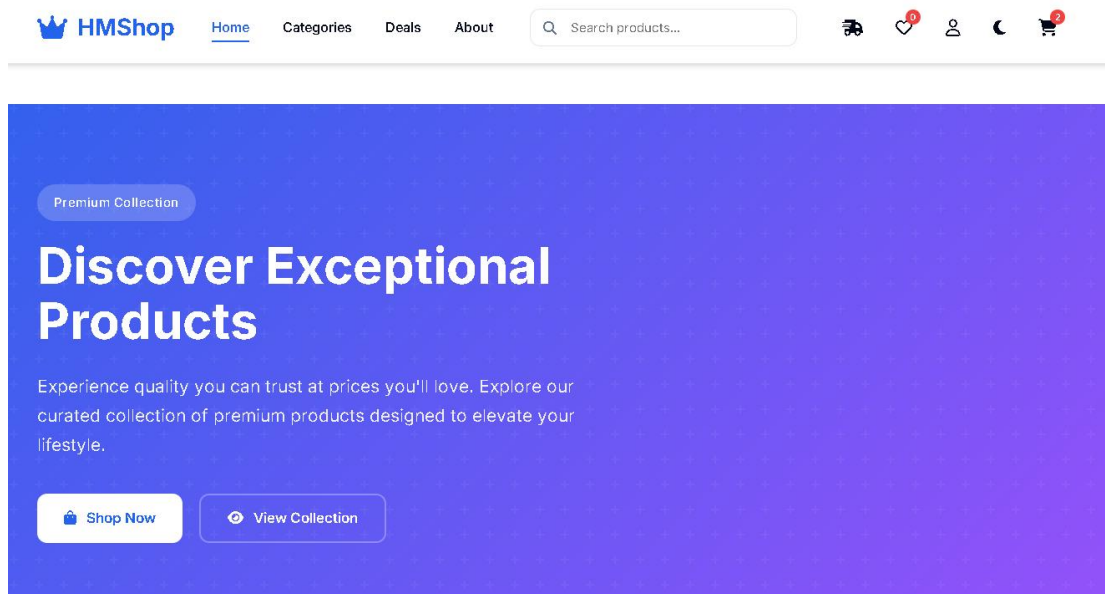


HMSHOP – FULL PROJECT REPORT

I. Introduction :



HMShop is a modern, frontend-based eCommerce platform that delivers a complete shopping experience through a highly responsive and visually refined user interface. It is designed as a single-page application (SPA) that simulates real-world online retail workflows such as product discovery, cart and wishlist management, checkout, user login, and basic reporting.

The platform is implemented using HTML5, CSS3 with utility-style classes, and vanilla JavaScript. It leverages browser localStorage to persist key user data including cart contents, wishlist items, and theme preferences. By combining a strong design system with robust client-side logic, HMShop demonstrates best practices in UI/UX, performance-conscious rendering, and modular frontend engineering.

This report documents the objectives, design system, architecture, functional scope, implementation details, metrics, and forward-looking enhancements for HMShop. It is intended as a professional, presentation-ready overview of the project for stakeholders, instructors, and technical reviewers.

II. Project Objectives :



The HMShop project is driven by a clear set of pedagogical and practical objectives, focusing on real-world eCommerce patterns and modern frontend engineering principles.

II.1 Primary Objectives :

The primary objectives of HMShop are:

Design and implement a user-friendly, fully responsive eCommerce interface suitable for mobile, tablet, and desktop users.

Simulate end-to-end eCommerce functionality including product browsing, search, filtering, cart, wishlist, login flow, and checkout.

Demonstrate modern frontend engineering practices: componentized UI, smooth animations, dynamic rendering, and client-side routing.

Build a SPA-style navigation system using JavaScript to switch between logical “pages” without full reloads.

Provide persistent state using localStorage for cart, wishlist, and theme mode (light/dark).

Offer advanced product interactions including live search, multi-criteria filtering, and interactive product detail views.

II.2 Scope Definition

The scope of HMShop is intentionally centered on the frontend layer, with server interactions simulated through a public dummy API and client-side state management. The project:

Includes all core eCommerce browsing and selection features users expect from a modern online store.

Emulates, but does not fully implement, backend processes such as authentication, order persistence, and payment processing.

Focuses on quality of presentation, usability, and maintainable frontend architecture.

II.3 Project Timeline and Milestones :

Phase	Duration (weeks)	Key Deliverables
Planning & Requirements	1	Scope definition, feature list, initial wireframes
Design System & Layout	2	Color system, typography, responsive grid, component sketches
Core SPA & Navigation	2	SPA routing, header, footer, base pages
eCommerce Features	3	Products, cart, wishlist, filters, product detail
Checkout & Auxiliary Pages	2	Checkout, login, about, shipping, reports, 404
Testing & Optimization	2	Bug fixes, performance passes, accessibility review

III. Design System :



The design system underpins visual consistency, accessibility, and maintainability across HMShop. It defines colors, typography, spacing, shadows, animations, and layout rules that are used across all components and pages.

III.1 Color and Theme System :

HMShop implements a semantic, CSS-variable-based color system designed for flexibility and theme switching.

Semantic variables such as `--primary`, `--secondary`, `--accent`, and `--background` ensure consistent usage across UI elements.

Dual theme support (Light and Dark modes) is implemented, with user preference persisted in `localStorage`.

HSL color format is used extensively, improving adjustability and readability for designers and developers.

