SportsGear

A PROJECT REPORT

Submitted by

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In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Information Technology

Lukhdhirji Engineering College Morbi

Gujarat Technological University, Ahmedabad

[April-2024]

Lukhdhirji Engineering College Morbi

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **SportsGear** has been carried out by Chirag Dodiya (200310116013), Bharat Nandanvar (210310116501), Drashti Kotecha (210310116502) under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Information Technology, 8th Semester of Gujarat Technological University, Ahmadabad during the academic year 2021-22.

Dr. Tejas Vasavada
Internal Guide

Dr. Chirag Patel
Head of Department

Lukhdhirji Engineering College Morbi

DECLARATION

We hereby declare that the Project report submitted along with the Project entitled **SportsGear** submitted in partial fulfillment for the degree of Bachelor of Engineering Information Technology in to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by Lukhdhirji Engineering College, Morbi under the supervision of **Dr. Tejas Vasavada** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference

Name of Student	Sign
1. Chirag Dodiya	_____
2. Bharat Nandanvar	_____
3. Drashti Kotecha	_____

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LLP No.: AAE-5586

Shaligram Infotech
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Date: 15th April 2024

To WHOM IT MAY CONCERN

Sub: Project Confirmation for Full Semester Final Year Project

This is certified that **Mr. Chirag Dodiya** student of **Bachelor of Engineering** program from ***Lukhdhirji* Engineering College, Morbi.** We are pleased to inform you that we assigned the project **SportsGear** as a part of final semester external project from **Shaligram Infotech LLP.**

He completed his external project successfully under our IT Manager Mr. Parth Patel.
External Project duration from **16th January 2024 to 16th April,2024**

We wish you all the best.

For,
Shaligram Infotech LLP

Mr. Parth Patel
IT Manager

Shaligram Corporates B/h. Dishman Corporate House, Ambli Rd, Ambli, Ahmedabad, Gujarat 380058. Ph.: +1-6315021166, +91-79-29702400/2500

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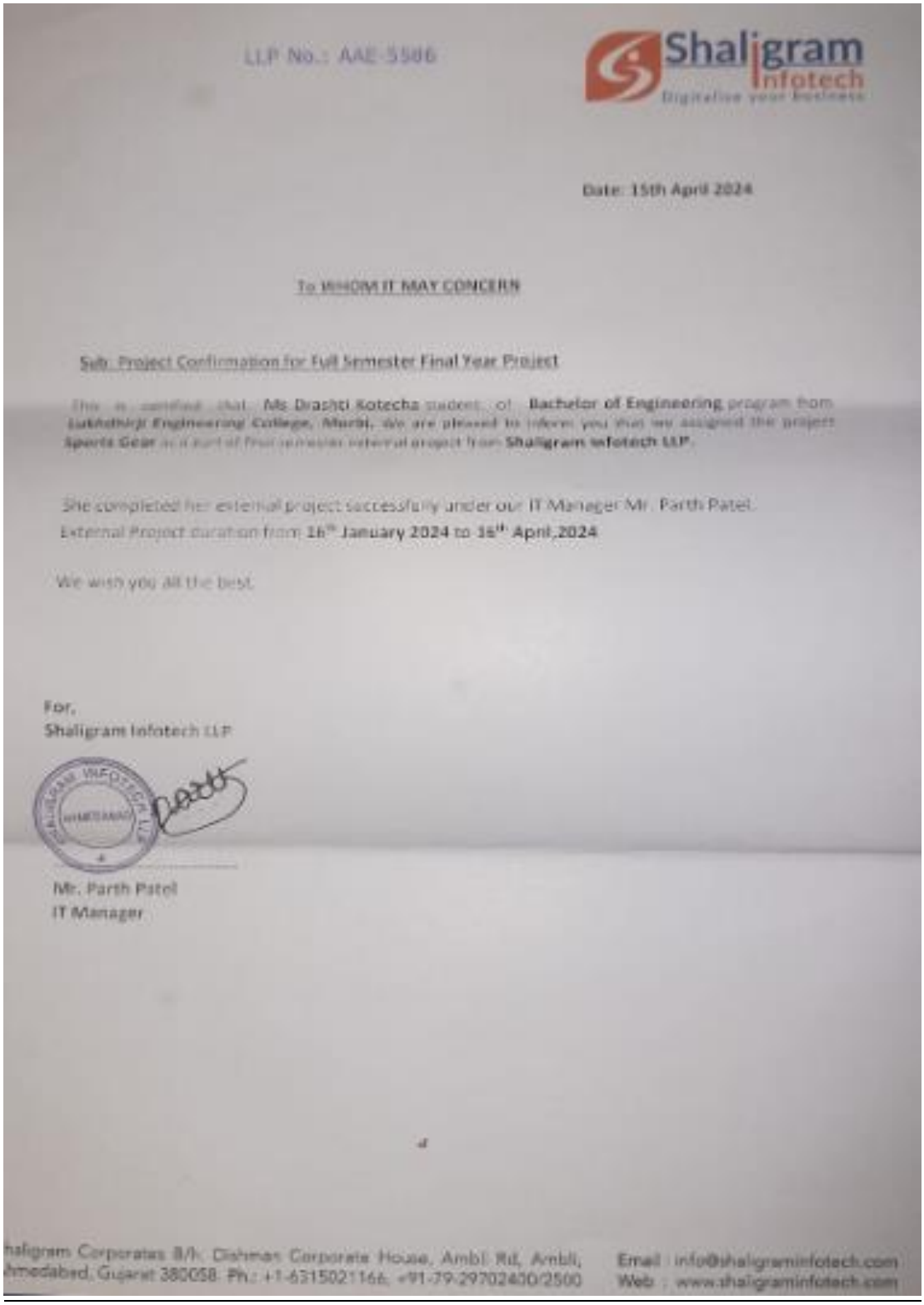
Certificate 2



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Sub: Project Confirmation for Full Semester Final Year Project

This is certified that Ms Drashti Kotecha student of Bachelor of Engineering program from Lukhdhirji Engineering College, Morbi, We are pleased to inform you that we assigned the project Sports Gear as a part of final semester external project from Shaligram Infotech LLP.

She completed her external project successfully under our IT Manager Mr. Parth Patel.
External Project duration from 16th January 2024 to 16th April,2024

We wish you all the best.

For,
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Date: 15th April 2024

To WHOM IT MAY CONCERN

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ACKNOWLEDGEMENT

With heartfelt warmth, we want to extend our deepest thanks to the incredible souls who've been our guiding stars. Mr. Bhavik Vaghasiya, your mentorship at Shaligram Infotech has meant the world to us. Your wisdom and encouragement have kept us going through thick and thin.

To Mrs. Priya Soni, you've been more than an HR rep; you've been a beacon of support and understanding. Your belief in our potential has given us the courage to push boundaries. And to Prof Tejas Vasavada, your guidance has been like a gentle breeze, nudging us in the right direction when we needed it most.

And Prof. Chirag Patel, your belief in us has been like a reassuring hand on our shoulders. Your encouragement at Lukhdhirji Engineering College - Morbi has given us the courage to tackle even the toughest challenges.

To each and every one who's been a part of our journey, your faith in us has been our greatest strength. We're beyond grateful for the chance to learn and grow under your wings.

Yours sincerely,

Chirag, Bharat & Drashti

(200310116013 & 210310116501 & 210310116502)

Abstract

Sporting Goods is dedicated to providing sports enthusiasts, athletes, and trainers with a seamless online shopping experience. Our mission is to make high-quality sporting equipment accessible and affordable, fostering a culture of active living.

We aim to create a user-friendly platform with competitive pricing and favorable return policies, prioritizing customer satisfaction. Through our social presence, we champion sports awareness and promote healthy lifestyles within communities.

Our commitment to inclusivity, affordability, and quality ensures that SportsGear remains a trusted destination for all sporting needs. Upholding professionalism and excellence, we continuously innovate to meet the evolving demands of our customers.

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CHAPTER 1

OVERVIEW OF THE COMPANY

1.1 About Company

Shaligram Infotech epitomizes excellence and innovation in the realm of software development. With a rich legacy spanning over eight years, our company has earned a stellar reputation for delivering exceptional web and mobile solutions tailored to the unique needs of our diverse clientele. Our mission is clear: to combine knowledge, experience, and innovation to transform businesses

Shaligram Infotech epitomizes excellence and innovation in the realm of software development. With over 8 years of experience, our company has been working alongside brands to build futuristic digital solutions that address their business challenges. Our mission is clear: to combine knowledge, experience, and innovation to transform businesses.

1.2 Services and Products of Company

Shaligram Infotech is a distinguished technology company renowned for providing cutting-edge automation solutions and seamless omnichannel experiences tailored to businesses. With a focus on enabling organizations to streamline operations and optimize processes, we specialize in delivering exceptional services that engage, empower, and excite our clients.

Additionally, our expertise extends to assisting businesses in crafting personalized and seamless experiences for their customers across various channels, including web, mobile, social media, and chatbots. At Shaligram Infotech, we are dedicated to offering innovative technology solutions that drive success in today's digital economy, consistently striving to exceed our clients' expectations with professionalism and excellence

1.3 Organization Chart

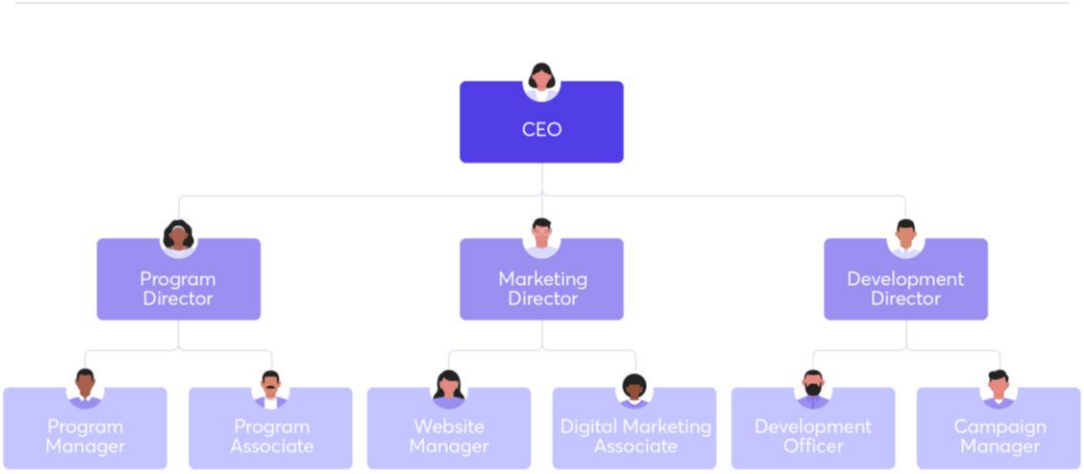


Fig 1.1 Organization Chart

CHAPTER 2

INTRODUCTION TO PROJECT

2.1 Project Summary

SportsGear is your go-to spot for top-notch sports equipment and accessories. We offer a diverse selection of high-quality gear to meet your sporting needs. Our mission is to provide you with a seamless shopping experience, where you can find everything, you need with ease.

Our user-friendly website is designed to help you make the best choice for your sports gear. We include detailed product descriptions and high-quality images so you can make informed decisions. Plus, with our transparent tracking system, you'll always know where your order is and when it's expected to arrive.

We're also all about making sure you're satisfied with your purchase. If you run into any issues, our easy returns process is here to help. We're committed to addressing your concerns quickly and efficiently.

SportsGear is Committed to being everyone's dependable partner for all sporting equipment's. Our unwavering dedication to professionalism ensures that we provide exceptional service, elevating your sporting experience and assisting you in achieving your goals. Whether you're a fitness enthusiast, a sports lover, or an outdoor adventurer, SportsGear offers a wide range of high-quality sports products and accessories to cater to your needs

2.2 Purpose

The SportsGear project is all about creating a one-stop online shop for sports equipment and accessories. Our goal is to make it easier for sports enthusiasts and fitness fans to find what they need at competitive prices. We understand that buying sports gear can sometimes be challenging, so we're here to make it as straightforward and enjoyable as possible.

With SportsGear, you can browse through a wide range of products, from the latest in sports technology to the essentials for any fitness routine. Whether you're into basketball, running, yoga, or any other sport, we've got you covered. Our platform is designed to be user-friendly, allowing you to find and purchase what you need without any hassle.

One of the things that set us apart is our commitment to customer satisfaction. We know that sometimes things don't go as planned, so we've made our return policy as simple and flexible as possible. If you're not happy with your purchase, you can return it with no fuss. Our customer service team is always ready to help, ensuring you have a great experience with us.

2.3 Scope

i. **Diverse Product Range:** SportsGear provides a comprehensive online marketplace, offering a wide variety of sports equipment and accessories to meet the needs of athletes, fitness professionals, and sports enthusiasts. This diverse product range ensures that users can find everything they need in one convenient place.

ii. **Quality Control:** SportsGear is committed to ensuring that all products meet rigorous quality standards. The platform's quality assurance process includes thorough product testing and customer feedback, contributing to a high level of customer satisfaction.

iii. **Customer-Centric Experience:** The platform's user-friendly interface and easy return policy are designed to enhance customer satisfaction. SportsGear aims to provide a seamless shopping experience, with clear product descriptions, transparent pricing, and efficient customer support.

iv. **Ongoing Innovation:** SportsGear is committed to continuous improvement and expansion. The platform embraces innovation by regularly updating its product offerings and incorporating new technologies to meet the evolving needs of the sports and fitness industry. This approach ensures that the platform remains relevant and appealing to its user base.

2.4 Technology Used

2.4.1 HTML:

HTML acts as an initializer of Hyper Text Markup Language for web pages. It provides a means to describe the structure of text-based information in documents by denoting text as headings, paragraphs, lists and so on and to supplement that text with interactive forms, embedded images and other objects.

2.4.2 CSS:

Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML.CSS describes how elements should be rendered on screen, on paper, in speech, or on other media

2.4.3 JAVASCRIPT:

JavaScript is a high-level programming language extensively used in web development for creating dynamic and interactive content on websites. It operates primarily on the client-side, executing within users' web browsers, enabling actions like form validation, animations, and real-time updates without page reloading

Its vast ecosystem includes libraries like jQuery and frameworks such as React.js and Angular.js, streamlining development tasks. JavaScript's asynchronous programming capabilities enable non-blocking code execution, crucial for tasks like data fetching and processing.

Furthermore, with platforms like Node.js, JavaScript extends its utility to server side programming, enabling full-stack development using a unified language. Supported by all modern web browsers, JavaScript is essential for creating versatile, cross-platform web applications

2.4.4 BootStrap

Bootstrap is a widely-used front-end framework developed by Twitter, designed to streamline the process of building responsive and mobile-friendly websites and web applications. Its key features include a responsive grid system, pre-styled CSS components, and JavaScript plugins for enhanced functionality such as carousels and modals. Bootstrap leverages CSS Flexbox and Grid layout systems to create flexible designs that adapt to various screen sizes.

Developers can easily customize Bootstrap using SASS variables and mixins to match specific design requirements. With comprehensive documentation and a large community of developers

2.4.5 DotNet (MVC)

A web application framework developed by Microsoft, embodies a model-view-controller (MVC) architecture, dividing applications into three key components.

1. **Model**: representing data and business logic

2. **View**: responsible for presenting the user interface

3. **Controller**: managing user interactions and application flow

This separation Encourages modularity, simplifies maintenance, and enhances scalability. Routing mechanisms translate URLs into controller actions, enabling clean and search engine optimized URLs.

2.4.6 SQL Server:

SQL Server is a relational database management system developed by Microsoft. It supports SQL to interact with databases, enables users to interact with databases through a range of operations, from simple data retrieval to complex manipulations.

It enforces referential integrity between objects to maintain data consistency. As with other relational databases, the principles of ACID properties, are implemented to maintain integrity.

2.5 Project Planning:

The SportsGear project uses detailed schedules to chart out the entire project lifecycle. This roadmap defines key milestones, deadlines, and dependencies, giving us a clear picture of what needs to happen and when. It guides the team in completing tasks efficiently and on time.

Project planning is crucial for organizing various parts of the SportsGear project, including product development, marketing campaigns, and customer support. By assigning specific roles and responsibilities, we can ensure that everyone knows what they need to do and how their work fits into the bigger picture. Project planning also involves coordinating teams and individuals within SportsGear. By using Gantt charts and other planning tools, we can monitor workloads and ensure that no one is overwhelmed. This helps maintain team morale and productivity throughout the project's duration.

As the SportsGear project progresses, project planning enables us to report on our achievements and identify areas for improvement. This ongoing assessment helps us stay on target and ensures that stakeholders are informed about our progress.

