

Sourdough Bakery Web Application - Requirements Document

Project: Sourdough Bakery Management System

Version: 1.0

Date: June 2025

Document Type: Software Requirements Specification (SRS)

Project Overview

This document outlines the functional and non-functional requirements for a web-based application designed to manage a small to medium-sized sourdough bakery's operations, including online ordering, inventory management, and customer relationship management.

The application will serve as a complete digital solution for:

- Customer-facing online storefront
- Order management and scheduling
- Basic inventory tracking
- Administrative dashboard
- Customer account management

Target users:

- **Primary:** Bakery customers (general public)
- **Secondary:** Bakery staff and owners (administrators)

Functional Requirements

1. Product Catalog (FR-001)

Description: Display available bakery products with details

Requirements:

- Display products organized by categories (Sourdough Breads, Whole Grain, Pastries, Seasonal)
- Show product information: name, description, price, preparation time, image
- Filter products by category, availability, and featured items
- Search functionality for finding specific products
- Responsive design for mobile and desktop viewing

Acceptance Criteria:

- Users can browse all available products
- Products display accurate pricing and availability
- Images load properly and are optimized for web

- Search returns relevant results within 2 seconds
- Categories are clearly organized and navigable

2. User Registration & Authentication (FR-002)

Description: Allow customers to create accounts and authenticate

Requirements:

- User registration with email verification
- Secure login/logout functionality
- Password reset capability
- Profile management (name, email, phone number)
- Input validation and error handling

Acceptance Criteria:

- Users can successfully register with valid email addresses
- Password requirements: minimum 8 characters, includes letters and numbers
- Email verification required before first order
- Users can reset passwords via email link
- Session management keeps users logged in appropriately

3. Shopping Cart & Ordering (FR-003)

Description: Enable customers to add products to cart and place orders

Requirements:

- Add/remove items from shopping cart
- Modify quantities in cart
- Cart persistence across sessions (for logged-in users)
- Order placement with pickup date/time selection
- Order confirmation and email notifications
- Special instructions field for custom requests

Acceptance Criteria:

- Cart updates immediately when items are added/removed
- Total price calculations are accurate including any applicable taxes
- Users must select pickup date at least 24 hours in advance
- Confirmation email sent within 5 minutes of order placement
- Orders cannot be placed for unavailable items

4. Order History & Tracking (FR-004)

Description: Allow customers to view past orders and track current orders

Requirements:

- Display order history with dates, items, and status
- Order status tracking (Pending, Confirmed, Preparing, Ready, Canceled)
- Reorder functionality for favorite combinations
- Order modification (cancellation only, within time limits)
- Download order receipts

Acceptance Criteria:

- Order history shows last 12 months of orders
- Status updates are real-time or updated within 15 minutes
- Users can reorder previous orders with one click
- Cancellation allowed up to 12 hours before pickup time

5. Admin Dashboard (FR-005)

Description: Central dashboard for bakery management

Requirements:

- Overview of daily orders and revenue
- Quick access to order management functions
- Inventory status at-a-glance
- Key performance indicators (KPIs)
- Recent activity feed

Acceptance Criteria:

- Dashboard loads within 3 seconds
- Data refreshes automatically every 5 minutes
- Mobile-responsive for tablet use
- Shows accurate real-time data

6. Order Management (FR-006)

Description: Manage customer orders through their lifecycle

Requirements:

- View all orders filtered by date, status, customer
- Update order status manually
- Print order details for production planning
- Customer communication (order updates, delays)
- Order modification capabilities

Acceptance Criteria:

- Orders can be filtered and sorted by multiple criteria
- Status changes trigger automatic customer notifications
- Order details print in production-friendly format
- Search orders by customer name or order number

7. Product Management (FR-007)

Description: Manage bakery product catalog

Requirements:

- Add, edit, delete products
- Manage product categories
- Set availability status
- Upload and manage product images
- Price management and history
- Featured product designation

Acceptance Criteria:

- Product changes reflect immediately on customer site
- Image uploads support common formats (JPG, PNG, WebP)
- Price changes maintain historical record
- Categories can be reordered and managed

8. Inventory Tracking (FR-008)

Description: Basic inventory management for daily planning

Requirements:

- Daily production planning (planned quantities)
- Track actual production vs. planned
- Record sales quantities
- Calculate remaining inventory
- Low inventory alerts
- Historical inventory reports

Acceptance Criteria:

- Daily inventory can be planned up to 7 days in advance
- Actual quantities can be updated throughout the day
- Alerts sent when remaining inventory falls below threshold
- Reports available for last 30 days

Non-Functional Requirements

1. Performance Requirements (NFR-001)

- **Page Load Time:** All pages must load within 3 seconds on standard broadband
- **Response Time:** API responses must complete within 2 seconds
- **Concurrent Users:** Support minimum 50 concurrent users
- **Database Performance:** Query response time under 1 second for 95% of operations

