Full Stack Project Report

Title Page

- Project Title: ShopSavvy: E-Commerce Web App for a Local Retail Store
- Institution / Organization: IBM Summer Internship Program
- Mentor/Supervisor: Mr. Jaivik Panchal
- Submission Date: 21 July 2025

Certificate

- This is to certify that the project title 'ShopSavvy: E-Commerce Web App for a Local Retail Store' is an original work completed by the Priyanka Mehta as part of the Full Stack Development Internship under the guidance of Mr. Jaivik Panchal .

Acknowledgment

- I would like to express my sincere gratitude to mentor, peers, and IBM Internship Program for their support and guidance throughout the development of the shosavvy project.

Table of Contents Abstract

Abstract

- This project is a full-stack e-commerce website for local retail.

- Developed to help local vendors expand digitally.

- Key features:

  - User authentication
  - Product browsing
  - Wishlist & cart
  - Order placement
  - Admin dashboard for product control

Objective

To create a responsive, secure, and functional online store allowing customers to browse and purchase products while enabling store admins to manage inventory effectively.

System Architecture

- **Diagram**: Frontend (HTML/CSS/JS) ↔ Backend (Node.js/Express) ↔ Database (MongoDB)

- **Flow**:

    - Client sends request → Express server handles → MongoDB stores/fetches data → Server responds

Technology Stack

- • **Frontend**: HTML, CSS, JavaScript

- **Backend**: Node.js, Express.js

- **Database**: MongoDB

- **Tools**: GitHub, VS Code, Postman, MongoDB Compass

Modules/Features

Module	Description	Technologies Used
Authentication	Login/Registration with JWT	Node.js, MongoDB
Product Browse	Show all products dynamically	HTML/CSS/JS
Wishlist	Add/remove products	Node.js, MongoDB
Cart	Add items and view total	JS, Express
Orders	Place and store orders	MongoDB
Admin Panel	Add/delete/update products	Node.js, MongoDB

Frontend Development

- Vanilla HTML, CSS, and JS

- Clean UI with navigation bar, product grid, cart/wishlist icons

- Responsive layout for desktop and mobile

Backend Development

- Express routing (`/routes/product.js`, `/routes/user.js`, `/routes/order.js`)

- RESTful API

- JWT-based Authentication

- Secure and modular route structure

Database Design

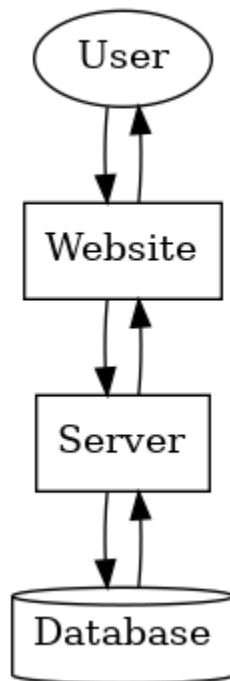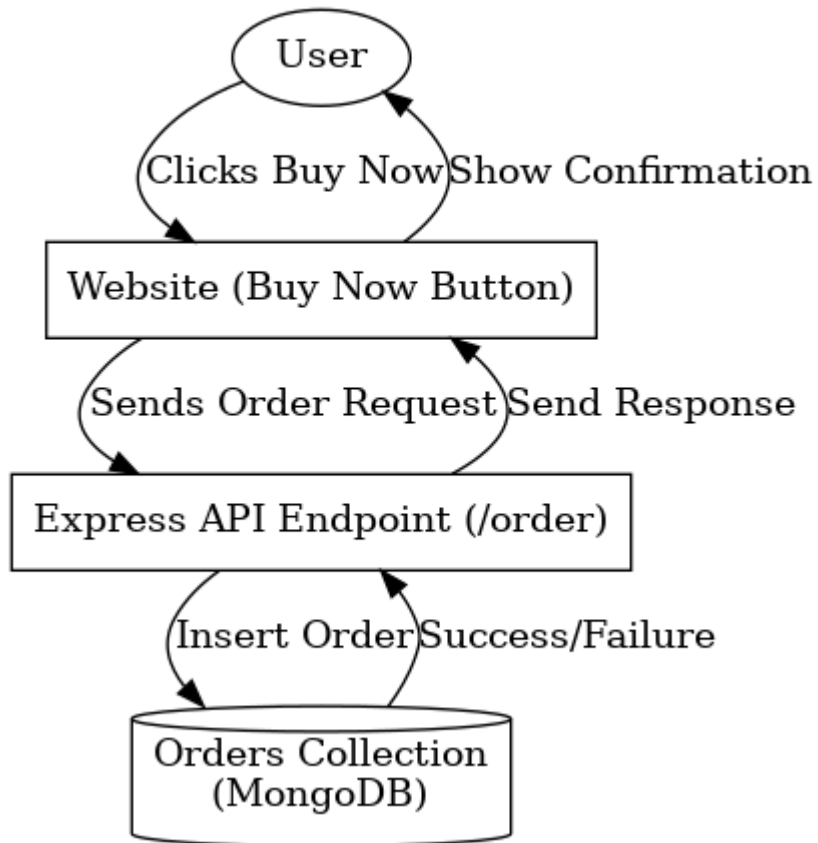- **DBMS**: MongoDB

