Online Shopping Application

Abstract

Online Shopping Application is a full-stack e-commerce web application developed to demonstrate real-world online shopping functionality. The application allows users to securely log in, browse products, view product details, and interact with a **responsive user interface.** The project showcases complete integration between **frontend, backend, and database technologies.**

Project Description

The main objective of Online Shopping Application is to build a **modern e-commerce platform** using web technologies. The frontend is designed to provide a smooth and interactive user experience, while the backend handles authentication, data processing, and secure communication with the database.

Technologies Used

Frontend: HTML, CSS, JavaScript, React.js
Backend: Node.js, Express.js
Database: SQLite
Authentication: JWT (JSON Web Token)

System Architecture

The project follows a client-server architecture. The React frontend communicates with the Node.js backend through RESTful APIs. The backend processes requests and interacts with the SQLite database to store and retrieve data.

Key Features

- Secure user authentication
- Product listing and product details view
- Filters and sorting options
- Responsive and user-friendly interface
- Protected routes using JWT

AI-Powered Help Centre (24/7 Chatbot)

The application integrates an **AI-powered chatbot** that acts as a **24/7 help centre** for users. The chatbot assists customers with product inquiries, order-related questions, navigation support, and basic troubleshooting. This AI feature enhances user experience by providing instant responses, reducing manual support requirements, and making the application more interactive and intelligent.

Database Description

SQLite is used as the database because it is lightweight, serverless, and easy to integrate. It stores user credentials, product details, and cart information efficiently, making it suitable for academic projects.

Advantages

- Simple and easy to use
- Secure authentication mechanism
- Low system resource usage
- Suitable for learning full-stack development
- Enhanced user support using AI chatbot

Conclusion

Online Shopping Application is a complete full-stack web application that demonstrates frontend–backend integration, secure authentication, database connectivity, and **AI-based user assistance**. It is well-suited for academic purposes and helps in understanding real-world web application development.