INDUSTRIAL TRAINING REPORT

ON

"REACT E-COMMERCE WEBSITE"

Submitted in partial fulfillment of the requirements

for the award of the degree of

Bachelor of Technology
In
Information Technology

Submitted by

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to

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December-2023

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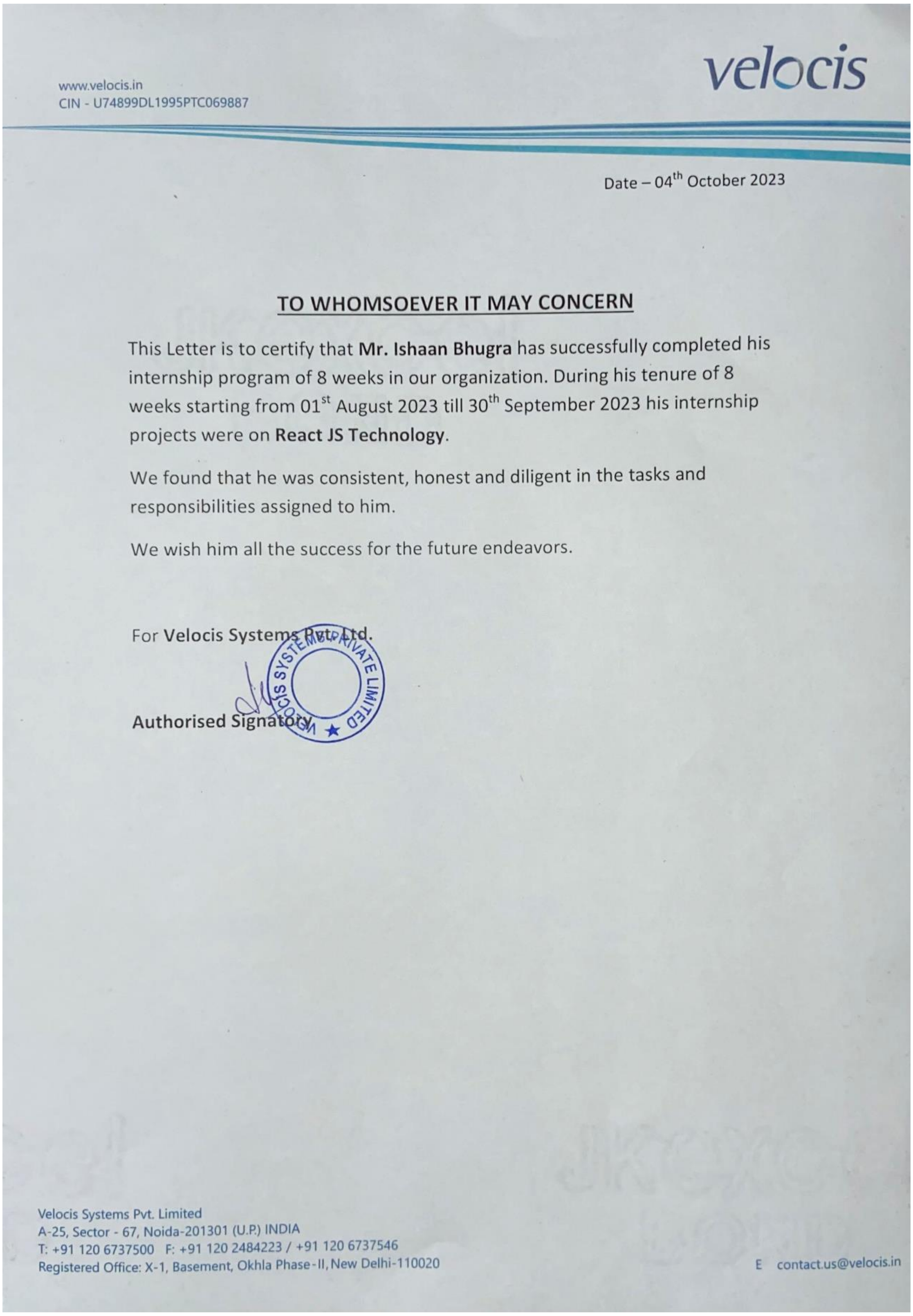

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Date – 04th October 2023

TO WHOMSOEVER IT MAY CONCERN

This Letter is to certify that **Mr. Ishaan Bhugra** has successfully completed his internship program of 8 weeks in our organization. During his tenure of 8 weeks starting from 01st August 2023 till 30th September 2023 his internship projects were on **React JS Technology**.

We found that he was consistent, honest and diligent in the tasks and responsibilities assigned to him.

We wish him all the success for the future endeavors.

For **Velocis Systems Pvt. Ltd.**

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Authorised Signatory

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Although it is not possible to name individually, I shall ever remain indebted to the faculty members of Dr. Akhilesh Das Gupta Institute of Professional Studies, New Delhi for their persistent support and cooperation extended during this work..

