



ONLINE EYEWEAR STORE

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1. Problem Description

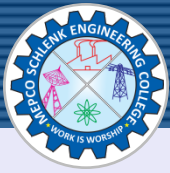
The need for an online eyewear store has increased over the years due to several factors.

- Firstly, *people have become more tech-savvy* and *prefer to shop online*, as it offers convenience and saves time.
- Secondly, the *eyewear industry is growing rapidly*, and customers are looking for a *wider range of products, styles, and designs to choose from*. An online eyewear store can offer a more extensive range of products as compared to a physical store.
- The online eyewear store project aims to provide a *convenient and hassle-free way* for customers to purchase *high-quality eyewear products from the comfort of their own homes*.
- The website will offer a *wide range of eyewear products*, including prescription glasses, sunglasses, contact lenses, and other accessories.



2. Objective

- To create an *user-friendly and convenient platform for customers* to purchase high-quality eyewear products online.
- To offer a wide range of eyewear products, including prescription glasses, sunglasses, contact lenses, and other accessories.
- To ensure a safe shopping experience, the project aims to offer *secure payment gateways and provide excellent customer service*, including prompt responses to customer queries and timely resolution of issues.



- To offer high-quality products, personalized recommendations, and excellent customer service, the project *aims to increase brand awareness and loyalty* while generating revenue for the business.
- Ultimately, the objective of the online eyewear store project is to provide customers with a *seamless and hassle-free shopping experience*, increasing *customer satisfaction and loyalty*.



3. Outcome

Building an online eyewear store website in Angular can bring numerous benefits to your business. Angular is a popular JavaScript framework that is used to build scalable and robust web applications. Some of the benefits of building an online eyewear store website in Angular include:

1. ***Increased Revenue:*** An online store can help increase revenue by providing a more extensive reach to potential customers beyond your physical location. Customers can purchase products anytime and anywhere, which can result in more sales.
2. ***Improved Customer Experience:*** An online eyewear store can offer an improved customer experience, such as personalized product recommendations, easy browsing and selection of products, and quick and convenient checkout. These can help to create a loyal customer base and increase repeat purchases.



3. *Better Inventory Management:* An online store can help with better inventory management, as the real-time tracking of inventory can help to minimize stockouts and reduce overstocking.

4. *Easier Management of Customer Data:* Online stores can provide insights into customer behaviour and preferences, which can be used to improve the marketing and sales strategies. This data can help businesses to tailor their products and services to customer needs and preferences, leading to higher customer satisfaction and sales.

5. *Increased Brand Awareness:* An online store can help increase brand awareness, as it allows businesses to reach a wider audience and attract new customers. This can help to establish the business as a reputable brand in the eyewear industry and create a loyal customer base.

4. Flow Diagram

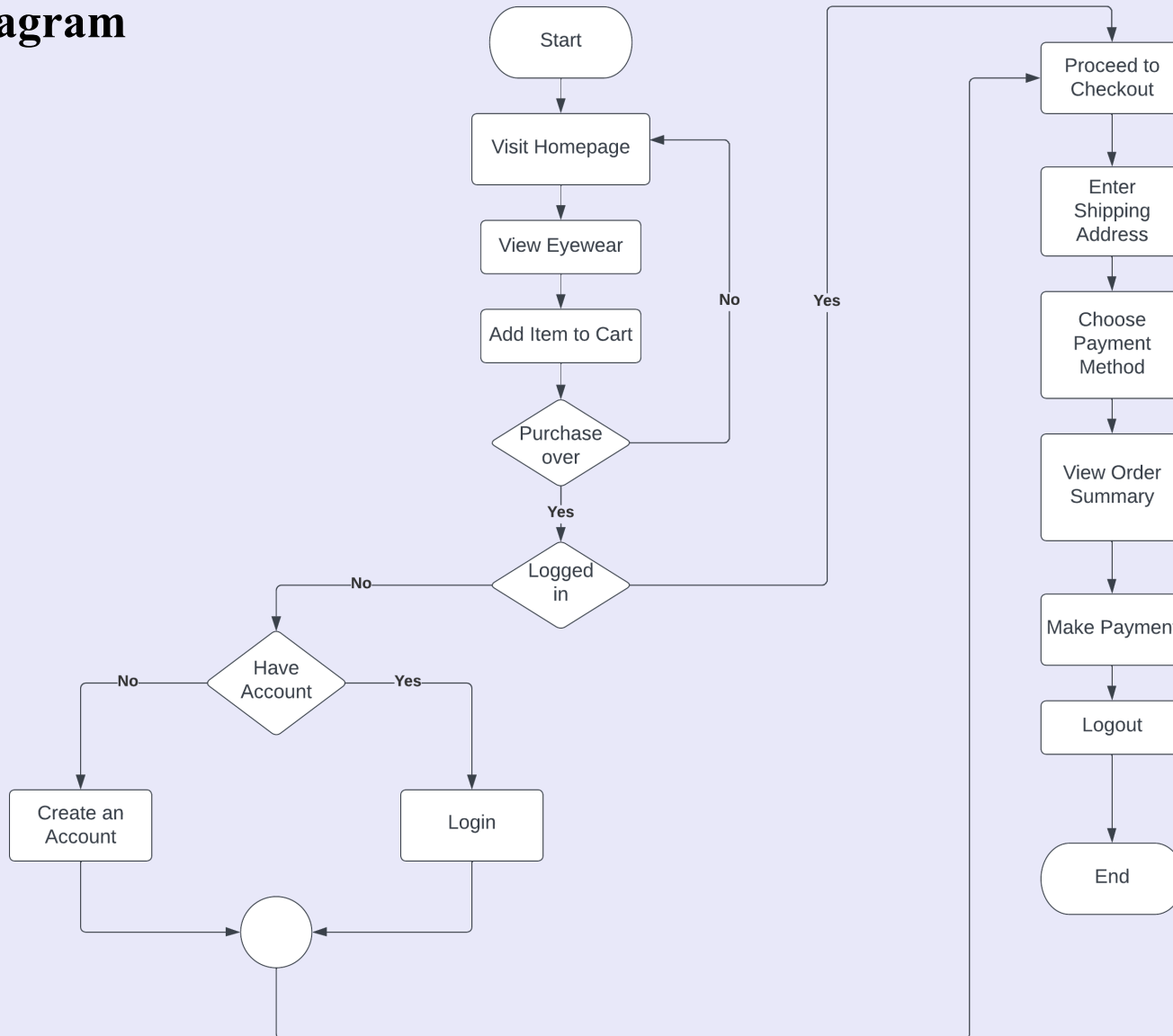


Figure 4.1: Flow Diagram of Online Eyewear Store Website



Architectural flow diagram implies the flow of the system. **Figure 4.1** depicts the architectural flow diagram for the Online Eyewear Store website.

The detailed explanation of the flow diagram is as follows:

- The flow starts with the user visiting the homepage of the website.
- The user can view the various kind of eyewear that are available.
- The user can also view the detailed description of each eyewear.
- The user can add the eyewear to the cart that he/she wishes to buy.
- Once the eyewear is added to the cart, the user can also change the quantity of the eyewear that he/she wishes to buy, that is it can be incremented or decremented.
- The user can then return to the home page and buy furthermore eyewear.



- Once the user has added all the desired eyewear to the cart with the desired quantity, the system checks whether the user is logged in or not.
- If the user is already logged in, the user proceeds to checkout page.
- Else, the user is taken to the login page to login to the lensmakers website.
- If the user is a new user, then the user is taken to the registration page for creating a new account.
- Then, the user proceeds to check out and enters the shipping address of the products.
- Then the user chooses the desired payment method, and the order summary is shown to the user.
- Then the user makes payment online if he has chosen the PayPal option, else the user confirms the order in case of COD option.

5. Modules

Listed below gives a description of database document schemas used for Online Eyewear Store.

