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**COIT20273&COIT13230**

**Software Design and Development Project**

**Term 1, 2024**

**Assessment 2**

**Progress Report on Online Shopping (Elecspectra)**

**Submitted to,**

**Unit coordinator**: **Farzad Sanati**

|  |  |
| --- | --- |
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# Detailed user stories

**Guest**

* As a guest, I want to open the application, so that I can only view a standard main page of the application.
* As a guest, I want to select product categories, so that I can find the product information.
* As a guest, I want to create a sign-up for the application, so that I can access the full version of the website.

**Customer**

* As a customer user, I want to log in to the application using my email address and password, so that I can view all of the website details and use full functions.
* As a customer user, I want to select my profile, so that I can edit my password, address, and mobile number.
* As a customer user, I want to search for products, so that I can select categories or write on the search bar.
* As a customer user, I want to use the inserted AI chatbot, so that I can get a detailed answer to what I asked about the application.
* As a customer user, I want to add the selected products to the shopping cart, so that I can view my selected items and total price.
* As a customer user, I want to use coupons, so that I can discount the products that I buy.
* As a customer user, I want to select items in my shopping list, so that I can delete the products.
* As a customer user, I want to pay for my shopping list items, so that I can insert payment details.
* As a customer user, I want to write a review and star rate, so that I can view other user's reviews.

**Admin**

* As an admin user, I want to log in using my email address and password, so that I can manage the application.
* As an admin user, I want to access the admin home page, so that I can add products.
* As an admin user, I want to manage the product list, so that I can edit and delete the products.
* As an admin user, I want to manage the review list, so that I can edit and delete the review.
* As an admin user, I want to update the inserted AI chatbot, so that I can provide latest with the information.

# Wireframes of all user interfaces

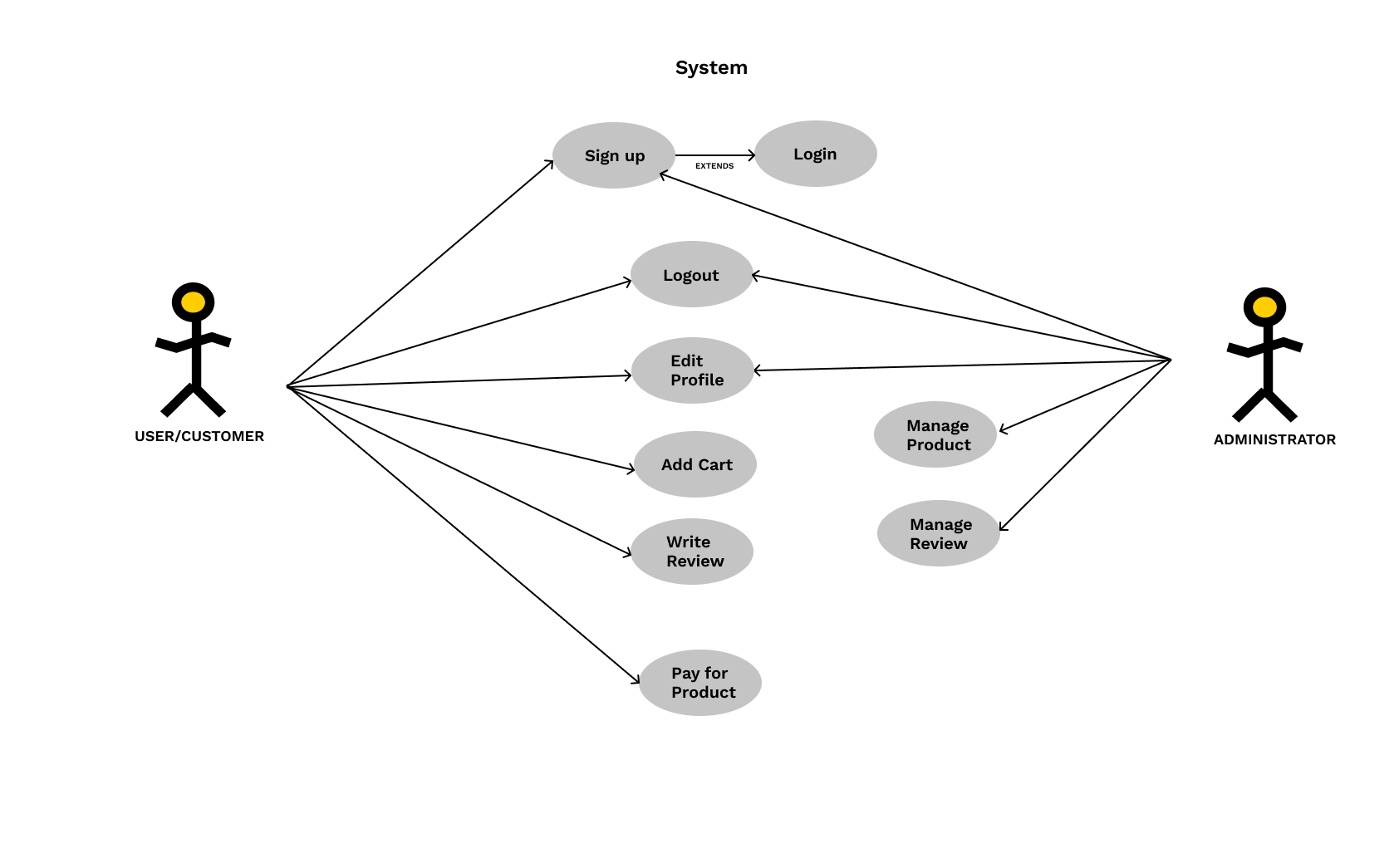


Figure 2. Use case diagram of web Based online application (ElecSpectra)

**Guest**

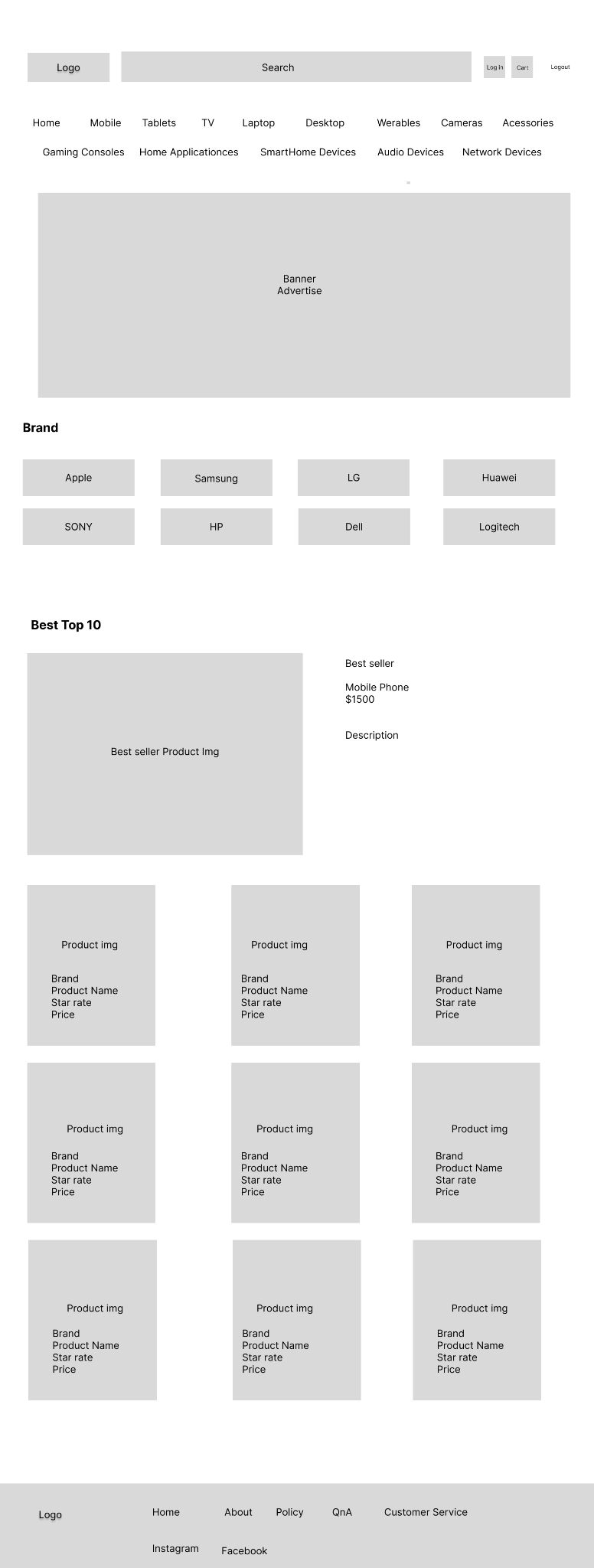


Figure 2-1. When a user doesn't log in (guests) the website is able to show this main guest page. And all users can search for the product utilizing a search bar that is display next to the logo.

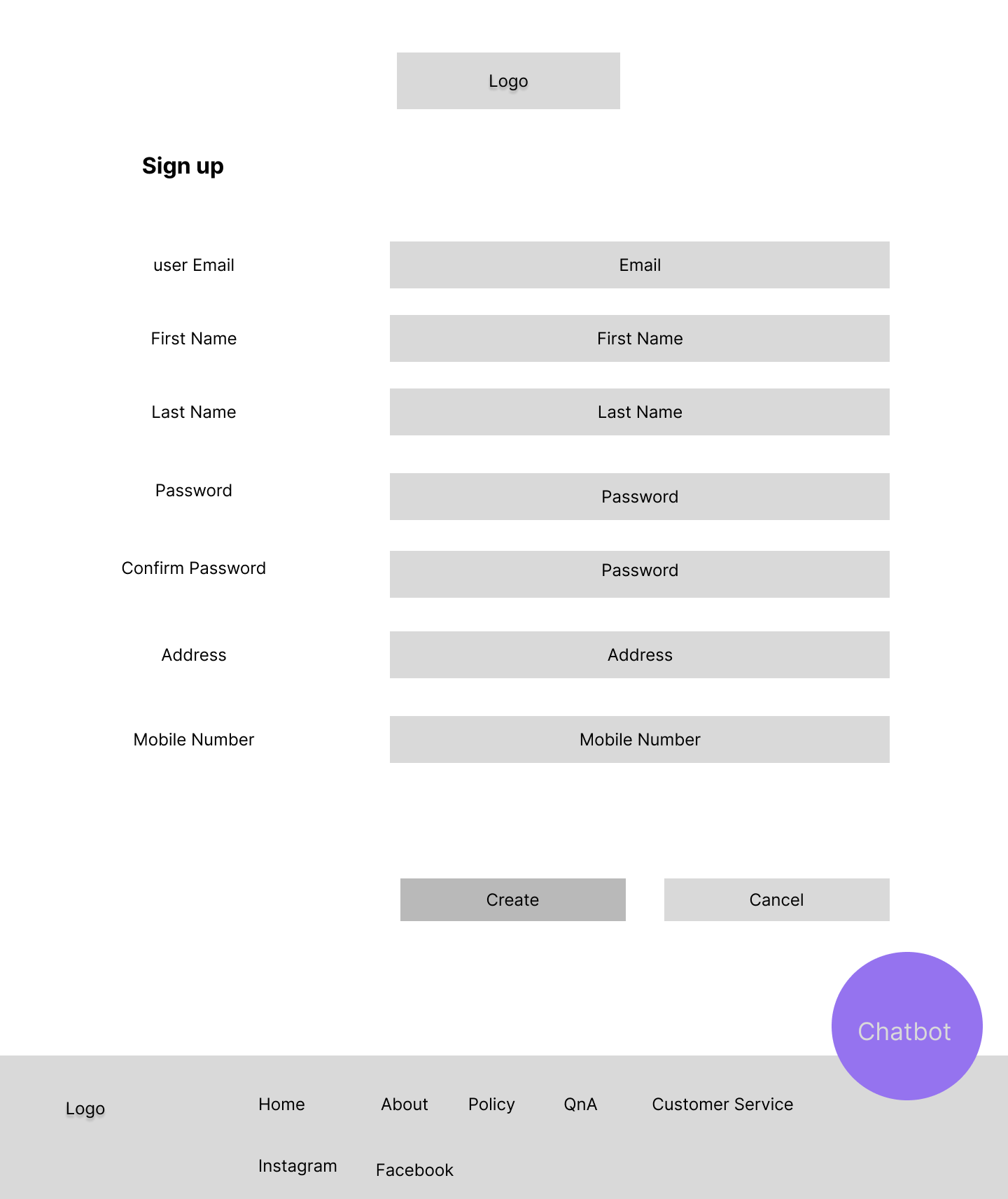


Figure 2-2. Sign-up page, If guests user want to sign up for the website, they are able to create an account using their personal information.