2. Security Requirements (NFR-002)

- **Authentication:** Secure password hashing
- **Data Protection:** HTTPS encryption for all data transmission
- **Input Validation:** All user inputs validated and sanitized
- **Session Management:** Secure session handling with appropriate timeouts
- **SQL Injection Prevention:** Parameterized queries for all database operations

3. Usability Requirements (NFR-003)

- **Mobile Responsive:** Fully functional on mobile devices (iOS Safari, Android Chrome)
- **Browser Support:** Modern browsers (Chrome, Firefox, Safari, Edge - last 2 versions)
- **Intuitive Navigation:** Maximum 3 clicks to complete any primary action

4. Reliability Requirements (NFR-004)

- **Uptime:** 99% availability during business hours (6 AM - 8 PM local time)
- **Data Backup:** Daily automated backups with 30-day retention
- **Error Handling:** Graceful error handling with user-friendly messages
- **Recovery:** System recovery within 4 hours of major failure

5. Scalability Requirements (NFR-005)

- **User Growth:** Architecture supports scaling to 500 registered users
- **Order Volume:** Handle up to 100 orders per day
- **Data Storage:** Database design supports 5 years of operational data
- **Infrastructure:** Cloud-deployable architecture for easy scaling

Technical Constraints

Technology Stack

- **Frontend:** ReactJs
- **Backend:** Spring Boot with Java 21

- **Database:** Oracle Database
- **Authentication:** Spring Security with JWT tokens
- **Deployment:** Cloud platform (AWS, Google Cloud, or similar)

Integration Requirements

- **Email Service:** Integration with email provider
- **Payment Processing:** Future integration capability with Stripe/PayPal
- **Image Storage:** Cloud storage for product images

Development Constraints

- **Code Quality:** Minimum 80% test coverage
- **Documentation:** Comprehensive API documentation
- **Version Control:** Git with feature branch workflow
- **Code Standards:** Follow established Java and React best practices

User Stories

1. Customer Stories

Epic: Online Ordering

- **US-001:** As a customer, I want to browse available sourdough products so I can see what's fresh today
- **US-002:** As a customer, I want to add products to my cart so I can order multiple items at once
- **US-003:** As a customer, I want to schedule my pickup time so I can get fresh bread when convenient
- **US-004:** As a customer, I want to create an account so I can track my orders and reorder favorites
- **US-005:** As a customer, I want to receive order confirmations so I know my order was received

Epic: Account Management

- **US-006:** As a customer, I want to view my order history so I can see what I've ordered before
- **US-007:** As a customer, I want to modify my profile information so I can keep my details current
- **US-008:** As a customer, I want to reset my password so I can regain access if I forget it

2. Administrator Stories

Epic: Order Management

- **US-009:** As a bakery owner, I want to see all orders for today so I can plan my baking schedule
- **US-010:** As a bakery owner, I want to update order status so customers know when their orders are ready
- **US-011:** As a bakery owner, I want to print order summaries so I can organize production efficiently

Epic: Business Management

- **US-012:** As a bakery owner, I want to manage my product catalog so I can add seasonal items
- **US-013:** As a bakery owner, I want to track daily inventory so I know what I've sold and what remains
- **US-014:** As a bakery owner, I want to see sales reports so I can understand my business performance

Acceptance Criteria Summary

MVP (Minimum Viable Product) Criteria

For the application to be considered complete for initial release:

1. **Customer Registration & Login:** Users can create accounts and authenticate
2. **Product Browsing:** Customers can view all available products with details
3. **Order Placement:** Customers can add items to cart and place orders
4. **Order Management:** Administrators can view and update order status
5. **Basic Inventory:** Administrators can track daily production and sales
6. **Email Notifications:** Customers receive order confirmations
7. **Responsive Design:** Application works on desktop and mobile devices

Assumptions and Dependencies

Assumptions

- Bakery operates during hours (10 AM - 8 PM)
- All orders are pickup-only (no delivery in v1.0)
- Payment processing handled offline initially (cash/card at pickup)
- Single location operation

Dependencies

- Oracle Database availability and licensing
- Email service provider account
- Web hosting/cloud platform access
- SSL certificate for HTTPS
- Domain name registration

Glossary

- **SRS:** Software Requirements Specification
- **MVP:** Minimum Viable Product
- **KPI:** Key Performance Indicator
- **WCAG:** Web Content Accessibility Guidelines
- **JWT:** JSON Web Token
- **API:** Application Programming Interface
- **HTTPS:** HyperText Transfer Protocol Secure
- **CRUD:** Create, Read, Update, Delete operations