项目文档

# Functional Requirement

Requirement ID Description  
RD-1 The system shall display a list of nearby restaurants with their real-time availability.  
RD-2 The system shall allow users to filter restaurants by cuisine type, price range, and dietary preferences.  
RD-3 The system shall allow users to sort restaurant options by preparation/delivery time and restaurant ratings.  
PS-4 The system shall show personalized meal suggestions on the home screen based on the user’s past orders, browsing history, and time of week.  
PS-5 The system shall ensure that dietary preferences are clearly flagged in personalized suggestions.  
OM-6 The system shall allow users to modify or cancel orders within 15–20 minutes of submission, if the food has not yet been prepared.  
OM-7 The system shall display available actions (e.g., modify, cancel) at each stage of the order process.  
OM-8 The system shall provide immediate confirmation of order changes and notify the restaurant or rider if applicable.  
OM-9 The system shall show the impact of order changes on delivery time and cost to help users make informed decisions.  
OM-10 The system shall allow users to view the preparation status of their order, if available.  
LS-11 The system shall support biometric login (e.g., fingerprint or facial recognition).  
LS-12 The system shall offer a secure guest checkout option for one-time users.  
LS-13 The system shall include a quick logout feature and session timeout after a few minutes of inactivity to enhance account security on shared devices.  
OT-14 The system shall provide real-time tracking of the order to the user.  
OT-15 The system shall allow users to make urgent order changes with clear feedback and minimal delay.

# External Description

# 5. Constraints  
  
## 5.1 Regulatory/Legal  
  
- \*\*SYS-REG-001\*\*: The system shall comply with all applicable data protection and privacy regulations, including the General Data Protection Regulation (GDPR) and local equivalents in target markets.  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To ensure legal compliance and build user trust when handling sensitive data such as biometric information and payment details.   
 - \*\*Source\*\*: Derived from SRL 4.4 and 5.4   
 - \*\*Acceptance Criteria\*\*: All data storage and transmission mechanisms are audited for compliance with GDPR and other relevant laws.   
  
- \*\*SYS-REG-002\*\*: The system shall ensure that guest checkout does not collect or retain any personally identifiable information (PII) unless explicitly provided and consented to by the user.  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To maintain compliance with privacy laws and support users who prefer not to create an account.   
 - \*\*Source\*\*: Derived from SRL 4.4 and 5.4   
 - \*\*Acceptance Criteria\*\*: Guest session data is stored using tokens and is not retained beyond the session lifecycle.   
  
- \*\*SYS-REG-003\*\*: The system shall not process or store any biometric data locally on the device without user consent and shall comply with platform-specific biometric data handling standards (e.g., Android BiometricPrompt, iOS LocalAuthentication).  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To ensure secure and legally compliant use of biometric authentication across different mobile platforms.   
 - \*\*Source\*\*: Derived from SRL 3.4 and 5.4   
 - \*\*Acceptance Criteria\*\*: Biometric data is not stored on the device; authentication is handled via platform APIs.   
  
## 5.2 Hardware  
  
- \*\*SYS-HWD-001\*\*: The system shall be compatible with mobile devices having at least 2 GB RAM and 500 MB of free storage.  
 - \*\*Priority\*\*: Should Have   
 - \*\*Rationale\*\*: To ensure the app can run efficiently on a wide range of devices commonly used by target users.   
 - \*\*Source\*\*: Derived from SRL 5.1   
 - \*\*Acceptance Criteria\*\*: The app shall start and operate without performance issues on devices meeting this hardware requirement.   
  
- \*\*SYS-HWD-002\*\*: The system shall require GPS and internet connectivity for core features such as restaurant discovery and order tracking.  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: These features are central to the user experience and depend on real-time location and availability data.   
 - \*\*Source\*\*: Derived from SRL 5.1   
 - \*\*Acceptance Criteria\*\*: The app shall not allow access to location-based or real-time features without GPS and internet connectivity.   
  
