Software Requirements Specification

FOOD SAFETY PORTAL

- **Dhanshree Dharpure**

Date: 22-03-2024

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Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Dhanshree Dharpure	22-03-24	Initial Version	0.1

1. Introduction

1.1 Purpose

- Promoting Food Safety Consciousness: Instill a culture of food safety awareness among consumers by providing credible insights into restaurants' adherence to regulations. This enhances confidence in dining choices and emphasizes compliance with industry standards.

- Enhancing Culinary Exploration: Empower users to make informed dining decisions aligned with preferences and safety criteria through intuitive interfaces and comprehensive restaurant information. This elevates culinary exploration, catering to diverse tastes and dietary considerations.

- Facilitating Seamless Dining Discoveries: Simplify the process of discovering and exploring dining options by offering user-friendly interfaces and a wealth of restaurant data. This streamlines the journey of culinary exploration, enabling users to uncover diverse dining destinations effortlessly.

- Supporting Regulatory Compliance: Facilitate regulatory compliance within the food industry by serving as a repository for restaurant data and implementing robust compliance checks. This aids regulatory authorities in monitoring and enforcing food safety standards, fostering a safer dining environment.

- Nurturing Transparency and Accountability: Promote transparency and accountability across the food industry by utilizing mechanisms such as user reviews, ratings, and feedback channels. This fosters trust and transparency between consumers, restaurants, and regulatory bodies, cultivating symbiotic relationships.

1.2 Document Conventions

- Font and Formatting: Headings in bold.
- Requirement statements in regular font.
- Priority levels indicated clearly.
- Priority Assignment: Inherited priorities for detailed requirements.
- Each requirement has its own priority level.
- Use of Highlighting: Important points highlighted.
- Examples and notes distinguished.
- Standard Terminology: Consistent use of terminology.
- Glossary provided for technical terms.
- Version Control: Clear indication of revisions.
- Revision history tracked

1.3 Intended Audience and Reading Suggestions

The Food Safety Portal is intended for various stakeholders involved in the development, implementation, and usage of the system. These may include developers, project managers, testers, users, and documentation writers. Developers: Need detailed technical requirements to implement the system. Project Managers: Require an overview of project goals and scope to plan resources and timelines. Testers: Seek detailed

functional requirements to design test cases and verify system behavior. Users: Interested in understanding system features and functionalities relevant to their interactions with the portal. Documentation Writers: Use the SRS to create user manuals and other supporting documentation. The SRS contains sections outlining the purpose, scope, requirements, and references of the Food Safety Portal. It is organized into distinct sections, including Introduction, Purpose, Document Conventions, Product Scope, References, and more. For effective reading, stakeholders are advised to begin with the overview sections, such as Introduction and Purpose, to understand the context and objectives of the project. Then, they can proceed to sections most pertinent to their role, such as Requirements for developers, Test Cases for testers, and User Interaction for users.

1.4 Product Scope

The Food Safety Portal is a software solution designed to enhance food safety practices and improve the dining experience for users. It provides a centralized platform for accessing information about restaurants, including reviews, ratings, menus, and food safety compliance data.

The primary purpose of the portal is to promote food safety awareness among consumers, facilitate informed dining decisions, and foster transparency within the food industry. By offering comprehensive restaurant information and features such as online booking and feedback submission, the portal aims to ensure a safer and more enjoyable dining experience for all users.

1.5 References

<List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document. Provide enough information so that the reader can access a copy of each reference, including title, author, version number, date, and source or location.>

2. Overall Description

2.1 Product Perspective

The Food Safety Portal (FSP) stands as an independent software solution crafted to revolutionize the way users engage with restaurant information and dining experiences. Unlike being a part of an existing product family, the FSP emerges as a singular entity, conceived to cater specifically to the escalating demands of the food safety domain. In essence, the FSP serves as a pioneering platform, introducing innovative functionalities to centralize restaurant data, enhance food safety awareness, and elevate the overall dining experience for its users. With its self-contained nature, the FSP represents a fresh approach, unencumbered by the constraints of pre-existing systems or dependencies on external frameworks. By positioning itself as a standalone product, the FSP endeavors to set new standards in the realm of food safety management and consumer engagement. Through its comprehensive suite of features and user-centric Software Requirements Specification for Food Safety Portal Page 3 design, it aims to address the pressing need for a unified solution that amalgamates restaurant information, user feedback, and regulatory compliance in a single, accessible interface..

2.2 Product Functions

● Provide access to detailed information about restaurants, including reviews, ratings, and menus.

- Facilitate online booking and reservation of tables at restaurants.
- Enable users to submit feedback and ratings based on their dining experiences.
- Promote food safety awareness through educational resources and information.
- Support administrative functions such as user account management and system maintenance.

2.3 User Classes and Characteristics

City Residents: This user class comprises individuals residing within the city who frequently use the Food Safety Portal (FSP) to explore restaurants, make online bookings, and provide feedback. They vary in technical expertise and may have differing preferences for dining out, making personalized recommendations and saved favorites crucial features for enhancing their experience. They often prioritize convenience and reliability in restaurant information and booking processes.

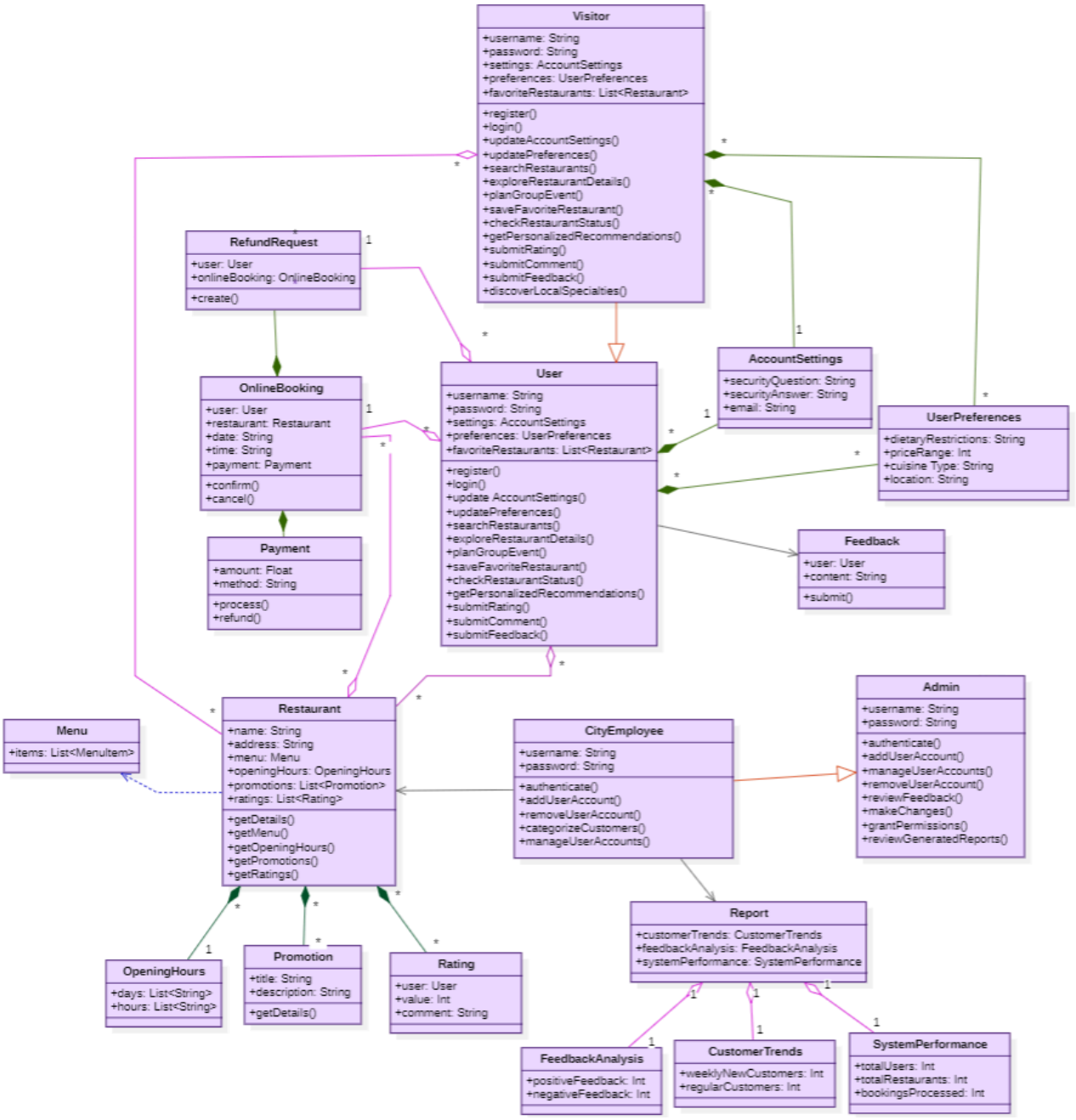
Visitors: Visitors to the city represent another significant user class. They utilize the FSP to discover local specialties, explore restaurants, and make online bookings. Visitors may heavily rely on the system's recommendations and reviews to make informed dining decisions. They prioritize ease of use and accurate information about restaurants, especially when exploring unfamiliar areas.

