real-time applications and streaming services.
2. Secondly, Node.js has a large and active community that creates and maintains a wealth of open-source packages and libraries, making it easy to add functionality to your application without having to reinvent the wheel.
3. Thirdly, Node.js is highly modular and extensible, which means that you can easily create your own modules and plug them into your application. This makes it easy to develop complex applications with a high degree of flexibility and modularity.
4. Finally, Node.js has excellent support for modern web development tools and frameworks, such as Express, Socket.io, and React, making it a popular choice for building scalable and responsive web applications.

However, Node.js does have some drawbacks. It is primarily designed for server-side applications, and is not as well-suited to building front-end interfaces as other tools like React or Angular. Additionally, while Node.js is fast and efficient, it can be difficult to write efficient code that takes full advantage of its capabilities, particularly for developers who are new to the platform.
Overall, Node.js is an excellent choice for building scalable and high-performance web applications, particularly for back-end services and APIs. Its lightweight, modular architecture, and extensive package ecosystem make it a popular choice for web developers of all skill levels.

2.5 AWS Comprehend

AWS is a NLP service that uses Machine Learning and discover the insights and relationships from unstructured data which is present in the form of text. It extracts and simplifies the textual data in various forms without having deep knowledge of Machine Learning.

AWS Comprehend is a natural language processing (NLP) service provided by Amazon Web Services (AWS). It uses machine learning to analyze text and

extract relevant information from it, such as entities, key phrases, sentiment, and language detection. The extracted insights can then be used for various applications, such as customer feedback analysis, social media monitoring, content categorization, and more.

One of the major advantages of AWS Comprehend is that it is fully managed, meaning that AWS takes care of the underlying infrastructure, scalability, and maintenance of the service, allowing developers to focus on building their applications. Additionally, AWS Comprehend is highly accurate, with pre-trained models that can understand and analyze text in several languages.

In terms of pricing, AWS Comprehend offers a pay-as-you-go model, where users only pay for what they use, with no upfront costs or minimum fees. The pricing is based on the number of characters processed, with discounts available for larger volumes.

AWS Comprehend can be easily integrated with other AWS services, such as Amazon S3, Amazon Kinesis, and Amazon Elasticsearch, making it a flexible and powerful tool for text analysis and processing. Some potential use cases for AWS Comprehend include:

- Sentiment analysis of customer feedback to improve products and services
- Categorization of content for better search and discovery
- Extraction of key phrases and entities for targeted advertising
- Language detection and translation for global businesses

Overall, AWS Comprehend is a powerful and flexible tool for text analysis and processing, with high accuracy, easy integration with other AWS services, and a flexible pricing model.

2.6 AWS Simple Storage Service Bucket

Amazon Simple Storage Service (S3) is an object storage service that offers industry-leading scalability, data availability, security, and performance. S3

allows businesses and individuals to store and retrieve any amount of data, at any time, from anywhere on the web.

S3 is designed for 99.999999999% (11 9's) of durability, and stores data for millions of applications used by market leaders in every industry. It offers scalable storage capacity, so customers can start small and grow as their storage needs increase, and only pay for what they use. S3 provides built-in security and compliance features that meet even the most stringent regulatory requirements.

In terms of features, S3 offers unlimited storage capacity, scalable performance, lifecycle policies, versioning, encryption, access control, and many other capabilities. S3 is also designed to integrate with other AWS services, such as Amazon CloudFront, Amazon Elastic Compute Cloud (EC2), Amazon Elastic Block Store (EBS), and Amazon Relational Database Service (RDS).

One of the major advantages of S3 is its ease of use. S3 provides a simple web services interface that can be used to store and retrieve any amount of data, at any time, from anywhere on the web. S3 also supports a wide range of applications, operating systems, programming languages, and development platforms, making it a versatile and flexible solution for businesses of all sizes.

Overall, AWS Simple Storage Service (S3) is a reliable, scalable, and cost-effective solution for storing and retrieving data of any size, with built-in security and compliance features that meet the most stringent regulatory requirements.

Chapter 3

Requirement & Analysis

3.1 Problem Definition

In the ever-evolving e-commerce market in India, small sellers and local business owners face many challenges when it comes to establishing their business online. These challenges include lack of technical knowledge, motivation, marketing budget, time constraints, and more. As a result, many small sellers and business owners suffer a significant loss, and some even abandon the idea of taking their business online.

To address these challenges, we have developed a platform called "ShopCase." The platform aims to help small sellers and local business owners establish their online presence without requiring technical expertise. The platform also offers security features to ensure the protection of their data and customer information.

The objective of the platform is to make the process of taking businesses online simple and accessible for everyone. ShopCase will provide a user-friendly interface with a search function that allows users to search for products or shops based on their preferences. This feature will support various sorting filters to provide the most relevant search results to users.

In summary, ShopCase is a platform designed to overcome the challenges small sellers and local business owners face when establishing their online presence. By providing a user-friendly interface and accessible platform, ShopCase aims to help small businesses reach and retain customers, even if they do not offer online product delivery facilities.

3.2 Identification of Needs

In the case of an e-commerce platform for local shopkeepers or businesses, the need for a new system arises from several factors:

- Limited online presence: Many local shopkeepers or businesses have limited online presence and rely heavily on physical foot traffic for sales. However, with the rise of e-commerce and changing consumer behavior, having a strong online presence is becoming increasingly important.
- Inefficient sales process: Traditional sales processes for local shops or businesses may involve manually recording transactions, managing inventory, and coordinating deliveries or pickups. This can be time-consuming and error-prone, leading to loss of sales and dissatisfied customers.
- Limited reach: Local shops or businesses are often limited in their geographical reach and may not be able to attract customers from other areas. An e-commerce platform can expand their reach and allow them to tap into a larger customer base.
- Lack of customer insights: Local shops or businesses may not have access to customer insights or feedback, making it difficult to improve their products or services. An e-commerce platform can provide valuable insights into customer behavior, preferences, and feedback.
- Limited marketing opportunities: Traditional marketing methods may not be as effective for local shops or businesses, especially when competing with larger retailers. An e-commerce platform can provide new marketing opportunities and channels to reach potential customers.

Overall, an e-commerce platform can help local shops or businesses overcome these challenges and improve their sales and customer engagement.

3.3 Feasibility Study

The proposed eCommerce platform is aimed at providing a platform for local shopkeepers and businesses to sell their products online. Before proceeding with the development of the platform, a feasibility study was conducted to evaluate its viability in terms of technical, economic, and operational feasibility.