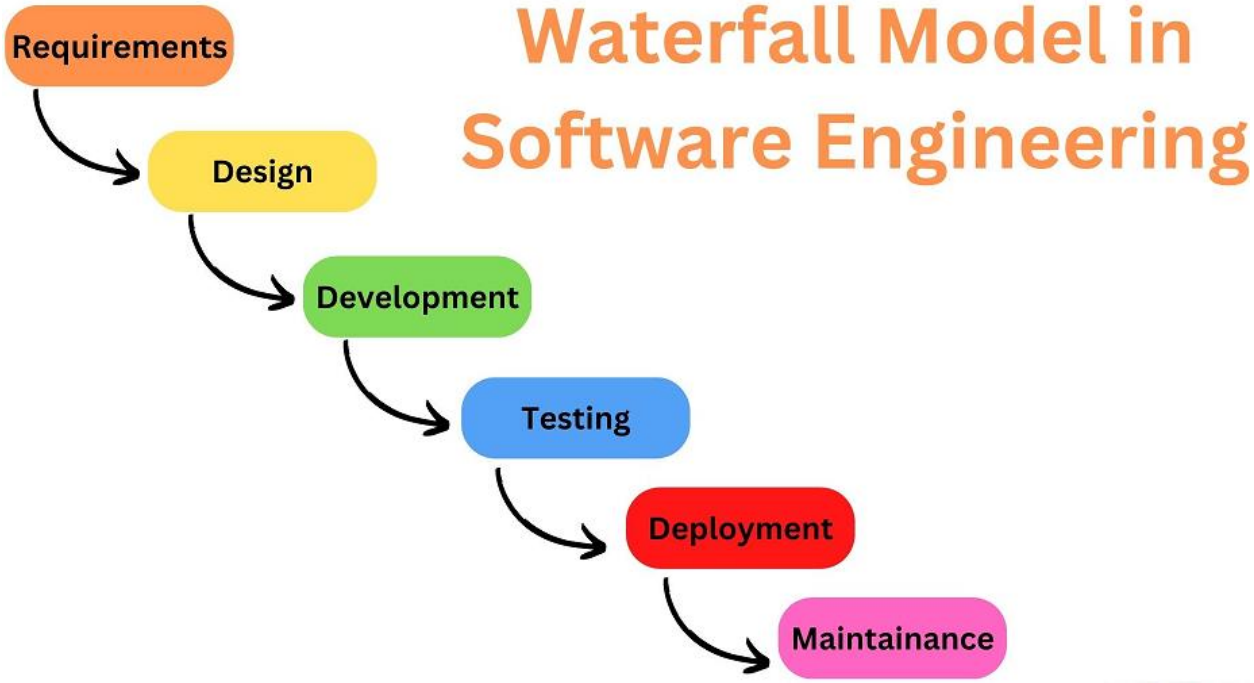
2.5.1 Development Approach

The Waterfall model's linear approach aligns with the structure and predictability we need for the SportsGear project. This model allows us to move through distinct phases in a specific sequence, ensuring that each step is completed before we move on to the next. This is particularly useful when requirements are clear and consistent, which is the case with SportsGear.

By using the Waterfall model, we can conduct thorough planning and design upfront. This structured approach gives us a comprehensive understanding of the project's scope, reducing the risk of scope creep or unexpected changes later on. With the sequential nature of the Waterfall model, we can allocate resources effectively, knowing exactly when each phase will start and end. Another benefit of the Waterfall model for SportsGear is that it minimizes the overlap between phases

Stages Of Waterfall Model:

1) Requirement analysis
2) System Design
3) Implementation
4) Testing
5) Deployment
6) Maintenance



2.1 Waterfall Model

2.6 Roles and Responsibility:

The SportsGear project team comprises three talented individuals, each with specific roles and responsibilities crucial to the project's success. Here's a breakdown of the team members and their areas of focus:

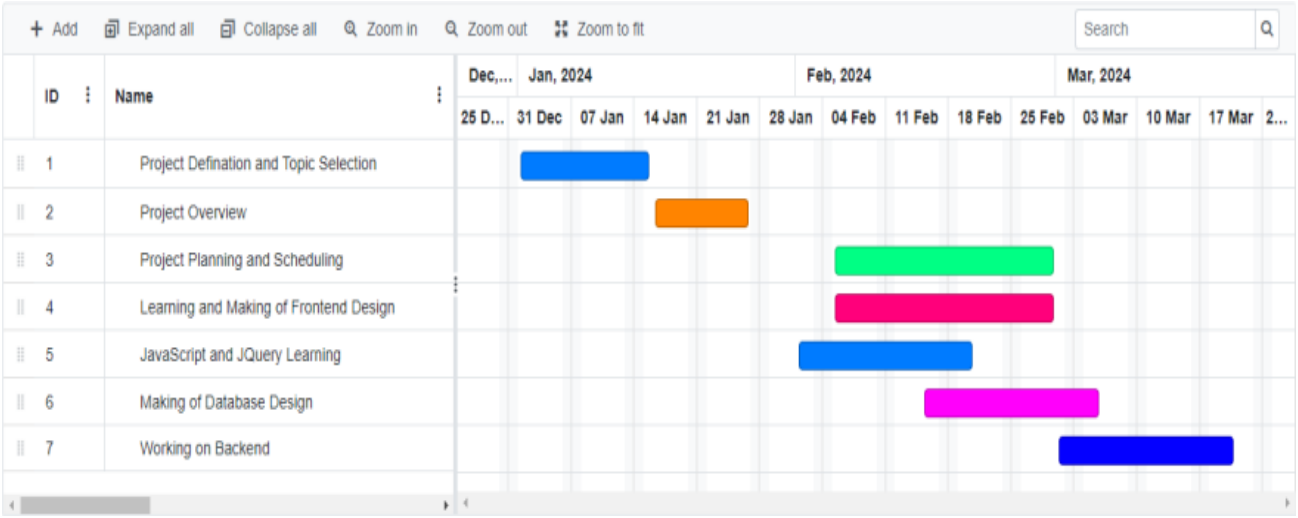
1. **Drashti Kotecha (Frontend Developer):** Drashti is responsible for the user interface and design elements of the SportsGear platform. She works on creating a visually appealing and user-friendly experience, ensuring that the website is intuitive and accessible across various devices. Drashti's tasks include designing page layouts, interactive elements, and the overall aesthetics of the platform. She collaborates with the backend developer to ensure smooth integration between the frontend and backend.

2. **Chirag Dodiya (Backend Developer):** Chirag takes charge of the server-side logic, databases, and backend infrastructure. He designs and maintains the system architecture, implements business logic, and ensures data security. Chirag is responsible for setting up and managing servers, databases, and APIs that power the SportsGear platform. His collaboration with the frontend developer ensures seamless data exchange and integration between different parts of the project

3. **Bharat Nandanvar (Full-Stack Developer):** Bharat plays a versatile role, assisting both Drashti and Chirag in their respective tasks. As a full-stack developer, he has a broad skill set that allows him to work on both frontend and backend tasks. Bharat's role includes contributing to the design and implementation of frontend features, as well as supporting the backend with coding, integration, and troubleshooting. He acts as a bridge between the frontend and backend, ensuring that all components of the project work harmoniously.

2.7 Gantt Chart:

The below Gantt Chart for our project SportsGear outlines the key phases of development, from project initiation to final delivery. It breaks down the timeline into manageable segments, allowing the team to track deadlines and identify any potential bottlenecks.



2.2 Gantt Chart

CHAPTER 3

SYSTEM ANALYSIS

3.1 System Requirements:

In a project like SportsGear, it's essential to define the hardware and software requirements to ensure smooth development and operation. Here's an outline of the necessary hardware and software for both the development team and the end-users.

Number	Description	Type
1	Operating System	Windows / MacOS / Linux
2	Tools and Technologies	HTML, CSS, JavaScript, BootStrap 5, DotNet (MVC)
3	Database	SQL Server
4	IDE	Visual Studio

Table 3.1 System Requirements

3.2 Constraints:

Regularities Policy:

The application does demand much reliability and it is fully assured that the particular information about the users should be secured and flow is maintained and accessed according to the right.

3.3 Requirement Of new System

Building the SportsGear platform addresses specific needs in the sports equipment and accessories market. This system is designed to fill gaps and provide an improved experience for both consumers and businesses. Here's why building this system is valuable, along with the requirements driving its development.

3.3.1 Why Build the SportsGear Platform?

A. **Enhanced Accessibility**: The new system offers an online marketplace for sports enthusiasts, allowing them to access a wide range of products from anywhere. This accessibility helps customers easily find what they need without visiting physical stores.

B. **Improved User Experience:** By building a new system, the aim is to create a seamless and intuitive user experience. This includes a clean user interface, simple navigation, and a streamlined checkout process, reducing friction and encouraging repeat business.

C. **Expanded Product Range**: The platform can feature a broader selection of sports equipment and accessories, catering to a diverse audience. This variety attracts more customers and increases sales opportunities for vendors.

3.4 System Feasibility

System feasibility for the SportsGear project involves a thorough assessment of technical and operational factors to determine whether the new platform can be successfully developed and implemented

Technical Feasibility:

The project utilizes contemporary technologies, ensuring compatibility with industry standards. The choice of frameworks and tools, such as React.js for the frontend and Node.js for the backend, provides a solid foundation. These technologies offer flexibility, allowing the platform to scale and integrate with third-party services. The development team has the necessary expertise, reducing the risk of technical challenges during the implementation phase.

Operational Feasibility:

Operational feasibility assesses whether the system can meet the needs of the organization and its customers. The SportsGear platform is designed to improve user experience, with a focus on ease of use, security, and customer support. 0The development team is structured to ensure efficient project management, with clearly defined roles for frontend, backend, and full-stack development. This structure supports operational efficiency and aligns with the project's goals.

Integration Feasibility:

The SportsGear system is designed with integration in mind, using open APIs and a modular architecture. This approach allows for seamless integration with existing systems, third-party services, and future enhancements. The platform's interoperability ensures compatibility with a range of technologies, facilitating integration and minimizing potential conflicts.

3.5 Functional Requirements:

1. **Login and Registration**: In these modules the user will be able to register and login into the system and also navigate to the pages where the login is required.

2. **Browse and search functionality for products:** this feature enables users to navigate through a diverse range of offerings and refine their searches efficiently.

3. **Product categorization by sport, brand, and type:** this organizational structure enhances user experience by facilitating easy navigation through the platform's inventory.

4. **Shopping cart and checkout process**: provides users with a seamless transaction experience.

5. **Payment gateway integration:** ensures secure and efficient transactions by facilitating the seamless processing of payments through multiple channels.

6. **Order tracking and management**: allows users to monitor the status of their orders and manage their purchase history effectively.

7. **Customer feedback and reviews:** allows users to share their experiences and provide valuable insights for improving product offerings and enhancing customer satisfaction.

8. **Social media login integration:** enhances user convenience by enabling seamless access to the platform using existing social media credentials

3.6 Non-Functional Requirements:

1. **Performance Requirements**: The website should load quickly and handle concurrent user traffic efficiently
2. **Security**: Secure payment processing and protection of user Data
3. **Usability**: Intuitive User interface and Navigation

3.7 DATA FLOW DIAGRAM:

A Data Flow Diagram (DFD) visually represents the flow of data within a system. It shows how data moves through the system, indicating sources, destinations, processes, and storage. In the context of the SportsGear project, a DFD would help illustrate the various components involved in processing data, from user interactions to backend processes, product databases, and order management.

Here's a description of a basic Data Flow Diagram for the SportsGear project:

3.7.1 DATA FLOW DIAGRAM (LEVEL 0):

A Level 0 Data Flow Diagram (DFD) provides a high-level view of the SportsGear system, illustrating how the system interacts with external entities and showing the main data flows. For SportsGear, the diagram would focus on key components such as customers, payment gateways, shipping providers, and customer support, representing the system as a single process. Here is a detailed description of a Level 0 DFD for SportsGear:

A Retail shopping website illustrates the high-level view of the system's overall functionality. It depicts the primary external entities that interact with the system, such as customers and the order, and the major data flows between them. The diagram provides a basic understanding of the system's scope, boundary, and processes.

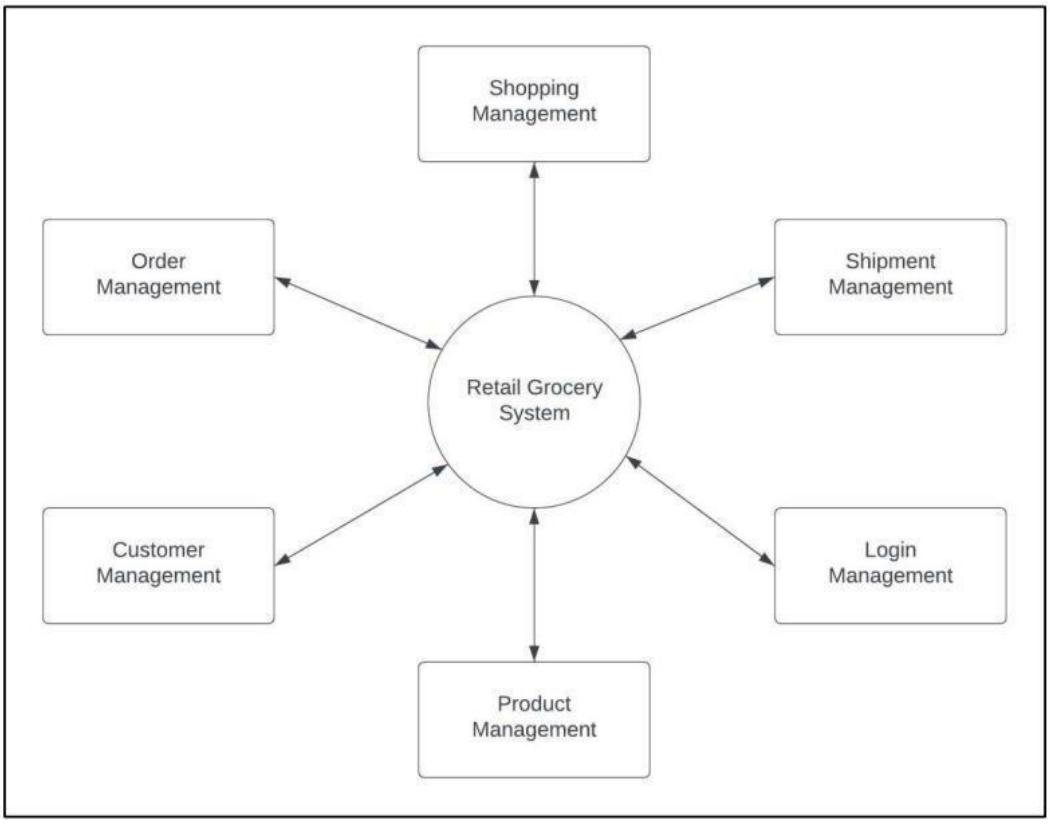
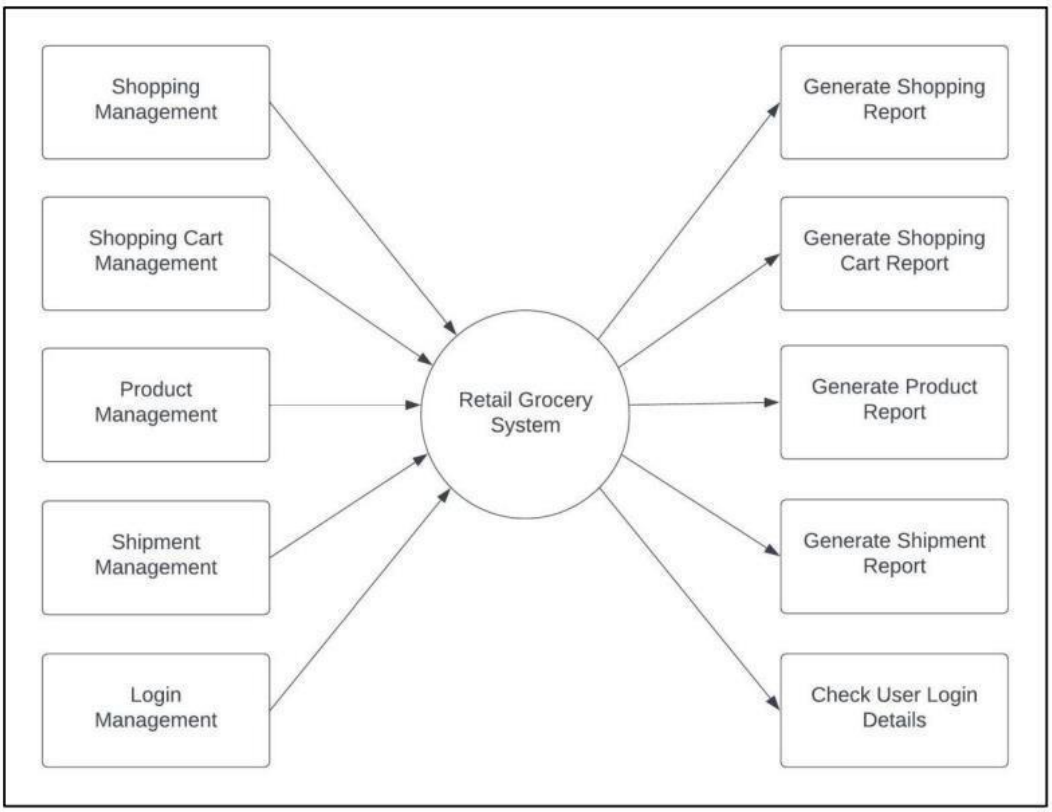


Fig 3.1 0 Level DFD

3.7.2 DATA FLOW DIAGRAM (LEVEL 1)

A Level 1 Data Flow Diagram (DFD) is a more detailed version of the high-level overview provided by the Level 0 DFD. It shows the main processes involved in the system or process, as well as the data flows between them. At this level, each process box in the Level 0 DFD is broken down into more detailed processes, each with its own inputs, outputs, and data flows. The Level 1 DFD provides a more comprehensive view of the system or process, showing how the different components interact with each other to accomplish the system's objectives. This level of detail allows for a more thorough analysis of the system or process, helping to identify any potential issues or areas for improvement. It can serve as a basis for further analysis, design, and implementation of the system or process. The data flow of SportsGear shopping website begins with a customer placing an order on the website or mobile app. This order is then sent to the store's database for processing, where it is checked for

inventory availability and pricing. Once the order is confirmed, the store picks and packs the items for delivery.