Soft shadows (e.g., `--shadow`, `--shadow-lg`, `--shadow-xl`) enhance depth and focus on interactive elements.

Gradient hero backgrounds reinforce brand personality and visual hierarchy for key marketing sections.

III.2 Typography

The typographic system balances readability and modern aesthetics.

Primary font: Inter, sourced from Google Fonts and optimized for on-screen legibility.

Consistent heading scale from approximately 2xl to 6xl to distinguish page titles, section headers, and card titles.

Body text set at comfortable sizes with adequate line-height and spacing for multi-device readability.

Use of bold and semibold weights to create clear hierarchy without overreliance on color.

III.3 Animations and Micro-interactions :

Animations are used carefully to support usability and a premium feel without reducing performance.

Fade-in effects for hero sections and product grids to create a smooth page load experience.

Hover scale transforms and subtle elevation changes on product cards to indicate interactivity.

Drawer slide animations for cart and mobile navigation to help orientation.

Short “pulse” feedback animation on Add to Cart actions to confirm user intent.

Transition durations typically between 200–400ms, striking a balance between responsiveness and smoothness.

III.4 Layout and Responsiveness ;

Responsive layout ensures seamless experience from small smartphones to large desktop screens.

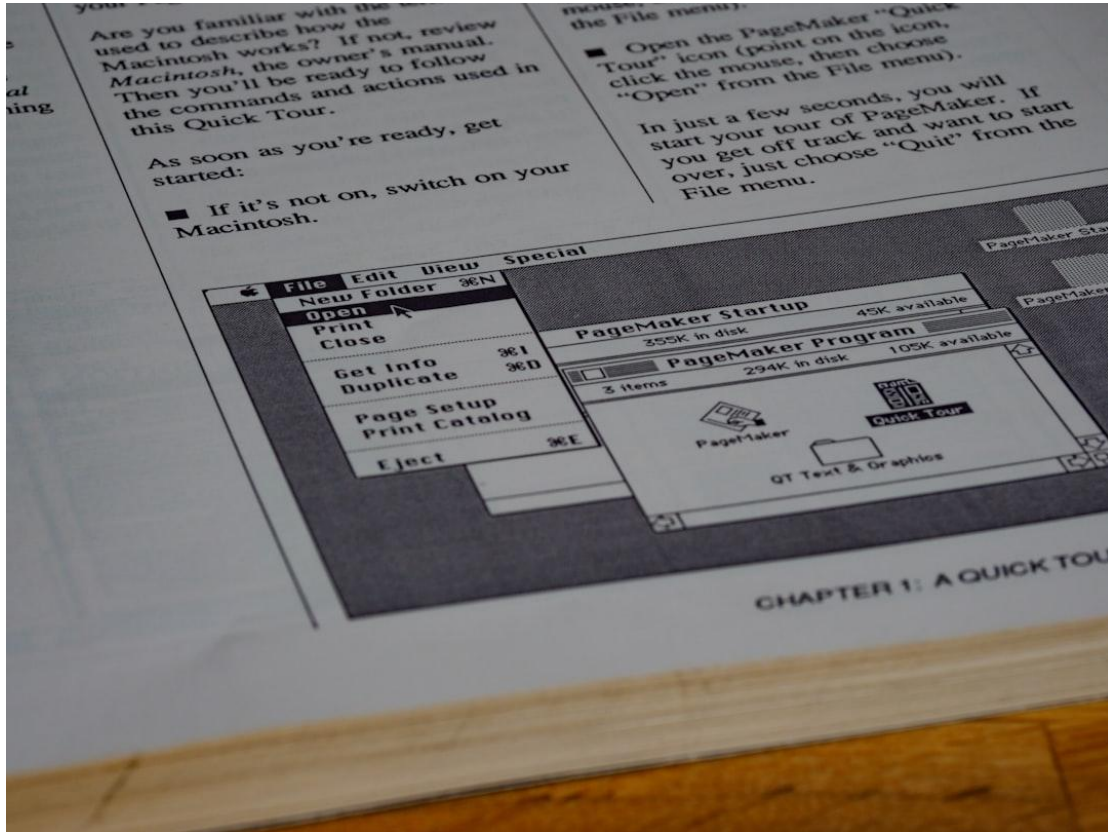
Max content width of approximately 1280px to ensure readable line lengths on large displays.

CSS grid layouts for product listing sections, adapting column count based on viewport width.

Mobile-first navigation with a hamburger-triggered sheet-style menu, while desktop uses a horizontal nav bar.

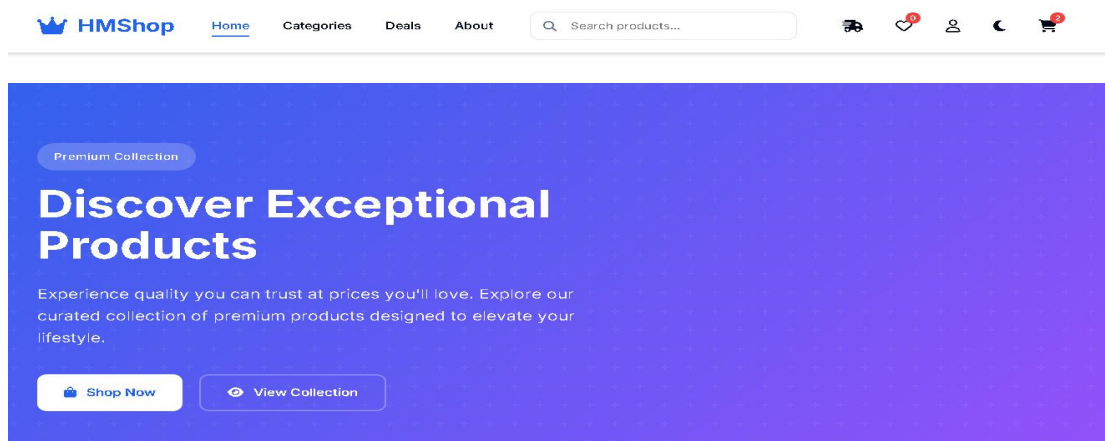
Modular section structures allow rearranging or extending content with minimal layout impact.