This acknowledgement will remain incomplete if I fail to express our deep sense of obligation to my parents and God for their consistent blessings and encouragement.

ISHAAN BHUGRA

(35215603120)

ABSTRACT

This project aims to design, develop, and implement a robust E-Commerce website to meet the evolving needs of online shoppers and facilitate seamless transactions for both consumers and businesses. The proposed platform focuses on enhancing user experience, ensuring security, and optimizing business processes.

Key features of the E-Commerce website include an intuitive and user-friendly interface, personalized user accounts, a comprehensive product catalog, and a secure and efficient payment gateway. The project also incorporates advanced search and recommendation algorithms to enhance product discovery, ultimately leading to an improved shopping experience.

Security is a paramount concern, and the website implements industry-standard encryption protocols, secure payment gateways, and user authentication mechanisms to safeguard user information and transactions. Additionally, the project addresses scalability considerations to accommodate potential growth and increased user traffic.

From a business perspective, the E-Commerce website integrates inventory management, order processing, and customer relationship management functionalities to streamline operations. Business analytics and reporting tools are also embedded to provide valuable insights into customer behavior, sales trends, and inventory turnover, empowering decision-makers with actionable data.

The project adopts modern web development technologies and follows best practices to ensure cross-browser compatibility, responsiveness, and a consistent user experience across various devices. Thorough testing procedures, including functionality, security, and performance testing, are conducted to guarantee a reliable and robust platform.

By combining cutting-edge technology with a focus on user-centric design and business optimization, this E-Commerce website project aims to set a new standard in the online retail landscape, providing an enhanced shopping experience for consumers while enabling businesses to thrive in the digital marketplace.

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CHAPTER 1

1.1 INTRODUCTION

In the rapidly evolving landscape of commerce, the paradigm shift towards digital transactions has reshaped the way businesses engage with consumers. As e-commerce continues to be a dominant force in the global marketplace, the development of an innovative and efficient E-Commerce website becomes not just a necessity but a strategic imperative for businesses seeking to thrive in the digital era.

This E-Commerce Website Project represents a comprehensive endeavor to create a dynamic online platform that goes beyond the conventional realms of virtual storefronts. With a focus on user experience, security, and business optimization, this project seeks to redefine the online shopping journey for consumers while providing businesses with a robust and scalable toolset to navigate the complexities of digital commerce.

As we delve into the intricacies of this project, we will explore the key features designed to enhance the user experience, from an intuitive interface to advanced search algorithms that cater to the diverse preferences of modern consumers. The project places a strong emphasis on security, implementing cutting-edge measures to safeguard user information and financial transactions.

Beyond the consumer-facing aspects, this E-Commerce website delves into the intricacies of business operations. Inventory management, order processing, and customer relationship management are seamlessly integrated to streamline workflows, providing businesses with the agility to respond to market demands effectively.

In adopting modern web development technologies, stringent testing methodologies, and adhering to industry best practices, this project aspires to set a new benchmark for E-Commerce websites. Whether accessed from desktops or mobile devices, users can expect a consistent and responsive interface, reinforcing the project's commitment to accessibility and user satisfaction.

As we embark on this journey of creating a forward-thinking E-Commerce website, the ultimate goal is not merely the development of a digital storefront but the creation of a digital ecosystem that fosters seamless transactions, cultivates customer loyalty, and propels businesses towards sustained success in the dynamic world of online commerce.

1.2 INTRODUCTION TO FRONT END DEVELOPMENT

Front-end development is a crucial facet of web development focused on creating the user interface and experience of a website or web application. It encompasses a diverse set of technologies, languages, and tools to bring together the visual and interactive elements that users interact with directly. At the core of front-end development is HTML, the markup language used to structure content, defining elements like headings, paragraphs, images, and links. CSS complements HTML by styling these elements, controlling layout, colors, fonts, and overall presentation. JavaScript, a dynamic programming language, plays a pivotal role in front-end development by enabling interactivity, dynamic content updates, and the handling of user interactions. The combination of HTML, CSS, and JavaScript forms the backbone of front-end development, collectively known as the "front-end stack."

Responsive design is a fundamental concept in front-end development, ensuring that websites adapt seamlessly to various screen sizes and devices. Front-end developers also need to consider cross-browser compatibility, as different web browsers may interpret and render code differently. Testing and debugging across multiple browsers is essential to deliver a consistent user experience. To enhance development efficiency and maintainability, front-end developers often leverage frameworks and libraries. Popular front-end frameworks like React.js, Angular, and Vue.js provide reusable components and tools for building robust and scalable applications.

