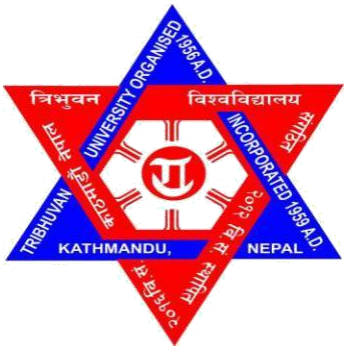

A
Final Year Internship Report
On
"Next Shoes"
At
"Black Tech"

In Partial Fulfillment of the Requirement for Degree of Bachelor of Science in Computer Science and Information Technology (B.Sc. CSIT) Awarded by Tribhuvan University

Submitted by:

Basanta Karki(25041/076)

Submitted to:

Institute of Science and Technology

Tribhuvan University

Department of Computer Science and Information Technology

Mount Annapurna Campus

Pokhara-5, Parshyang Kaski

June, 2024

An Internship Report on

NEXT SHOES

At

BLACK TECH PVT. LTD.

Submitted by:

Basanta Karki (25041/076)

Supervisor:

Er. Santosh Poudel

Assistant Professor

Submitted to:

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

Mount Annapurna Campus

Pokhara-5, Parshyang

June, 2024

Tribhuvan University

Institute of Science and Technology

Mount Annapurna Campus, Pokhara-5, Parshyang, kaski

Date: 2024-06-01

Supervisor's Recommendation

I hereby recommend that the internship work prepared under my supervision by Mr. **Basanta Karki (25041/076**) entitled " **Next Shoes**" be accepted as in fulfilling partial requirement for completion of Four Year's Bachelor's Degree in Computer Science and Information Technology and recommend for further evaluation.

……..

Er. Santosh Poudel

Mount Annapurna Campus, Pokhara

B.Sc. CSIT Department

ACCEPTANCE LETTER

The undersigned certified that the internship work entitled **Next Shoes** submitted by **Mr. Basanta Karki (25041/076)** in the partial fulfillment for the degree of Four Years Bachelor Degree of Science in Computer Science and Information Technology has been examined and accepted for the degree awarded Tribhuvan University.

……..	……..
Supervisor	Internal Examiner
Er. Santosh P**oudel**	Er. **Sudip Dahal**
Assistant Professor	Assistant Professor
Department of CSIT	Department of CSIT
Mount Annapurna Campus	Mount Annapurna Campus

……..	……..
Director	External Examiner
Mr. Surya Bahadur GC	**Name**
Mount Annapurna Campus	**Designation**

Date: 2024-06-10

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The successful completion of this internship report would not have been possible without the support and assistance of many individuals and organization. I would like to take this opportunity to offer my earnest admiration to each and every one of them. The satisfaction and success of completion of this task would be incomplete without heartfelt thanks to people whose constant guidance, support and encouragement made this work successful.

Firstly, I would like to give my gratitude towards my mentor **M**r. **Suraj Gautam**, Project Manager of company, for his unquestionable support. Without his constant guidance and suggestions, this report would have been nowhere near completion. My gratitude for his trust and generosity goes beyond words.

I would also like to thank supervisor **Er. Santosh Poudel** and the **Director of Mount Annapurna Campus**, for his invaluable encouragement, guidance and ever willingness to spare time from his otherwise busy schedule.

I would like to dedicate our hearty gratitude to **Black Tech Pvt. Ltd** for providing us with an opportunity to do internship at this reputed organization with full support and cooperation.

At the end, I would like to express my sincere thanks and appreciation to all my colleagues and seniors who have helped me directly or indirectly during this internship period.

Basanta Karki

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ABSTRACT

This internship report details the development of Next Shoes, a cutting-edge web application designed to offer a seamless and intuitive platform for users to explore and purchase premium footwear. Next Shoes is designed to revolutionize how people shop for footwear online by offering a specialized platform that meets the unique needs of shoe enthusiasts.

Interns collaborating with the project team engage in diverse responsibilities including UI/UX design, backend integration using Node.js, feature enhancement, product catalog management, testing, and quality assurance. Using React for the website's look and Node.js for its backend, interns learn to create responsive, feature-packed apps. Key technologies employed include React for dynamic frontend experiences, Node.js for efficient server-side development, MongoDB for flexible data storage, and Express.js for building robust APIs. This internship offers an exciting environment for interns to contribute to innovative solutions, establishing Next Shoes as the go-to destination for sneaker head and footwear enthusiasts, making the premium shoes accessible and affordable with an attractive and user-friendly approach.

Keywords: *React, NodeJs, MongoDb, Express.js,APIs,user-friendly*

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LIST OF ABBREVIATIONS

Abbreviation	**Full Form**
API	Application Programming Interface
BSc	Bachelor of Science
CEO	Chief Executive Officer
CMS	Content Management System
CSIT	Computer Science and Information Technology
DB	Database
GHz	Gigahertz
IDE	Integrated Development Environment
IT	Information Technology
JS	JavaScript
JSON	JavaScript Object Notation
JSX	JavaScript XML
OS	Operating System
POS	Point of Sale
PC	Personal Computer
SEO	Search Engine Optimization
SQL	Structured Query Language
UI	User Interface
UX	User Experience
XML	Extensible Markup Language

CHAPTER 1 : INTRODUCTION

1.1. Introduction to Internship

Internships are great for students to connect what they learn in class with real-world work. They can try out different fields to see what they like before choosing a career. It's a chance to learn practical skills, like time management and working with others, that are important in any job. Plus, it helps them figure out if they're on the right path for their future careers. By participating in this internship program affiliated with Tribhuvan University's "Bachelor of Science in Computer Science and Information Technology" course, students can establish a solid foundation for their career growth. They gain a deeper understanding of workplace culture, acquire valuable work-related experiences, and develop skills that are directly applicable in the field. This program integrates theory and practice, allowing students to witness the practical implementation of concepts and theories learned in the classroom, reinforcing their understanding and preparing them for real-world challenges.

Participating in an internship program offers numerous benefits to students, including:

- Get hands-on experience at work.
- Try out different careers
- Learn time management and teamwork.
- Pick up skills you need for your career.
- Understand how organizations work.
- Improve your business skills like communication and teamwork.
- Connect what you learn in class to real life.

Overall, this internship program aims to provide students with a transformative learning experience, combining theoretical knowledge with practical application. It equips them with the skills, experience, and industry exposure necessary to thrive in the field of Computer Science and Information Technology, while also paving the way for future career.

1.2. Introduction to Project

With the advancement of information and technology, replacing conventional or paper based system with computer-based information system, it becomes a vital and integral part of each and every organization. As an ongoing intern at BlackTech, the "Next Shoes"

project presents an exciting opportunity. This initiative focuses on developing an online shoes store, leveraging the power of React.js and Node.js. With Node.js as the backend technology, the system facilitates seamless communication between the website, database, and other systems. React is utilized to create an interactive and visually appealing frontend, ensuring a user-friendly browsing experience. By integrating these technologies, the project aims to simplify the ordering process and enhance overall efficiency. The ultimate goal of "Next Shoes" is to establish itself as a premier destination for shoes enthusiasts, offering a comprehensive product catalog, real-time updates on availability, and a seamless online shopping experience. Throughout the internship, valuable experience as a Frontend developer will be gained, contributing to the ongoing development of this innovative project using React.js.

1.3. Problem Statement

In the traditional approach to purchasing products, several challenges arise. First, customers often face limitations in terms of convenience and accessibility. They have to physically visit stores, navigate through crowded aisles, and rely on the availability of knowledgeable staff for assistance. Additionally, traditional purchasing methods lack real-time updates on product availability, resulting in wasted time and effort. Moreover, inventory management in brick-and-mortar stores can be inefficient, leading to stockouts or overstocking of items.

1.4. Objectives

The internship program was done to fulfill the academic requirement of BSc.CSIT 8th Semester. An internship provides a variety of benefits for the young workers who want to broaden their chances for landing in a job and jump-starting their careers. The main objectives of the internship project were to understand how the application works in real time.

1.4.1. Objectives of Internship

The main objective of the internship project in simple term is to get practical experience of the theoretical knowledge gained in the classroom. The main task is to get enrolled into the organization and do tasks as required by the organization as well as the course of study i.e. BSc.CSIT. The internship attachment project is a remarkable opening to experience the real world working environment and culture where the knowledge learned during B.Sc. CSIT course might be implemented. The solution given to the organization will be in terms of

system analysis and design and developing an integrated system that helps in planning and decision making for the organization.