- ☐ **Collections**:

    - users: Stores user credentials
    - products: From data.js
    - wishlist, cart, orders: Each tied to a user ID

Data Flow Diagrams

DFD Level 0: High-Level Overview

DFD Level 1: Buy Now Flow

```
                    ┌─────────┐
                    │  User   │
                    └─────────┘
         Clicks Buy Now    Show Confirmation

        ┌──────────────────────────────┐
        │  Website (Buy Now Button)    │
        └──────────────────────────────┘
         Sends Order Request    Send Response

        ┌──────────────────────────────┐
        │  Express API Endpoint (/order)│
        └──────────────────────────────┘
         Insert Order    Success/Failure

            ┌──────────────────────┐
            │  Orders Collection   │
            │     (MongoDB)        │
            └──────────────────────┘
```

Testing (optional)

- Manual Testing: Frontend buttons, form validation

- Postman: Tested all backend routes (GET/POST/DELETE)

- JWT tested for route protection

Security Measures

- Passwords hashed with bcrypt

- JWT for session handling

- Input validation on backend

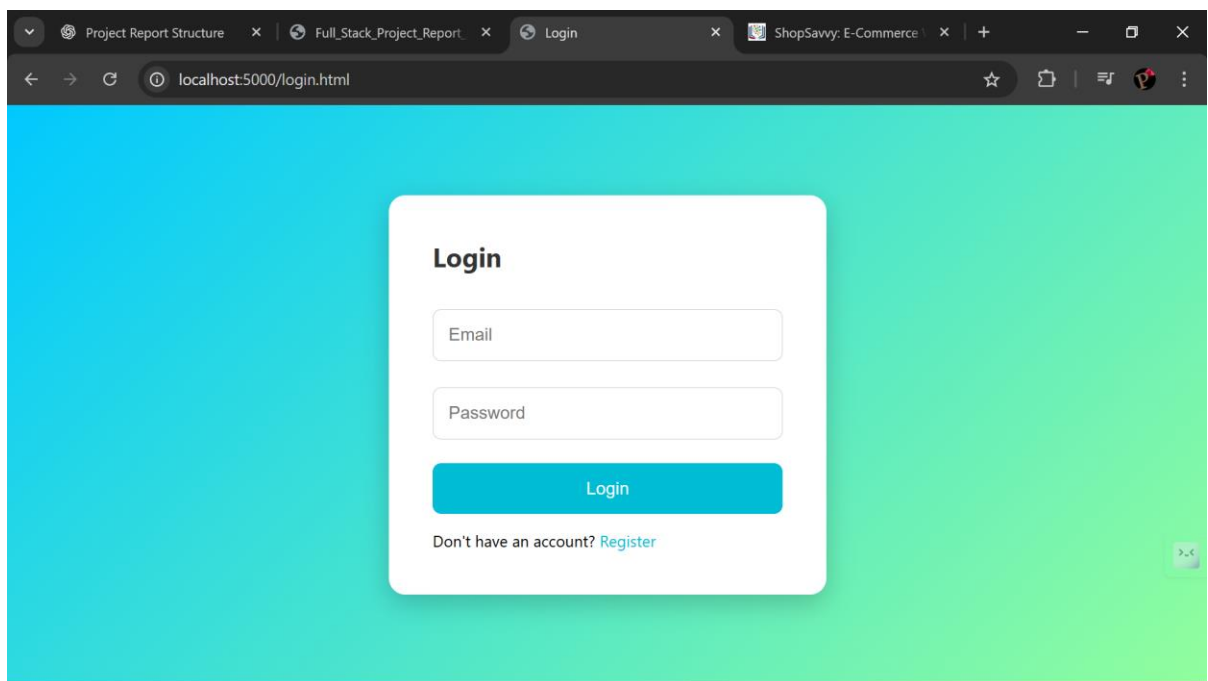- Access control for admin feature

Limitations

- No payment gateway integration yet

- Admin and customer login not separated visually

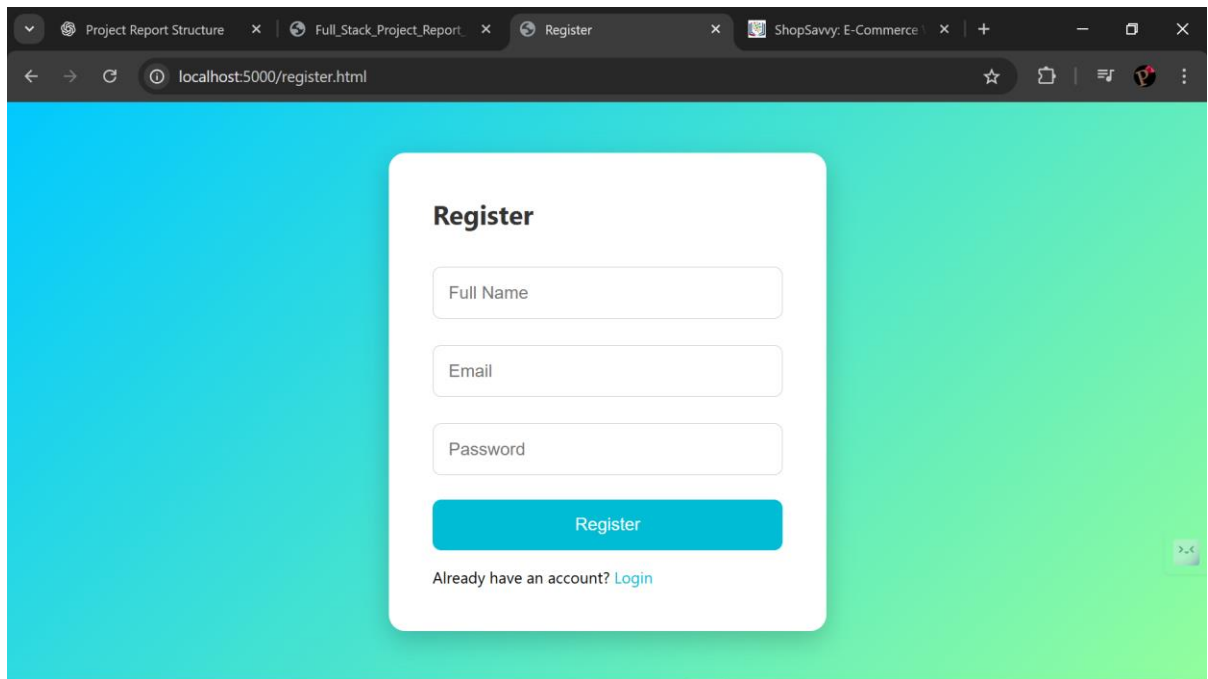- Lacks real-time order update

Future Enhancements

- Add payment gateway (Razorpay/Stripe)