As web development projects grow in complexity, version control systems like Git become integral for tracking changes, collaborating with other developers, and managing different versions of the codebase. Additionally, build tools and task automate processes like code minification, compilation, and bundling, optimizing the performance of the final web application. The front-end development landscape is dynamic and continually evolving with advancements in technology and shifts in user expectations. Front-end developers must stay abreast of these changes to deliver modern, user-friendly interfaces that meet the demands of an ever-evolving digital landscape. In essence, front-end development is a multidimensional discipline that requires technical proficiency, creativity, and a deep understanding of user experience principles.

1.3 INTRODUCTION TO REACTJS

React.js, commonly referred to as React, is an open-source JavaScript library developed and maintained by Facebook. It is widely used for building user interfaces, especially for single-page applications where smooth, interactive, and dynamic user experiences are crucial. React follows a component-based architecture, allowing developers to break down the user interface into reusable and manageable components. Each component encapsulates its own logic, state, and UI, making it easier to develop and maintain complex applications.

One of React's key features is its use of a virtual DOM (Document Object Model), a lightweight in-memory representation of the actual DOM elements. React efficiently updates and renders the virtual DOM, and then selectively updates only the necessary parts of the actual DOM. This approach enhances performance and contributes to React's reputation for building fast and responsive applications.

React utilizes a declarative syntax, enabling developers to describe how the UI should look based on the application's state, and React takes care of updating the DOM to match that state. This declarative approach simplifies the process of building and maintaining complex UIs compared to traditional imperative methods.

React's ecosystem includes React Router for managing navigation within single-page applications, and Redux for state management in larger applications. Additionally, React has a strong community and extensive documentation, making it accessible for both beginners and experienced developers.

React's popularity is attributed to its efficiency, scalability, and the ability to seamlessly integrate with other libraries and frameworks. It has become a go-to choice for many developers and companies when building modern and interactive web applications. With its last update in January 2022, React continues to evolve with updates and improvements, reinforcing its position as a leading library for front-end development.

1.4 HISTORY OF REACTJS

A brief timeline of the key events in the history of React:

1. **2011 - Jordan Walke's Prototype:**
   - React's story began in 2011 when Jordan Walke, a software engineer at Facebook, created an internal prototype called "FaxJS" to address the need for a more efficient way to build user interfaces. The initial focus was on improving the performance of Facebook's ads interfaces.

2. **2013 - Open Sourcing React:**
   - In May 2013, Facebook officially open-sourced React at the JSConf US conference. This move allowed developers outside of Facebook to use and contribute to the library. The decision to open source React marked a shift in the industry, as it provided a powerful tool for building user interfaces using a component-based architecture.

3. **2014 - React Conf and Flux:**
   - Facebook hosted the first React Conf in January 2014, where they introduced the Flux architecture pattern. Flux was designed as a unidirectional data flow pattern to complement React's component-based structure, providing a clear and predictable way to manage application state.

4. **2015 - Introduction of React Native:**
   - React Native was introduced in March 2015, extending React's principles to mobile

app development. React Native allows developers to use React to build cross-platform mobile applications using native components. This innovation gained widespread adoption due to its ability to enable code-sharing between web and mobile projects.

5. **2016 - React Fiber and Create React App:**
   - In 2016, the React team introduced React Fiber, a complete rewrite of the React core algorithm designed to improve the library's performance and enable new features. The same year, the Create React App tool was released, simplifying the setup and configuration of React applications.

6. **2018 - React Hooks:**
   - React Hooks were introduced in React 16.8, providing a new way to use state and lifecycle features in functional components. This addition simplified the development of components and allowed developers to reuse stateful logic across different parts of their applications.

7. **2020 - Concurrent Mode and React 17:**
   - Facebook announced Concurrent Mode, an upcoming set of features aimed at improving React's ability to handle large and dynamic user interfaces. Concurrent Mode allows React to work more efficiently on tasks like rendering and responding to user input. React 17 was also released in 2020 with no new features but focused on improving the upgrade process for users.

Throughout its history, React has become a dominant force in front-end development, and its concepts have influenced the development of other JavaScript frameworks and libraries. The React community continues to grow, and the library remains a popular choice for building modern and efficient user interfaces.

1.5 PROJECT

1.5.1 React E-Commerce Website

The React E-Commerce Website Project involves crafting a dynamic online shopping platform using the React JavaScript library, renowned for its component-based architecture. This approach allows for the creation of reusable and modular UI components, fostering an efficient and maintainable development process. With a focus on user interface responsiveness, the project ensures seamless experiences across various devices. Key features include robust state management, secure API integrations for product information and user authentication, and the implementation of essential functionalities like a secure shopping cart, payment gateways, and advanced search capabilities. By prioritizing user authentication, authorization, and incorporating responsive design principles, the project aims to deliver a secure, user-friendly, and scalable E-Commerce solution, elevating the online shopping experience for both businesses and consumers.