**Customer**

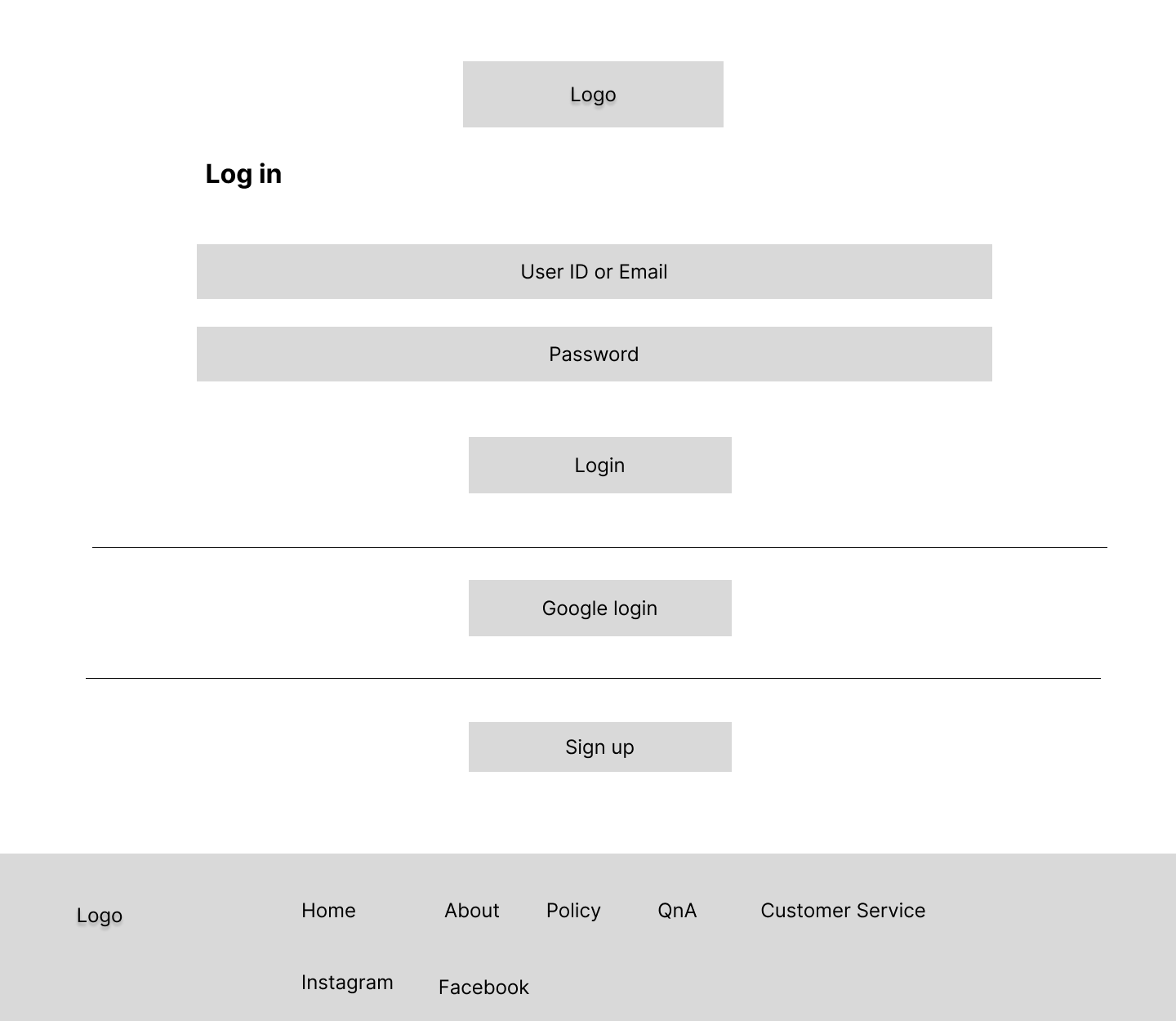
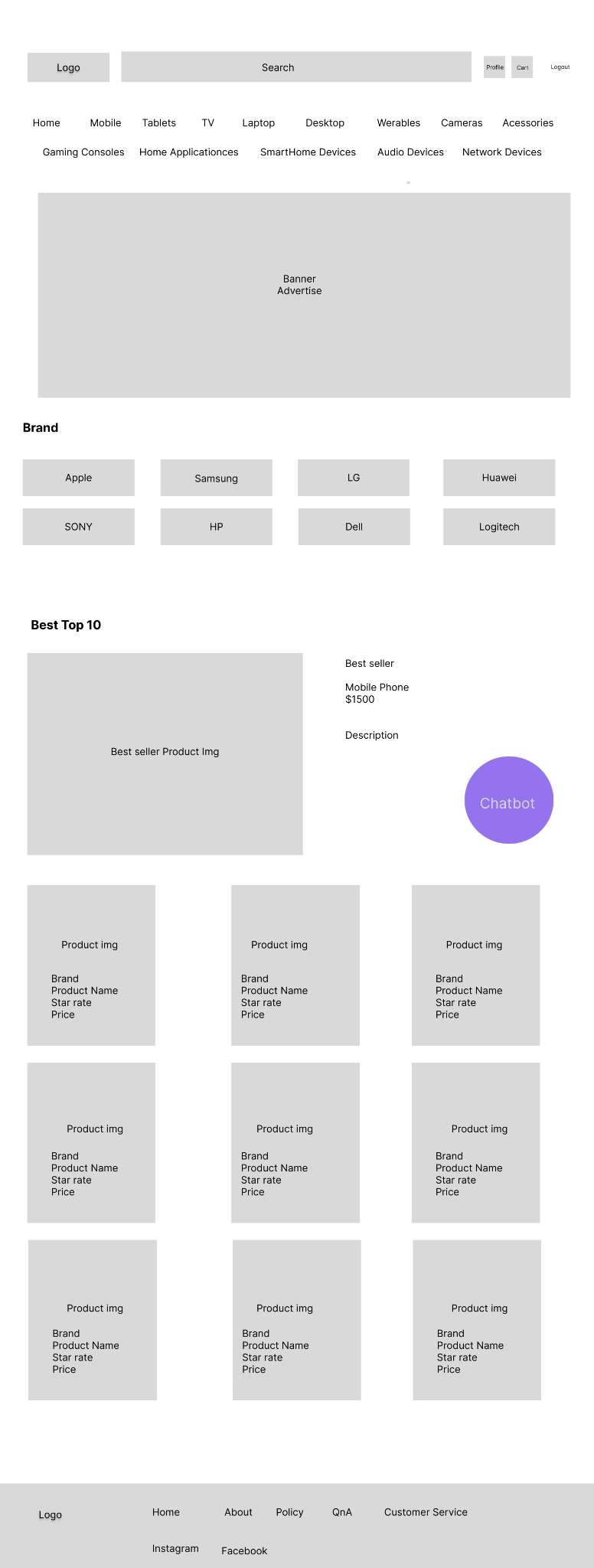


Figure 2-3. Log-in page. If users already signed up, they can log in using their email address and password.



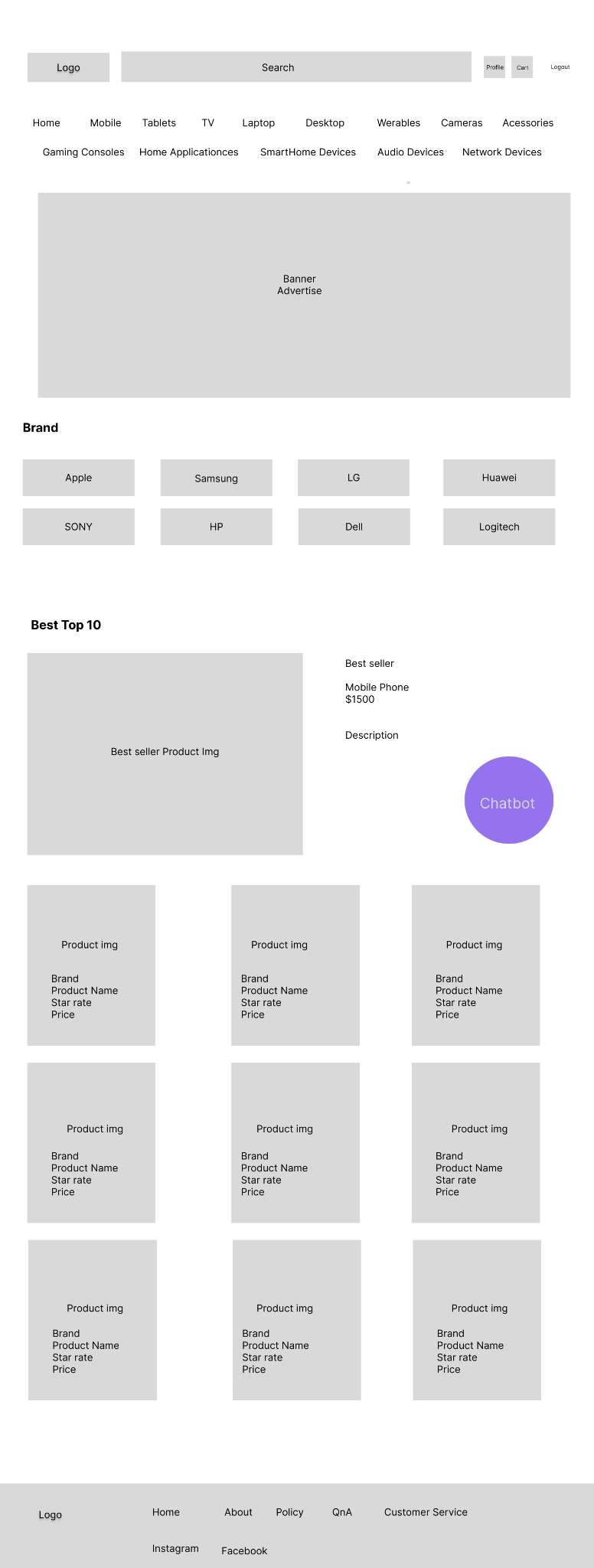


Figure 2-4. Customer home page. When users log in to their accounts, the website will display the main page for logged users.