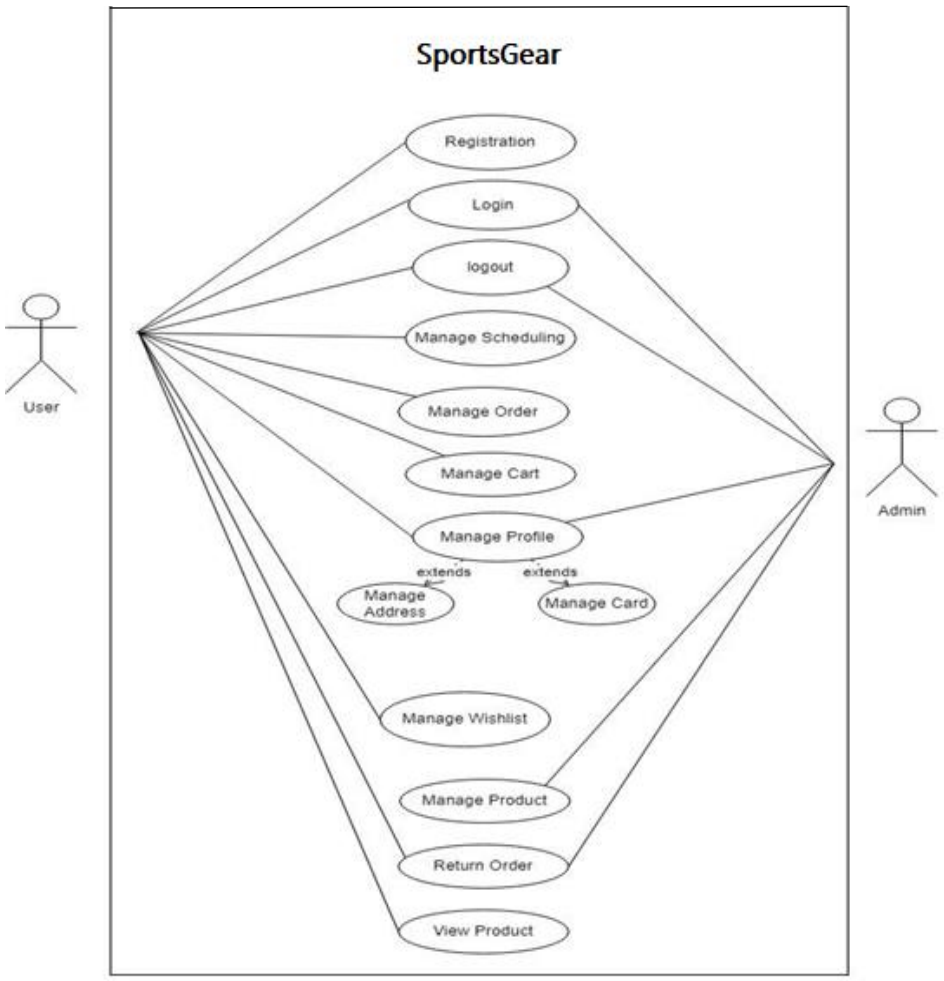


3.2 Level 1 DFD

3.8 UML (Unified Modeling Language)

3.8.1 USE CASE:

A Use Case Diagram visually represents the interactions between actors (users or external systems) and use cases (system functions or processes) within a system. It helps understand the system's scope, its primary functions, and how different actors interact with those functions. For the SportsGear project, a Use Case Diagram can illustrate the various roles involved in the platform and the key actions they can perform. Here's a description for the use case diagram of the SportsGear project:

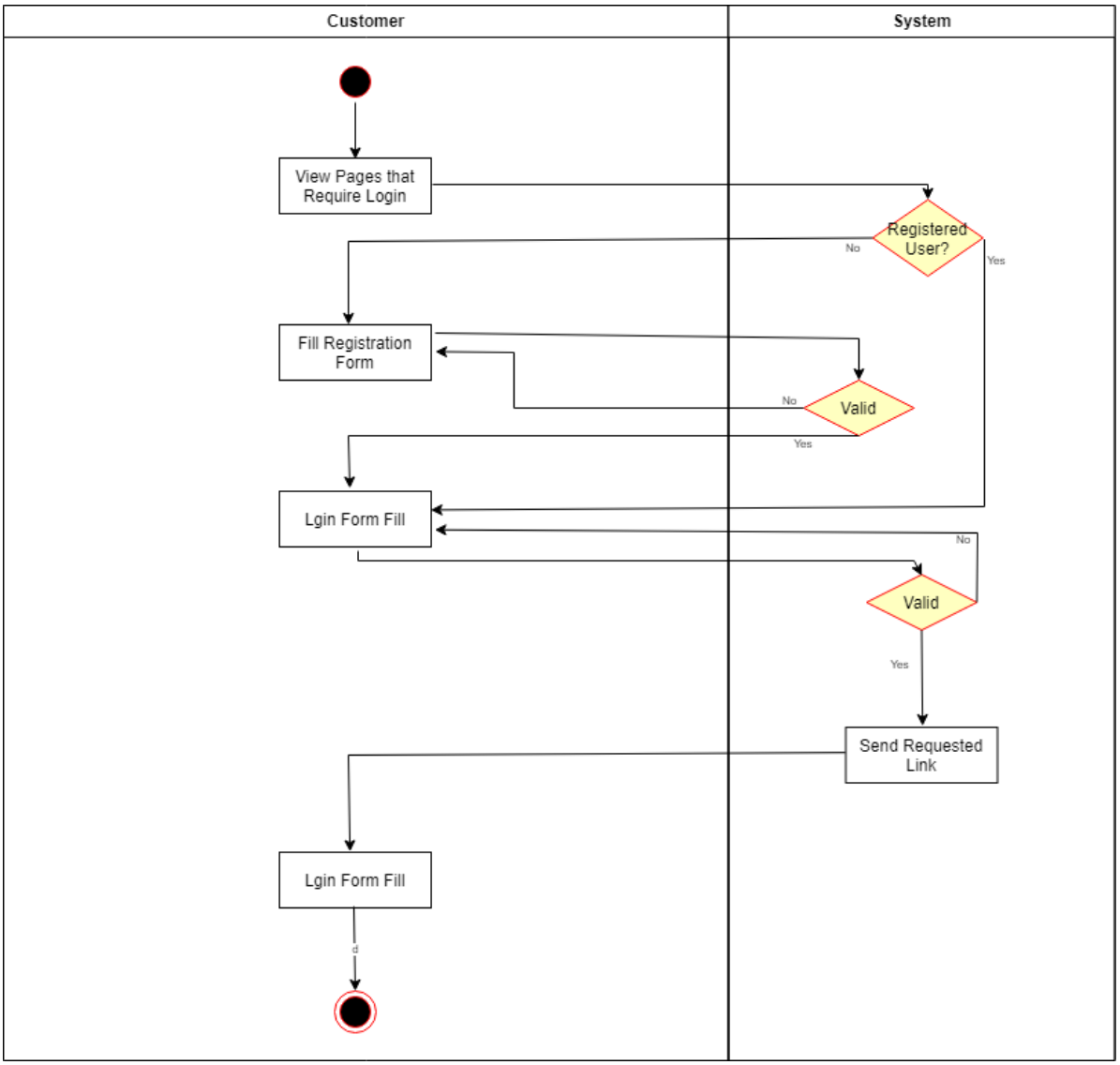


3.3 Use case Diagram

3.9 Activity Diagram:

3.9.1 Login And register Process

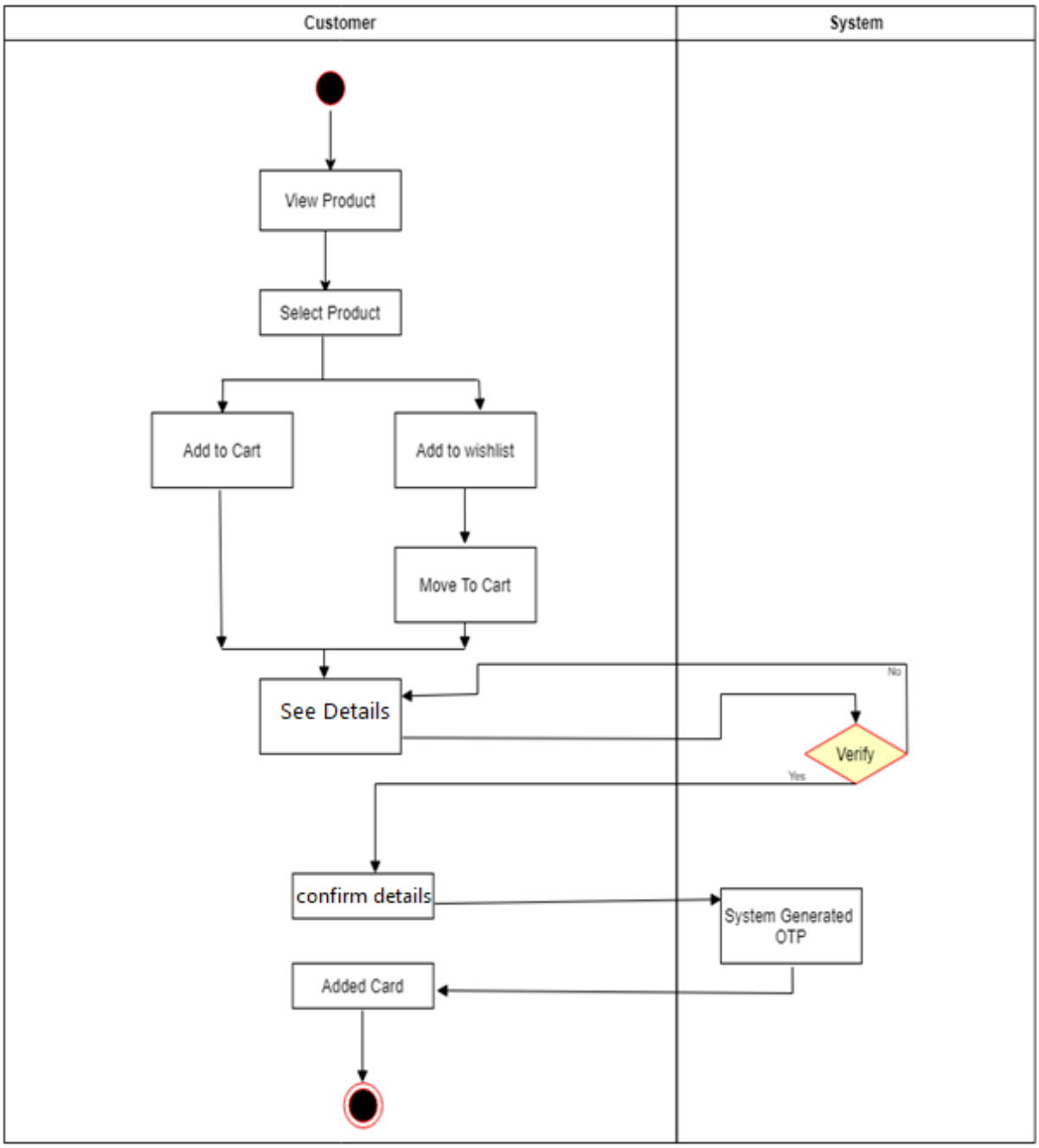
The Login/Register Activity Diagram outlines the process by which users access the SportsGear platform, either by logging in with existing credentials or registering for a new account. This diagram illustrates the steps involved, including authentication, account creation, and error handling. Here's a description of the Login/Register Activity Diagram for inclusion in the project report:



3.4 Activity Diagram

3.9.2 Order Product:

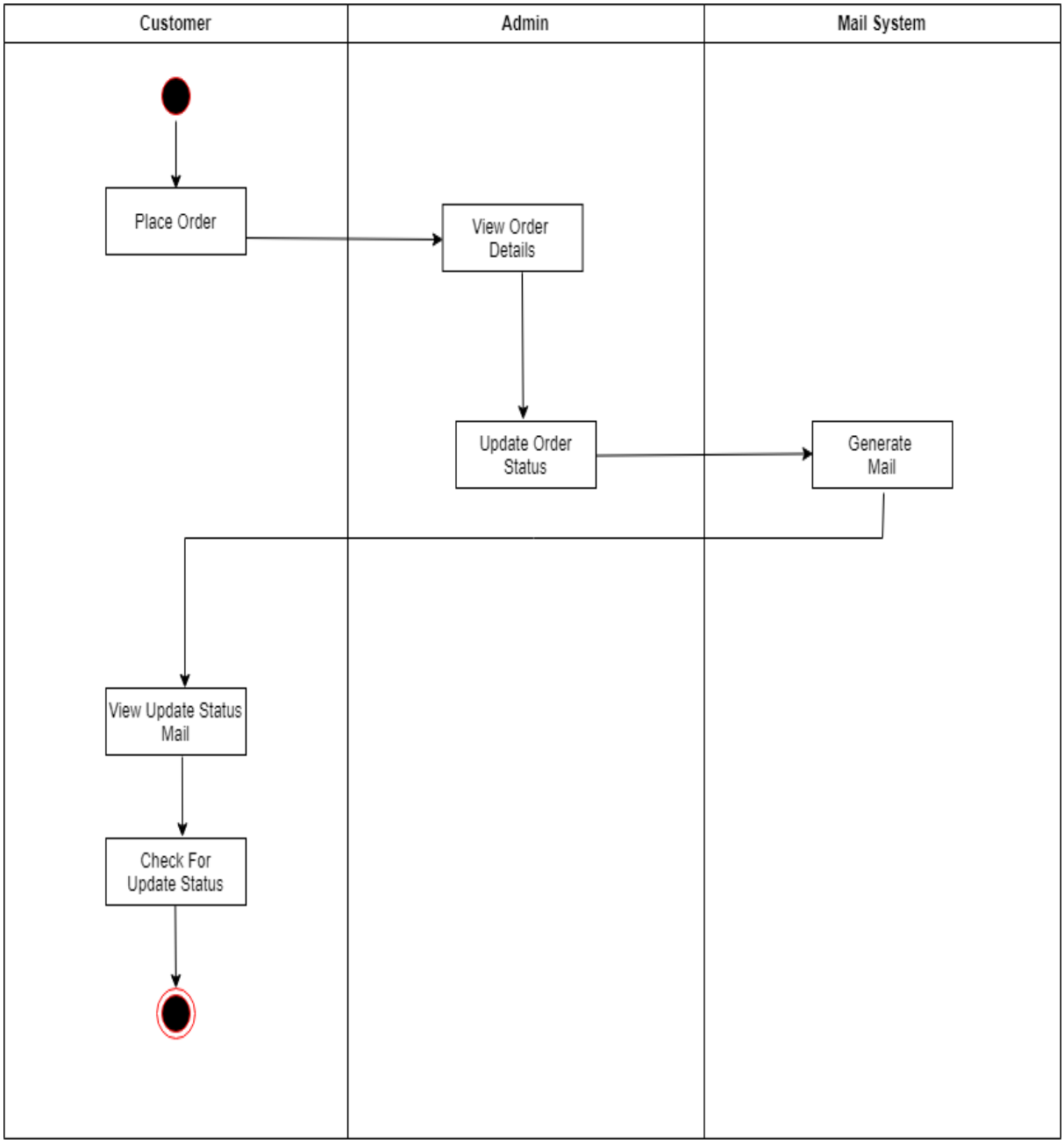
The "Order Product" section describes the process by which customers select, confirm, and place an order for sports equipment and accessories on the SportsGear platform. This process involves multiple steps, from product selection to order confirmation and payment processing, including interactions with external systems like payment gateways



3.5 Order Product

3.9.3 Dynamic Tracking:

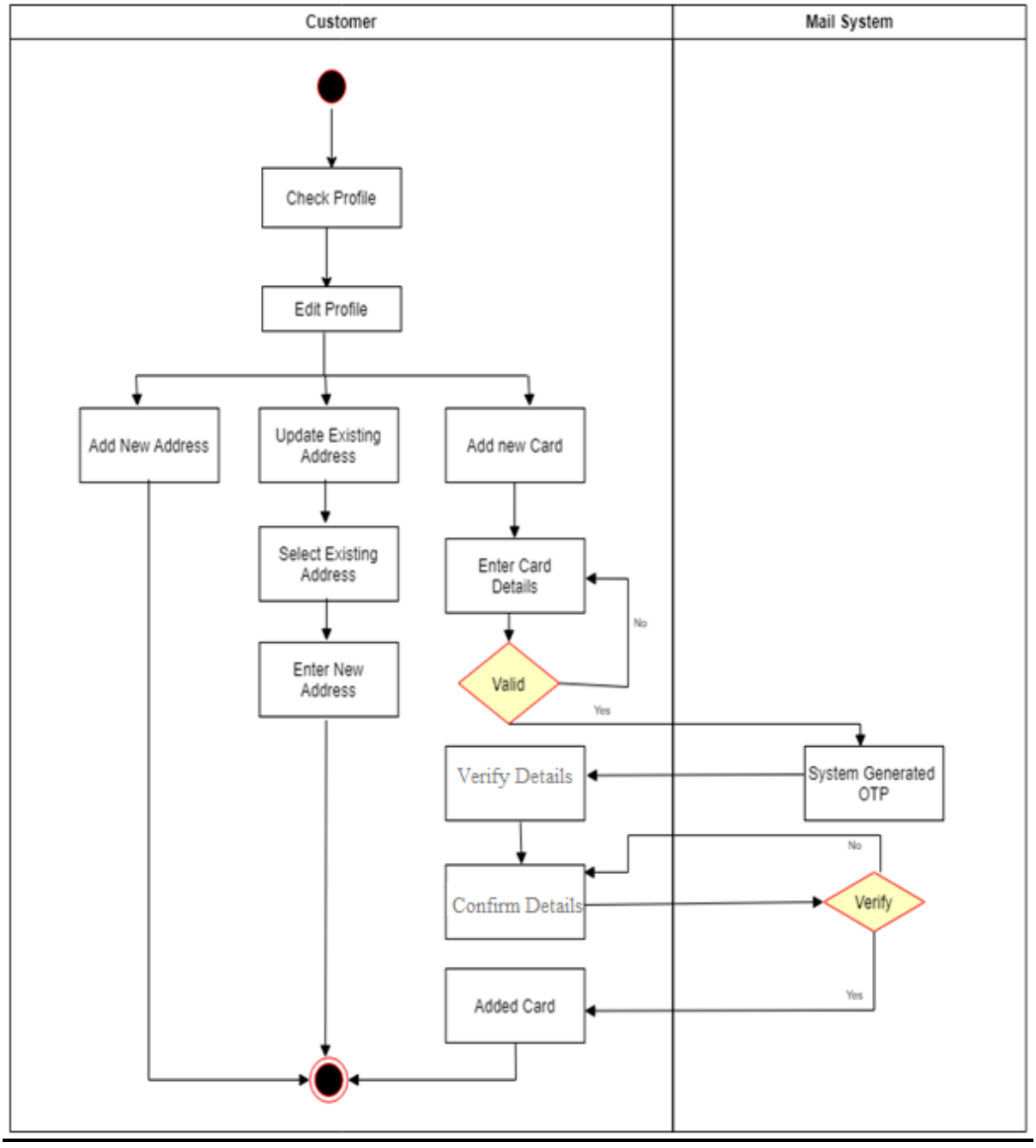
Dynamic Tracking in the context of the SportsGear platform refers to the ability to monitor and track the progress of customer orders in real-time. This process allows customers to see where their orders are in the shipping and delivery process, providing transparency and improving customer satisfaction.



