Final Project Report: DreamSop - E-commerce Web Application

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1. Project Overview

DreamSop is a Django-based e-commerce web application developed to provide a seamless online shopping experience for users, vendors, and administrators. The system is built using Django (Python) for the backend, HTML/CSS for the frontend, and SQLite/PostgreSQL as the database. The primary goal was to create a fully functional e-commerce solution that allows product listings, user registration, vendor management, and order tracking.

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2. Project Objectives

- Develop a user-friendly and responsive e-commerce web application
- Implement separate roles: Admin, Vendor, and Customer (User)
- Enable vendors to register, manage products (CRUD)
- Allow users to register, browse products, add to cart, and place orders
- Allow admin to manage all users, vendors, and view orders

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3. Technology Stack

- **Backend:** Django 5.x
- **Frontend:** HTML5, CSS3 (custom static files)
- **Database:** SQLite3 (default), optional PostgreSQL
- **Authentication:** Django default auth with role-based access
- **Version Control:** Git, GitHub

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4. Application Modules

- **Users App:**
    - Handles user registration and authentication

    - Includes user roles: is_admin, is_vendor, is_customer
- **Products App:**
    - Product listing, detail view, and CRUD for vendors
    - Products linked to vendors (ForeignKey)
- **Store App:**
    - Cart, checkout, and order placement features
    - Order model includes order date, user, and product details
- **Vendor Dashboard:**
    - Vendors can view and manage their own products
    - Interface for adding/editing/removing products

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5. Key Features Implemented

- Class-based views (CBVs) throughout
- Static folder setup with style.css
- Role-based template rendering (e.g. vendor dashboard, user cart)
- Separate HTML templates for login, registration, products, cart, checkout
- Admin can access Django admin panel

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6. Deployment

- Local development using virtualenv
- Docker support for PostgreSQL setup (optional)
- Static files collected and served in production mode

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7. Challenges Faced

- Managing role-based access without using signals
- Organizing apps for maintainability (users, products, store)

- Ensuring user-friendly templates with basic CSS styling

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8. Future Improvements

- Add payment gateway integration (e.g. Razorpay, Stripe)
- Add product filtering, search, and reviews
- Implement AJAX for smoother cart updates
- Mobile responsive UI with Bootstrap or Tailwind
- REST API support using Django REST Framework

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9. Conclusion

DreamSop successfully implements the core functionalities of an e-commerce application. It provides an easy-to-use interface for users, product control for vendors, and oversight capability for admins. The architecture is extendable for future features like payment integration or API support.