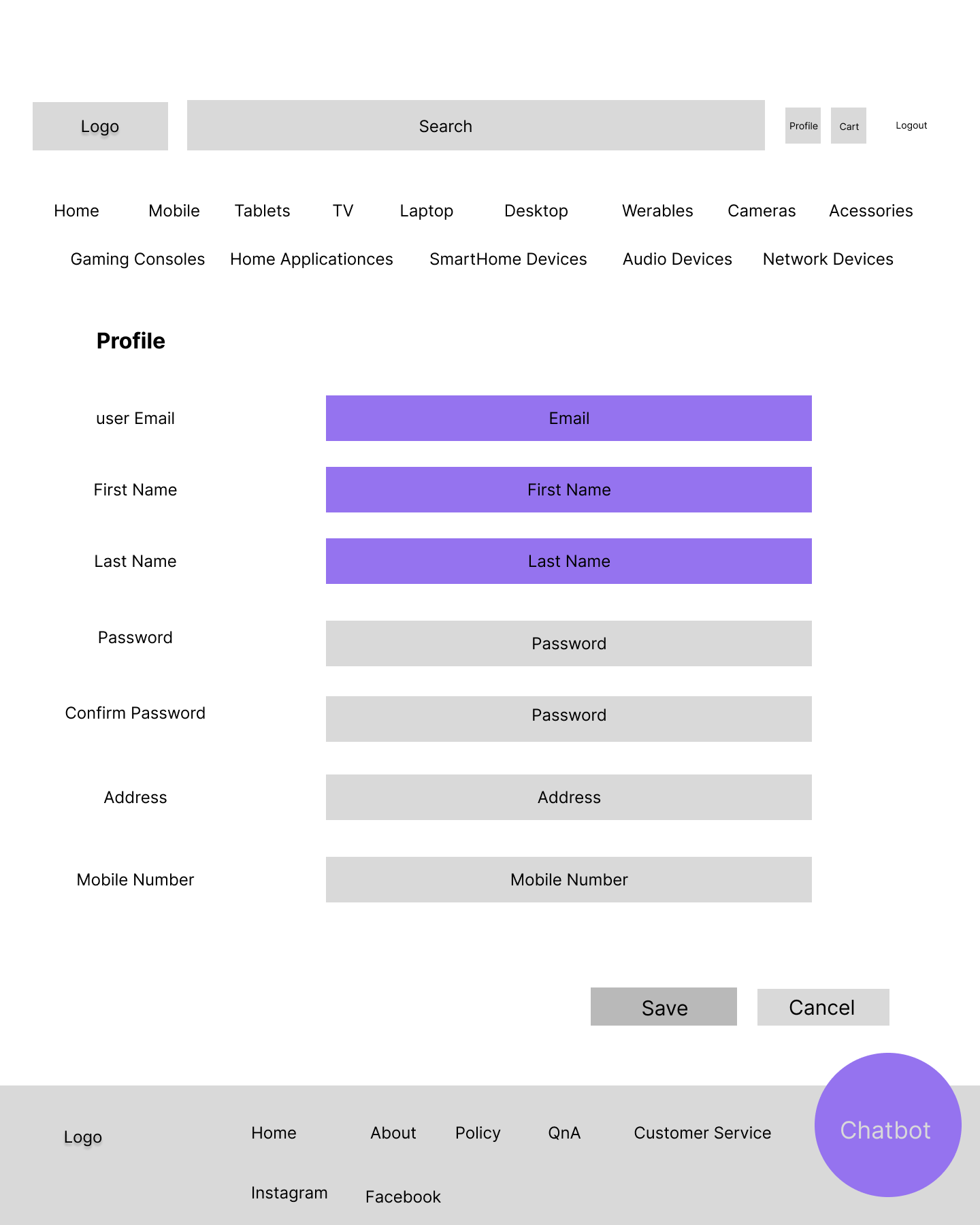


Figure 2-5. Modify profile page. Customer users can edit their profile except for their user email, first name and last name.

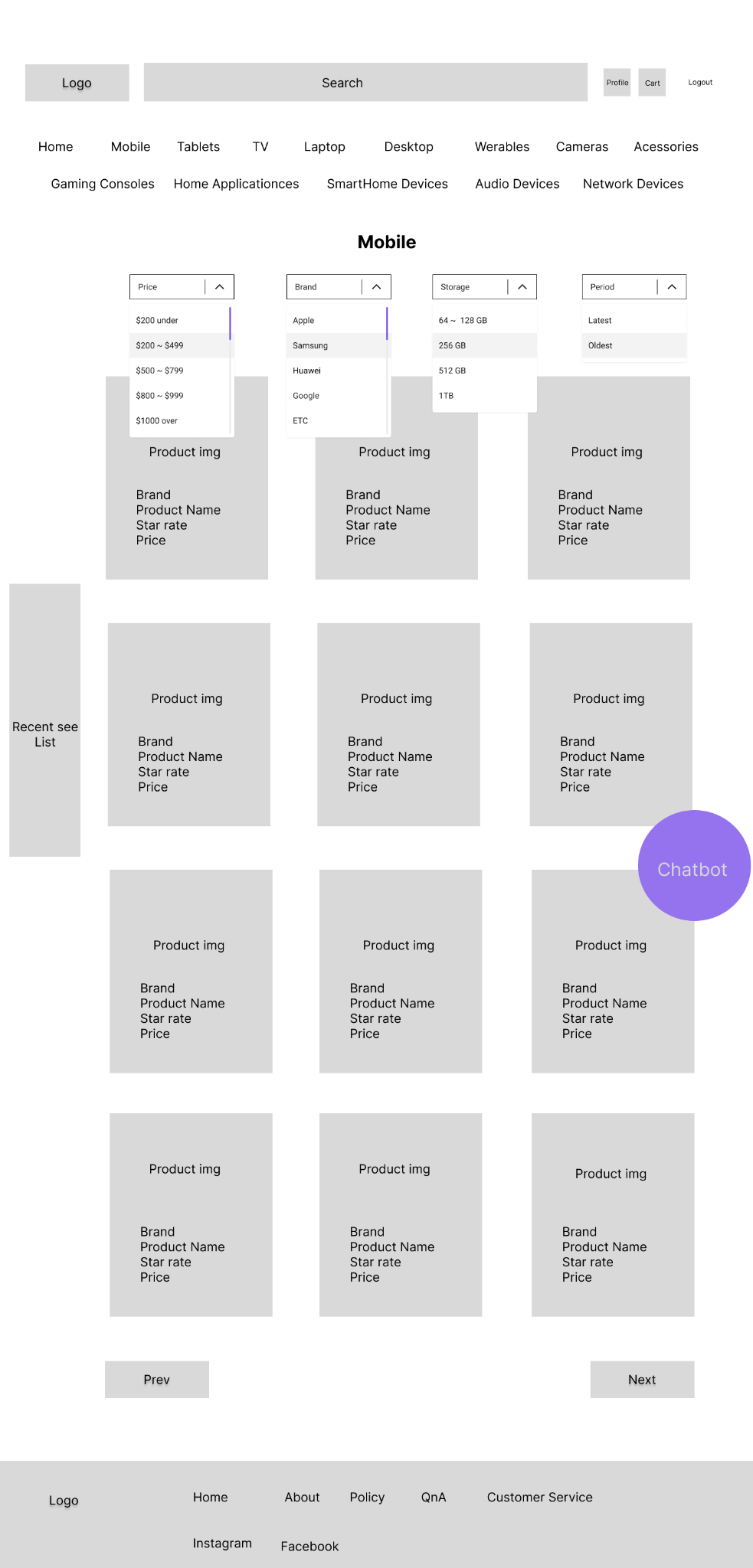


Figure 2-6. List of products(mobile) page. The product lists page can be shown to the customer users and they select and search the products using categories.

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Figure 2-7. Product detail(mobile) page. When the user clicks on one item of a product, the website shows the product detail page. And they can select specific product options and add to their cart.

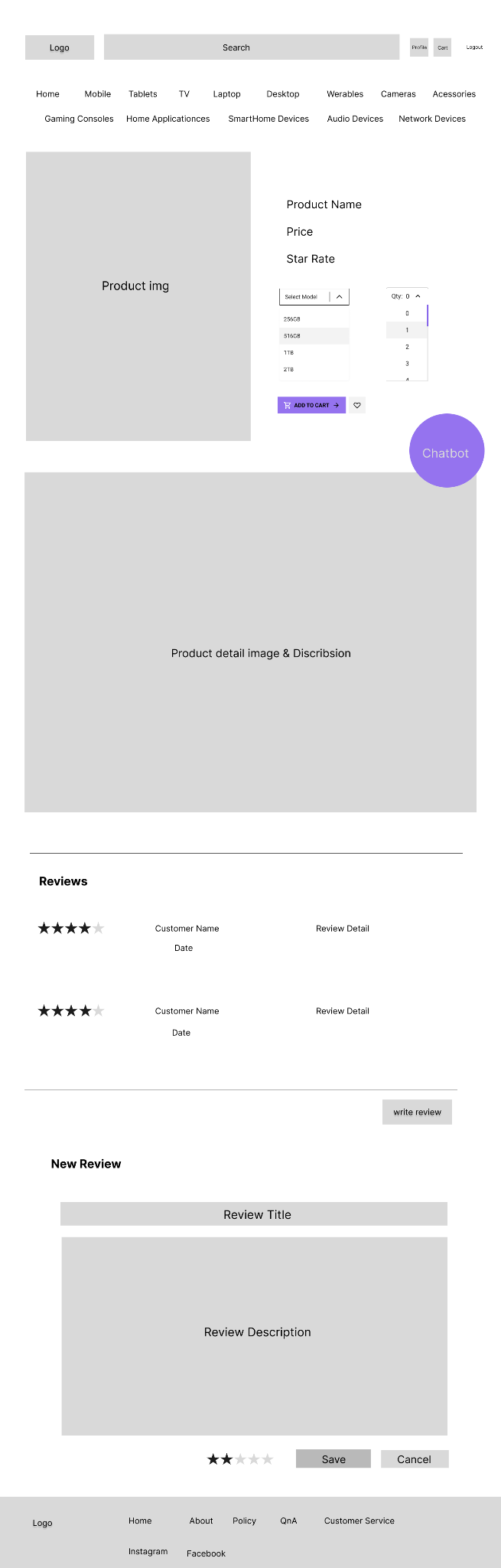


Figure 2-8. Review page. Customer users can explore and write product reviews and save.