Table 5.1: User Description

Attribute Name	Type	Constraint(s)	Description
User ID	String	UNIQUE	Autogenerated for each user, when a new user registers in the website
Name	String	NOT NULL	Name of the user
Email-ID	String	Must be of the form <username>@<mailserver>.<domain> UNIQUE, NOT NULL	E-Mail ID of the User
Password	String	NOT NULL	Password which the user uses to login to the website
IsAdmin	Boolean	NOT NULL	Indicates whether the user has admin privileges

Table 5.2: Product Description

Attribute Name	Type	Constraint(s)	Description
Product ID	String	UNIQUE	Autogenerated for each product, when it is added to the database
Name	String	NOT NULL	Name of the product
Slug	String	UNIQUE	Used to navigate to the product description page of that product
Image	String	NOT NULL	Path to the image of the eyewear
Brand	String	NOT NULL	Brand of the eyewear
Category	String	NOT NULL	Type of eyewear
Description	String	NOT NULL	Detailed description about the eyewear
Price	Number	NOT NULL	Price of the eyewear
Count in stock	Number	NOT NULL	Number of that particular eyewear currently in stock
Rating	Number	NOT NULL	Star rating out of 5
Number of reviews	Number	NOT NULL	Total number of reviews for that eyewear
Reviews	Array	NOT NULL	Collection of usernames, with their corresponding rating and comments

Table 5.3: Review Description

Attribute Name	Type	Constraint(s)	Description
Name	String	NOT NULL	Name of the user
Rating	Number	NOT NULL	Star rating out of 5
Comment	String	NOT NULL	Comment provided by the user

Table 5.4: Order Description

Attribute Name	Type	Constraint(s)	Description
Order ID	String	UNIQUE	Autogenerated for each order, when it is added to the database
Products	Array	NOT NULL	Name of the user
Shipping Address	Object	NOT NULL	Delivery address for the order
User ID	String	NOT NULL	Comment provided by the user
Payment Method	String	NOT NULL	Way by which customer makes payment for the purchase
Items Price	Number	NOT NULL	Price of all the items the customer has purchased
Shipping Price	Number	NOT NULL	Shipping charges for the purchase
Tax Price	Number	NOT NULL	Tax for the purchase
Total Price	Number	NOT NULL	Total price including the items price, shipping charges and the tax price
IsPaid	Boolean	NOT NULL	Indicates whether the payment has been made or not
Payment Result	Object		Status of the payment
paidAt	Timestamp		Exact time at which payment is made
IsDelivered	Boolean		Indicates whether the product has been delivered or not
deliveredAt	Timestamp		Exact time at which order is delivered



Table 5.5: Shipping Address Description

Attribute Name	Type	Constraint(s)	Description
Full Name	String	NOT NULL	Full name of the customer
Address	String	NOT NULL	Street address and area
City	String	NOT NULL	Delivery City
State	String	NOT NULL	Delivery State
Postal Code	String	NOT NULL	PIN code of delivery address
Country	String	NOT NULL	Delivery country

Table 5.6: Payment Description

Attribute Name	Type	Constraint(s)	Description
Payment ID	String	UNIQUE	ID generated for each payment
Status	String	NOT NULL	Current state of the payment



The various modules available in the Online Eyewear Store are as follows:

1. Login Module
2. Register Module
3. Search Eyewear Module
4. Search by Category Module
5. Add Eyewear Module
6. Edit Eyewear Module
7. Delete Eyewear Module
8. Add to Cart Module
9. Place Order Module
10. Make Payment Module
11. Edit User Module
12. Delete User Module



5.1. Login Module

Table 5.7 Login Module Description

Files used	login.component.html, login.component.ts, auth.service.ts, user.routes.ts
Short Description	Allows the user to login to the online eyewear store website
Arguments	E-Mail ID, Password
Return	Success/Failure in login
Pre-Condition	The user must have an account in the website
Post-Condition	The home page of the online eyewear store will be displayed
Exception	Invalid E-Mail ID or password
Actors	Admin, User
Collections used	Users collection

5.2. Register Module

Table 5.8 Register Module Description

Files used	register.component.html, register.component.ts, user.service.ts, user.routes.ts
Short Description	Allows the user to create a new account in the online eyewear store website
Arguments	Name, E-Mail ID, Password, Confirm Password
Return	Success/Failure in registration
Pre-Condition	The user must not have an account with the e-mail id
Post-Condition	The home page of the online eyewear store will be displayed
Exception	Invalid e-mail or Weak password
Actors	User
Collections used	Users collection

5.3. Search Eyewear Module

Table 5.9 Search Eyewear Module Description

Files used	search.component.html, search.component.ts, product.routes.ts, product.service.ts
Short Description	Allows the user to search an eyewear based on the name of the eyewear
Arguments	Eyewear Name
Return	Eyewear Details/Eyewear Not Found
Pre-Condition	The user must know the correct name of the eyewear that he is going to search for
Post-Condition	All the eyewear that contains the search term in its name is displayed to the user
Exception	No matching eyewear
Actors	User
Collections used	Products collection

5.4. Search by Category Module

Table 5.10 Search by Category Module Description

Files used	search.component.html, search.component.ts, product.routes.ts, product.service.ts
Short Description	Allows the user to search an eyewear based on the category of the eyewear
Arguments	Eyewear Category
Return	List of Eyewear Details/Eyewear Not Found
Pre-Condition	The user must know the category or the class of the eyewear that he wishes to buy
Post-Condition	All the eyewear that belongs to the selected category is displayed to the user.
Exception	No matching eyewear in the selected category
Actors	User
Collections used	Products collection



5.5. Add Eyewear Module

Table 5.11 Add Eyewear Module Description

Files used	admin-product-edit.component.html, admin-product-edit.component.ts, product.service.ts, product.routes.ts, admin.guard.ts
Short Description	Allows the admin to add new eyewear to the online eyewear store website
Arguments	Name, Slug, Price, Path to Image, Brand, Category, Count in stock, Description
Return	Success/Failure in adding new eyewear
Pre-Condition	The admin must be logged in to the website
Post-Condition	The eyewear inventory page of the online eyewear store will be displayed
Exception	Duplicate slug or Invalid path to image
Actors	Admin
Collections used	Products collection, User Collection

5.6. Add to Cart Module

Table 5.12 Add to Cart Module Description

Files used	cart.component.html, cart.component.ts, cart.service.ts, product.routes.ts
Short Description	Allows the user add eyewear to the cart in the online eyewear store website
Arguments	Eyewear name, quantity
Return	Success/Failure adding eyewear to cart
Pre-Condition	The user must be logged in to the website
Post-Condition	The cart page of the online eyewear store will be displayed
Exception	Product out of stock
Actors	User
Collections used	Products collection, Users Collection

5.7. Place Order Module

Table 5.13 Place Order Module Description

Files used	place-order.component.html, place-order.component.ts, order.routes.ts, cart.service.ts, order.service.ts
Short Description	Allows the user to login to the online eyewear store website
Arguments	Eyewear name, Quantity, Shipping Address, Payment Method
Return	Success/Failure in placing order
Pre-Condition	The user must be logged in to the website
Post-Condition	The order summary page of the online eyewear store will be displayed
Exception	Invalid shipping address or Product out of stock
Actors	User
Collections used	Orders collection, Users Collection

5.8. Make Payment Module

Table 5.14 Make Payment Module Description

Files used	payment-method.component.html, payment-method.component.ts, order.routes.ts, auth.guard.ts, auth.service.ts
Short Description	Allows the user to make payment for an order placed in the online eyewear store website
Arguments	Order ID, Amount, PayPal E-Mail, PayPal Password
Return	Success/Failure in payment
Pre-Condition	The user must be logged in to the website
Post-Condition	The payment status for the order will be displayed to the user
Exception	Invalid PayPal E-Mail or Password
Actors	User
Collections used	Orders collection, Payment Collection

