FRONT END ENGINEERING-II

Project Report Semester-IV (Batch-2022) NYRC:Not Your Regular Cover



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ABSTRACT

NYRC (Not Your Regular Cover) is an innovative e-commerce platform developed to sell personalized phone covers, desk mats, and hoodies. This project utilizes ReactJS to build a highly responsive and user-friendly front-end application, ensuring an engaging and seamless shopping experience.

The platform's design emphasizes performance, scalability, and maintainability, leveraging ReactJS's component-based architecture. Key features include an intuitive user interface, real-time product customization, and responsive design. The application uses React's Context API and hooks for efficient state management and data handling, ensuring smooth and interactive user experiences.

Integration with external APIs enables effective product information retrieval, inventory management, and secure payment processing. Modern web development practices, such as responsive design, guarantee accessibility and a consistent user experience across various devices, including desktops, tablets, and smartphones.

NYRC exemplifies best practices in ReactJS development, featuring reusable components, effective use of props and state, and adherence to design principles that create a cohesive and aesthetically pleasing interface. This project highlights the capabilities of ReactJS in developing robust, user-centric, and highly customizable e-commerce platforms tailored to contemporary online shopping needs.

Furthermore, the project incorporates advanced UI/UX strategies to enhance user engagement and satisfaction. By leveraging animations, transitions, and an optimized loading strategy, NYRC ensures that users have a smooth and visually appealing experience. User feedback mechanisms are also integrated, allowing continuous improvement and adaptation based on customer preferences and behaviors.

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1. INTRODUCTION

1.1 BACKGROUND

The rapid evolution of e-commerce has fundamentally transformed the retail landscape, offering consumers unprecedented convenience and access to a vast array of products. Within this digital revolution, there has been a marked shift towards personalized and unique merchandise, driven by consumers' desires for individuality and self-expression. Items such as phone covers, desk mats, and hoodies have emerged as popular choices for personalization, allowing individuals to display their personal tastes and preferences through everyday items.

NYRC (Not Your Regular Cover) was conceived to cater to this burgeoning demand for customizable products. Traditional retail options often fall short in providing the variety and level of customization that modern consumers seek. To address this gap, NYRC leverages ReactJS to create a seamless, interactive, and user-friendly online shopping experience. ReactJS, renowned for its efficiency, flexibility, and component-based architecture, is particularly well-suited for developing dynamic and responsive web applications. This makes it an ideal choice for building an e-commerce platform that prioritizes performance and user engagement.

The project is rooted in the broader context of technological advancements and evolving consumer behaviors. The widespread adoption of smartphones and increased internet usage have significantly altered shopping habits, making e-commerce a dominant force in retail. Additionally, the trend towards personalized shopping experiences has underscored the need for platforms that can offer extensive customization options at scale. NYRC addresses these trends by combining cutting-edge technology with a deep understanding of contemporary consumer needs, aiming to deliver a superior and tailored shopping experience.

NYRC's development not only focuses on the technical aspects but also on enhancing the overall user experience. The platform incorporates advanced UI/UX strategies, including smooth animations, transitions, and optimized loading times, to ensure a visually appealing and engaging interface. User feedback mechanisms are integrated to continually adapt and improve the platform based on customer

preferences and behaviors. This commitment to user satisfaction and continuous improvement positions NYRC as a competitive and customer-centric brand in the personalized merchandise market.