The broad objectives of this internship are as follows:

- To help students explore career interests before making long-term commitments.
- To build skills by using classroom learning in real work situations.

1.4.2. Objectives of Project

The objective of the Next Shoes project is to develop a user-friendly e-commerce website that offers a seamless and convenient shopping experience for customers looking to purchase shoes. The website will be designed to provide easy navigation and browsing capabilities, allowing customers to explore a wide range of shoes and make informed purchasing decisions. The goal is to create a platform that bridges the gap between shoes stores and customers, providing a centralized marketplace where stores can showcase their products and customers can effortlessly browse, select, and purchase the shoes they desire.

With the development of this project, we aim to meet the following objectives:

- To create a user-friendly interface that allows customers to easily browse and select from a wide range of available products across different categories.
- Enable customers to browse and purchase shoes conveniently from anywhere.

1.5. Scope and Limitations

1.5.1. Scope

Developing an integrated shoe store solution that combines online and offline shopping. It includes a user-friendly platform, seamless inventory management, efficient order processing, and a diverse product range. The goal is to enhance the customer experience, optimize inventory control, and integrate both shopping channels effectively.

1.5.2. Limitations

Some limitations are mentioned below:

- The system cannot be accessible offline.
- Technical skills or staff may be needed for maintenance.
- Users won’t able to change any functionality of the applications.

1.6. Report Organization

Chapter 1:

It contains the detail introduction of internship and project done during internship including the problem statement, their objectives and scope and limitations.

Chapter 2:

Description of organization, organizational hierarchy, departments of the organization. It also contains the literature review of the project.

Chapter 3:

Roles and Responsibilities, Weekly log, Description of the Project Involved during Internship, Tasks/Activities such as Requirement, system design, implementation of the project that indicates how the system is implemented what tools, platforms have been used. Testing clarifies the system workflow are the areas that chapter 3 covers.

Chapter 4:

Includes what conclusion we gained from the internship and what we learnt during this entire period.

CHAPTER 2 : Organization Details and Literature Review

2.1. Introduction to Organization

Black Tech is an aspiring software company dedicated to building high-end software solutions. They accelerate product development practices, making them faster and more reliable. They prioritize the requirements and deliver fast, innovative customizations tailored according to the needs. They take each and every project as a new adventure. It is a new chance to learn, create something interesting and unique. Every project they undertake will have a team of experts who can design your project in the most creative and professional way. Black Tech mission is to provide a digital solution for website, branding, designing, web application. For each of the solution the Black Tech focuses on making it efficient, user friendly as well as cost effective (BlackTech, 2022).

Figure 1: BlackTech Logo

Table 1: Organizational Information

Name	**Black Tech Pvt. Ltd.**
Address	**Zero Km, Pokhara 33700**
Phone	**+977 9802839909**
Email	**hello@blacktech.com.np**
Website	**https://www.blacktech.com.np**

2.2. Organizational Hierarchy

Black Tech Pvt Ltd is a software company specializing in IT services, digital solutions, and technology consulting across various fields. Situated at Zero KM, Pokhara, Black Tech Pvt Ltd helps enterprises transform their business for the digital age and supports technology-focused companies through strategic growth and marketing initiatives.

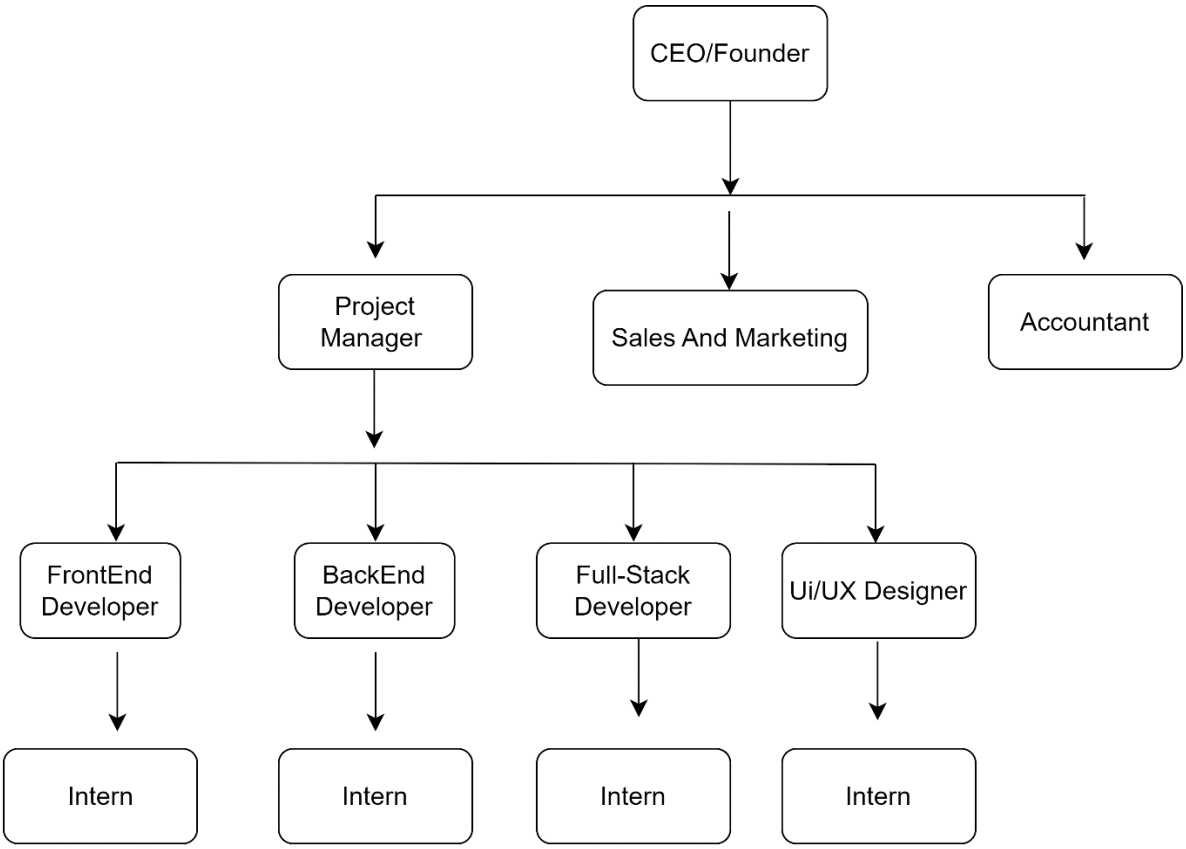

Figure 2: Organizational Structure of BlackTech

2.3. Working Domain of Organization

Black Tech is a dynamic software company specializing in a wide array of digital services. Focused on innovation and excellence, Black Tech excels in web development, mobile app development, API integration, and designing and branding solutions. With a strong commitment to quality and client satisfaction, Black Tech leverages cutting-edge technologies to deliver bespoke digital solutions that meet the diverse needs of businesses and organizations. Whether it's creating intuitive websites, developing robust mobile applications, integrating seamless APIs, or crafting compelling designs and brand

identities. The organizations chosen field of action, the part of the environment which they choose to be vital to their company, so if that part changes, they must react. It is the area which the organization will sell its products and services). There is different sector which make up the environment for an organization, each of which affect different organizations in different ways. These are shown below:

Task Environments

These are sectors which an organization will interact with directly and therefore have a direct impact on the company itself. This includes the sectors:

- Industry
- Human Resources
- International Sectors

General Environment

These are sectors which an organization will interact with indirectly, not directly every day, but it will indirectly influence the firm. The sectors which are included are the following:

- Government
- Sociocultural
- Economic Conditions
- Technology
- Financial Resources Sector

2.4. Description of Intern Department

Black Tech in Pokhara provides excellent internship opportunities in backend development, frontend development, UI/UX design, and SEO. Each intern receives dedicated workspace, internet access, and mentorship. The company fosters a supportive and friendly environment for interns to learn and thrive.

The financial department

Finance Department is the part of an organization that is responsible for acquiring funds for the firm, managing funds within the organization and planning for the expenditure of funds on various assets. It is the part of an organization that ensures efficient financial management and financial control necessary to support all business activities.

Roles and Responsibilities of a Finance Department

- Management of company's cash flow
- Budgets and forecasting
- Advising and sourcing longer-term financing
- Management of Company's Investments
- Financial Reporting and analysis

Human Resource department

The HR department is responsible for staff recruitment and training, record keeping, compensation and benefits, insurance, and employee relations.