6. Results

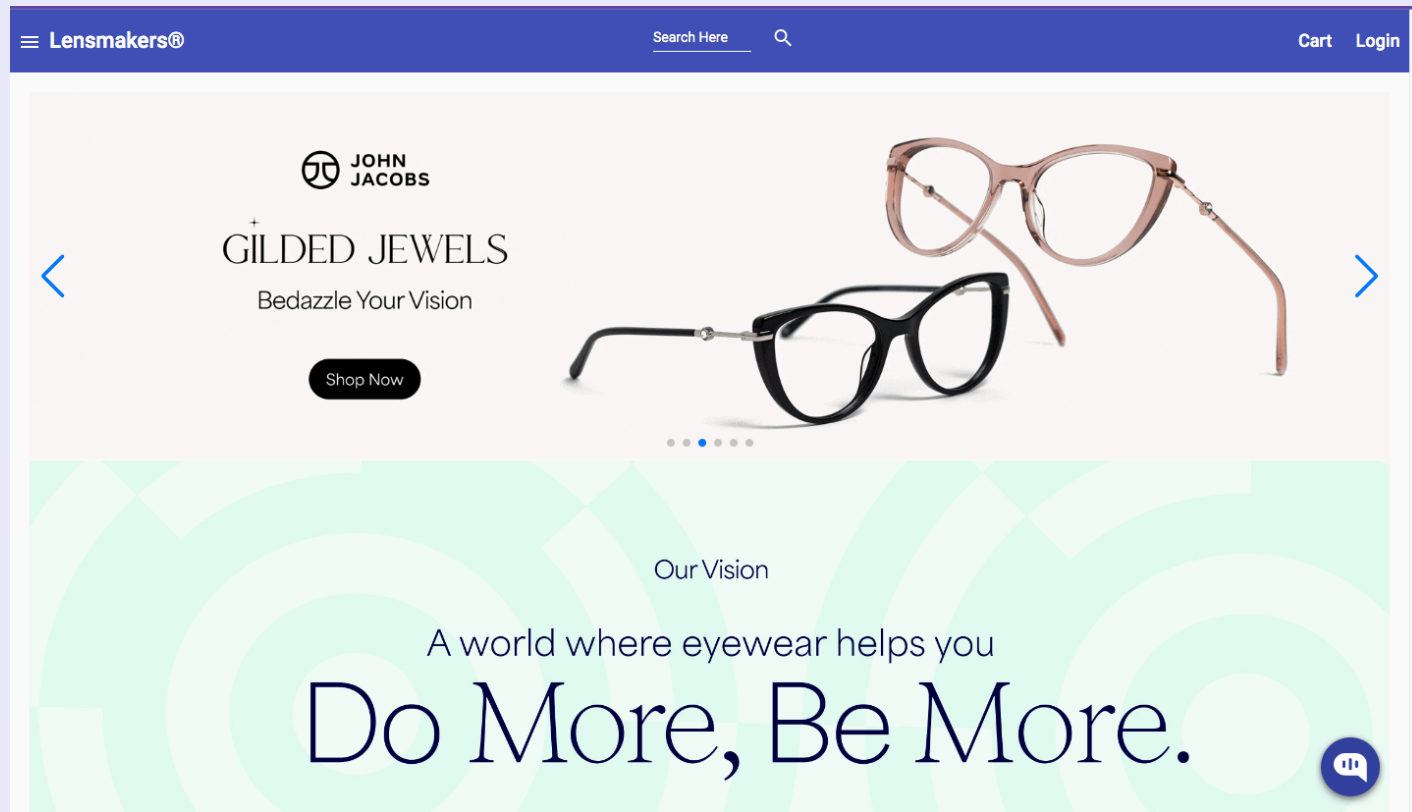


Figure 6.1: Home Page of Online Eyewear Store

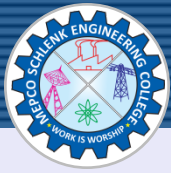


Figure 6.1 provides the interface for home page of the website. The user can select from a wide range of eyewear available in the homepage. There is also a search feature to search for a particular eyewear from the website. Also, a filter by category option is available in the side menu, to filter out eyewear based on specific category, for example sunglasses or power glasses.

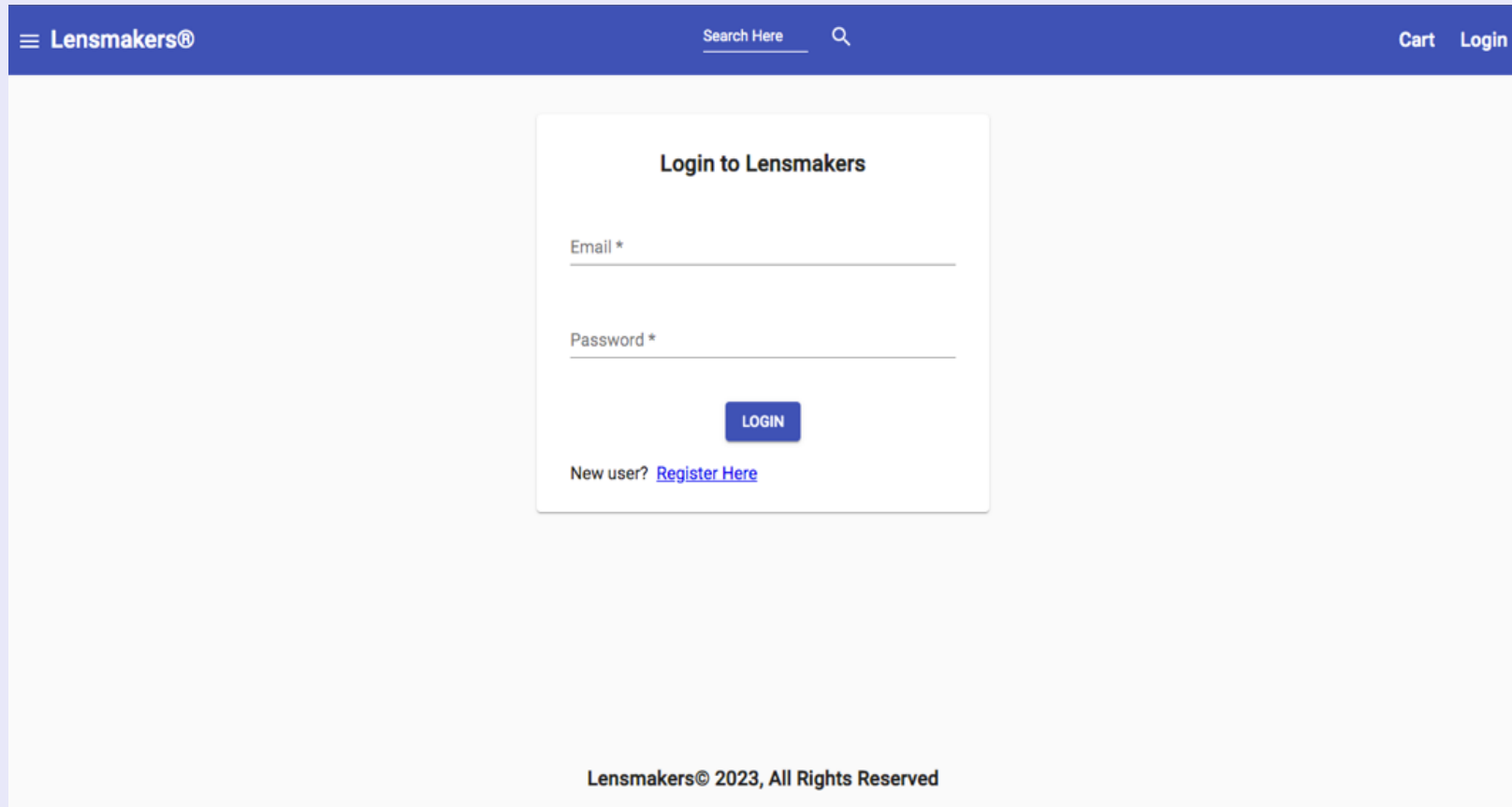
The image shows a web browser window displaying the login page of an online eyewear store named 'Lensmakers®'. The page has a dark blue header with the store's name on the left, a search bar in the center, and 'Cart' and 'Login' links on the right. The main content area is white and contains a centered login form. The form is titled 'Login to Lensmakers' and includes two input fields: 'Email *' and 'Password *'. Below these fields is a blue 'LOGIN' button. At the bottom of the form, there is a link for 'New user? Register Here'. The footer of the page states 'Lensmakers© 2023, All Rights Reserved'.

