A

MINI-PROJECT REPORT

ON

"E-COMMERCE WEBSITE FOR AN ELECTRONICS SHOP"

Computer Science and Engineering

Punyashlok Ahilyadevi Holkar Solapur University

By

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Under Guidance Of
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING WALCHAND INSTITUE OF TECHNOLOGY

SOLAPUR – 413006

(2022-2023)

CERTIFICATE

This is to certify that the Mini-Project entitled

"E-COMMERCE WEBSITE FOR AN ELECTRONICS SHOP"

Is Submitted By

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Abstract

Every day, the influx of new technology continues to connect billions of people to the Internet. The convenience of online shopping has made it effortless for individuals to purchase goods, groceries, and clothing with just a few clicks on their smartphones. However, despite this progress, there remains an untapped potential for electronic shops to fully leverage the benefits of the internet. As electronic shops play a vital role in providing us with the latest gadgets and devices, it is crucial to empower them with a platform dedicated to maximizing their profitability.[4] This is a project sponsored by 'Paras Electronics and Furniture.' This idea aims to support our sponsor by offering them a comprehensive platform that provides valuable insights into products and customer preferences. With smartphones becoming ubiquitous, they can effortlessly access our user-friendly platform, enabling them to operate efficiently and access a wide range of features from anywhere.[1]

Introduction

The main objective of this project is to build a platform for our sponsor Shri Paras Electronics and Furniture to sell their products and track their sales. This platform offers a flexible and effective customer-retailer relationship management. Electronics shop owner will have access to a unique interface where they can learn and stay updated with market information. The website will serve as a secure and efficient way to facilitate electronics marketing.

E-commerce provides an opportunity to streamline the electronic product value chain and reduce inefficiencies in distribution. It offers electronics shop a new avenue to sell their products to various buyers, including businesses, retailers, and consumers.[3] In the context of the electronic industry in India, this project aims to support our sponsor who face challenges in meeting their needs. By utilizing software technologies, we aim to assist them with our practical project, integrating the latest tech advancements to enhance their efforts. The platform will provide them with knowledge of electronic products, presented through a simple and user-friendly interface that can be accessed from any device.[1]

The website acts as a front-end for conducting online transactions related to buying and selling. It interacts with other project components to produce desired results based on customer interactions. Specifically, it serves as a B2B and B2C trading platform, enabling our sponsor and customers to engage in business transactions seamlessly. The platform will offer features such as product checking, registration, shopping cart functionality, and a secure payment gateway system.[2]

B2B Trading Platform: The B2B trading platform enables traders to conduct business transactions, eliminating complexities and offering a wide range of possibilities. It facilitates trade without geographical boundaries and provides features such as product

checking, registration, shopping cart functionality, and a secure payment gateway system.[4]

B2C Customer Platform: The B2C customer platform allows customers to purchase electronic products. It provides features such as product checking, registration, shopping cart functionality, and relevant information. Customers will have access to a safe and secure payment gateway system to complete their purchases.[4]

Product Information: The platform includes a product information function that provides detailed information about electronic products. This function can be expanded to include other product categories as well. It may include product views such as photographs and additional features such as product search functionality.[5]

Electronic shopping cart: Electronic shopping cart provides an interface for users to place items in a "shopping basket" so that the products included can be remembered for a predetermined time. Shopping cart will include features such as quantity.[5]

Reason for choosing the project

→ To gain experience working with clients

→ To help us understand real time projects

→ Increasing need to provide services remotely.

Problem Statement and Objectives

Problem Statement:

→ To develop an innovative and secure website to improve global connectivity and expand the customer base.

→ To overcome limited accessibility, inefficient customer tracking, and insecure transactions by leveraging advanced networking technologies, implementing customer tracking tools, and integrating robust security measures.

Objective:

→ To develop a website for increasing connectivity worldwide.

→ To provide a platform for tracking and increasing customers' base.

→ To provide a secure place in the online market which is in significant demand due to pandemic.

Background

E-commerce in the electronics industry has experienced rapid growth, transforming the way products are bought and sold. Our mini project focuses on developing an e-commerce website for our sponsor 'Shri Paras Electronics and Furniture' using the MERN Stack (MongoDB, Express.js, React.js, Node.js) along with Tailwind CSS for enhanced styling.

Technological advancements have significantly impacted various aspects of society, including communication, entertainment, and business practices. The project utilizes the MERN Stack, which includes MongoDB as the database, Express.js and Node.js for the server-side framework, and React.js for the front-end development.

The e-commerce website provides a user-friendly interface for customers to explore and purchase electronic products. It leverages the power of React.js to create dynamic and interactive web pages. The data is stored and managed using MongoDB, which offers a flexible and scalable database solution for e-commerce applications.[2]

The website incorporates features such as product details, including images and specifications, to provide customers with comprehensive information. Additionally, it offers a subscription option for customers to receive notifications about new products and a Q&A section for users to ask questions and seek assistance.[6]

During the testing phase, the website's functionality, performance, and security aspects are thoroughly evaluated. Rigorous testing ensures that customer information remains secure and that the website is resilient against potential hacking risks.[6]

By utilizing the MERN Stack and Tailwind CSS, this mini project aims to deliver a robust and efficient e-commerce website for our sponsor. The use of React.js provides a seamless user experience, while MongoDB ensures reliable data management. Together, these technologies create a scalable and secure platform to meet the evolving demands of the digital market.

Technologies Used

To implement the project, we have utilized various open-source tools and technologies, specifically the MERN (MongoDB, Express.js, React.js, Node.js) stack along with Tailwind CSS. The following describes each component in detail:

- MongoDB: MongoDB is a widely-used NoSQL database that offers flexibility and scalability for storing and retrieving data in the application.
- Express.js: Express.js is a flexible web application framework for Node.js, providing a robust set of features for routing, middleware, and handling HTTP requests.
- React.js: React.js is a popular JavaScript library for building user interfaces. It follows a component-based approach, enabling the creation of reusable UI components and facilitating efficient rendering and updating of the user interface.
- Node.js: Node.js is a server-side JavaScript runtime environment that allows the execution of server logic and handling of requests. It provides a non-blocking I/O model, making it highly efficient for building scalable web applications.