3.6 Dynamic Tracking of the Product

3.9.4 Profile Management:

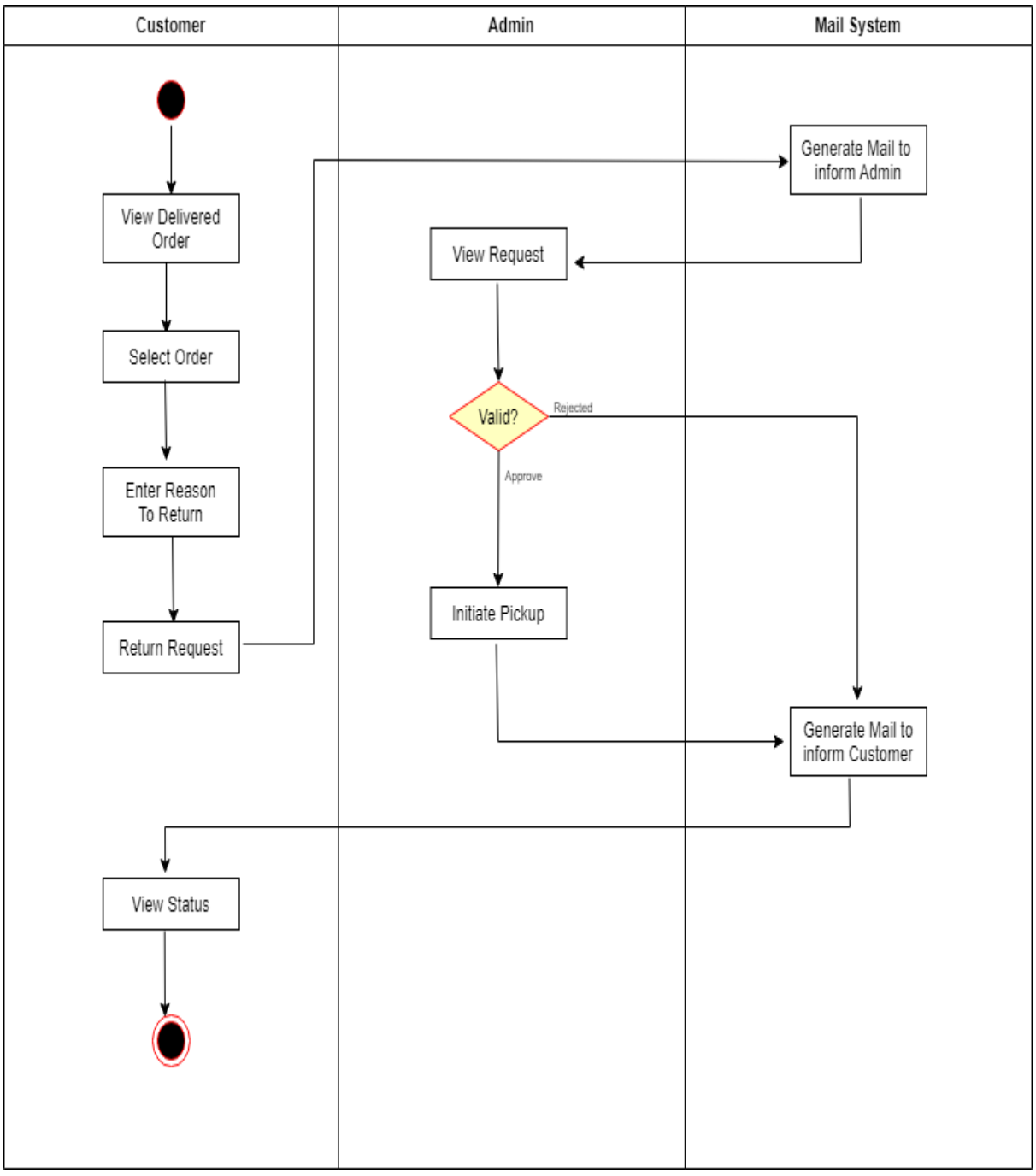
Profile Management is a critical feature of the SportsGear platform, allowing users to manage their personal information, account settings, and preferences.



3.7 Profile Management

3.9.5 Return Order:

Returning an order is an important aspect of customer service and satisfaction. The "Return Order" process in the context of the SportsGear platform outlines the steps customers take to return a purchased item.



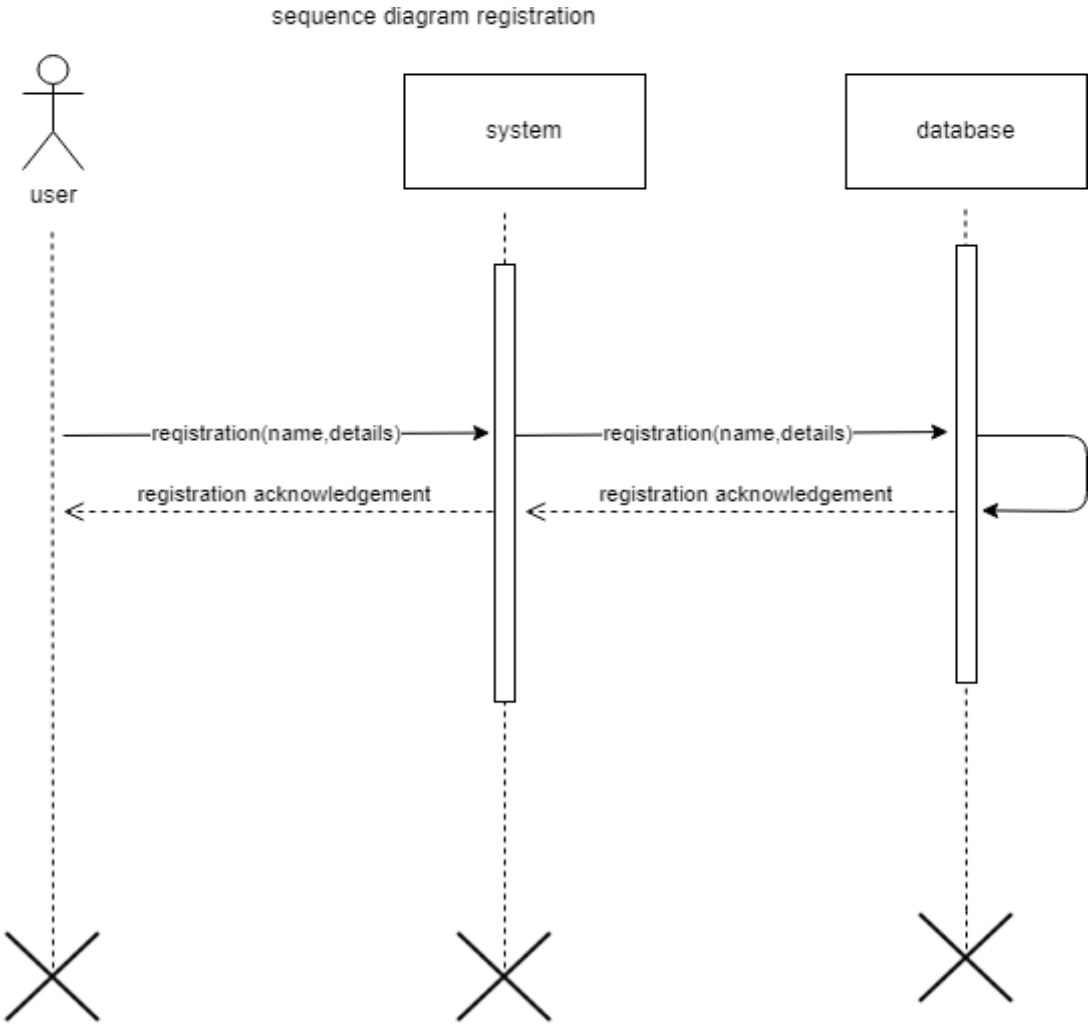
3.8 Return Order

3.10 Sequence Diagram

The sequence diagram for the SportsGear project illustrates the interaction between various components during the order processing workflow. It captures the communication flow between the customer, the front-end system, the back-end system, and external services such as payment gateways.

3.10.1 Registrations Sequence Diagram:

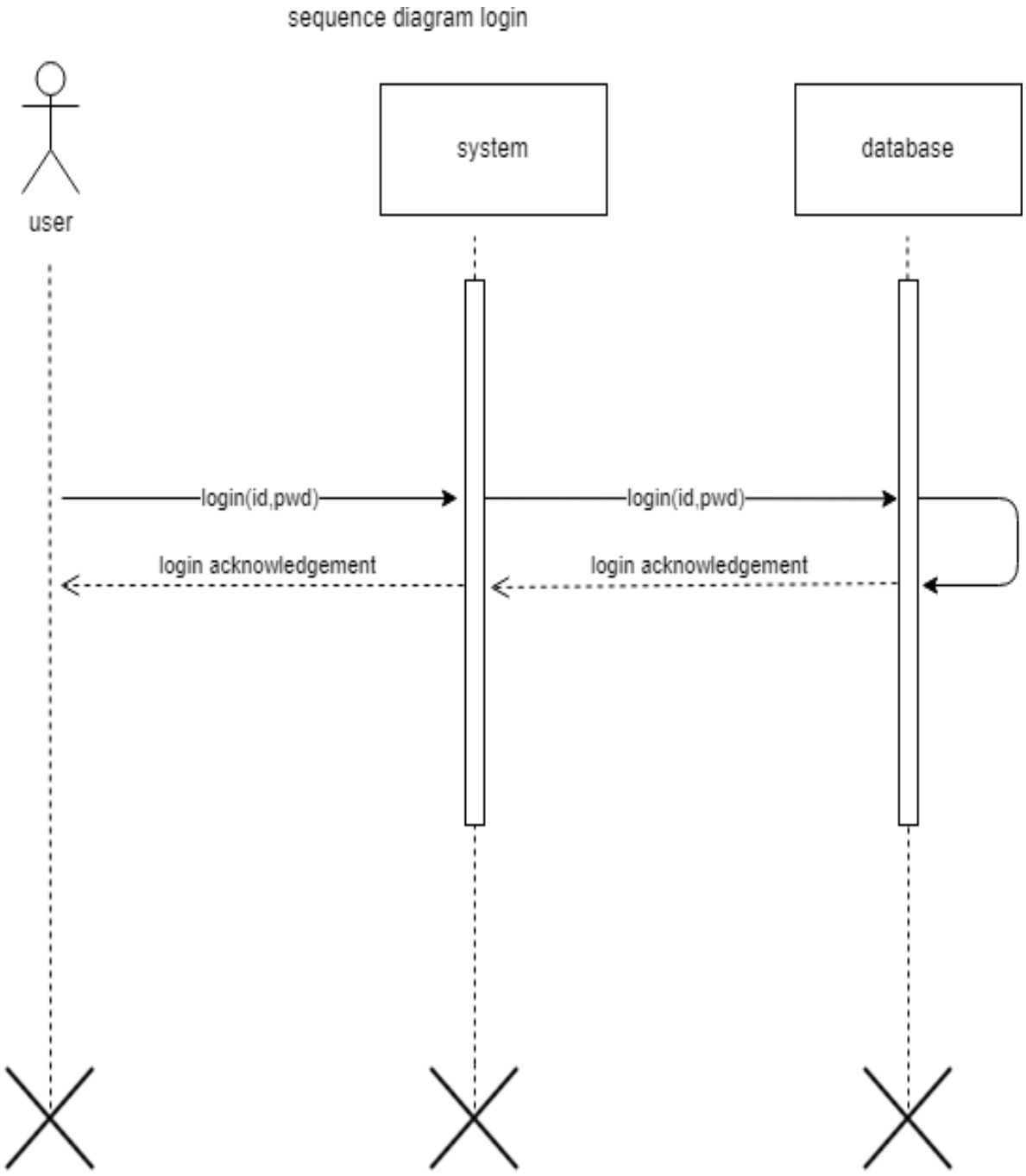
The "Registration Sequence Diagram" for the SportsGear platform illustrates the interaction between the customer (user), the front-end system, and the back-end system during the user registration process.



3.9 Registrations Sequence Diagram

3.10.2 Login Sequence Diagram

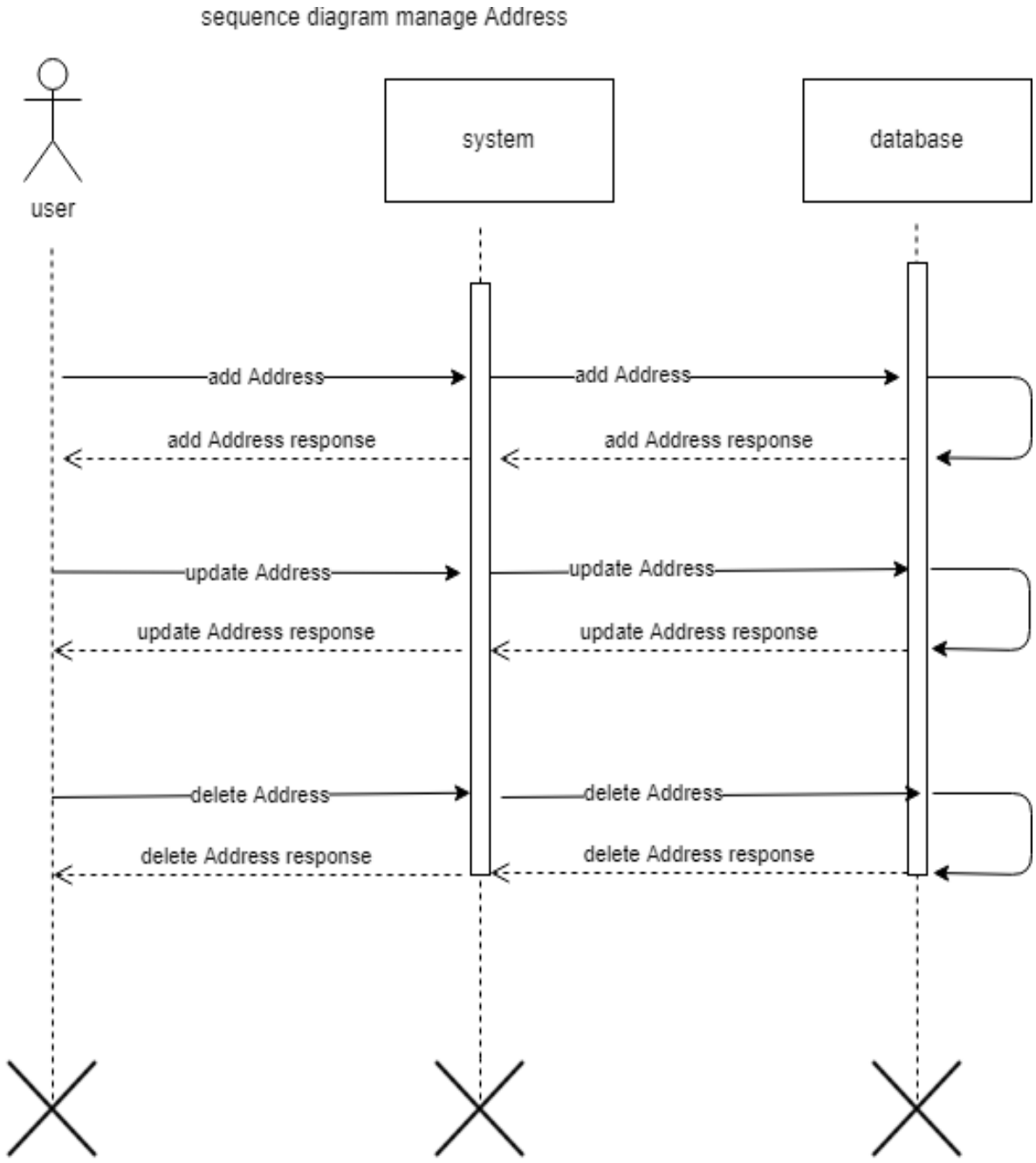
In the SportsGear platform, this diagram describes the interactions between the user, the front-end system, and the back-end system to verify user credentials and grant access to the platform.



