Practical SE Lab

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CSE B1

Aim: To design a Component and Deployment Diagram to represent the structural view of the system.

Theory:

Phase 1

Component Diagram for User Registration and Authentication:

Phase Purpose of Scenario: To illustrate the components involved in the registration, authentication, and account management process for City Residents, Visitors, City Employees, and Admin.

Detailed Explanation of Components:

City Residents and Visitors:

1. *Account Management Component:*
   - Responsible for handling account creation and management functionalities.
   - Receives account creation requests from users and processes them.
   - Transition to the "Account Created" state upon successful account creation.
2. *Authentication Component:*
   - Manages user authentication and login processes.
   - Validates user credentials and grants access upon successful authentication.
   - Transition to the "Logged In" state upon successful login.
3. *Account Settings Component:*
   - Facilitates the customization of account settings and preferences.
   - Allows users to update their account details for a tailored experience.
   - Transition to the "Account Settings Updated" state after settings modification.

City Employees:

1. *Authentication Component:*
   - Functions similarly to the authentication component for City Residents and Visitors.
   - Validates city employee credentials and grants access to specific functionalities.
   - Transition to the "Logged In" state upon successful login.
2. *Functionality Access Component:*
   - Provides access to functionalities tailored to city employee roles within the system.
   - Allows city employees to perform tasks specific to their responsibilities.
   - Transition to the "Functionality Accessed" state after accessing functionalities.

Admin:

1. *Authentication Component:*
   - Utilizes unique credentials for admin login authentication.
   - Grants access to administrative functionalities upon successful authentication.
   - Transition to the "Logged In" state upon successful login.
2. *Account Management Component:*
   - Manages user accounts and ensures security and integrity.
   - Allows the admin to oversee and perform actions related to user accounts.
   - Transition to the "Account Management" state after managing user accounts.

This component diagram outlines the key components involved in the user registration, authentication, and account management process, distinguishing between functionalities for different user roles.

Phase 2

Component Diagram for Search and Explore:

Phase Purpose of Scenario: To demonstrate the components responsible for searching for restaurants, exploring detailed information, and receiving personalized recommendations.

Detailed Explanation of Components:

City Residents and Visitors:

1. *Search Component:*
   - Facilitates restaurant search based on user preferences and criteria.
   - Receives search queries and retrieves relevant restaurant information.
   - Transition to the "Search Initiated" state upon initiating a search.
2. *Explore Component:*
   - Provides detailed information about various restaurants, including reviews and menus.
   - Allows users to explore and gather information about specific establishments.
   - Transition to the "Information Explored" state after exploring information.
3. *Recommendation Component:*
   - Generates personalized recommendations based on user preferences and past interactions.
   - Presents recommended restaurants to users for enhanced user experience.
   - Transition to the "Recommendations Received" state after receiving recommendations.

This component diagram illustrates the components responsible for enabling users to search for restaurants, explore detailed information, and receive personalized recommendations, enhancing their overall experience with the system.

Phase 3
Component Diagram for Interaction and Transaction:

Phase Purpose of Scenario: To depict the components involved in making online bookings, processing payments, and providing feedback on dining experiences.

Detailed Explanation of Components:

City Residents and Visitors:

1. *Booking Component:*
   - Facilitates the booking process for preferred restaurants.
   - Allows users to select and book tables based on availability.
   - Transition to the "Booking Made" state upon successful booking.
2. *Payment Component:*
   - Manages payment transactions securely for restaurant bookings.
   - Ensures smooth processing of payments for confirmed bookings.
   - Transition to the "Payment Processed" state after successful payment processing.
3. *Feedback Component:*
   - Enables users to provide ratings, comments, and feedback on dining experiences.
   - Collects user feedback to improve services and customer satisfaction.
   - Transition to the "Feedback Submitted" state after submitting feedback.

Restaurant Guide:

1. Booking Management Component:
   - Manages and confirms incoming online bookings for restaurants.
   - Verifies and acknowledges successful bookings for further processing.
   - Transition to the "Booking Confirmed" state upon confirming bookings.
2. Information Update Component:
   - Allows restaurant guides to update restaurant information, including menus and promotions.
   - Ensures that restaurant information is accurate and up-to-date for users.
   - Transition to the "Information Updated" state after updating restaurant information.

This component diagram outlines the key components involved in the interaction and transaction process, illustrating the functionalities for users and restaurant guides in making bookings, processing payments, and providing feedback.