Roles and Responsibilities of a Human Resource Department

- Hire the right employees
- Conduct disciplinary actions
- Update polices
- Maintain employee record
- Conduct benefit analysis

Purchasing Department

Purchasing department's main role is purchasing supplies and materials used in the projects and company daily needs. They need to compare among different suppliers and finding the items with correct prices and qualities.

Roles and Responsibilities of a Purchasing Department

- Evaluate company needs.
- Conduct research.
- Compare and negotiate prices.
- Coordinate deliveries.
- Manage supplier relationships.

Project Department

The Project Department handles scheduling and management for each project. The project manager decides the budget, assigns tasks to employees, and oversees worker safety. Their goal is to ensure that construction work is completed according to contract requirements.

Roles and Responsibilities of a Project Department:

- Offer a unified view of all projects.
- Assist in implementing projects.

- Standardize the project management process.
- Plan and schedule resource efficiently.

Engineering Department

In general, the engineering department is responsible for the planning of the construction project. This includes conducting surveys, engaging in research, analyzing results, planning the construction and supporting all technical issues during the project.

Roles and Responsibilities of Engineering Department

- Identifying and troubleshooting system problems
- Identifying necessary improvements to computer systems
- Completing programming to implement new updates
- Configuring new computer systems

2.5. Internship Placement Details

The internship is done as a partial fulfillment of the requirement for the degree of Bachelor of Science in Computer Science and Information Technology. The internship is assigned six credit hours (minimum of three month or 180 hours long) as a part of the course requirement. The authorities of the organization carried out an interview to provide an internship opportunity to be part of that organization for certain period of time as an intern. The organization was selected on the basis of my area of interest to help my career as an IT professional and as well as an Software developer.

2.5.1. Organizational Selection

Choosing the right organization is crucial for an internship as it provides valuable exposure to real work environments, which is the main goal of such programs. I prioritized selecting a well-established organization with ample resources. Due to my interest in web development and aspiration to work in IT, I was selected for an internship in the frontend department. The team members were supportive and dedicated, offering their time and guidance, which greatly contributed to my project during the 10-week internship period.

2.5.2. Internship Placement

During my internship, I had my own space at the company where I worked. I was fully integrated into the team, treated like a regular employee. Additionally, I was furnished with internet connectivity, a vital tool that facilitated the smooth execution of assigned tasks and the prompt troubleshooting of any issues that arose.

2.5.3. Internship Duration

As required by the BSc. CSIT 8th Semester curriculum, the internship must span a minimum of 10 weeks or 180 hours. It involves various phases of training or tasks, each with specific objectives that track the intern's progress throughout the internship. Each phase outlines how and when interns will achieve their objectives and complete assigned tasks.

Table 2 : Internship Description Table

Start Date	4th March, 2024
Duration	3 Month
Office Hours	11:00 am- 6:00pm
Working Hours	7 hours per day
Working Days	6 days a week (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday)
Position	React Intern
Mentor	Mr. Suraj Gautam

2.6. Literature Review

This literature review is crucial for developing this project. Before starting development, various previous projects and services in similar domains were examined. These reviews helped to understand the existing knowledge landscape in shoes e-commerce and informed the design and development of the application.

2.6.1. Daraz

Daraz, Nepal's leading online store, offers a wide range of products from top brands. It provides secure payments, strong customer support, and a user-friendly mobile app for convenient shopping. Despite competition, Daraz organizes frequent sales and events to attract budget-conscious shoppers. However, delivering efficiently across Nepal's varied terrain remains a logistical challenge. Daraz continues to adapt to meet the evolving demands of e-commerce in Nepal, solidifying its position in the digital retail market. (Daraz, 2024)

2.6.2. Hukut Store

Thulo.com, an online marketplace and e-commerce platform based in Nepal, has emerged as a prominent player in the country's digital marketplace landscape. Founded in 2005, Thulo.com has become one of the largest online shopping platforms, connecting buyers and sellers in Nepal. With its wide array of products, ranging from electronics and home appliances to fashion, beauty, sports, and groceries, Thulo.com offers a comprehensive shopping experience to its customers. (Thulo.com, 2005)

2.6.3. Sastodeal

Sastodeal story began in 2011. Today, Sastodeal is one of the leading ecommerce companies in Nepal with millions of customers and thousands of vendors / partners all over Nepal. They have a logistic network that ensures deliveries in most parts of the nation. Their goal is to ensure that their customers can buy products at affordable prices, get their products delivered as assured, and on time regardless of their location. Their platform caters to daily needs, Electronics appliances, lifestyle, men and women fashion wears and much more. (Sastodeal company profile, information, 2023)

2.6.4. OkDam

OkDam is a well-established e-commerce platform in Nepal, offering a wide array of products to cater to the diverse needs of online shoppers. Founded in 2011, OkDam has been a significant player in the country's e-commerce industry. The platform provides a comprehensive shopping experience encompassing electronics, fashion, home appliances, and more. (OkDam, 2017)

CHAPTER 3 : INTERNSHIP ACTIVITIES

3.1. Roles and Responsibilities

During my internship at the Black tech as a Frontend Developer, I was assigned several important roles and responsibilities to handle. These included:

- Ensuring the website is responsive and works well on different devices (desktops, tablets, mobile phones).
- Seek support from IT professionals when needed for effective problem-solving.
- Collaborating with backend developers to integrate frontend components with backend systems.
- Develop user-friendly and responsive UI components that interact with APIs.
- Testing the website's frontend functionalities and debugging issues to ensure smooth user experience.
- Stay updated with React.js developments and best practices.

3.2. Weekly Log

Table 3: Weekly Log of Assigned Internship Activities

Week	Phases	Activities
Week 1	Learning	Getting started with learning of React.JS from codevolution to grasp the fundamentals, including components, state, props, and JSX.
Week 2	Learning by Implementing	Enhancing design skills and development efficiency.
Week 3	Research and Familiarization	Engage in discussions with the backend team and project manager to understand client demands, collaborate on API requirements.
Week 4	System Coding	Start building the homepage with sliders, categories, Brands and product sections. Implement featured products and a search bar while focusing on responsive design for various devices.

Week 5	System Coding	Create user profile pages and work on developing the checkout system and order management features.
Week 6	System Coding	Further more work on product detail page and integrate with backend for data retrieval and updates.
Week 7	System Coding	Develop the dashboard for product management including features for adding, editing, and removing products, managing categories, image upload and product description.
Week 8	System Coding	Implement remaining client-side features as per client's requirements for an enhanced user experience.
Week 9	System Testing and Debugging	Begin testing both admin and client-side applications. Identify and start fixing bugs.
Week 10	Debugging and Fixing Bugs	Final testing and bug fixes for both admin and client-side applications. Refine based on feedback and discuss future improvements with the team.

3.3. Description of Project

As a frontend developer in the "Next Shoes" project, my primary focus is on building a robust online platform for shoe sales. Key responsibilities include implementing crucial features such as role-based authentication, dynamic sliders for showcasing featured products, efficient categorization of shoes into different categories and subcategories, managing brands and products, developing a comprehensive order management system, automating invoice generation for completed orders, and setting up an order confirmation email system to ensure transparency and customer confidence.

The project employs a technology stack that consists of Node.js and Express.js for the backend, with MongoDB and Mongoose handling database management. Node.js is chosen for its improved code maintainability. For frontend development, React.js and Redux are utilized. API communication is facilitated by Axios, while Tailwind CSS is employed for responsive and efficient styling. Collaboration with the project team remains essential to seamlessly integrate frontend and backend components. Adherence to coding standards ensures high code quality and consistency throughout the project. Ultimately, the objective

of "Next Shoes" is to provide a stellar and hassle-free online shopping experience, setting a high standard in the realm of ecommerce for footwear.

3.3.1. Development Methodology

The Software Development Life Cycle model can be said as the sequence of stages that are performed in order to develop the application, the steps can be planning, analysis, designing, implementing and testing. The Software Development Life Cycle model that is going to be used while developing this application is the Iterative Development. The iterative model applies primarily to the software portion of a development. This model is represented as a cycle that may be completed several times during a development project. The key idea is that during each cycle a working prototype of the software is produced and made available for testing and user interaction (Ledin, 2001). The reason behind choosing Iterative development model is that, in this model the various versions of applications are developed with adding each new feature in the application on each update and since the project that I was working on was the office internal project and didn't have any clear requirement so many versions of the application were developed and according to the user feedback new features were added and the application was update.