Restaurant Guides: Restaurant guides manage bookings, update restaurant information, and process payments within the FSP. They require a higher level of technical expertise to efficiently manage the backend operations. Accuracy and timeliness in managing bookings and updating restaurant information are crucial for their role.

City Employees: City employees primarily utilize the FSP to view customer records, review feedback, and generate reports for analyzing system performance and customer trends. They require access to comprehensive data and reporting tools to fulfill their administrative duties effectively. Privacy and security of customer records are paramount for this user class.

Admin: The admin oversees and manages user accounts, reviews feedback and complaints, generates reports, and grants permissions to other user classes. They play a critical role in ensuring the security, efficiency, and effectiveness of the FSP. Admins require robust administrative controls and access to sensitive system functionalities to maintain system integrity and user satisfaction.Operating Environment

2.4 Operating Environment



2.5 Design and Implementation Constraints

- Compatibility: The software must be compatible with various devices and operating systems commonly used by city residents, visitors, and restaurant guides, imposing constraints on technology choices and implementation strategies.

- Integration: The software may need to integrate with existing systems or databases used by city authorities or restaurant owners, requiring adherence to specific interfaces and data exchange protocols.
- Scalability: The software should be designed to accommodate potential growth in user base and transaction volume, imposing constraints on architecture and infrastructure choices.
- Regulatory Compliance: The software must comply with food safety regulations and standards imposed by local authorities, which may limit certain design options and functionalities.
- Security Considerations: Due to the sensitive nature of user data and financial transactions, the software must adhere to strict security protocols to prevent unauthorized access, data breaches, and fraud.

2.6 User Documentation

- User Manual: A comprehensive guide explaining the functionality of the Food Safety Portal, including registration, restaurant exploration, booking management, and feedback submission.
- Online Help: Context-sensitive help available within the software interface to assist users in navigating and using various features.
- Tutorials: Step-by-step tutorials or video guides demonstrating key tasks and functionalities of the software, aimed at helping users quickly familiarize themselves with the system

2.7 Assumptions and Dependencies

- Assumed Factors: It is assumed that the software will utilize secure payment gateways and third-party APIs for online transactions and restaurant information retrieval. Additionally, it is assumed that users will have access to stable internet connections for seamless usage of the software.
- Dependencies: The project depends on the availability and reliability of external services and APIs for functionalities such as payment processing, restaurant information retrieval, and map integration. Any changes or disruptions to these dependencies could impact the project timeline and functionality.

3. External Interface Requirements

3.1 User Interfaces

- Web-based Interface: Accessible via standard web browsers, the interface will include intuitive navigation, search functionality, and interactive elements for users to explore restaurants, make bookings, and provide feedback.
- Mobile Application Interface: For on-the-go access, a mobile application will be available on Android and iOS platforms, offering similar functionalities to the web-based interface but optimized for smaller screens.
- Admin Dashboard: An admin dashboard will provide administrators with tools to manage user accounts, review feedback, generate reports, and perform other administrative tasks.

3.2 Hardware Interfaces

- Desktop Computers: Compatible with desktop computers running Windows, macOS, or Linux operating systems, with standard hardware configurations and internet connectivity.

- Mobile Devices: Compatible with smartphones and tablets running Android or iOS operating systems, supporting touch input and various screen sizes.
- Internet Connection: Requires a stable internet connection for accessing online features, such as restaurant information retrieval, booking management, and payment processing.

3.3 Software Interfaces

- Database Management System (DBMS): Interaction with a relational database management system (e.g., MySQL or PostgreSQL) for storing user data, restaurant information, booking records, and feedback.
- Operating Systems: Compatible with various operating systems, including Windows, macOS, iOS, and Android, ensuring cross-platform accessibility.
- Web Services: Utilization of RESTful web services for communication between different software components, enabling data exchange and functionality integration.
- Payment Gateway: Integration with a secure payment gateway API to facilitate online payment processing for restaurant bookings.
- Mapping Service: Integration with a mapping service API (e.g., Google Maps) to provide location-based services, such as restaurant search and directions.

3.4 Communications Interfaces

- Email Notifications: Sending email notifications to users for account registration, booking confirmations, feedback acknowledgments, and other relevant communications.
- API Calls: Interaction with external APIs (e.g., payment gateway, mapping service) via API calls to retrieve data and perform transactions securely.
- Data Encryption: Utilization of encryption protocols (e.g., SSL/TLS) to ensure secure transmission of sensitive data, such as user credentials and payment information.
- HTTP/HTTPS Protocol: Communication between client devices and the server will be conducted using HTTP/HTTPS protocols for transmitting data securely over the internet.

4. System Features

<This template illustrates organizing the functional requirements for the product by system features, the major services provided by the product. You may prefer to organize this section by use case, mode of operation, user class, object class, functional hierarchy, or combinations of these, whatever makes the most logical sense for your product.>

4.1 System Feature 1: Friendly User Interface

4.1.1 Description and Priority:

This feature aims to provide users with a user-friendly interface accessible via both web browsers and mobile applications. It facilitates seamless navigation for users to explore restaurants, make bookings, and provide feedback. Given its direct impact on user satisfaction and system adoption, this feature is of high priority.

4.1.2 Stimulus/Response Sequences:

- User accesses the platform via a web browser or mobile application.
- The system presents a visually appealing and easy-to-navigate interface with clear navigation options.
- Users perform actions such as searching for restaurants, viewing restaurant details, making bookings, and submitting feedback.
- The system responds promptly to user interactions, providing real-time updates and feedback.

