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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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**Table of Contents**

[**1. Detailed user stories 3**](#_heading=)

[**2. Wireframes of all user interfaces 4**](#_heading=)

[***3. Major data structures 21***](#_heading=h.1fob9te)

[**4. Database schema 23**](#_heading=h.gjqesiasp3rv)

[**5. Software architecture 24**](#_heading=h.34ownxithzga)

[**6. Platforms/languages/tools/frameworks 26**](#_heading=h.hm8t98k6pddr)

[**7. Test plan. 27**](#_heading=h.kkz7pyg6vkmu)

# 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

**Guest**

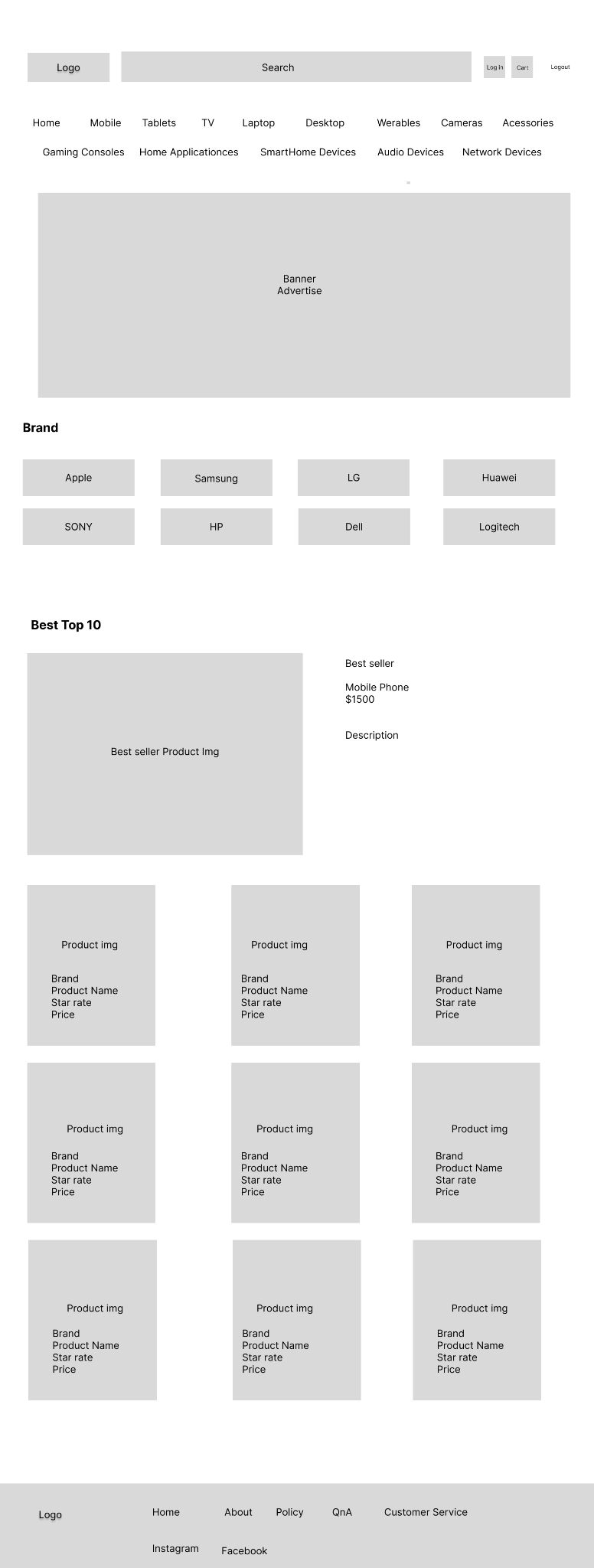


Figure 2-1. Home(Main) page for guests

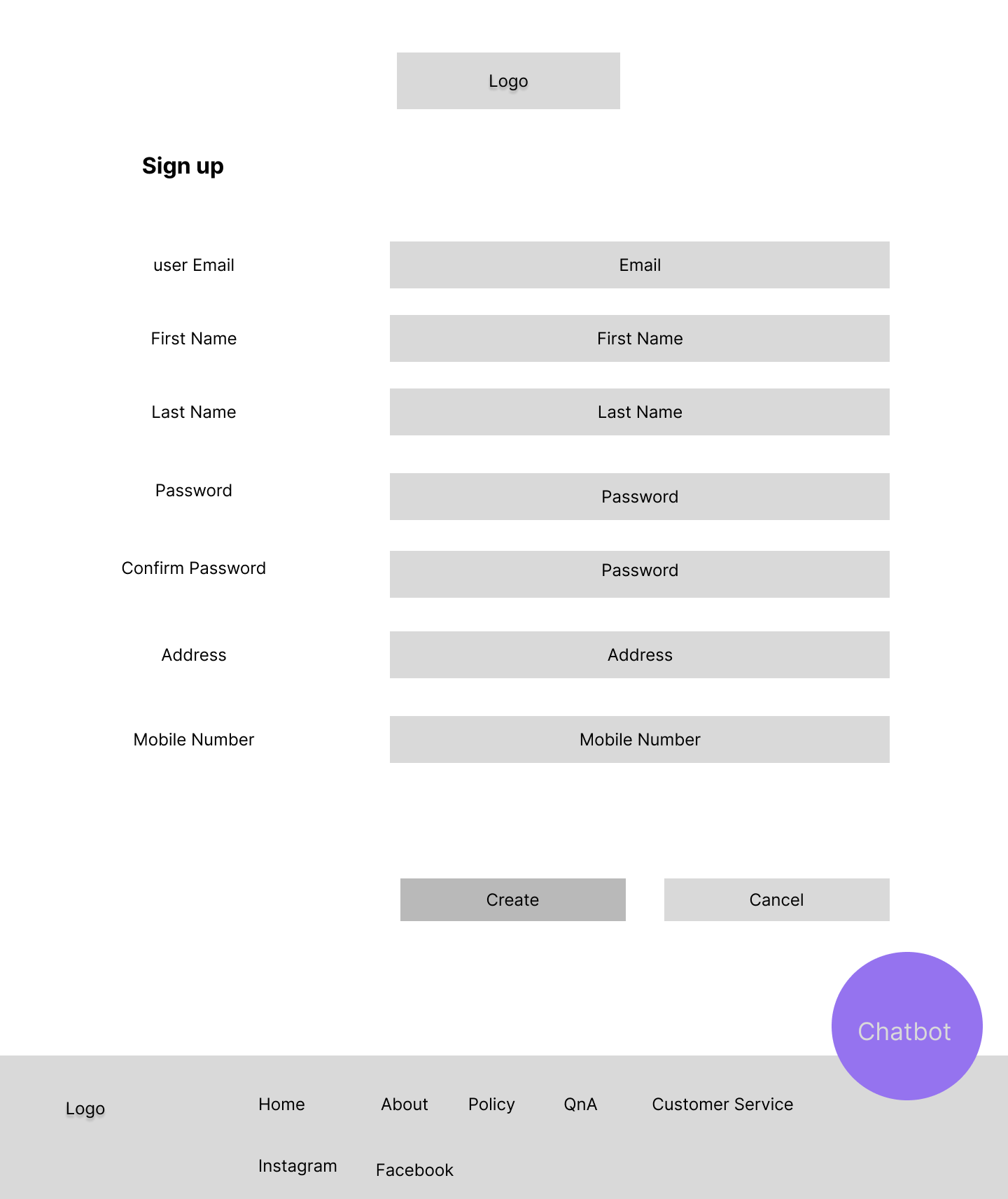


Figure 2-2. Sign up page

**Customer**

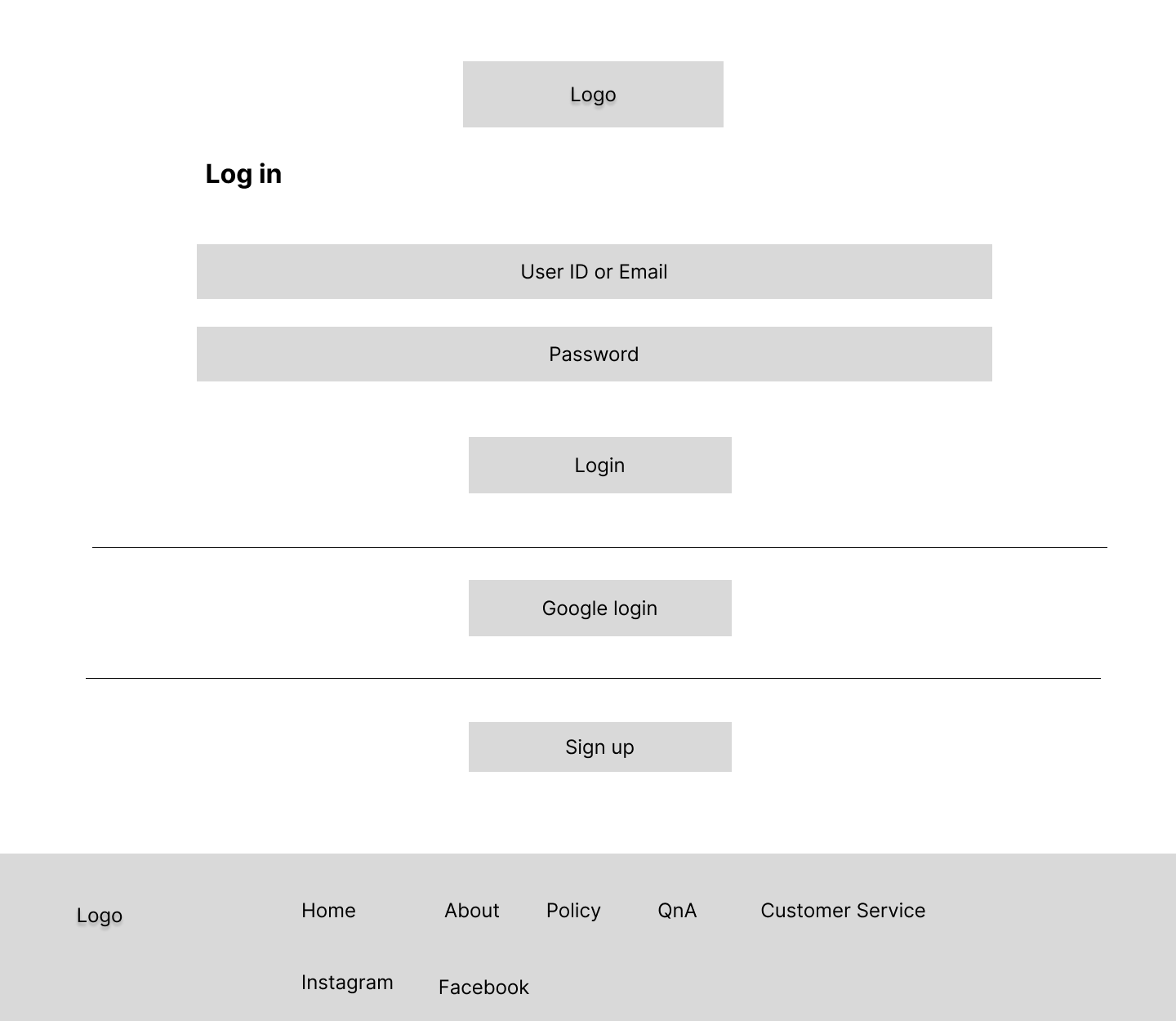
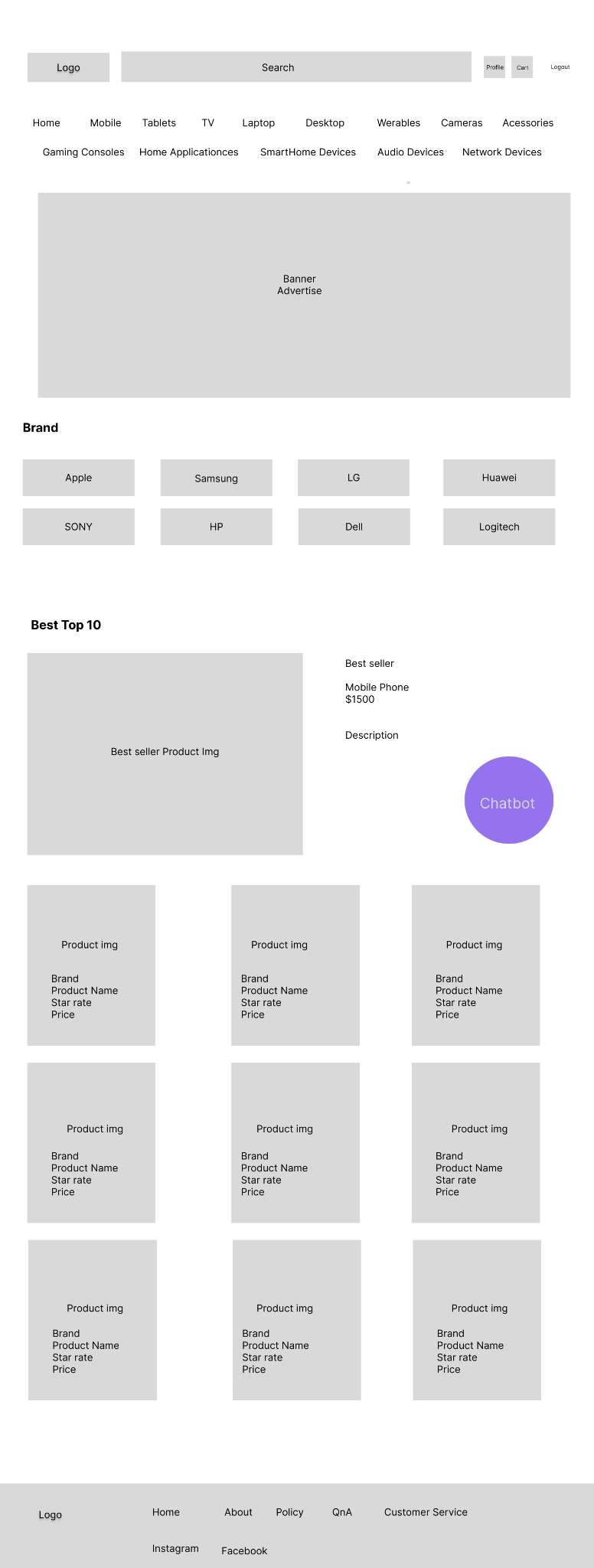