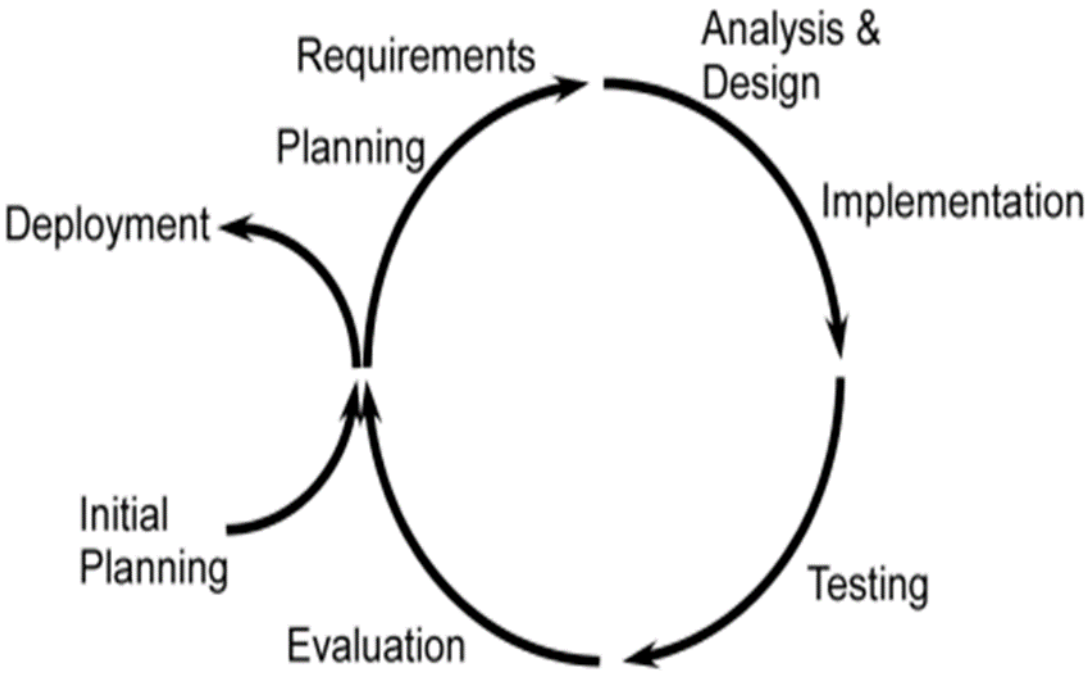

Figure 3: Iterative Software Development Cycle

Planning and Requirements Gathering

During this phase of software development, we gathered all the necessary information about the system. We carefully planned how to develop the system based on the requirements collected. We specifically planned the features needed for the Next Shoes project during this phase. We conducted feasibility studies and collected data by visiting various businesses and sampling. We finalized several functional requirements based on this information. Our planning and requirements were finalized taking into account feedback from both businesses and customers.

Analysis and Design

Once the planning and requirement is complete for the cycle, an analysis is performed to point out the appropriate logic, database models and to know any other requirements of this particular stage. Moreover, the design stage also occurs in this phase of iterative model, where the technical requirements of are established that will be utilized in order to meet the need of analysis stage. In this phase it was decided to use Node js and Express js, Mongo db for this project.

Iterations

First Iteration: In the initial iteration, our primary goal was to establish the foundational elements of the user interface (UI). This phase was all about building the framework for the UI, which involved configuring the project's structure, setting up critical dependencies, and creating fundamental UI components. It was during this stage that crucial elements like navigation menus, user login interfaces, and registration screens were meticulously crafted. These components formed the cornerstone of the user-facing aspect of the application, laying a robust foundation for what was to come.

Second Iteration: During the second iteration, our attention in the frontend development shifted towards elevating the essential features of the user interface. We were dedicated to crafting user-friendly interfaces that improved the overall experience of browsing, searching, and filtering products. Our goal was to seamlessly integrate critical functionalities like product listings, category selection, and brand filters, all of which were vital in ensuring a smooth and efficient user journey.

Third Iteration: In the third iteration, we worked on improving the user interface for order management. We created user-friendly screens for placing orders, tracking them, and

viewing order history. This iteration aimed to streamline order management and make it more user-friendly.

Final Iteration and Deployment: In the final stage, we combined all the parts of the user interface into a unified and polished design that looked good and worked well. We tested it a lot to make sure everything worked smoothly with the backend, like getting data and showing it correctly. We also made guides to help users understand how to use the application. After making sure everything was ready and fixing any problems, we launched the Next Shoes app together with the backend, so now users can use the complete and ready-to-go version of the application.

By applying an iterative approach to both backend and frontend development, Next Shoes achieved a harmonious integration of functionality and user interface, resulting in a robust and user-friendly e-commerce platform.

3.3.2. Tools and Software Used

The tools and software used on Next Shoes during my internship are:

- **Visual Studio (VS) code:** VS code is one of the most widely used IDEs. It has several functionalities that makes coding easier. It also has built in terminal which makes installing packages easier and also to run the application. (VisualStudio, 2010)
- **Designing Tools:** Graphics designing tools such as Adobe xd, Figma etc were used by graphics designers to create design/prototype for the application.
- **GIT/GITHUB:** As we had number of developers working on this project, collaboration was required. Hence, we used git and github and started working on different branches. We were assigned with different task by the company. After finishing the task we were asked to push the code to certain branch. Then Senior developer would test our code and he would only push the code to master branch if it was good from his perspective. (Github, 2008)
- **Redux:** Redux is a popular state management library for managing the application's global state. In an e-commerce platform, can use Redux to manage the shopping cart, user authentication, and other shared data.
- **Slack:** Slack is a workplace communication tool, "a single place for messaging, tools and files." This means Slack is an instant messaging system with lots of add-ins for other workplace tools. There are two methods of chat in Slack: channels (group chat), and direct message. Let's take a quick look at the user interface (Woodgate, 2019).

- **Jira:** Jira is a project management tool that helps teams organize their work and track tasks efficiently. It allows teams to create tasks, assign them to team members, set deadlines, and monitor progress. Jira provides features for agile project management, such as Scrum and Kanban boards, which visualize tasks and workflows.

3.3.3. Requirement Elicitation

Requirement elicitation refers to the search for details about the functions to be performed by the system and the limitations under which the system must operate. It is regarded as the process of obtaining data from stakeholders or, in other words, it can be defined as the elicitation process that takes place once the data analytics has interacted with stakeholders to understand their requirements. The goal of requirement elicitation is to thoroughly identify the business needs, risks, and assumptions associated with any given project.

3.3.3.1. Functional Requirements

Functional requirements outline the specific functions and capabilities the system must perform to fulfill its intended purpose. These requirements describe what actions the system should be able to execute and how it should behave under various conditions.

Functional requirements of our system are:

- **User Registration and Login**

Users should be able to create accounts, including providing personal information and login credentials.

- **Product Listing and Search**

The app displays a categorized list of shoes that users can search and browse.

- **Cart**

Users should be able to add and remove items from their carts.

- **Checkout and Payment Processing**

Users should proceed through a step-by-step checkout process. Multiple payment options, including digital wallets, and cash on delivery, should be supported.

- **User Profiles**

Users should have profiles where they can update their personal information and view their order history.

- **Order Management**

Administrators should be able to manage orders, process refunds, and handle returns.

- **Admin Dashboard:**

Administrators should have access to a dashboard to manage products, users, orders, and content. Content management capabilities, including adding/editing/removing products, should be available.

3.3.3.2. Non-Functional Requirements

Nonfunctional requirements are requirements that are not directly concerned with the specified function delivered by the system. They describe how, how well or to what standard a function should be provided. Non-functional requirements may also describe aspects of the system that don't relate to its execution, but rather to its evolution over time. Some non-functional requirements for this website are:

- **Usability**

The app should have an intuitive and user-friendly UI/UX to ensure ease of use.

- **Performance**

The app must load quickly and respond promptly to user interactions, even during peak usage.

- **Security**

User data, including personal information and payment details, must be encrypted and stored securely.

- **Scalability**

The app's architecture should allow for easy scaling to accommodate increased user traffic and data.

- **Compatibility**

The app should be compatible with various android devices and screen sizes, ensuring a consistent experience.

- **Reliability**

The app should function reliably without crashes, or disruptions during usage.

- **Maintenance**

The codebase and architecture should be well-documented and structured for ease of maintenance and updates.