In addition to the MERN stack, we have incorporated Tailwind CSS as the preferred CSS framework for styling the web application. Tailwind CSS is a utility-first CSS framework that offers a wide range of pre-defined classes, making it easy to create responsive and visually appealing designs. It allows for rapid development by providing a streamlined approach to styling and layout.

By utilizing the MERN stack and Tailwind CSS, we have built a modern and efficient web development environment. This technology stack leverages JavaScript throughout the entire application, from the server-side logic with Node.js to the front-end user interface with React.js. Tailwind CSS ensures a smooth and convenient styling process, allowing for the creation of visually stunning and responsive designs.

Description and Working of Project

There are 4 modules,

1. Web Designing:
    - The web designing includes all the pages where we are going to give detailed information of website.
    - For designing Tailwind CSS is used.

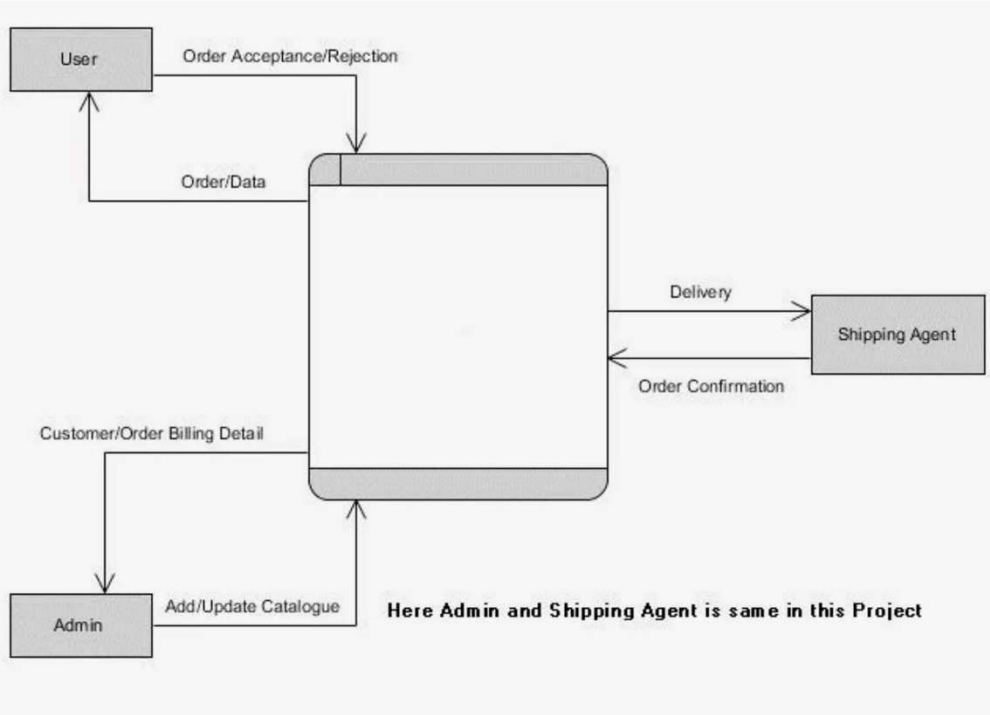
2. Web Development and Extra features:
    - We are going to provide a subscription option where the customers can press the subscription button to get notifications.[7]
    - Also, there is QNA section, where the customers can ask their queries. Also, they can directly contact on provided contact details.[7]

3. Domain, Email, Registration and buying:
    - We have provided five different brands of electronic products where customers can benefit from selecting various options. Each product comes with its unique advantages and discounts. When customers click on the "Buy" option, a new tab opens, displaying different brands, their discounts, and respective prices. Additionally, there is a dedicated page with detailed information and photographs for each brand of electronic product.[7]

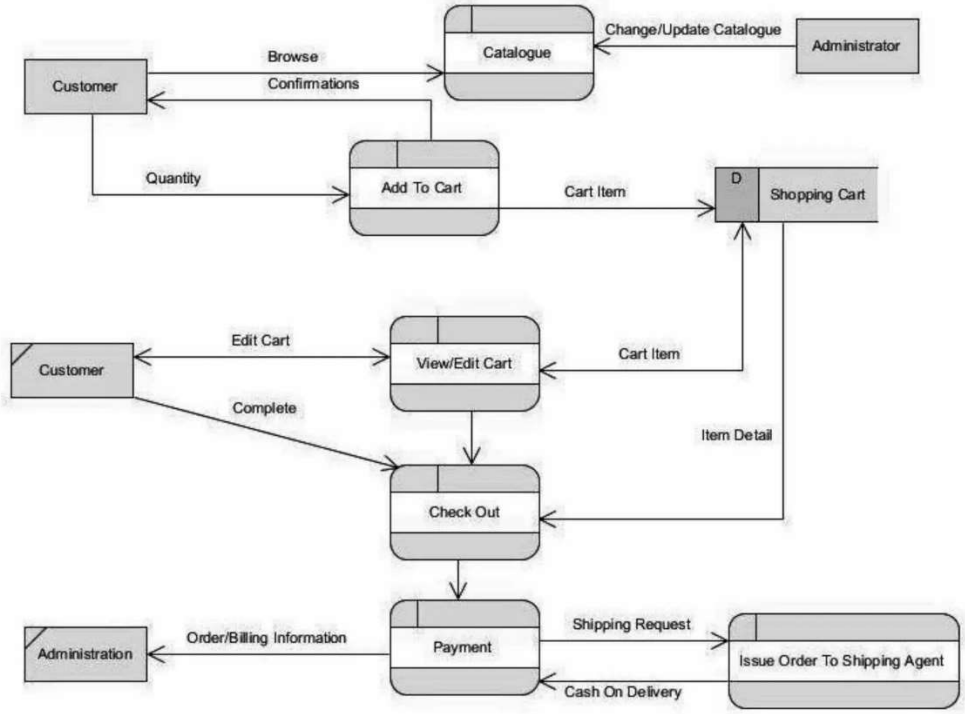
4. Testing and Deploying:
    - We will test the customer's information valid or not.