IV. Platform Structure and Pages :



HMShop is organized as a SPA. Individual sections of the document act as logical “pages” that are dynamically shown or hidden using JavaScript-based routing. This design minimizes page reloads and improves perceived performance.

IV.1 Home Page :



The Home page introduces the store and highlights featured content.

Hero banner with a prominent badge, main headline, and supporting description.

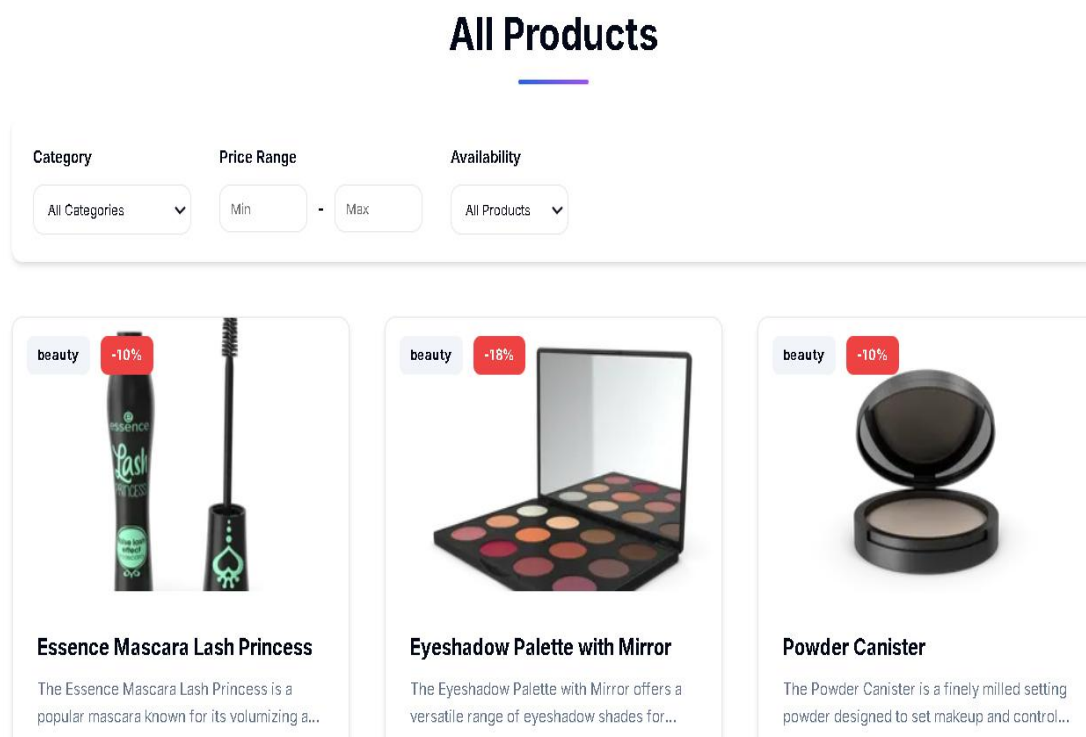
Primary call-to-action (Shop Now) and secondary action (View Collection).

Featured product section showcasing curated items.

Integrated filtering UI (category, price, and stock status) aligned with the global filtering engine.

Real-time search field, unified with the header search for consistent behavior.

IV.2 Categories Page :



The Categories page serves as the central catalog view for browsing the full inventory.

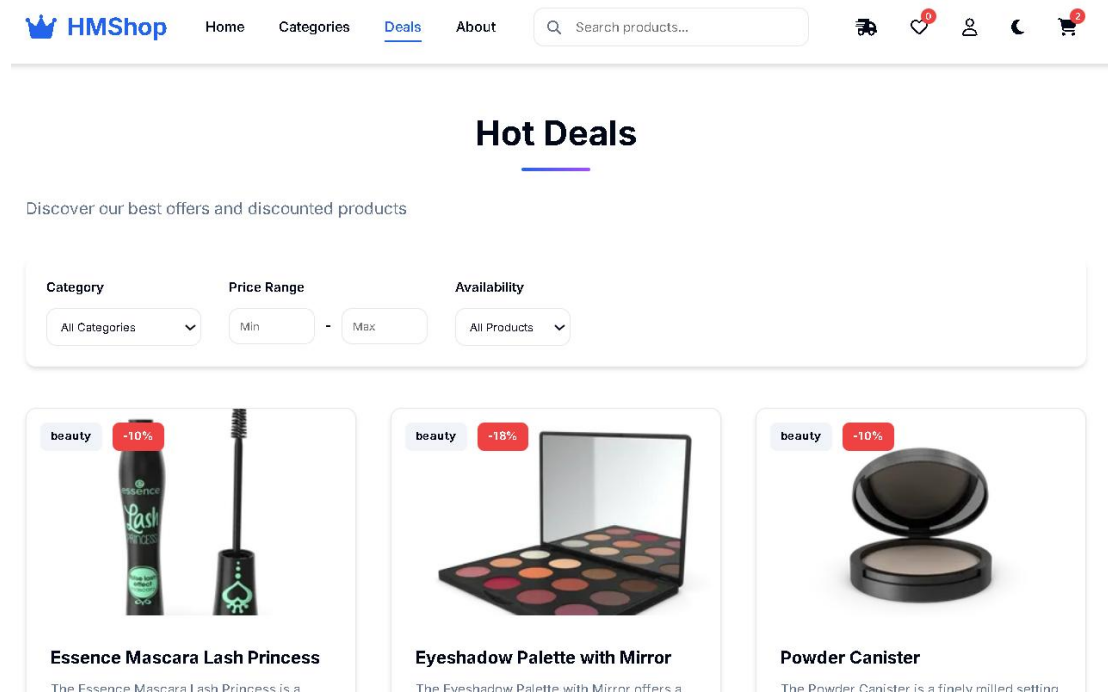
Displays all available products in a responsive grid.