3.4. System Modeling Elements

3.4.1. Gantt Chart

Figure 4: Gantt Chart Representing Internship Duration and Stages

3.4.2. Use Case Diagram

Use case diagram is a simplest graphical representation of a user interaction with the system that shows relationship between user and different use cases which the user is involved. In the diagram below, use case shows the different actions and relationship with each other. In the below diagram it shows that the User can login, registration, view products, view orders status/details, place order, add items in cart, logout. Also, the use case shows admin interactions below, it shows that the admin can login, add/modify/remove products, view orders status/details, add/modify categories, add banners and logout.

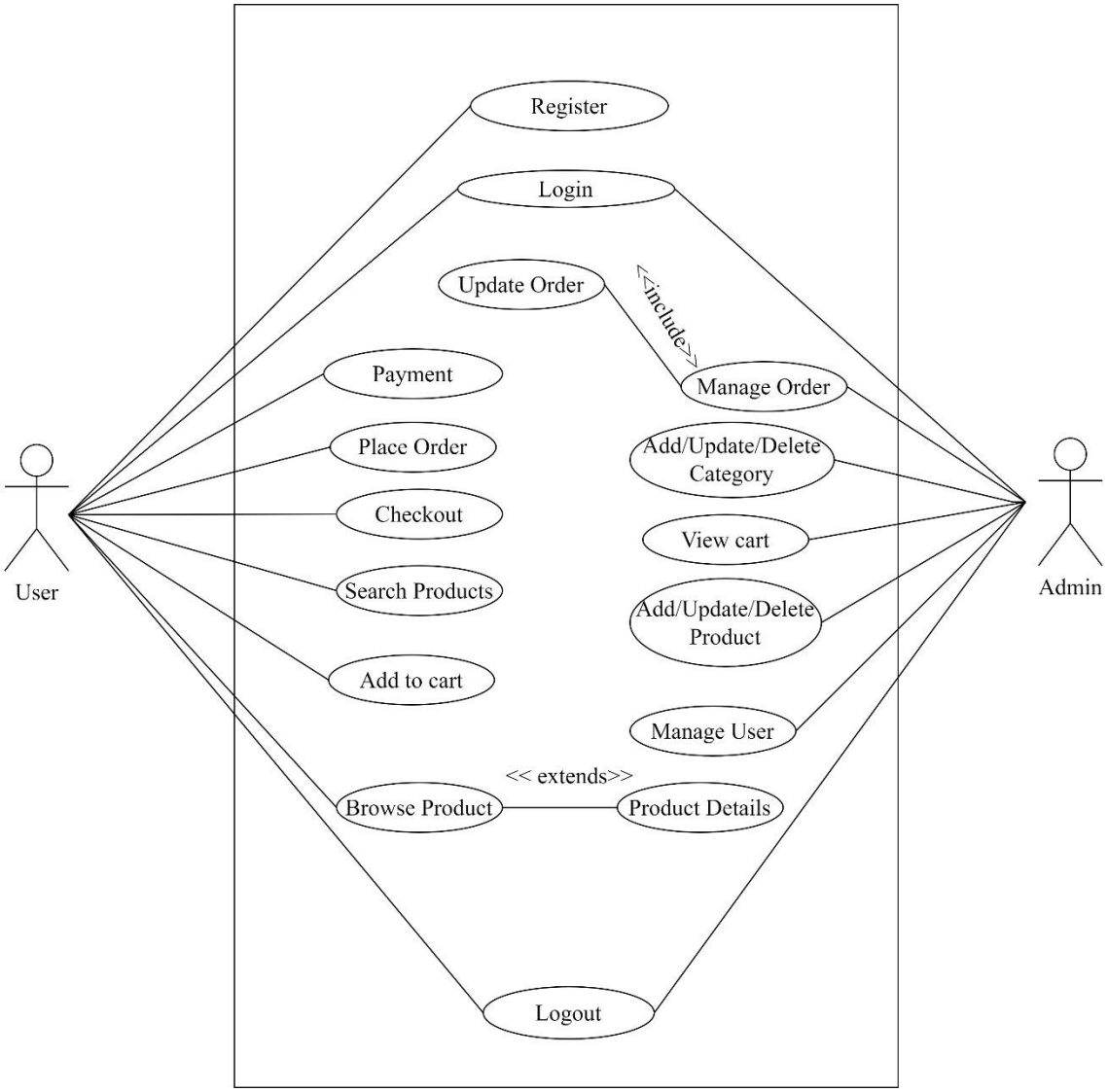

Table 4: Use Case Diagram of Next Shoes

3.5. Task and Activities Performed

During internship period at Black Tech different activities were performed in order to develop the frontend for the web Application and the performed activities are as follows:

- **Study about the project**

Since the project was in a planning phase, I was given a task to study about the project, its goal and objectives and asked to complete the project during my internship period.

- **Setting up Slack and Jira**

As soon as we joined the company, we were asked to setup Slack and Jira. Slack was used

for the communication purpose between the developers, designers and project manager. We were also asked to give daily update on the task we did in Slack. And Jira was used to give us task by Manager. After completing the task, we had to check the task on Jira.

- **Setting up the development environment**

In order to start developing the android application various software and tools were Configured and installed. Some of the tools are:

- Installation of Visual Studio Code
- Setting up the Environment variable
- Verify Node.js and npm Installation
- Installing git and creating git hub account if we didn't have one
- Collaborating in the project with the help of git hub
- Generating a React.js App

- **Research about the frameworks, tools and libraries**

Before getting into projects, we were asked if we knew about some of the important tools, terms, libraries that were highly used in the project including Visual Studio Code, Git, React.js, Node.js, HTML, and CSS. Our mentor provided essential learning resources, such as documents, articles, blogs, video tutorials, and YouTube channels, facilitating our understanding of these tools. Furthermore, we invested time in exploring libraries and packages, utilizing online sources like YouTube tutorials and online courses. This research equipped us to make informed choices regarding the adoption of libraries and packages.

- **Designing and Implementing**

In the design and implementation phase of a web project, several important tasks are carried out. We start by understanding what the project needs and how it should look. Then, we create the actual web pages using technologies like HTML, CSS, and JavaScript tool React.js. We make sure the website works well on all devices, from big screens to small phones. We also connect the website to the server so it can get and send data. This is important for things like showing product details or processing orders. Security is a big concern, so we add features to keep information safe and make sure everything works as expected.

- **Testing**

In the testing phase, we ensure our web app's quality and reliability. We create unit tests for React components using tools like Jest and React Testing Library to catch issues early.

Integration tests confirm everything works together, including testing the homepage, cross-browser compatibility, responsiveness and Navigation testing.

- **Documentation**

In documentation, we prioritize two essential tasks: First, we diligently document our codebase, especially for intricate components and complex logic, ensuring clarity and understanding. Second, we create user-friendly README files and usage guides. These guides act as introductory roadmaps for team members and stakeholders, simplifying project setup and usage. Together, these documentation efforts enhance collaboration, facilitate problem-solving, and empower everyone involved to navigate and contribute effectively to the project.

3.6. Testing

After the project is completed, I tested its various components in terms of quality, performance to make it error free and remove any sort of technical jargons. The testing phase can be carried out manually or by using automated testing tools to ensure each component worksfine.

3.6.1. Home Page Load Testing

Home page load test ensures that the home page load quickly, enhancing user engagement and satisfaction.

Testing objective: To verify that the home page of website loads within an acceptable timeframe, ensuring a smooth and engaging user experience.

Table 5 : Home Page Load Test

Test Case ID	Description	Expected Outcome	Status	Notes
TC-1	Home Page Load Test	Homepage loads with in 3 seconds.	Passed	

3.6.2. Navigation Testing

Testing Objective: To verify that all the links and buttons on the website are functional and correctly direct users to the intended pages, ensuring seamless navigation.

Table 6: Navigation Test

Test Case ID	Description	Expected Outcome	Status	Notes
TC-2	Navigation Test	All navigation links lead to correct pages.	Passed	

3.6.3. Responsive Design Testing

Responsive design test ensure that the website is suitable for every devices like mobile, laptop, computer, tablet etc. It ensure that website is responsive over various browsers and operating system.

Testing Objective: To ensure that website/Application maintains optimal functionality and visual coherence across various screen sizes and devices through responsive design.

Table 7 : Responsive Design Test

Test Case ID	Description	Expected Outcome	Status	Notes
TC-3	Responsive Design Test	Website layout adjusts for mobile and tablet.	Passed	

3.6.4. Cross-browser Compatibility Test

Cross-browser compatibility testing is a crucial step in web development to ensure that a website or web application works consistently and correctly across different web browsers and their various versions. The developed system was tested on different available browser. we checked on different browser like Google Chrome, Internet Explorer, Safari, Opera, etc.

