Aim: To construct Component Diagram and Deployment Diagram to depict the structural view of the system.

Theory:

COMPONENT DIAGRAM:

1) Search Restaurant:

● Login: This component manages user authentication, including username/password verification and session management.
● ISafetyGuideline: This interface defines safety guidelines that various system components must adhere to.
● IDatabase: This interface abstracts interactions with the database, providing a standardized way for components to communicate with it.
● Fetch details: This component retrieves information from data sources, potentially interacting with the database or external systems.
● Filtering System: This component applies criteria or rules to refine datasets within the system. ● User Interface: This component encompasses all modules responsible for presenting information to users and capturing user input.
● Review System: This subsystem manages reviews, including functionalities for submitting, viewing, and managing review-related data.
● Review: A subcomponent of the Review System, focusing on individual review management. ● (Review Give Feedback): Represents the operation of providing feedback on reviews. ● (Review Give rating): Represents the operation of rating reviews based on user experience or opinion. ● Safety Guideline System: A subsystem dedicated to managing safety guidelines within the system.
● User Account Manager: This component handles user account management tasks, such as creating accounts and managing user profiles.
● Authentication: Manages the authentication process, verifying user identities.
● Database: Denotes a dependency relationship between components and the Database, indicating interaction or reliance on it.
● Food Category: Represents a classification system for different types of food within the system. ● Restaurant: Represents restaurants within the system, indicating functionalities related to managing restaurant data.
● Rating: Manages the process of rating items within the system, such as restaurants or dishes.
● Give Feedback: Allows users to provide feedback within the system.
● Give rating: Allows users to provide ratings within the system.
● Search Restaurant: Enables users to search for restaurants based on various criteria. ● Feedback: Represents feedback data or functionality within the system, including storage and management of user-provided feedback.

2) Booking and Payment:

● IBooking: This component defines an interface for booking functionalities, abstracting the specific implementation details. It provides standardized methods for other components to interact with booking-related operations.

- IDelivery: Similarly, this component defines an interface for delivery functionalities, abstracting delivery operations. It offers a standard interface for communication with other components regarding delivery-related tasks.
- Transaction: This component manages transaction-related functionalities, such as processing payments and managing financial transactions associated with bookings and deliveries.
- IDatabase: An interface component that provides an abstraction for interacting with the database. It enables other components to access and manipulate data stored in the database without needing to know implementation details.
- Database: Represents the actual database system within the architecture, storing various data types, including booking information, delivery details, payment records, etc.
- Booking: Handles booking-related tasks like making reservations, managing bookings, and handling booking requests from users.
- Payment: Manages payment-related functionalities, including processing payments for bookings and deliveries.
- Online Booking: This component is a subsystem dedicated to handling online booking functionalities specifically. It includes features like online reservation forms and availability checking.
- (Port): Ports serve as interaction points allowing components to communicate with each other. Here, the port is associated with the "Online Booking" component, indicating interaction with other components. ● (Online Booking > Booking): Denotes a dependency relationship, indicating that the "Online Booking" component depends on or interacts with the "Booking" component.
- Reservation: Manages and processes reservations within the system.
- Delivery: Denotes a dependency relationship between components, indicating a dependency between the "Reservation" and "Delivery" components.
- UI Interface: Represents the user interface of the system, including modules responsible for presenting information to users and capturing user input.
- Make Payment: Handles the process of making payments within the system, likely associated with payment functionality.
- Order: Handles functionalities related to placing orders within the system, possibly associated with both booking and delivery processes.
- Review: Manages functionalities related to user reviews or feedback, allowing users to review their experiences with bookings or deliveries.
- Account: Manages user account functionalities, such as creating accounts, managing profiles, and storing user-related information.
- database: Denotes a subsystem or module dedicated to managing the database within the system architecture.
- Delivery Options: Manages functionalities related to providing users with options for delivery services, such as delivery time slots and methods.
- Payment Options: Manages functionalities related to providing users with various payment options, such as credit card and PayPal.

3) User Management System:

● Approve data changes: Responsible for approving changes to data within the system. ● Validate Credential: Verifies the authenticity of user credentials during the authentication process. ● Manage records: Handles the management of various records within the system.