1.2 OBJECTIVE

- ➤ **Deliver a Seamless User Experience**: Create an intuitive and responsive user interface that ensures easy navigation and a smooth shopping experience across all devices, including desktops, tablets, and smartphones.
- ➤ Enable Real-Time Product Customization: Implement features that allow users to customize products in real-time, providing interactive previews to enhance customer engagement and satisfaction.
- > Ensure High Performance and Scalability: Utilize ReactJS's component-based architecture to build a high-performance application that can scale efficiently with increasing user traffic and product catalog size.
- ➤ Integrate Secure and Efficient Payment Systems: Incorporate reliable and secure payment gateways to facilitate smooth transactions and ensure customer trust.
- ➤ **Provide Robust Inventory Management**: Implement backend integration for effective product information retrieval and inventory management to ensure accurate product availability and timely updates.
- ➤ Adopt Modern Web Development Practices: Apply contemporary web development techniques, including responsive design, to guarantee accessibility and a consistent user experience.
- ➤ Leverage User Feedback for Continuous Improvement: Integrate mechanisms for collecting and analyzing user feedback to continually improve the platform based on customer preferences and behaviors.
- > Promote Brand Identity and Customer Loyalty: Build a platform that not only meets functional requirements but also enhances brand identity through cohesive design and customer-centric features, fostering long-term customer loyalty.
- ➤ Currency Conversion: Ensure that currency conversion is handled correctly if your products have prices listed in a currency other than USD. If your products are priced in a different currency, you'll need to convert the total amount to USD before passing it to Stripe. Double-check your currency conversion logic to ensure accuracy.

1.3 SIGNIFICANCE

- ➤ Global Accessibility: If your project involves selling products or services to customers worldwide, accurate currency conversion ensures that people from different countries can make purchases without confusion or unfair pricing discrepancies. This expands your potential customer base and allows you to tap into international markets.
- > Customer Trust and Satisfaction: Providing accurate pricing information instills trust in your customers. When they see that the total amount they're charged accurately reflects the displayed

- prices in their local currency, they're more likely to feel confident in making a purchase. This contributes to positive customer experiences and encourages repeat business.
- ➤ **Legal and Regulatory Compliance**: Depending on your project's scope and the regions in which you operate, there may be legal and regulatory requirements related to currency conversion and pricing transparency. Adhering to these regulations helps you avoid potential fines, penalties, or legal complications.
- Financial Accuracy: Accurate currency conversion ensures that your revenue calculations are precise. This is essential for financial reporting, taxation, and budgeting purposes. It helps you maintain financial integrity and make informed business decisions based on reliable data.
- ➤ Competitive Advantage: In a competitive market, offering transparent and accurate pricing, including currency conversion, can set you apart from competitors. It demonstrates your commitment to customer satisfaction and professionalism, potentially attracting more customers to your platform.
- ➤ Mitigating Currency Risk: By converting prices to a stable currency like USD, you mitigate the risk associated with fluctuations in exchange rates. This protects your business from potential losses due to currency volatility, ensuring consistent pricing for your customers regardless of changes in exchange rates.
- > Enhanced Transparency and Customer Experience: Accurate currency conversion promotes transparency in pricing, allowing customers to easily understand the cost of products or services without the need for manual calculations. This improves the overall customer experience, reducing friction during the checkout process and increasing customer satisfaction.
- Facilitating International Expansion: If your project has aspirations for international expansion, accurate currency conversion is essential for entering new markets seamlessly. It demonstrates your commitment to catering to the needs of customers worldwide and removes barriers to entry by providing pricing information in their local currencies.

2. PROBLEM DEFINITION AND STATEMENT:

2.1 PROBLEM STATEMENT:

- ➤ Globalized E-commerce Landscape: With the proliferation of e-commerce, businesses are increasingly targeting customers worldwide, leading to diverse customer bases with varying currencies and purchasing preferences.
- ➤ Challenges in Pricing: Businesses face challenges in providing accurate and transparent pricing across different regions and currencies due to fluctuating exchange rates and diverse market conditions.
- > Customer Dissatisfaction: Inaccurate pricing and currency conversion can result in inconsistencies, confusion, and dissatisfaction among customers, impacting their trust in the business and hindering potential sales.
- ➤ **Risk of Currency Fluctuations**: Fluctuations in exchange rates pose a risk to businesses, impacting revenue calculations, financial stability, and profit margins, particularly in international transactions.
- > Need for Reliable Solution: There is a pressing need for a reliable currency conversion mechanism that seamlessly integrates into e-commerce platforms, ensuring fair and transparent pricing for customers worldwide while mitigating currency risk for businesses.

