**Backend User Stories for Online Shop MVP**

**User Authentication and Management**

1. **User Registration**
   * As a user, I want to register an account so that I can save my shopping list and order history.
   * **Acceptance Criteria**:
     + Endpoint to create a new user account.
     + Validate and store user details securely.
2. **User Login**
   * As a user, I want to log in to my account so that I can access my shopping list and order history.
   * **Acceptance Criteria**:
     + Endpoint for user login.
     + Validate credentials and provide a session token.
3. **User Session Management**
   * As a user, I want my session to persist so that I don't have to log in multiple times.
   * **Acceptance Criteria**:
     + Implement session management with token-based authentication.
     + Ensure tokens expire after a period of inactivity.

**Product Management**

1. **Retrieve Product List**
   * As a user, I want to view a list of products categorized by type so that I can browse items.
   * **Acceptance Criteria**:
     + Endpoint to fetch product list with categories.
     + Return product details (image, title, price, description).
2. **Retrieve Product Details**
   * As a user, I want to view detailed information about a product so that I can decide if I want to buy it.
   * **Acceptance Criteria**:
     + Endpoint to fetch details of a specific product.
     + Return detailed product information (large image, full description, price, stock).

**Shopping List Management**

1. **Add Product to Shopping List**
   * As a user, I want to add a product to my shopping list so that I can purchase it later.
   * **Acceptance Criteria**:
     + Endpoint to add a product to the user's shopping list.
     + Update the shopping list in the database.
2. **Remove Product from Shopping List**
   * As a user, I want to remove a product from my shopping list so that I can manage my selections.
   * **Acceptance Criteria**:
     + Endpoint to remove a product from the user's shopping list.
     + Update the shopping list in the database.
3. **View Shopping List**
   * As a user, I want to view my shopping list so that I can see the products I have selected.
   * **Acceptance Criteria**:
     + Endpoint to retrieve the user's shopping list.
     + Return list of products with quantities and total price.
4. **Update Product Quantity in Shopping List**
   * As a user, I want to update the quantity of products in my shopping list so that I can manage my purchases.
   * **Acceptance Criteria**:
     + Endpoint to update the quantity of a specific product in the shopping list.
     + Update the shopping list in the database.
5. **Clear Shopping List**
   * As a user, I want to clear my entire shopping list so that I can start fresh.
   * **Acceptance Criteria**:
     + Endpoint to clear all items from the shopping list.
     + Update the shopping list in the database.

**Checkout and Payment**

1. **Initiate Checkout**
   * As a user, I want to proceed to the checkout page so that I can complete my purchase.
   * **Acceptance Criteria**:
     + Endpoint to initiate checkout and fetch summary of the shopping list.
     + Return list of items, quantities, and total price.
2. **Submit Payment Details**
   * As a user, I want to submit my payment details so that I can complete my purchase.
   * **Acceptance Criteria**:
     + Endpoint to submit payment details and process the payment.
     + Validate payment information and process the transaction.
3. **Order Confirmation**
   * As a user, I want to receive an order confirmation after my payment is successful so that I know my order is placed.
   * **Acceptance Criteria**:
     + Endpoint to generate and return order confirmation details.
     + Send confirmation email with order details, confirmation code, and delivery information.

**Order Management**

1. **Store Order Details**
   * As a backend system, I need to store order details so that I can track purchases and facilitate order management.
   * **Acceptance Criteria**:
     + Save order details, user information, and payment status in the database.
     + Generate a unique order confirmation code.
2. **Send Order Confirmation Email**
   * As a backend system, I need to send an order confirmation email to the user so that they have a record of their purchase.
   * **Acceptance Criteria**:
     + Compose and send an email with order details, confirmation code, and delivery information.
     + Use a reliable email service to ensure delivery.

**Non-Functional Requirements**

1. **Data Encryption**
   * As a backend system, I need to encrypt sensitive user data so that it is protected from unauthorized access.
   * **Acceptance Criteria**:
     + Implement encryption for user passwords, payment details, and other sensitive information.
2. **Performance Optimization**
   * As a backend system, I need to ensure fast response times so that users have a smooth experience.
   * **Acceptance Criteria**:
     + Optimize database queries and server responses to ensure pages load within 2 seconds.
3. **Scalability**
   * As a backend system, I need to handle up to 10,000 concurrent users so that the site can accommodate high traffic.
   * **Acceptance Criteria**:
     + Implement load balancing and scalable infrastructure to handle peak loads.
4. **Secure Transactions**
   * As a backend system, I need to ensure secure transactions so that user payments are protected.
   * **Acceptance Criteria**:
     + Implement HTTPS for all transactions.
     + Use secure payment gateways for processing payments.