Testing Objective: To ensure consistent functionality and visual presentation of website across different web browser and platforms.

Table 8 : Cross-browser Test

Test Case ID	Description	Expected Outcome	Status	Notes

TC-4	Cross-browser Compatibility Test	Consistent rendering over major browsers.	Passed	Tested on Chrome, Firefox, Safari, Edge

3.6.5. Link Testing

Link Testing is done to check whether the links in website missing or not.

Testing Objective: To identify weather there any missing or broken links.

Table 9 : Link Test

Test Case ID	Description	Expected Outcome	Status	Notes
TC-5	Link Test	No broken link or missing images.	Passed	

CHAPTER 4 : CONCLUSION AND LEARNING OUTCOMES

4.1. Conclusion

The BlackTech internship offered a valuable chance for the author to gain practical experience in a real-world environment, focusing on teamwork and aligning projects with their interests. It enhanced their knowledge and skills while reinforcing lessons in communication, teamwork, and implementing ideas effectively.

The main objective of the internship is learning the things that is necessary to get yourself into the real field of work. This internship has enhanced author knowledge and skills. It has given author the opportunity to understand this industry and how the work is actually done. "Next Shoes" the web-based application, simplifies product selection, with a focus on shoes, offering detailed specs and a user-friendly shopping experience. This project underwent rigorous testing and successful implementation to ensure a seamless user experience, contributing to the author's professional growth and future opportunities.

4.1.1. Accomplishment

Taking part in an internship at a respected organization like Black Tech was an eye-opening experience, providing insights into the industry and software development process. This opportunity underscored the importance of discipline, dedication, and ethical practices in a professional setting. Key lessons learned include:

- Mastering effective time management to handle multiple tasks under pressure and meet project deadlines.
- Applying theoretical knowledge practically, bridging the gap between learning and real-world application.
- Developing teamwork skills through coordination and cooperation to make informed decisions. Throughout the internship, valuable interpersonal and professional skills were sharpened, preparing me for future endeavors in the field.

4.1.2. Frontend Development Phases

During the internship, a clear understanding emerged regarding the various stages of Frontend Development, as well as how tasks are allocated among team members within a project. The use of GIT for code sharing, management, merging, and version control

became familiar. Additionally, insights were gained into the utilization of widgets for designing the application's user interface.

4.2. Lessons Learnt

During the internship at Black Tech , several valuable lessons were acquired:

- The significance of effective time management and the ability to handle multiple tasks under pressure to meet deadlines.
- Swiftly addressing urgent bugs and implementing fixes.
- Gaining an understanding of the distinctions between theoretical and practical knowledge.
- Collaborating within a team with coordination and cooperation to make informed decisions.
- Recognizing the potential career path of working as a Frontend Developer.

4.3. Learning Outcomes

The internship program has been a valuable opportunity for a soon-to-be graduate student. It offered firsthand exposure to the working environment of IT professionals in organizations and enabled the acquisition of essential skills for future roles in the IT field. This experience effectively connected academic coursework with practical applications in real-world IT settings.