2.2 REQUIREMENTS:

2.2.1 Software Requirements:

- > Operating System: Windows 10/11, macOS Catalina or later, or a recent Linux distribution
- ➤ **Development Environment:** Visual Studio Code or any integrated development environment (IDE) supporting JavaScript and ReactJS
- ➤ **Node.js:** Version 14.x or later
- ➤ Package Manager: npm (Node Package Manager) or yarn
- **Browser:** Latest versions of Chrome, Firefox, or Safari for testing

2.2.2 Hardware Requirements:

- **➤** Minimum Hardware Requirements:
 - **CPU:** Intel Core i5-8300H or AMD Ryzen 5 3500U
 - **RAM:** 16GB DDR4
 - **GPU** (**optional for accelerated processing**): NVIDIA GeForce GTX 1660 Ti or AMD Radeon RX 5600M
 - Storage: 256GB SSD
- > Recommended Hardware for Optimal Performance:
 - **CPU:** Intel Core i7-10750H or AMD Ryzen 7 5800H
 - **RAM:** 32GB DDR4
 - GPU: NVIDIA GeForce RTX 3070 or AMD Radeon RX 6700M
 - Storage: 512GB NVMe SSD

3. PROPOSED DESIGN/METHODOLOGY:

3.1 SCHEMATIC DIAGRAM:

- > Description:
- **Frontend (ReactJS Application)**: Users interact with various components to browse, customize, and purchase products.
- **Backend (Server)**: Handles API requests, manages data flow, and processes orders and customizations.
- **Database**: Stores all essential data, including user profiles, product details, orders, and customizations.
- Third-Party Services: External services for payment processing and email notifications.
- **Analytics and Monitoring**: Collects and analyzes data on user behavior and sales for continuous improvement.

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Frontend (ReactJS) <> Backend (Server)	
(API Endpoints)	
- Home Page <fetches -="" products="" td="" <=""><td></td></fetches >	
- Product Page Products - /customizations	
- Customization Tool <sends -="" orders<="" receives ="" td=""><td></td></sends>	

- Shopping Cart Data - /users
- User Profile +
- Checkout Page +
++ Database
11 11
- Products
- Customizations
+
+
Third-Party
Services
Gateway
+
+
Analytics and
Monitoring
- User Behavior

+
++

3.2 FILE STRUCTURE:

public/:

➤ Contains static assets such as the main index.html file, manifest.json for Progressive Web App (PWA) settings, and other assets like images, icons, and fonts.

src/:

- > assets/: Stores static assets used within the application such as images, icons, and fonts.
- > components/: Contains reusable React components organized by feature or common usage. Each feature has its own folder, making it easier to maintain and scale.
 - Common/: Components used across multiple pages like Header, Footer, Navbar, and Spinner.
 - **Home**/: Components specific to the home page.
 - **Product**/: Components related to product listings and details.
 - Customization/: Components for the customization tool and preview.
 - Cart/: Components related to the shopping cart.
 - User/: Components for user-related functionalities like profile, login, and order history.
 - **Checkout**/: Components for the checkout process.
- contexts/: Contains context providers for global state management, such as AuthContext and CartContext.
- **hooks**/: Custom hooks used throughout the application, such as useAuth.

- **pages**/: Each file represents a page in the application and typically combines several components.
- > services/: Contains services for API calls and other utility functions. For example, api.js for generic API requests and authService.js for authentication-related requests.
- > styles/: Contains CSS files for styling different components and pages.
- > **App.js**: The root component that sets up the application layout.
- ➤ index.js: The entry point of the application, rendering the App component.
- **routes.js**: Defines the application's routing configuration.

.gitignore:

> Specifies files and directories that should be ignored by Git.

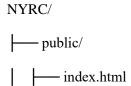
package.json:

Lists the project's dependencies and scripts for building, testing, and running the application.

README.md:

- > Provides an overview of the project, setup instructions, and other relevant documentation.
- > yarn.lock / package-lock.json:
- ➤ Lock file generated by the package manager to ensure consistent installations across different environments.

