### **Functional Requirements**

1. **User Registration and Account Management**
   1. **Create Account**: Customers must be able to create an account with email, password, and contact details.
   2. **Login/Logout**: Users can log in and log out securely using their credentials.
   3. **Account Profile**: Users can view and edit their profile, including personal information, address, and payment methods.
   4. **Order History**: Customers can view past orders, track current orders, and reorder products.
2. **Product Catalog Management**
   1. **Product Search**: Customers should be able to search for pets or pet products by name, category, or keyword.
   2. **Category Filtering**: Filter products by categories such as "Dogs," "Cats," "Pet Supplies," and by attributes like breed, size, or price range.
   3. **Product Details**: Each product page will display high-quality images, descriptions, size, breed compatibility (for pets), availability, and price.
   4. **Stock Availability**: Real-time updates on stock availability must be shown to customers.
3. **Shopping Cart and Checkout**
   1. **Add to Cart**: Customers can add products to their cart with quantity selection.
   2. **View Cart**: Users can view items in the cart, update quantities, or remove products.
   3. **Proceed to Checkout**: Customers can proceed to checkout where they provide shipping and payment information.
   4. **Secure Payment**: The checkout system will integrate with payment gateways like PayPal, Stripe, and credit cards.
   5. **Shipping Options**: Customers can choose from available shipping methods, and calculate shipping cost.
   6. **Order Confirmation**: Customers receive an order confirmation email with details of their purchase.
4. **Inventory Management (Admin)**
   1. **Add/Edit/Remove Products**: Admins can manage product listings by adding, editing, or removing pets and pet-related products.
   2. **Inventory Tracking**: The system should track product stock and alert admins when an item is low in stock.
   3. **Manage Orders**: Admins can view, update, and track customer orders. They can mark orders as processed or shipped.
5. **Customer Support**
   1. **Live Chat**: Real-time live chat support for customers to get assistance with orders and product inquiries.
   2. **Contact Form**: A form for customers to contact customer service for inquiries or support.
   3. **FAQ Page**: A page for common questions regarding shipping, returns, refunds, and product details.
6. **Returns & Refunds Management**
   1. **Return Process**: Customers can initiate product returns from their order history.
   2. **Refund Handling**: Customers will be refunded through the same payment method used for purchase once returns are confirmed.
7. **Newsletter and Promotions**
   1. **Newsletter Sign-up**: Customers can subscribe to receive newsletters with updates, promotions, and new arrivals.
   2. **Promo Code Integration**: The system must support promo codes for discounts during checkout.

### **Non-Functional Requirements**

1. **Performance Requirements**
   1. **Scalability**: The application should support up to 500 concurrent users without performance degradation.
   2. **Page Load Time**: Pages, particularly product pages and checkout, should load within 2 seconds.
   3. **Transaction Speed**: Payment processing should complete within 30 seconds to prevent cart abandonment.
2. **Usability**
   1. **User Interface (UI)**: The design should be intuitive and easy to navigate for both customers and admins.
   2. **Mobile Responsiveness**: The website must be fully functional and visually appealing on mobile devices, tablets, and desktops.
   3. **Accessibility**: The application should follow WCAG (Web Content Accessibility Guidelines) to ensure it is usable by people with disabilities.
3. **Security Requirements**
   1. **Data Encryption**: All sensitive data, especially payment information, must be transmitted securely using SSL (HTTPS).
   2. **Authentication**: Customers must have secure logins using hashed passwords. Admins will have additional authentication (e.g., two-factor authentication).
   3. **Data Privacy**: The system must comply with GDPR (General Data Protection Regulation) and other applicable privacy laws.
   4. **Payment Security**: The payment gateway integration must meet PCI DSS standards for secure payment processing.
4. **Reliability**
   1. **Uptime**: The system should maintain 99.9% uptime, ensuring high availability.
   2. **Backups**: Daily backups of all data (e.g., orders, inventory, customer info) should be performed.
   3. **Error Handling**: The application should have mechanisms in place to log and handle errors gracefully.
5. **Maintainability**
   1. **Modular Architecture**: The code should be modular to allow easy updates and maintenance.
   2. **Documentation**: The codebase and system architecture should be well-documented to facilitate future development and debugging.
   3. **Bug Tracking**: The system should integrate with bug tracking tools to log and resolve issues quickly.
6. **Legal & Compliance**
   1. **Terms and Conditions**: The system must display clear Terms of Service and Privacy Policy in accordance with applicable laws.
   2. **Age Restrictions**: If selling age-restricted items (e.g., pet medications), the system should include age verification checks.
7. **Localization & Internationalization**
   1. **Multi-Language Support**: The application should be capable of supporting multiple languages for customers in different regions.
   2. **Currency Support**: The system should support multiple currencies, particularly if operating internationally.
8. **Backup and Disaster Recovery**
   1. **Regular Backups**: The system should perform regular backups of key data like inventory, orders, and customer information.
   2. **Disaster Recovery Plan**: The application should have a disaster recovery plan to restore services quickly in case of system failure.