3.3.1 Technical Feasibility:

The technical feasibility of the platform was evaluated by assessing the availability of the necessary hardware and software resources required for the development and deployment of the platform. The platform will be developed using modern web technologies such as ReactJS, NodeJS, and ExpressJS. The platform will be hosted on cloud-based servers provided by Amazon Web Services (AWS), which provides reliable and scalable hosting services. Additionally, the use of MongoDB for data storage will provide flexibility in terms of data management and scalability.

3.3.2 Economic Feasibility:

The economic feasibility of the platform was evaluated by analyzing the cost involved in developing and maintaining the platform. The platform will be developed by a team of experienced developers who will be working on an hourly basis. The cost of development will depend on the complexity of the platform and the number of features that need to be implemented. The platform will also incur ongoing costs such as hosting fees, maintenance fees, and advertising costs.

3.3.3 Operational Feasibility:

The operational feasibility of the platform was evaluated by assessing the ease of use and user-friendliness of the platform. The platform will be designed with a user-friendly interface that will allow users to easily navigate and search for products. The platform will also support various payment methods to cater to the needs of different customers.

Overall, the feasibility study showed that the proposed eCommerce platform is technically feasible and economically viable. Additionally, the platform is operationally feasible as it is designed to be user-friendly and easy to use.

3.4 Project Planning and Scheduling

Scheduling and Estimates of Iteration Release :

Milestone	Description	Release Date	Release
			Iteration
M1	Application view and Design	Nov 1st-2nd week	R1
	(Front-end development)		
M2	Database for my application	Nov 3rd-4th week	R1
	(Back-end)		
M3	Integrating views and designs	Dec 1st-2nd week	R1
	(Integrating front-end and Backend)		
M4	Testing for initial release	Dec 3rd-4th week	R2
M5	Issue tracker, user reviews,	Jan 1st-2nd week	R2
	web design integration		
M6	Final release	Jan 3rd-4th week	R2

3.5 Software Requirement Specification

3.5.1 Product Overview

The shopcase platform is an e-commerce platform that aims to provide a convenient and user-friendly experience for local shopkeepers and businesses. Customers can search for products or shops based on their preferences and location, and the platform supports various sorting filters. The user interface is designed to be easy to navigate, and customers can add products to their cart for checkout. The platform supports multiple payment options, making transactions convenient for users.

The platform will be built using modern web technologies including React, Node.js, Express.js, and MongoDB. The backend will be hosted on AWS and will use AWS Simple Storage Bucket for storing images and Amazon Comprehend for analyzing customer feedback.

Shop owners will have a dedicated dashboard to manage their inventory, update product information, and track sales. They will also be able to communicate with customers through a messaging system integrated into the platform. Security and user privacy are a priority, with secure login and registration systems in place to protect user data. The platform is scalable to accommodate a large number of users and products.

The UI is designed to have a search bar, and customers can toggle between searching for a shop or product. If searching for a shop, a list of shops will be displayed, and customers can enter the virtual shop to explore the variety of items available. If searching for a product, a list of available shops will be displayed, and customers can enter any of the displayed lists to view details about their desired product. If a customer cannot find a specific product, they can add it to their bucket, creating awareness among vendors to make it available in the market.

Shopkeepers can register their shop and upload all details about the product, including cost, quality, size, quantity, and more. Customers can maintain their profile with a username, password, and profile picture, and their name will be displayed along with their review. Overall, the shopcase platform aims to make the shopping experience convenient and user-friendly for customers and help local shopkeepers and businesses reach a wider audience.

3.5.2 Product Perspective:

The shopcase platform is an e-commerce platform that aims to help local shopkeepers or businesses reach their customers through an online marketplace. The platform

provides an online presence for small local businesses that may not have the resources or expertise to create and manage their own ecommerce site.

The shopcase platform will enable shopkeepers or businesses to register and create their own shop profile, add products to their shop, manage their inventory, and process orders. Customers can browse shops and products, place orders, and make payments securely online.

3.5.3 Product Functions:

The shopcase platform will provide the following functions:

- **Registration:** The platform will allow shopkeepers and businesses to register themselves with their basic information such as name, contact number, email address, and location.
- **Login:** Registered users will be able to login into the platform using their registered email address and password.
- **Profile Management:** Users will be able to manage their profiles by updating their information, such as contact number, email address, and location.
- **Product Management:** Users will be able to add new products to their inventory, update existing product information, and remove products from their inventory.
- **Shop Management:** Users will be able to create and manage their shops by adding new shop locations, updating shop information, and removing shop locations.
- **Search:** The platform will provide a search functionality to enable users to search for products or shops by name or category. The search results will be sorted based on relevance, and users will be able to filter the results using various sorting filters.
- **Order Management:** The platform will allow users to manage their orders by tracking the order status, managing returns and refunds, and generating reports on order history and revenue.
- **Payment Gateway Integration:** The platform will integrate with a payment gateway to enable users to make secure online payments.
- **Review and Rating:** The platform will allow users to rate and review products and shops, helping other users make informed purchase decisions.
- **Admin Dashboard:** The platform will have an admin dashboard to enable the site administrator to manage users, products, shops, and orders, and generate reports on site usage and revenue.
- **Customer Support:** The platform will provide customer support through a chatbot or a support email address to address any issues or concerns raised by users.

3.5.4 User Characteristics

The user characteristics for the Shopcase platform are:

a. Customers:

- Customers are the primary users of the platform who can browse the products and purchase them.
- They can search for products or shops by name, category or location.
- Customers can create an account and save their delivery address and payment information for quick checkout in the future.
- They can also leave ratings and reviews for the products or shops.

b. Shop Owners:

- Shop Owners can create an account and list their products on the platform.
- They can manage their product inventory, view sales reports, and fulfill customer orders.
- They can also view customer ratings and reviews for their shop and products and respond to customer queries or complaints.

c. Admins:

- Admins are the platform's superusers who have access to all functionalities of the platform.
- They can manage user accounts, verify shop ownership, and moderate user-generated content such as product listings, ratings, and reviews.
- They can also view platform analytics and generate reports for performance evaluation.

d. Guest Users:

- Guest users are unregistered users who can browse the products and shops on the platform but cannot make purchases or leave ratings and reviews.
- They can create an account at any time during the browsing process to avail of the platform's features.

The Shopcase platform caters to a diverse user base, including customers, shop owners, admins, and guest users. Each user type has a unique set of characteristics, needs, and objectives, and the platform aims to provide a seamless experience for all of them.