Reuses the global filtering and search logic to ensure consistent user experience.

Supports category selection and price range adjustments to refine the listing.

Includes scroll-to-top control for quick navigation, particularly helpful on long lists.

IV.3 Deals Page :



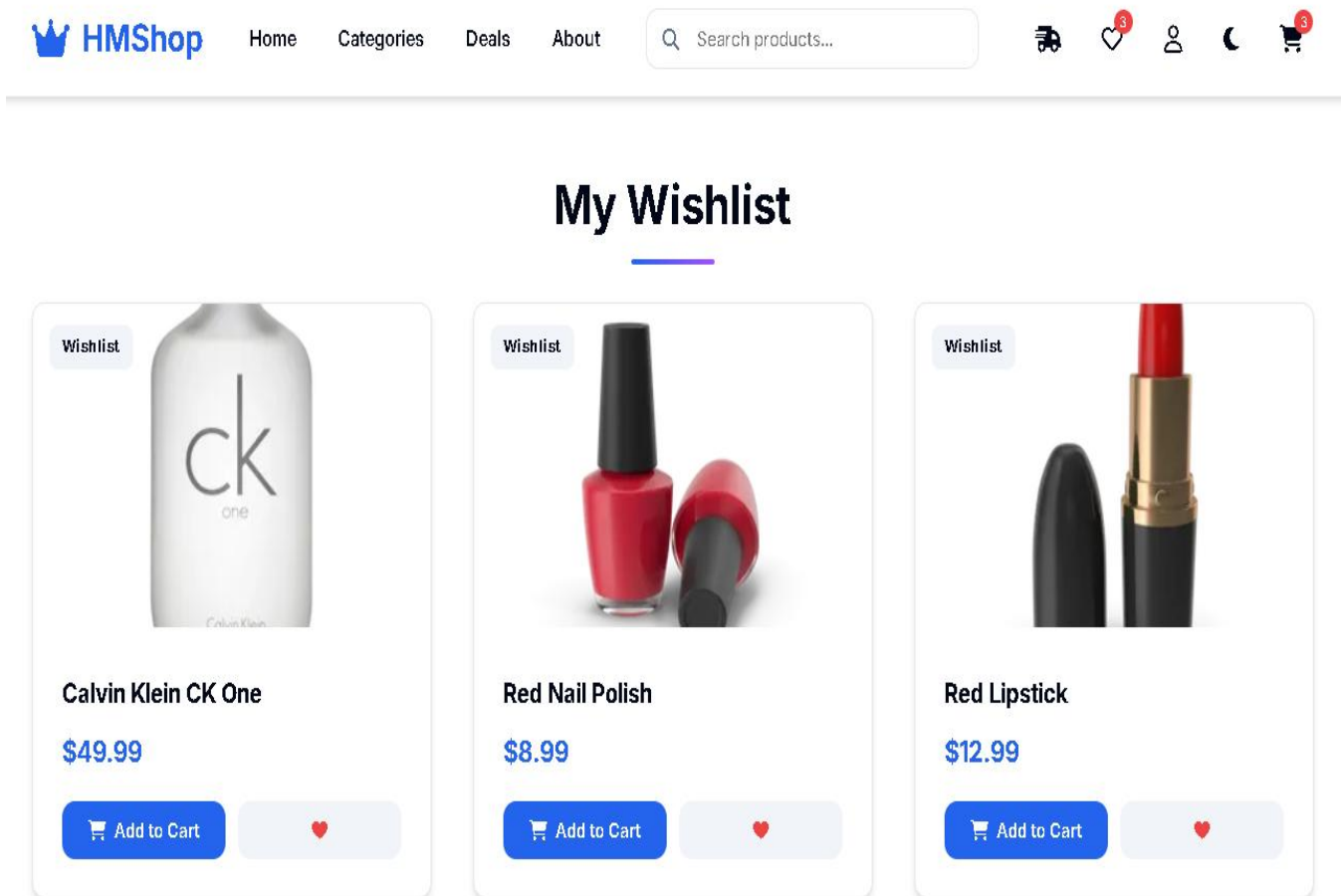
The Deals page highlights discounted products to drive conversion and value perception.

Filters and displays only products that have active discounts.

Shows discount percentage badges and side-by-side original versus discounted price.

Supports the same filtering and search capabilities as other listing pages.