Figure 2-3. Log in page



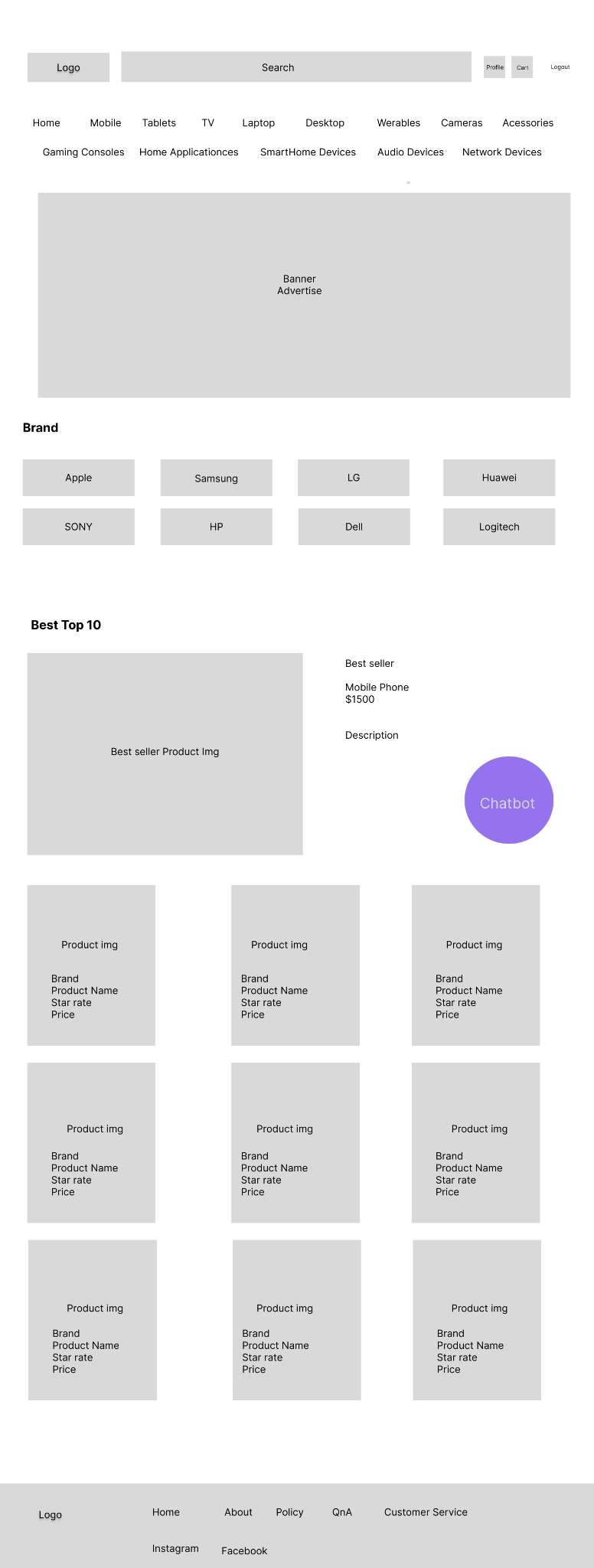


Figure 2-4. Customer home page

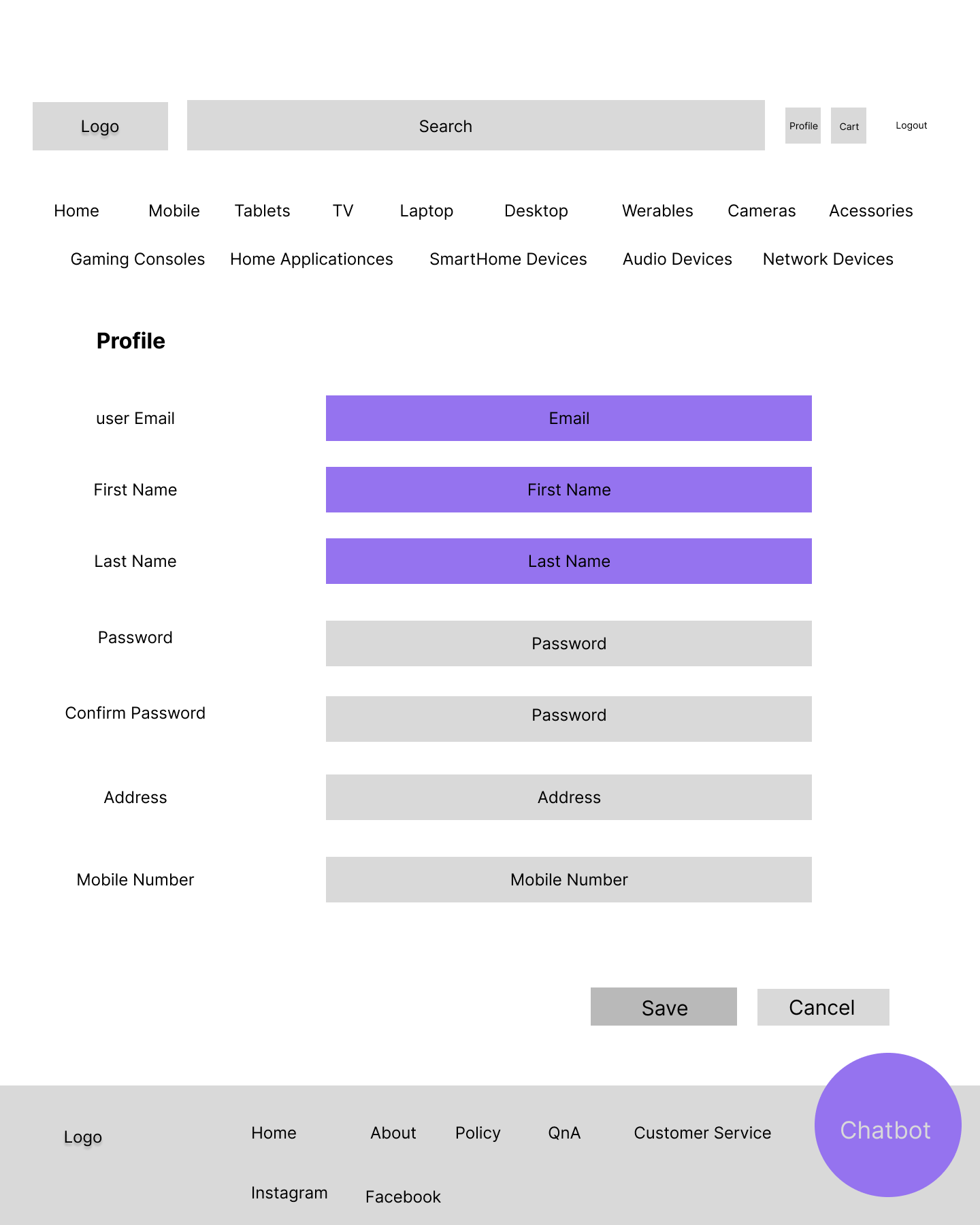


Figure 2-5. Modify profile page

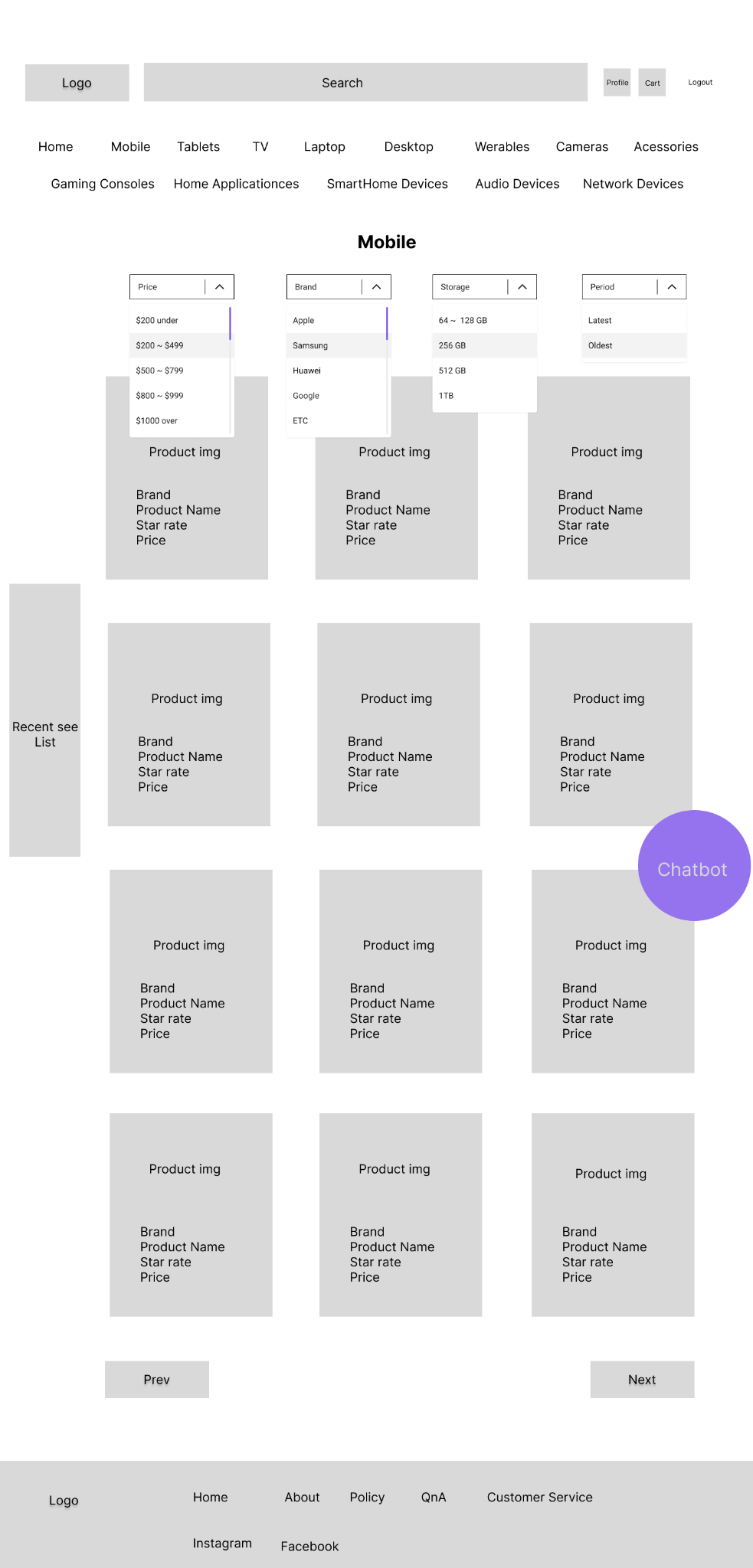


Figure 2-6. List of product(mobile) page

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Figure 2-7. Product detail(mobile) page