- Use React frontend for dynamic UI

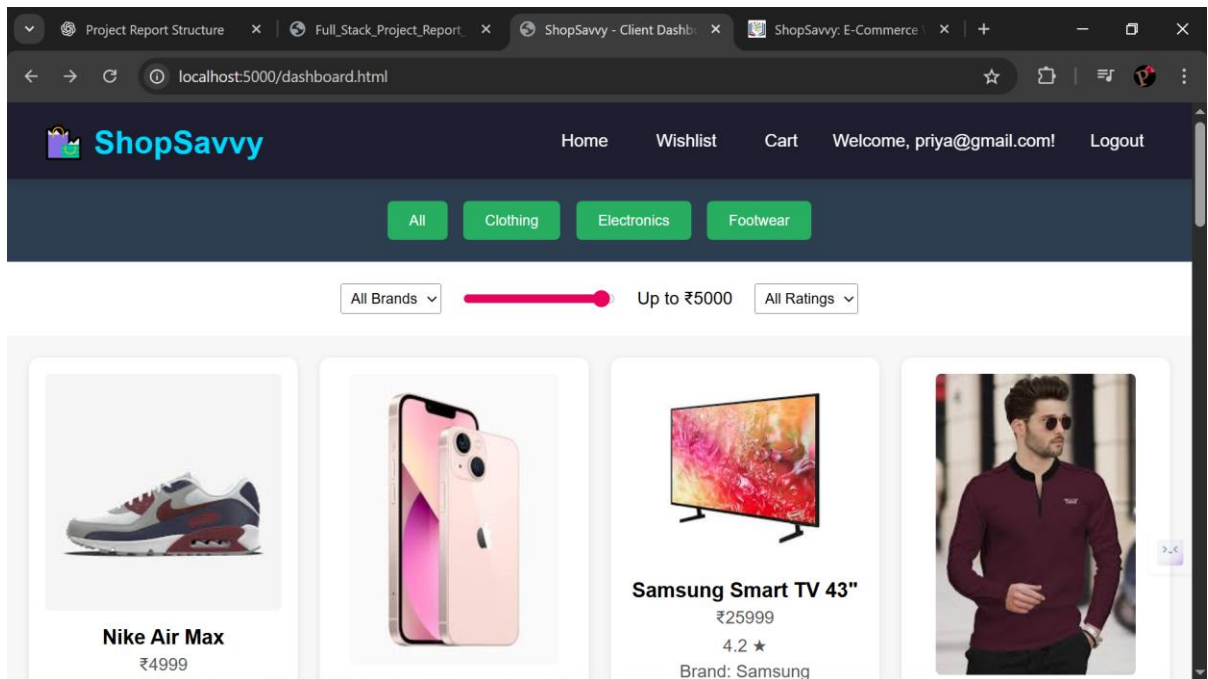- Email order confirmation