1.5.2 Objective

The objective of the E-Commerce Website Project is to design, develop, and deploy a cutting-edge online shopping platform using React, with a focus on delivering an exceptional user experience and optimizing business operations. This project aims to create a dynamic and responsive user interface, incorporating secure user authentication, authorization, and seamless API integrations for efficient product management and secure financial transactions. The overarching goal is to provide consumers with a user-friendly, visually appealing, and feature-rich online shopping experience while empowering businesses with robust tools for inventory management, order processing, and customer relationship management. Through the use of modern web development practices and technologies, the project strives to set a new standard in E-Commerce, combining innovation with reliability to establish a digital marketplace that meets the evolving needs of businesses and customers alike.

1.5.3 Working:

1. **Dynamic UI Components:** Developed modular and reusable React components for an interactive and visually appealing user interface.

2. **Efficient State Management:** Implemented robust state management to ensure seamless updates and real-time interactions using React

3. **API Integration:** Integrated with back-end services and APIs for product information, authentication, and secure transactions.

4. **User Authentication:** Implemented secure user authentication processes, including sign-up, login, and password recovery.

5. **Shopping Cart Functionality:** Created a dynamic shopping cart allowing users to add, remove, and modify items with real-time updates.

6. **Payment Gateway Integration:** Integrated secure payment gateways for smooth and secure online transactions.

7. **Responsive Design:** Ensured a responsive design for a consistent and enjoyable shopping experience across devices.

8. **Thorough Testing:** Conducted manual testing, including unit tests and usability testing, to ensure functionality.

9. **Optimization:** Optimized performance for quick load times.

10. **Deployment:** Deployed the React front end to a hosting environment, configuring domain settings for seamless integration.

11. **Ongoing Maintenance:** Provided continuous maintenance, addressing updates, bug fixes, and iterative enhancements for sustained excellence.

12. **Search and Filtering:** Incorporated advanced search and filtering options for users to easily find products based on preferences.

13. **Cross-browser Compatibility:** Ensured compatibility across various web browsers to reach a broad user base.

14. **Personalized User Accounts:** Provided users with personalized accounts for order history, preferences, and saved information.

15. **Scalability Planning:** Designed the architecture with scalability in mind to accommodate future growth and increased user traffic.

16. **Continuous Improvement:** Established a process for continuous improvement, incorporating user feedback and staying abreast of evolving technologies and trends.

CHAPTER 2

2.1 METHODOLOGY

The methodology for developing a React E-Commerce website involves a comprehensive approach that leverages the capabilities of ReactJS throughout the entire development lifecycle. Beginning with project initiation and planning, React's suitability for creating a dynamic and responsive user interface is considered. The technology stack selection emphasizes React's declarative syntax and component-based architecture, with React Router facilitating seamless navigation in the single-page application. The wireframing and prototyping phase integrates React components to visualize the layout and gather user feedback. In design, React's component reusability is prioritized, ensuring responsiveness through the efficient rendering of its virtual DOM. The React component architecture is carefully planned, breaking down UI elements into reusable components, and state management utilizes React's built-in features or external tools like Redux. Integration with back-end services and APIs is executed using React's capabilities for asynchronous operations and dynamic content rendering. User authentication, shopping cart development, and the checkout process are handled using React components for smooth interactions. Thorough testing involves unit testing of React components, optimizing performance through features like React.memo and React.lazy. Deployment considerations include server-side rendering for improved performance. Monitoring tools and analytics are integrated with React components, providing insights into user interactions. Ongoing maintenance involves bug fixes, updates, and enhancements within the React framework. The marketing and launch phase highlights React's SEO-friendly features and showcases the dynamic capabilities of the E-Commerce website. This holistic approach ensures a cohesive and efficient development process, capitalizing on ReactJS to deliver a responsive, feature-rich, and visually appealing E-Commerce platform.

2.2 Software Model:

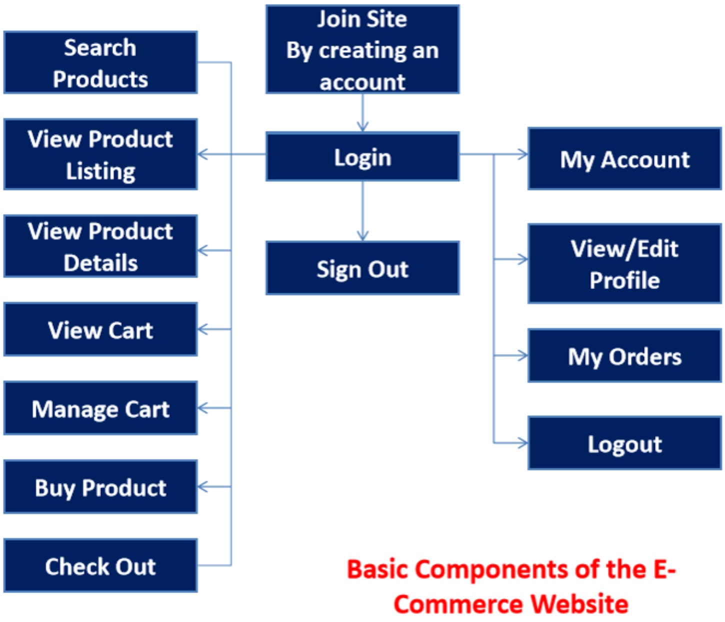


Fig 2.1 Software Model

2.3 Technologies Used:

- **API**
- **MUI**
- **Lodash**
- **Axios**
- **JSON CRUD Operations**
- **Context API**