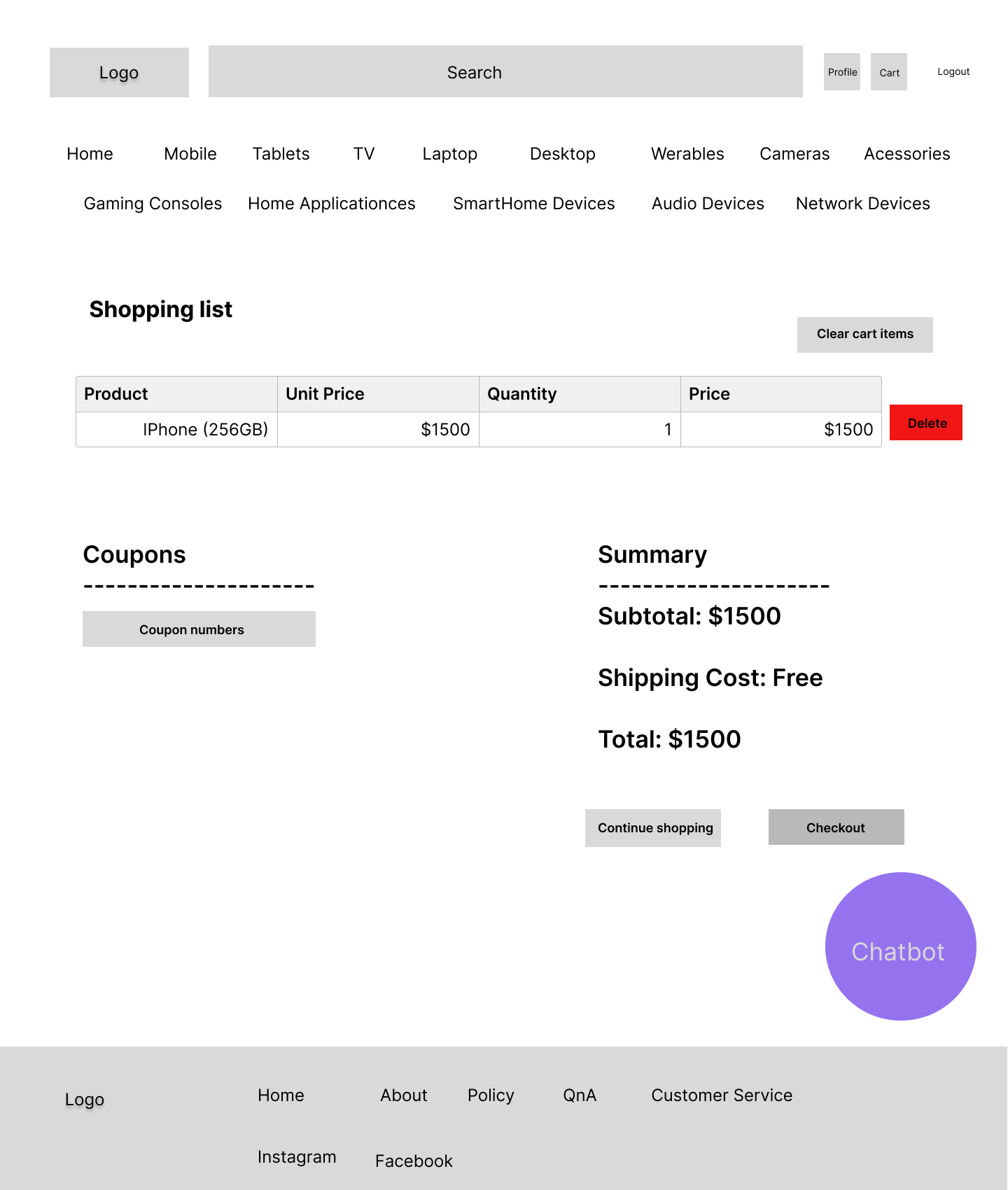


Figure 2-9. Cart(Shopping List) page. The cart page will show the product that users added from the product detail page. Also, users can delete the product that they don't want to buy.

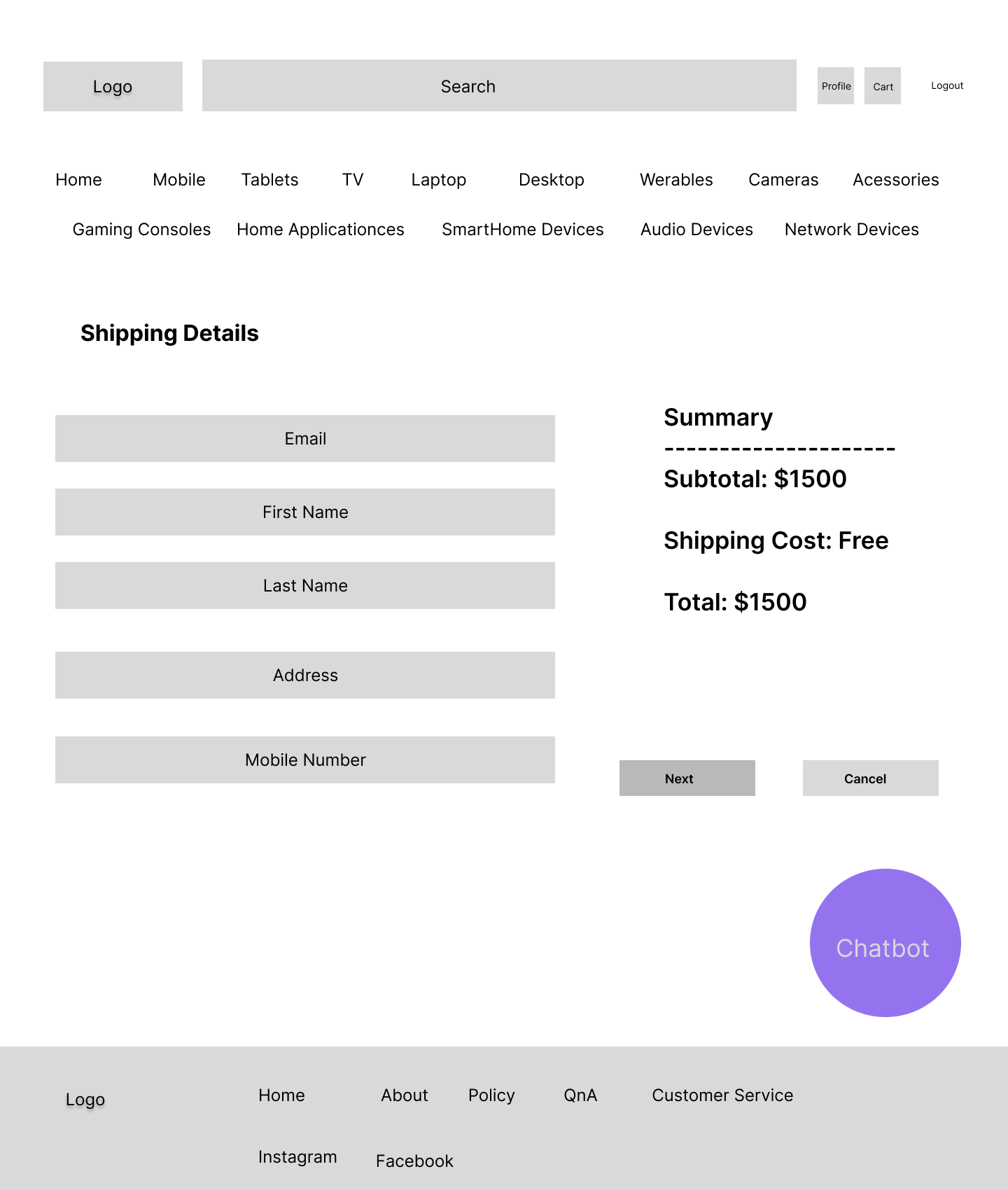


Figure 2-9. Shipping Product page. On the shipping detail page, users need to write the delivery address.

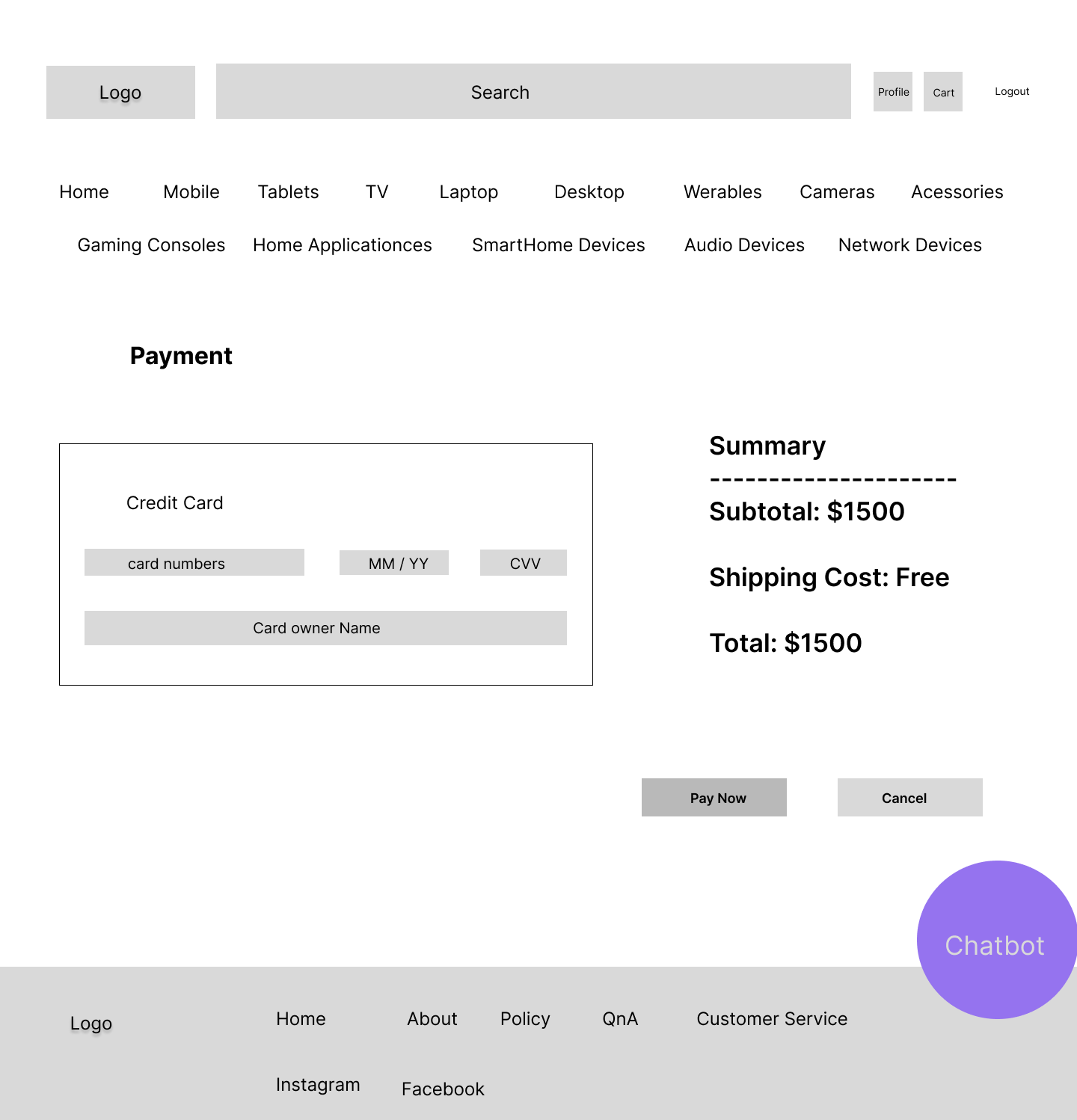


Figure 2-10. Payment page. After writing their address, users insert the payment details to purchase on the payment page.