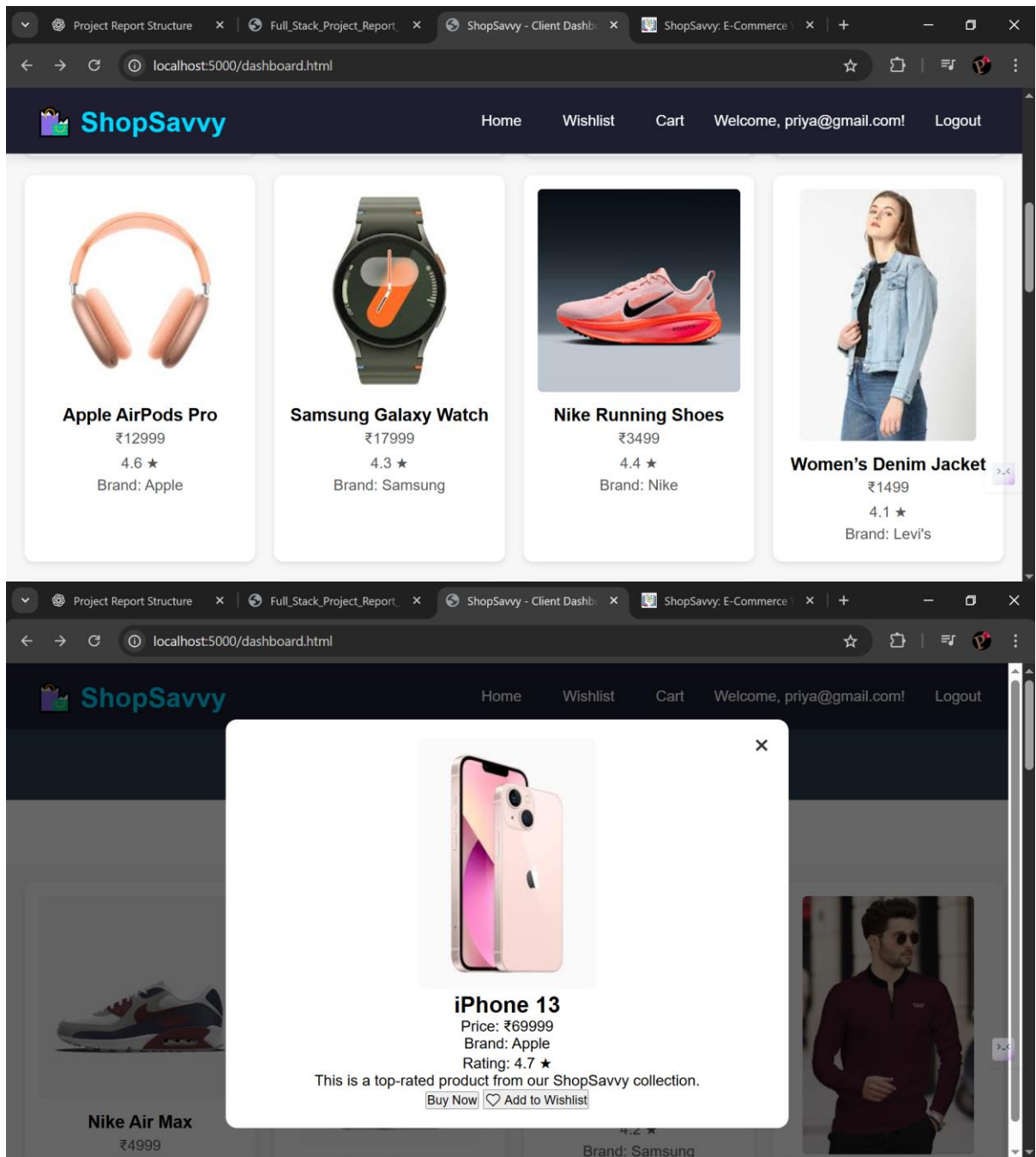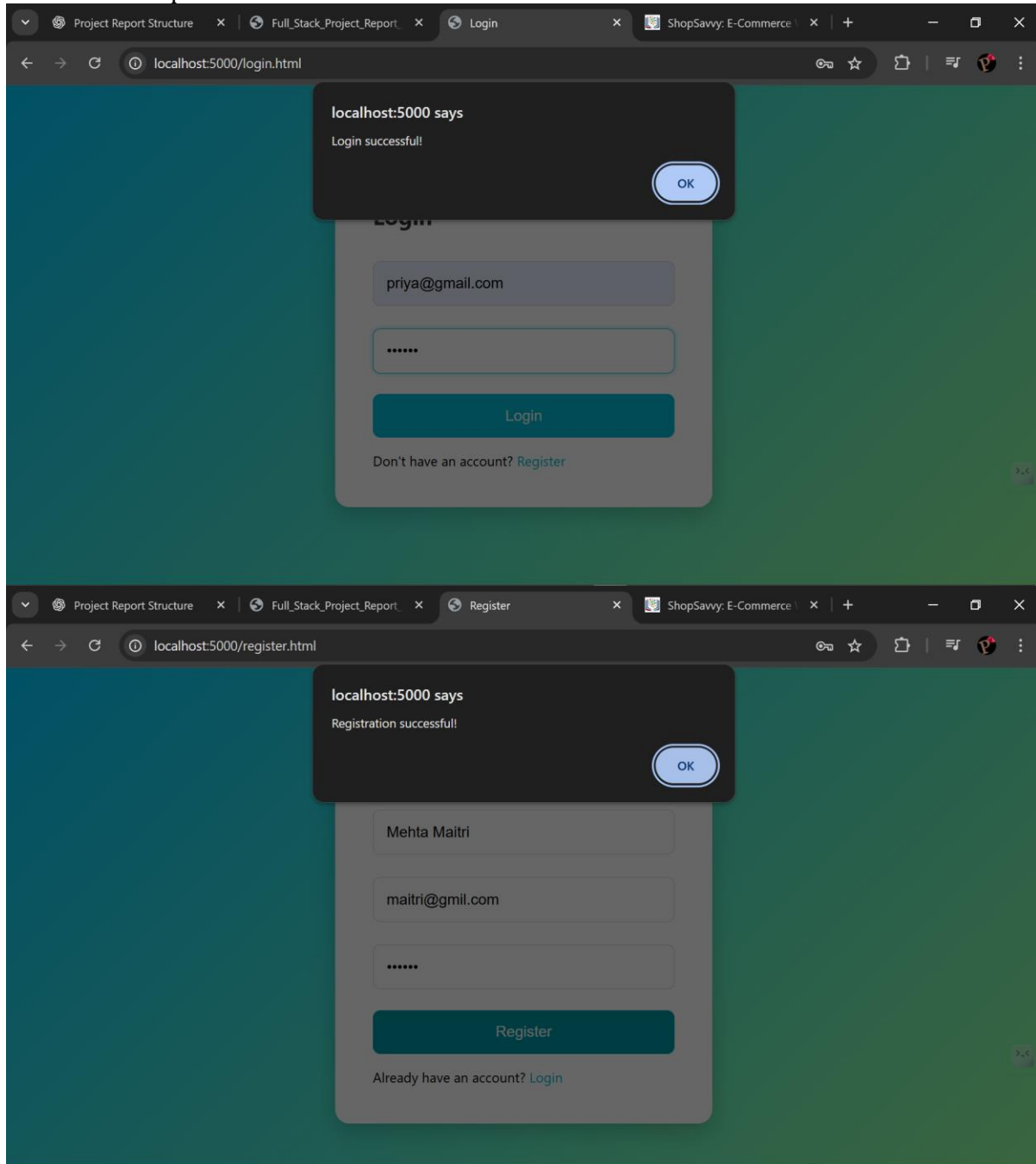- Admin analytics dashboard