4.1.3 Functional Requirements:

- REQ-1: The system shall feature an intuitive layout with prominently displayed navigation elements, including search bars, menu options, and action buttons.
- REQ-2: The interface shall be responsive and optimized for various screen sizes and devices, ensuring a consistent user experience across web browsers and mobile applications.
- REQ-3: The system shall provide informative and visually appealing displays of restaurant information, including photos, ratings, reviews, and menus.
- REQ-4: User interactions, such as clicking on restaurant listings, making bookings, or submitting feedback, shall result in immediate and clear responses from the system, with appropriate feedback messages or confirmation dialogs displayed.
- REQ-5: The interface shall include accessibility features to accommodate users with disabilities, such as screen readers, keyboard navigation, and alternative text for images.

4.2 System Feature 2: Real-time Mapping

4.2.1 Description and Priority:

This feature enables real-time mapping integration within the system, allowing users to visualize restaurant locations, obtain directions, and explore nearby attractions seamlessly. Given its importance in enhancing user experience and facilitating location-based interactions, this feature is of high priority.

4.2.2 Stimulus/Response Sequences:

- User initiates a mapping function within the platform.
- The system retrieves real-time mapping data and displays interactive maps.
- Users interact with the maps to view restaurant locations, obtain directions, or explore nearby points of interest.
- The system updates the map dynamically based on user actions and real-time data.

4.2.3 Functional Requirements:

- REQ-1: The system shall integrate with real-time mapping services to provide users with interactive maps.

- REQ-2: Users shall be able to search for restaurants and view their locations on the map interface.
- REQ-3: The system shall provide functionalities for users to obtain directions to selected restaurants from their current location.
- REQ-4: Users shall have the ability to explore nearby attractions or amenities on the map interface.
- REQ-5: The map interface shall be responsive and optimized for various devices and screen sizes

4.3 System Feature 3: Responsive Feedback System

4.3.1 Description and Priority:

This feature entails implementing a responsive feedback system within the platform, allowing users to provide feedback on their dining experiences promptly. As user feedback is integral to improving service quality and enhancing user satisfaction, this feature is considered of high priority.

4.3.2 Stimulus/Response Sequences:

- Users initiate the feedback submission process within the platform.
- The system prompts users to provide feedback through intuitive forms or interfaces.
- Users submit feedback, including ratings, comments, and suggestions.
- The system acknowledges receipt of feedback and provides confirmation to users.

4.3.3 Functional Requirements:

- REQ-1: The system shall provide users with intuitive interfaces for submitting feedback.
- REQ-2: Users shall be able to rate their dining experiences and provide textual comments or suggestions.
- REQ-3: The system shall validate and store user feedback securely in the database.
- REQ-4: Users shall receive confirmation messages upon successful submission of feedback.
- REQ-5: Administrators shall have access to view and analyze user feedback for continuous improvement.

4.4 System Feature 4: Secured Payment Procedures

4.4.1 Description and Priority:

This feature involves implementing secured payment procedures within the platform to ensure safe and reliable transactions for users making online bookings or purchases. Given the sensitivity of financial data and the importance of trust in payment processes, this feature is considered of paramount importance.

4.4.2 Stimulus/Response Sequences:

- Users initiate the payment process for bookings or purchases within the platform.

- The system redirects users to secure payment gateways or interfaces.
- Users enter their payment details and confirm the transaction.
- The system processes the payment securely and provides confirmation of the transaction status.

4.4.3 Functional Requirements:

- REQ-1: The system shall integrate with secure payment gateways to facilitate transactions.
- REQ-2: Users' payment information shall be encrypted and securely transmitted to the payment gateway.
- REQ-3: The system shall support multiple payment methods, including credit/debit cards and digital wallets.
- REQ-4: Users shall receive confirmation messages upon successful payment transactions.
- REQ-5: The system shall comply with industry standards and regulations for payment security, such as PCI DSS.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Response Time: The system should respond to user actions (e.g., search queries, booking requests) within 2 seconds under normal load conditions.

Scalability: The system should be able to handle a 50% increase in user traffic without a significant degradation in performance, ensuring scalability as user demand grows.

Peak Load Handling: During peak usage periods, such as weekends or holidays, the system should maintain acceptable performance levels, with response times not exceeding 5 seconds for any user action.

Database Query Performance: Database queries should be optimized to retrieve data efficiently, with no query taking longer than 500 milliseconds to execute.

5.2 Safety Requirements

User Safety: The application should provide accurate and reliable food safety information to users to prevent potential health risks associated with dining at restaurants.

Data Integrity: Safeguards should be in place to ensure the integrity of food safety data, preventing the dissemination of false or misleading information that could harm users.

Regulatory Compliance: The application should comply with relevant food safety regulations and standards to protect user health and safety.
Certification: The application should obtain relevant safety certifications to demonstrate its commitment to user safety and compliance with industry standards.

5.3 Security Requirements

- Authentication: Users should be required to authenticate their identity using secure authentication mechanisms (e.g., password, biometrics) before accessing sensitive features or data.
- Access Controls: Role-based access controls should be implemented to restrict access to sensitive information based on user roles and permissions.
- Compliance: The application should comply with relevant security and privacy regulations (e.g., GDPR, HIPAA) to protect user data and privacy rights.
- Data Encryption: All sensitive user data, including personal details and payment information, should be encrypted both in transit and at rest to protect against unauthorized access.

5.4 Software Quality Attributes

- Reliability: The application should operate reliably under various conditions, minimizing downtime and system failures to ensure uninterrupted service.
- Maintainability: The application should be designed with modularity and maintainability in mind, allowing for easy updates and enhancements to support long-term viability.
- Security: The application should implement robust security measures to protect user data and transactions, ensuring privacy and preventing unauthorized access or breaches.
- Usability: The application should prioritize ease of use, with intuitive interfaces and clear navigation to enhance user experience.

5.5 Business Rules

- Booking Policies: Users should adhere to specific booking policies (e.g., cancellation deadlines, payment procedures) defined by the application to ensure fair and efficient booking processes.
- User Roles: Different user roles (e.g., admin, regular user) should have distinct permissions and capabilities within the system.

6. Other Requirements

- Database Requirements: The application should use a relational database management system (e.g., MySQL, PostgreSQL) to store and manage data effectively.
- Internationalization: The application should support multiple languages and currencies to cater to a diverse user base.
- Legal Compliance: The application should comply with relevant legal requirements and regulations governing online booking and food safety information dissemination.