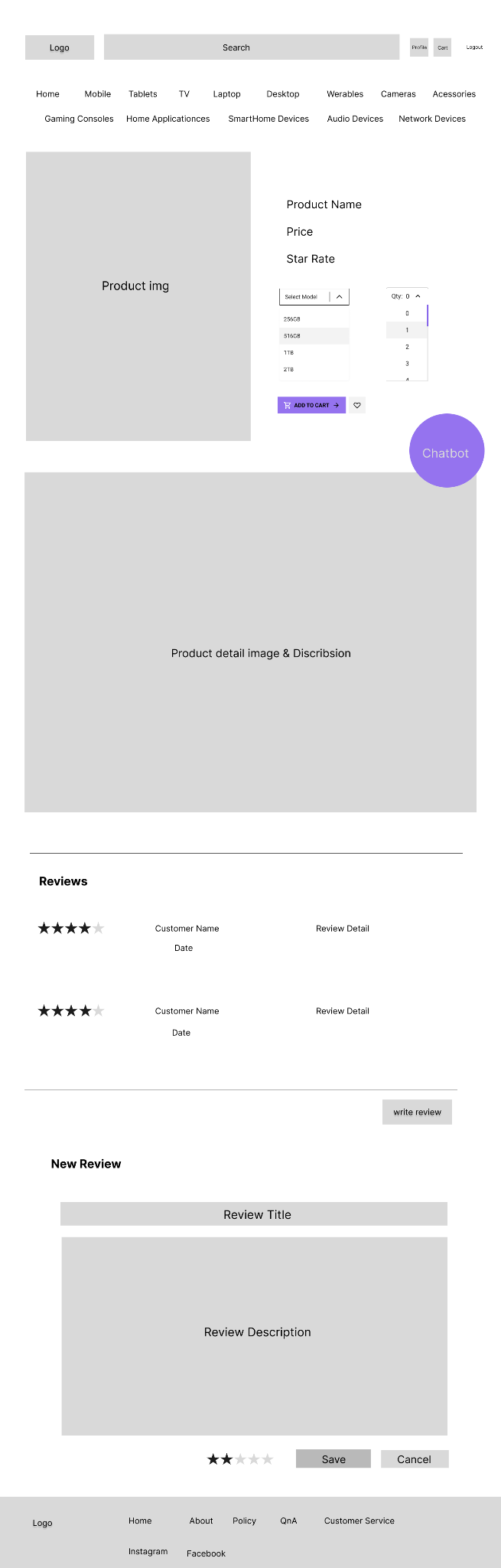


Figure 2-8. Review page

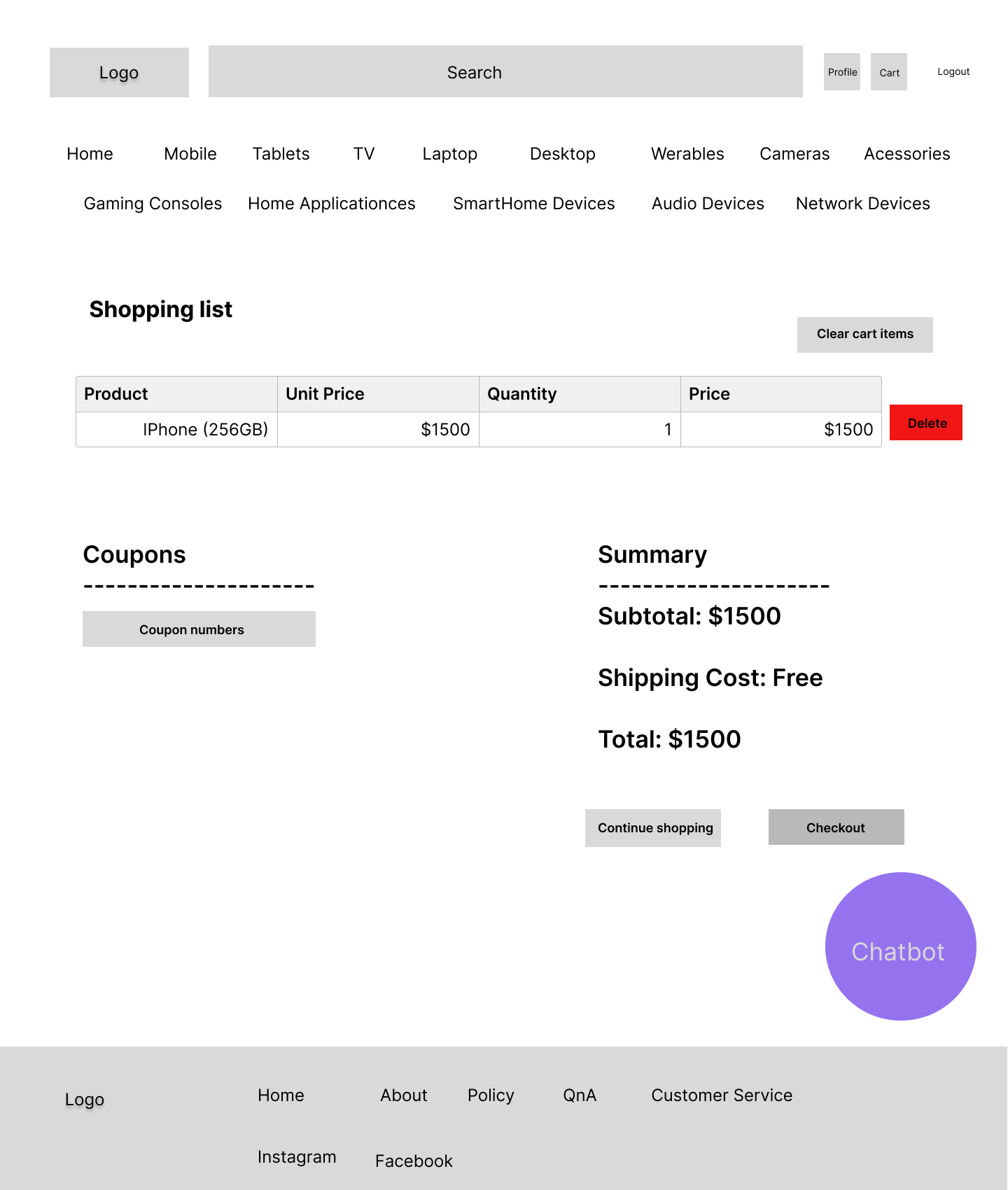


Figure 2-9. Cart(Shopping List) page

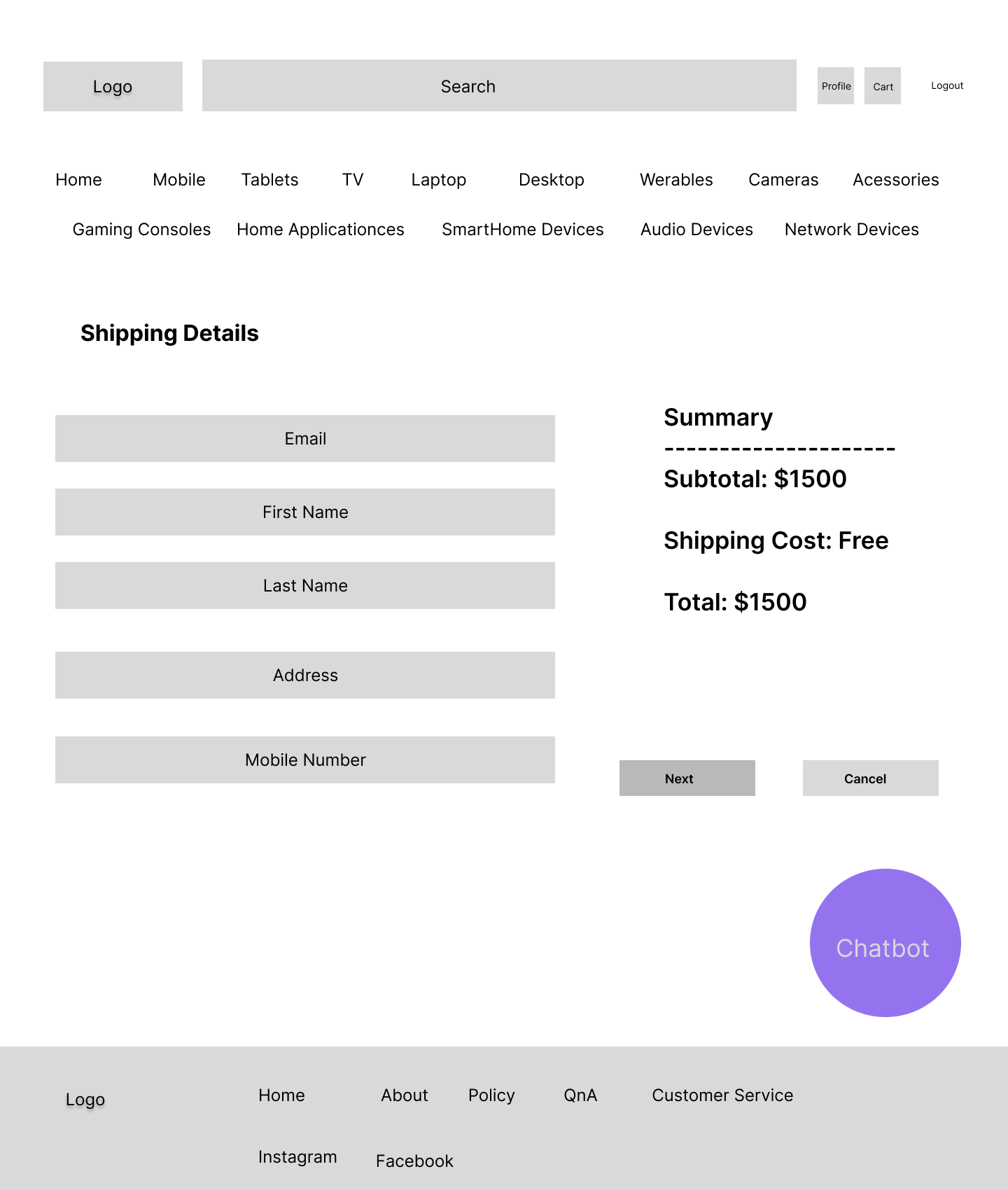


Figure 2-9. Shipping Product page

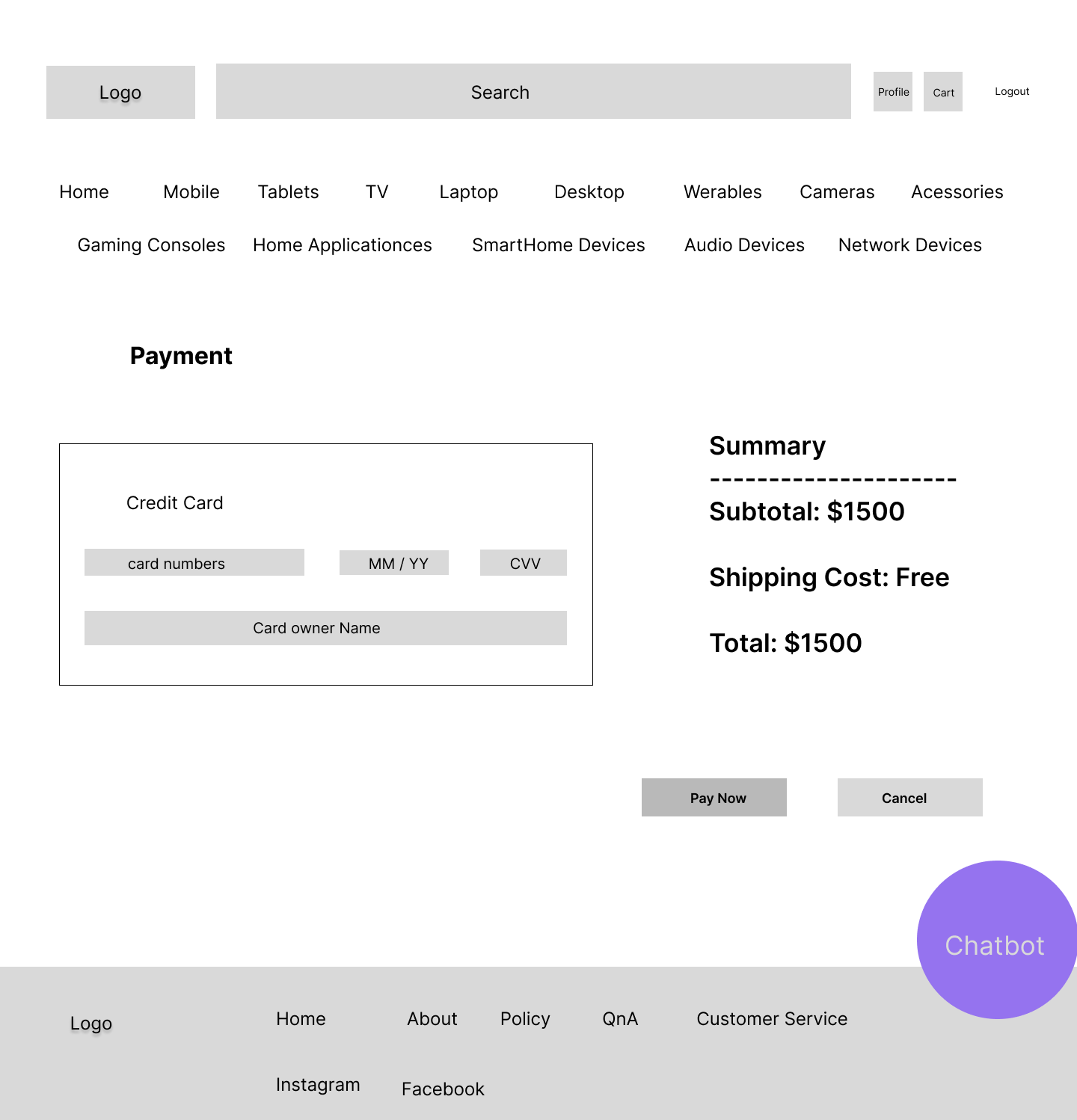