Screenshots

- Login page

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- Dashboard

ShopSavvy

Home   Wishlist   Cart   Welcome, priya@gmail.com!   Logout

Apple AirPods Pro
₹12999
4.6 ★
Brand: Apple

Samsung Galaxy Watch
₹17999
4.3 ★
Brand: Samsung

Nike Running Shoes
₹3499
4.4 ★
Brand: Nike

Women's Denim Jacket
₹1499
4.1 ★
Brand: Levi's

ShopSavvy

Home   Wishlist   Cart   Welcome, priya@gmail.com!   Logout

×

iPhone 13
Price: ₹69999
Brand: Apple
Rating: 4.7 ★
This is a top-rated product from our ShopSavvy collection.
Buy Now   ♡ Add to Wishlist

Nike Air Max
₹4999

4.2 ★
Brand: Samsung

- CRUD operations

- Admin panel etc.
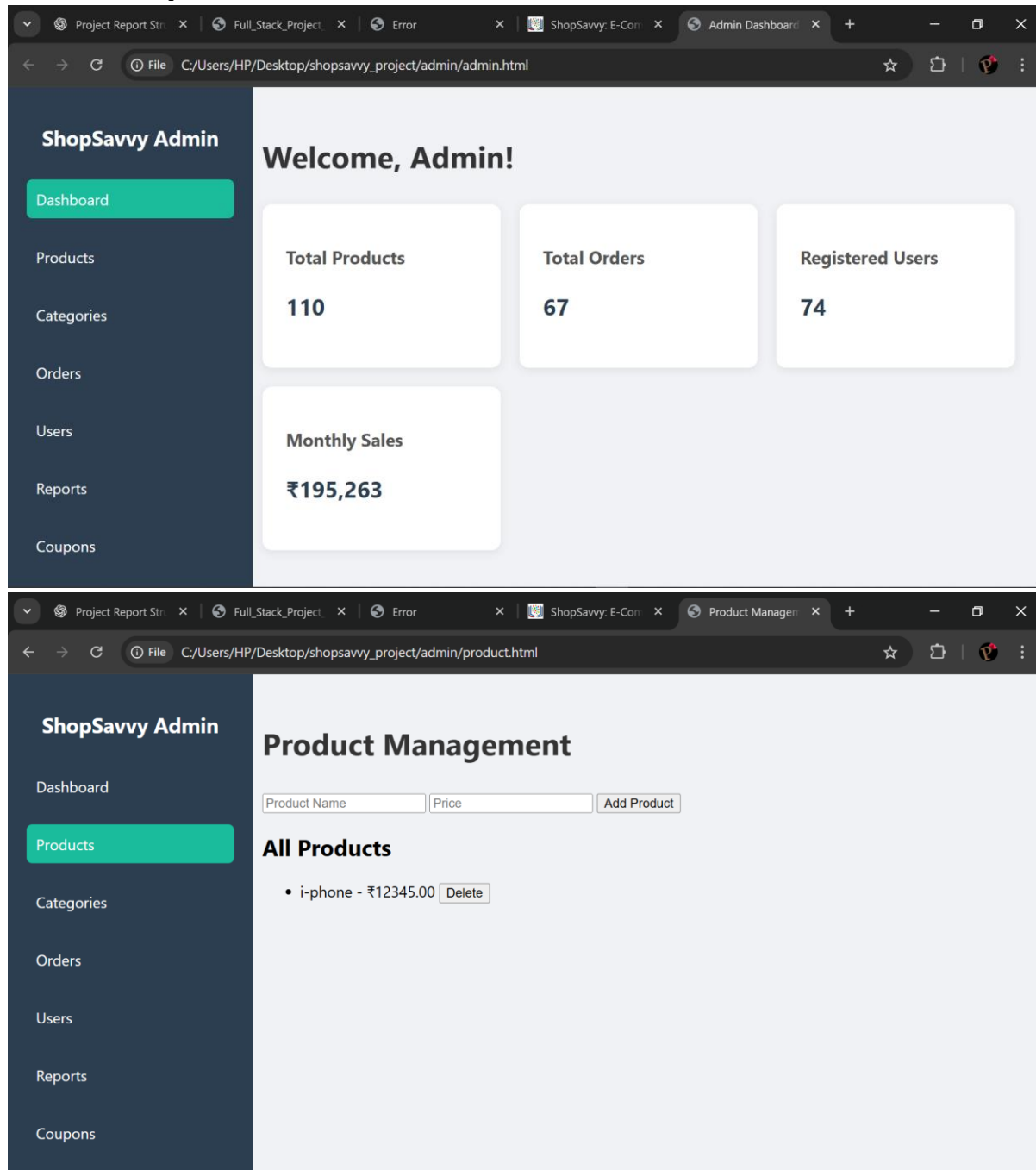
