ShopEase –

E-Commerce Web Application

# 1. Introduction

ShopEase is a full-stack e-commerce web application designed to simulate the core functionality of modern online shopping platforms such as Amazon or Flipkart. This system allows customers to browse products, manage shopping carts, and place orders. At the same time, it provides an admin dashboard for managing products and monitoring orders.

# 2. Objective

The goal of ShopEase is to provide an intuitive and responsive online shopping experience with full control for the administrator. The application ensures secure user management, real-time inventory handling, and seamless order processing.

# 3. Key Features

**For Users**

* Registration & login using JWT
* Browse, search, and filter products
* Add/remove items in cart
* Checkout with order summary
* Mobile-responsive UI

**For Admins**

* Secure admin login
* Add/edit/delete products
* Manage customer orders
* Track stock and pricing

# 4. Technology Stack

|  |  |
| --- | --- |
| **Layer** | **Tools & Frameworks** |
| Frontend | React.js, Tailwind CSS, JavaScript, HTML/CSS |
| Backend | Node.js, Express.js |
| Database | MongoDB Atlas, Mongoose |
| API Calls | RESTful API, Axios |
| Authentication | JWT, bcrypt |

# 5. System Architecture

Client Side (React): Responsible for UI and interactions.  
Server Side (Express/Node): Handles API routes, authentication, and logic.  
Database (MongoDB): Stores user, product, and order data securely.

# 6. Project Structure

ShopEase/  
├── client/  
│ └── src/

│ ├── components/  
│ ├── pages/  
│ ├── App.js/│   
│ └── index.js   
├── server/  
│ ├── controllers/  
│ ├── models/  
│ ├── routes/  
│ └── server.js

# 7. User Roles & Functionalities

**Authentication**

* User Registration/Login (JWT with bcrypt password encryption)
* Protected routes for orders and admin tasks

**Customer Flow**

* Sign up / Log in
* View & search products
* Add to cart and checkout
* View order confirmation

**Admin Flow**

* Log in as admin
* Manage product catalog
* Monitor and process orders

# 8. REST API Endpoints

**Authentication**

|  |  |  |
| --- | --- | --- |
| **Method** | **Endpoint** | **Description** |
| POST | /api/auth/register | Register user |
| POST | /api/auth/login | Authenticate user |

**Products**

|  |  |  |
| --- | --- | --- |
| **Method** | **Endpoint** | **Description** |
| GET | /api/products | Fetch all products |
| GET | /api/products/:id | Fetch product by ID |
| POST | /api/products | Add product (admin only) |
| PUT | /api/products/:id | Edit product (admin only) |
| DELETE | /api/products/:id | Delete product (admin only) |

**Orders**

|  |  |  |
| --- | --- | --- |
| **Method** | **Endpoint** | **Description** |
| POST | /api/orders | Place order |
| GET | /api/orders | View all orders (admin) |

# 9. Setup & Deployment Instructions

**Backend Setup**

cd server  
npm install  
# Add .env with:  
MONGO\_URI=your-mongo-uri  
JWT\_SECRET=your-secret  
npm start

**Frontend Setup**

cd client  
npm install  
npm start

**Access**

Frontend : <http://localhost:3000>  
Backend : <http://localhost:5000>

# 10. Screenshots (Refer to Attached PPT)

* Home Page, Product Listings
* Product Detail View
* Cart and Checkout Pages
* Login/Register Screens
* Admin Dashboard

# 11. Future Enhancements

* Invoice PDF generation
* Order tracking
* Wishlist feature
* Email notifications
* Multi-language support
* Category-specific filters

**GitHub Link :** <https://github.com/Manasa0109/shopease-ecommerce-master>