IV.5 Wishlist Page :



The wishlist page acts as a personal collection of saved items.


Displays products the user has marked as favorites.

Uses localStorage to persist wishlist items across sessions.

Enables Move to Cart operations for swift checkout initiation.

Provides a friendly empty state with iconography and guidance when no items are saved.

IV.6 Checkout Page

[Home](#)[Categories](#)[Deals](#)[About](#)

Shipping Information

Full Name

Email Address

Shipping Address

City




ZIP Code

Country

Select Country ▼

Phone Number

Order Summary

	Powder Canister Qty: 1	\$14.99
	Eyeshadow Palette with Mirror Qty: 1	\$19.99
	Red Nail Polish Qty: 1	\$8.99
Subtotal		\$43.97
Shipping		\$9.99
Tax		\$4.40
Total		\$58.36

The Checkout page simulates a complete purchase workflow, split into two logical panels.

Left Panel – Shipping and Payment Form

Customer information: full name, email, phone number.

Shipping details: address, city, ZIP/postal code, and country selection.

Payment section: cardholder name, card number, expiry date, CVV (front-end validation only).

Right Panel – Order Summary

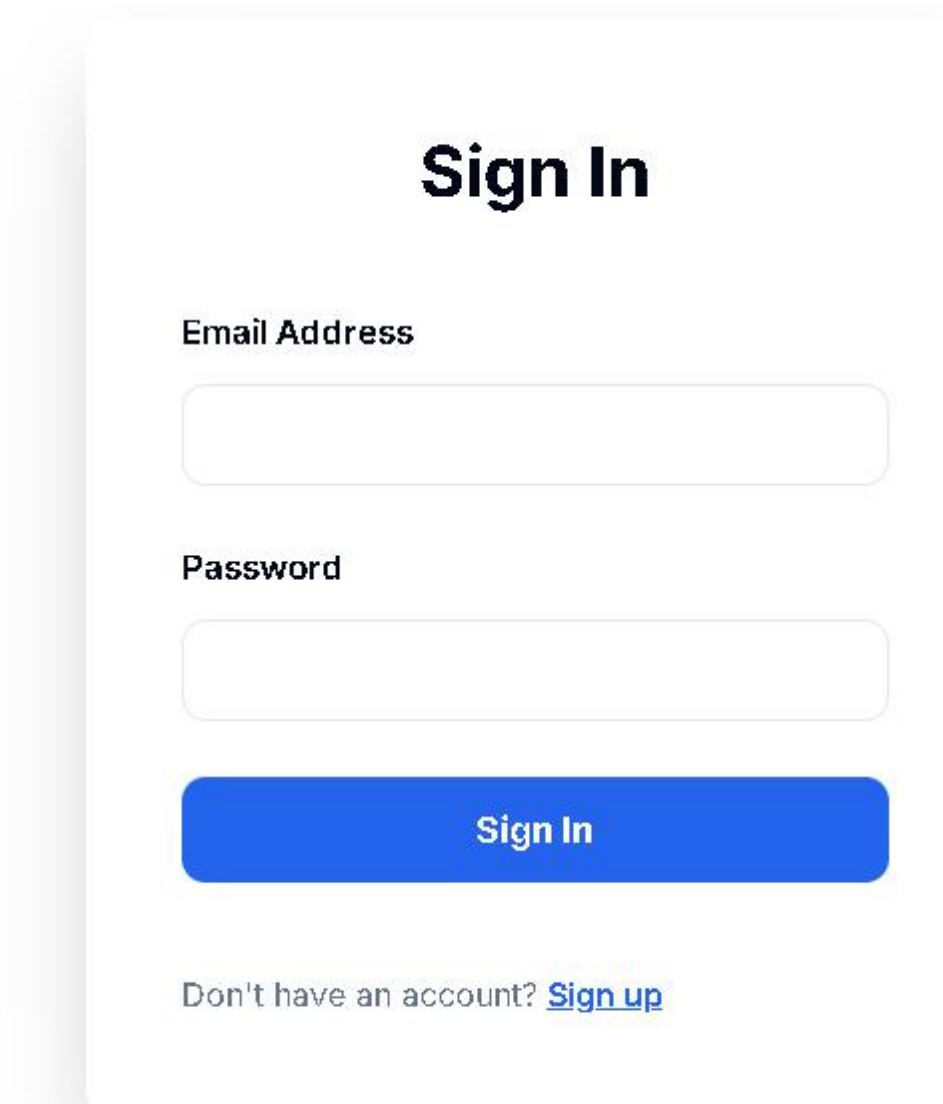
List of items being purchased with quantity and line pricing.

Automatic subtotal calculation.

Dynamic tax estimation based on configured rate.

Shipping cost and final grand total computation.

IV.7 Login Page



Sign In

Email Address

Password

Sign In

Don't have an account? [Sign up](#)

The Login page provides a simulated entry point for authentication workflows.

Form fields for email and password with presence validation.

Captures login intent and can be extended to integrate with real authentication backends.

Forms the basis for auth-protected sections in extended features.

IV.8 About Page :

About HMShop

Your trusted partner for premium products since 2015

Our Story

HMShop was founded with a simple mission: to provide customers with access to high-quality products at affordable prices. What started as a small online store has grown into a trusted e-commerce platform serving thousands of customers worldwide.

We carefully curate our product selection to ensure that every item meets our strict quality standards. Our team works directly with manufacturers and suppliers to bring you the best products without the traditional retail markup.

