Backend API

Overview

The backend of this application is implemented in Laravel 10. It uses the Passport package for authentication and provides RESTful APIs for managing products and user authentication.

Key Features

1. **Products API**: Full CRUD operations with user authentication.
2. **Authentication API**: Register, login, and logout functionality.

Php commands for running this appilication

1.php artisan serve (for running xampp server note your system must have xampp version ^8.2)

2.php artisan passport:install (for generating the keys for passport authentication handling)

3.php artisan migrate(not need if you imported the database)

API Endpoints

S.No	**URL**	**Method**	**Authentication**	**Comment**
1	/product?per_page=5	GET	Yes	Fetch all products with pagination. Query param ?per_page=5 is required.
2	/product/{id}	GET	Yes	Fetch a single product by ID.
3	/product	POST	Yes	Create a new product.
4	/product/{id}	DELETE	Yes	Delete a product by ID.
5	/product-update	POST	Yes	Update a product. Handles individual fields and file uploads.
6	/product-search?query=fast	GET	Yes	Search products using the query parameter.
7	/register	POST	No	Register a new user.
8	/login	POST	No	Login a user and return an access token.
9	/logout	GET	Yes	Logout the authenticated user.

Authentication Mechanism

- **Package**: Laravel Passport
- **Type**: Bearer token
- **Protected Routes**: All product-related endpoints and the logout endpoint require a valid token.

Frontend

Overview

The frontend is implemented using Laravel Blade templates with Bootstrap for styling. It handles both guest users and authenticated users, managing cart functionality and user authentication seamlessly.

Key Features

1. **User Authentication**:
   - Login and Register pages for user management.
   - Displays Login/Register or Logout button dynamically based on authentication status.
2. **Add to Cart**:
   - **Logged-In Users**: Cart data is stored in the database.
   - **Guest Users**: Cart data is stored in the session.
3. **Cart Management**:
   - View cart items.
   - Delete products from the cart.
   - Update product quantities.
   - Automatically updates price and total price based on cart actions.
4. **Product Search**:
   - Search bar in the top navigation allows users to search for products.

Frontend Implementation Details

1. **Login/Register Functionality**:
   - Separate forms for user registration and login.
   - Redirects users based on authentication status.
2. **Cart Functionality**:
   - Cart items are displayed in a tabular format with quantity, price, and total price.
   - Users can delete or update items directly from the cart.
   - Total price updates dynamically based on cart changes.
3. **Dynamic Authentication Buttons**:
   - Topbar displays either "Login/Register" or "Logout" based on whether the user is logged in.

4. **Product Search**:
   - Integrated with the /product-search API.
   - Search results are displayed dynamically on the frontend.
5. **Styling**:
   - Fully styled with Bootstrap for a responsive and user-friendly UI.

Technologies Used

1. **Backend**:
   - Laravel 10
   - SQL Database
   - Passport for authentication
2. **Frontend**:
   - Laravel Blade templates
   - Bootstrap for styling
   - Session and database for cart management

Additional Notes

- **Session Management**: Both guest and logged-in users are supported without authentication middleware by leveraging session storage for cart data.