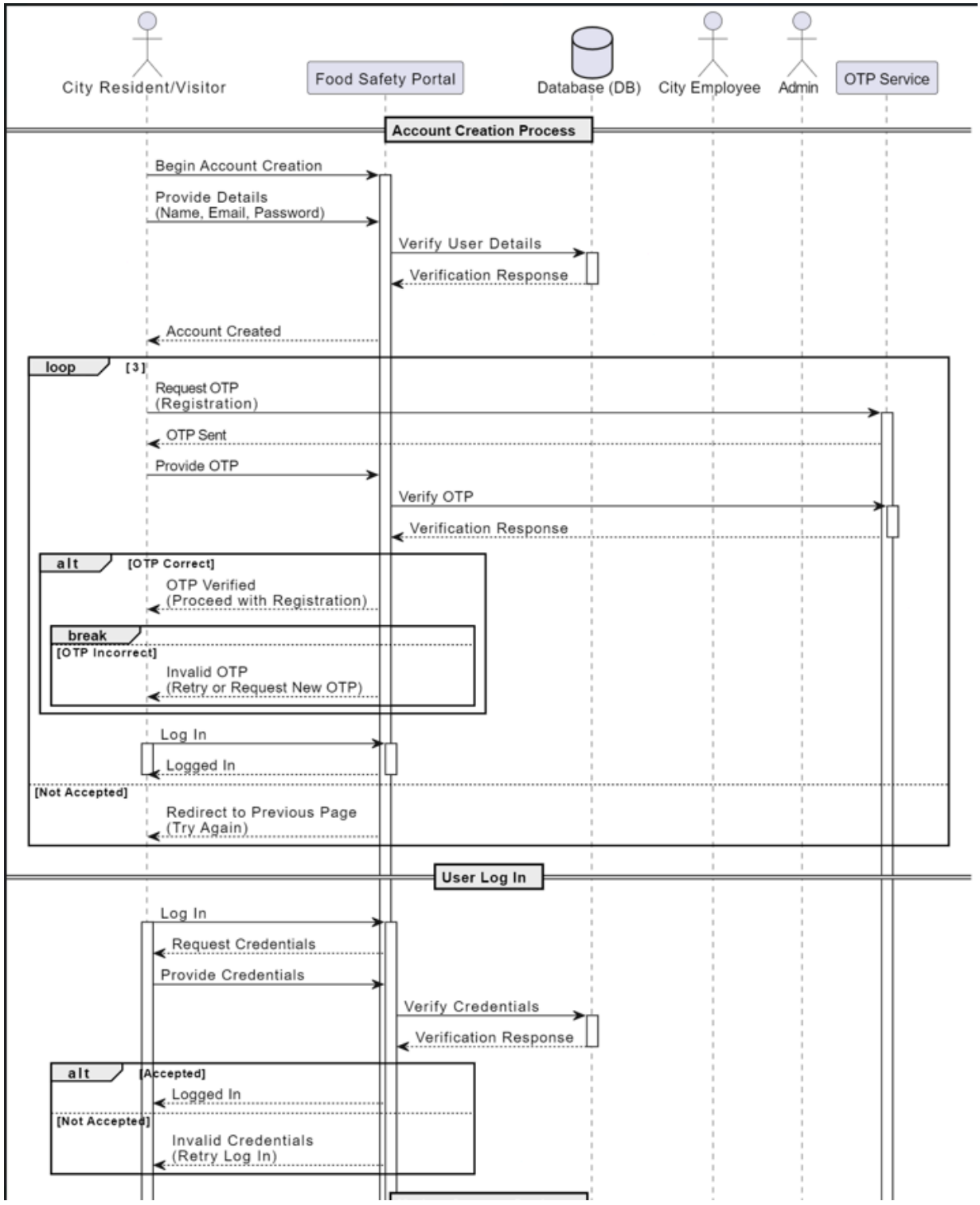
Appendix A: Glossary

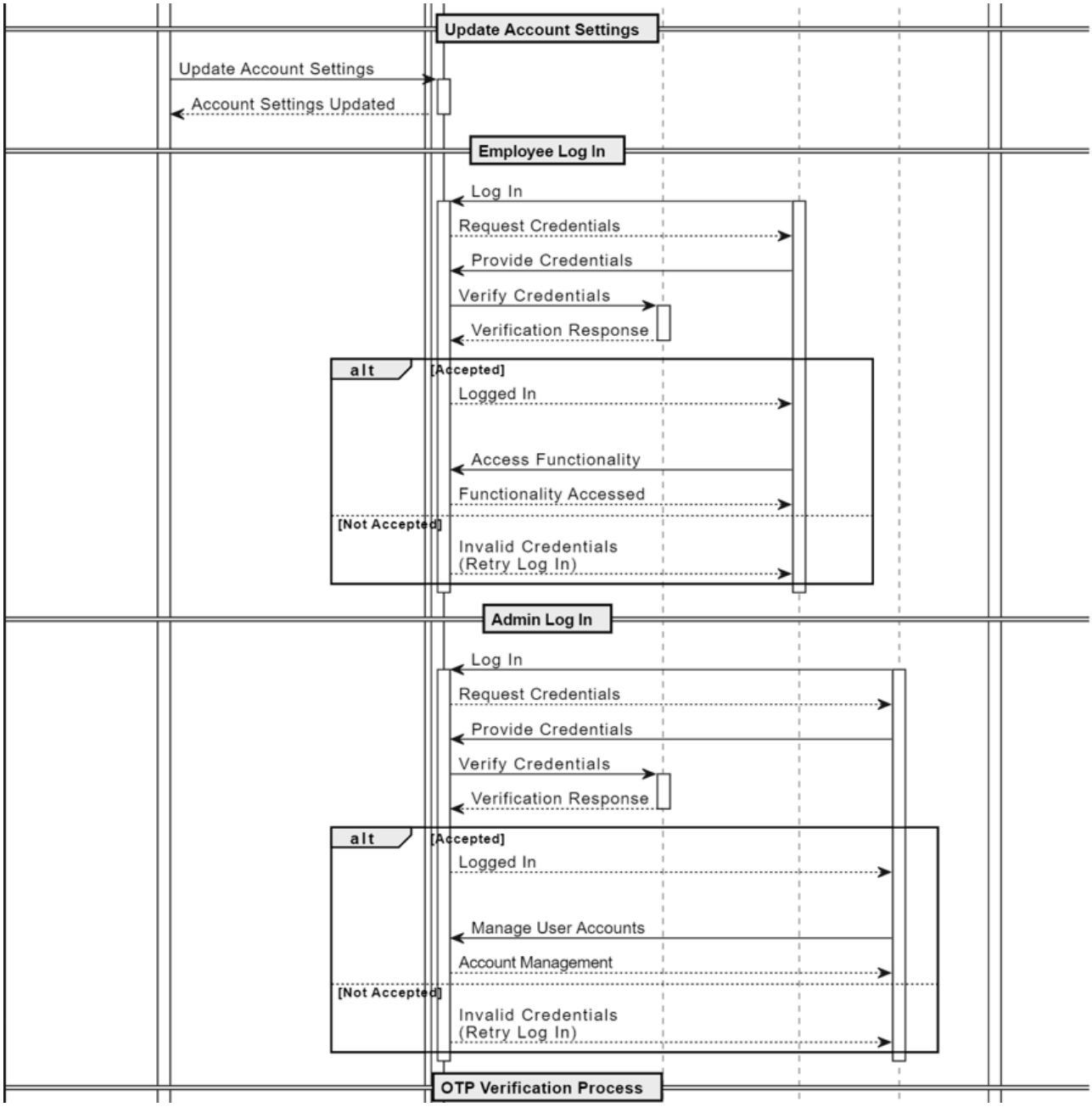
- HTTP: Hyper Text Transfer Protocol
- FSP: Food Safety Portal
- API: Application Programming Interface.