Manage Categories

Enter category name   Add Category

#	Category Name	Actions
1	Electronics	Edit Delete
2	Clothing	Edit Delete
3	Home Decor	Edit Delete

Order Management

Order ID	User	Product	Total	Status	Delivery	Actions
ORD001	Priya Shah	Wireless Earbuds	₹2,199	Shipped	16 - 07 - 2025	Save
ORD002	Ravi Patel	Smart Watch	₹3,499	Delivered	14 - 07 - 2025	Save

Browser 1 (top)

This page says

Are you sure you want to delete this category?

OK Cancel

Enter category name   Add Category

#	Category Name	Actions
1	Electronics	Edit Delete
2	Clothing	Edit Delete
3	Home Decor	Edit Delete

Browser 2 (bottom)

Manage Categories
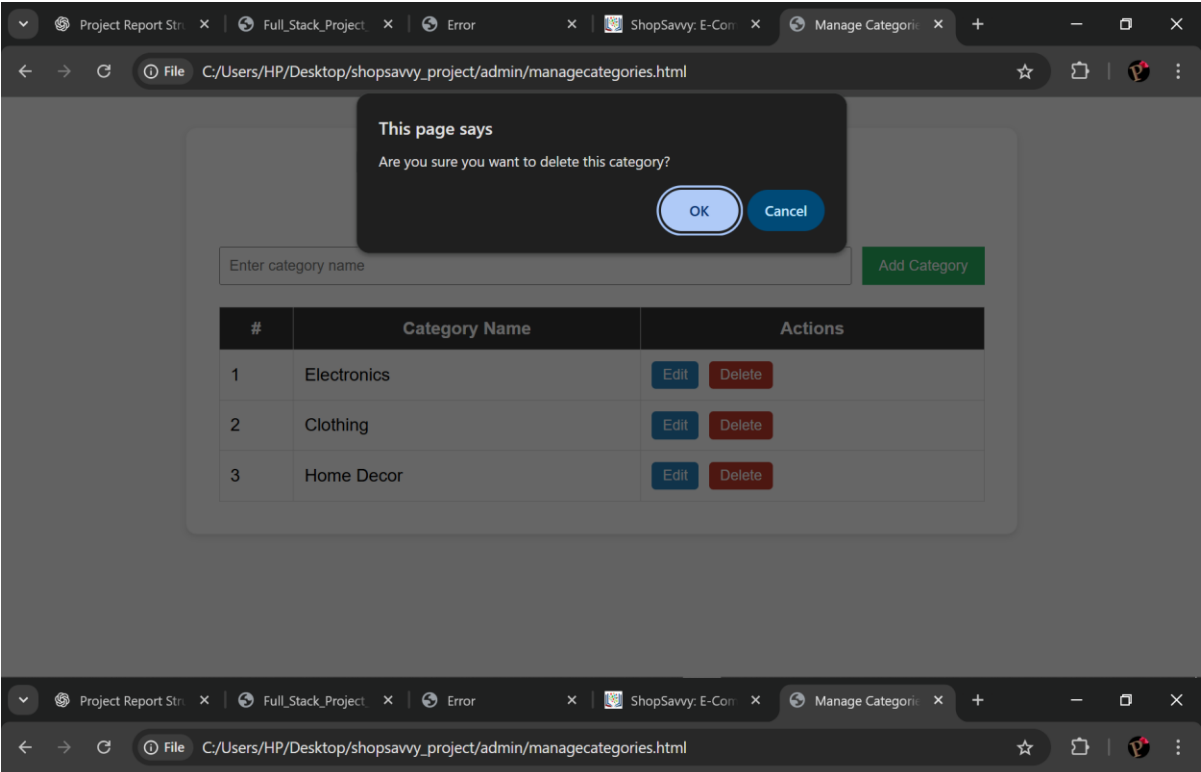
Enter category name   Add Category