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APPENDIX

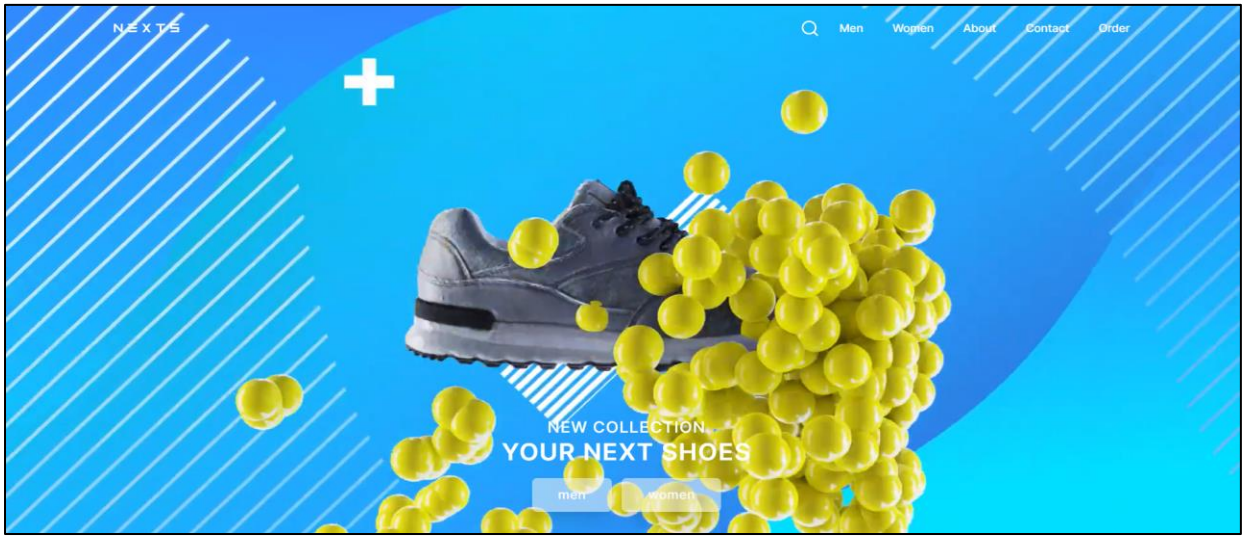

Figure 5 : Homepage -1

Figure 6: Homepage -2

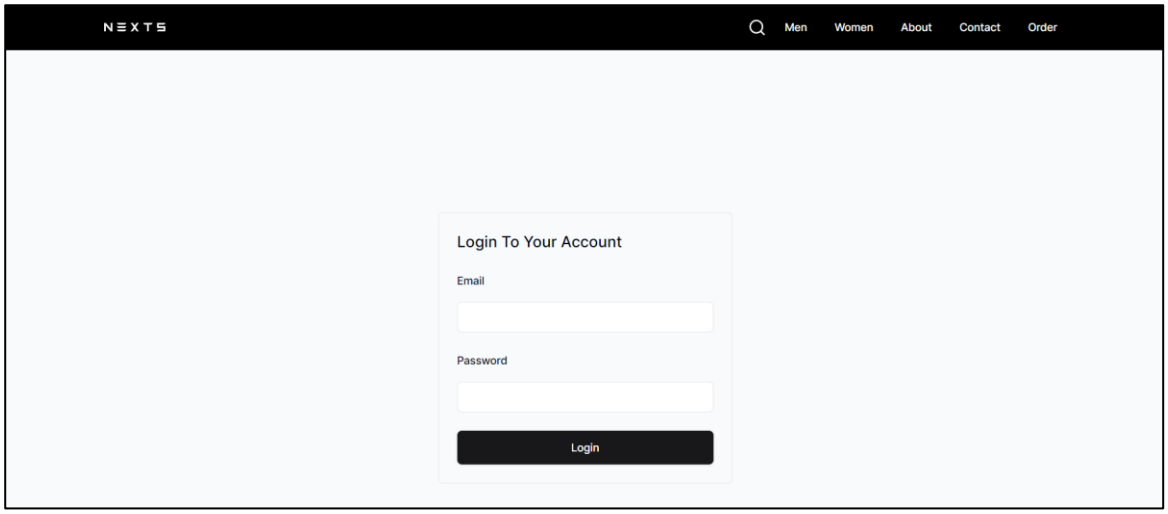

Figure 7: User LogIn

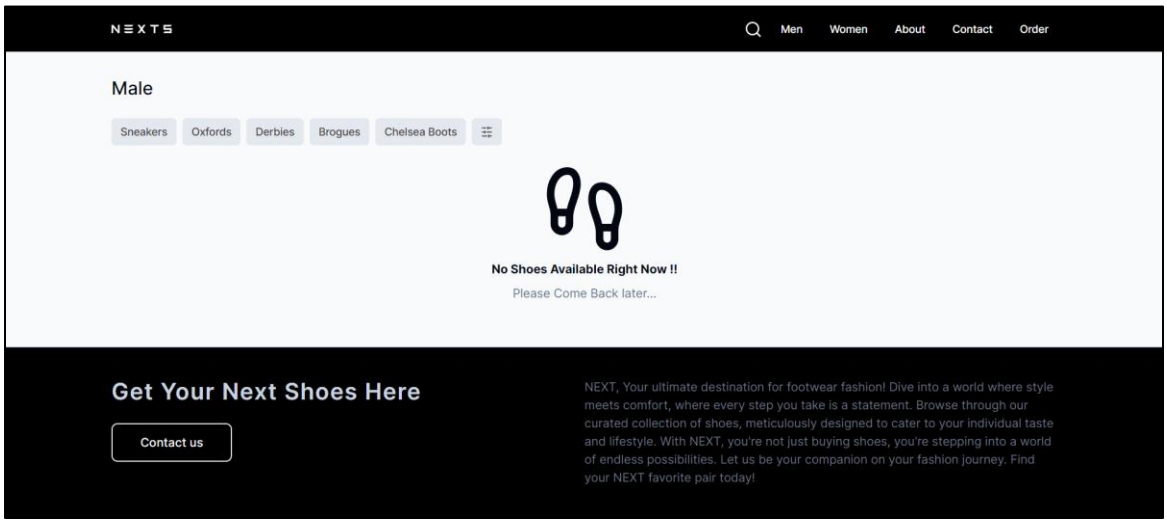

Figure 8: Product Display Section

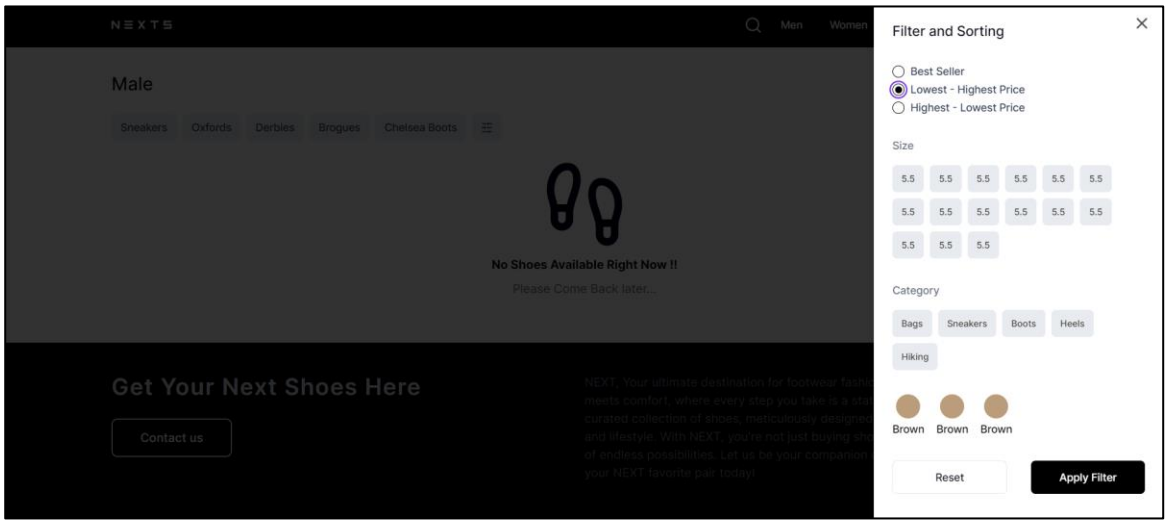

Figure : Product Detail

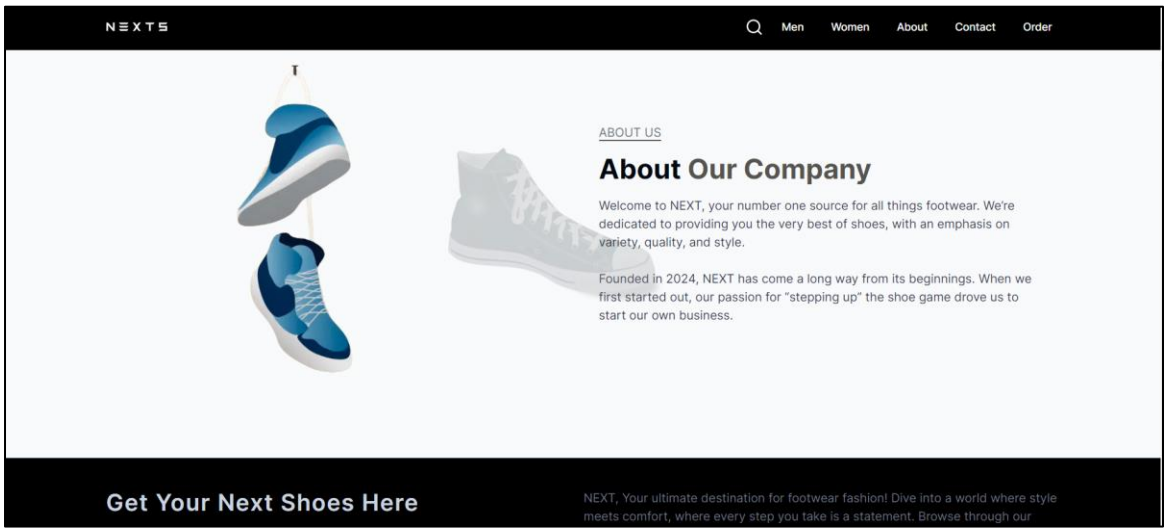

Figure 9: About Us Section