> DIAGRAM FORM:



	— manifest.json
	assets/
	images/
	icons/
	L fonts/
\vdash	— src/
	assets/
	images/
	icons/
	fonts/
	components/
	Common/
	Header.js
	Footer.js
	Spinner.js
	Home/
	│
	Product/
	ProductList.js
	ProductDetail.js
	ProductCard.js
	Customization/
	CustomizationTool.js
	Preview.js

Cart/
Cart.js
CartItem.js
User/
UserProfile.js
Login.js
Register.js
CrderHistory.js
Checkout/
Checkout.js
contexts/
AuthContext.js
CartContext.js
hooks/
useAuth.js
pages/
Home.js
Product.js
Customization.js
Cart.js
UserProfile.js
Login.js
Register.js
Checkout.js
services/

— api.js
authService.js
styles/
index.css
Home.css
Product.css
Customization.css
Cart.css
UserProfile.css
Checkout.css
index.js
routes.js
gitignore
package.json
README.md
yarn.lock / package-lock.json

> ALGORITHMS:

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User Interface (React)

v +----+ | Search & Filtering | | Algorithms | +----+ +----+ Recommendation | Algorithms | +----+ +----+ Customization | Algorithms | +----+ +----+ | Cart Management | Algorithms +----+

+----+ Order Processing | Algorithms | +----+ +----+ | Authentication & | | Authorization | Algorithms | +----+ +----+ | Analytics & | | Reporting Algorithms | +----+ +----+ | Inventory Management | Algorithms +----+

V	
+	-+
Payment Processing	g
Algorithms	

+-----

4. METHODOLOGY

1. Planning

Objectives:

- > Define project goals and requirements.
- ➤ Identify target audience and user needs.
- > Determine key features and functionalities.

Activities:

- ➤ Conduct market research to understand user preferences and industry trends.
- > Gather and analyze requirements from stakeholders.
- > Create a project timeline and resource allocation plan.
- > Develop a risk management plan to identify potential challenges and mitigation strategies.

2. Design

Objectives:

- > Create a blueprint for the user interface and user experience.
- > Design the system architecture and database schema.
- > Plan the overall aesthetic and branding of the platform.

Activities:

- ➤ Create wireframes and mockups using design tools like Figma or Adobe XD.
- > Develop user flow diagrams to visualize the navigation and interactions.
- > Design database schema to organize data efficiently.
- > Define the technical architecture, including frontend, backend, and database components.
- > Plan for responsive design to ensure compatibility across different devices and screen sizes.

3. Development

Objectives:

- > Implement the frontend and backend components of the platform.
- ➤ Integrate third-party services for payment processing, email notifications, etc.
- > Develop and integrate all required algorithms.

Activities:

- > Set up the development environment with tools and technologies such as ReactJS, Node.js, and a database (e.g., MySQL, MongoDB).
- > Implement the frontend using ReactJS, focusing on components, state management, and routing.
- ➤ Develop the backend API using Node.js and Express.js, handling authentication, authorization, and business logic.

- ➤ Integrate database management systems for data storage and retrieval.
- > Implement the product search, filtering, recommendation, and customization algorithms.
- ➤ Integrate third-party services like payment gateways (e.g., Stripe, PayPal) and email services.
- > Ensure code quality through peer reviews and version control using Git and GitHub.

4. Testing

Objectives:

- > Verify that all components function correctly and meet the specified requirements.
- Ensure the platform is secure, scalable, and performs well under load.

Activities:

- > Write unit tests for individual components and functions.
- ➤ Conduct integration tests to ensure different modules work together seamlessly.
- > Perform end-to-end testing to simulate user interactions and workflows.
- > Conduct performance testing to identify and address bottlenecks.
- > Implement security testing to protect against vulnerabilities and attacks.
- > Gather user feedback through beta testing and make necessary adjustments.

5. Deployment

Objectives:

- > Deploy the platform to a live environment.
- > Ensure the platform is accessible and operational for users.

Activities:

- > Set up production environment and hosting services (e.g., AWS, Heroku).
- ➤ Configure continuous integration and continuous deployment (CI/CD) pipelines for automated deployments.
- > Perform final testing in the production environment to ensure everything works as expected.
- ➤ Monitor the deployment process and address any issues that arise.
- ➤ Launch the platform and make it available to users.