**Admin**

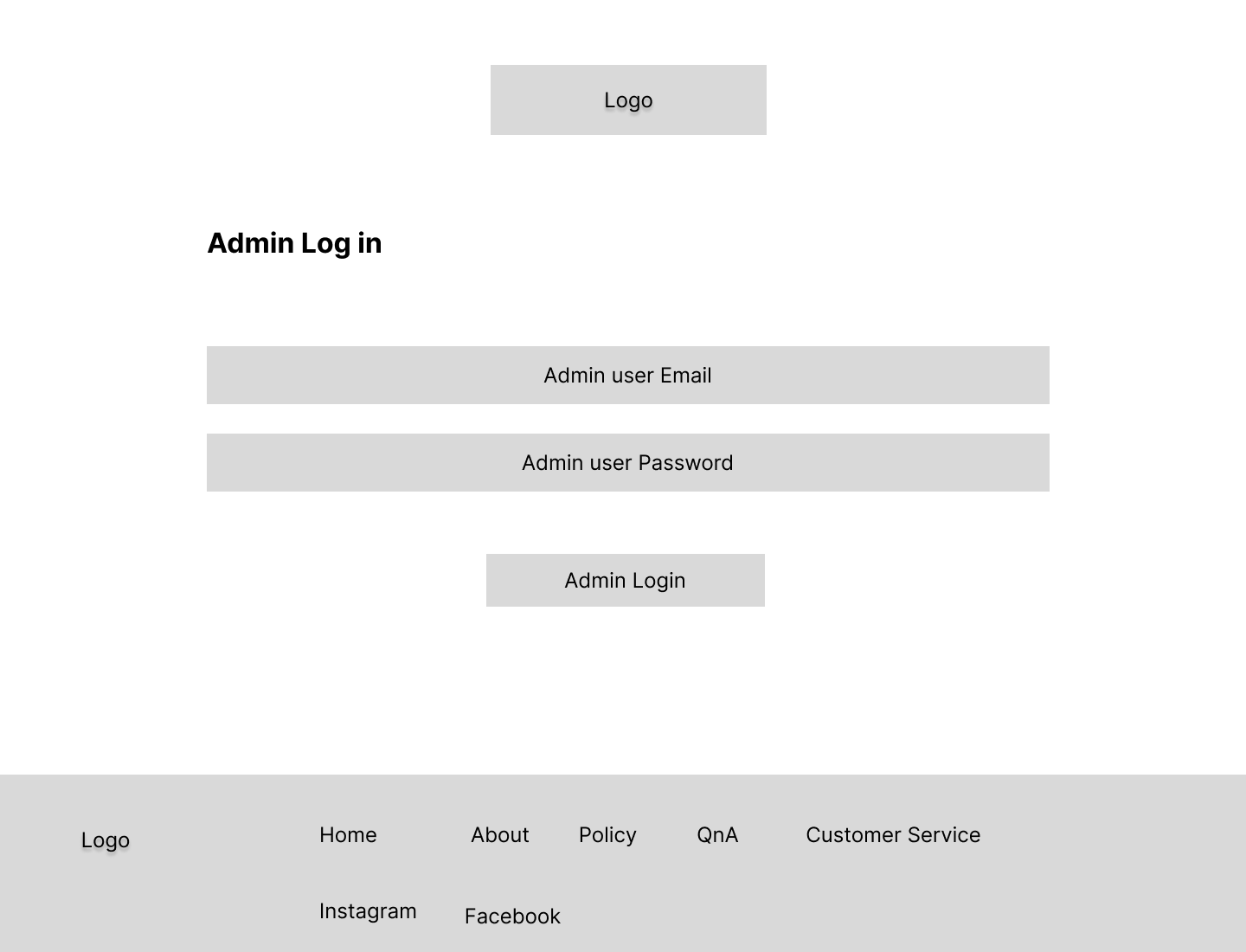


Figure 2-11. Admin log-in page. Admin user should write their email and password for admin login.

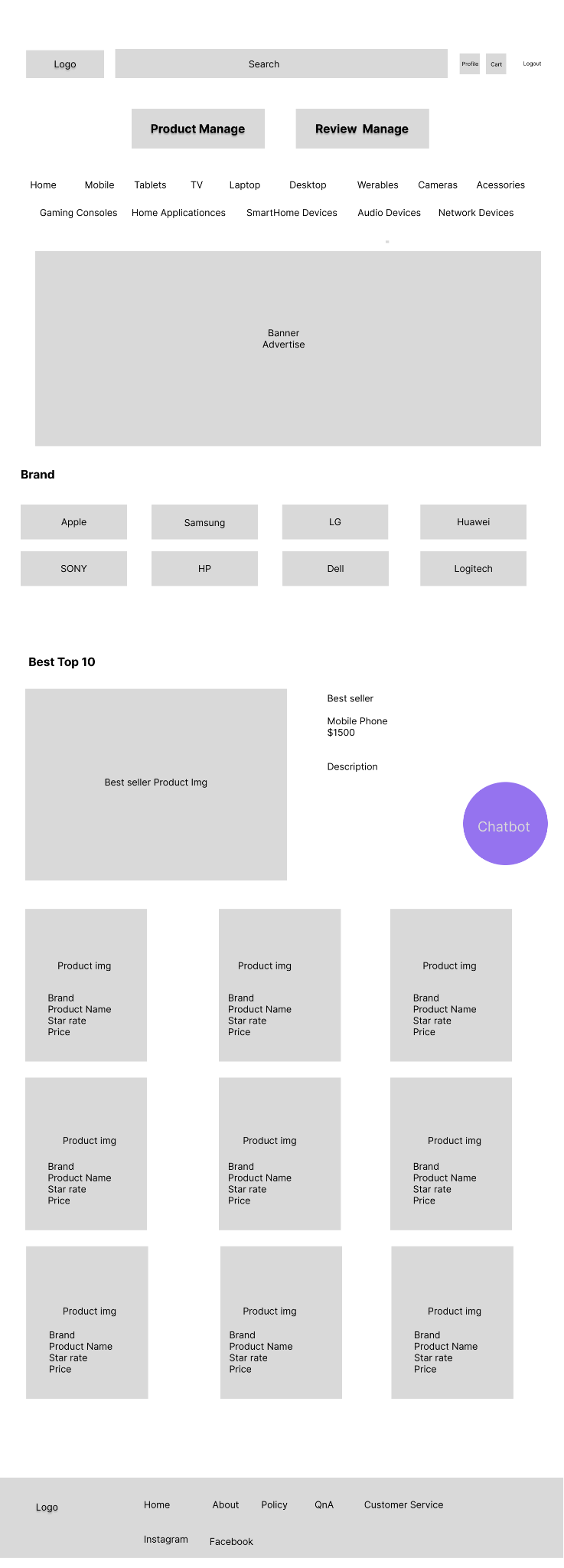


Figure 2-12. Admin home(main) page. When admin users log in to their accounts, the website will display the main page.

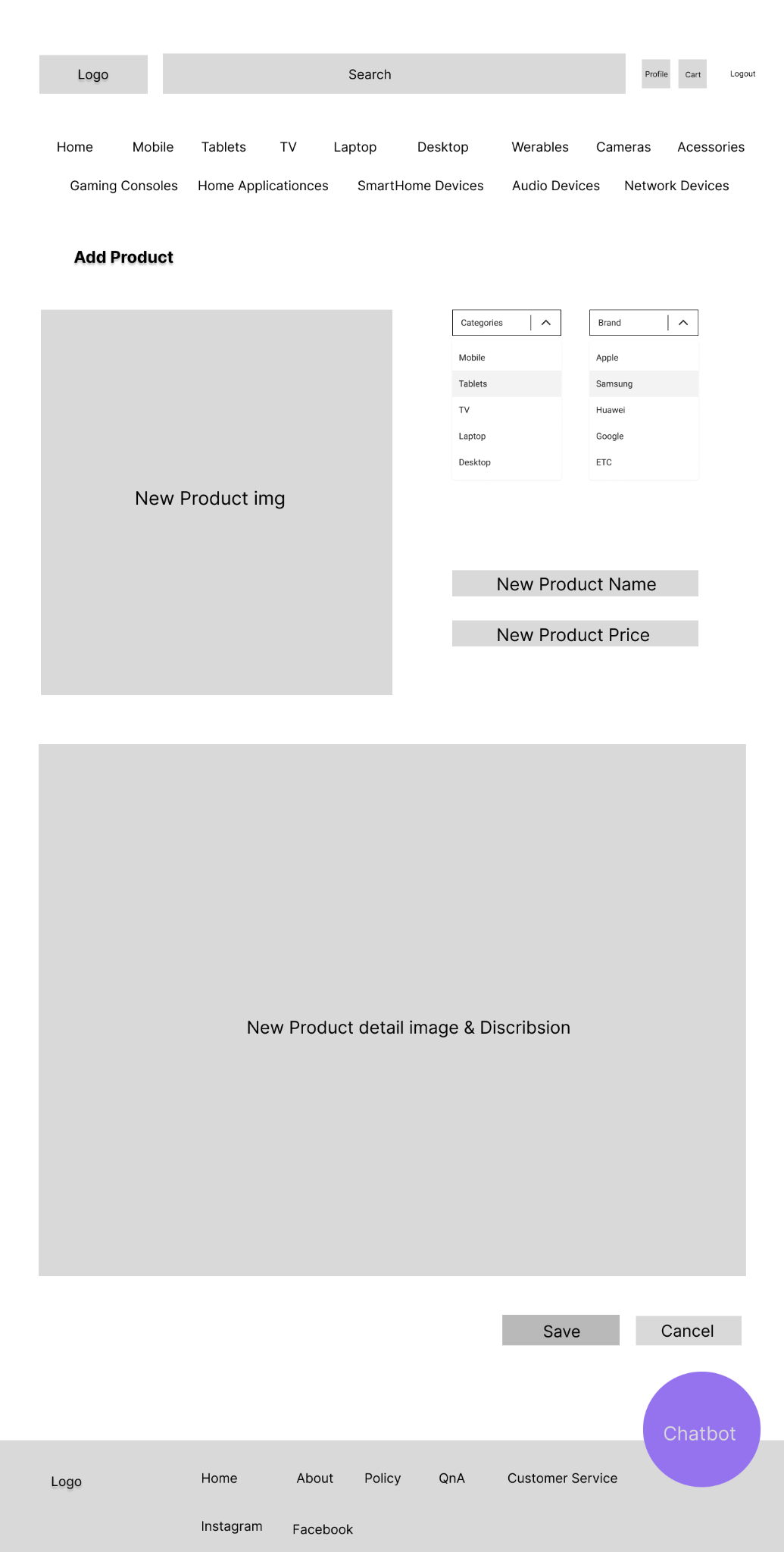


Figure 2-13. Admin add product page. Admin users are able to add and save new product on the website.