Figure 2-10. Payment page

**Admin**

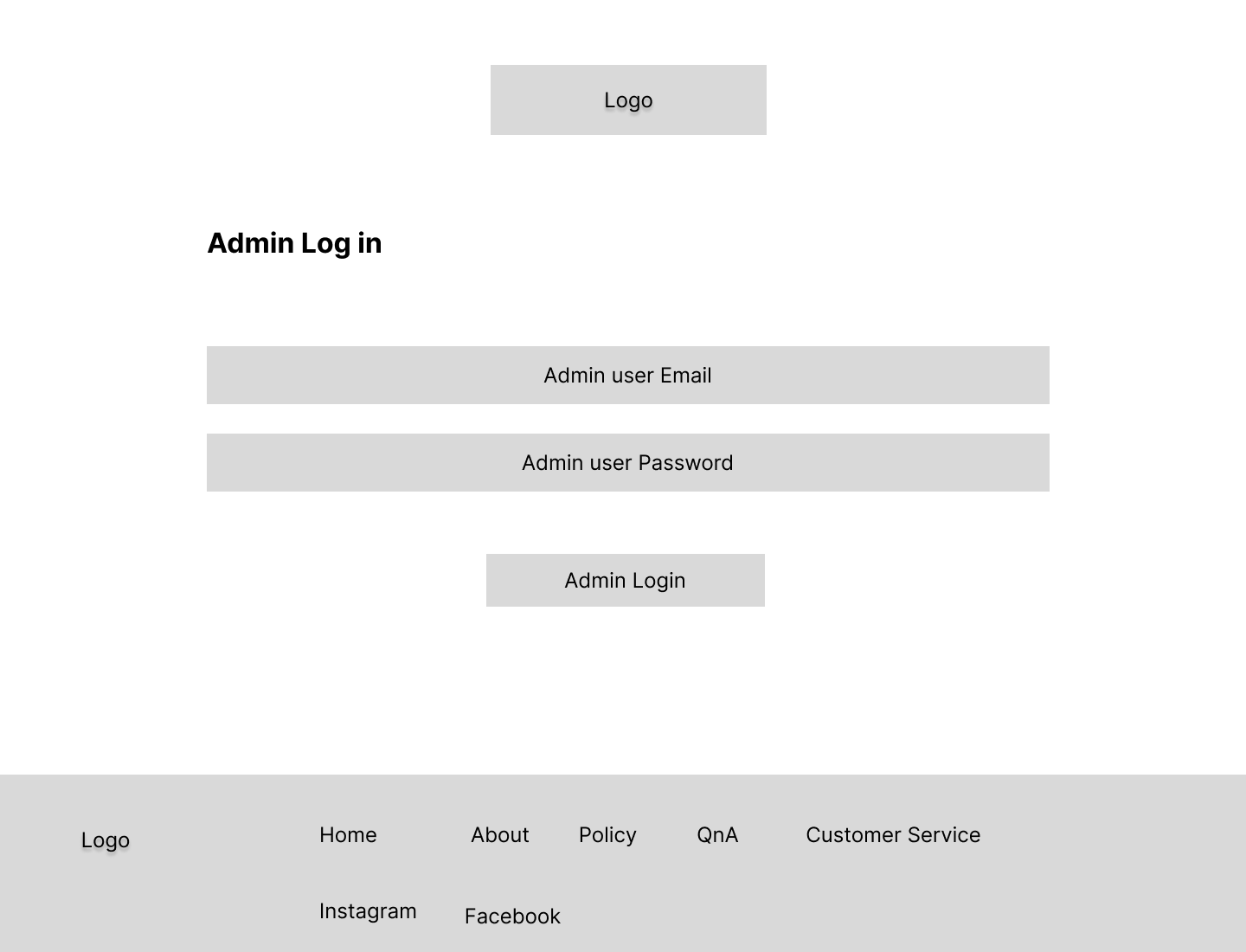


Figure 2-11. Admin log-in page

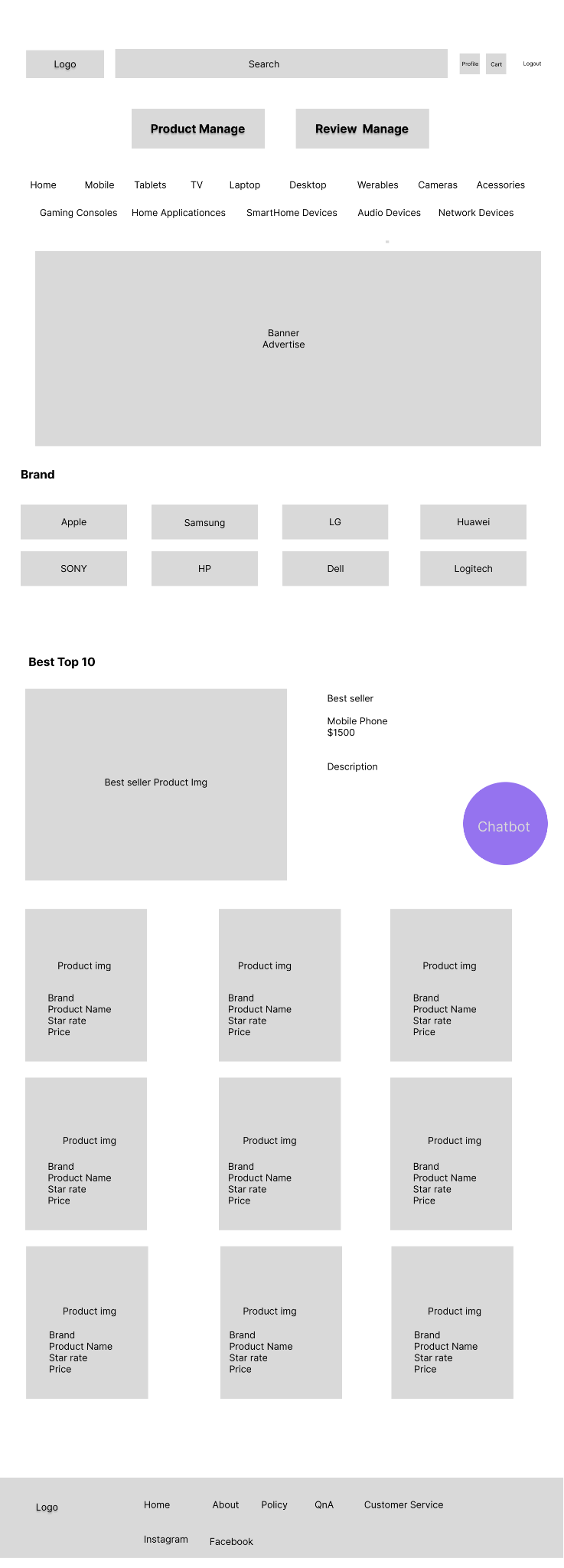


Figure 2-12. Admin home(main) page

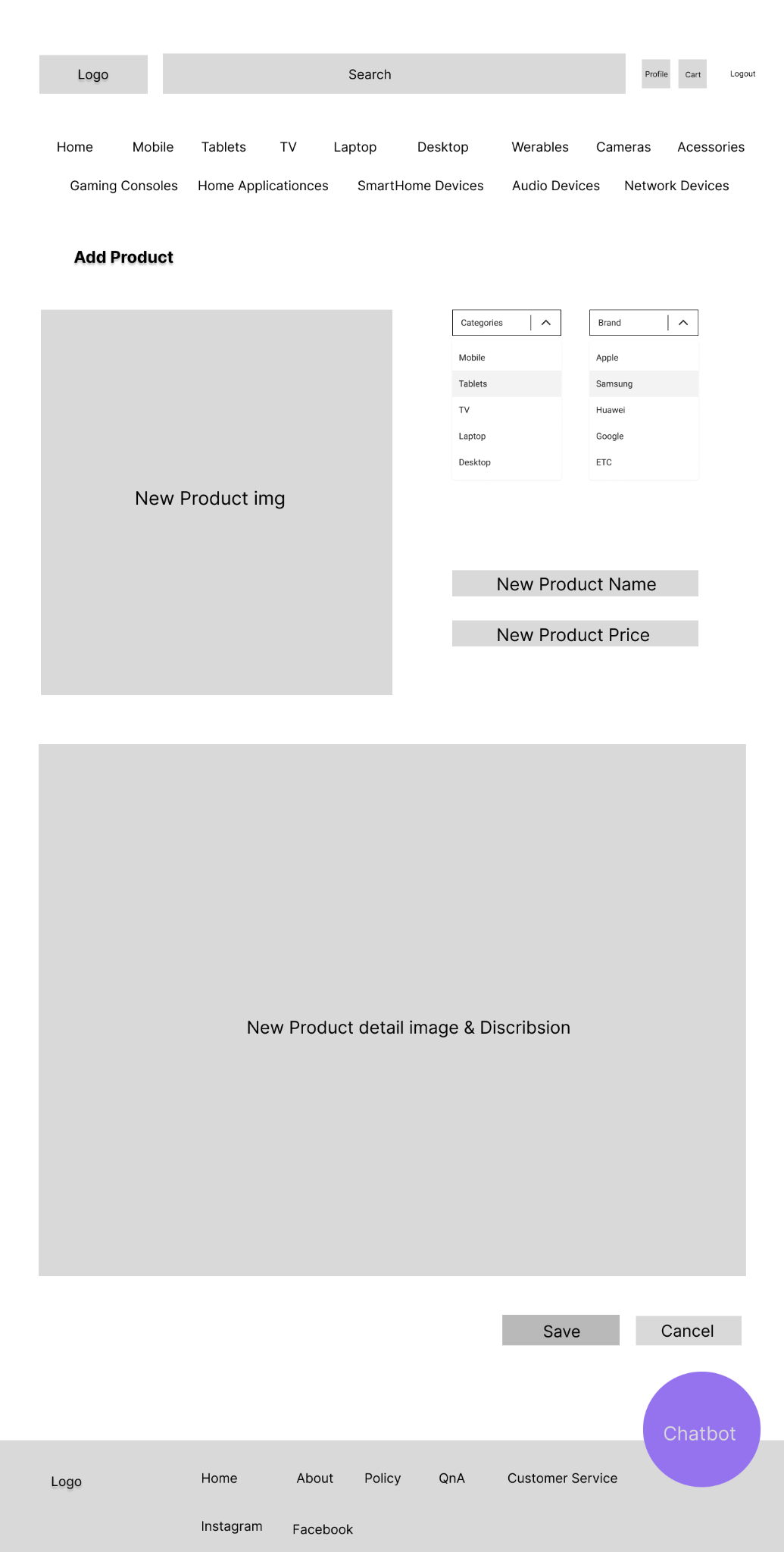


Figure 2-13. Admin add product page