3.10 Login Sequence Diagram

3.10.3 Manage Address Sequence Diagram:

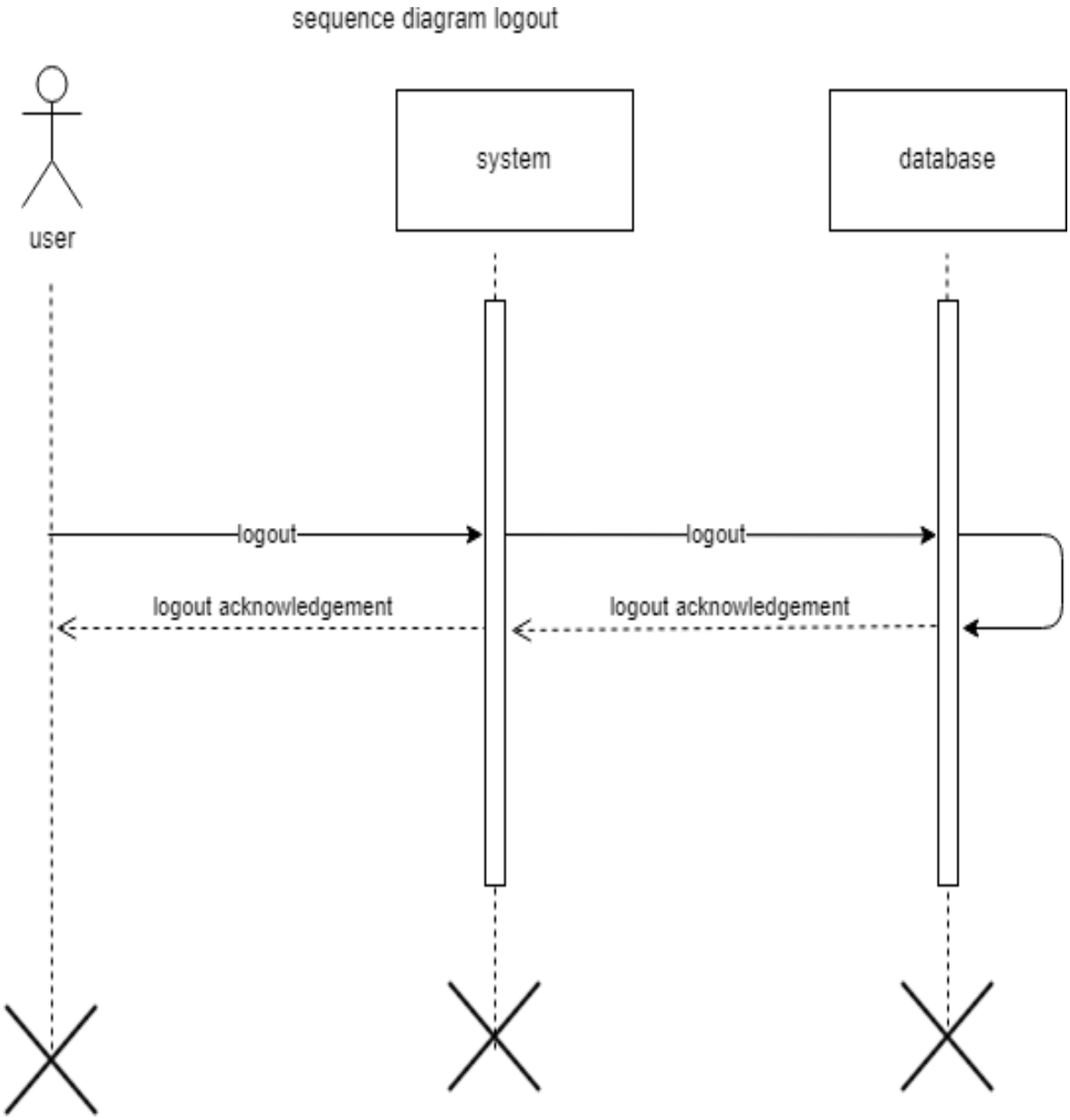
The "Manage Address Sequence Diagram" outlines the steps involved in updating or managing addresses on the SportsGear platform. This sequence diagram describes the interactions between the user, the front-end system, and the back-end system to add, edit, or delete shipping addresses.



3.11 Manage Address Sequence Diagram

3.10.4 Logout Sequence Diagram:

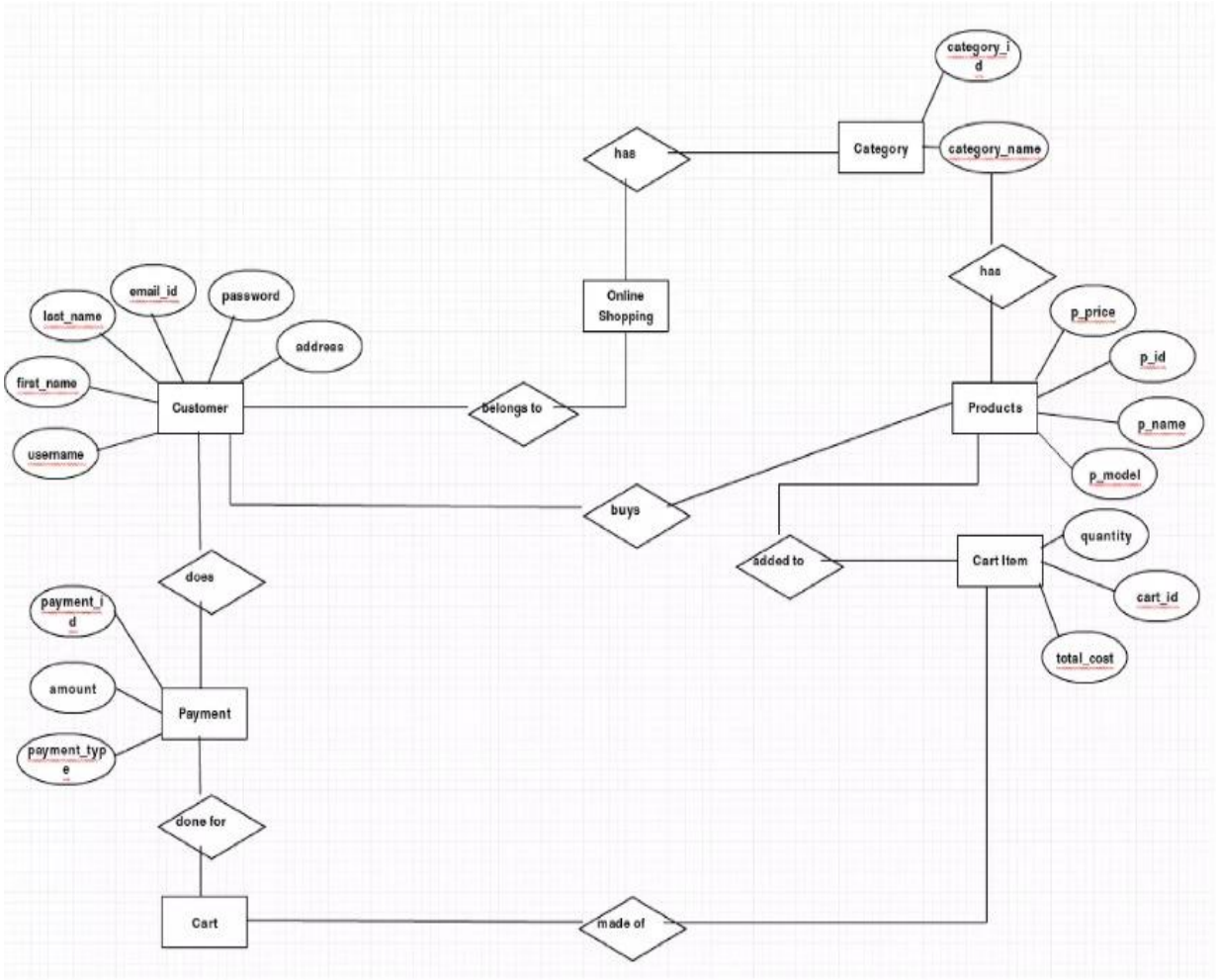
Logging out is an essential security feature that allows users to safely end their session on a platform. The "Logout Sequence Diagram" describes the interactions between the user, the front-end system, and the back-end system during the logout process on the SportsGear platform.



3.12 Logout Sequence Diagram

3.11 E-R Diagram:

The Entity-Relationship (ER) Diagram for the SportsGear project illustrates the key entities in the platform's database and the relationships between them. It serves as a blueprint for the database design, ensuring that all necessary data structures are in place to support the platform's operations. The diagram shows how entities like customers, products, orders, and addresses are linked to each other, providing a clear understanding of the data model.



3.13 ER Diagram

The Entity-Relationship Diagram for the SportsGear project provides a solid foundation for the platform's database design, clarifying the relationships between key entities and guiding the development of database schema. It plays a crucial role in ensuring that the database meets the platform's needs and supports its core functionality.

3.12 Modules & Description:

1. Dashboard:

The dashboard enables users to view a range of products available in a retail store platform. This feature allows users to search for products based on their preferences and needs, and it typically includes a filtering option to narrow down the search results.

When users browse products, they can see images, descriptions, prices, and other important details about each product. They can also use the filtering feature to sort products by various categories such as price range, brand, color, size, ratings, and availability. This allows users to quickly find the products that meet their specific requirements.

2. View Cart:

The "View Cart/Wishlist" feature is a functionality that allows users to see all the items that they have added to their shopping cart on a retail store platform. This feature helps users keep track of the products they intend to purchase and review them before proceeding to checkout.

When a user clicks on the "View Cart" or "View Wishlist" button, they are directed to a page where they can see a list of all the products they have added to their cart or Wishlist. The list typically includes the product name, image, price, quantity, and a subtotal for each item. Users can also see the total price of all the items in their cart or Wishlist and also can be updated

Overall, the "View Cart/Wishlist" feature is an essential tool for online shopping as it provides users with a quick and easy way to review and manage their shopping cart or Wishlist.

CHAPTER 4

SYSTEM DESIGN

4.1 Database Structure Design:

The database structure design involves planning and creating a comprehensive layout for a database to store and manage the information efficiently and securely. For the SportsGear project, the database structure design encompasses various components, including tables, fields, relationships, indexes, and constraints, to ensure seamless operation and data integrity

Name	Datatype
user_id	Int, primary key, identity
user_name	Varchar(35)
password	Varchar(40)
email	Varchar(40)
f_name	Varchar(40)
l_name	Varchar(40)
address	Varchar(230)
mobile	Varkchar(20)

Table 4.1 User Table

Name	Datatype
admin_id	Int, primary key, identity
user_name	Varchar(40)
email	varchar(40)
password	Varchar(40)

Table 4.2 Admin Table

Name	Datatype
category_id	Int, primary key, identity
category_name	Varchar(40)

Table 4.3 Category Table

Name	Datatype
login_id	Int, primary key, identity
admin_id	Int, foreign key(admin)
activity_type	Varchar(30)
activity_desc	Varchar(50)
timestamp	DateTime

Table 4.4 Admin Activity Table

Name	Datatype
product_id	Int, primary key, identity
product_name	Varchar(60)
product_description	Varchar(200)
category_id	Int, foreign key (category)
price	Decimal(10,2)
stock_quantity	Int
product_img	Varbinary(max)

Table 4.5 Product Table

Name	Datatype
order_id	Int, primary key, identity
user_id	Int, foreign key(user)
order_date	Datetime
total_amount	Decimal(10,2)

Table 4.6 Order Table

Name	Datatype
order_detail_id	Int, primary key, identity
order_id	Int, foreign key(order)
product_id	Int, foreign key(product)
quantity	Int
per_item_price	Decimal(10,2)
sub_total	Decimal(10,2)

Table 4.7 Order Details Table

Name	Datatype
order_detail_id	Int, primary key, identity
order_id	Int, foreign key(order)
product_id	Int, foreign key(product)
quantity	Int
per_item_price	Decimal(10,2)
sub_total	Decimal(10,2)

Table 4.8 Review Table

Name	Datatype
Payment_id	Int, primary key
Order_id	Int, foreign key(order)
Payment_method	Varchar(40)
Transaction_id	int
Payment_status	boolean
Payment_date	Date

4.9 Payment Info Table

4.2 System Procedural Design:

1) **Homepage Loading**: When the user accesses the SportsGear website, the homepage is loaded with various product categories displayed prominently. The page also features a search bar to allow users to search for specific items.

2) **Search Functionality:** If a user enters a search query in the search bar, the system retrieves and displays the relevant products matching the query.

3) **Category Selection:** When a user selects a specific product category from the homepage, the system displays all products within that category.

4) **Product Selection and Details**: Upon selecting a product, the system displays detailed information about the selected item, including its name, price, description, and available options (e.g., size, color). Users can then choose to add the product to their shopping cart.

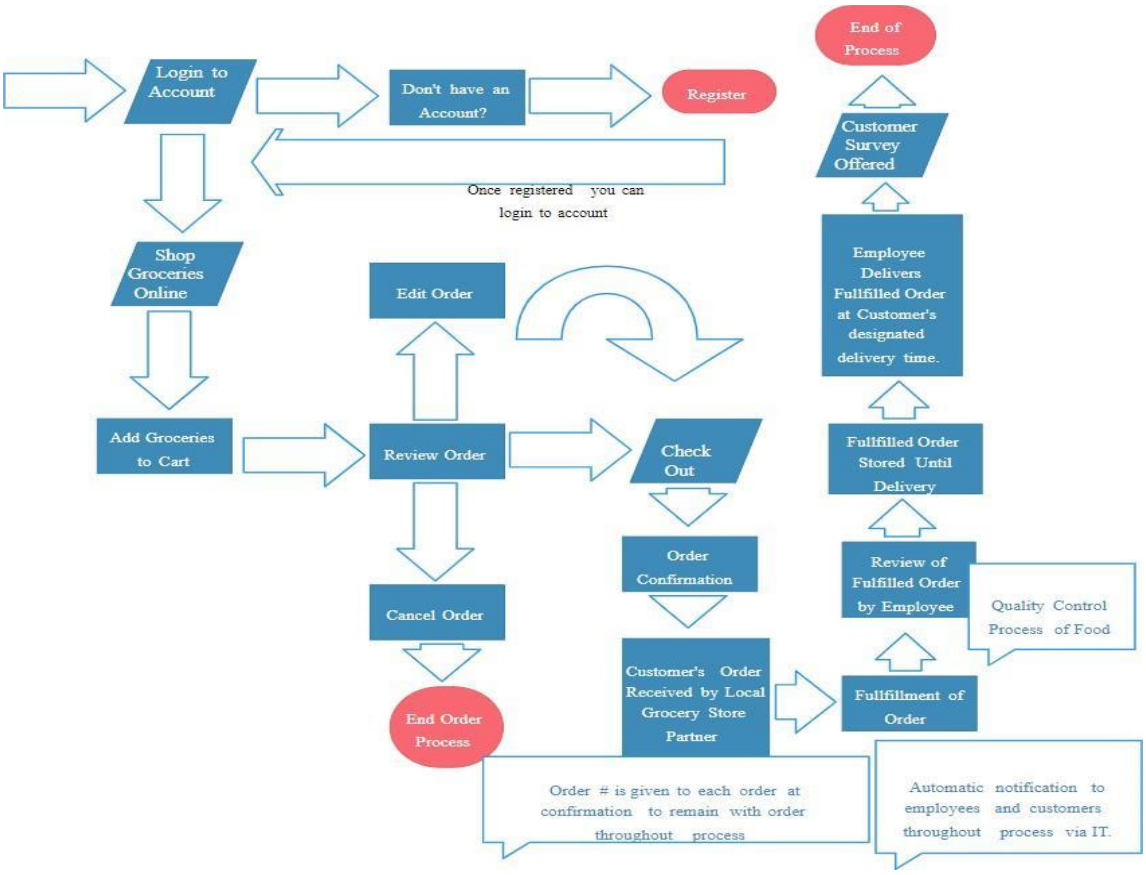
5) **Viewing the Shopping Cart:** If the user clicks on the shopping cart icon, the system displays the contents of the cart, including all added items and the total price.

6) **Checkout Process:** If the user chooses to proceed to checkout, the system displays a form for the user to enter their personal information, such as shipping address, email, and payment details

7) **Order Confirmation:** Once the user agrees to the terms and conditions and completes the checkout form, the system processes the payment using the provided payment information

4.3 Flow Chart Diagram:

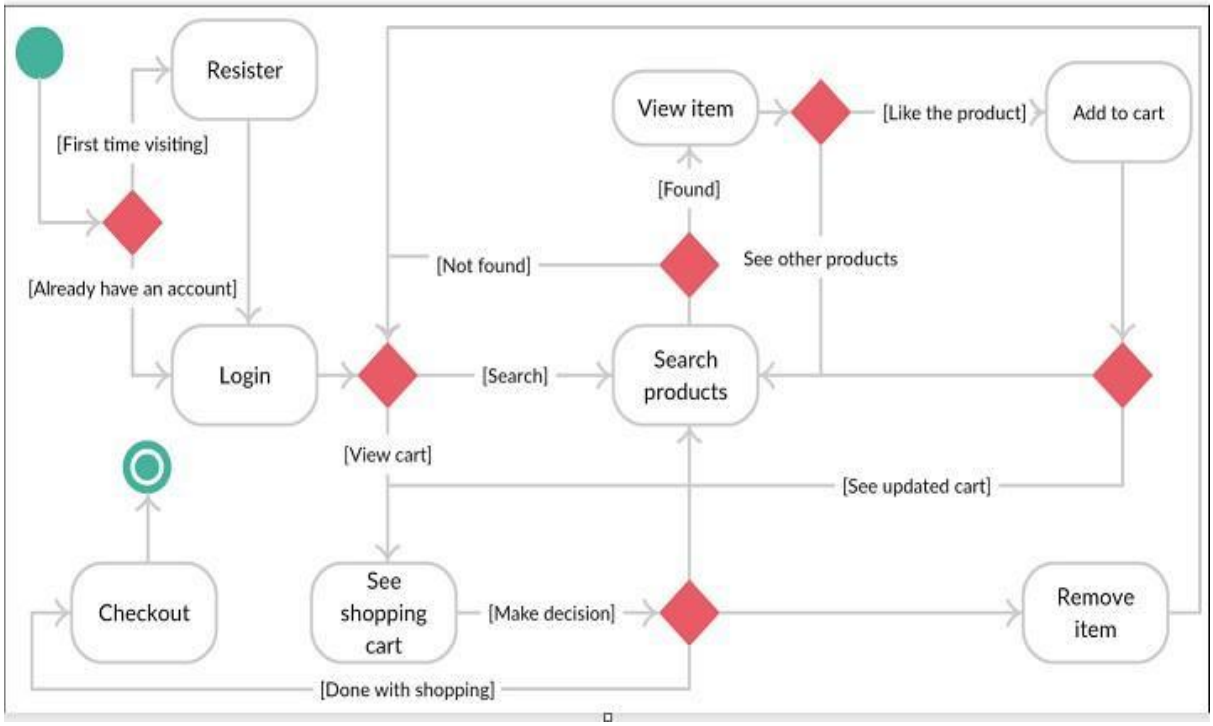
The following flowchart diagram outlines the process flow for a user navigating the SportsGear platform, from landing on the homepage to completing a purchase and receiving an order confirmation.