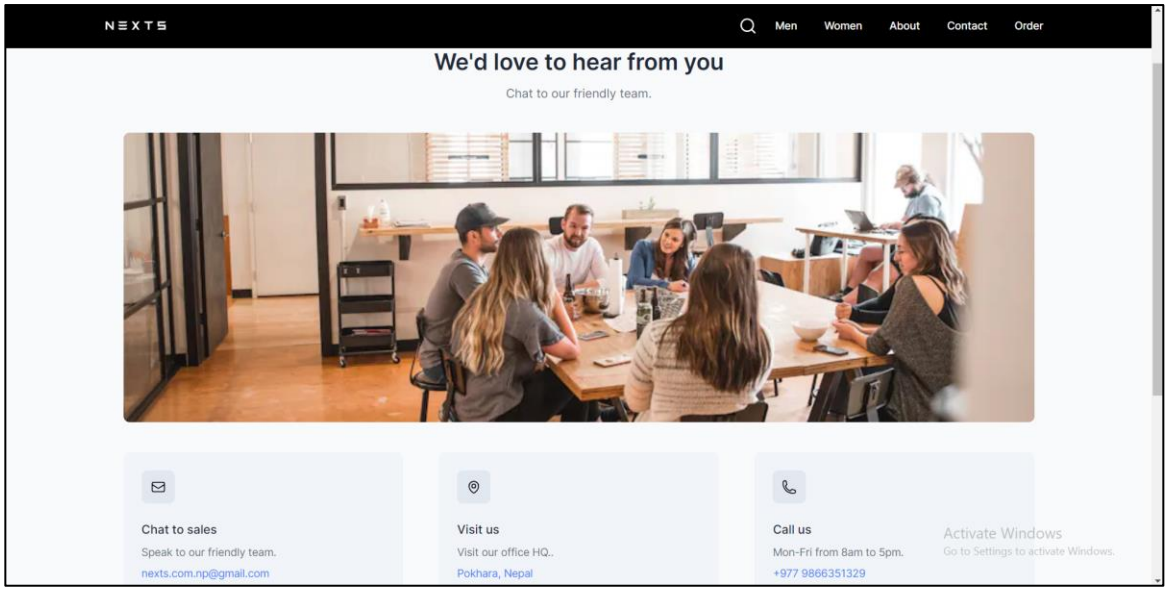

Figure 10:Contact Us Section

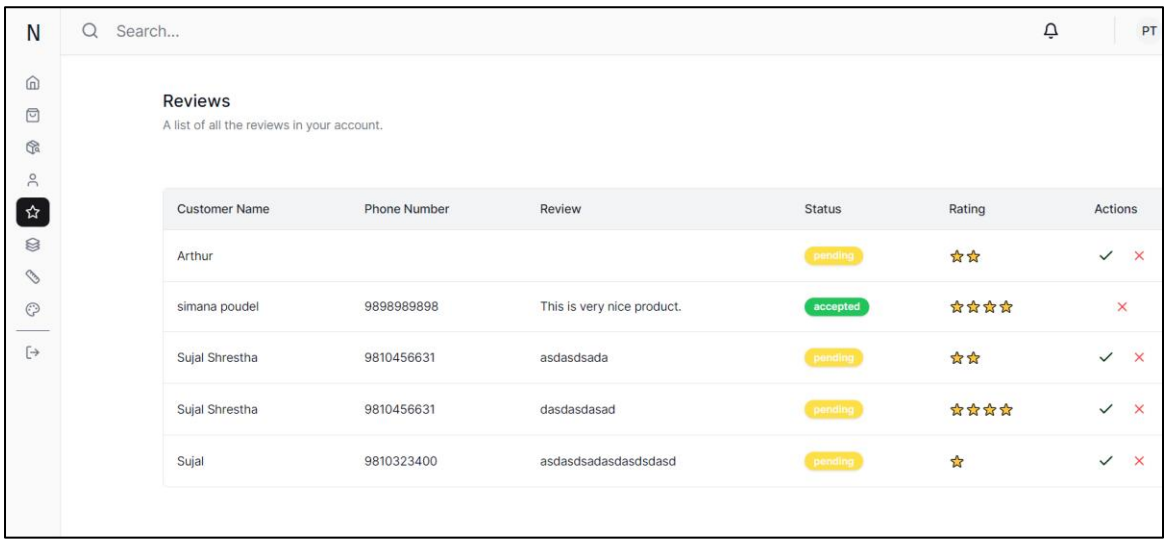

Figure 11:Admin Pannel 1

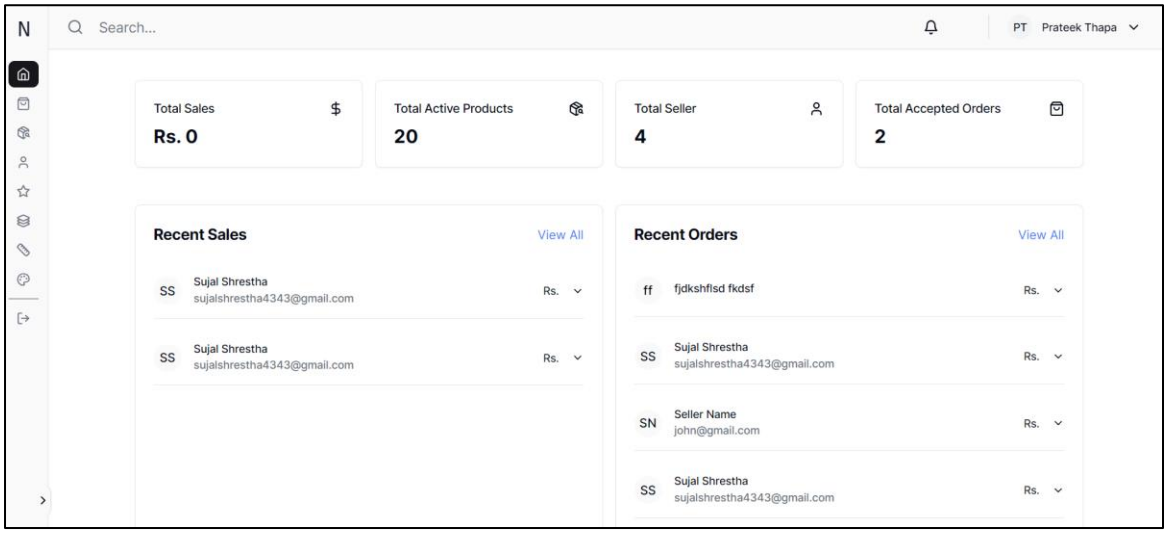

Figure 12: Admin Dashboard

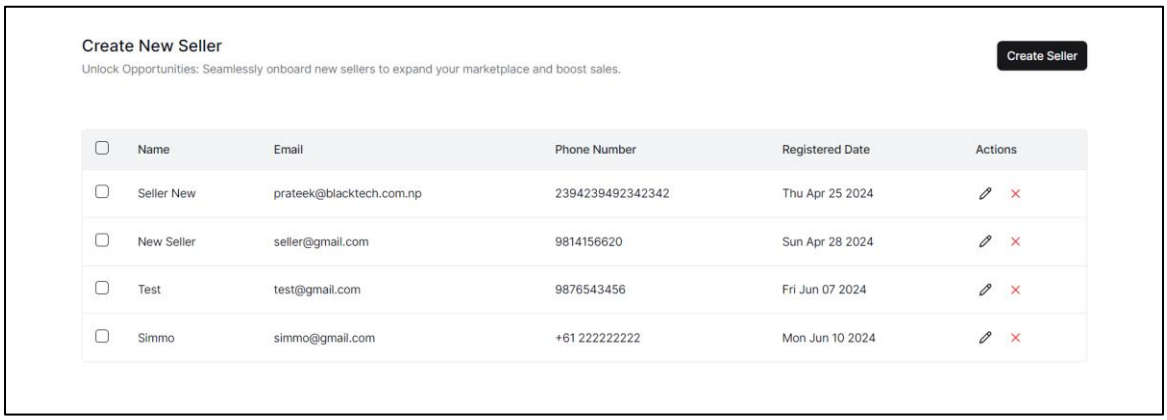

Figure 13: User Details

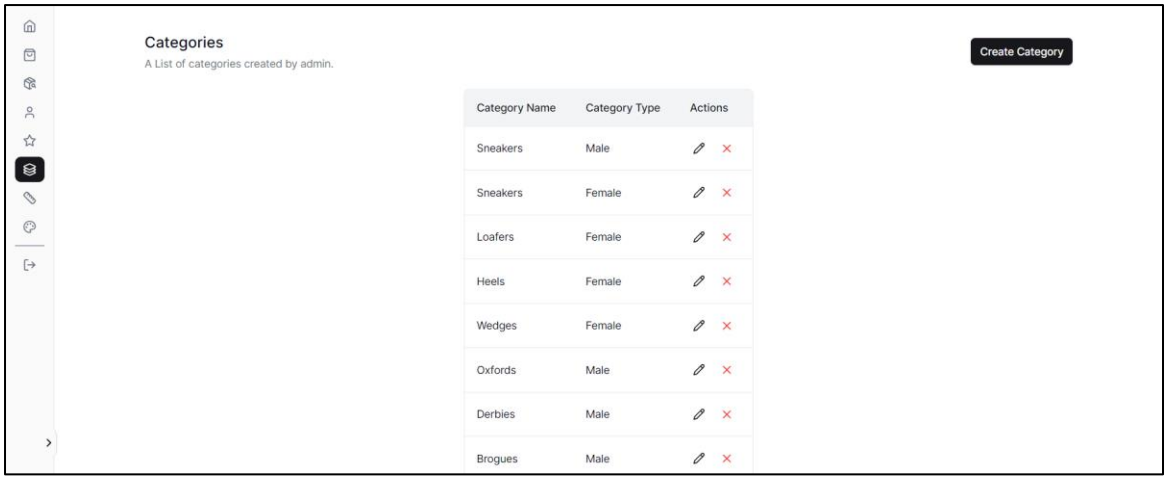

Figure 14: Category Management

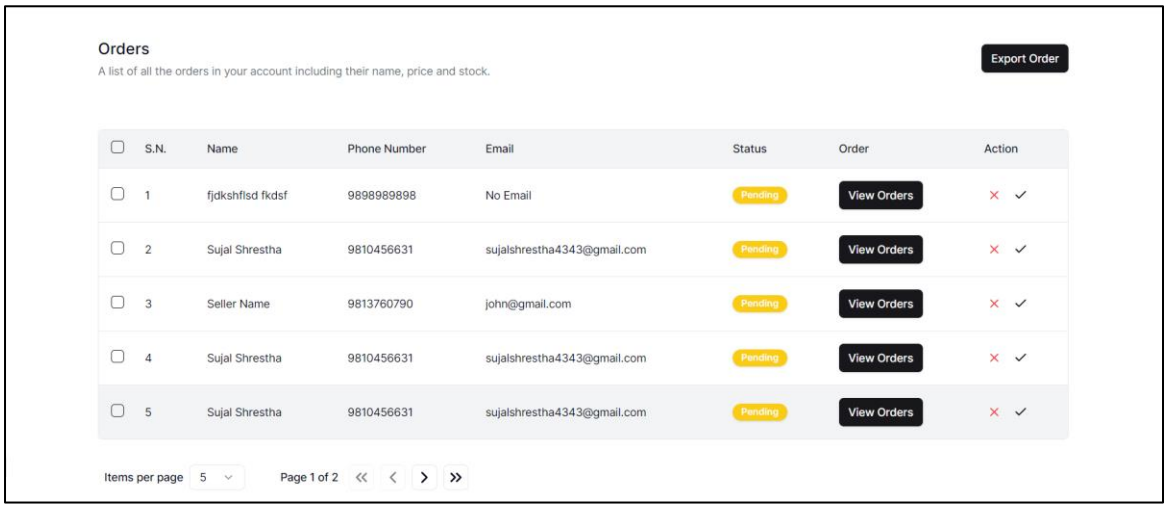

Figure 15: Order Management