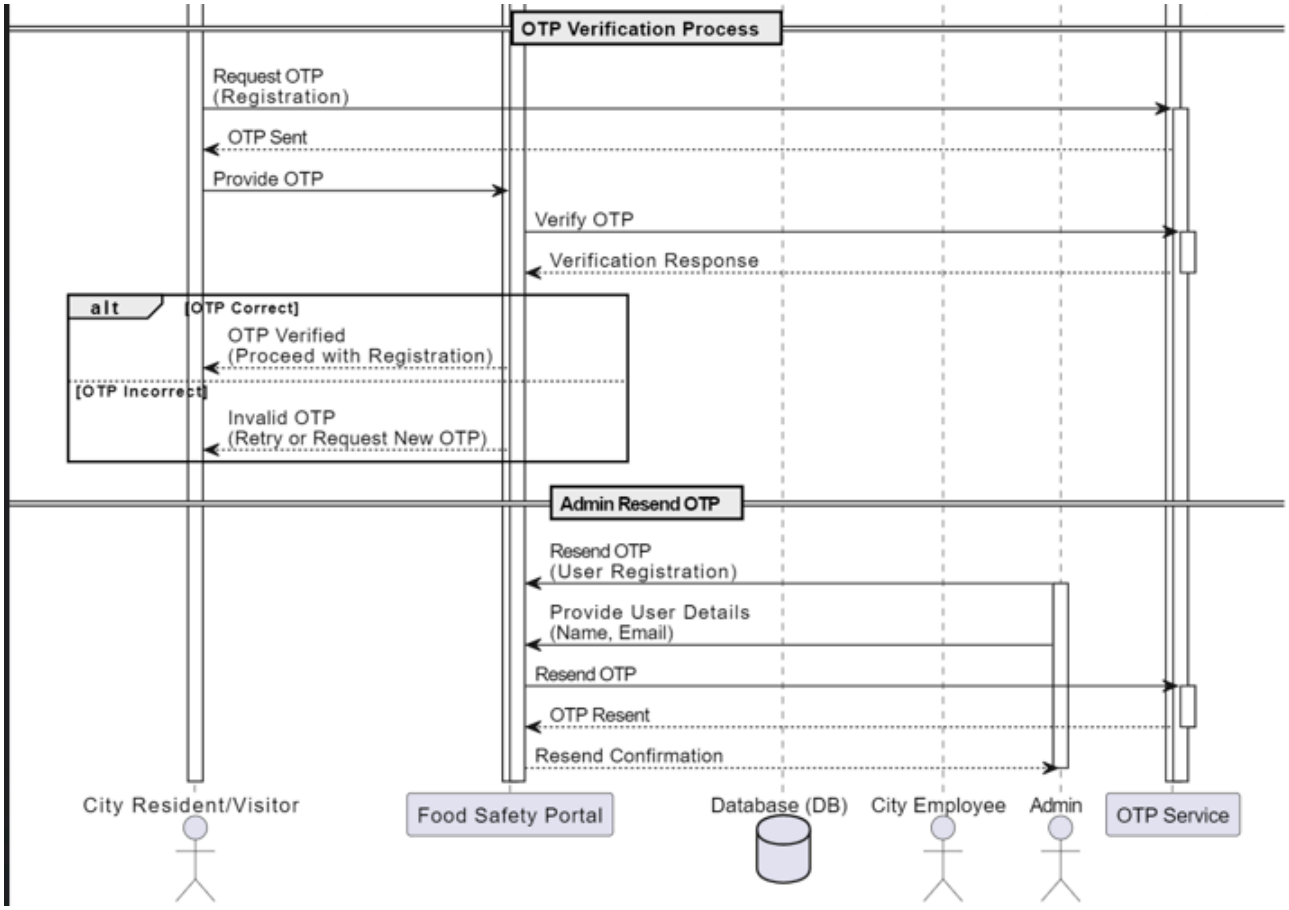
- MySQL: My Structured Query Language

Uml diagrams :