Figure 6.2: Login Page of Online Eyewear Store

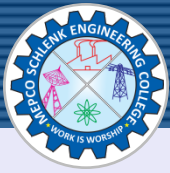


Figure 6.2 provides the interface for login page of the website. If the login e-mail and password are valid, the user is allowed to login to the website. If the user is a new user there is also a register link embedded in the page which takes the user to the registration page.

≡ Lensmakers® Search Here 🔍 Cart Login

Create an Account

Name *

Email *

Password *

Confirm Password *

REGISTER

Already have an account? [Login](#)

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Figure 6.3: Register Page of Online Eyewear Store



Figure 6.3 provides the interface for new user registration page of the website. The user can create a new account in the website by using his/her e-mail address, provided the e-mail doesn't already exist on the database. If the user already has an account, then the user is taken to the login page where the user can login with his/her existing e-mail and password.

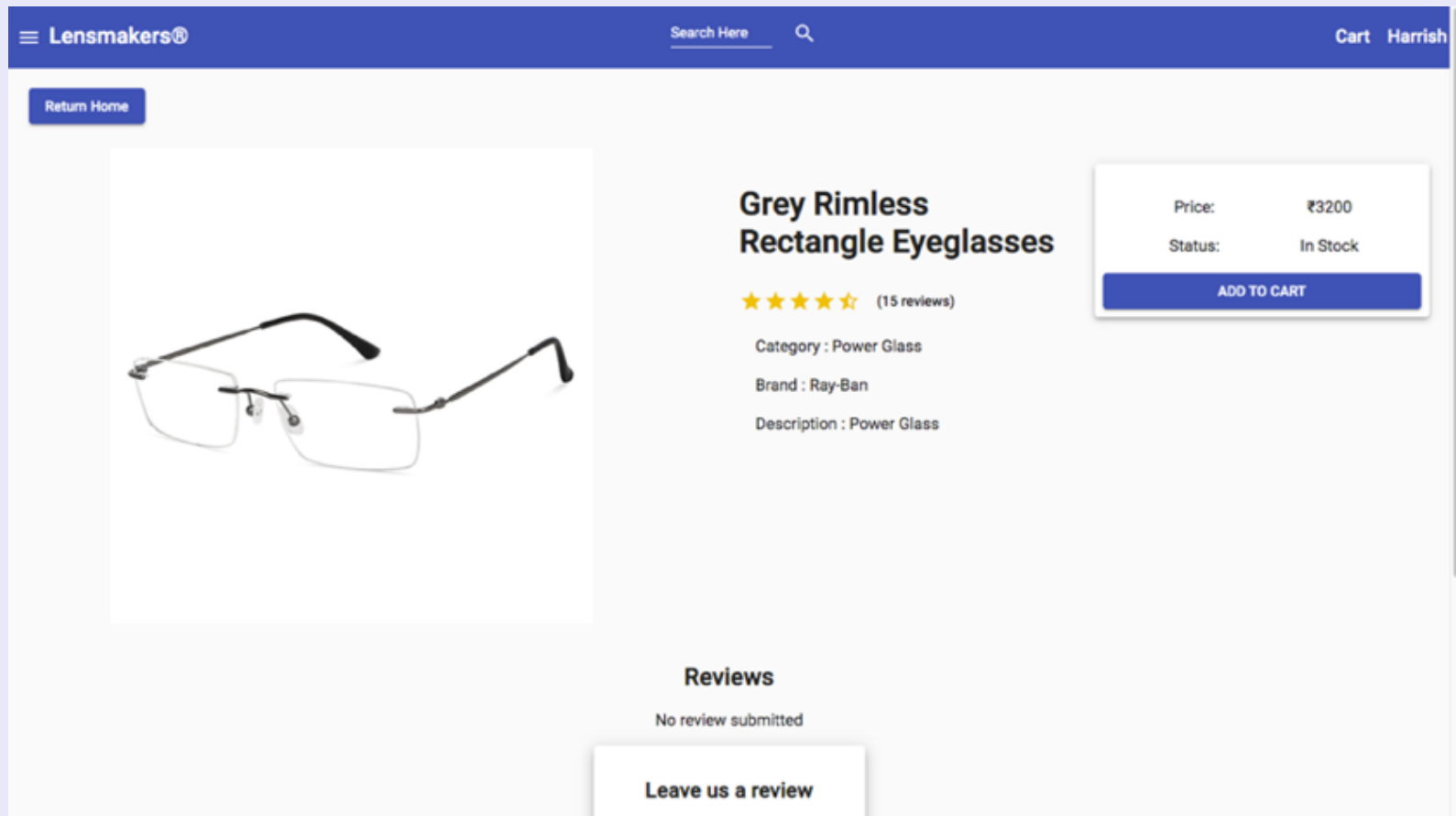





Figure 6.4: Product Details Page of Online Eyewear Store



Figure 6.4 provides the detailed information about an eyewear. It contains the name of the eyewear, category of the eyewear, brand of the eyewear, price of the eyewear, short description about the eyewear, stock status of the eyewear, star rating out of 5, number of reviews. The user can also submit a star rating and review for the eyewear. Add to cart button is provided in the website, which the user can use to add the product to his/her cart, provided the item is in stock, for purchase.

Shopping Cart

Image	Name	Price	Quantity	Subtotal
	Black Full Rim Wayfarer Sunglasses	₹1299	2	₹2598
	Black Full Rim Hexagonal Glasses	₹3799	1	₹3799
	Sand Dune Full Rim Square	₹1200	3	₹3600

Subtotal (6) : ₹9997

CHECK OUT

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Figure 6.5: Cart Page of Online Eyewear Store



Figure 6.5 provides the cart page of the website. This page displays all the eyewear that the user has added to his/her cart with the eyewear name, preview image and its price. The user can also increment or decrement the quantity of the eyewear in the cart page. After completing the process, the user can proceed to checkout.

