

Retro Bytes - User Guide

This guide explains how to use the Retro Bytes application: first-time setup, feature walkthroughs, scenarios, troubleshooting, and how security affects the user experience.

1. Getting Started

- Launch the app (see Build & Setup Guide) and open <http://localhost:8081/> (current port).
- Use the header to navigate: Home, Categories, Search, Cart, Wishlist, Orders (when logged in), Admin (for admin only), Login/Logout.
- When entering ZIP codes for testing, use **20742** or **10001**.
- Users:

alice@retrobytes.test / Passw0rd!

bob@retrobytes.test / Passw0rd!

luke@retrobytes.test / Passw0rd!

yoda@retrobytes.test / Passw0rd!

- Admin:

admin@retrobytes.test / Passw0rd!

2. Features Overview

- Browse categories and product details (price, condition, images).
- Check local stock by ZIP (5-digit).
- Search by keyword, filter by category and condition.
- Cart and checkout: add items, view totals, place orders, view order confirmation.
- Wishlist: save/remove items per session/user.
- Admin (for ADMIN role): manage inventory, orders, and users.
- Order history (logged-in users): /orders.

3. Use Cases (Step-by-Step)

UC-1 Browse Catalog

- From Home, click a category (e.g., Retro Consoles), click a product to view details.

UC-2 Check Local Stock

- On a product page, enter ZIP (e.g., 20742) → Check → see In/Low/Out of stock and qty.

UC-3 Add to Cart & Place Order

- Product page → Add to Cart → Cart → Checkout → enter name/email/ZIP, choose delivery/pickup → Place Order → redirected to /order/{id} with details.

UC-4 Search & Filter

- Search page → enter keyword → Apply and optionally choose Category/Condition → Apply → open product.

UC-5 Wishlist

- Product page → Save to Wishlist and view/remove items via /wishlist.

UC-6 Order History (logged-in)

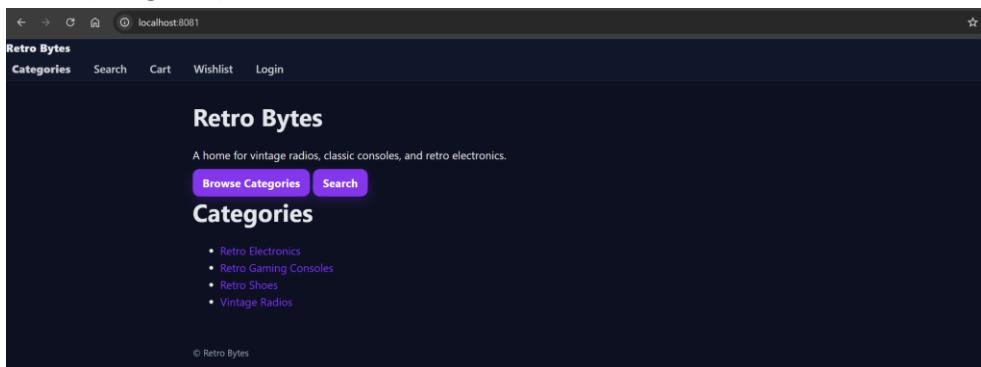
- After login, use Orders link → /orders to see your orders and view details.

UC-7 Admin (ADMIN only)