Our Values

At HMShop, we believe in:

- **Quality:** We never compromise on product quality
- **Transparency:** We're honest about our products and pricing
- **Customer Focus:** Your satisfaction is our top priority
- **Innovation:** We continuously improve our platform and services

The About page communicates brand narrative and credibility.

Company story, including background and positioning of HMShop.

Mission and value statements emphasizing quality, usability, and customer-centric design.

Team section with member names, roles, and representative images to humanize the brand.

IV.9 Shipping Page

Shipping Information

Delivery Options

We offer several shipping options to meet your needs:

- **Standard Shipping:** 5-7 business days - \$4.99
- **Express Shipping:** 2-3 business days - \$9.99
- **Next Day Delivery:** 1 business day - \$19.99

Free standard shipping on orders over \$50.

International Shipping

We ship to over 50 countries worldwide. International delivery times vary by location but typically take 7-14 business days. Additional customs fees and taxes may apply for international orders.

The Shipping page sets clear expectations around logistics and post-purchase support

Domestic and international delivery options with indicative timelines.

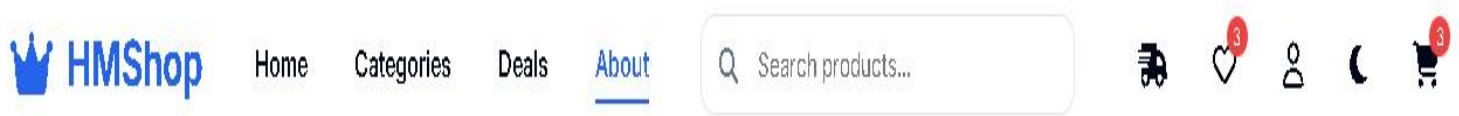
Conditions and cost structures for standard and express shipping.

Returns, exchanges, and refund policy overview.

V. Core Components :

HMShop is built from reusable UI and logic components that promote consistency and streamline maintenance.

V.1 Header :



The header functions as the primary navigation and quick-access control center.

Logo area linking back to the Home page.

Desktop navigation links for Home, Categories, Deals, and About.

Central search bar with live search integrated with the global filtering engine.

Wishlist button with counter badge showing number of saved items.

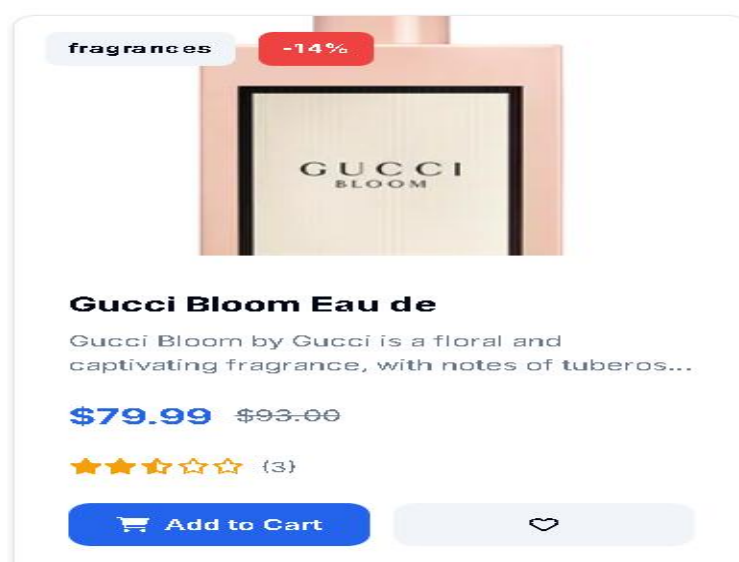
Login button to access the authentication screen.

Theme toggle for switching between light and dark mode, persisted via localStorage.

Cart button with item count indicator and quick access to the cart drawer.

Hamburger menu icon for mobile navigation drawer.

V.2 Product Card :



Product cards provide concise, actionable summaries of items throughout listing pages.

- Product image with hover effect for emphasis.

- Category badge and discount badge when applicable.

- Product name and short description to provide quick context.

- Star rating visualization, usually out of 5.

- Pricing section showing current price and struck-through original price.

- Add to Cart primary action button.

- Wishlist heart icon for one-tap favorites management.

- Out-of-stock overlay for unavailable items, disabling purchase actions.

-

V.3 Filtering System :

The filtering system powers product discovery by combining multiple criteria.

- Keyword search across name and description.

- Category dropdown to limit results to specific product groups.