4.1 flow chart diagram

4.4 State Transition Diagram:

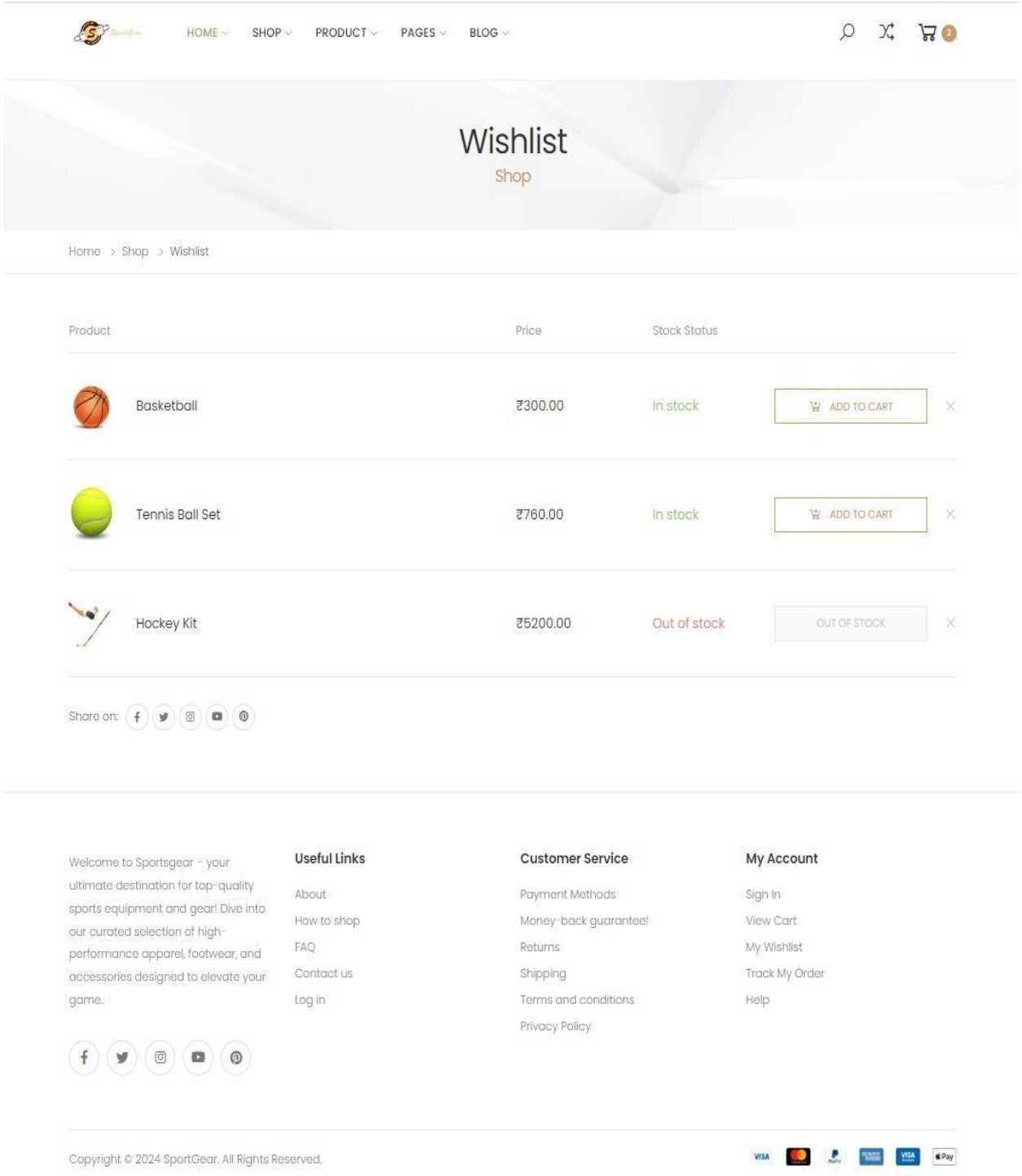
The State Transition Diagram for the SportsGear project outlines the various states that an order can be in and the transitions that occur between those states. This diagram provides a visual representation of the lifecycle of an order, from its creation to its completion, and shows how different events or actions lead to state changes.



4.2 State Transition Diagram

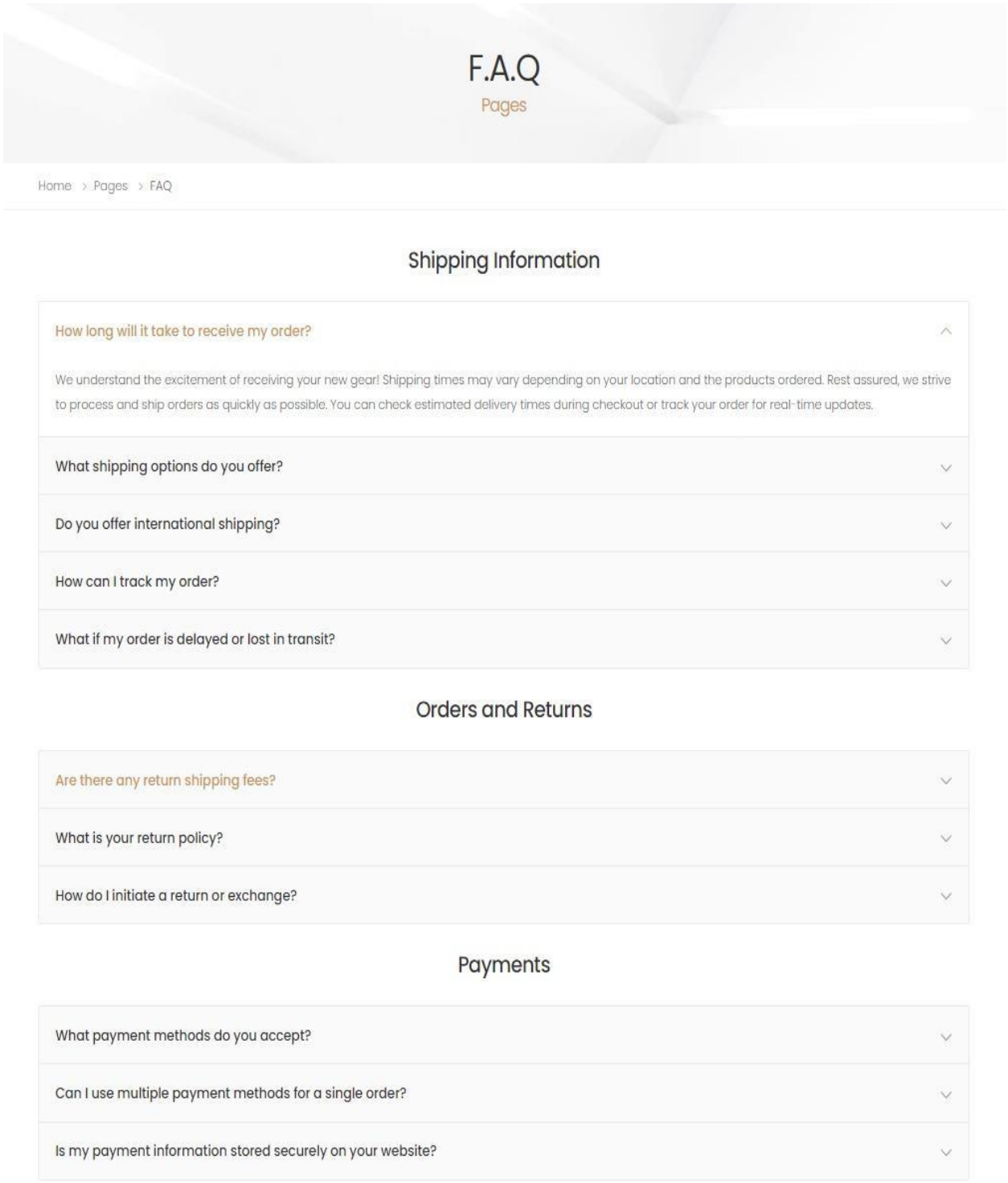
4.5 Interface Design:

4.5.1 Wish-List Module:



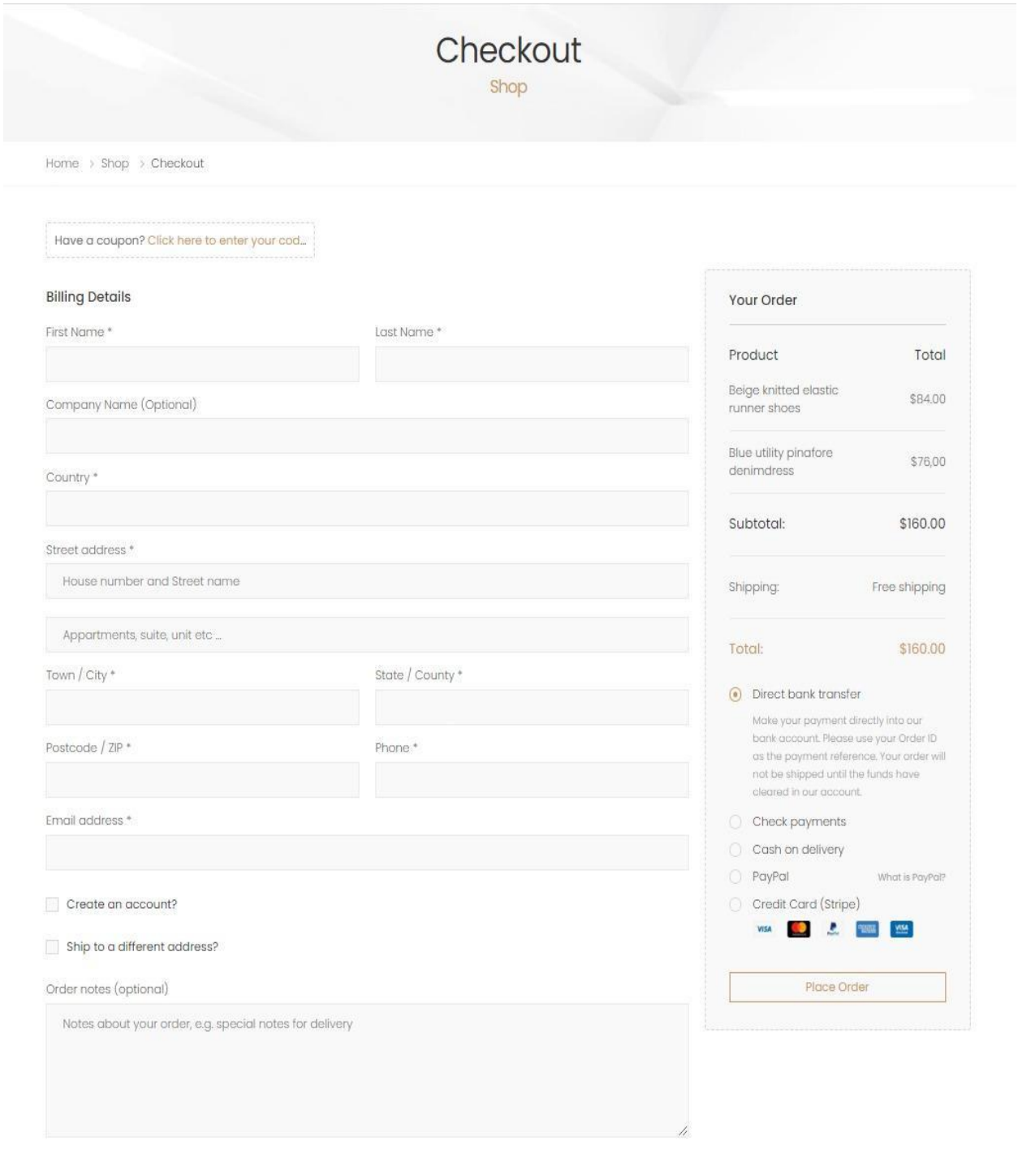
4.3 Wishlist Module

4.5.2 FAQ Module:



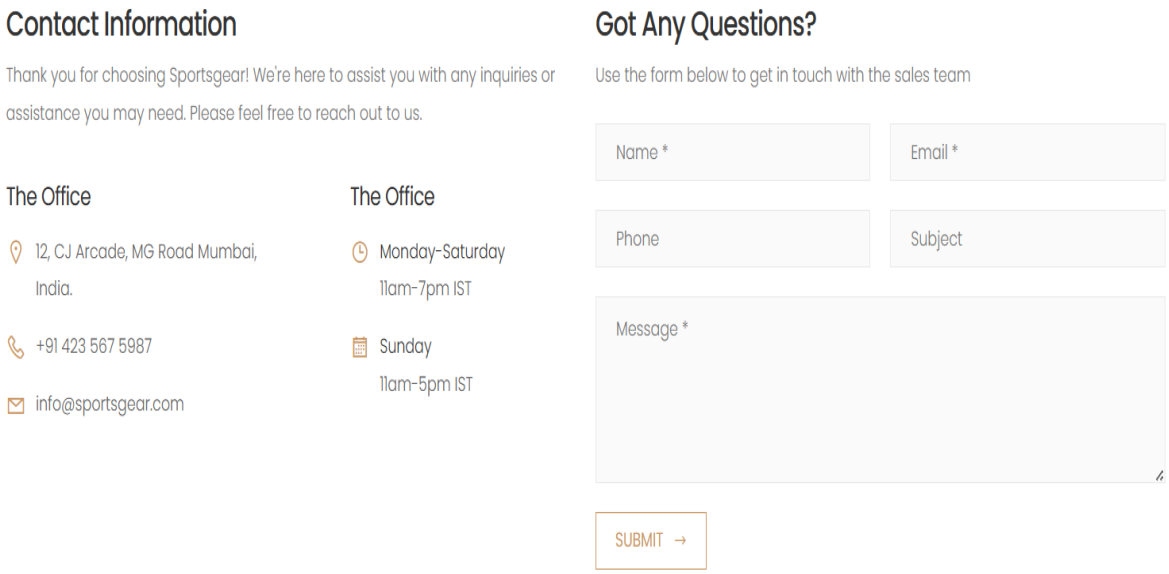
4.4 FAQ Module

4.5.3 Checkout Page Module:



4.5 Checkout Module

4.5.4 Contact us Module



4.6 Contact Us Module

CHAPTER 5

IMPLEMENTATION

5.1 Implementation Platform and Environment:

The SportsGear project is designed to accommodate a diverse range of users, including both single and multi-users, with the flexibility to operate the platform simultaneously. Our system supports multi-user functionality, allowing multiple users to interact with the website at the same time without compromising performance or user experience.

We have developed a user-friendly interface to ensure that all individuals, regardless of their technical expertise, can easily navigate and utilize the platform. The graphical user interface (GUI) is intuitive and straightforward, providing a seamless experience for users when accessing products, placing orders, and managing their accounts.

5.2 Security Features:

User Authentication:

I. User identification and authentication protocols are implemented to verify individual identities upon system entry.
II. Each user is required to log in to the system to access its functionalities.

Password Protection:

I. Each user creates their own username and password, and is assigned access rights accordingly, ensuring that only authenticated and authorized users can access the platform.

Confidentiality:

I. We prioritize user confidentiality, guaranteeing that each user's data remains inaccessible to others.
II. Through individualized encryption keys, we secure user data, preventing unauthorized access or breaches.

5.3 Coding Standards:

To maintain high-quality code and ensure consistency across the project, we have established a set of coding standards for our development team. These standards aim to improve code readability, facilitate collaboration, and streamline maintenance. The following are the key coding standards we have adopted

i. Functions and variables are named meaningfully and follow the snake_case convention.
ii. URLs are named descriptively to enhance readability and usability.
iii. Class names adhere to Pascal Case conventions.
iv. Indentation is maintained at 4 spaces for consistent and organized code structure.

CHAPTER 6
TESTING

6.1 Testing Plan

A testing plan is a structured document that outlines the strategy, resources, scope, timeline, and objectives for testing a project. It is a critical component of quality assurance, guiding the testing process to ensure that all functional and non-functional requirements are met. For a project like SportsGear, an e-commerce platform, a well-designed testing plan can significantly impact the efficiency and success of the project. Here's how a testing plan can be structured and its effects on the project's efficiency

Testing Plan for SportsGear Project:

1. Scope of Testing
2. Testing Objectives
3. Testing Methods
4. Test Case Design
5. Test Environment
6. Testing Schedule
7. Resources and Responsibilities
8. Reporting and Documentation

6.2 Testing Strategies:

Testing strategies are comprehensive approaches to ensure the quality and reliability of a software project. They encompass various testing methods and practices, designed to identify defects, verify functionality, and ensure a seamless user experience. A robust testing strategy is essential for projects like SportsGear, an e-commerce platform, as it ensures a stable and reliable system.

6.3 Testing Methods:

Testing methods are the specific techniques used to ensure that a software system meets its functional and non-functional requirements. For a project like SportsGear, which involves multiple components (such as frontend, backend, and databases), a combination of testing methods is necessary to validate its reliability and usability.