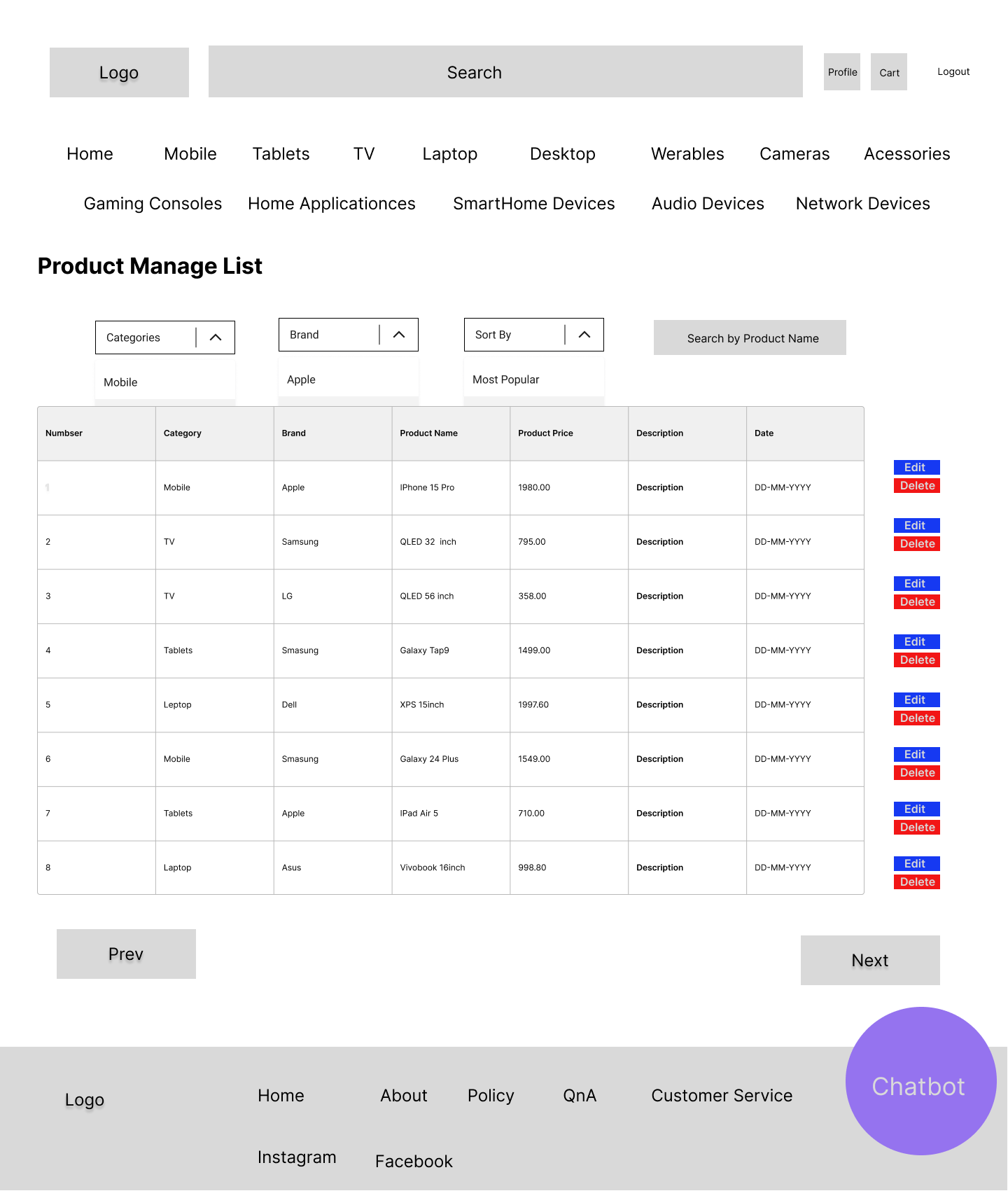


Figure 2-14. Admin Product manage list page. Admin users can manage their products such as deleting and editing. Also, it can be searched by using categories and a search bar.

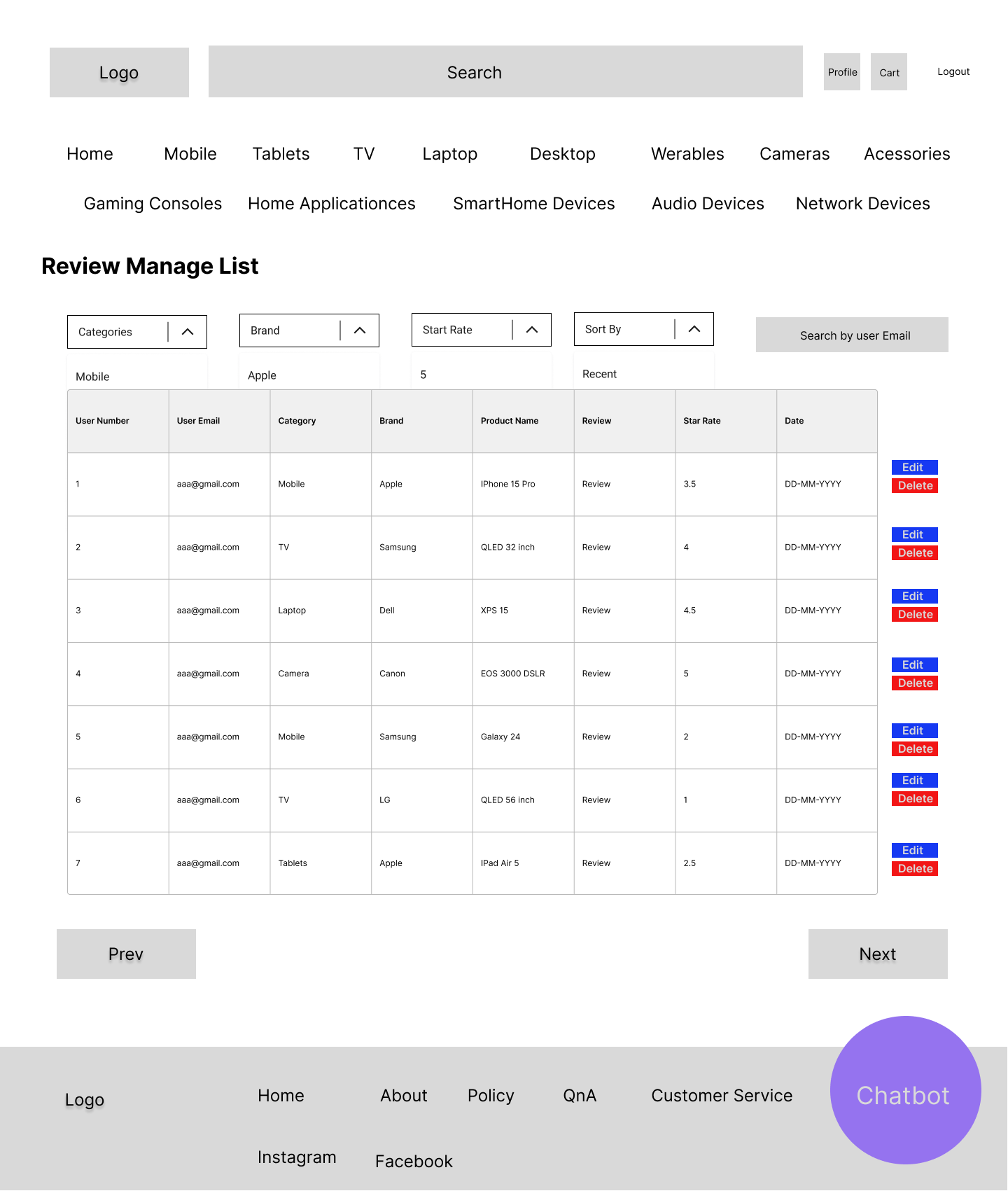


Figure 2-15. Admin review manage list page. Admin review manage list page. Admin users can manage their reviews such as deleting and editing. Also, it can be searched by using categories and a search bar.

**Chatbot Detail**

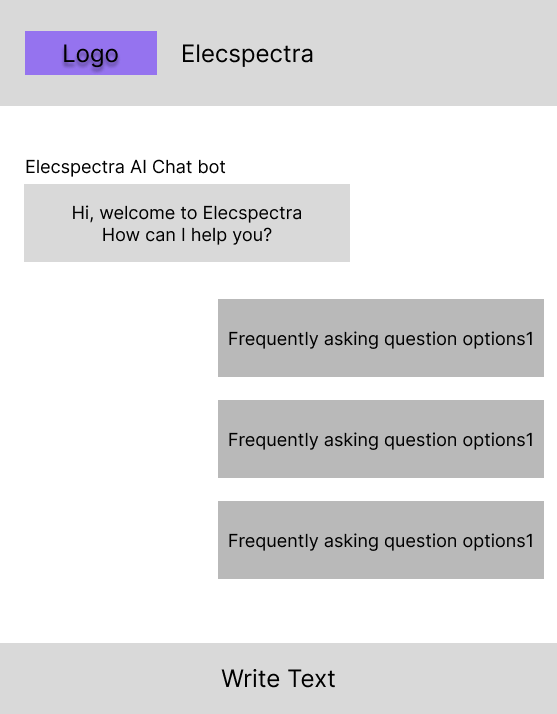
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Figure 2-16. Chatbot main window. All users can use AI chatbots to get specific and accurate answers to their questions.

# Major data structures

**Entity Relationship Diagram**

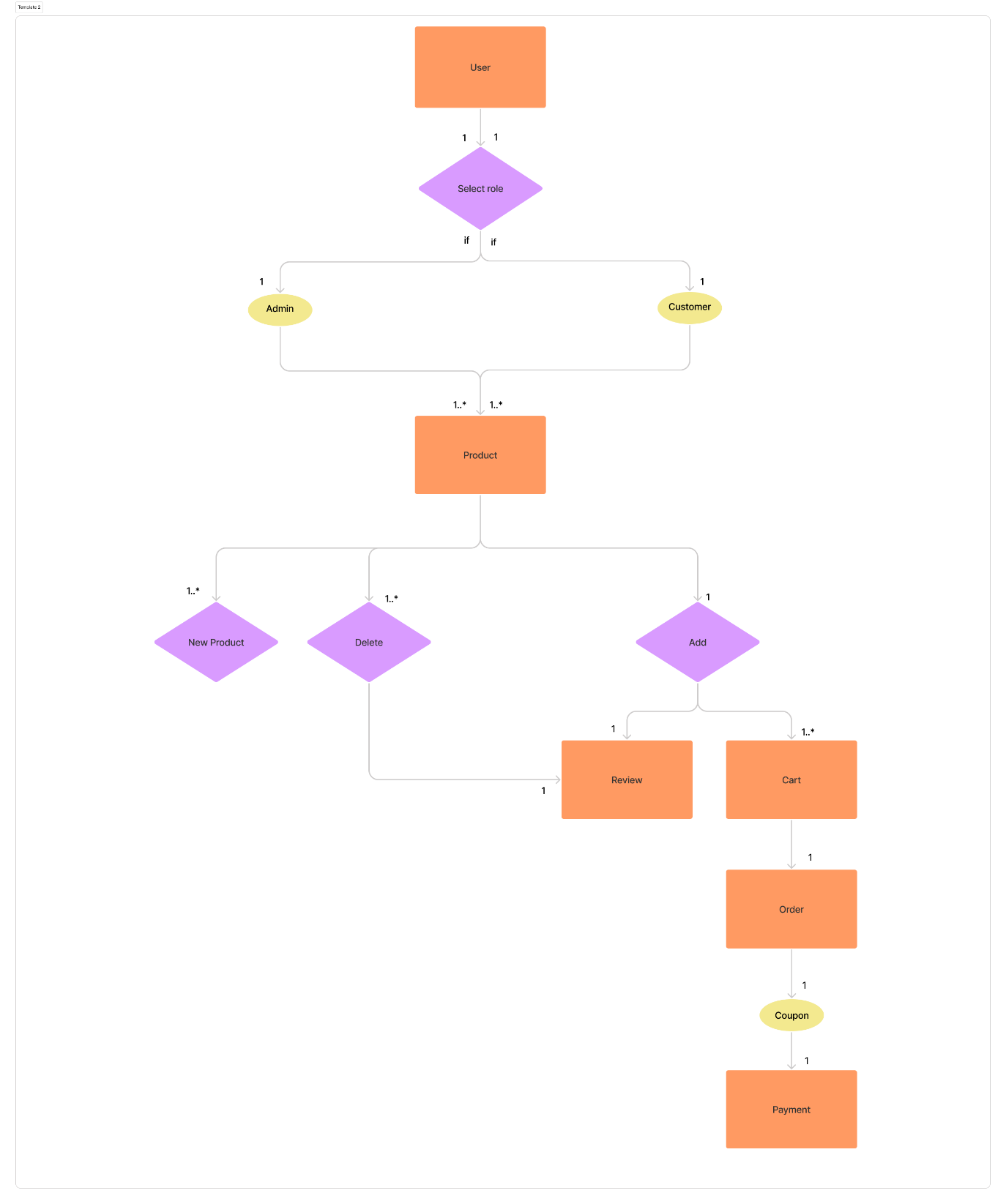
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Figure 3-1. Entity Relationship Diagram for web Based online application (ElecSpectra)