2.3.1 API

An Application Programming Interface, or API, serves as a set of rules and protocols facilitating seamless interaction between different software applications. It defines methods and data formats, allowing one application to request and exchange information with another. APIs are instrumental in integrating disparate software systems, enabling them to work together cohesively and share data efficiently. They play a pivotal role in various contexts, such as retrieving data from external sources, integrating specific functionalities into applications, accessing online services, automating tasks, and fostering communication between different software components. In essence, APIs act as communication bridges, empowering developers to enhance and extend software capabilities by seamlessly integrating various functionalities and services into their applications.

2.3.2 MUI

Material-UI (MUI) is a popular React UI framework that provides a comprehensive set of React components following the principles of Google's Material Design. Developed to streamline the process of building modern, visually appealing user interfaces, Material-UI offers a wide range of pre-designed and customizable components, such as buttons, navigation bars, and form elements, adhering to a consistent design language. With its modular and responsive architecture, Material-UI simplifies the development of aesthetically pleasing and user-friendly React applications by providing developers with a toolkit that aligns with the principles of Material Design, ensuring a cohesive and engaging user experience across web and mobile platforms. Its popularity is attributed to its flexibility, ease of use, and the ability to create consistent and visually appealing interfaces while leveraging the power and flexibility of React.

2.3.3 React Hook Form

React Hook Form is a powerful and flexible library in the React ecosystem designed to simplify and streamline the process of handling forms in React applications. It leverages the principles of React hooks to manage form state, validation, and submission logic in a concise and efficient manner. With React Hook Form, developers can create dynamic and interactive forms by utilizing hooks such as `useForm` to initialize the form, `useFieldArray` to manage dynamically growing form fields, and `useFormContext` for easy access to form context within nested components. One of its key advantages lies in its ability to reduce boilerplate code associated with form management, making the codebase more maintainable and enhancing the overall developer experience. Additionally, React Hook Form seamlessly integrates with React's functional components, aligning with modern React development practices.

2.3.4 Axios

Axios is a popular JavaScript library used for making HTTP requests in web applications. It operates as a promise-based HTTP client, providing a clean and convenient way to interact with RESTful APIs and fetch data from external servers.

Axios is widely utilized in both browser-based applications and Node.js environments, offering features such as automatic JSON data transformation, the ability to intercept requests and responses, and support for handling asynchronous operations. Known for its simplicity and ease of use, Axios simplifies the process of working with APIs by abstracting away many of the complexities associated with HTTP requests, making it a preferred choice for developers aiming to efficiently manage data retrieval and communication between their applications and external servers.

2.3.5 JSON CRUD Operations

Performing CRUD operations (Create, Read, Update, Delete) on JSON (JavaScript Object Notation) involves manipulating the data within a JSON structure. To **create**, a new JSON object or array is added, representing additional information. **Reading** entails accessing specific properties or elements within the JSON, retrieving data for display or further processing. **Updating** involves modifying existing values, allowing for dynamic adjustments to the information stored. **Deleting** removes a JSON object or element, streamlining the dataset. In a typical scenario, these operations might be applied to a collection of data, such as users or products, enabling the application to manage, display, and update information efficiently. These CRUD operations are fundamental for interacting with and managing data within a JSON structure in various web and application development contexts.

2.3.6 Context API

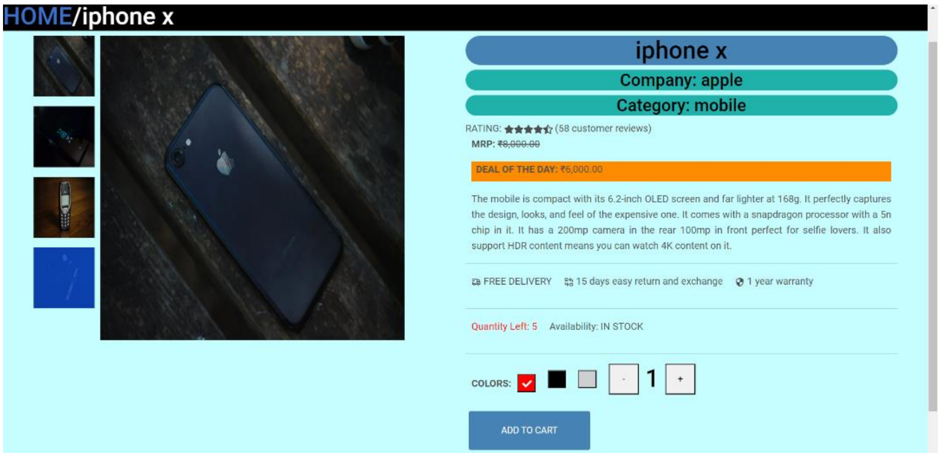
The Context API in React is a powerful feature designed to manage and share state across components without the need for prop drilling, enhancing the efficiency of state management in larger applications. It allows the creation of a centralized data store or context, which can be accessed by any component within the tree without passing the data through each intermediate component explicitly. The Context API consists of a Provider component, responsible for defining the context and providing the state, and a Consumer component, enabling access to the context's data. While React's Context API is a versatile tool for state management, it is often employed judiciously in combination with other state management libraries, such as Redux, to address specific use cases and achieve optimal flexibility in React applications.