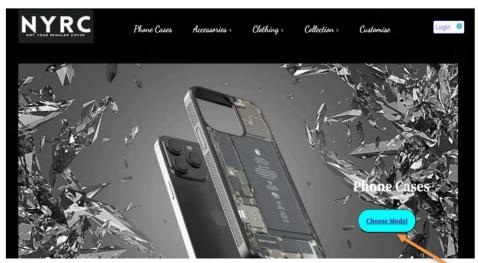
6. Maintenance

Objectives:

- ➤ Keep the platform updated, secure, and functioning smoothly.
- > Continuously improve the platform based on user feedback and technological advancements.
- > Activities:
- ➤ Monitor the platform for performance, security, and user issues.
- > Regularly update dependencies and frameworks to their latest versions.
- > Implement new features and improvements based on user feedback.

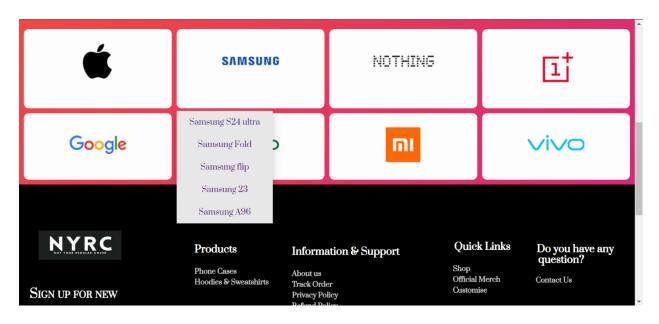
- Fix bugs and address any issues promptly.
- > Perform regular backups and ensure disaster recovery plans are in place.
- > Provide customer support to assist users with any problems they encounter.

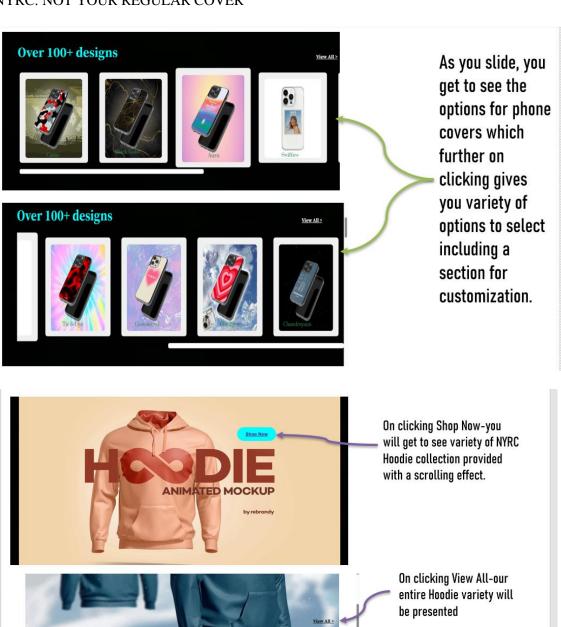
5. RESULTS



NYRC Cover Page

While clicking this option, you can choose your phone_cover





NYRC Hoodie collection category

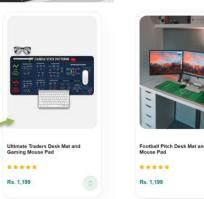
19



On clicking Shop Nowyou will witness variety of NYRC Desk Mats

Each desk mat option will showcase how it will look under keyboard, giving the buyer to understand the outlook of desk mats.

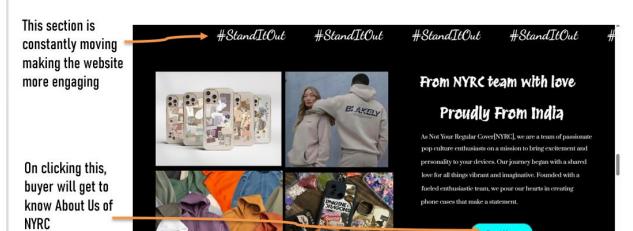
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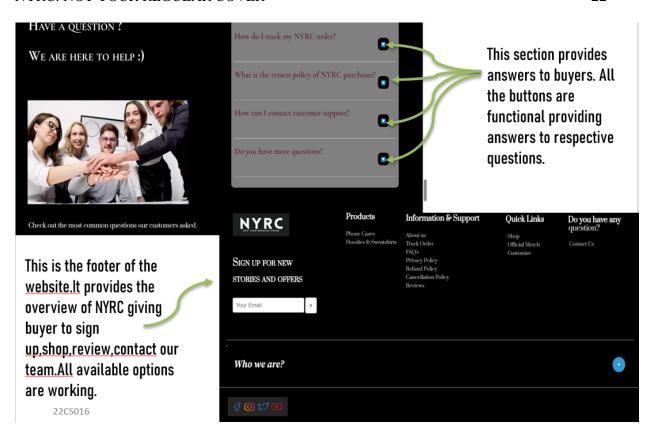