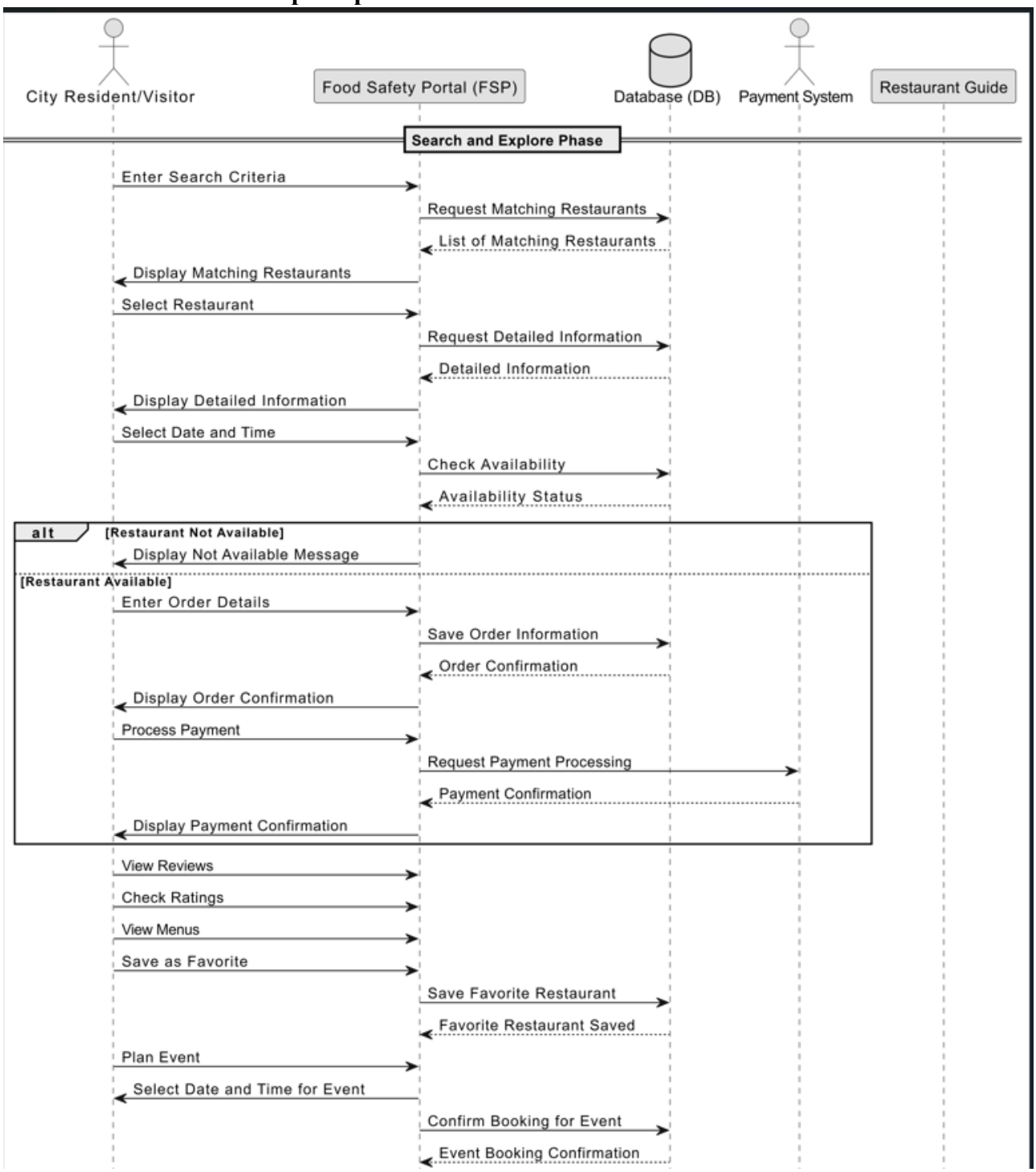
scenario 1: login and registration

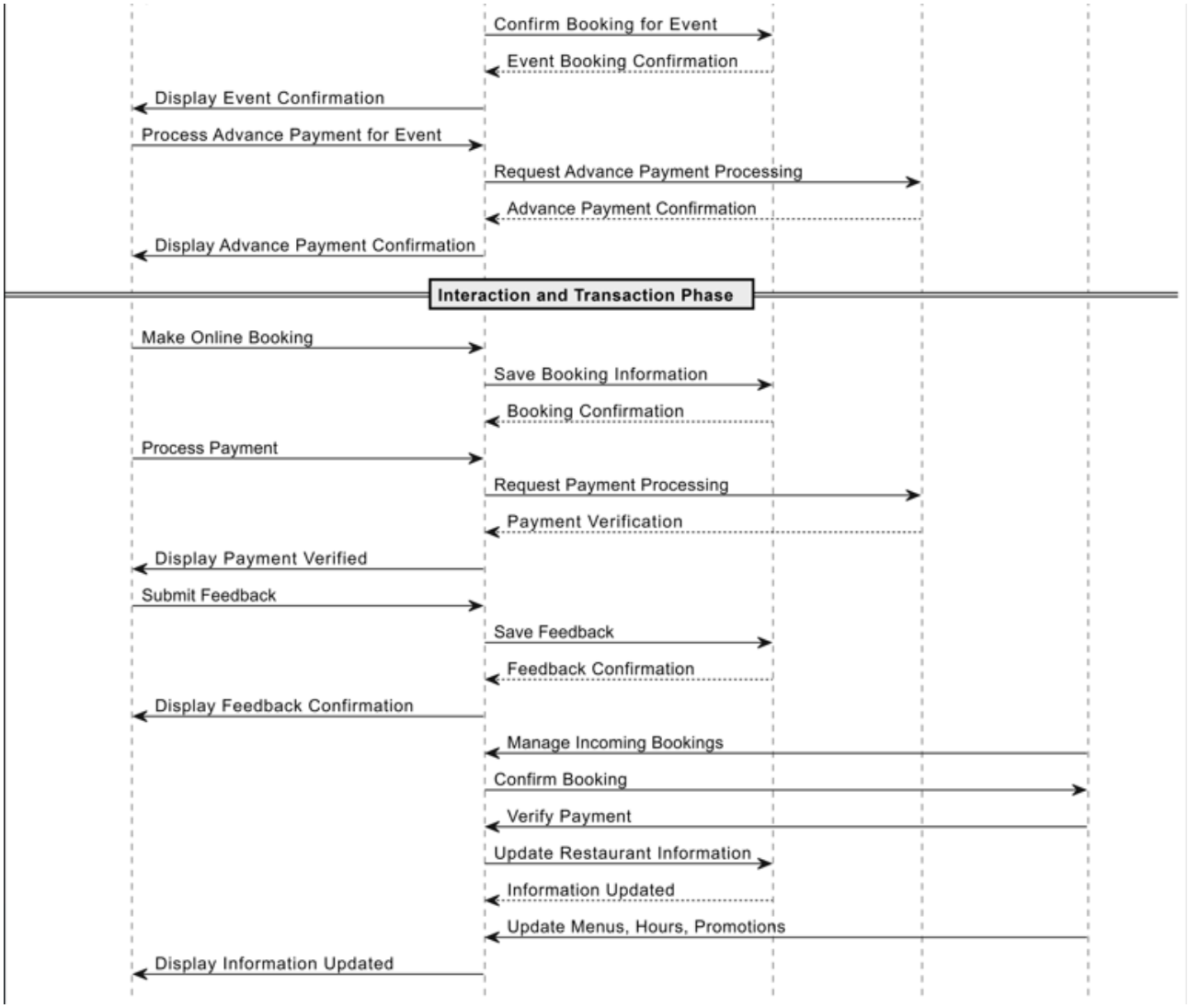



Update Account Settings
Update Account Settings
Account Settings Updated
Employee Log In
Log In
Request Credentials
Provide Credentials
Verify Credentials
Verification Response
alt
[Accepted]
Logged In
Access Functionality
Functionality Accessed
[Not Accepted]
Invalid Credentials
(Retry Log In)
Admin Log In
Log In
Request Credentials
Provide Credentials
Verify Credentials
Verification Response
alt
[Accepted]
Logged In
Manage User Accounts
Account Management
[Not Accepted]
Invalid Credentials
(Retry Log In)
OTP Verification Process

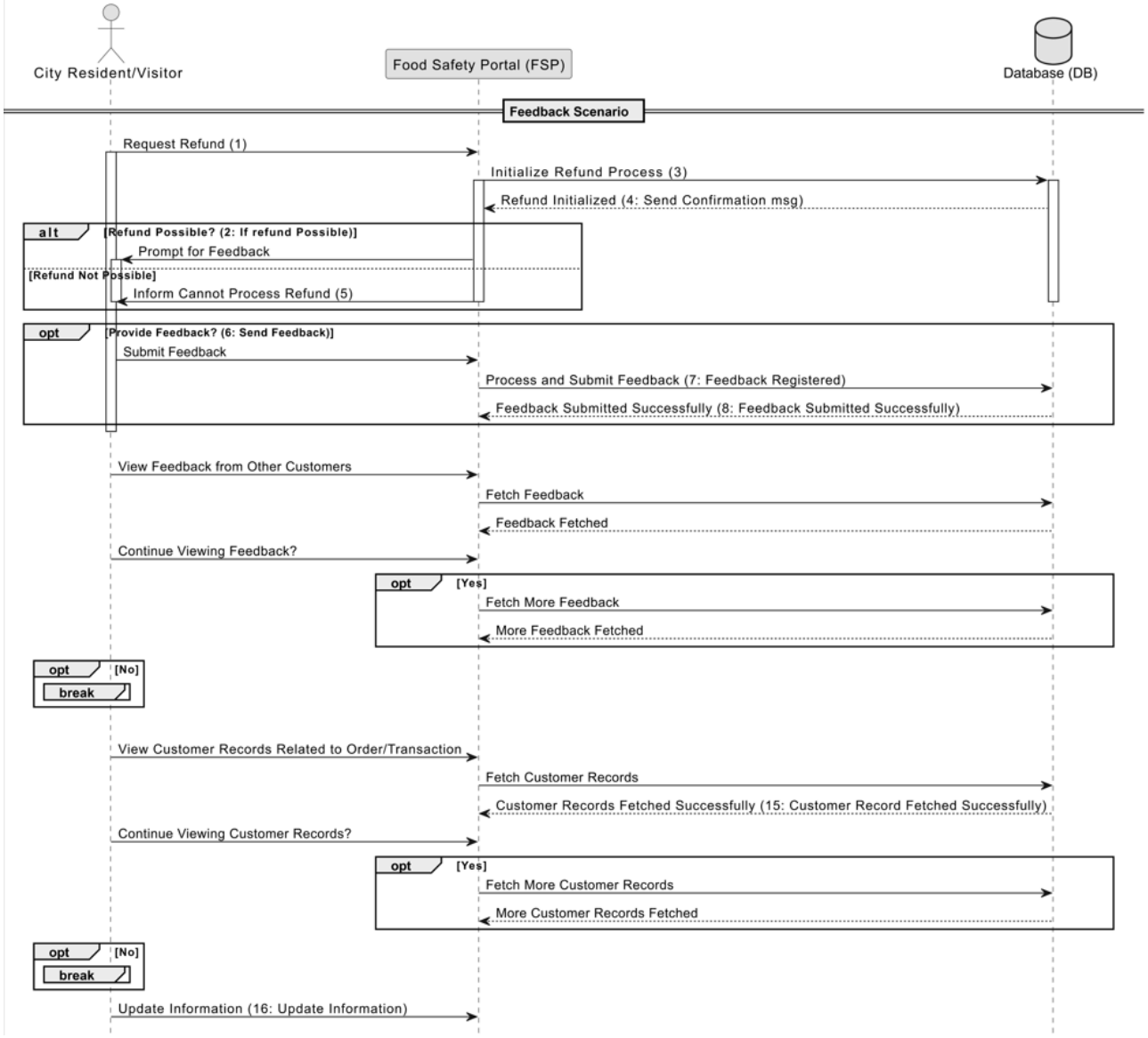

OTP Verification Process
Request OTP
(Registration)
OTP Sent
Provide OTP
Verify OTP
Verification Response
alt
[OTP Correct]
OTP Verified
(Proceed with Registration)
[OTP Incorrect]
Invalid OTP
(Retry or Request New OTP)
Admin Resend OTP
Resend OTP
(User Registration)
Provide User Details
(Name, Email)
Resend OTP
OTP Resent
Resend Confirmation
City Resident/Visitor
Food Safety Portal
Database (DB)
City Employee
Admin
OTP Service