#	Category Name	Actions
1	Clothing	Edit Delete
2	Home Decor	Edit Delete

Manage Users

#	Name	Email	Admin	Actions
1	Priya Patel	priya@gmail.com	No	Delete
2	Raj Mehta	raj@gmail.com	Yes	Delete
3	Anjali Sharma	anjali@gmail.com	No	Delete

This page says

Are you sure you want to delete this user?

OK   Cancel

#	Name	Email	Admin	Actions
1	Priya Patel	priya@gmail.com	No	Delete
2	Raj Mehta	raj@gmail.com	Yes	Delete
3	Anjali Sharma	anjali@gmail.com	No	Delete

Manage Users

#	Name	Email	Admin	Actions
1	Raj Mehta	raj@gmail.com	Yes	Delete
2	Anjali Sharma	anjali@gmail.com	No	Delete

ShopSavvy Admin

Dashboard

Products

Categories

Orders

Users

Reports

Coupons

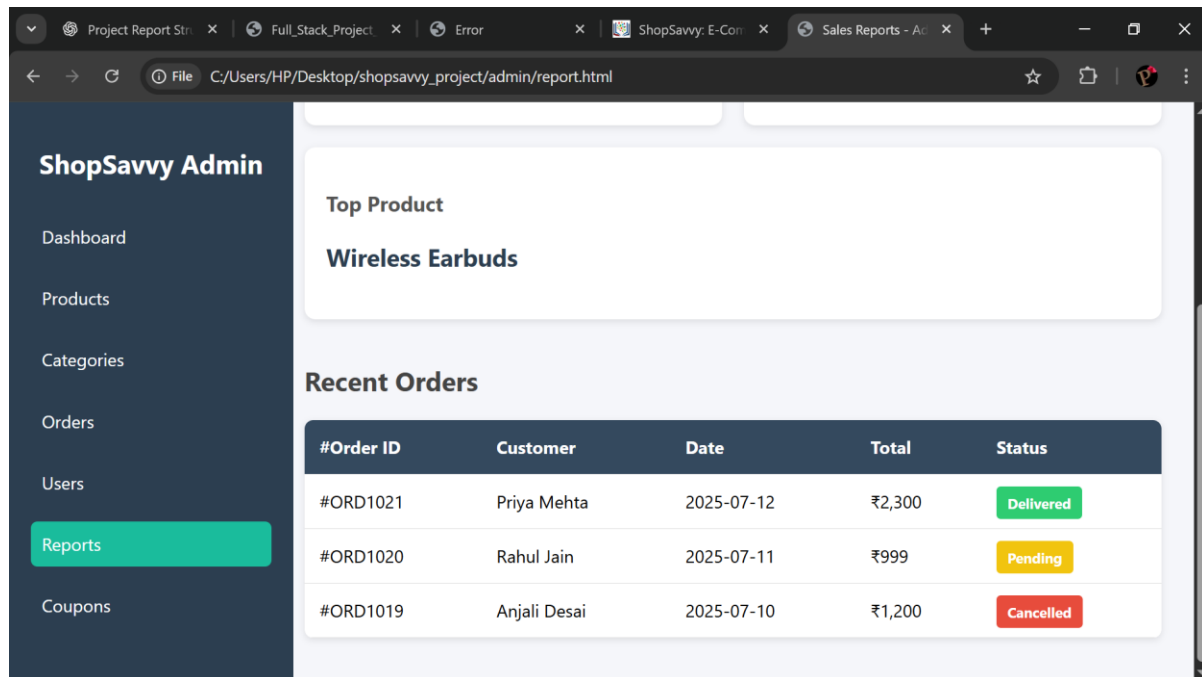## Sales Reports

Total Revenue

₹1,40,000

Orders This Month

132

Top Product

Wireless Earbuds

Recent Orders

Annexures

- Code Snippets: Main `server.js`, `order.js`, wishlist logic

- API Docs: POST /order, GET /products, etc.

- GitHub Link: https://github.com/priyanka200401/my-project

References

- Express.js Documentation

- MongoDB Docs

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