3.5.5 Attributes

1. User ID: A unique identifier assigned to each user upon registration.
2. Name: The name of the user.
3. Email Address: The email address of the user used for registration and communication.
4. Profile Picture: An optional image that the user can upload to their profile.
5. Phone Number: The phone number of the user used for communication.
6. Password: The password set by the user to log into the platform.
7. Address: The physical address of the user's residence or business.
8. Location: The user's location to determine their nearest shops.
9. Payment Details: The user's preferred payment method and associated details like payment information of the user, including credit card details and other payment methods.
10. Order History: A record of all the orders placed by the user.
11. Wishlist: A list of products the user has saved for future purchase.
12. Reviews and Ratings: The user's ratings and reviews for seller's products,services, and shops on the platform.
13. Preferences: The user's preferences, such as preferred categories, brands, and price range.
14. Social Media Links: Links to the user's social media profiles, if they choose to connect them.
15. Account Type: The type of account the user has, such as a regular customer account or a seller account.
16. Store Information (for sellers): Information about the seller's store, such as name, description, and location.
17. Store Inventory (for sellers): A list of products available for purchase in the seller's store.
18. Account Settings: Options for the user to edit their profile information, change their password, or delete their account.

3.6 Software Engineering Paradigm Applied

Agile Development

Agile development paradigm is a popular approach in software engineering that emphasizes iterative and incremental development, continuous collaboration, and flexibility to changes throughout the development process. It is well-suited for projects with evolving requirements and involves active participation from stakeholders, including users, developers, and product owners.

In the context of the Shopcase platform, the agile development paradigm would be an appropriate choice for several reasons. Firstly, the platform is targeted towards small local shopkeepers and businesses, and their requirements and preferences may evolve over time. An agile approach would allow for the flexibility to accommodate such changes.

Secondly, the platform would require active collaboration between different stakeholders, such as shopkeepers, customers, and developers. An agile approach would promote continuous feedback and communication between these groups, ensuring that the platform meets the needs of its users.

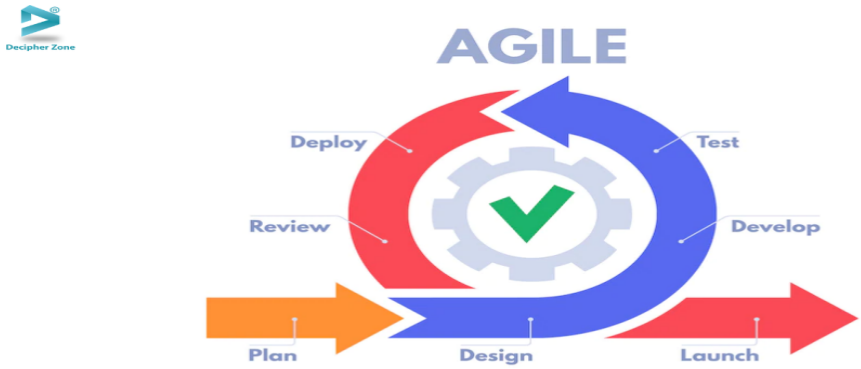
Thirdly, the agile approach would support the iterative and incremental development of the platform, allowing for early delivery of working software that can be tested and improved upon in subsequent iterations.

Overall, the agile development paradigm would enable the development team to deliver a robust and user-friendly platform that meets the evolving needs of its users through continuous collaboration and feedback.

Agile Development Lifecycle

The Agile software development life cycle (SDLC) is an iterative and incremental approach to software development that emphasizes flexibility and customer satisfaction. It is a set of practices that guide the software development process, from requirements gathering to deployment, with a focus on delivering high-quality software in a timely and efficient manner.

The Agile SDLC consists of the following phases:



Planning: This phase involves gathering requirements, identifying the project goals and objectives, and creating a project plan.

Analysis: In this phase, the requirements are analyzed, and the development team works with the customer to refine and prioritize the features and functions of the software.

Design: The design phase involves creating the architecture and design of the software based on the requirements gathered in the previous phases.

Development: This is the phase where the actual coding of the software takes place. The development team works in short iterations, delivering small chunks of functionality at a time.

Testing: Testing is an integral part of the Agile SDLC. Testing is done in parallel with development, and each iteration is tested before moving to the next one.

Deployment: In the deployment phase, the software is released to the customer or end-users. The deployment process is automated, and the software is released in small increments.

Maintenance: The maintenance phase involves fixing any bugs or issues that arise after the software has been deployed. The development team continues to work on the software, adding new features and functions as needed.

Chapter 4

System Design

4.1 Basic Modules

Modules: here's an overview of the common, manager, and store modules for the Shopcase platform:

4.1.1 Common Module:

The Common Module will contain the basic functionalities that are shared by all the other modules. This module will handle user authentication, session management, and database connection. It will also contain utility functions for formatting and validating data. Here are the **submodules** for **Common module:**

- **Authentication:** This Submodule allows users to register, login, and logout.
- **Search:** This submodule enables users to search for products or shops by keywords, category, location, etc.
- **Cart:** This submodule allows users to add/remove products from their cart and proceed to checkout.
- **Payment:** This submodule integrates with payment gateways to enable secure and easy payment options.
- **Review:** This submodule enables users to rate and review products and shops.
- **Notification:** This submodule sends notifications to users regarding their orders, cart updates, and other important events.

4.1.2 Manager Module:

The Manager Module will contain functionalities related to managing the shopkeepers, their shops, and products. This module will handle the CRUD (Create, Read, Update, Delete) operations for shopkeepers, their shops, and products. It will also contain functionalities to assign and manage the roles of different users. The manager module will also provide functionalities to generate reports and analytics. Here are the **submodules** for **Manager module:**

- **Product Management:** This submodule allows managers to add, edit, and delete products from the shop.
- **Shop Management:** This submodule enables managers to manage their shop details, such as name, location, working hours, and contact information.

- **Order Management:** This submodule allows managers to view and manage orders placed by customers, such as order status, payment status, and shipping status.
- **Inventory Management:** This submodule enables managers to manage their inventory, such as stock availability and stock updates.