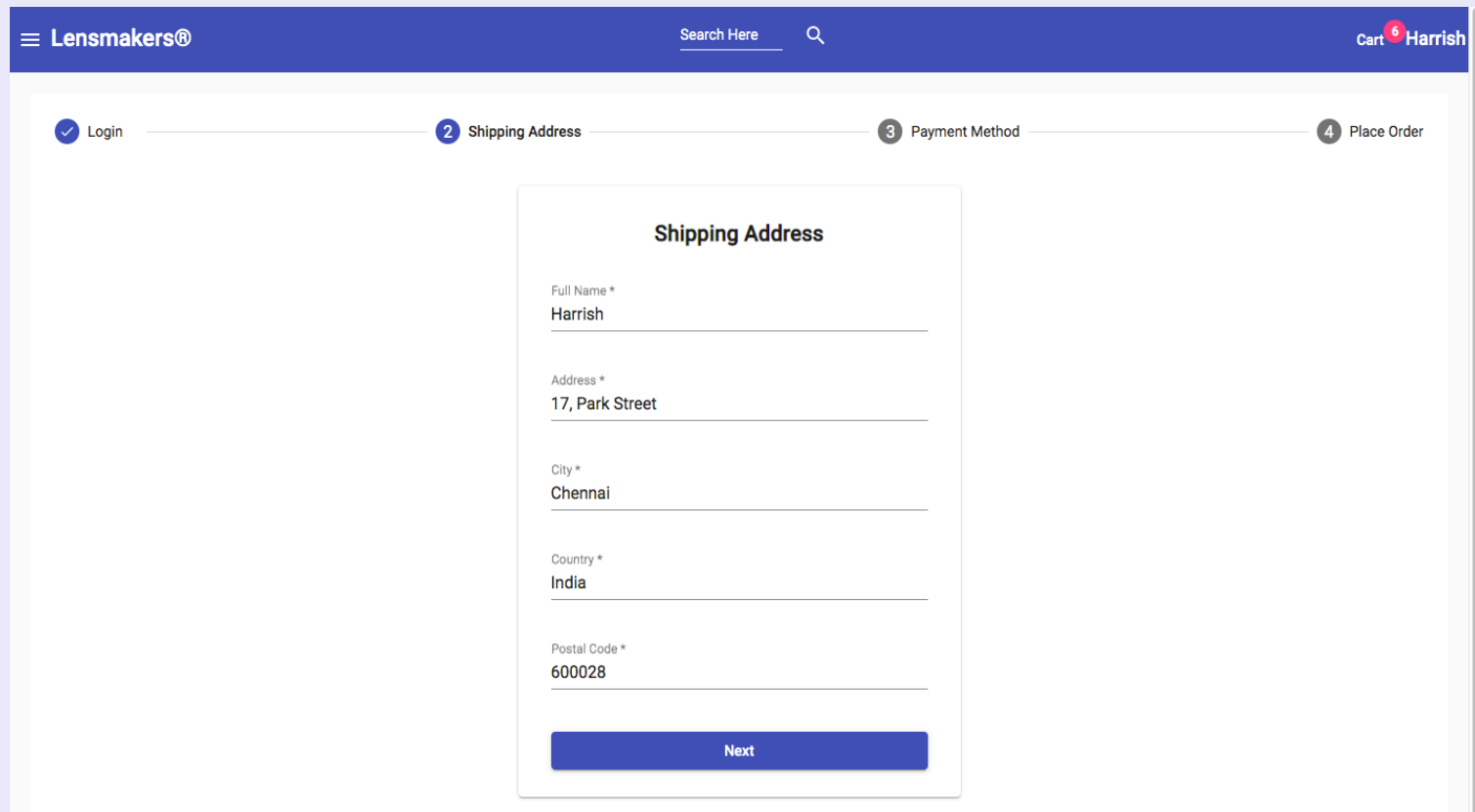
The screenshot shows the 'Shipping Address' page of an online eyewear store. The header is dark blue with the 'Lensmakers®' logo on the left, a search bar in the center, and a 'Cart' icon with a red notification bubble containing the number '6' and the name 'Harrish' on the right. Below the header, a progress bar shows four steps: '1 Login' (checked), '2 Shipping Address' (active), '3 Payment Method', and '4 Place Order'. The main content area is a white box titled 'Shipping Address' containing five form fields: 'Full Name *' with the value 'Harrish', 'Address *' with '17, Park Street', 'City *' with 'Chennai', 'Country *' with 'India', and 'Postal Code *' with '600028'. A blue 'Next' button is at the bottom of the form.

Figure 6.6: Shipping Address Page of Online Eyewear Store

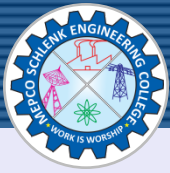


Figure 6.6 provides the shipping address page of the website. The user must fill the billing name along with the complete address with postal code for the successful delivery of the package.

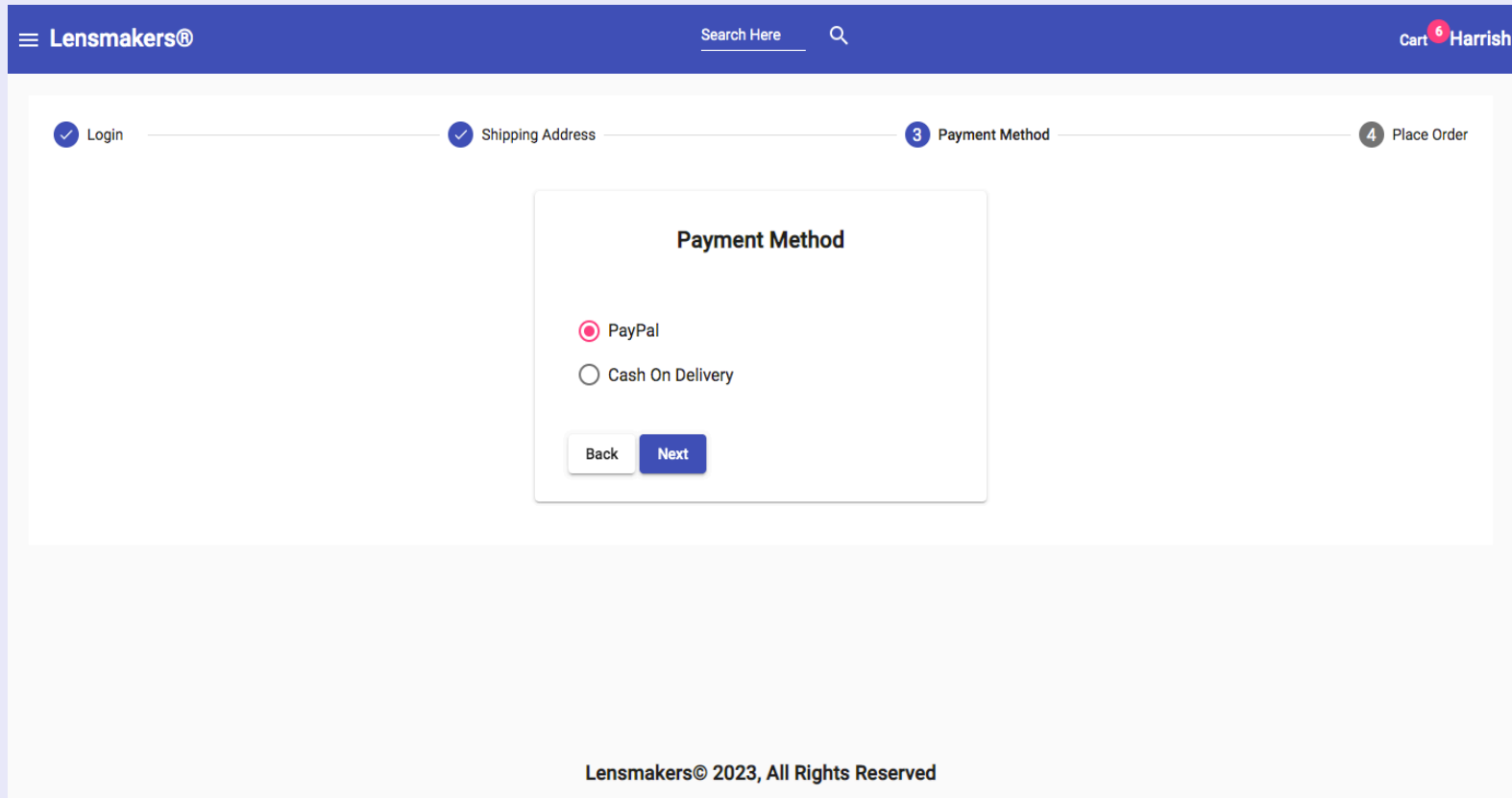



The screenshot shows the 'Payment Method' page of the Lensmakers® online eyewear store. The page has a dark blue header with the 'Lensmakers®' logo on the left, a search bar in the center, and a shopping cart icon with a red notification bubble on the right. Below the header, a progress bar indicates four steps: 'Login', 'Shipping Address', 'Payment Method' (the current step, highlighted with a blue circle and the number 3), and 'Place Order' (highlighted with a grey circle and the number 4). The main content area is a light yellow box containing a white card titled 'Payment Method'. This card has two radio button options: 'PayPal' (which is selected) and 'Cash On Delivery'. At the bottom of the card are two buttons: 'Back' and 'Next'. The footer of the page states 'Lensmakers© 2023, All Rights Reserved'.