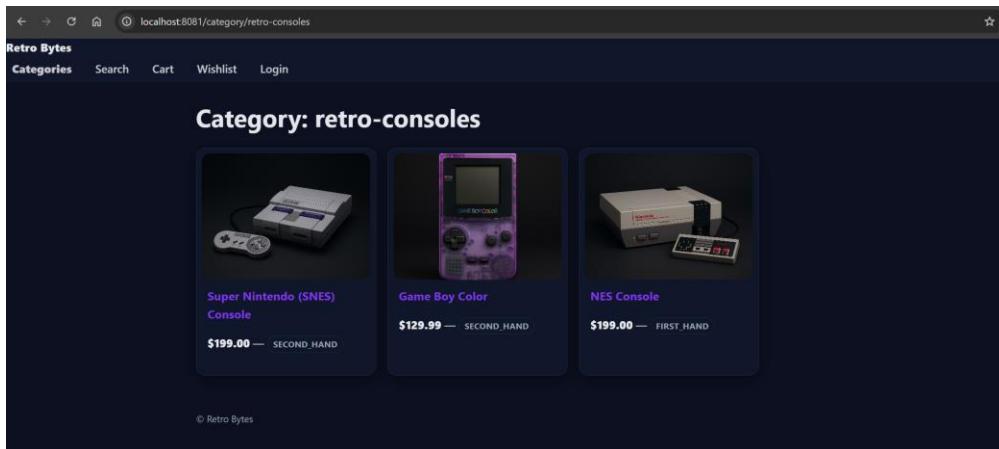
- Use Admin link → manage orders (cancel/update), inventory (edit qty), users (delete non-admin users. their orders are canceled but retained).

4. Screenshots

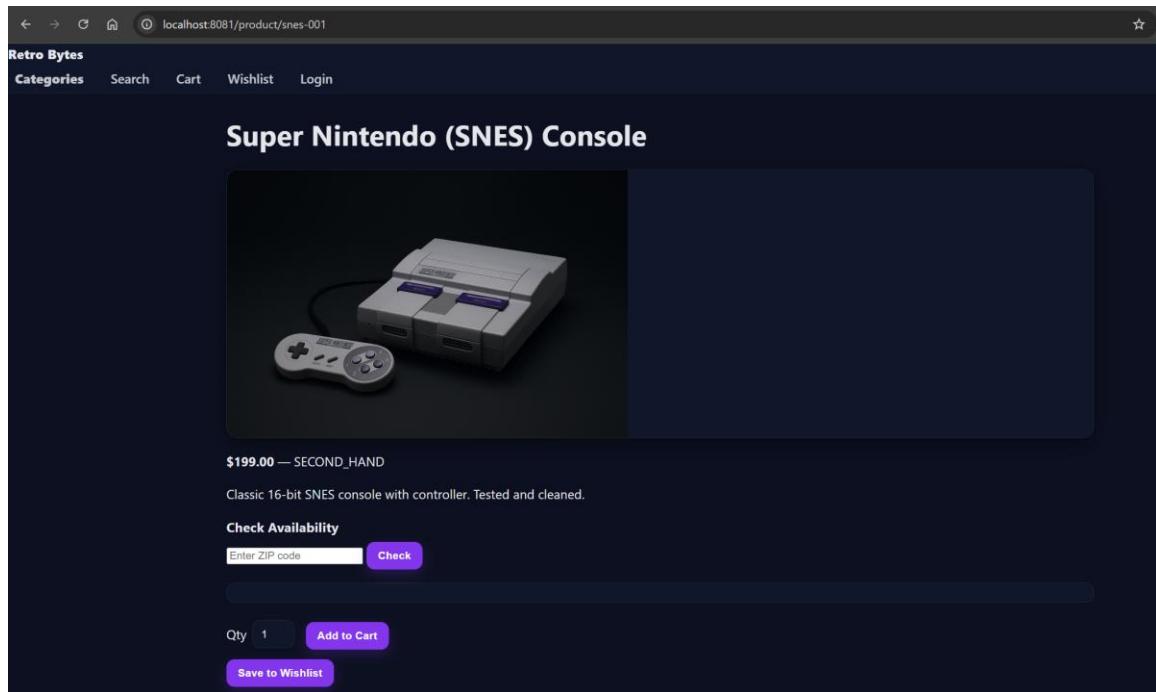
Home (categories)