4.1.3 Store Module:

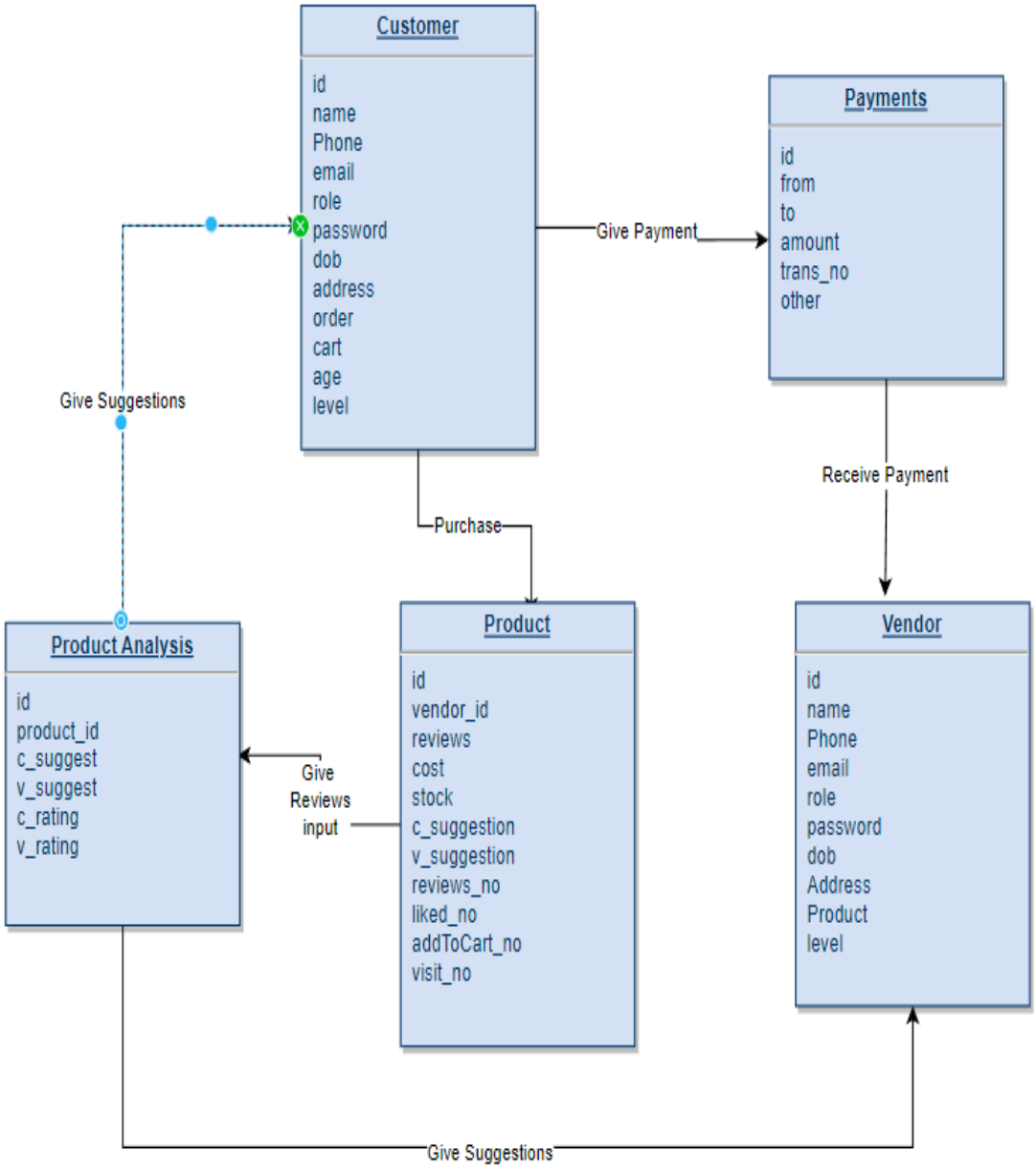
The Store Module will contain functionalities related to the customer-facing side of the platform. This module will handle the search functionality for products and shops, shopping cart management, checkout, and payment processing. The store module will also provide functionalities to handle orders and track their status. It will also contain functionalities to handle customer reviews and ratings. Here are the **submodules** for **Store module:**

- **Shop Listing:** This submodule enables store owners to list their shops on the platform.
- **Shop Verification:** This submodule verifies the authenticity of the shop and its products to ensure customer trust.
- **Shop Dashboard:** This submodule provides store owners with a dashboard to view their shop's performance, such as sales, revenue, and customer analytics.
- **Customer Management:** This submodule enables store owners to manage their customers, such as customer information, order history, and communication.

The common, manager, and store modules will be interconnected and will work together to provide a seamless shopping experience to the customers. The common module will provide the foundation for the other modules, while the manager and store modules will handle the backend and frontend functionalities, respectively and each of these submodules is essential for the smooth functioning of the platform and provides necessary features to cater to the needs of customers, managers, and store owners.

