

ShopEZ: Seamless Online Shopping Platform

1. Introduction

Project Title: ShopEZ: Seamless Online Shopping Platform

2. Project Overview

Purpose: ShopEZ is a full-stack MERN application designed to simplify online shopping. It enables users to browse products, add them to cart, and manage purchases efficiently.

Features:

- User registration and login
- Product browsing
- Add to cart and remove from cart
- Category-based filtering
- Responsive user interface
- Product data management
- Real-time interaction between frontend and backend

3. Architecture

Frontend:

- Built using React.js
- Uses functional components and hooks
- Styled with CSS
- Interacts with backend using Axios

Backend:

- Built using Node.js and Express.js
- Provides RESTful API endpoints
- Handles authentication and product management
- Middleware for error handling

Database:

- MongoDB with Mongoose ODM
- Schemas for Users and Products
- CRUD operations via Mongoose models

4. Setup Instructions

Prerequisites:

- Node.js (v14 or above)
- MongoDB (local or cloud instance)
- Git

Installation:

- Clone the repository
- Navigate to frontend and run npm install
- Navigate to backend and run npm install

- Create .env file with PORT and MONGO_URI

5. Folder Structure

Client (frontend):

```
frontend/
  └── src/
    ├── components/
    ├── pages/
    ├── redux/
    ├── App.js
    └── index.js
```

Server (backend):

```
backend/
  ├── controllers/
  ├── models/
  ├── routes/
  ├── middleware/
  ├── config/
  └── server.js
```

6. Running the Application

Frontend: npm start

Backend: npm start

7. API Documentation

Method	Endpoint	Description
POST	/auth/register	Register new user
POST	/auth/login	Login user
GET	/products	Get all products
POST	/cart	Add item to cart
DELETE	/cart/:id	Remove item from cart

8. Authentication

Handles login and registration using backend validation.

9. User Interface

- Home page
- Product listing
- Login and register pages
- Cart management

10. Testing

Manual testing done using Postman and browser tools.

11. Screenshots or Demo

Screenshots can be added here.

12. Known Issues

Payment integration not implemented yet.

13. Future Enhancements

- Payment integration
- Order tracking
- Wishlist feature
- Admin dashboard