Project Description: Online Shopping Website using MERN stack

Project Overview

The Online Shopping Website aims to provide users with a seamless e-commerce experience where they can browse, search, and purchase products from various categories. The platform will include features for both customers and administrators to ensure smooth operations, efficient product management, and secure transactions. The backend will be developed using Node.js, leveraging its scalability, performance, and extensive ecosystem to support a robust, feature-rich application.

Objectives

- To build a responsive and user-friendly online shopping platform.
- To develop a secure, scalable, and efficient backend using Node.js.
- To implement features like user authentication, product management, order processing, and payment integration.
- To ensure data security and privacy.
- To provide administrators with tools to manage products, users, and orders effectively.

Key Features

1. User Management

- **User Registration:** New users can create accounts by providing basic information.
- **User Login:** Secure login using email/password or social login options.
- **User Profile Management:** Users can update their personal information, view order history, and manage shipping addresses.

2. Product Management

- **Product Listing:** Users can view products categorized by type, brand, and price range.
- **Search and Filter:** Advanced search and filtering options to help users find products quickly.
- **Product Details:** Detailed product descriptions, images, reviews, and ratings.

3. Shopping Cart

- **Add to Cart:** Users can add products to their cart.
- **Cart Management:** Update product quantities or remove items from the cart.
- **Save for Later:** Option to save products for future purchase.

4. Order Management

- **Order Placement:** Users can place orders by selecting payment and shipping options.
- **Order History:** Users can view their past orders.

5. Admin Dashboard

- **Product Management:** Admins can add, update, and remove products.
- **User Management:** Admins can manage user accounts and roles.
- **Order Management:** Admins can view and update the status of orders.
- **Reports and Analytics:** View sales reports, user activity, and other key metrics.

Technology Stack

Backend

- **Node.js:** The core backend framework for handling server-side logic.
- **Express.js:** A web application framework for building APIs.
- **MongoDB:** NoSQL database for storing product, user, and order data.
- **JWT (JSON Web Token):** For secure user authentication.
- **Bcrypt:** For password hashing and security.

Frontend

- **React.js:** For building the user interface.
- **Bootstrap/Tailwind CSS:** For responsive and mobile-friendly design.
- **Template:** https://themewagon.com/themes/organic/

Payment Integration

- **COD:** for now, we just want COD (Cash on Delivery) feature for payment

Security Measures

- **Data Encryption:** Encrypt sensitive data in transit and at rest.
- **Authentication and Authorization:** Implement role-based access control.
- **Input Validation:** Prevent common attacks like SQL injection and cross-site scripting.

Project Milestones

Milestone	Description	Deadline
Requirement Gathering and Database Schema Preparation	• Finalize project requirements and scope. • Finalizing Database Schema	**20th Jan 2025**
Backend Development	Build APIs using ExpressJS and MongoDB.	**17th Feb 2025**
Frontend Development	Customize template and consume required APIs	**17th Mar 2025**
Testing	Conduct comprehensive testing to ensure functionality and security.	**24th Mar 2025**

Conclusion

The Online Shopping Website project with Node.js backend will provide users with a secure and feature-rich e-commerce platform. The use of modern technologies and best practices will ensure scalability, performance, and a seamless user experience.