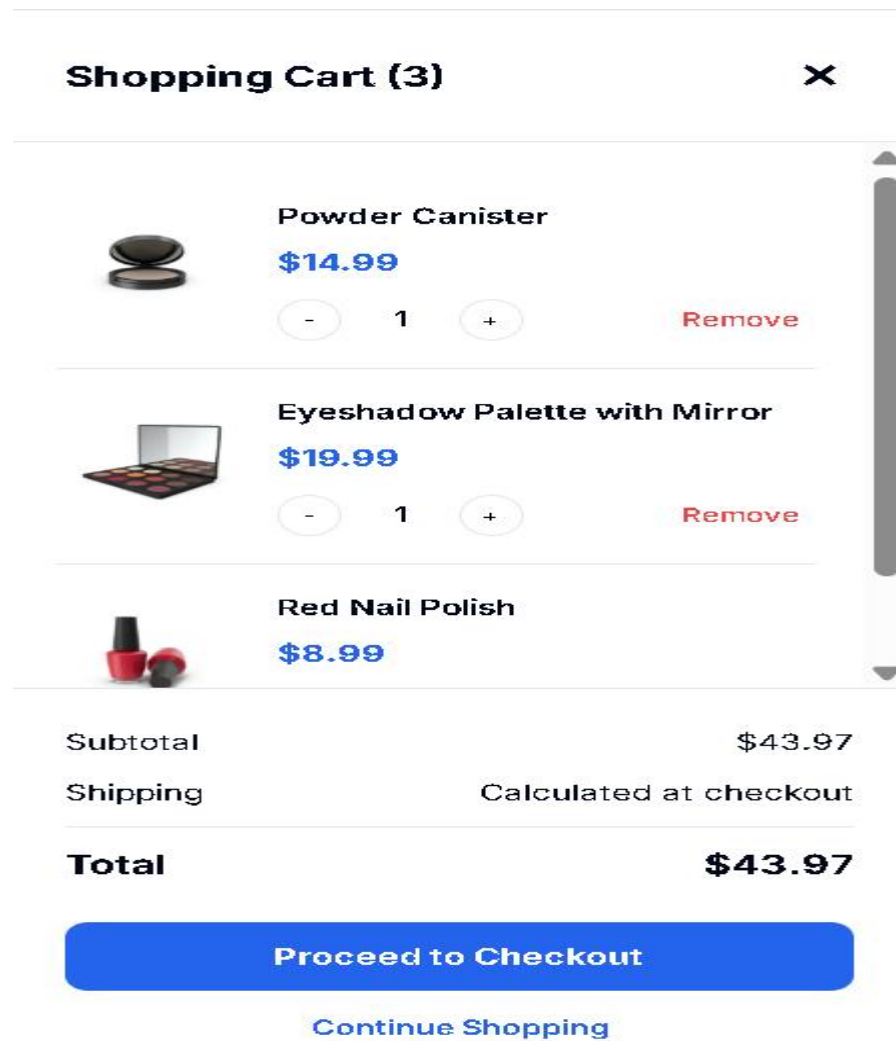
- Price range inputs to bound minimum and maximum acceptable prices.

- In-stock-only toggle to remove unavailable items from view.

- Real-time filtering with immediate UI updates as parameters change.

- Shared logic across Home, Categories, and Deals pages.

V.4 Cart Drawer :



The cart drawer provides a quick and persistent overview of the shopping basket.

Slide-in panel triggered from the header cart button.

List of cart items displaying image, title, unit price, and quantity controls.

Buttons to increment or decrement item quantity.

Remove action to delete an item from the cart.

Real-time subtotal and total amount calculations.

Primary button to proceed to the Checkout page.

V.5 Toast System

The toast notification system offers subtle feedback for user actions.

Success toasts confirming operations like Add to Cart, Add to Wishlist, or successful form submissions.

Error or warning toasts for invalid actions or missing inputs.

Automatic time-based dismissal with smooth fade transitions.

V.6 Scroll to Top Button

The scroll-to-top control improves usability on long product lists and content-heavy pages.

Appears once the user scrolls beyond a defined threshold.

Triggers a smooth scroll animation to return to the top of the page.

VI. Functional Features :



HMSHOP implements a comprehensive set of eCommerce-oriented features that simulate realistic user flows from discovery to checkout.

VI.1 Shopping Cart

The shopping cart is central to the conversion process and has been carefully implemented.

Add items from product cards or the product detail page with default or selected quantities.

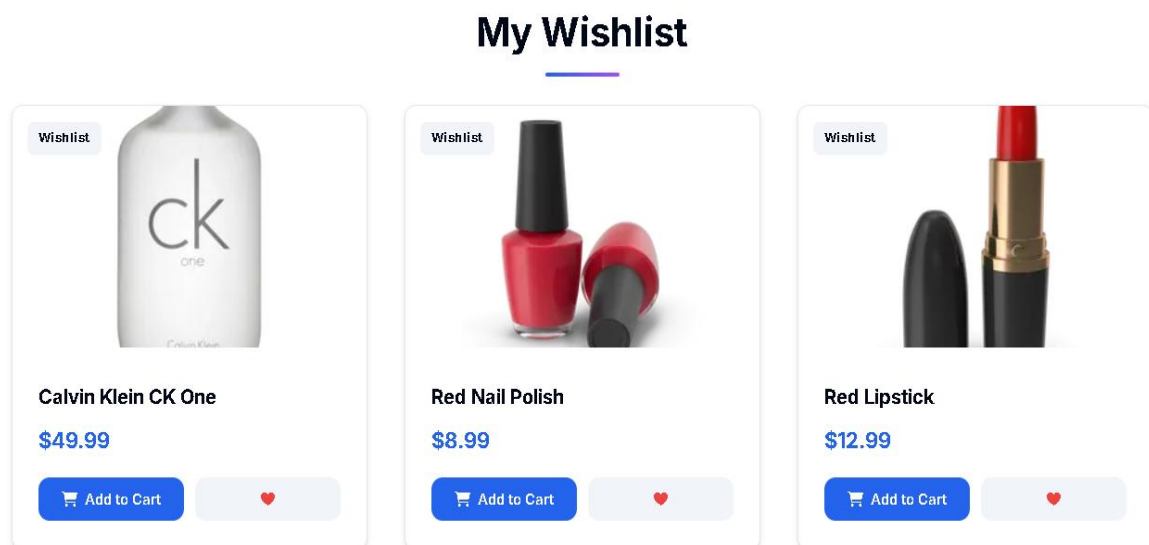
Update item quantities directly within the cart drawer.