- ● Add or Delete User: Manages the addition or removal of users from the system.
- ● User Management: Oversees the management of user-related functionalities.
- ● Restaurant Guide: Represents a subsystem or module dedicated to providing guidance related to restaurants.
- ● (Restaurant Guide Open and Close activity): Manages the opening and closing activities of the restaurant guide.
- ● Generate reports: Responsible for generating reports within the restaurant guide subsystem. ● (Restaurant Guide > Admin): Denotes a dependency relationship between the Restaurant Guide and the Admin component.
- ● (Restaurant Guide Approve data changes): Indicates a specific dependency between the Restaurant Guide and the approval of data changes.
- ● (Restaurant Guide > Restaurant Guide): Represents an internal interaction within the Restaurant Guide subsystem.
- ● City Employee: Indicates a dependency relationship between the City Employee component and other components.
- ● Admin: Manages administrative tasks within the system.
- ● Port1: An interaction point allowing components to communicate with each other. ● Grant Access: Grants access to specific resources or functionalities within the system. ● (Admin > Allow website access): Denotes a dependency relationship between the Admin component and allowing website access.
- ● Database: Represents the database system within the architecture.
- ● Validate report: Validates generated reports within the system.
- ● Manage users: Handles user management functionalities within the system.
- ● Check Safety Guidelines: Ensures adherence to safety guidelines within the system.
- ● Add Restaurant: Manages the addition of new restaurants to the system.
- ● Restaurant Review Handling: Handles the processing of restaurant reviews within the system. ● Open and close activities: Manages the opening and closing activities within the system. ● User Interface: Represents the user interface of the system, including modules responsible for user interaction.
- ● User: Represents the user entity within the system.
- ● Authorization Service: Manages authorization processes within the system.
- ● Backend Services: Represents the backend services responsible for supporting various functionalities within the system.
- ● Verification Controller: Controls the verification processes within the system.

DEPLOYMENT DIAGRAM:

Search Restaurant:
- This component represents the functionality for searching restaurants within the system.

User Interface:
- The user interface through which users interact with the system.

Backend Server:
- The server-side component responsible for handling backend operations and logic.

Login Module:
- Manages user authentication and login functionality.

Safety Guideline Module:
- Handles safety guideline-related functionalities.

Filter:
- Implements filtering functionalities within the system.

Booking Module:
- Manages booking-related operations and functionalities.

Payment Module:
- Handles payment processing functionalities.

Database:
- Represents the database system storing system data.

User Management Module:
- Manages user-related operations such as user registration and profile management.

Web Server:
- Hosts the web-based components and serves web requests.

Interface1:
- Represents an interface for communication between different servers or components.

(Web Server Authentication Server):
- Denotes the connection between the Web Server and the Authentication Server for handling authentication requests.

(Web Server Booking Server):
- Represents the connection between the Web Server and the Booking Server for booking-related functionalities.

(Web Server Payment Server):
- Represents the connection between the Web Server and the Payment Server for payment processing.

(Web Server-Authentication Server):
- Another connection between the Web Server and the Authentication Server.

(Web Server-Database Server):
- Denotes the connection between the Web Server and the Database Server for accessing and storing data.

(Web Server-User Management Server):
- Represents the connection between the Web Server and the User Management Server for user-related operations.

Authentication Server:
- Handles authentication-related functionalities.

(Authentication Server-Guidelines Server):
- Represents the connection between the Authentication Server and the Guidelines Server for managing safety guidelines.

(Authentication Server-Filtering Server):
- Denotes the connection between the Authentication Server and the Filtering Server for implementing filtering functionalities.

(Authentication Server-Search Restaurant):

- Connection between the Authentication Server and the Search Restaurant module.

Guidelines Server:

- Manages safety guidelines within the system.

Filtering Server:

- Implements filtering functionalities.

Booking Server:

- Handles booking-related operations.

Payment Server:

- Processes payment transactions.

Database Server:

- Represents the server hosting the database system.

User Management Server:

- Handles user management operations.

Result: Component and Deployment diagrams have been designed and studied.