**UML Diagram**

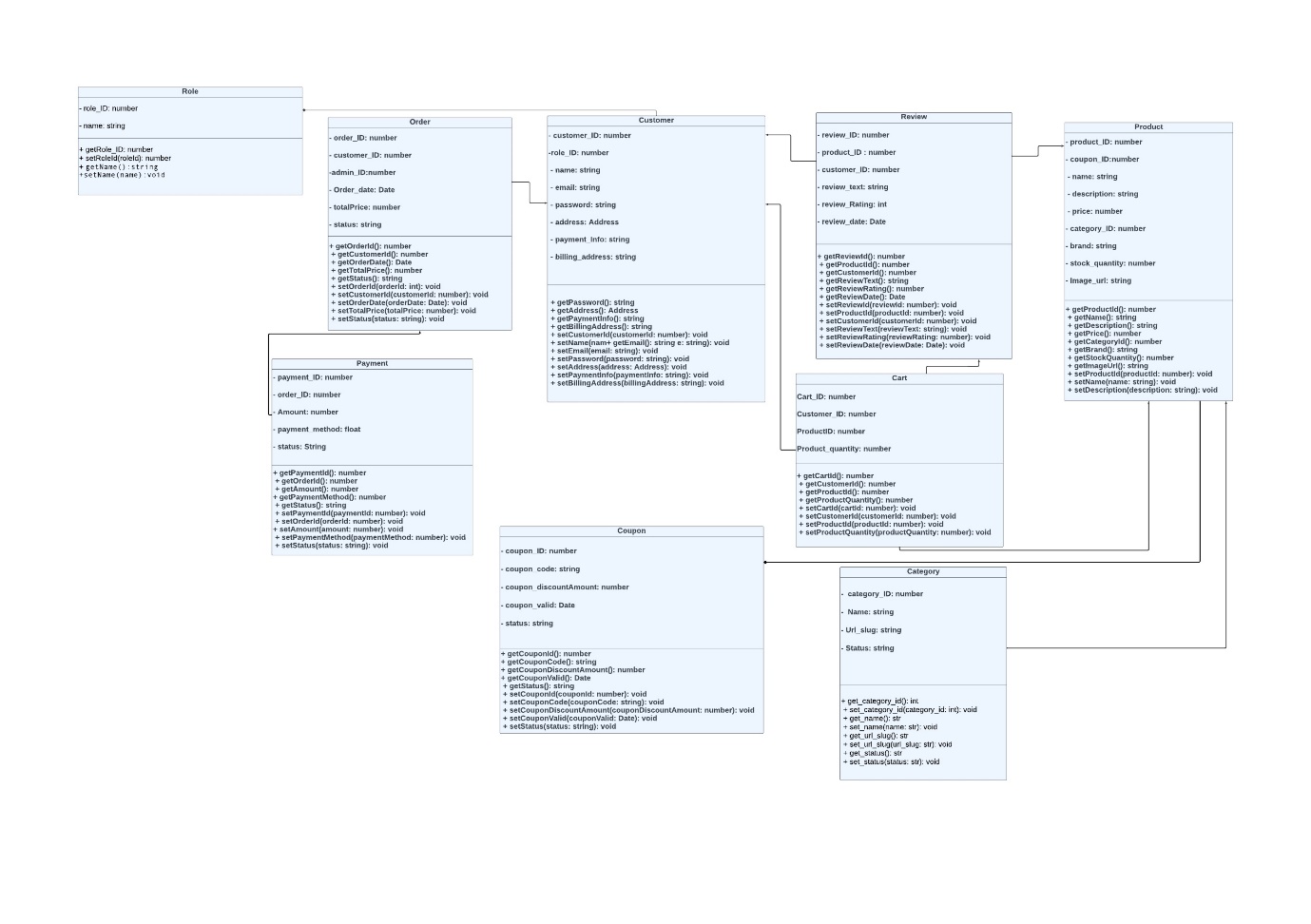


Figure 3-2. UML Class Diagram for web Based online application (ElecSpectra)

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# Database schema

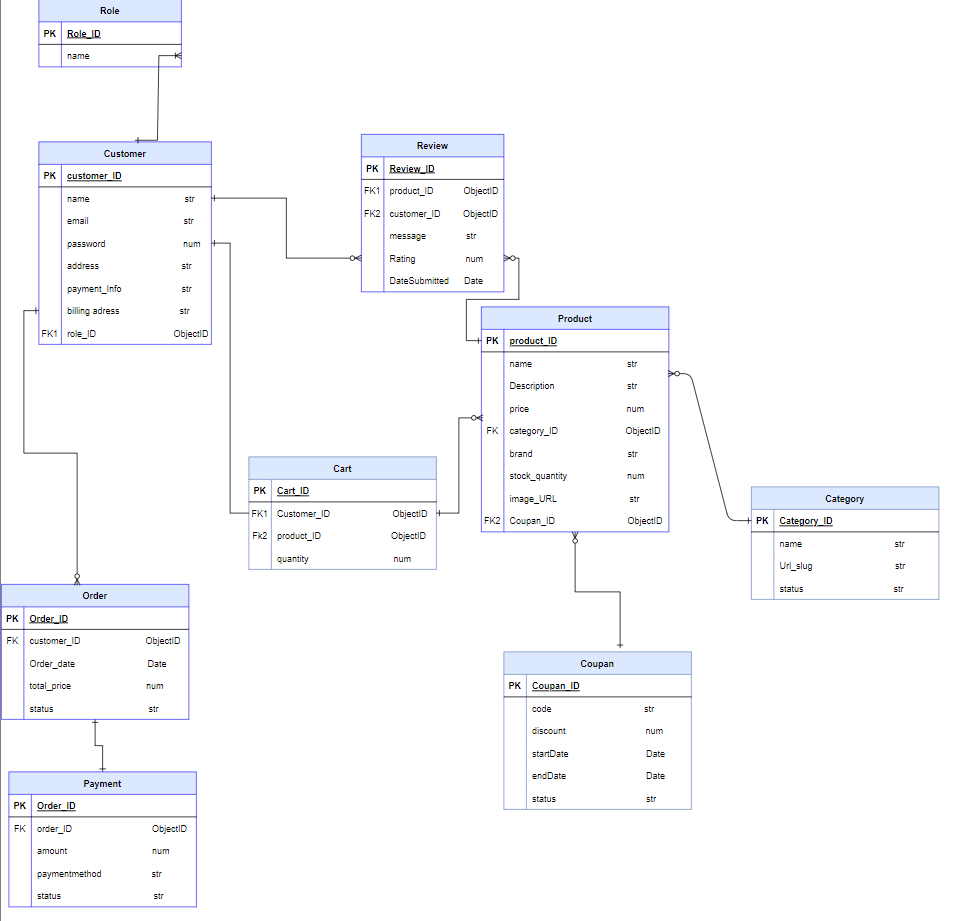


Figure 4-1. Database schema of web Based online application (ElecSpectra)