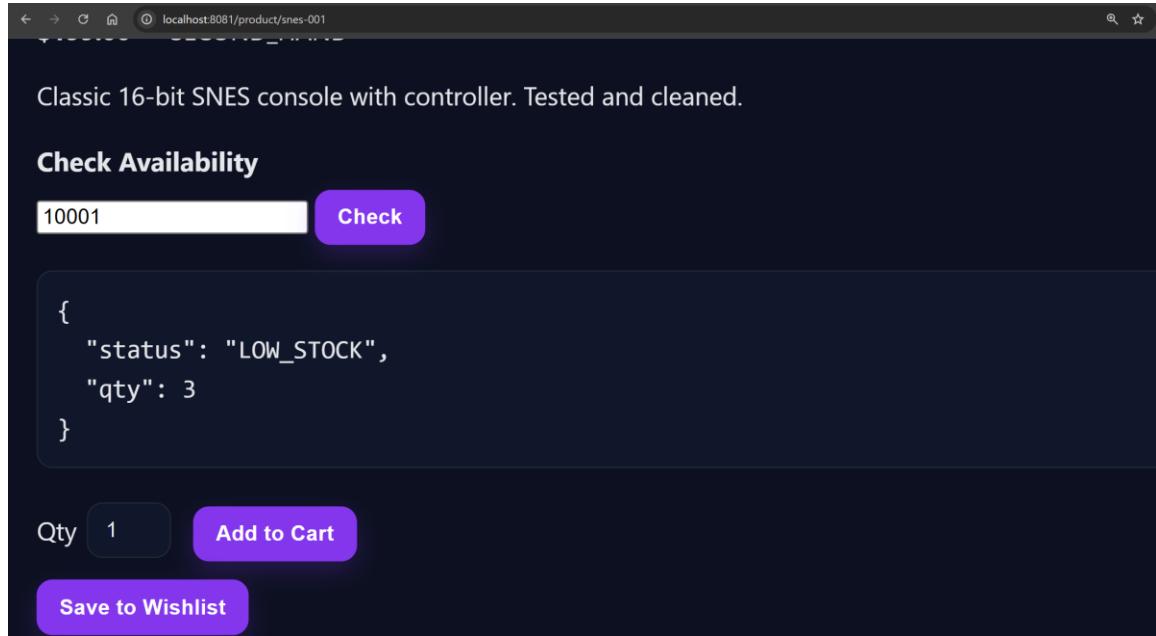
- Category (grid)



- Product



- Availability check



- Cart

The screenshot shows a dark-themed web application for "Retro Bytes". At the top, there's a navigation bar with links for Categories, Search, Cart, Wishlist, and Login. Below the navigation, the title "Your Cart" is centered. A table displays one item: "Super Nintendo (SNES) Console" in "SECOND_HAND" condition, quantity 1, price \$199.00, and subtotal \$199.00. Below the table, it says "Total: \$199.00" and has a "Checkout" button. At the bottom, there's a copyright notice: "© Retro Bytes".

- Checkout

The screenshot shows the "Checkout" page. It starts with an "Order Summary" section showing the same item as the cart. Below it is a "Contact & Delivery" section. The delivery details are filled out: Name (KSP), Email (ksp@umd.edu), and Region / ZIP (10001). The fulfillment method is set to "Delivery". At the bottom is a prominent "Place Order" button.

- Order confirmation

The screenshot shows the "Order Confirmation" page. It displays the Order ID (27a8d099-f525-4caa-889d-f32910301c81), Status (PLACED), Fulfillment (delivery), Region (10001), Customer (KSP (ksp@umd.edu)), and Placed at (2025-12-01 03:46:46). Below this is an "Items" section with the same item details as the previous pages. At the bottom, it says "Total: \$199.00" and has a "Continue shopping" link.

- Wishlist

The screenshot shows a dark-themed web application titled "Your Wishlist". At the top, there's a navigation bar with links for Categories, Search, Cart, Wishlist, and Login. Below the navigation is a table with a single row. The table has columns for Item, Condition, Price, Status, and Action. The item listed is "Super Nintendo (SNES) Console", which is in "SECOND_HAND" condition, priced at "\$199.00", and marked as "Available". There is a purple "Unsave" button next to the row. The footer of the page includes a copyright notice: "© Retro Bytes".

