

Spice Sage Detailed User Stories and Feature Specifications

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1. User Authentication and Profile Management

Epic: Secure User Authentication System

The authentication system serves as the gateway to our platform, ensuring secure access while maintaining a friction-free user experience. This system must balance security requirements with user convenience, implementing industry-standard protocols while keeping the user experience smooth and intuitive.

User Story 1: New User Registration

As a new user, I want to create an account so that I can start my spice discovery journey.

Technical Requirements:

- Implement RESTful API endpoint `/api/v1/auth/register`
- Input validation using Yup schema validation
- Password strength requirements (minimum 8 characters, including uppercase, lowercase, number, special character)
- Email verification using SendGrid
- GDPR-compliant data collection consent

Acceptance Criteria:

- User can register using email/password
- User can register using social login (Google, Facebook, Apple)
- User receives welcome email within 2 minutes
- User must verify email before accessing premium features
- Registration process completes in under 60 seconds
- Form provides real-time validation feedback

User Story 2: Password Recovery

As a registered user, I want to reset my forgotten password so that I can regain access to my account.

Technical Requirements:

- Implement rate-limited password reset requests
- Time-limited reset tokens (15 minutes)
- Secure reset link generation
- Password history tracking
- Audit logging of reset attempts

Acceptance Criteria:

- User receives reset email within 1 minute
- Reset link expires after 15 minutes
- New password cannot match last 3 passwords
- Process completes in under 3 minutes
- User receives confirmation email after reset
- Failed attempts are logged with IP address

Epic: User Profile Management

The profile management system allows users to maintain their personal information, preferences, and settings. This system must provide intuitive interfaces for data management while ensuring data integrity and privacy.

User Story 3: Preference Management

As a subscriber, I want to set and update my spice preferences so that I receive personalized recommendations.

Technical Requirements:

- Real-time preference updates
- Preference categories taxonomy
- Dietary restriction tracking
- Allergen management
- Preference history tracking

Acceptance Criteria:

- User can select multiple cuisine preferences
- User can set spice heat tolerance level
- User can specify dietary restrictions
- Changes reflect immediately in recommendations
- User can view preference history
- Preferences sync across devices

2. Subscription Management System

Epic: Flexible Subscription Engine

The subscription engine handles all aspects of recurring orders, including plan management, billing, and fulfillment coordination. This system must be robust enough to handle complex subscription rules while remaining flexible for user modifications.

User Story 4: Subscription Customization

As a subscriber, I want to customize my subscription plan so that it matches my cooking habits and budget.

Technical Requirements:

- Implement subscription plan models
- Flexible billing cycle management
- Inventory reservation system
- Dynamic pricing engine
- Subscription state machine

Acceptance Criteria:

- User can modify delivery frequency
- User can adjust quantity per delivery
- User can skip deliveries
- User can pause/resume subscription
- Changes reflect in next billing cycle
- User receives confirmation of changes

User Story 5: Delivery Management

As a subscriber, I want to manage my delivery schedule so that I receive spices when I'm available to accept them.

Technical Requirements:

- Dynamic delivery scheduling system
- Multi-carrier integration
- Address validation service
- Delivery window optimization
- Real-time tracking integration

Acceptance Criteria:

- User can select preferred delivery dates
- User can update delivery address
- User receives delivery notifications
- User can track shipment in real-time
- User can provide delivery instructions
- Changes possible up to 24 hours before delivery

3. Mobile Application Features

Epic: Mobile Experience

The mobile application provides a seamless extension of the web platform, offering unique features that leverage device capabilities while maintaining core functionality offline.

User Story 6: Spice Management

As a mobile user, I want to manage my spice collection through my phone so that I can track freshness and usage.

Technical Requirements:

- NFC tag reading system
- Local storage for offline access
- Background sync capabilities

- Image recognition for spice identification
- Usage tracking algorithms

Acceptance Criteria:

- User can scan spice containers
- User can view freshness timeline
- User can track usage history
- User receives expiration alerts
- User can manage inventory offline
- Data syncs when online

4. Recipe and Content Management System

Epic: Interactive Recipe Platform

The recipe platform serves as a dynamic connection between users' spice collections and culinary exploration. This system must provide personalized recipe recommendations while considering dietary restrictions, available ingredients, and user preferences.

User Story 7: Recipe Discovery

As a home cook, I want to discover recipes based on my spice collection so that I can make the most of my ingredients.