Figure 6.7: Payment Method Page of Online Eyewear Store



Figure 6.7 provides the payment method page of the website. The user can choose to pay through the PayPal payment gateway or the Cash on Delivery option.

Place Order

Image	Name	Price	Quantity	Subtotal
	Black Full Rim Wayfarer Sunglasses	₹1299	- 2 +	₹2598
	Black Full Rim Hexagonal Glasses	₹3799	- 1 +	₹3799
	Sand Dune Full Rim Square	₹1200	- 3 +	₹3600

Order Summary

Items :	₹9997
Shipping :	₹0
Tax :	₹1499.55
Total :	₹11496.55

PLACE ORDER

Shipping Address

Harrish, 17, Park Street, Chennai, India, 600028

EDIT

Payment Method

PayPal




EDIT

Figure 6.8: Place Order Page of Online Eyewear Store



Figure 6.8 provides the place order page of the website. The user can still increment or decrement the quantity of eyewear that he/she has finally checked out. The user can also edit the shipping address or the mode of payment. Once the user has confirmed all the details, he/she can click the place order button to confirm the order.

Order Preview

Image	Name	Price	Quantity	Subtotal
	Black Full Rim Wayfarer Sunglasses	₹1299	2	₹2598
	Black Full Rim Hexagonal Glasses	₹3799	1	₹3799
	Sand Dune Full Rim Square	₹1200	3	₹3600

Order Summary

Items :	₹9997
Shipping :	₹0
Tax :	₹1499.55
Total :	₹11496.55

PayPal

☐ Debit or Credit Card

Powered by **PayPal**

Payment Method

Method: PayPal

Status: **Not Paid**

Shipping Address

Address: Harrish, 17, Park Street, Chennai, India, 600028

Status: **Not Delivered**

Figure 6.9: Order Summary Page of Online Eyewear Store



Figure 6.9 provides the order summary page of the website. This page displays all the eyewear purchased by the user, with the preview image, eyewear name, price and quantity. It also displays the item price, tax and total amount of the purchase. The user can make payment through the PayPal Payment gateway or using his/her debit/credit card.

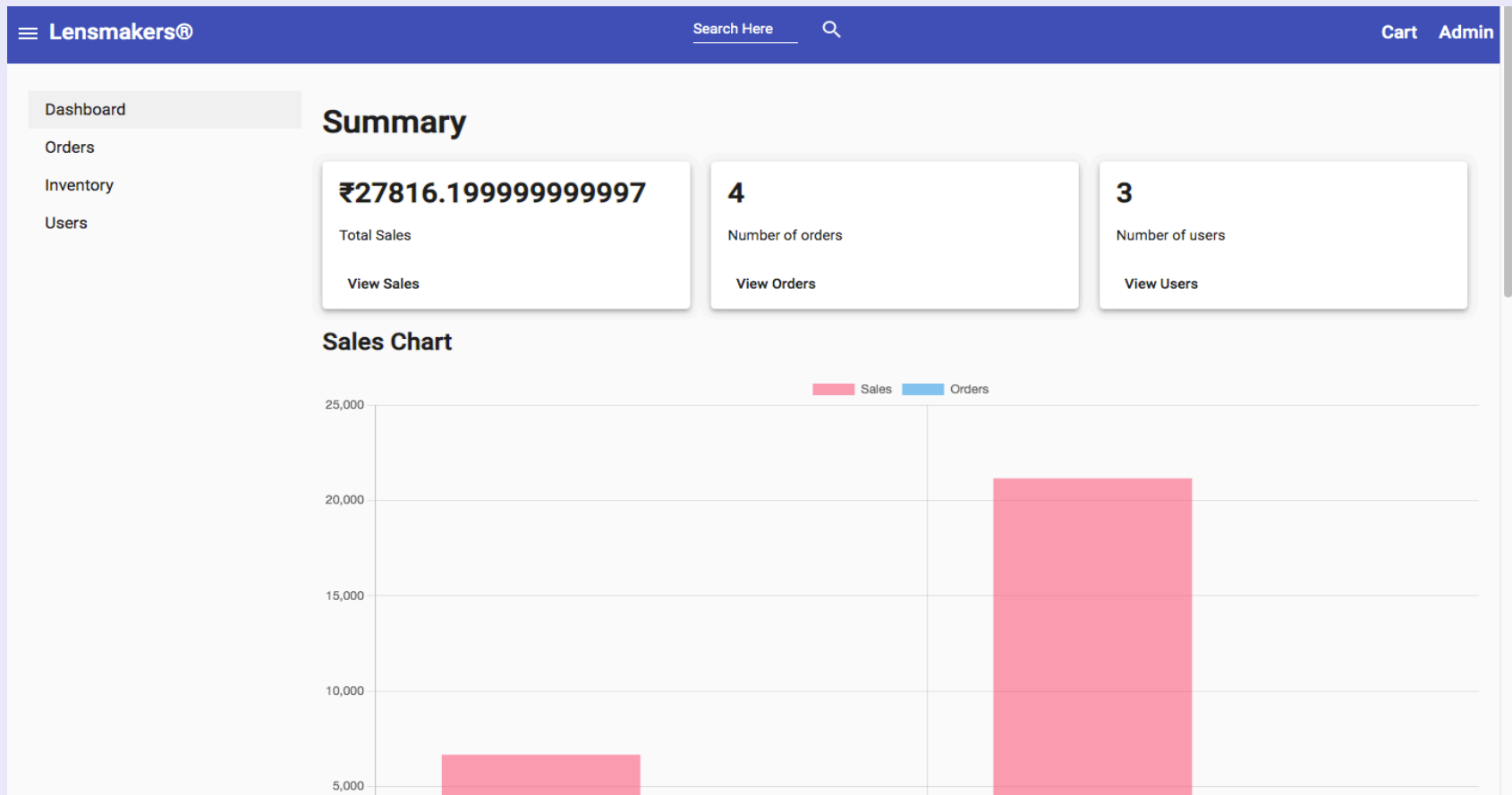


Figure 6.10: Admin Dashboard Page of Online Eyewear Store

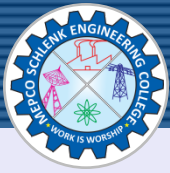


Figure 6.10 provides the admin dashboard page of the website. This page helps the admin to track the sales, orders and users. The sales is tracked and visually plotted using a histogram and the count of each eyewear category in the inventory is visualized using a pie chart.

Lensmakers®

Search Here

CartAdmin

DashboardOrdersInventoryUsers

Manage Orders

ORDER ID	USER	DATE	TOTAL PRICE	PAID	DELIVERED	ACTION
...6e94f	Harrish	2023-04-30T19:02:49.573Z	₹6665.4	NO	NO	DETAILS
...bc886	Harrish	2023-05-01T13:20:48.085Z	₹8159.25	2023-05-01T13:21:11.377Z	2023-05-01T13:21:40.078Z	DETAILS
...5c8ac	Harrish	2023-05-01T17:37:57.468Z	₹1495	NO	NO	DETAILS
...5c8e2	Harrish	2023-05-01T17:56:55.465Z	₹11496.55	NO	NO	DETAILS

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Figure 6.11: Manage Orders Page of Online Eyewear Store



Figure 6.11 provides the order management page of the website. The admin can see and manage all the order details through this page. The admin can also mark a parcel as delivered by clicking the details button which takes the admin to the order details page.

