**Project Definition: ClickNShop E-commerce Website**

**Summary:** ClickNShop is a modern e-commerce platform designed to provide users with a seamless shopping experience. It incorporates advanced features such as user authentication, secure password hashing, efficient product filtering, a robust payment gateway, intuitive product cart management, user profile management, product reviews, and an intuitive admin panel for streamlined management. The project utilizes a MERN stack (MongoDB, Express.js, React.js, Node.js) along with various supplementary technologies to ensure high performance and reliability.

**Functionality:**

1. **User Authentication:** Users can securely sign up and log in to their accounts.
2. **Password Hashing:** Passwords are hashed to enhance security and protect user data.
3. **Product Filtering:** Users can easily filter products based on various criteria.
4. **Payment Gateway:** Integration with a reliable payment gateway ensures secure transactions.
5. **Product Cart Management:** Users can add, delete, and update items in their shopping carts.
6. **Profile Management:** Users can manage their profiles, including changing names and passwords.
7. **Product Review:** Users can leave reviews and ratings for products.
8. **Admin Panel:**
   * **Manage Users:** Admins can perform CRUD operations on user accounts.
   * **Change User Role:** Admins can modify user roles for access control.
   * **Review and Product Management:** Admins can manage product reviews and products.
   * **Dashboard with Charts:** Admins have access to a dashboard displaying key metrics using charts.

**Technology Used:**

**Frontend:**

* HTML: Standard markup language for structuring web pages.
* CSS: Style sheet language for presentation.
* React Material UI: React component library for building responsive UIs.
* Cloudinary: Cloud-based image and video management service for media storage.
* Redux: State management library for predictable state updates.
* Axios: Promise-based HTTP client for making AJAX requests.

**Backend:**

* Node.js: JavaScript runtime environment for executing server-side code.
* Express.js: Fast, unopinionated web framework for Node.js.
* Bcrypt.js: Library for hashing passwords securely.
* Nodemon: Utility for automatically restarting the server during development.
* CORS: Middleware for enabling Cross-Origin Resource Sharing.

By leveraging these technologies, ClickNShop delivers a robust and efficient e-commerce solution that meets the demands of modern online shopping.