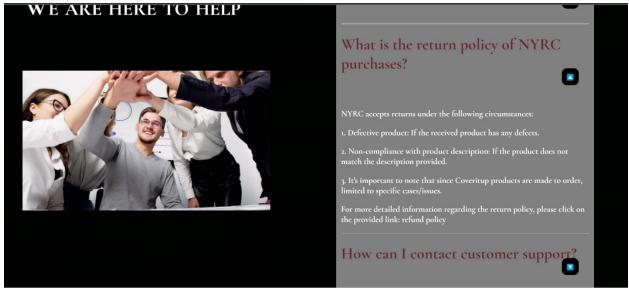




NYRC Reviews by newspapers and magazines









Refund Policy

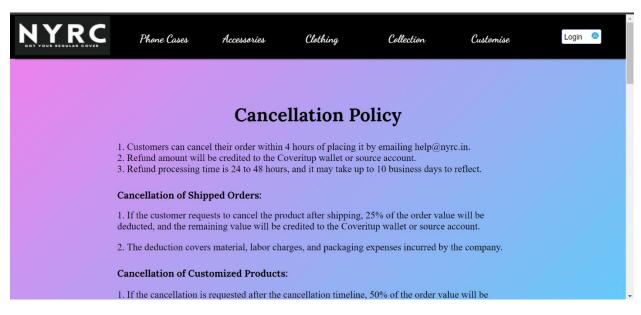
TERMS AND CONDITIONS:

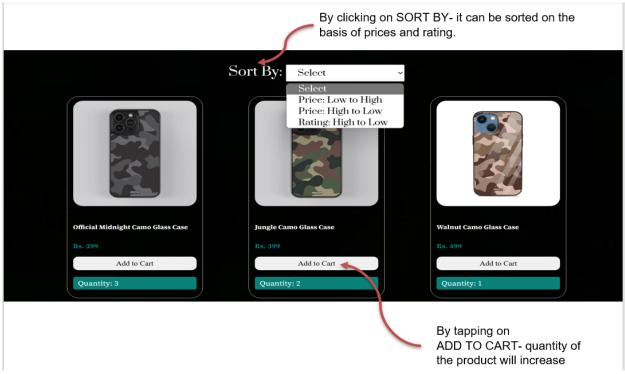
At NYRC, we always treat our customers like a family & our goal is to provide 100% satisfaction to our customers. If for any purpose our customers are not happy with the product, we are here to guide them.

For any concerns or issues, please ensure to send us an email within four days of delivery at help@nyrc.in. This allows us to promptly address your request and provide further assistance in accordance with our policies

RETURN POLICY FOR MOFT:

- 1. No Question asked for Return within 7 days from delivery, Product should be in mint condition when picked for return.
- 2. Returns not accepted if the sticker is Tampered or detached.
- 3. If you encounter any issues such as fitting problems, manufacturing defects, or printing discrepancies, we are more than happy to assist you with a free replacement.
- 4. In the event of Customers refusing the package after shipping. Customers have the option to either have the package reshipped or opt for a refund, with a deduction of 30-50% on the final order