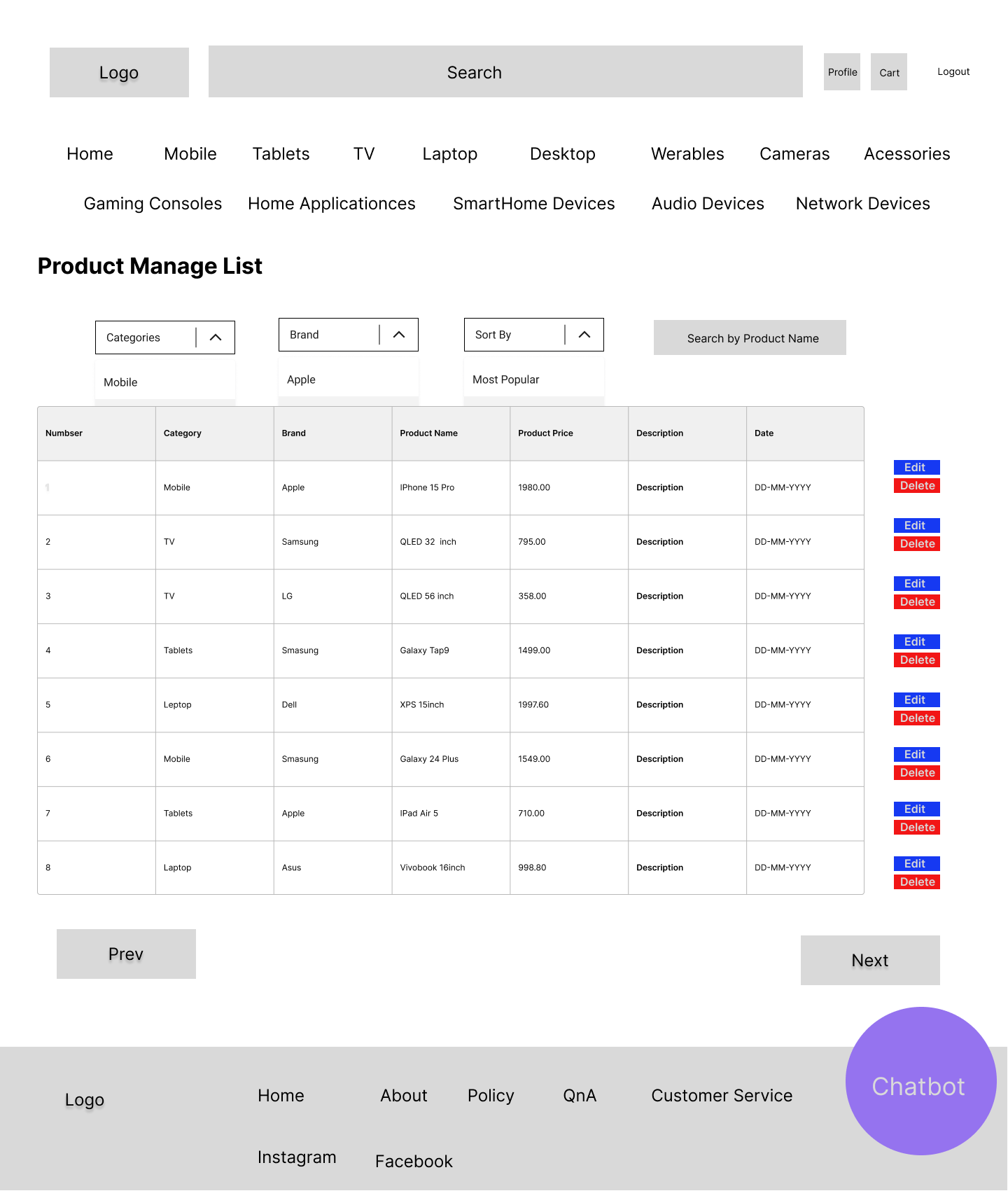


Figure 2-14. Admin Product manage list page

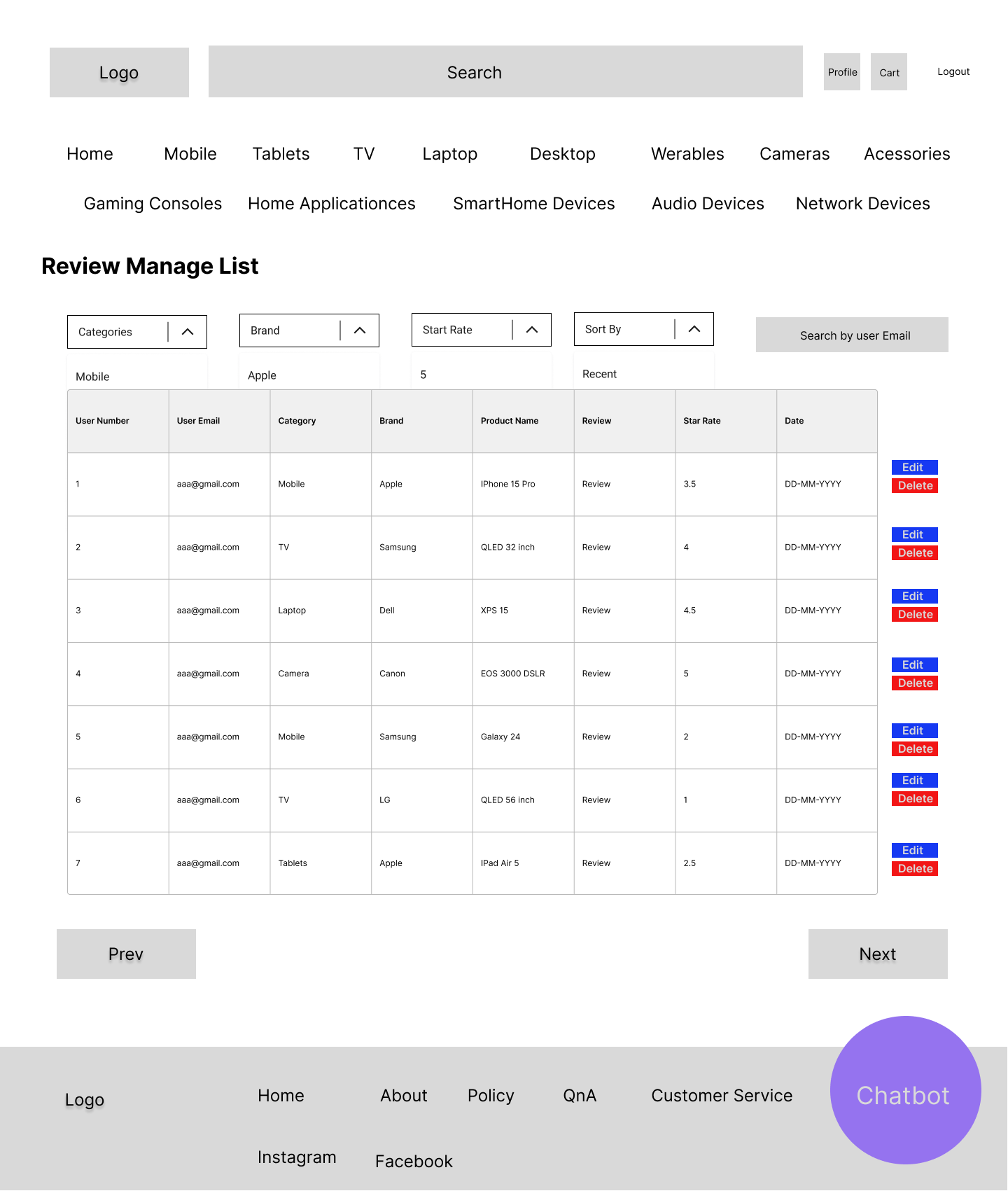


Figure 2-15. Admin review manage list page

**Chatbot Detail**

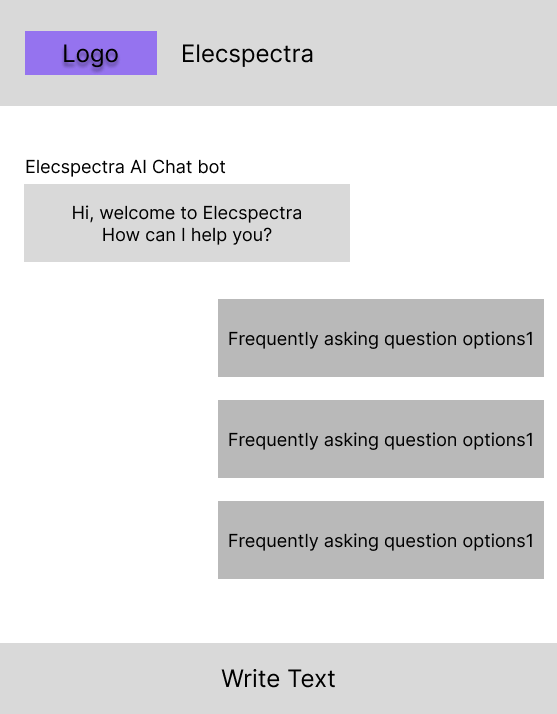
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Figure 2-16. Chatbot main window