Figure 6.12: Eyewear Inventory Page of Online Eyewear Store



Figure 6.12 provides the eyewear inventory page of the website. It displays all the eyewear that are currently in the inventory of the eyewear store. The admin can add a new eyewear or modify or delete the existing eyewear details.

≡ Lensmakers@ Search Here 🔍 Cart Admin

Add / Update Eyewear

Name *
Sample Eyewear

Slug *
sample-eyewear-1682966803168

Price *
0

Path to Image *
../assets/images/sg-1.jpeg

Brand *
Sample Brand

Category *
Sunglass

Count In Stock *
0

Description *
Sunglass

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Figure 6.13: Add Eyewear Page of Online Eyewear Store



Figure 6.13 provides the add eyewear page of the website. The Admin can add a new eyewear to the inventory or update the details of an existing eyewear. Once a new eyewear is added or updated, the change is reflected immediately in the home page of the website.

≡ Lensmakers®

Search Here

Q

Cart Admin

DashboardOrdersInventory**Users**

Manage Users

ID	NAME	E-MAIL	ADMIN	ACTIONS	
...aa683	Admin	admin@admin	true	EDIT	DELETE
...aa684	user	user@user	false	EDIT	DELETE
...aa685	Harrish	harrish@gmail.com	false	EDIT	DELETE

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Figure 6.14: Manage Users Page of Online Eyewear Store

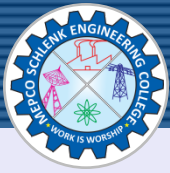


Figure 6.14 provides the manage users page of the website. The Admin can edit user details or delete user from the website. The admin can also make another user an Admin. That is, the admin can provide admin privileges to other users also.

≡ Lensmakers®

Search Here 🔍

Cart Admin

Update User: Harrish

Name *

Harrish

☐ Make Admin


[Update](#) [Back](#)


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Figure 6.15: Update User Page of Online Eyewear Store





Figure 6.15 provides the update user page of the website. The admin can change the name of the user and can provide a user with Admin privileges.

 Lensmakers®

Search Here 

Cart Admin

Order Preview

Image	Name	Price	Quantity	Subtotal
	Black Full Rim Wayfarer Sunglasses	₹1299	1	₹1299
	Blu Hustlr Grey Rim Bold	₹1300	1	₹1300

Order Summary

Items :	₹2599
Shipping :	₹0
Tax :	₹389.85
Total :	₹2988.85

DELIVER ORDER

Payment Method

Method: PayPal

Status: Paid at 2023-05-06T10:48:00.824Z

Shipping Address

Address: Harrish, 17, Park Street, Chennai, India, 600028

Status: Not Delivered

Figure 6.16: Deliver Order Page of Online Eyewear Store



Figure 6.16 provides the deliver order page of the website. Once the payment has been made successfully by the user, and the order has been delivered, the admin can mark the order as delivered in the website.

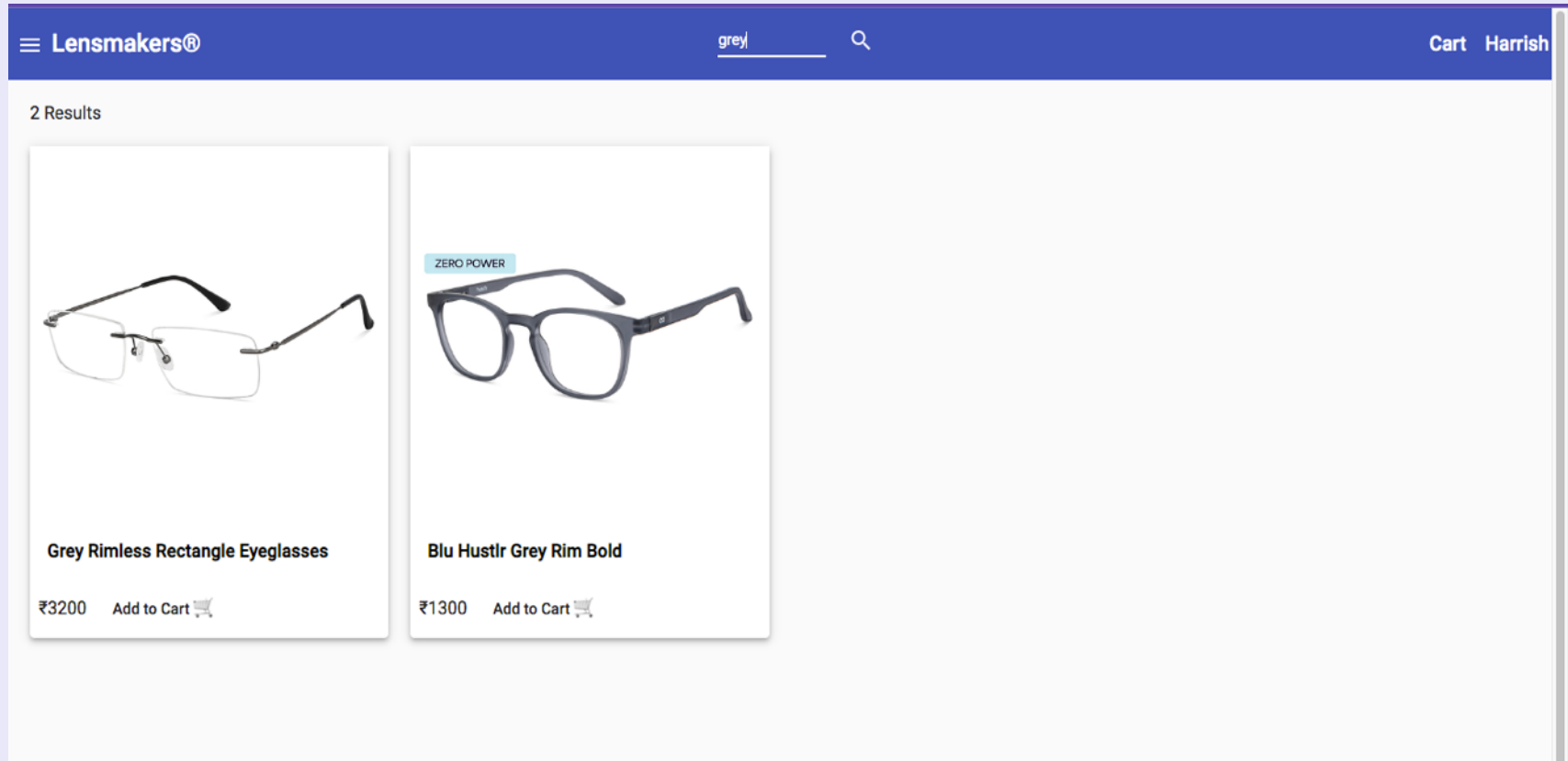


Figure 6.17: Search Page of Online Eyewear Store



Figure 6.17 provides the search eyewear page of the website. It enables the user to search for any particular eyewear based on the given eyewear name or a substring of the eyewear name.