Data Flow Diagrams

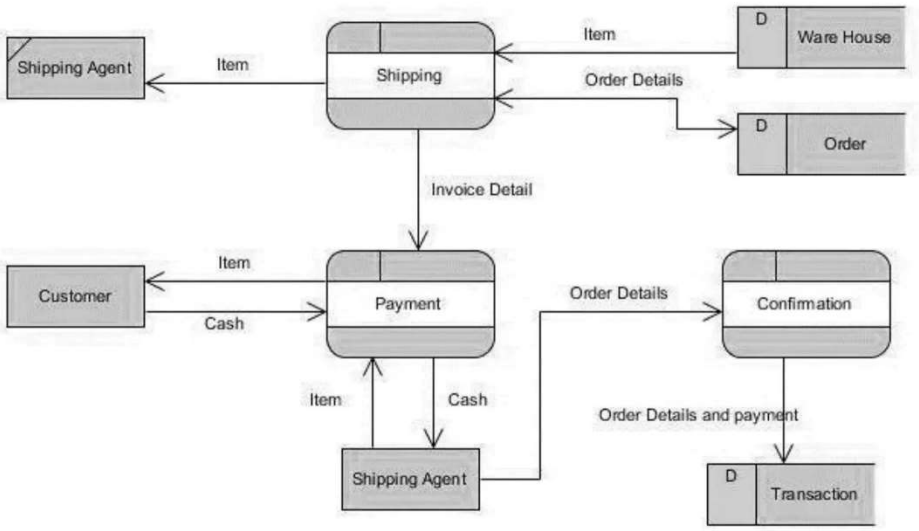
DFD Context Level



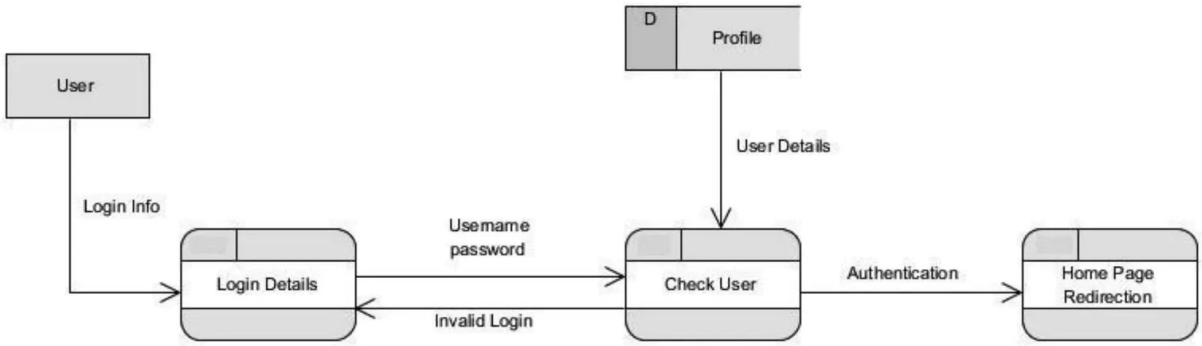
DFD Level 1:



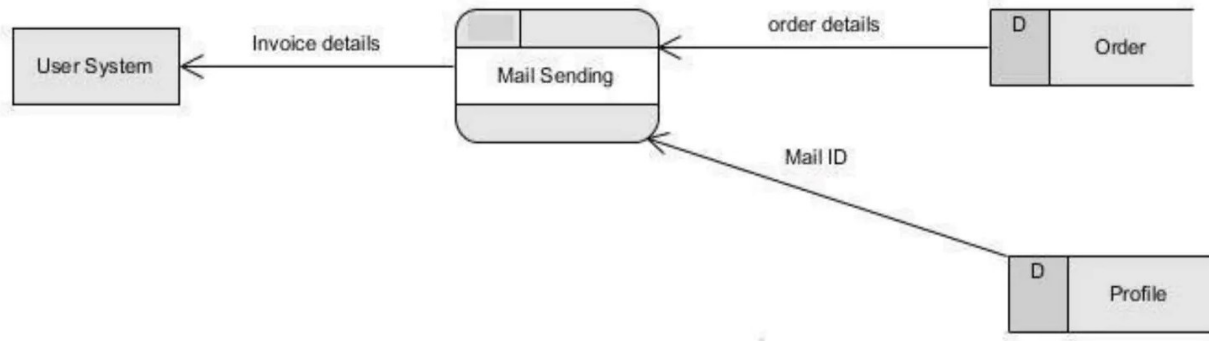
DFD Physical Transaction:



DFD Login:

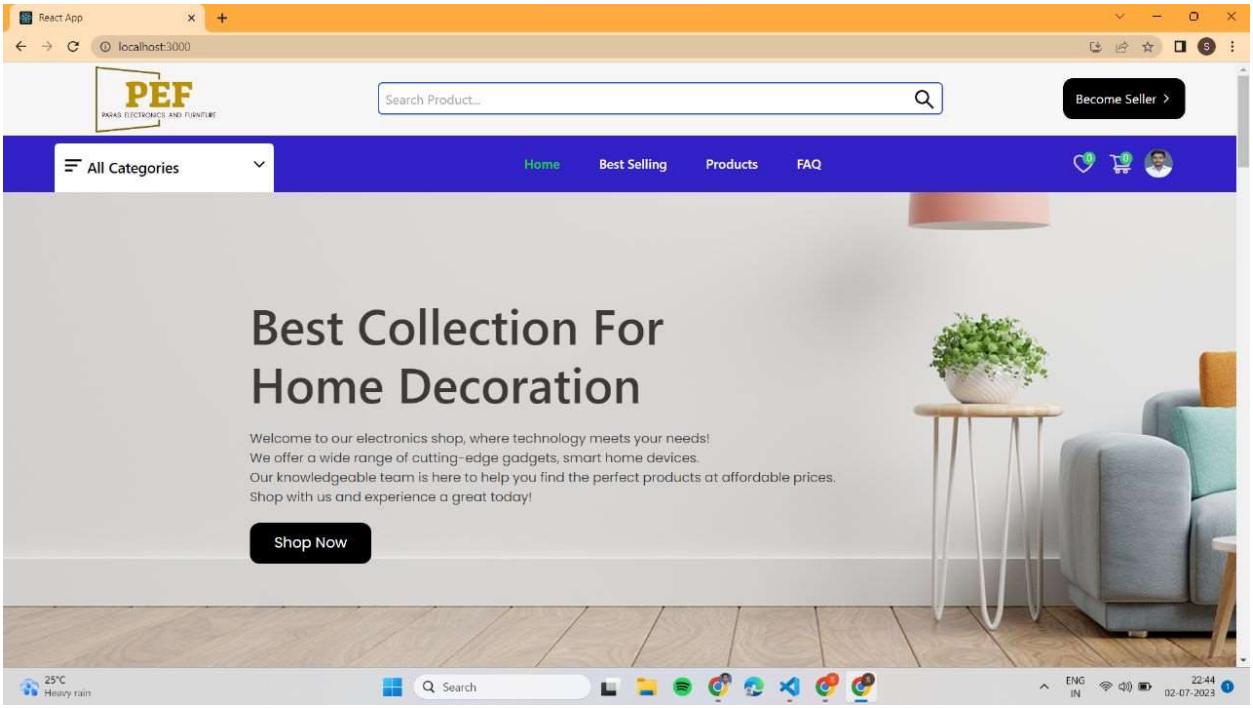


DFD Intimation:

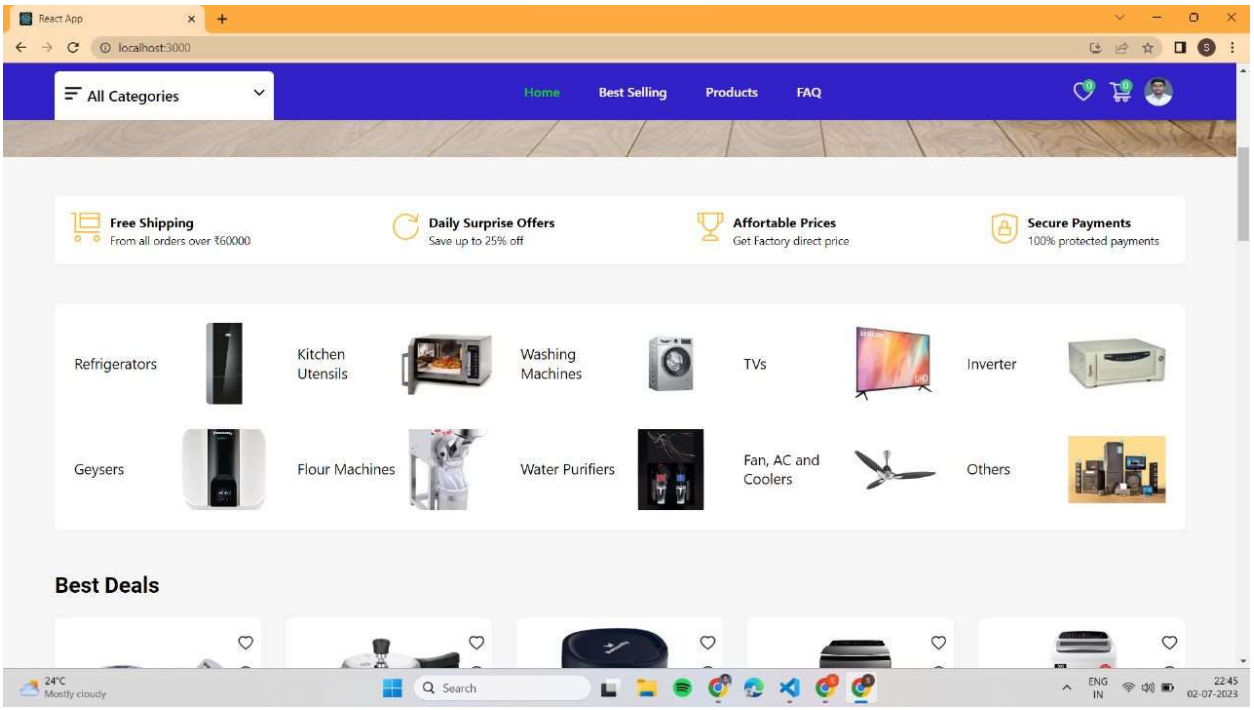


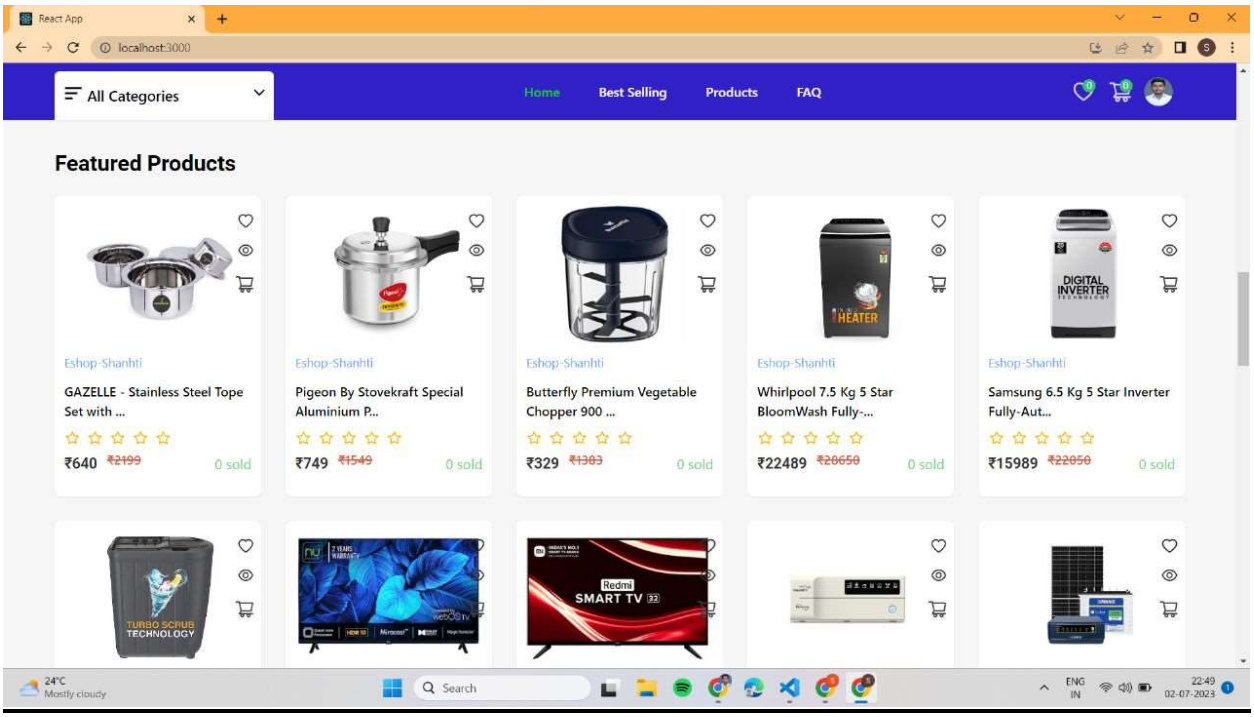
Screenshots & Results

Screenshot displaying Home Page:

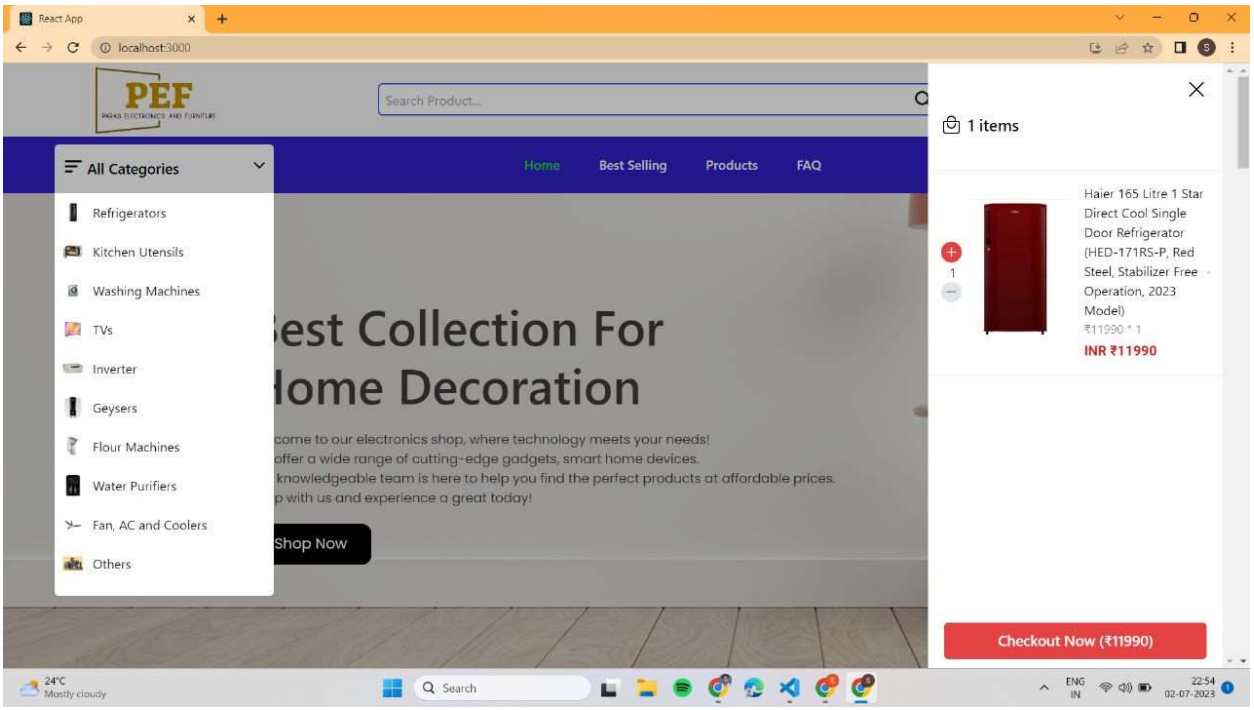


Screenshot displaying Home Page when scrolled down:

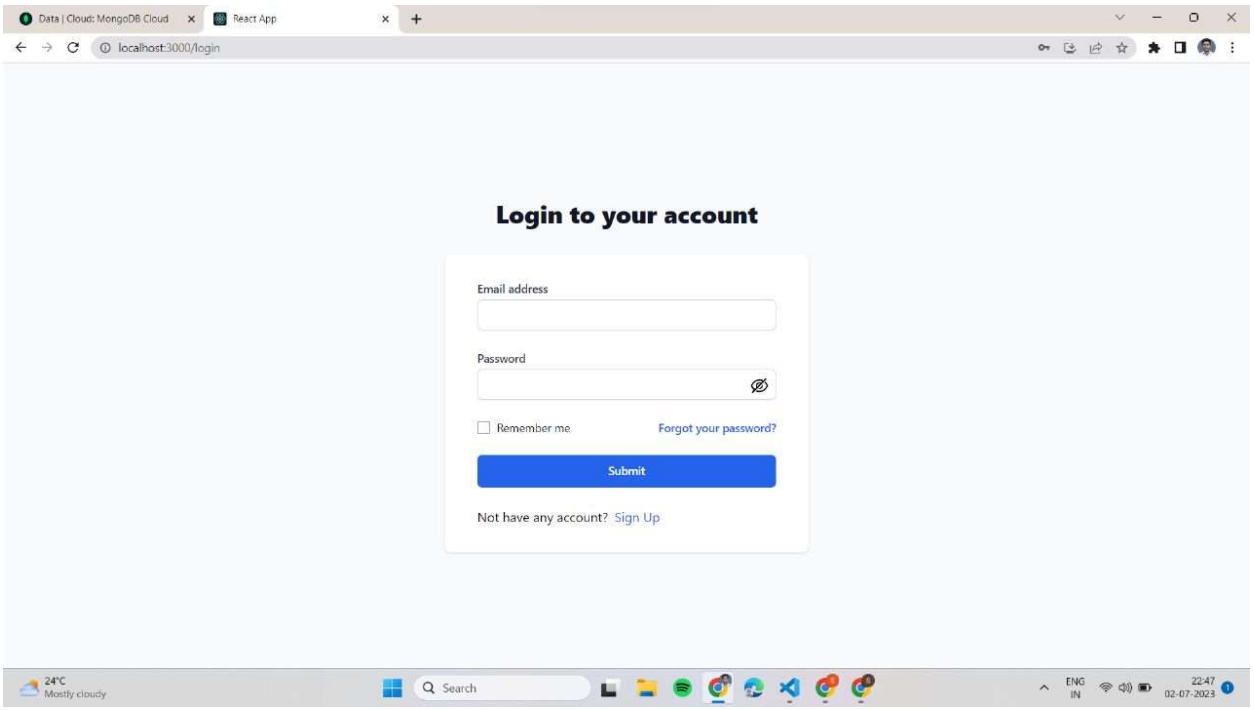


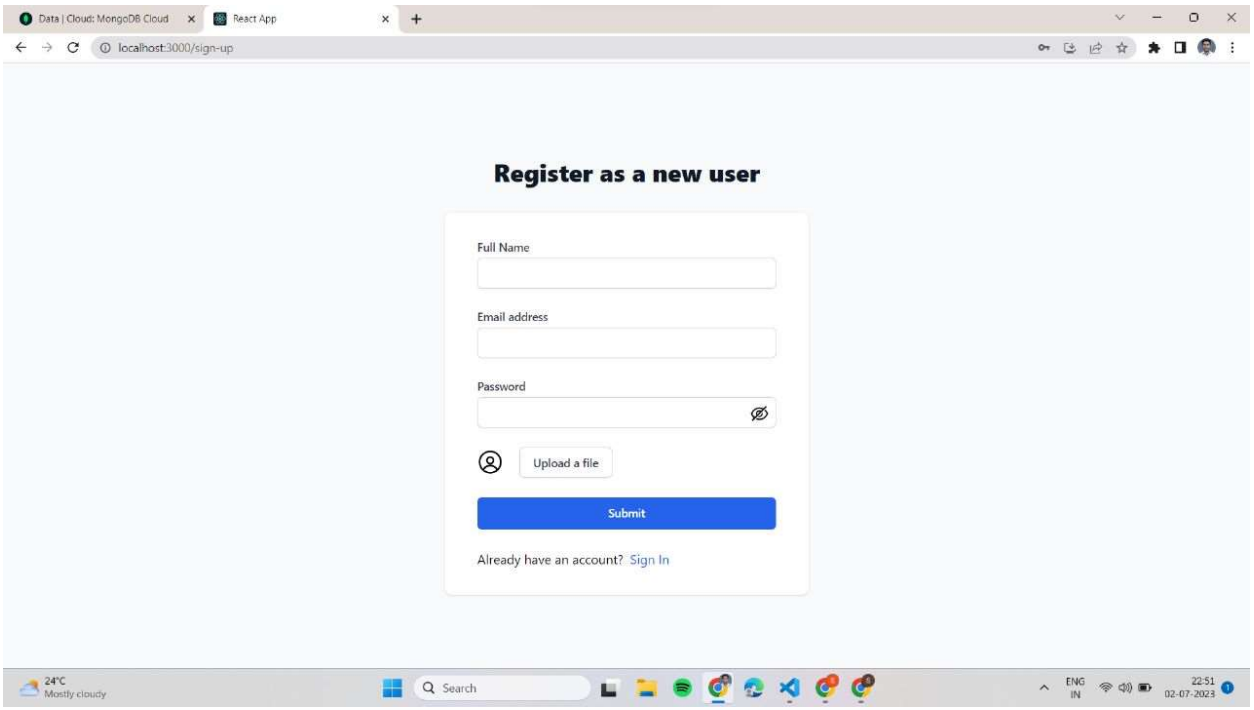


Screenshot displaying our website Card Page:

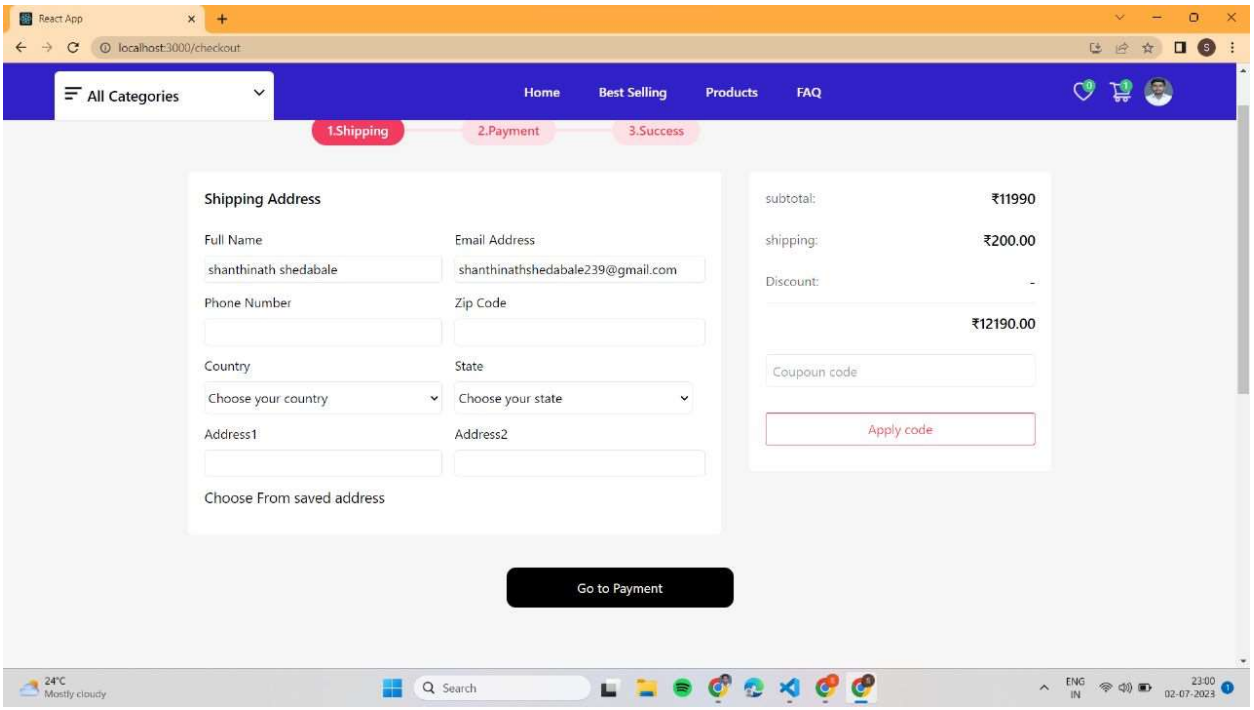


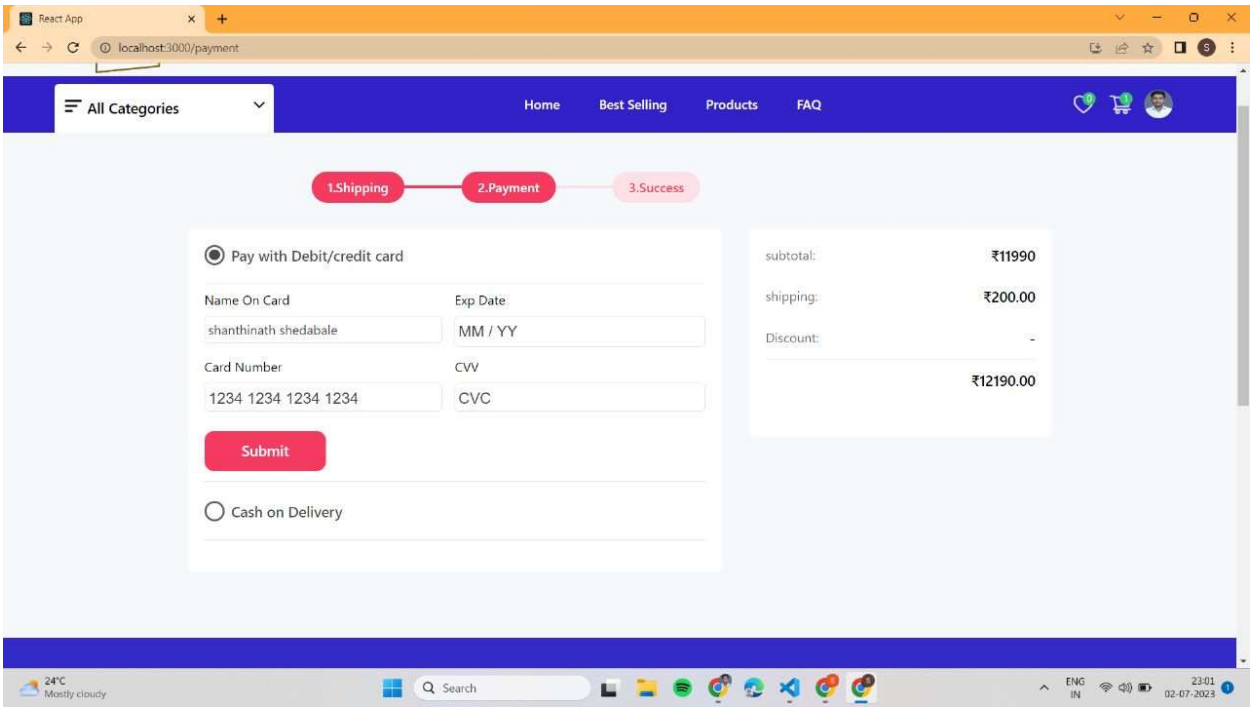
Screenshot displaying Login/Register Page:



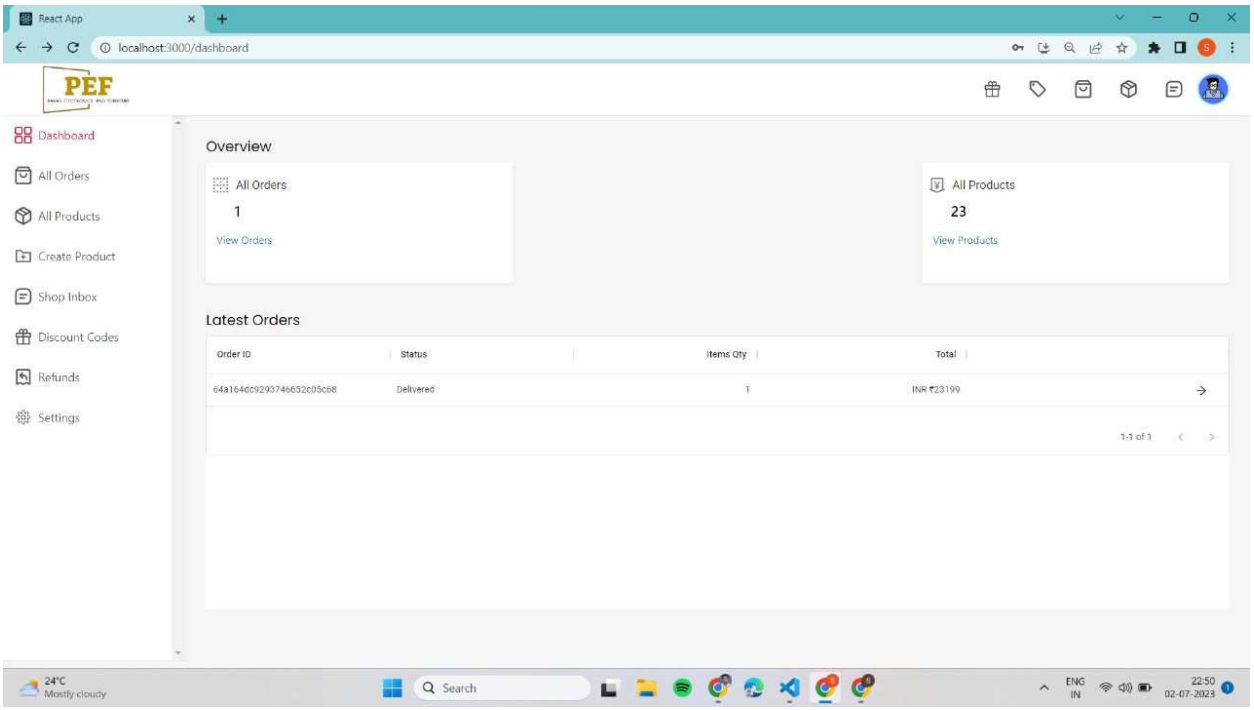


Screenshot displaying Payment Gateway and Checkout Page:





Screenshot displaying Admin Dashboard page:



Advantages and Disadvantages

Advantages:

1. Customers can enquire about a product or service and place orders anytime, anywhere from any location.
2. Provides users with more options and quicker delivery of products.
3. Provides users with more options to compare and select the cheaper and better options.
4. A customer can put review comments about a product and can see what others are buying, or see the review comments of other customers before making a final purchase.
5. It provides readily available information.

Disadvantages:

1. Late Delivery: Sometimes due to weather conditions, there may be a chance of late Delivery.
2. Product and Price Comparison: With online shopping, customers can compare several products and find the least price. This forces many businesses to compete on price and reduce their profit margin, reducing the quality of products.
3. Need for Access to the Internet: As many e- commerce platforms have the features and functionalities which require a high-speed Internet connection for an optimal consumer experience, there is a chance that companies are excluding visitors who have slow internet connections.

Future scope

- In the future, there is immense potential for the integration of Artificial Intelligence/Machine Learning (AI/ML) algorithms in the electronic shop e-commerce industry. These advanced algorithms can provide real-time insights to enhance product recommendations, optimize inventory management, and personalize the shopping experience for customers.[8]
- By implementing these technological solutions, electronic shops can efficiently manage and monitor their operations. Real-time digital analysis enables effective decision-making, reducing excess inventory, optimizing pricing strategies, and streamlining logistics.[7]
- Additionally, voice search functionality can be incorporated into the website, supporting multiple languages such as English and Hindi. This feature will enable customers to search for products using voice commands in their preferred language, enhancing accessibility and user experience.[7]
- Integration of a QR scanner feature can enable users to scan QR codes on electronic products. This functionality can provide users with additional product details, specifications, user reviews, and related information, enhancing their understanding and confidence in making a purchase decision.[5]

Overall Project Cost

Requirement Gathering	10 hrs.
Designing	20 hrs.
Coding	40 hrs.
Implementation	8 hrs.
Deployment	5 hrs.
Software used	Used Free Open-Source Software

Conclusion

In conclusion, our project focused on developing a tailored e-commerce website for our sponsor of an electronics shop. It serves as a comprehensive platform for our sponsor to showcase and sell a wide range of electronic products. With a user-friendly interface and efficient features, our website enables them to effortlessly manage inventory, update listings, process orders, and track sales records. Our primary objective was to provide a dynamic platform that maximizes sales potential and offers a seamless buying experience.[5]

We would like to note that the deployment of the project has been intentionally delayed at the request of our sponsor. They have provided valuable feedback and requested additional enhancements before moving forward with the deployment. We are dedicated to collaborating closely with the sponsor to fulfill their requirements and ensure the successful deployment of the website.

By leveraging the MERN Stack and incorporating Tailwind CSS, we have developed a robust website that enhances online shopping for customers. Our project demonstrates the capabilities of modern web technologies in empowering our sponsor to thrive in the competitive market.[3]

In summary, our project has achieved its goals of creating a tailored e-commerce website for our sponsor *Paras Electronics and Furniture*. We remain committed to fulfilling the sponsor's requirements and ensuring the website meets their expectations prior to deployment.

References

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