4.2 Data Design

4.2.1 Database design

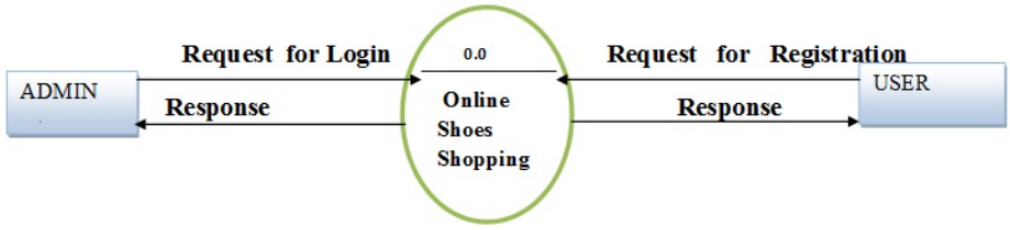


4.3 Diagrams

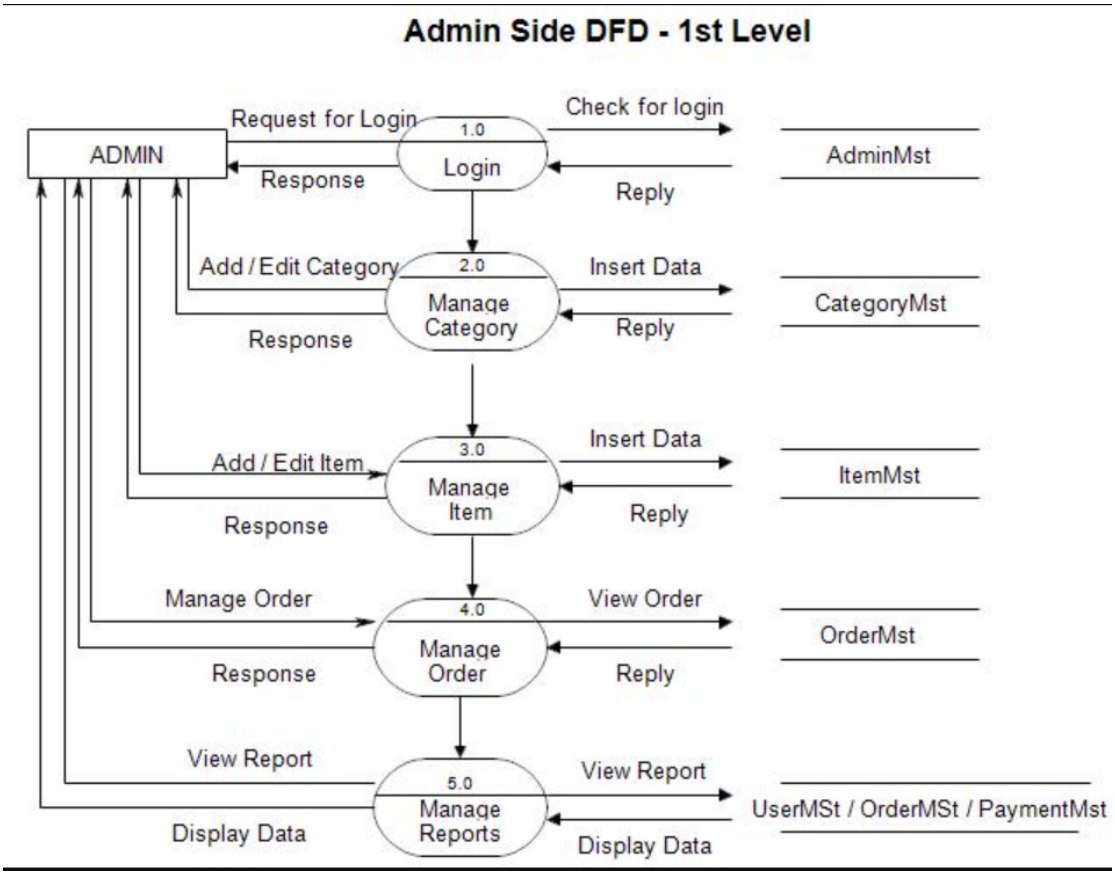
4.3.1 Data flow Diagrams

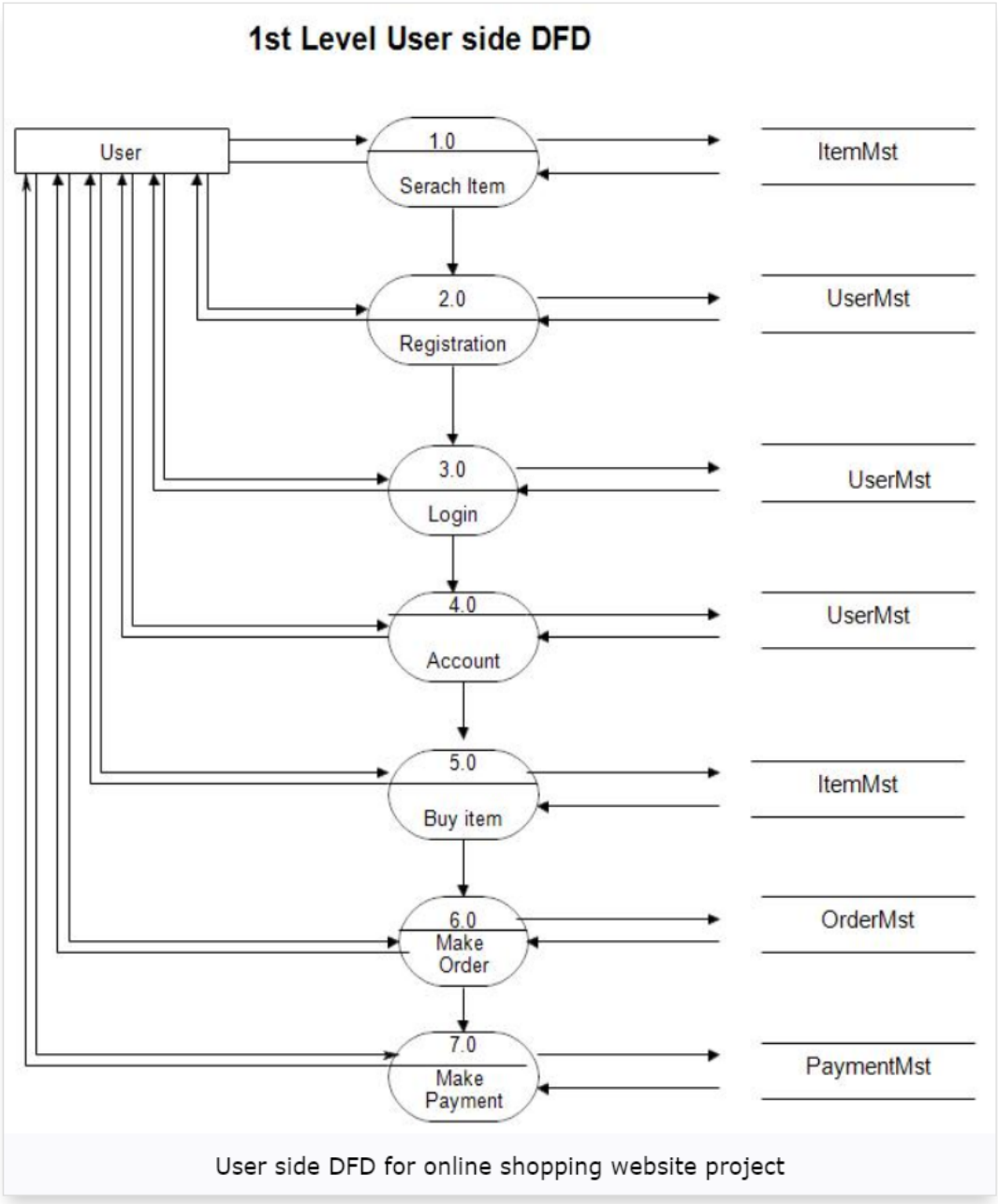
Context level DFD – 0 level

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.