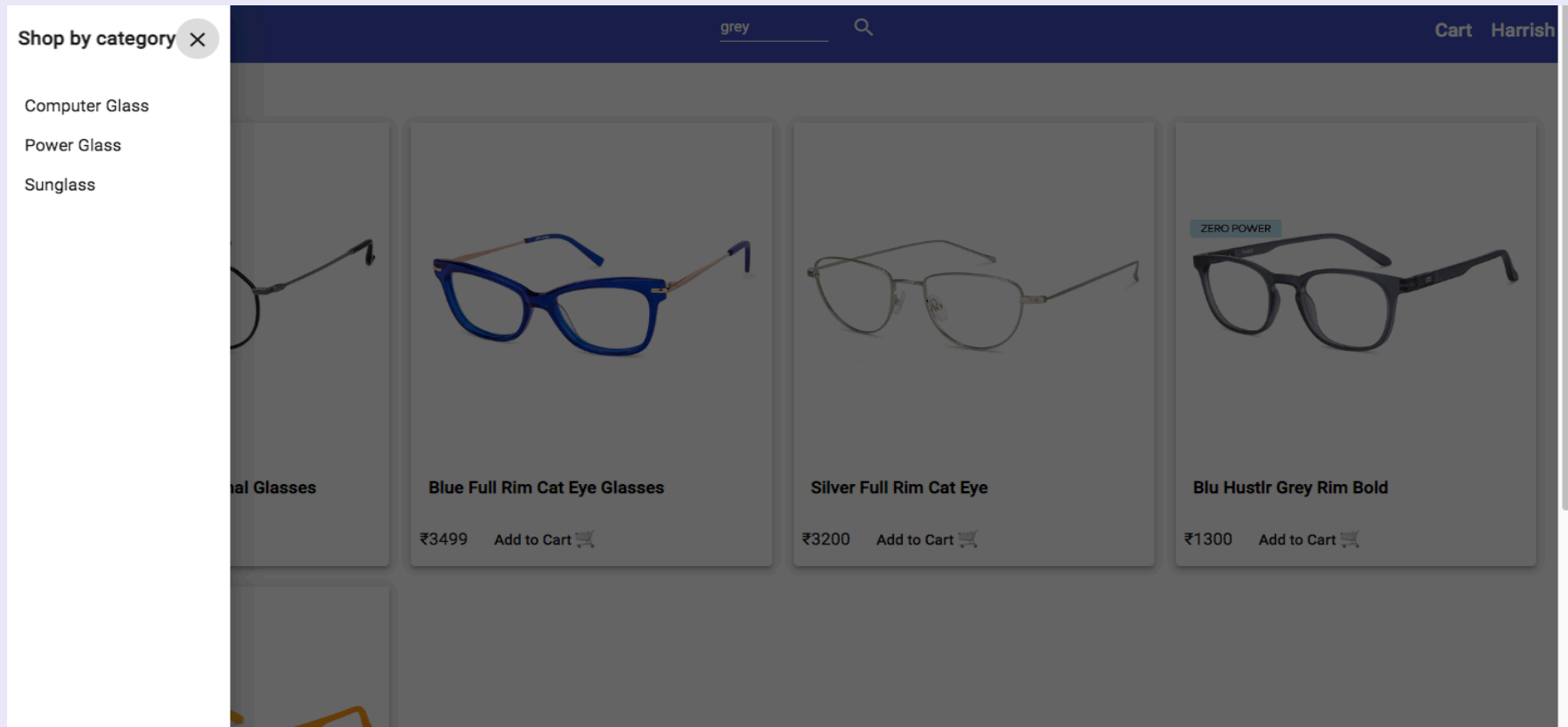


Figure 6.18: Search by Category Page of Online Eyewear Store

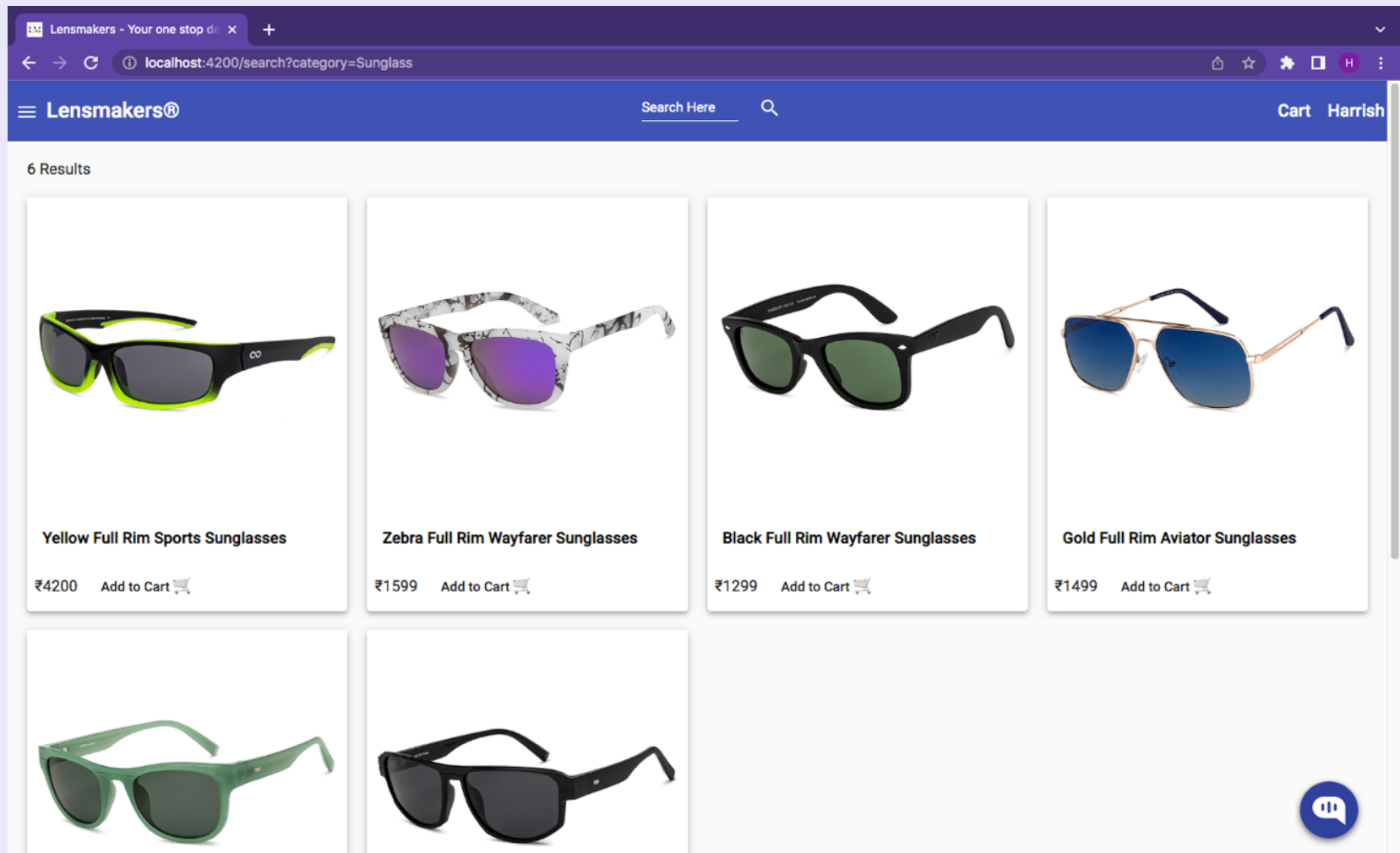


Figure 6.19: Category Filter Page of Online Eyewear Store



Figure 6.18 and **Figure 6.19** provides the search by category page and category-based filter results of the website. It enables the user to filter eyewear based on a selected category such as Sunglasses or Computer Glasses.



Conclusion:

Based on the user interface screenshots presented, it can be concluded that the design of the online eyewear store's interface is visually appealing and user-friendly. The use of high-quality product images, clear typography, and a consistent color scheme creates a cohesive and professional look. The layout of the homepage effectively showcases the store's featured products, while the top navigation bar and search bar make it easy for users to find what they are looking for. The product category pages are well-organized and provide useful filtering options, allowing users to quickly narrow down their search.

The product pages themselves are well-designed, with detailed product descriptions and clear pricing information. The "Add to Cart" and "Check Out" buttons are prominently displayed, making it easy for users to complete their purchase. The shopping cart and checkout pages are also well-designed, with clear instructions and easy-to-fill forms. The use of a progress bar during checkout provides users with a clear understanding of the steps required to complete their purchase. Overall, the user interface screenshots demonstrate that the online eyewear store's interface is well-designed and user-friendly, creating a positive user experience.



THANK YOU!