Black box testing is a method of testing software based on its external behavior without knowledge of its internal code structure. In the SportsGear project, an e-commerce platform, black box testing focuses on ensuring the platform behaves as expected from a user's perspective.

Implementing Black Box Testing for SportsGear Project:

1. Identify Key Scenarios
2. Create Test Cases
3. Set Up a Test Environment
4. Execute Test Cases
5. Document and Analyze Results
6. Conduct Regression Testing
7. Involve Users
8. Use Automated Testing Tools

Test Cases:

Test Case 1:

Regular User Login and Registration

Objective: Verify that regular users can successfully register and log in to the website.

Preconditions: The website is running, and the registration page is accessible.

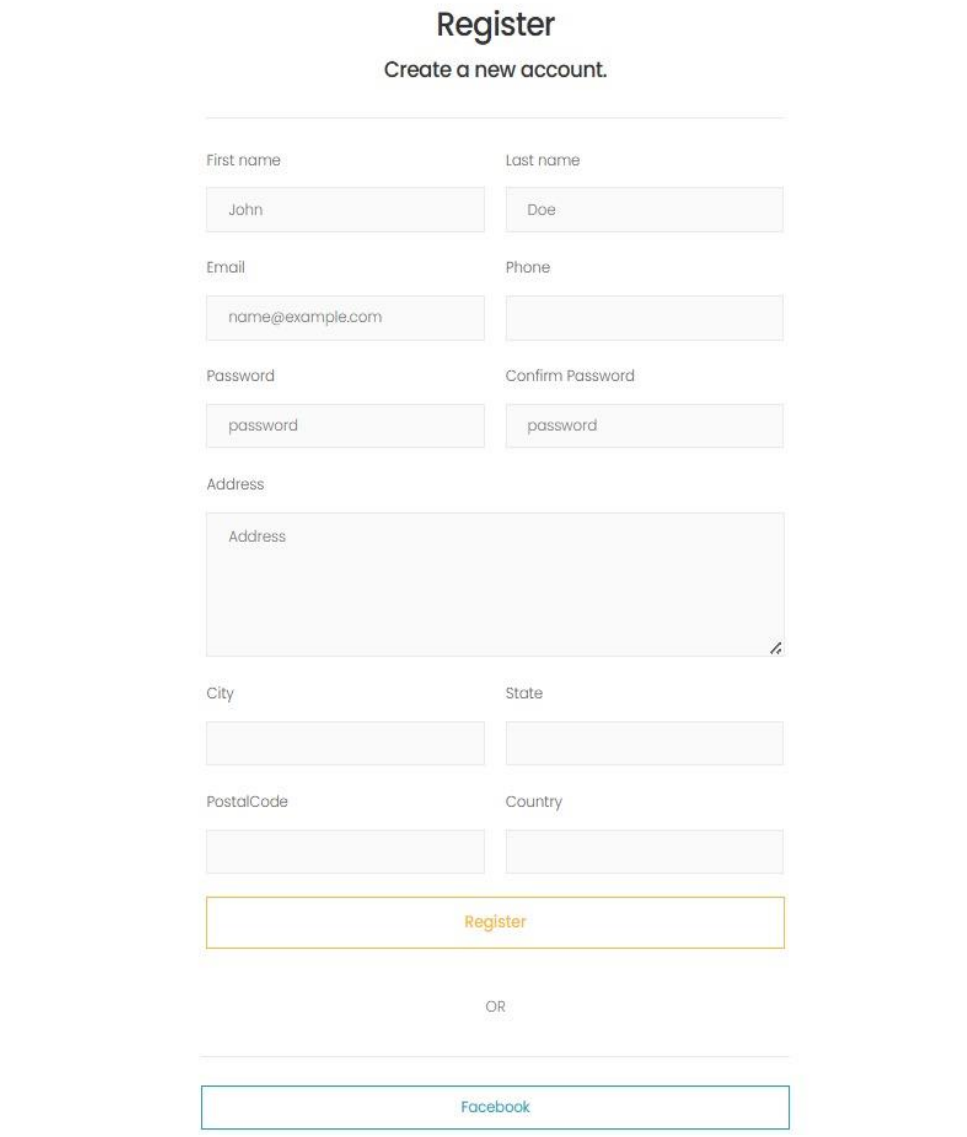


Fig. 6.1 Register as User

Steps:

1. Navigate to the registration page.
2. Enter valid details in the registration form (e.g., name, email, password).
3. Click the "Register" button.
4. Verify that the user is redirected to a confirmation or welcome page.
5. Log out if required.
6. Navigate to the login page.
7. Enter the registered email and password.
8. Click the "Login" button.
9. Verify that the user is redirected to their account dashboard.

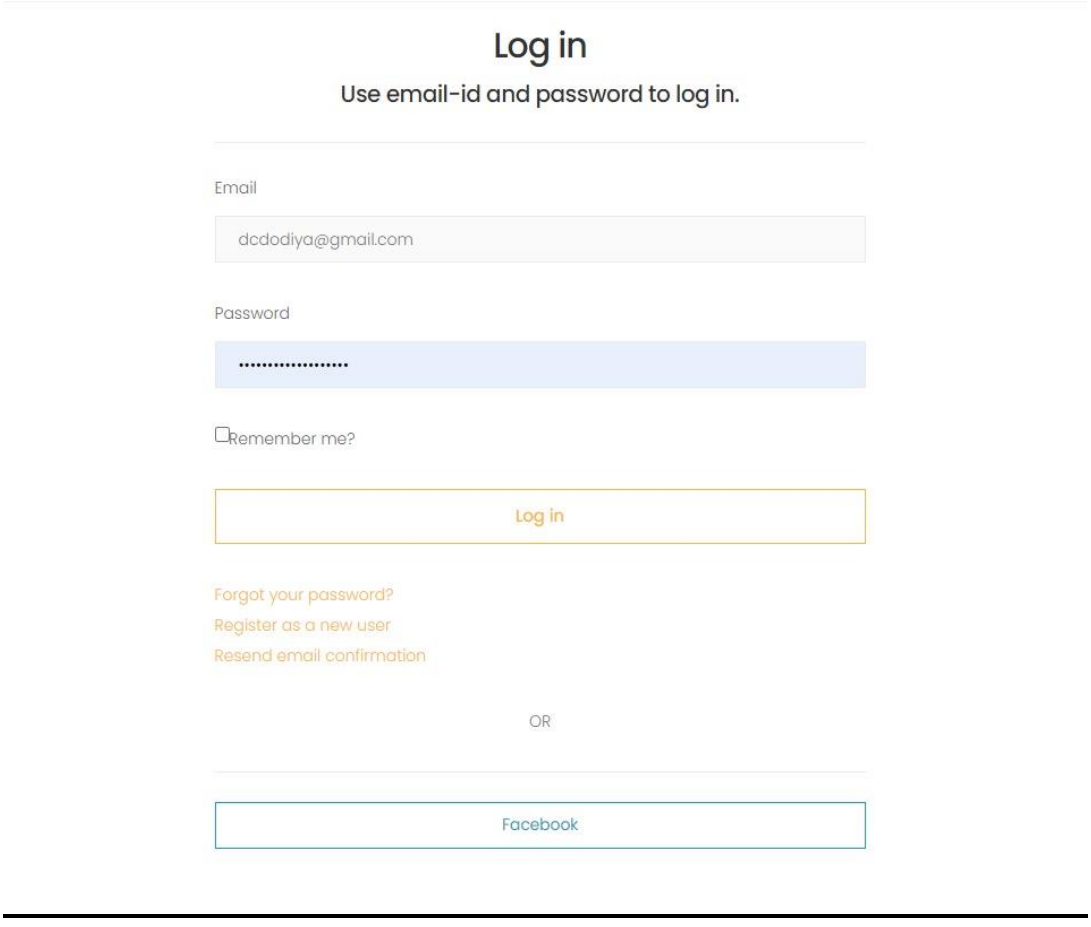


Fig. 6.2 Login as User

Expected Outcome:

The user is successfully registered and can log in using the credentials provided during registration.

After login, the user is redirected to their account dashboard or homepage.

Negative Test Cases:

Attempt to register with an already registered email.

Attempt to register with invalid or incomplete information.

Attempt to log in with incorrect credentials.

Test Case 2:

Admin Login and Management of Sporting Category

Objective: Verify that admin users can log in and manage sporting categories.

Preconditions: Admin accounts are created, and the admin login page is accessible.