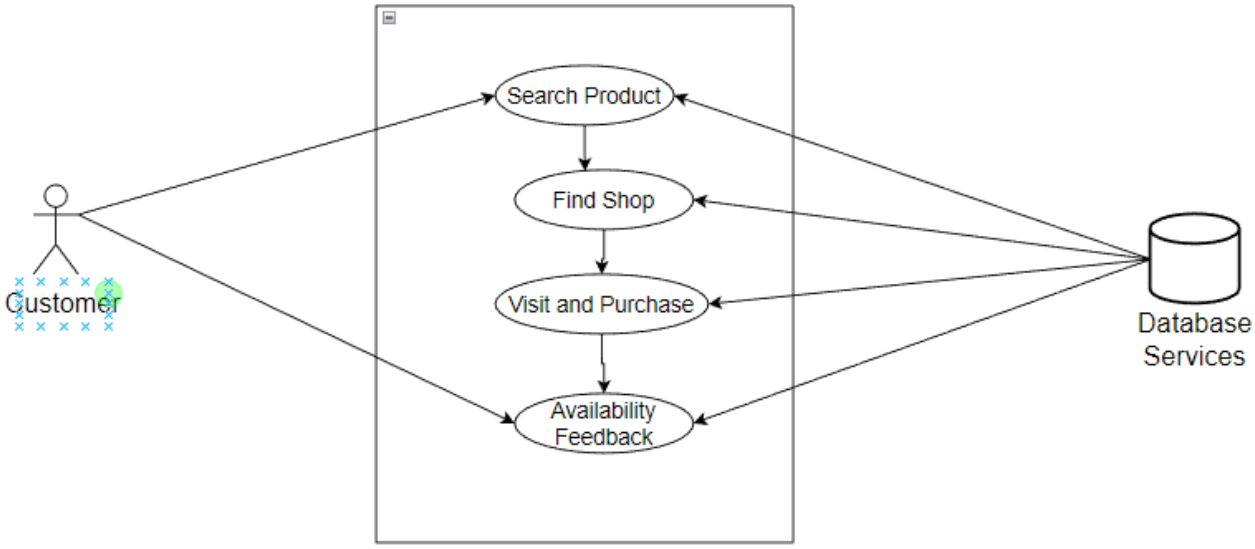
o – Level DFD for Online shopping website project





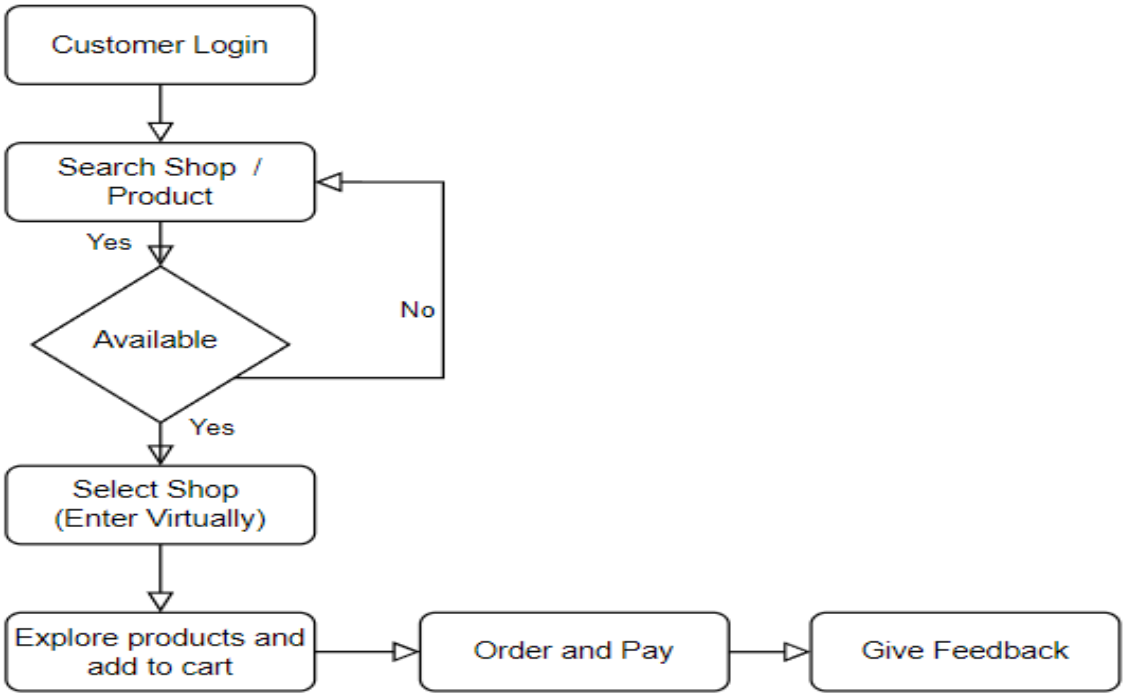
User side DFD for online shopping website project

4.3.2 Use Case Diagrams



Use case showing searching of product by Customer

4.3.2 Activity Diagrams



4.4 User Interface Diagrams

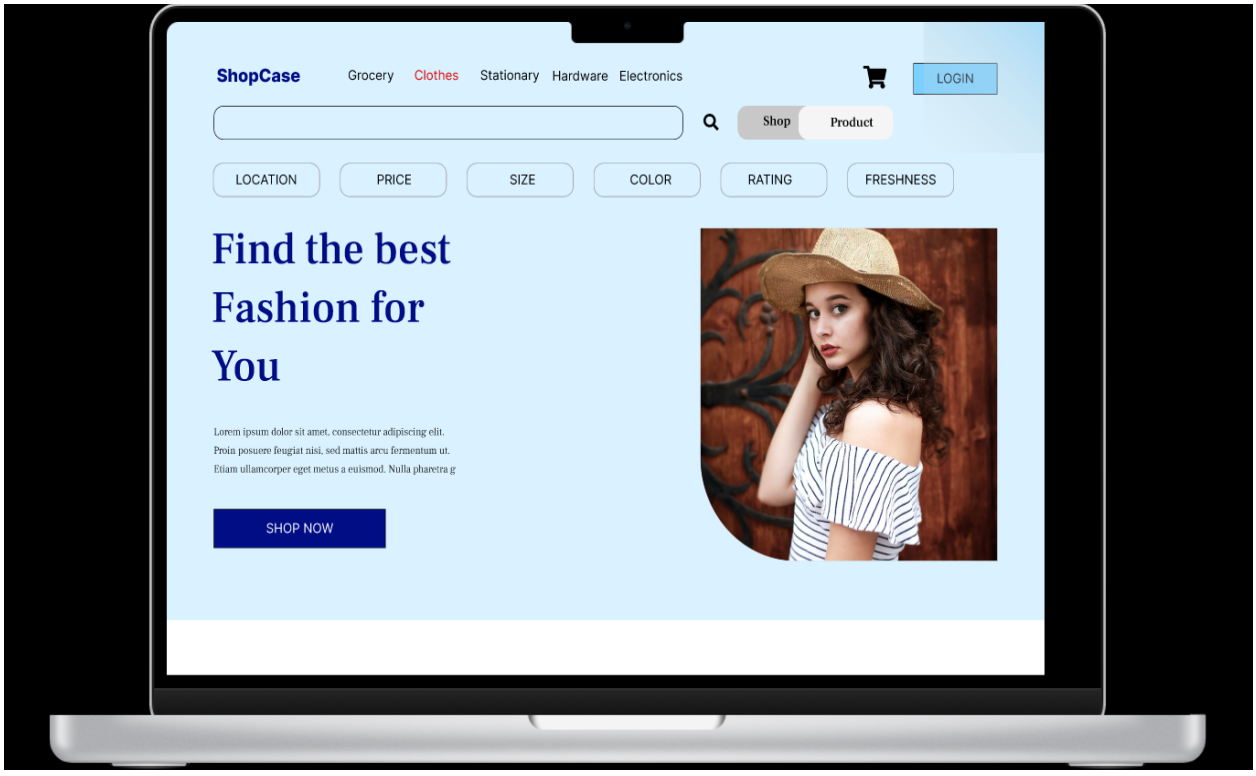


Fig: Customer Side UI (Store)