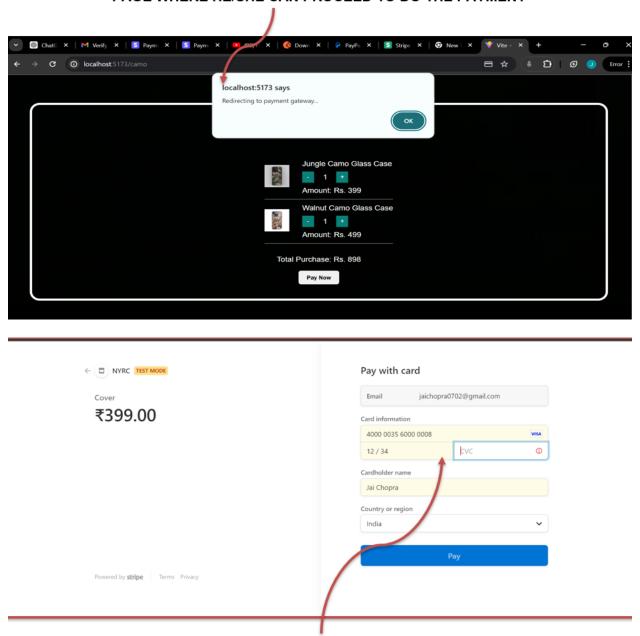




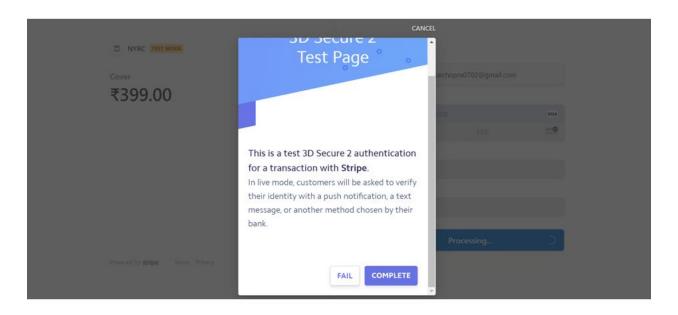


THIS PAGE HIGHLIGHTS THE PRURCHASES ADDED TO CART AND CONSUMER CAN PROCEED TO PAY

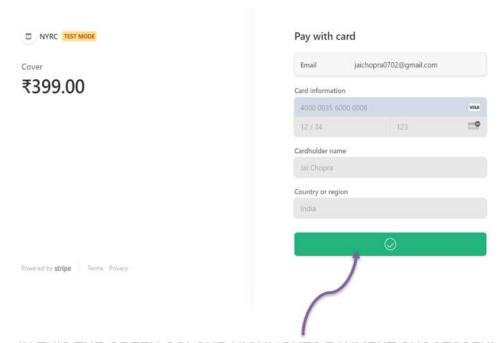
ONCE THE CONSUMER CLICKS ON PAY, HE/SHE IS REDIRECTED TO STRIPE PAGE WHERE HE/SHE CAN PROCEED TO DO THE PAYMENT



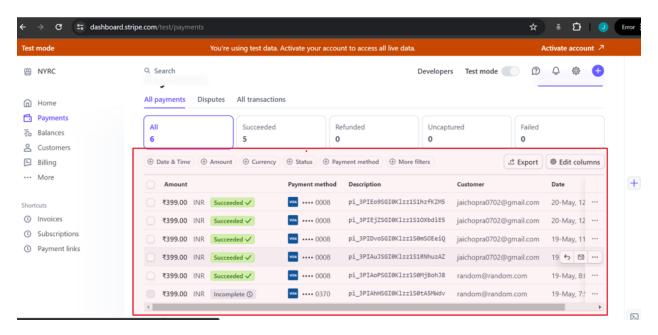
WHEN REDIRECTED, THE CONSUMER NEEDS TO ADD CREDENTIALS LIKE CARD DETAILS,CVV,COUNTRY NAME/REGION AND PROCEED FURTHER.



THIS IS THE FINAL CONFIRMATION REQUESTED TO CONSUMER WHETHER HE/SHE WISHES TO PROCEED THE PAYMENT.



IN THIS THE GREEN COLOUR HIGHLIGHTS PAYMENT SUCCESSFUL.



THIS HIGHLIGHTS WHETHER THE TRANSACTIONS ARE SUCCEEDED OR INCOMPLETE. THIS ALSO PROVIDES DETAILS OF THE INCURRED TRANSACTIONS.

REFERENCES

- > STRIPE
- > YOUTUBE
- > COVER IT UP
- CASE FACTORY
- > SOULED STORE
- > PINTEREST
- > RED WOLF