# 5. Software architecture

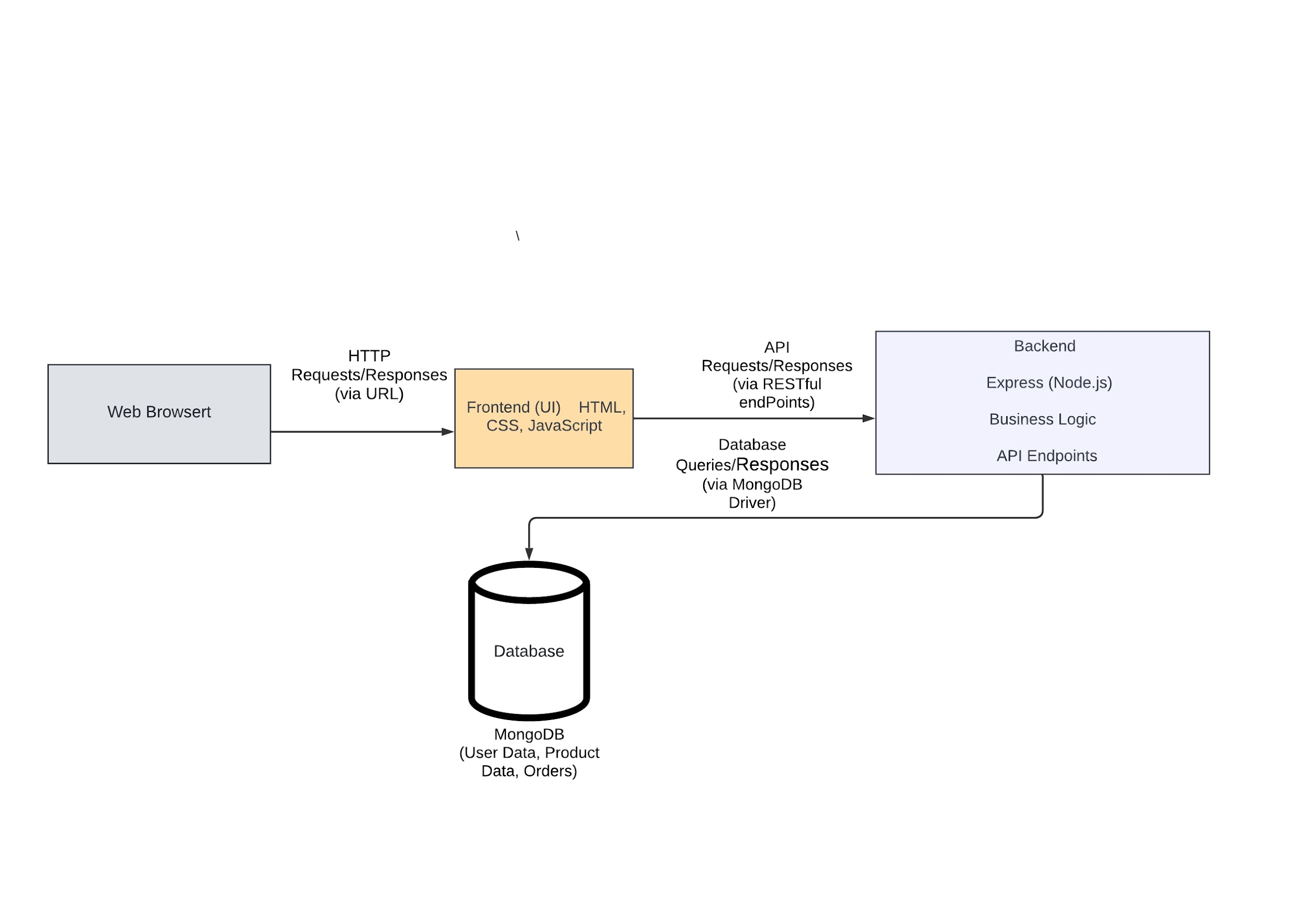


Figure 4-1. Frontend-Backend architecture diagram

* To browse products, add things to their carts, and place orders, users interact with the frontend interface.
* HTTP requests, containing user authentication and action details, are sent by the frontend to the backend API.
* The backend interfaces with the database, handles requests, and carries out business logic.
* Data, such as product specifications, user profiles, carts, and orders, are stored and retrieved using databases.
* Responses are built by the backend using pertinent information and HTTP status codes.
* Each request receives a response that tells the front end whether it was successful or unsuccessful.
* Frontend displays feedback to users by updating the UI in response to responses received.
* The frontend, backend, and database components communicate with one another seamlessly thanks to data flow.
* Business logic, such as data processing, validation, and authentication, is handled by the backend.
* Data integrity and dependability are ensured by databases, which store and handle persistent data.

# 6. Platforms/languages/tools/frameworks

**Frontend:**

Platform: Web browsers (Chrome, Safari, Firefox).

Language: HTML5, CSS3, JavaScript (ES6).

**Backend:**

Platform: Node.js runtime environment.

Language: JavaScript (Node.js)

Framework: Express.js

**Database:**

Platform: MongoDB

**Development Tools:**

IDE: Visual Studio Code for coding and debugging.

Version Control: Git/GitHub

Database Tool: MongoDB Compass

Wireframe Creation: Figma

# 

# 7. Test plan.

**Unit Test**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Description** | **Test Data** | **Expected Results** | **Actual Results** |
| 1 | Retrieve product list from the database | No data required | Will be Returning a non-empty array of products |  |
| 2 | Retrieve customer list from the database | No data required | Customers' non-empty array will return |  |
| 3 | Retrieve order list from the database | No data required | Will be Returning a non-empty array of orders |  |
| 4 | Save a new product in the database | Product name: "Product 1", Description: "Description 1", Price: 100, Category ID: 1, Brand: "Brand 1", Stock Quantity: 50, Image URL: "url" | Status will be true denoting a properly inserted product |  |
| 5 | Save a new customer in the database | Customer name: "Ram Sharma", Email: "ram@example.com", Password: "password123", Address: Address object, Mobile:0400000000, Payment Info: "Credit Card", Billing Address: "Billing Address", Customer Type: "Regular" | Status will be true denotes a successfully inserted customer. |  |
| 6 | Save a new review in the database | Message: “product review”  Rating:3.5  Date:dd-mm-yyyy | Status will be true denotes a successfully inserted review. |  |
| 7 | Save a new order in the database | Customer ID: 1, Order date: Current Date, Total price: 500, Status: "Pending" | Status will be true denoting an order insertion accomplished. |  |
| 8 | Retrieve product details by ID from the database | Product ID | Product object will return |  |
| 9 | Retrieve customer details by ID from the database | Customer ID | Will Return the customer object |  |
| 10 | Retrieve order details by ID from the database | Order ID | Will Return the order object |  |
| 11 | Update product details in the database | Updated product details | Status true will denote a successful update. |  |
| 12 | Update customer details in the database | Updated customer details | Status true will denote a successful update. |  |
| 13 | Delete product details in the database | Delete product details | Status true will denote a successful delete. |  |
| 14 | Delete customer details in the database | Delete customer details | Status true will denote a successful delete. |  |
| 15 | Insert a new order into the database | Customer ID, Order date, Total price, Status | Status true will denote an order insertion accomplished. |  |
| 16 | Check the AI chatbot response generation | User input | Response from user input request successfully |  |

**Functional Tests**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Description | Test Data | Expected Results | Actual Results |
| 1 | User login with valid credentials | Username: elecuser@example.com  Password: "password3232" | Accepted and will be redirected to the dashboard |  |
| 2 | User login invalid ID and password | Username: invalidelecuser@eample.com  Password: "invalid" | Rejected and an error message will be appeared |  |
| 3 | User logout from the application | Click on logout link | will be removed from the session and taken to the login page |  |
| 4 | User sign up from the application | Username: elecuser@example.com  Password: "password3232  address  Mobile | Accepted and will be shown up the window sign up succeed |  |
| 5 | User sign up from the application using an invalid password | Username: elecuser@example.com  Password: invalid password  address  Mobile | Unaccepted and will be the error window shown up |  |
| 6 | View product list | Navigate to the product list page | Product list exhibited.  Details of the product will be shown. |  |
| 7 | View product details | Click on a product from the list | Product details will be displayed |  |
| 8 | Add a product to the cart | Click on "Add to Cart" button | Product will be added to the cart. |  |
| 9 | View cart contents | Navigate to the cart page | items of the cart will be shown |  |
| 10 | Update product quantity in the cart | Change quantity of a product and click quantity table | The cart's product quantity will be updated. |  |
| 11 | Remove a product from the cart | Click on "Delete" button next to a product | Product will be removed from the cart |  |
| 12 | Proceed to checkout | Click on "Proceed to Checkout" button | It will Redirected to the checkout page |  |
| 13 | Fill out shipping information in the checkout form | Enter shipping details in the form | The shipment information form will  Successfully completed |  |
| 14 | Select payment method and complete the order | Choose payment method and click "Place Order" | Order will be successfully placed |  |
| 15 | View order history | Navigate to the order history page | Order history will be displayed |  |
| 16 | View order details | Click on an order from the history | Order details will be displayed |  |
| 17 | View profile information | Navigate to the profile settings page | Profile information will be displayed |  |
| 18 | Update profile information | Modify profile details and click "Save" | Profile information will be updated. |  |
| 19 | Change password | Enter old and new passwords and click "Change Password" | Password will be changed successfully |  |
| 20 | Add review and rate | Title: “review title”  Message: “Review description”  Rate: 3.5 | Review information form will  Successfully completed |  |
| 21 | Create new product information | Product name:iPhone 15  Price:1500  Category: “Mobile”  Brand: “Apple”  Stock Quantity:5  Img: png / URL | Accepted and will be redirected to the dashboard |  |
| 22 | Update product information | Click on “Edit” button the product on the product manage list page  Stock Quantity:5  Img: png / URL | The product information will be updated. |  |
| 23 | Delete product information | Click on "Delete" button next to the product on the product manage list page | The product information will be deleted. |  |
| 24 | Delete review information | Click on "Delete" button next to the review on the review manage list page | The review information will be deleted. |  |
| 25 | User request and Chatbot respond | Write the message input on the chatbot window and the chatbot generates the answer | Chatbot respond to the answer regarding to user’s input message |  |

**Integration Testing**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Description | Test Data | Expected Results | Actual Results |
| 1 | Verify users role | Insert user email address and password | Role depends on an email address |  |
| 2 | Verify the product creation UI and product list are integrated. | Make a new product and see if the list contains it. | The product list will feature the new item. |  |
| 3 | Examine how the product list and product editing interact. | Modify a product from the list of products and save the modifications. | Updated product details will be displayed in the list. |  |
| 4 | Examine how the backend and frontend product search interact. | Look for a product by utilizing the search function. | The website will show products that are relevant to it. |  |
| 5 | Verify the order placing and checkout process's integration. | Finish the checkout procedure and submit an order. | The order will be placed and submit successfully. |  |
| 6 | Examine the relationship between the inventory update and product reservation. | Make a reservation for a product and confirm that it is in stock. | Inventory will be reduced by the reserved product. |  |

**User Acceptance Tests (UATs)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Description | Test Data | Expected Result | Actual Results |
| 1 | Verify the user's login credentials are valid. | Input valid login details, such as your username and password. | Logged in successfully and will be taken to the user dashboard |  |
| 2 | Verify that the user's login credentials are invalid. | Enter the wrong login information. | When an attempt to log in is unsuccessful, an error message with invalid credentials will appear |  |
| 3 | Check the functionality of the user logout. | Select the "logout" link. | successful Logged out and will navigate to the login page |  |
| 4 | Check out the product catalogue. | Go to the page of the product catalogue. | A list of the available products will be provided beside the product catalogue |  |
| 5 | Examine product information. | Click on one of the catalogue items. | The chosen product's detailed information will be shown |  |
| 6 | Place an item in the purchasing cart. | For a product, click the "Add to Cart" button. | An item will be added to the shopping cart |  |
| 7 | Examine the items of your shopping cart. | Open the page with the shopping cart. | The items of the shopping cart will be shown |  |
| 8 | Adjust the amount of a product in the shopping cart. | Modify a product's quantity and select "Update" | The number of products in the cart will be updated |  |
| 9 | Take one item out of the shopping cart. | The "Delete" button will appear next to a product. | The item will be out of the shopping cart. |  |
| 10 | Go ahead and check out. | Select "Proceed to Checkout" from the menu. | It will Redirect to the payment page |  |
| 11 | Complete the shipping details section of the checkout form. | Fill out the form with your shipping information. | The shipping information will be successfully completed |  |
| 12 | Choose a payment option and finish placing the order. | Click "Place Order" after selecting your payment option. | The order will be placed successfully, and a message of confirmation will appear |  |
| 13 | Visit the order history page to view the order history. | Go to the account section and select order history | Order history will be shown |  |
| 14 | Check out the order information. | Select one order from the list of orders. | A detailed description of the chosen order will be shown |  |
| 15 | View profile details. | Go to the page with the profile settings. | Information about the profile will be shown |  |
| 16 | Update your profile details. | Click "Save" after making changes to the profile details. | Profile details will be successfully updated |  |
| 17 | Examine review | Insert the review description and click the "Save" button. | The review will be added to the Reviews section |  |
| 18 | Place a new product in the product category. | For a product, click the "Add Product" button. | An item will be added to the Product list |  |
| 19 | Update product details . | Click "Edit" on the product manage list. | Product details will be successfully updated |  |
| 20 | Remove product details. | Click "Delete" on the product manage list. | Product details will be successfully removed |  |
| 21 | Take one review out of the review manage list. | The "Delete" button will appear next to a review. | Review details will be successfully removed |  |
| 22 | Multiple users request out-of-option questions on the chatbot | Write questions into the input box on the chatbot. | Chatbots provide specific answers to questions from different users. |  |

# 8. Project tracking tool

For this project**, Jira and GitHub** will be our tools of choice for project tracking.

<https://github.com/jimeekang/COIT13230-Group5.git>