## 5.3 Interface  
  
- \*\*SYS-INT-001\*\*: The system shall integrate with restaurant and delivery APIs using standardized protocols and data formats.  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To ensure accurate and up-to-date information on restaurant availability, meal options, and delivery status.   
 - \*\*Source\*\*: Derived from SRL 2.2 and 5.2   
 - \*\*Acceptance Criteria\*\*: Integration with at least three restaurant and two delivery APIs is achieved with no data inconsistency.   
  
- \*\*SYS-INT-002\*\*: The system shall provide a consistent and intuitive API for future dietary preference expansion.  
 - \*\*Priority\*\*: Should Have   
 - \*\*Rationale\*\*: To support the addition of new dietary preferences based on user feedback and market trends.   
 - \*\*Source\*\*: Derived from SRL 4.4 and 5.2   
 - \*\*Acceptance Criteria\*\*: The API allows for new dietary preference types to be added without requiring changes to the core system.   
  
- \*\*SYS-INT-003\*\*: The system shall support integration with secure payment gateways, including Stripe and PayPal.  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To provide a seamless and secure checkout experience across multiple platforms and user preferences.   
 - \*\*Source\*\*: Derived from SRL 4.1 and 5.2   
 - \*\*Acceptance Criteria\*\*: Payment gateway integration is verified for security and usability in all supported OS versions.   
  
## 5.4 Design & Implementation  
  
- \*\*SYS-DIS-001\*\*: The system shall be developed as a mobile-first application with a responsive and adaptive user interface for both Android and iOS platforms.  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To ensure the app is optimized for the primary use case of mobile users in fast-paced environments.   
 - \*\*Source\*\*: Derived from SRL 2.1 and 5.2   
 - \*\*Acceptance Criteria\*\*: The UI is consistent and functions correctly across Android and iOS platforms.   
  
- \*\*SYS-DIS-002\*\*: The system shall not store user session data on shared or public devices beyond the duration of the session.  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To protect user privacy and security when using the app on shared or public devices.   
 - \*\*Source\*\*: Derived from SRL 3.4 and 5.4   
 - \*\*Acceptance Criteria\*\*: Session data is cleared upon logout or after a 5-minute inactivity timeout.   
  
- \*\*SYS-DIS-003\*\*: The system shall not include any design dependencies that restrict future platform expansion or API integration.  
 - \*\*Priority\*\*: Should Have   
 - \*\*Rationale\*\*: To maintain flexibility and ease of future enhancements without requiring major rework.   
 - \*\*Source\*\*: Derived from SRL 2.1 and 4.4   
 - \*\*Acceptance Criteria\*\*: The app design and architecture allow for seamless integration with new platforms or APIs.   
  
## 5.5 Other Constraints  
  
- \*\*SYS-OTH-001\*\*: The system shall be localized to support at least three major languages (English, Chinese, Spanish) at launch.  
 - \*\*Priority\*\*: Should Have   
 - \*\*Rationale\*\*: To accommodate a diverse user base and expand market reach.   
 - \*\*Source\*\*: Stakeholder feedback and market analysis   
 - \*\*Acceptance Criteria\*\*: Language selection is available in the settings, and all UI elements are translated accurately.   
  
- \*\*SYS-OTH-002\*\*: The system shall be designed to support deployment in urban and semi-urban areas only, with no requirement for rural or remote location support.  
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To align with the system’s target audience and restaurant/delivery service availability.   
 - \*\*Source\*\*: Derived from SRL 1.3 and 5.1   
 - \*\*Acceptance Criteria\*\*: The system shall not attempt to operate in unsupported rural areas and shall provide clear feedback in such cases.   
  
- \*\*SYS-OTH-003\*\*: The system shall not support voice input or hands-free interaction in the initial release.  
 - \*\*Priority\*\*: Could Have   
 - \*\*Rationale\*\*: To maintain focus on core features and reduce development complexity in the initial phase.   
 - \*\*Source\*\*: Stakeholder feedback and prioritization using MoSCoW   
 - \*\*Acceptance Criteria\*\*: Voice input is not implemented, and no UI elements or features are designed for this interaction method.