- Search results

The screenshot shows a search results page with a dark theme. The title is "Search" and the search term is "game". A search bar contains the word "game". Below the search bar are dropdown menus for "All Categories" and "Any Condition". An "Apply" button is located below the search bar. The results section shows one result: "Game Boy Color". It features a thumbnail image of the device, its name, and its price: "\$129.99 — SECOND HAND".

- Login Page

The screenshot shows a "Sign in" page with a dark theme. The title is "Sign in". There are two input fields: "Email" and "Password", both with placeholder text. Below the password field is a "Sign in" button. The footer of the page includes a copyright notice: "© Retro Bytes".

- Admin

The screenshot shows the "Admin Home" page with a dark theme. The title is "Admin Home". At the top, there are navigation links for Categories, Search, Cart, Wishlist, Orders, Admin, and Logout. The "Admin" link is highlighted. The main content area lists three management options: "Manage Orders", "Manage Inventory", and "Manage Users". The footer of the page includes a copyright notice: "© Retro Bytes".

- Admin Inventory

The screenshot shows the 'Inventory' page of the Retro Bytes admin interface. The page title is 'Inventory'. It displays a table of products with the following data:

Product	Region	Qty	Action
Game Boy Color	10001	8	<button>Update</button>
Game Boy Color	20742	3	<button>Update</button>
NES Console	10001	5	<button>Update</button>
NES Console	20742	9	<button>Update</button>
Philco 1939	20742	1	<button>Update</button>
Super Nintendo (SNES) Console	10001	2	<button>Update</button>
Super Nintendo (SNES) Console	20742	7	<button>Update</button>
Zenith Royal 500 (1960s) Transistor Radio	10001	0	<button>Update</button>
Zenith Royal 500 (1960s) Transistor Radio	20742	5	<button>Update</button>

Below the table, there is a form with fields for 'product id (e.g., snes-001)', 'region (e.g., 20742)', and 'qty', followed by a 'Save' button.

- Admin Managing Users

The screenshot shows the 'Users' page of the Retro Bytes admin interface. The page title is 'Users'. It displays a table of users with the following data:

Email	Name	Role	Action
alice@retrobytes.test	Alice	USER	<button>Delete</button>
bob@retrobytes.test	Bob	USER	<button>Delete</button>
luke@retrobytes.test	Luke	USER	<button>Delete</button>
yoda@retrobytes.test	Yoda	USER	<button>Delete</button>

At the bottom of the page, there is a copyright notice: '© Retro Bytes'.

5. Troubleshooting (User-Facing)

- Invalid ZIP/search: enter a 5-digit ZIP and search only allows letters/numbers/space/'/- and max 50 chars.
- Order placement fails: ensure valid name/email/ZIP and item must be in stock and cart total item cap is 10.
- 429 Too Many Requests: wait for rate limit to reset (search/availability/login).
- CSRF/403: refresh the page to get a fresh token and ensure cookies enabled.
- Missing images: ensure media exists under web/media/products/<id>/main.jpg.

- Admin access denied: only ADMIN role can open /admin and log in as admin@retrobytes.test.

6. Security Features (User Impact)

- Inputs validated (ZIP, search, name/email/password, IDs, qty) and bad inputs return friendly 400s.
- Login protected by throttling, passwords stored hashed (bcrypt) and session cookie is HttpOnly, SameSite=Lax.
- Orders recompute totals server-side, tampered client prices/qty are ignored and stock enforced at checkout.
- Wishlist/cart scoped to your session/user and admins cannot view others' wishlists.
- Media served from a fixed root and traversal attempts blocked (raw/encoded).
- Errors are friendly - internal details logged server-side.
- Logging: auth success/fail, access denials, rate limits, order totals (server vs client), admin inventory/user actions, CSRF failures, server errors.

7. Notes

- Session cookies keep cart/wishlist/order access and logout clears user binding.
- Use HTTPS in production and set cookies Secure and session rotation/expiry can be enabled in deployment.