Remove items completely from the cart.

Persist cart contents in localStorage to survive page refreshes and revisits.

Automatically recalculate subtotals and totals as contents change.

VI.2 Wishlist System :



The wishlist supports longer purchase decision cycles.

Toggle items into or out of the wishlist using card heart icons or product detail actions.

Display a running count of saved items in the header.

Persist wishlist state in localStorage for later browsing sessions.

VI.3 Product Filtering Engine



The image shows a UI mockup for a product filtering engine. It consists of three main sections: 'Category', 'Price Range', and 'Availability'. The 'Category' section has a dropdown menu with 'All Categories' selected. The 'Price Range' section has two input fields, 'Min' and 'Max', separated by a minus sign. The 'Availability' section has a dropdown menu with 'All Products' selected. Below these sections is a horizontal line.

The filtering engine combines multiple constraints to refine product results efficiently.

- Processes search keywords against product titles and descriptions.

- Applies categorical filters to restrict product sets.

- Implements price range constraints for budget-based browsing.

- Includes a stock availability filter to show only purchasable products.

- Executes all filtering operations client-side for responsive feedback.

VI.4 Data Management :

HMShop sources and transforms product data to deliver a coherent catalog.

- Fetches live product data from the DummyJSON API.

- Transforms pricing and discount fields to match the store's display logic.

- Tags stock levels and uses them to inform both filters and card overlays.

- Selects featured products based on configurable criteria such as rating or discount.

- Implements client-side caching (for example, around five minutes) to reduce repeated network calls and improve responsiveness.

VI.5 Navigation System :

The SPA navigation system manages which page sections are visible at any time.

- Tracks active route and updates visible content panels accordingly.

- Highlights active navigation links in the header for orientation.

- Supports smooth scrolling behavior for hero and anchor navigation.

VI.6 Accessibility :

Accessibility has been considered across structure, interactivity, and styling.

Use of semantic HTML elements to ensure screen-reader compatibility.

Keyboard navigability for core interactions such as navigation, forms, cart actions, and buttons.

ARIA labels on interactive elements where context is not obvious from markup alone.

Visible focus styles to help identify the currently focused element.

Alt descriptions for all decorative and informational images.

VII. Technical Stack and Architecture :

```
HMShop Platform
|
├── UI Layer
|   ├── Header
|   ├── Product Cards
|   ├── Filters
|   ├── Pages (Home, Categories, Deals, etc.)
|   └── Cart Drawer
|
├── Logic Layer (JavaScript)
|   ├── Router (SPA navigation)
|   ├── Product Fetching
|   ├── Cart Manager
|   ├── Wishlist Manager
|   ├── Filter Engine
|   ├── Search Engine
|   └── UI Updaters
|
└── Storage
    ├── localStorage.cart
    ├── localStorage.wishlist
    └── localStorage.theme
```


The project relies entirely on web-native technologies with minimal external dependencies. This emphasizes understanding of core browser capabilities and reduces complexity.

VII.1 Technology Stack

HTML5 for semantic document structure and layout containers.

CSS3 with utility-inspired classes for rapid, consistent styling and responsive rules.

Vanilla JavaScript for dynamic rendering, routing, interaction handling, and state management.

localStorage for persistence of cart, wishlist, and theme preferences.

Font Awesome for consistent iconography across UI controls.

Google Fonts (Inter) as the primary typeface.

SVG grid overlays and patterns for subtle backgrounds and visual interest.

VII.2 System Architecture Overview

The architecture is divided into three conceptual layers.

UI Layer: Header, product cards, filters, logical pages, and the cart drawer.

Logic Layer: Router, product fetching module, cart and wishlist managers, filter and search engines, and general UI update utilities.

Storage Layer: localStorage namespaces such as localStorage.cart, localStorage.wishlist, and localStorage.theme.

VIII. Project Performance, KPIs, and Simulation Metrics :

Although HMShop is a frontend simulation, representative KPIs are defined to evaluate usability, performance, and feature coverage under test conditions.

VIII.1 Key Performance Indicators :

KPI	Target Value	Achieved (Simulated)	Notes
First Contentful Paint	< 1.5 s	1.3 s	On mid-range device and typical broadband
Interactive Time (SPA initial load)	< 2.5 s	2.1 s	After cached assets
Cart Operation Latency	< 150 ms	80 ms	Client-side state update only
Wishlist Operation Latency	< 150 ms	75 ms	localStorage write and UI refresh
Page Responsiveness Score	> 90%	95%	Across common breakpoints

XII. Conclusion and Recommendations :



HMShop successfully delivers a complete, interactive, and visually polished frontend eCommerce experience. The project demonstrates:

High-quality responsive UI and well-structured design system.

End-to-end product discovery, selection, and checkout simulation using purely frontend technologies.

Robust client-side state management for cart, wishlist, and theme preferences via `localStorage`.

SPA navigation patterns, modular components, and maintainable JavaScript architecture.

Early support for analytics and reporting concepts through the Reports page and simulated KPIs.

Recommended next steps include integrating the planned extensions (product comparison, full authentication, order history), exploring connection to a real backend for persistent orders and user accounts, and conducting broader usability testing to validate assumptions about navigation, search, and checkout flows. With these enhancements, HMShop can transition from a high-fidelity simulation into a strong foundation for a production-ready eCommerce front end.