scenario 2 : Search and Explore phase



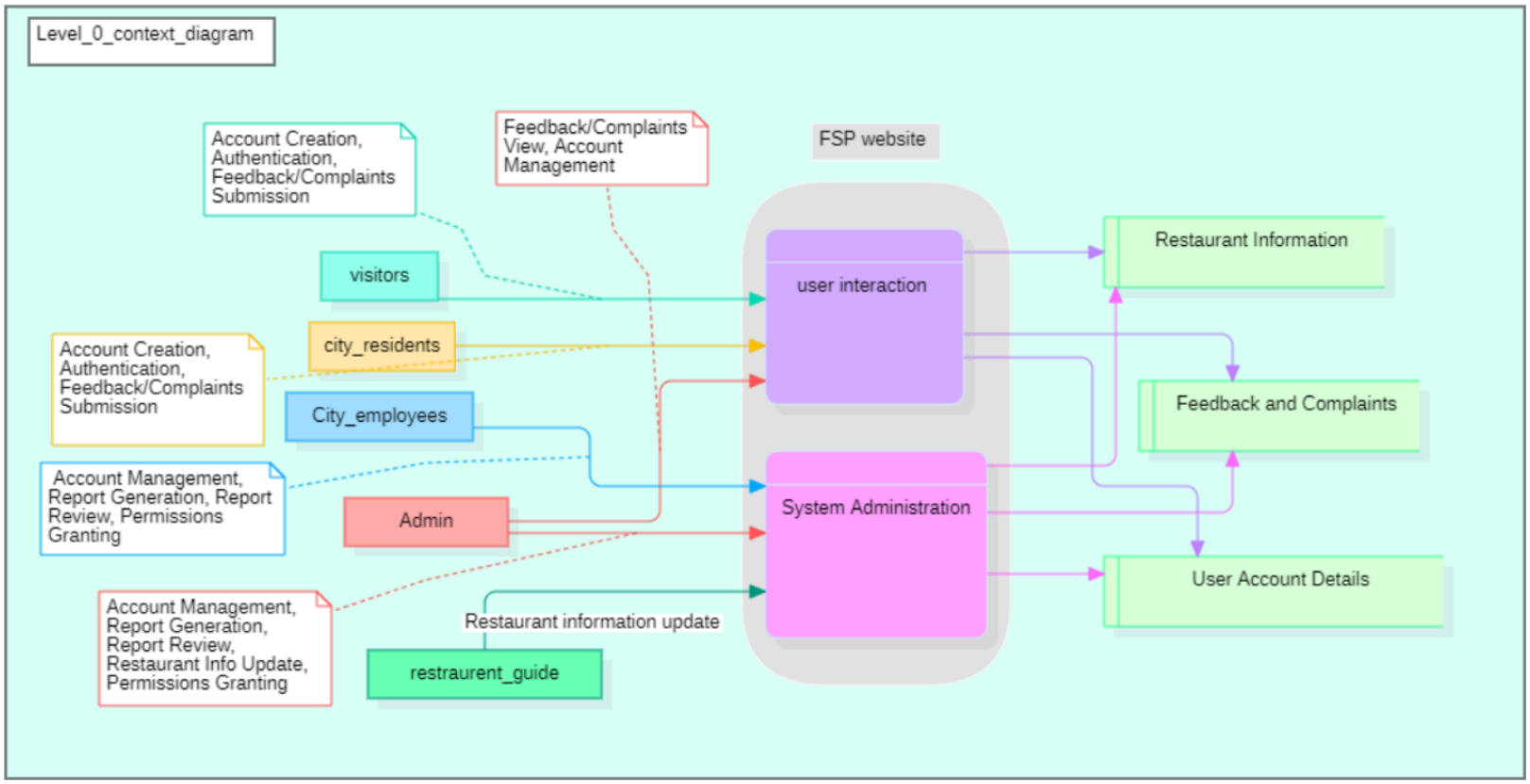

Confirm Booking for Event
Event Booking Confirmation
Display Event Confirmation
Process Advance Payment for Event
Request Advance Payment Processing
Advance Payment Confirmation
Display Advance Payment Confirmation
Interaction and Transaction Phase
Make Online Booking
Save Booking Information
Booking Confirmation
Process Payment
Request Payment Processing
Payment Verification
Display Payment Verified
Submit Feedback
Save Feedback
Feedback Confirmation
Display Feedback Confirmation
Manage Incoming Bookings
Confirm Booking
Verify Payment
Update Restaurant Information
Information Updated
Update Menus, Hours, Promotions
Display Information Updated