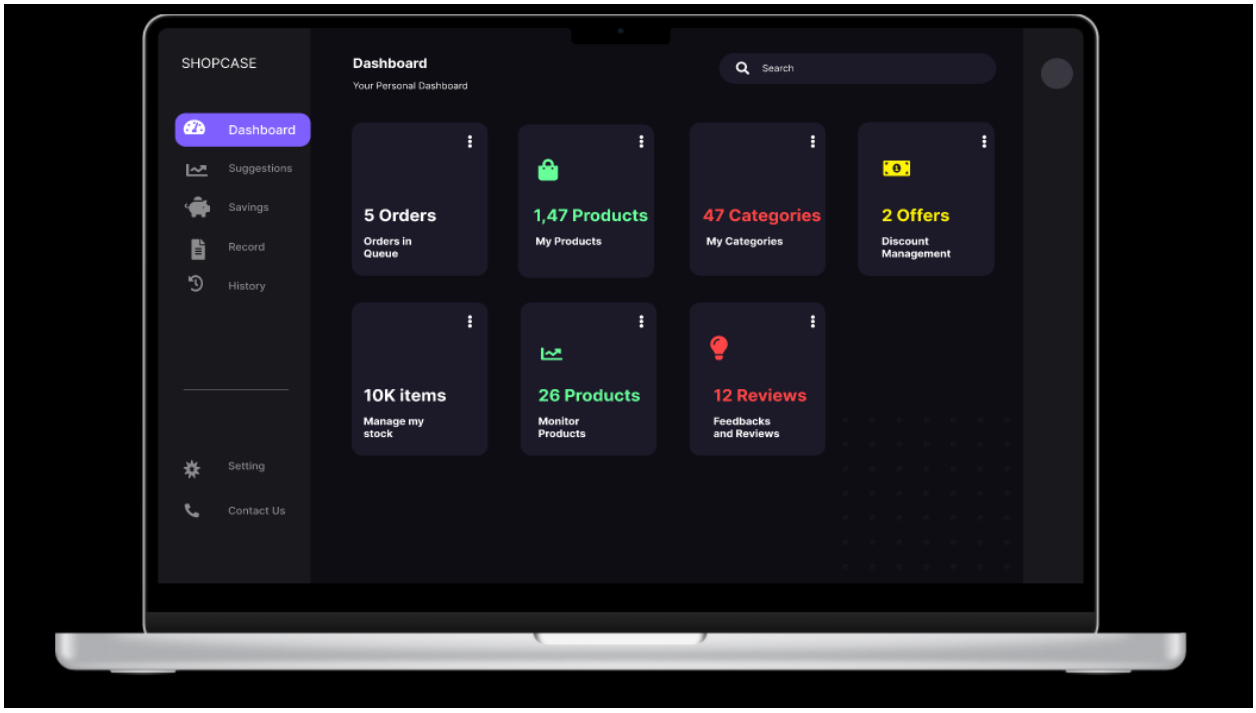


Fig: Vendor Side UI (Manager)

Chapter 5

Results & Discussion

5.1 User Documentation

The User Documentation for the Shopcase platform will provide users with a comprehensive guide on how to use the software, its features and functions, and how to navigate the different components. The following sections will be included in the User Documentation:

Getting Started:

Welcome to Shopcase platform, an ecommerce platform for local shopkeepers and businesses. This section will guide you through the steps to get started with our platform.

Sign Up: To use Shopcase platform, you need to sign up. Click on the "Sign Up" button on the homepage and enter your details such as name, email address, and password. Once you have filled in all the required fields, click on the "Sign Up" button.

Log In: After successful sign up, you will be redirected to the login page. Enter your registered email address and password to log in. Once you have logged in, you will be directed to your dashboard.

Dashboard: The dashboard is the main page of the platform, where you can view your profile information, recent orders, and other important information related to your account. From here, you can also navigate to other pages of the platform such as the product catalog, shopping cart, and order history.

Product Catalog: To view the available products on the platform, click on the "Product Catalog" tab on the top navigation bar. You can search for products by product name or shop name. You can also filter the products by category, price range, and other parameters.

Shopping Cart: Once you have selected the products you want to buy, add them to your shopping cart. To access your shopping cart, click on the "Shopping Cart" icon on the top navigation bar. Here, you can view the products in your cart, update the quantities, and proceed to checkout.

Checkout: To place an order, click on the "Checkout" button in your shopping cart. Here, you will need to provide your shipping address, select the payment method, and confirm your order.

Order History: To view your order history, click on the "Order History" tab on the top navigation bar. Here, you can view the status of your orders, track the delivery, and view the order details.

The navigation menu is located at the top of the screen, and it contains links to different sections of the application. The menu options include:

Home: Clicking on the Home link will take the user back to the landing page.

Products: This link will take the user to the products page where they can browse through different categories of products and search for specific products using the search bar.

Shops: The Shops link will take the user to a page where they can search for shops in their local area.

Cart: This link will take the user to their shopping cart where they can view and manage their current orders.

Account: Clicking on the Account link will take the user to their account page where they can view their order history, manage their profile and change their account settings.

Login/Logout: If the user is not currently logged in, they will see a Login link. Clicking on this link will take the user to the login page. If the user is already logged in, they will see a Logout link which they can click to log out of their account.

Register: The Register link is located next to the Login link. Clicking on this link will take the user to the registration page where they can create a new account.

Shop Information: The Shop Information subsection allows the shop owner to update their shop's name, address, and contact details. This information is used to display the shop's details on the website and to communicate with customers.

Product Management: The Product Management subsection enables the shop owner to manage their products, including adding new products, updating existing products, and deleting products. It also allows the shop owner to organize products into categories and collections.

Payment and Shipping: The Payment and Shipping subsection provides the shop owner with the ability to configure payment and shipping options. They can choose from a range of payment gateways and shipping providers and set up their own custom shipping rates.