CHAPTER 3

3.1 RESULT ANALYSIS

- ✓ The website works successfully according to our requirements.
- ✓ All the functionalities included in the website work properly.
- ✓ Home page, about page, products page, single product page, product entry page, contact page, login/signup page, cart page, payment page, successful payment page and other components were created with front end.
- ✓ Evaluated the responsiveness of the design across different devices and browsers.
- ✓ Analyzed the effectiveness of search and filtering functionalities in helping users find products easily.
- ✓ Checked for optimized image loading and lazy loading to enhance performance.
- ✓ Verified the effectiveness of the deployment process and the hosting environment. Ensured that the website is seamlessly integrated into the chosen hosting platform.

3.2 SNAPSHOTS OF PROJECT



HOME/iphone x

iphone x

Company: apple

Category: mobile

RATING: ★★★★☆ (58 customer reviews)

MRP: ~~₹8,000.00~~

DEAL OF THE DAY: ₹6,000.00

The mobile is compact with its 6.2-inch OLED screen and far lighter at 168g. It perfectly captures the design, looks, and feel of the expensive one. It comes with a snapdragon processor with a 5n chip in it. It has a 200mp camera in the rear 100mp in front perfect for selfie lovers. It also support HDR content means you can watch 4K content on it.

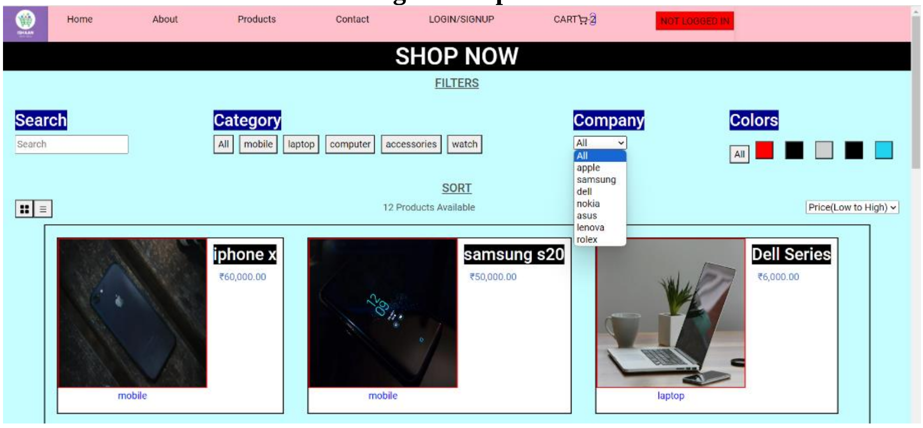
FREE DELIVERY 15 days easy return and exchange 1 year warranty

Quantity Left: 5 Availability: IN STOCK

COLORS: ☑ ■ □ - 1 +

ADD TO CART

Fig 3.1 Snapshot-1



Home About Products Contact LOGIN/SIGNUP CART 2 NOT LOGGED IN

SHOP NOW

FILTERS

Search

Search

Category

All mobile laptop computer accessories watch

Company

All

All
apple
samsung
dell
nokia
asus
lenova
rolex

Colors

All

SORT

12 Products Available

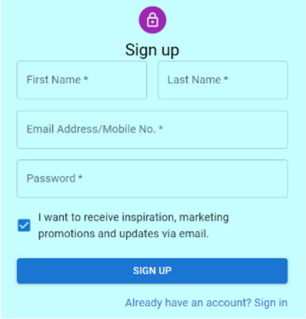
Price(Low to High)