scenario 3: Admin and feedback

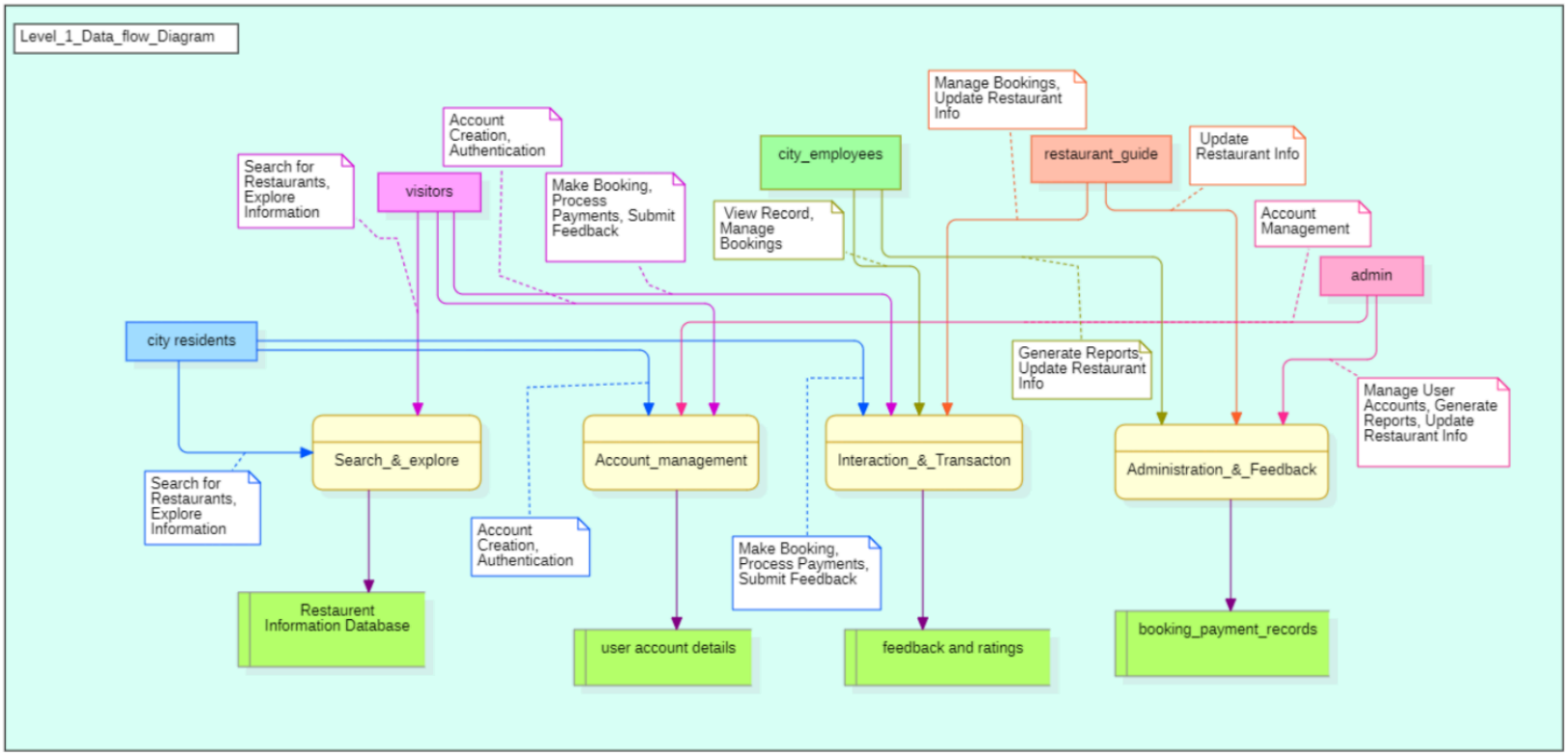


Data flow diagrams

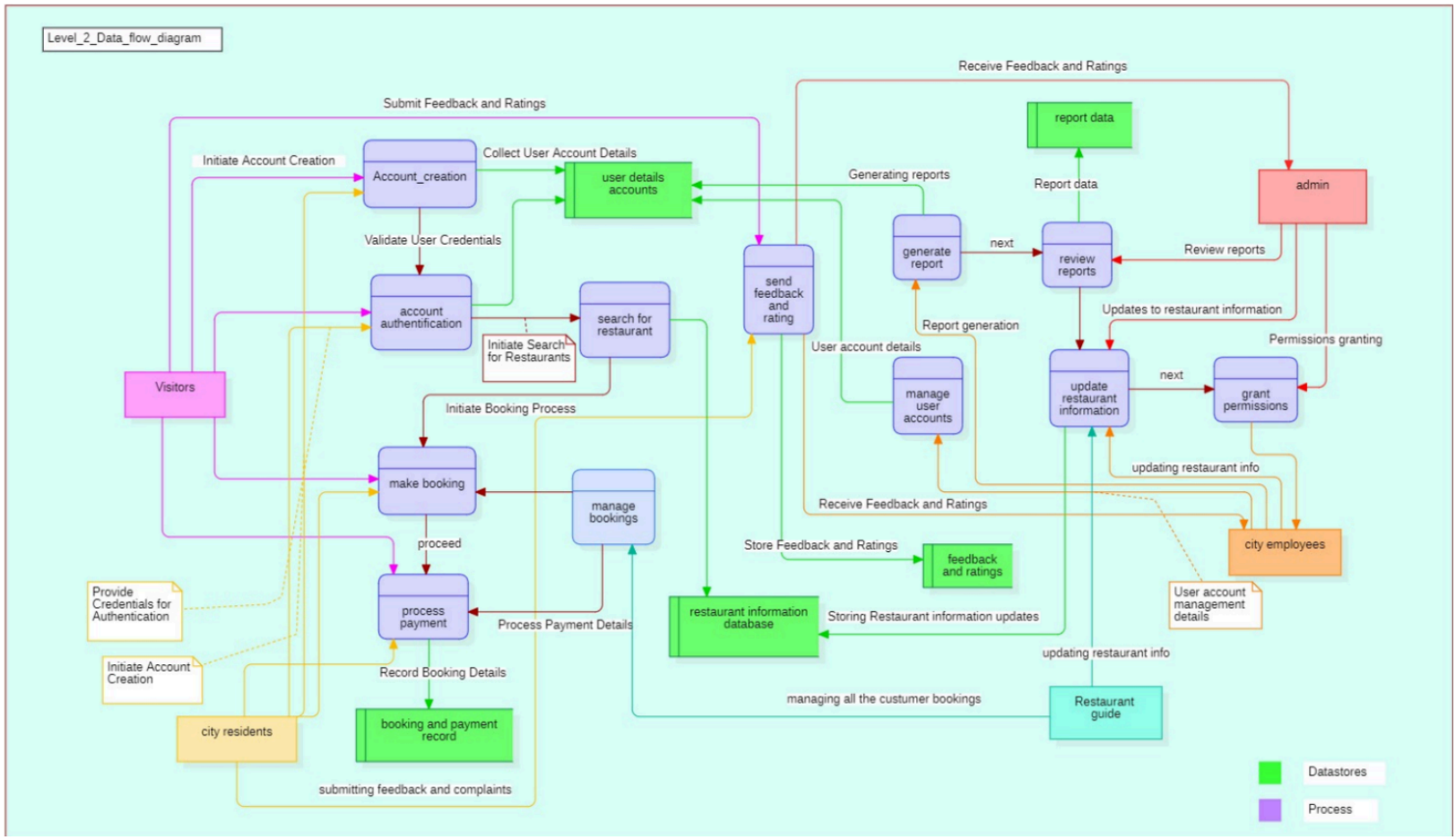
level 0: contextdiagram



level 1


Level_1_Data_flow_Diagram
Manage Bookings, Update Restaurant Info
Account Creation, Authentication
city_employees
restaurant_guide
Update Restaurant Info
Search for Restaurants, Explore Information
visitors
Make Booking, Process Payments, Submit Feedback
View Record, Manage Bookings
Account Management
admin
city residents
Generate Reports, Update Restaurant Info
Manage User Accounts, Generate Reports, Update Restaurant Info
Search_&_explore
Account_management
Interaction_&_Transacton
Administration_&_Feedback
Search for Restaurants, Explore Information
Account Creation, Authentication
Make Booking, Process Payments, Submit Feedback
Restaurent Information Database
user account details
feedback and ratings
booking_payment_records

level 2:


Level_2_Data_flow_diagram
Receive Feedback and Ratings
Submit Feedback and Ratings
report data
Initiate Account Creation
Account_creation
Collect User Account Details
user details accounts
Generating reports
Report data
admin
Validate User Credentials
generate report
next
review reports
Review reports
account authentification
search for restaurant
send feedback and rating
Updates to restaurant information
Report generation
Permissions granting
User account details
Initiate Search for Restaurants
Visitors
manage user accounts
update restaurant information
next
grant permissions
Initiate Booking Process
updating restaurant info
make booking
manage bookings
Receive Feedback and Ratings
proceed
Store Feedback and Ratings
feedback and ratings
city employees
Provide Credentials for Authentication
process payment
restaurant information database
Storing Restaurant information updates
User account management details
Process Payment Details
Initiate Account Creation
Record Booking Details
updating restaurant info
managing all the custumer bookings
Restaurant guide
city residents
booking and payment record
submitting feedback and complaints
Datastores
Process