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# Major data structures

**Entity Relationship Diagram**

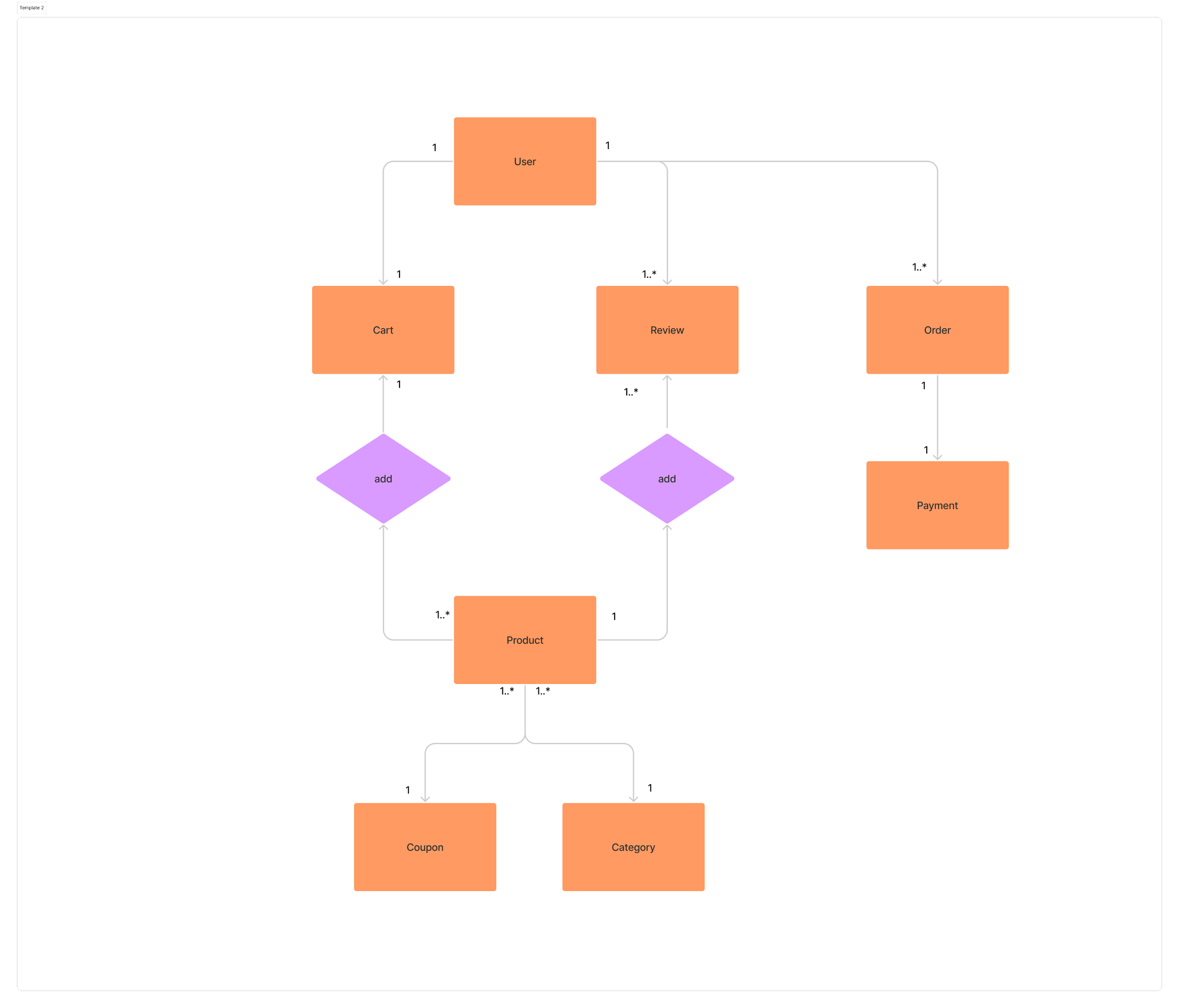


Figure 3-1. Entity Relationship Diagram for web Based online application (ElecSpectra)