Order Management: The Order Management subsection enables the shop owner to view and manage customer orders. They can view order details, track shipments, and manage refunds and cancellations.

Product Listings: This section will provide instructions on how to create and manage product listings, including product descriptions, prices, and images.

The Product Listings section of the User Documentation for the Shopcase platform provides detailed information on how to list products on the platform. It covers the following topics:

- Adding a new product
- Editing a product
- Deleting a product
- Bulk uploading products

Adding a new product: To add a new product, the user needs to follow the steps below:

1. Click on the "Add Product" button on the dashboard.
2. Fill in the product details such as name, description, price, images, and category.

3. Click on the "Save" button to add the product to the platform.

Editing a product: To edit a product, the user needs to follow the steps below:
1. Go to the product listing page.
2. Click on the product that needs to be edited.
3. Update the product details such as name, description, price, images, and category.
4. Click on the "Save" button to save the changes.

Deleting a product: To delete a product, the user needs to follow the steps below:
1. Go to the product listing page.
2. Click on the product that needs to be deleted.
3. Click on the "Delete" button.
4. Confirm the deletion by clicking on the "Yes" button.

Bulk uploading products: To bulk upload products, the user needs to follow the steps below:
1. Prepare a CSV file containing the product details such as name, description, price, images, and category.
2. Click on the "Bulk Upload" button on the dashboard.
3. Upload the CSV file.
4. Map the columns in the CSV file to the corresponding fields in the platform.
5. Click on the "Upload" button to add the products to the platform.

Sales Dashboard: The Sales Dashboard provides an overview of the merchant's sales performance. It displays the total number of orders, the total revenue, and the average order value. Merchants can also view their sales performance over time with the help of graphs and charts.

Order Details: Merchants can view the details of individual orders such as order ID, order date, customer details, order status, and order value. Merchants can also filter the orders by date range and status.

Sales Comparison: Merchants can compare their sales performance over time. It displays the total revenue and the number of orders for two different time periods. Merchants can also view the percentage increase or decrease in their sales.
Search Section of User Documentation for the Shopcase Platform:

The search section of the Shopcase platform is a powerful tool that enables users to quickly and easily find the products or shops they are looking for. In this section, we will provide a detailed explanation of how to use the search functionality.

Search by Product: To search for a product, follow these steps:
1. Navigate to the search bar located at the top of the homepage.
2. Type in the name of the product you are looking for.
3. Hit enter or click on the search icon.
4. The search results page will display a list of products that match your search query. The search results can be sorted by relevance, price, rating, or popularity. You can also apply filters to narrow down the search results further.

Search by Shop Name: To search for a shop, follow these steps:
1. Navigate to the search bar located at the top of the homepage.
2. Type in the name of the shop you are looking for.

3. Hit enter or click on the search icon.
4. The search results page will display a list of shops that match your search query. The search results can be sorted by relevance, rating, or popularity. You can also apply filters to narrow down the search results further.

When searching for products, users can sort the results by:

Relevance: This option displays the search results in order of relevance to the search terms used.

Price: This option displays the search results in order of price, with the cheapest items first.

Rating: This option displays the search results in order of average rating, with the highest rated items first.

Newest: This option displays the search results in order of newest products first.

When searching for shops, users can sort the results by:

Relevance: This option displays the search results in order of relevance to the search terms used.

Distance: This option displays the search results in order of proximity to the user's current location, with the closest shops first.

Rating: This option displays the search results in order of average rating, with the highest rated shops first.

Newest: This option displays the search results in order of newest shops first.

Chapter 6

SWOT Analysis

6.1 Strength

- Provides an online presence for local businesses to reach a wider audience.
- Allows customers to easily search for products or shop names, making it convenient for them to find what they need.
- Provides various sorting filters to help customers find exactly what they are looking for.
- Helps local businesses compete with larger chain stores by providing a platform to showcase their unique products and services.
- Encourages local spending, which can boost the local economy and create a sense of community.

6.2 Weakness

- Limited reach: the platform may only be popular within the immediate area, limiting the potential customer base.
- Limited selection: smaller businesses may not have as wide a selection of products as larger stores.
- Limited resources: local businesses may not have the resources to maintain an online presence and update their inventory regularly.
- May require a learning curve for customers to adapt to the platform and search for products effectively.

6.3 Opportunity

- Partnerships with local business organizations to promote the platform.
- Expansion into neighboring areas to increase the customer base.
- Offering additional services such as online ordering, delivery, and pickup options.
- Providing analytics and insights to businesses to help them improve their inventory and sales.

6.4 Thread

- Competition from other online marketplaces that offer similar services.
- Difficulty in getting businesses to sign up and participate on the platform.
- Difficulty in getting customers to use the platform regularly.
- Potential security risks for both businesses and customers.

Chapter 7

Conclusion

Conclusion

The Shopcase platform provides an efficient and user-friendly way for local shopkeepers and businesses to showcase their products online and reach a wider audience. With the ability to search by product or shop name, customers can easily find what they are looking for and filter their search results according to their preferences.

The platform offers a range of features such as product management, inventory management, order management, and payment integration, making it a comprehensive solution for businesses to manage their online presence.

By using Shopcase, businesses can easily create an online store without the need for technical expertise, saving time and effort. The platform also provides a secure and reliable environment for online transactions, ensuring customer satisfaction and trust.

Overall, Shopcase is a valuable tool for small businesses and local shopkeepers to expand their reach and increase their sales. It is a cost-effective and efficient solution that offers a range of features to make online selling and management easy and accessible.

We invite you to try out the Shopcase platform and see for yourself how it can benefit your business. If you have any questions or feedback, please do not hesitate to contact our support team for assistance.

7.1 Limitation of the System

One limitation of a local shopkeeper or business showcase platform with search by products or search by shop name is the need for accurate and up-to-date product and shop information. If the platform relies on the shops to manually update their own information, there may be inconsistencies in product availability or pricing, which could lead to customer frustration and loss of trust in the platform. Additionally, if the platform does not have a large enough user base, there may not be enough product or shop listings to make it a valuable resource for customers.

7.2 Future Scope

One possible future scope for a local shopkeeper or business showcase platform with search by products or search by shop name is to integrate with existing inventory management systems or point-of-sale systems. This would allow the platform to automatically update product availability and pricing information, reducing the potential for inconsistencies. Another future scope could be to incorporate customer reviews and ratings to help guide other potential customers in their decision making. Additionally, the platform could explore partnerships with local delivery services or offer their own delivery service, expanding the reach of the shops beyond their immediate area. Finally, the platform could explore adding additional features, such as the ability for shops to offer promotions or discounts, to incentivize customers to make purchases through the platform.