Final Project Report - ShopEZ

1. INTRODUCTION

1.1 Project Overview

ShopEZ is a MERN-stack based e-commerce platform that provides a seamless shopping experience for customers and an efficient dashboard for sellers. It allows users to browse a wide range of products, add to cart, place orders, and receive real-time order updates.

1.2 Purpose

The purpose of ShopEZ is to simplify the online shopping process and provide a platform for small sellers to grow their businesses with analytics and product management tools.

2. IDEATION PHASE

2.1 Problem Statement

Online shopping platforms are often cluttered and difficult to use for both buyers and sellers. ShopEZ addresses this by providing a clean UI, simple checkout process, and seller dashboard.

2.2 Empathy Map Canvas

Identified needs of busy users and sellers who require fast and informative shopping experiences.

2.3 Brainstorming

Features were brainstormed including personalized recommendations, user-friendly cart, seller analytics, and secure payment flow.

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

Customer visits the site, searches product, adds to cart, places order, receives confirmation.

3.2 Solution Requirement

Product catalog, user authentication, admin panel, order and cart system.

3.3 Data Flow Diagram

Frontend -> Backend API -> MongoDB

3.4 Technology Stack

Frontend: React.js

Backend: Node.js + Express.js

Database: MongoDB

4. PROJECT DESIGN

4.1 Problem Solution Fit

Clean UI, fast checkout, and personalized product recommendations fulfill modern shopping expectations.

4.2 Proposed Solution

ShopEZ - a platform with both user and seller features.

4.3 Solution Architecture

Frontend interacts with backend APIs to perform CRUD on MongoDB via Mongoose.

5. PROJECT PLANNING & SCHEDULING

Milestone 1: Environment setup and Git integration

Milestone 2: Backend APIs and database schemas

Milestone 3: React frontend, routing, and integration

Milestone 4: Testing, UI enhancements, and deployment

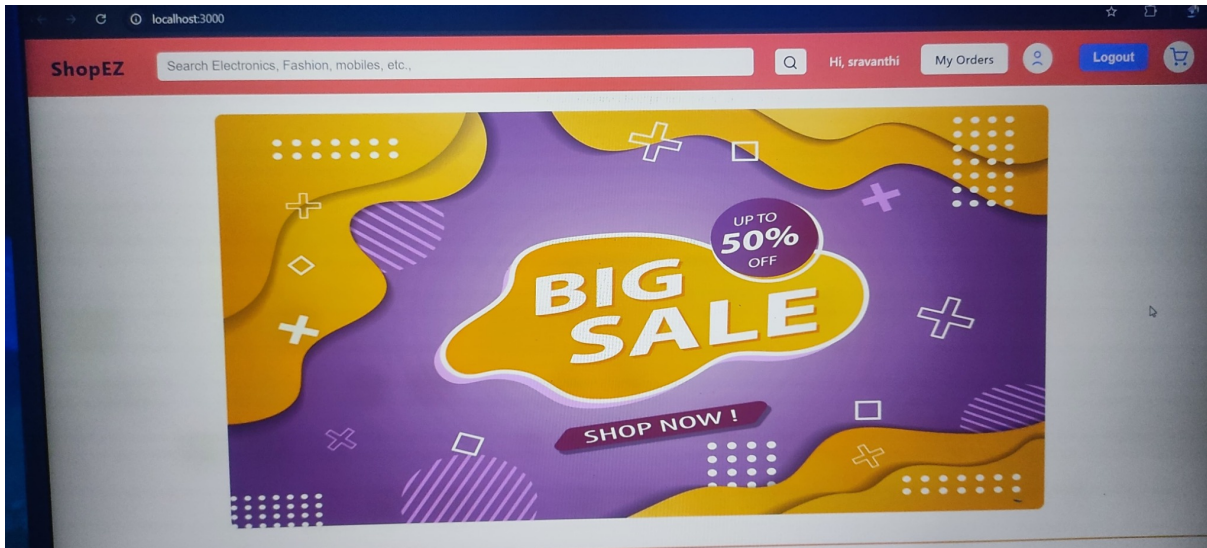# 6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

Tested CRUD operations on large product datasets, verified quick response times.

Stress-tested order placement and login features.

7. RESULTS

7.1 Output Screenshots

8. ADVANTAGES & DISADVANTAGES

Advantages:

- User-friendly interface

- Seller dashboard with analytics

- Secure and fast checkout

Disadvantages:

- Currently in local deployment

- No AI-based recommendation engine yet

9. CONCLUSION

ShopEZ successfully demonstrates a scalable and modular MERN stack e-commerce platform with user and admin functionality. It is ideal for both students and small businesses to build on.

10. FUTURE SCOPE

- Integrate AI-based recommendation

- Add real-time order tracking

- Implement PWA for mobile shopping

- Add coupon/discount modules

11. APPENDIX

Source Code: https://github.com/SandhyaK-5/ShopEZ

Demo Video: https://drive.google.com/file/d/12LSyk0rHTb9M3oY0dYaq8x4nDVsBI6j2/view

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