# Medley Pharma Web Application (MERN)

**Project Description**

Medley Pharma is a web application designed to streamline and optimize the management of pharmaceutical operations. It is built using the MERN stack (MongoDB, Express.js, React.js, and Node.js) The application supports both user and admin functionalities, allowing users to order and pay for medicines while enabling admins to add and update medicine information.

**Technologies Used**

**Frontend:**

* **React.js:** For building the user interface with reusable components.

**Backend:**

* **Node.js:** For server-side scripting and handling requests.
* **Express.js:** For creating a robust API and handling routing.

**Database:**

* **MongoDB:** A NoSQL database for storing and retrieving data efficiently.

**Authentication:**

* **JSON Web Tokens (JWT):** For secure user authentication and session management.

**Key Components**

* **User Authentication:** Secure login and registration system using JWT for user authentication.
* **Admin Dashboard:** Admin functionalities include adding, updating, and deleting pharmaceutical products with details such as name, category, price, stock levels, and expiry dates.

**Inventory Management**

* **Product Management:** Functionality to add, edit, and delete pharmaceutical products with details such as name, category, price, stock levels, and expiry dates.
* **Stock Tracking:** Tracking of stock levels to prevent overstocking or stockouts.
* **Expired Product Handling:** If a product is expired, the application ensures that there is no option to order that product, preventing users from purchasing expired medicines.

**Customer Management**

* **Customer Database:** Maintained a comprehensive database of customers with contact information and purchase histories.

**Development Process**

**Frontend Development**

* **Component-Based Architecture:** The frontend is built using React.js with a component-based architecture, making it easy to manage and reuse components.
* **State Management:** State is managed using React's useState and useEffect hooks for maintaining and updating the application state.

**Backend Development**

* **API Development:** The backend API is developed using Express.js, handling various routes for user authentication, product management.
* **Database Integration:** MongoDB is integrated using Mongoose for data modeling and interaction with the database.
* **Authentication:** JWT is used for secure user authentication, ensuring that only authorized users can access certain features of the application.

**Project Development Workflow**

1. **Planning:** Identified the key features and functionalities required for the application.
2. **Frontend Implementation:** Developed the React components.
3. **Backend Implementation:** Created the Express.js API and connected it to MongoDB using Mongoose.
4. **Integration:** Connected the frontend with the backend API, ensuring smooth communication and data exchange.

**Conclusion**

Medley Pharma is a comprehensive web application designed to enhance the efficiency of pharmaceutical management. It provides a seamless and user-friendly experience.