**UML Diagram**

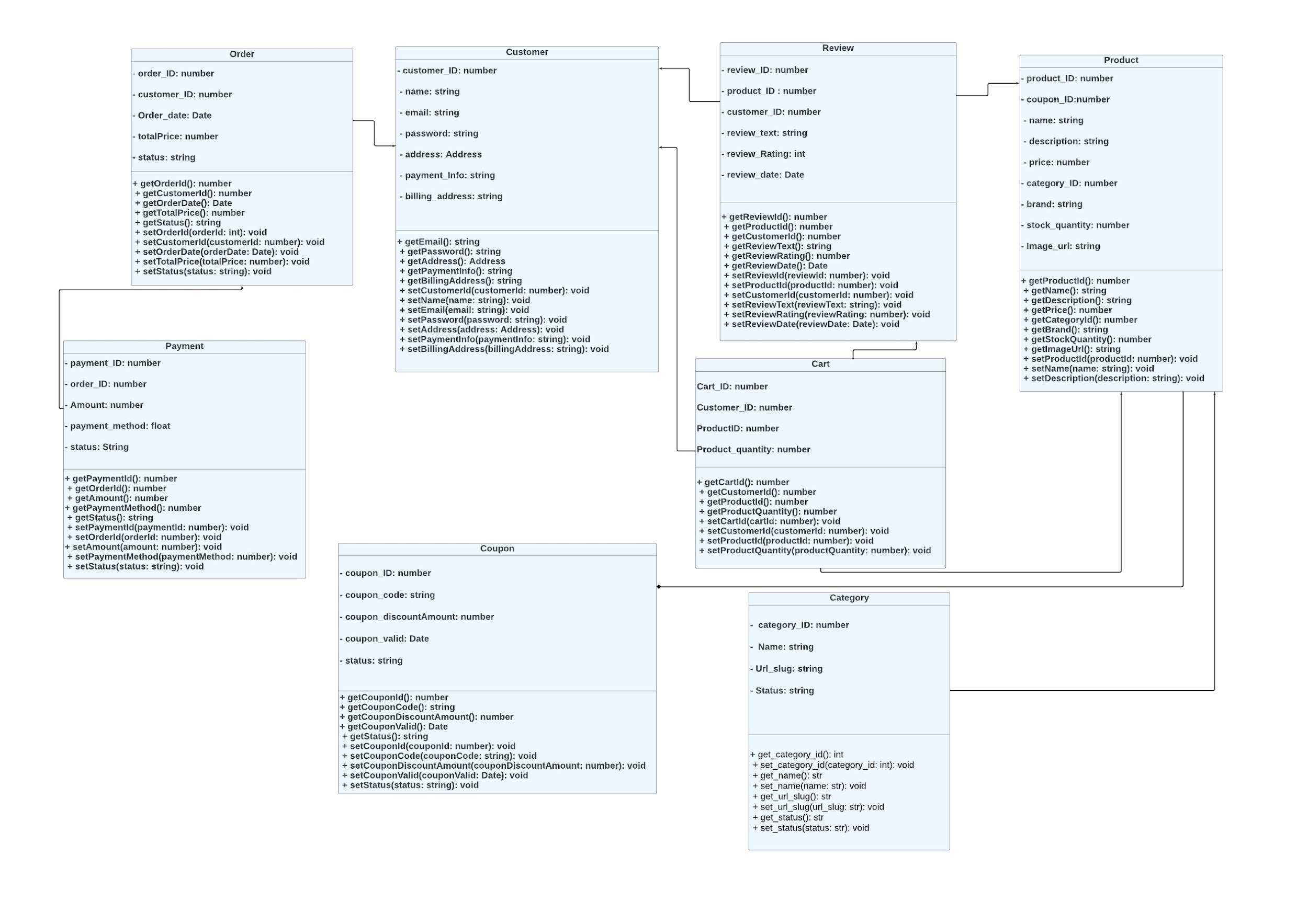


Figure 3-2. UML Class Diagram for web Based online application (ElecSpectra)

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# Database schema

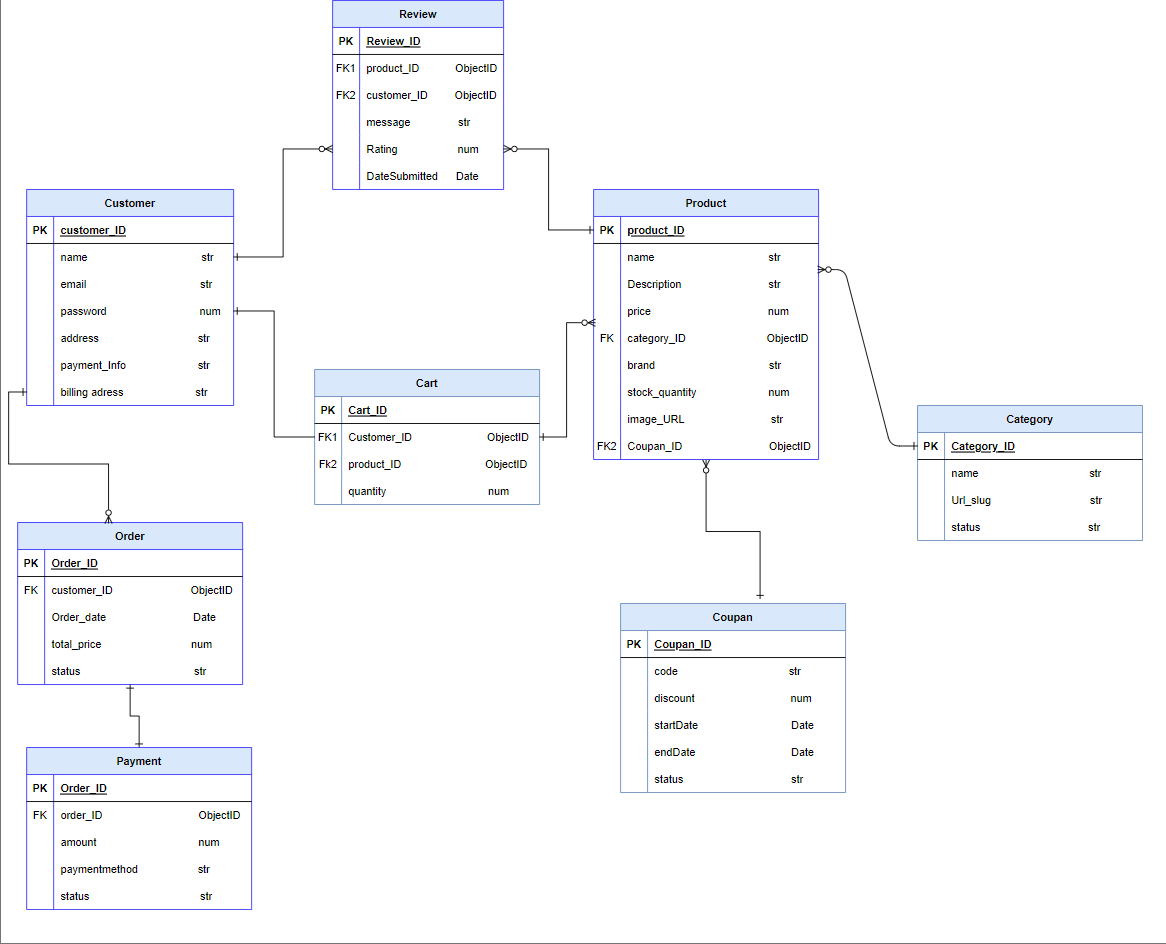


Figure 4-1. Database schema of web Based online application (ElecSpectra)

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# 5. Software architecture

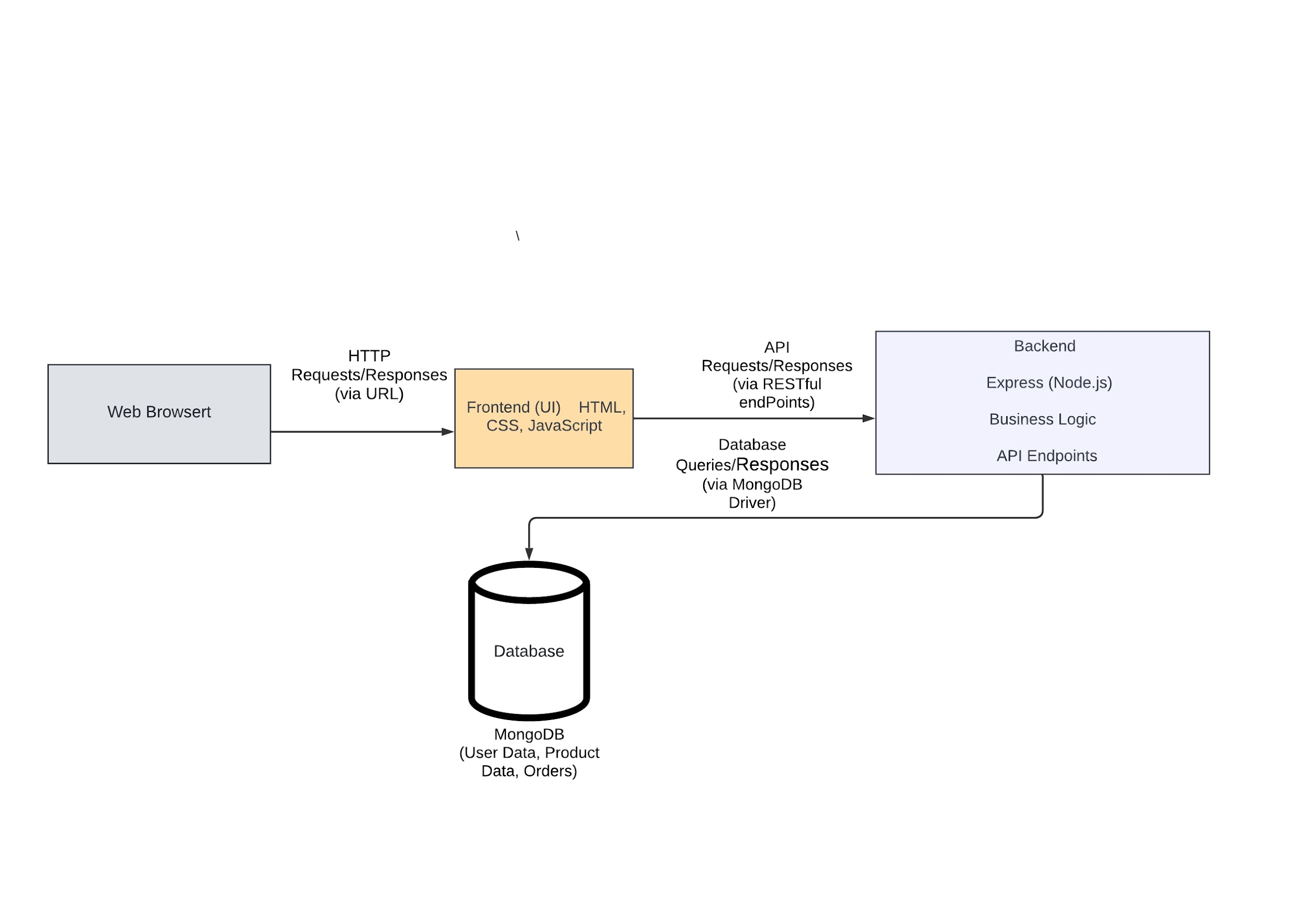


Figure 4-1. Frontend-Backend architecture diagram

* 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.

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# 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** will be our tool of choice for project tracking.