iphone x ₹60,000.00 mobile

samsung s20 ₹50,000.00 mobile

Dell Series ₹6,000.00 laptop

Fig 3.2 Snapshot-2



Sign up

First Name *

Last Name *

Email Address/Mobile No. *

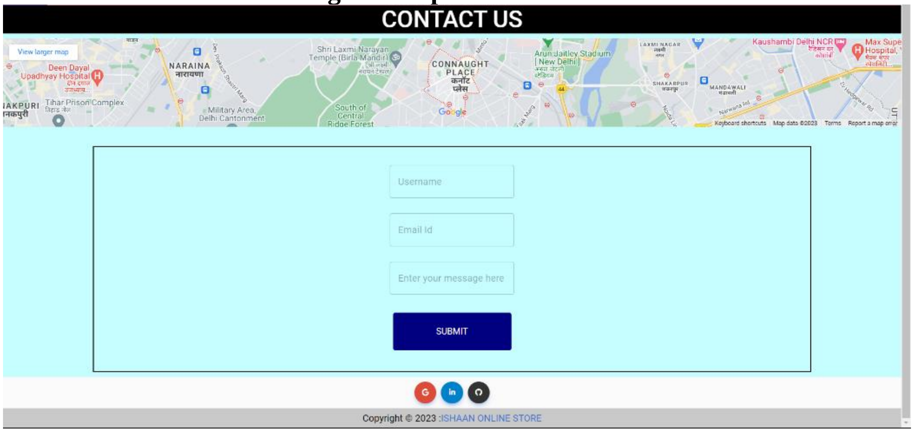
Password *

☑ I want to receive inspiration, marketing promotions and updates via email.

SIGN UP

Already have an account? Sign in

Fig 3.3 Snapshot-3



CONTACT US

Username

Email Id

Enter your message here

SUBMIT

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Fig 3.4 Snapshot-4

CHAPTER 4

MERITS, DEMERITS AND APPLICATIONS

4.1 ADVANTAGES

- Faster buying process
- Lower costs
- Variety, convenience, and security
- No time restrictions
- Customer data insights
- Expanding the reach for new customers
- Cost reduction.
- Affordable advertising and marketing.
- Flexibility for customers.
- No reach limitations.
- Product and price comparison.
- Faster response to buyer/market demands.

4.2 DISADVANTAGES

- Privacy and security issues
- Connectivity and website issues
- Consumers' inability to try or test the product
- Fear of the unknown
- Specialized and costly workforce
- Tax laws
- Legal matters
- Late deliveries
- Credit card fraud
- No help of specialized staff or sales assistance

4.3 APPLICATIONS

1. Retail
2. Online Marketplaces
3. Travel and Hospitality
4. Digital Products and Services
5. Food and Grocery Delivery
6. Subscription Services
7. B2B Transactions
8. Healthcare
9. Automotive
10. Real Estate
11. Education
12. Financial Services
13. Event Ticketing
14. Charitable Organizations
15. Government Services
16. Art and Collectibles
17. Fashion and Apparel
18. Electronics and Technology
19. Home Goods and Furniture
20. Beauty and Personal Care
21. Sports and Fitness Equipment
22. Pet Supplies
23. Toys and Games
24. DIY and Home Improvement
25. Industrial and Manufacturing Supplies
26. Music and Entertainment
27. Social Networking and Dating Platforms
28. Job Portals and Recruitment
29. Online Auctions
30. Photography and Videography Services
31. Legal Services
32. Wedding and Event Planning
33. Virtual Events and Conferences
34. Eco-friendly and Sustainable Products
35. Mobile Apps and Software
36. Artisan and Handcrafted Goods
37. Specialty and Niche Markets
38. Hobbies and Collectibles
39. Religious and Spiritual Goods
40. Automotive Parts and Accessories

CHAPTER 5

CONCLUSIONS AND FUTURE SCOPE

5.1 CONCLUSION:

In conclusion, the "React E-Commerce Website" project has been successfully executed, marking a significant achievement in delivering a dynamic and user-friendly online shopping platform. Throughout the development lifecycle, meticulous attention was given to implementing crucial features such as product browsing, user credentials and login state and shopping cart management. The project provided a seamless and responsive user experience across various devices and browsers.

Manual testing ensured the correctness of CRUD operations, contributing to a robust and reliable system. Manual testing have also been instrumental in refining the user interface, making it intuitive and engaging. Performance evaluations confirmed optimized loading times, contributing to an efficient user experience.
I would like to extend my gratitude towards Velocis Systems Pvt. Ltd., Noida, UP and Mr. Raj Ranjan (Manager).

The project aligns with scalability considerations, providing a foundation for future growth and expansion. Documentation is comprehensive, facilitating seamless maintenance and future development efforts. Iterative updates can continue to enhance the website's features.

In essence, the successful completion of the "React E-Commerce Website" project underscores the synergy of technology, user experience, and business objectives. This accomplishment is a testament to the dedication, expertise, and collaborative efforts. As the website is deployed to its hosting environment, it stands ready to provide a compelling and online shopping experience, contributing to the success and growth in the digital landscape.

5.2 FUTURE SCOPE:

1. Mobile Application Integration:

- Develop a mobile application or progressive web app (PWA) to provide a more immersive and convenient shopping experience for mobile users.

2. Augmented Reality (AR) Features:

- Integrate AR technology to allow users to virtually try products before purchasing, enhancing the online shopping experience.