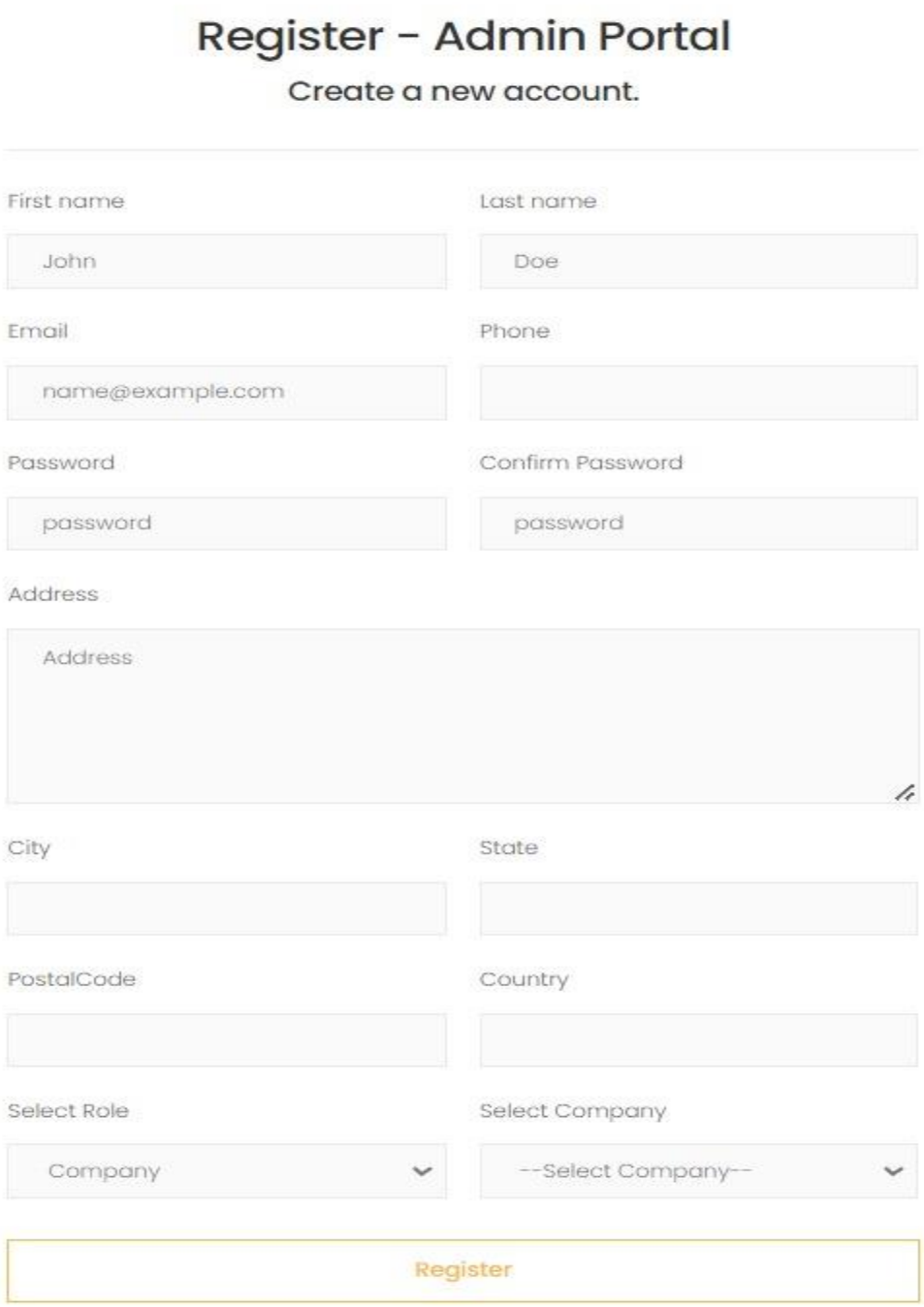


Fig. 6.3 Register as Admin

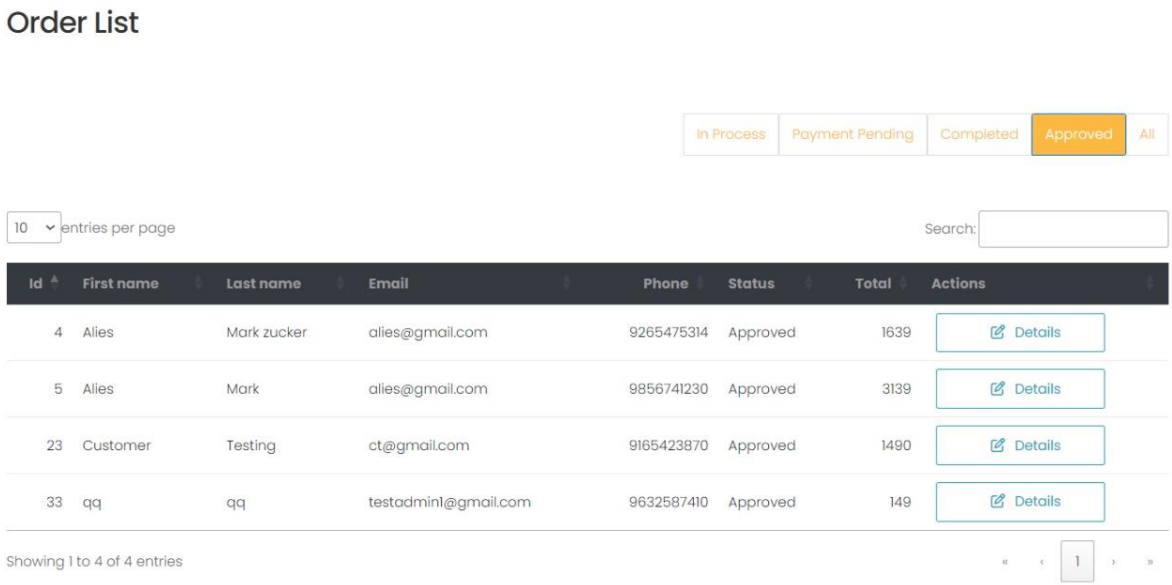


Fig 6.4 View the Order

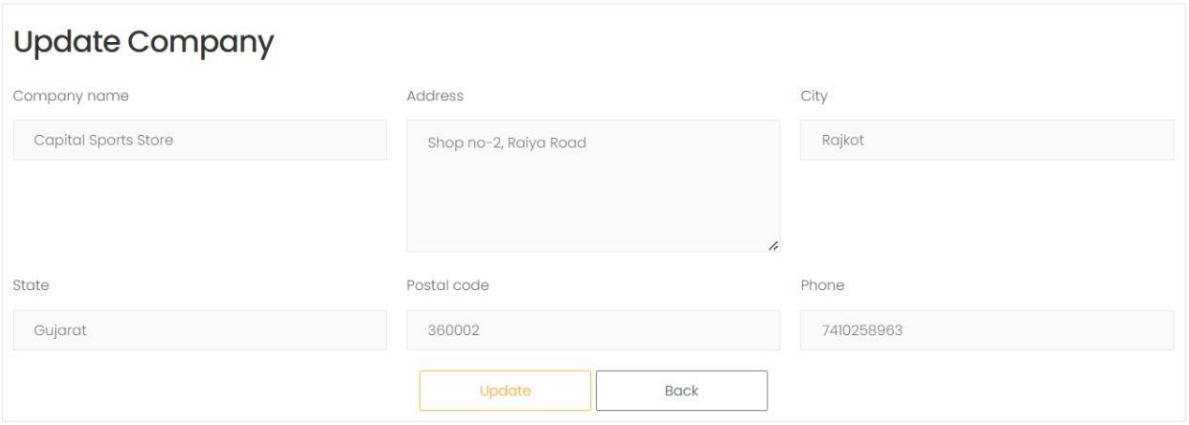


Fig 6.5 Update the Category Information

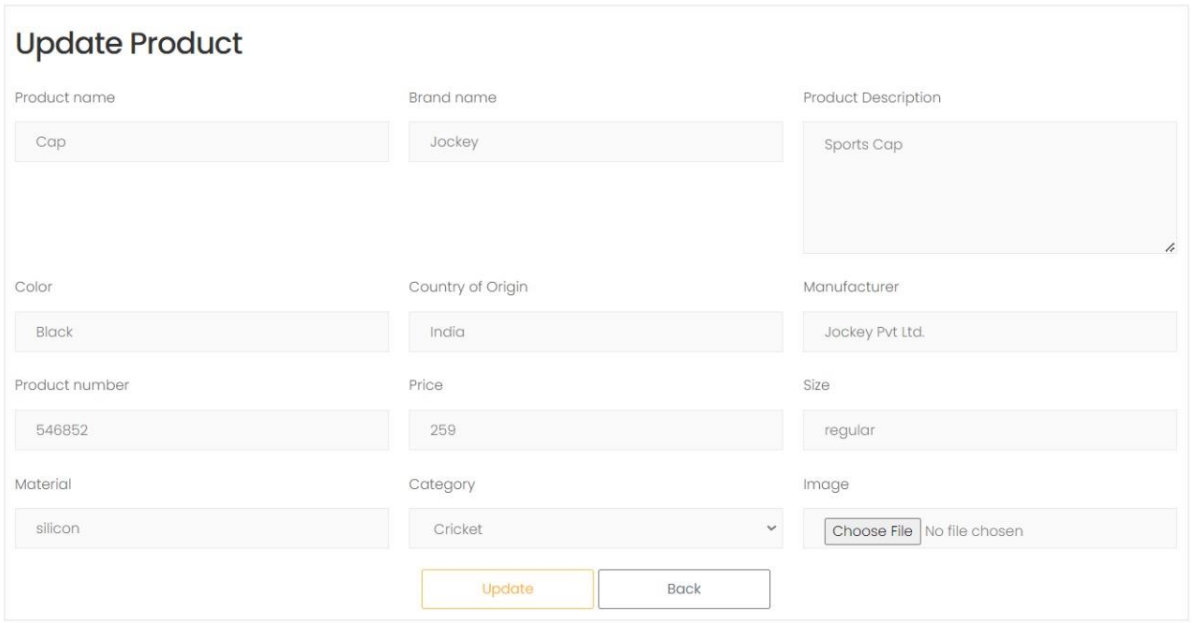


Fig 6.6 Update the Product Information

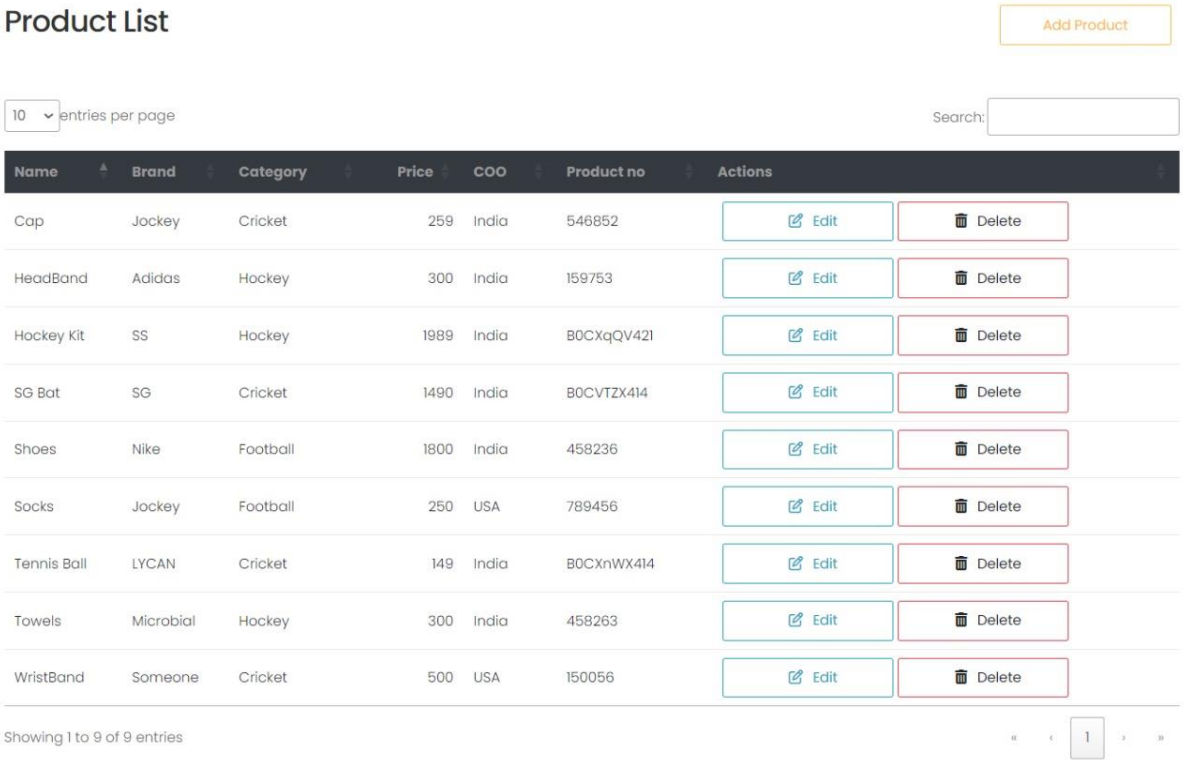


Fig 6.7 Product List

Steps:

1. Navigate to the admin login page.
2. Enter valid admin credentials.
3. Click the "Login" button.
4. Verify that the admin is redirected to the admin dashboard.
5. Navigate to the category management section.
6. Add a new sporting category (e.g., "Basketball").
7. Save the new category.
8. Verify that the category is successfully added to the list of categories.

Expected Outcome:

- The admin can successfully log in and access the admin dashboard.
- The admin can add, edit, and remove sporting categories.

Negative Test Cases:

- Attempt to log in with incorrect admin credentials.
- Attempt to add a duplicate category.
- Attempt to add a category with invalid data.

Test Case 3:

User Order Placement and Payment

Objective: Verify that users can place an order and make a payment.

Preconditions: The website has products available for purchase, and a payment gateway is configured.

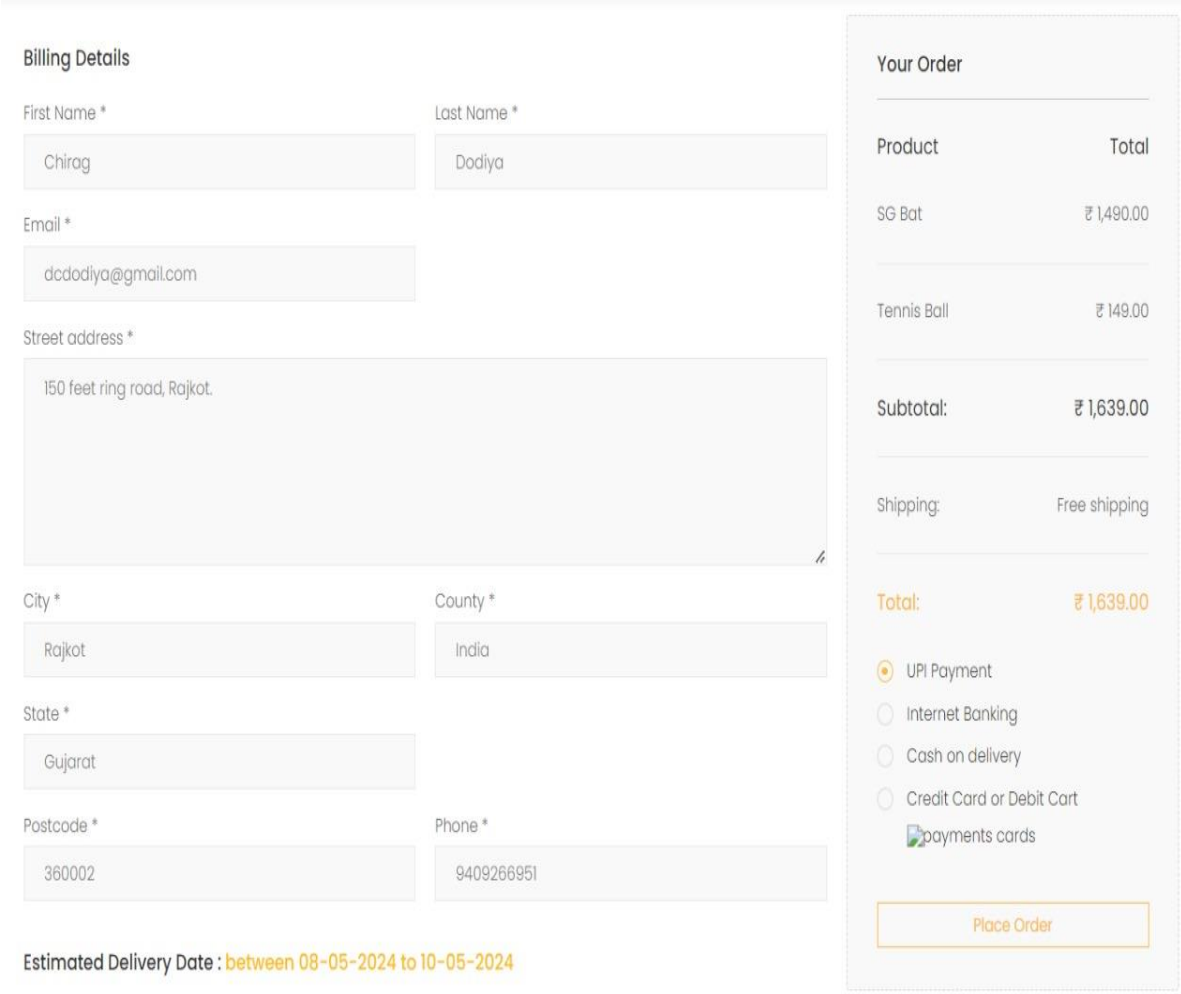


Fig 6.8 Entre Details to Place Order

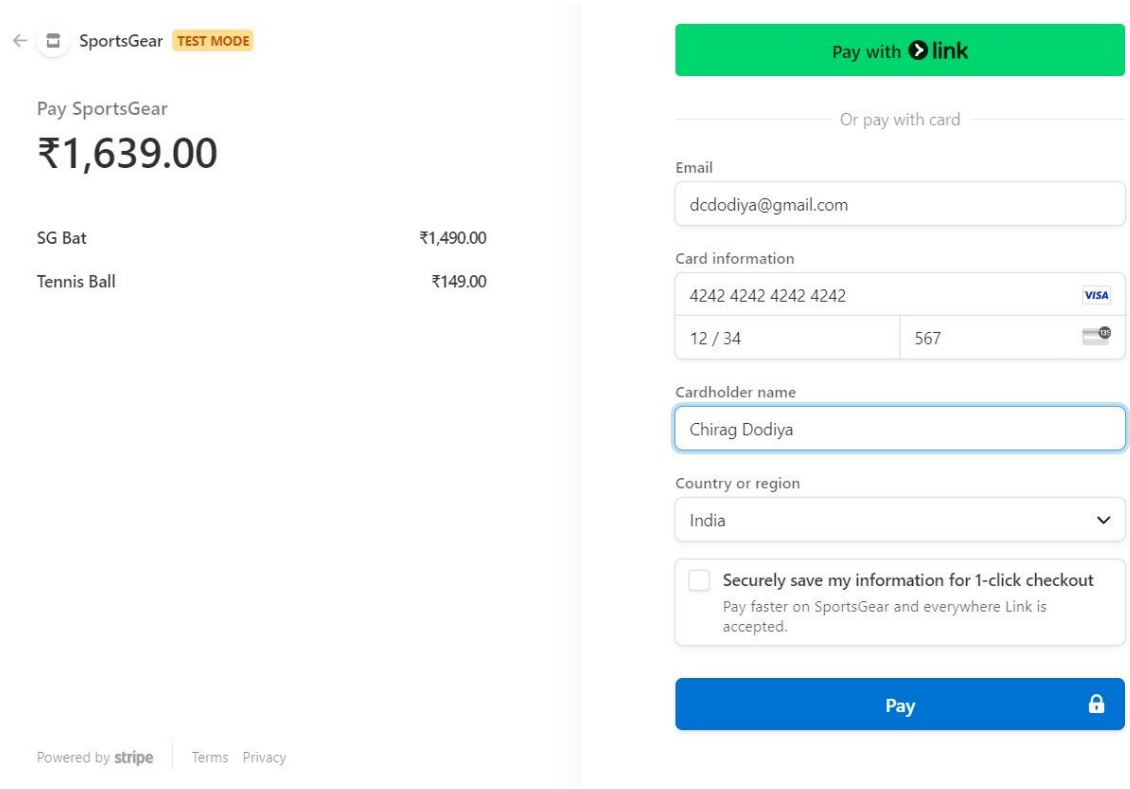


Fig 6.9 Enter Card Number and details to Confirm Order

Steps:

1. Log in as a regular user.
2. Navigate to the product catalog.
3. Select a product and add it to the shopping cart.
4. Proceed to the checkout page.
5. Enter shipping and billing information.
6. Choose a payment method and enter payment details.
7. Confirm and place the order.
8. Verify that a confirmation message is displayed.
9. Check the order history to ensure the order is listed.

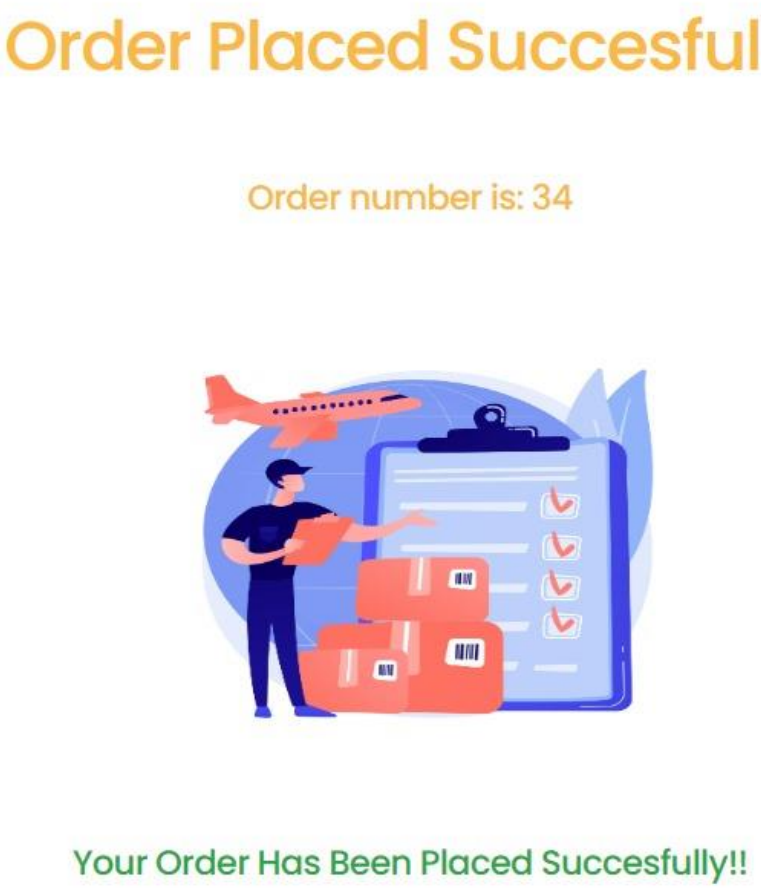


Fig 6.10 Confirm Order Page

Expected Outcome:

- The user can successfully add products to the shopping cart, enter required information, and complete a purchase.
- A confirmation message is displayed after placing the order.
- The order appears in the user's order history.

Negative Test Cases:

- Attempt to place an order with invalid payment information.
- Attempt to place an order with incomplete shipping/billing information.
- Attempt to place an order without adding products to the cart.

CHAPTER 7

CONCLUSION, DISCUSSION & REFERENCES

7.1 Overall Analysis of Project

At SportsGear, more than just an online store – It is your ultimate destination for all things related to sports. Whether you're a seasoned pro or just starting out on your fitness journey, the platform got you covered with a wide range of top-notch sports accessories and equipment. So, whether you're gearing up for the big game or hitting the gym for a workout, you can trust SportsGear to have everything you need to perform your best.

1. **Enhanced Customer Experience**: SportsGear have user-friendly interface and intuitive navigation routes promise to enhance the overall customer experience. By providing easy access to a wide range of sports products, detailed product information, and seamless checkout processes, the platform aims to ensure customer satisfaction and loyalty.
2. **Curated Selection:** With a diverse selection of top-notch sports accessories and equipment, the platform caters to the needs of both seasoned athletes and fitness enthusiasts alike.
3. **Customer Feedback and Iterative Improvement:** Actively incorporating customer feedback can be instrumental in refining the user experience and enhancing product offerings. Regularly updating the website based on customer feedback demonstrates the seek for improvement.

Overall, the platform will emerge as a dynamic realm of online sports platform, committed to providing athletes and fitness enthusiasts with a comprehensive platform for accessing premium-quality sports accessories and equipment. With a user-centric approach, a curated selection of products, and a relentless pursuit of customer satisfaction.

7.2 Dates of Continuous Evaluation (Ce-I And Ce-II):

- First review is conducted on 03/02/2024 via online mode.
- Second review is conducted on 02/03/2024 via online mode.

7.3 Limitation

1. **Technical Glitches**: Technical issues can affect the user experience on the SportsGear platform. These may include slow load times, website crashes, or bugs that disrupt smooth navigation, leading to customer dissatisfaction.

2. **Customer Support Challenges**: SportsGear may face challenges in providing prompt customer support without a dedicated system in place. This could result in longer response times and reduced customer satisfaction when issues arise.

3. **Limited Personalization**: The platform may lack advanced personalization features, which could hinder the ability to recommend tailored products to users based on their preferences and past purchases

4. **Language and Accessibility Barriers**: SportsGear might struggle with language and accessibility issues, limiting its ability to cater to a broader audience. This could lead to difficulties in engaging non-native English speakers or users with specific accessibility needs.

5. **Maintenance and Updates**: Regular maintenance and updates are required to keep the platform running smoothly. Failure to maintain the system properly can lead to outdated software, security vulnerabilities, and reduced platform performance.

6. **Dependency on Technology**: As an online platform, SportsGear relies heavily on technology for its operations. This dependence can reduce the personal touch in customer relationships, leading to a lack of connection with customers seeking a more personalized experience.

7.4 Future Enhancement

There are several future enhancements that can be made to our SportsGear webiste to improve the overall customer experience and increase efficiency for store owners. Some possible enhancements include:

1. Integration with Voice Assistants: Integrating the voice assistants can make more convenient for customers to shop on SportsGear.

2. User Experience (UX) Design: Continuously refining the user interface and experience of the SportsGear website can improve usability and navigation. Conducting user testing, gathering feedback, and implementing iterative design improvements can enhance the overall shopping journey and drive conversions

3. Partnerships and Collaborations: Collaborating with athletes, sports teams, or fitness influencers can enhance Sports Gear's brand credibility and reach. Co-branded product releases, exclusive collaborations, or sponsored events can generate buzz and attract new customers while strengthening relationships with existing ones.

REFERENCES:

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jQuery: https://www.w3schools.com/jquery/default.asp

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SQL Server: https://learn.microsoft.com/en-us/sql/sql-server/?view=sql-server-ver16

SQL Server: https://www.w3schools.com/sql/sql_ref_sqlserver.asp