Technical Requirements:

- Recipe recommendation engine
- Ingredient matching algorithm
- Dietary restriction filter system
- User preference learning
- Recipe rating and review system

Acceptance Criteria:

- User sees recipes matching their spice inventory
- Recipes filter based on dietary restrictions
- User can save favorite recipes

- System learns from user interactions
- Recipe difficulty matches user skill level
- Substitution suggestions for missing ingredients

User Story 8: Recipe Creation and Sharing

As an experienced cook, I want to create and share my own recipes so that I can contribute to the community.

Technical Requirements:

- Recipe creation interface
- Image upload and processing
- Recipe validation system
- Social sharing integration
- Attribution tracking

Acceptance Criteria:

- User can create structured recipes
- User can upload multiple photos
- System validates recipe completeness
- Easy social media sharing
- Creator attribution maintained
- Community can provide feedback

5. Educational Content System

Epic: Interactive Learning Platform

The educational platform provides users with engaging content about spice history, usage, and culinary traditions. This system must deliver personalized learning experiences while maintaining cultural authenticity and accuracy.

User Story 9: Spice Education

As a cooking enthusiast, I want to learn about spice origins and traditional uses so that I can appreciate and use them authentically.

Technical Requirements:

- Educational content management system
- Interactive learning modules
- Progress tracking
- Quiz system
- Cultural information database

Acceptance Criteria:

- User can access multimedia content
- Content adapts to user knowledge level
- Progress saves automatically
- User can earn achievements
- Content available offline
- Cultural context preserved

6. Inventory Management System

Epic: Smart Inventory Control

The inventory management system tracks spice freshness, usage patterns, and stock levels while coordinating with the subscription system for timely replenishment.

User Story 10: Automated Inventory Tracking

As a subscriber, I want my spice inventory to update automatically so that I always know what I have and when to reorder.

Technical Requirements:

- Real-time inventory tracking
- Predictive reordering system
- Usage pattern analysis
- Freshness monitoring
- Waste reduction algorithms

Acceptance Criteria:

- Inventory updates with each use
- Automatic reorder suggestions
- Freshness alerts
- Usage history available
- Waste reduction tips
- Integration with subscription system

7. Community and Social Features

Epic: Community Engagement Platform

The community platform connects users through shared culinary interests, enabling recipe sharing, discussion, and collaborative learning.

User Story 11: Community Interaction

As a member, I want to connect with other spice enthusiasts so that I can share experiences and learn from others.

Technical Requirements:

- Social networking features
- Content sharing system
- Discussion forums
- User reputation system
- Moderation tools

Acceptance Criteria:

- User can create profiles
- Content sharing enabled
- Forum participation
- Reputation tracking
- Community guidelines enforced

- Private messaging available

8. Analytics and Reporting System

Epic: Business Intelligence Platform

The analytics platform provides insights into user behavior, subscription patterns, and business performance while enabling data-driven decision making.

User Story 12: Performance Analytics

As an administrator, I want to access detailed analytics so that I can optimize the platform and improve user experience.

Technical Requirements:

- Real-time analytics processing
- Custom report generation
- Data visualization tools
- Trend analysis
- Export capabilities

Acceptance Criteria:

- Real-time dashboard access
- Custom report creation
- Automated trend detection
- Data export options
- Privacy compliance
- Historical data access

Implementation Notes

Implementing these features should always prioritize user experience while maintaining system reliability and performance. Each feature should be developed with scalability in mind, allowing for future growth and enhancement of the platform.

Development Guidelines

Each feature implementation should follow these standards:

1. Code Organization:
 - a. Feature-based directory structure
 - b. Shared utilities and components
 - c. Clear separation of concerns
 - d. Type-safe implementations
2. Error Handling:
 - a. Comprehensive error types
 - b. User-friendly error messages
 - c. Proper error logging
 - d. Recovery procedures
3. Testing Strategy:
 - a. Unit test coverage > 80%
 - b. Integration test suites
 - c. End-to-end test scenarios
 - d. Performance benchmarks
4. Documentation:
 - a. API documentation
 - b. Implementation guides
 - c. Deployment procedures
 - d. Troubleshooting guides

Testing Requirements

Each feature should include:

1. Unit Tests: Coverage for all business logic and edge cases.
2. Integration Tests: End-to-end workflows and system integration points.
3. Performance Tests: Load testing and response time verification.
4. Accessibility Tests: WCAG compliance verification.
5. Security Tests: Vulnerability scanning and penetration testing.