3. Enhanced Personalization:

- Implement advanced recommendation engines and machine learning algorithms to offer personalized product suggestions based on user behavior and preferences.

4. Voice Search Optimization:

- Optimize the website for voice search, allowing users to search for products and navigate the website using voice commands.

5. Social Commerce Integration:

- Integrate social media features to facilitate social sharing, user reviews, and even direct purchasing through social platforms.

6. Integration with Emerging Technologies:

- Stay abreast of emerging technologies, such as virtual reality (VR), artificial intelligence (AI), and 5G connectivity, and assess their potential applications for enhancing the E-Commerce experience.

7. Enhanced Customer Service:

- Implement chatbots or virtual assistants to enhance customer support and provide real-time assistance to users.

9. Data Analytics and Business Intelligence:

- Strengthen data analytics capabilities to gain deeper insights into customer behavior and market trends, enabling data-driven decision-making.

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APPENDIX

Technology Stack

FRONT END: HTML5, CSS, JAVASCRIPT, REACTJS
REACT LIBRARIES: react-router-dom, styled-components, react-hook-form, redux, Context API, lodash, axios
FRAMEWORK: MaterialUI, Bootstrap
OTHER: JSON, Formspree

Component Architecture

- About.js
- App.css
- App.js
- Cart.js
- Contact.js
- ErrorPage.js
- GlobalStyle.js
- Home.js
- Login.js
- Payment.js
- PaymentSuccessful.js
- ProductEntry.js
- Products.js
- Signup.js
- SingleProduct.js
- index.css
- index.js

        - components

            - AddToCart.js
            - CartAmountToggle.js
            - CartItems.js
            - FeatureProducts.js
            - FilterSection.js
            - Footer.js
            - GridView.js
            - Header.js
            - HeroSection.js
            - ListView.js
            - MyImage.js
            - Nav.js
            - PageNavigation.js
            - Product.js
            - ProductList.js

  - Sort.js
  - Star.js
- contextAPI
  - CartContext.js
  - FilterContext.js
  - LoginContext.js
  - ProductContext.js
- reducer
  - CartReducer.js
  - FilterReducer.js
  - LoginReducer.js
  - ProductReducer.js
- Helpers
  - FormatPrice.js
- Others:
  - .gitignore
  - API DATA.txt
  - E-Commerce Website Working.mp4
  - README.md
  - apidata.json
  - db.json
  - package-lock.json
  - package.json

State Management

State management in React is a crucial aspect of building dynamic and interactive user interfaces. The `useState` and `useEffect` hooks are fundamental tools for managing state and side effects in functional components.
useState:
The `useState` hook allows functional components to declare and manage state variables. It takes an initial state as an argument and returns an array containing the current state value and a function to update that state.
useEffect:
The `useEffect` hook is used to perform side effects in functional components. It takes a function as its first argument, which will be executed after the component renders. This function can include asynchronous operations, subscriptions, or any code that involves interactions outside the component.

Together, `useState` and `useEffect` empower React developers to manage component state and handle side effects efficiently, contributing to the creation of dynamic and responsive applications.

API Integration

API integration in React using Axios is a common practice for fetching data from external sources, such as a server or third-party API. Axios is a popular JavaScript library that simplifies the process of making HTTP requests.

1. The `useEffect` hook is utilized to fetch data when the component mounts. The empty dependency array ensures that the effect runs only once.
2. Axios is used to make a GET request to the specified API endpoint (`**https://api.pujakaitem.com/api/products**` in this project).
3. The retrieved data is stored in a state using a function, triggering a re-render with the updated data.
4. The component renders a list of products based on the fetched data and filtering and sorting.

Deployment Process

Deploying a React website to GitHub Pages involves a straightforward process.

1. npm install gh-pages --save-dev

2. In your `package.json` file, add the following fields:

```
"homepage": " https://ishaanbhugra.github.io/React_Ecommerce_Website/ ",
     "scripts": {
    "predeploy": "npm run build",
    "deploy": "gh-pages -d build",
    // other scripts...
   },
```

3. npm run build
4. npm run deploy

5. Visit the provided GitHub Pages link:
https://ishaanbhugra.github.io/React_Ecommerce_Website/
This process enables a seamless deployment of this React website to GitHub Pages, making it accessible to the public through the provided link.

Code Repository

A GitHub repository serves as a centralized hub for collaborative software development. Developers use it to track changes, manage tasks and collaborate seamlessly through branches and pull requests. The repository hosts project documentation, contributing guidelines, and README files, providing valuable insights for users and contributors. GitHub's integration with CI/CD services automates the testing and deployment processes, ensuring code reliability.
This project’s code repository link is:
https://github.com/ishaanbhugra/React_Ecommerce_Website
This platform plays a vital role in modern software development, fostering transparency, collaboration, and efficient version control.

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