Deployment Diagram

The main components of the system are:

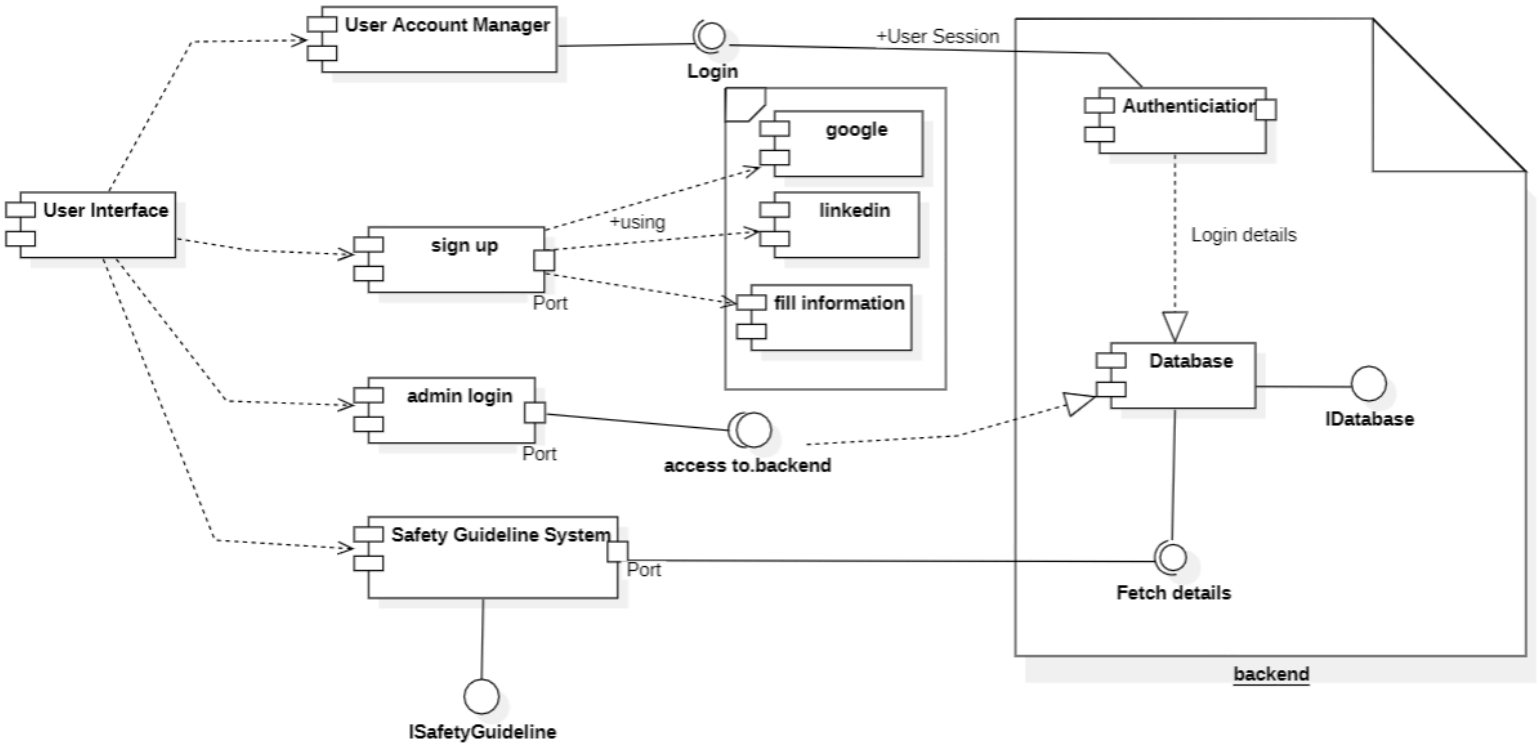
- ☐ Deployment monitoring service: This component is responsible for monitoring the performance and availability of the system and ensuring that it is running smoothly.
- ☐ Restaurant guide and employees: This component provides information about different restaurants and their employees, including their menus, ratings, and reviews.
- ☐ Authentication server: This component is responsible for authenticating users and verifying their credentials before granting them access to the system.
- ☐ Web server: This component serves the user interface of the system to the users.
- ☐ Backend server: This component handles the business logic of the system and communicates with the database server to retrieve and store data.
- ☐ Database server: This component stores the data of the system, including user accounts, feedback, records, complaints, and restaurant data.
- ☐ Guidelines server: This component provides safety guidelines to the users and ensures that they are following the rules and regulations.
- ☐ User management server: This component manages the user accounts and permissions, and provides a user management interface for the administrators.
- ☐ Filtering server: This component filters the data based on the user's preferences and provides a filtered view of the data.
- ☐ Payment server: This component handles the payment processing for the bookings and other transactions.
- ☐ Booking server: This component manages the bookings and provides a booking interface for the users.

Result: component and deployment diagram has been designed and studied.

(Screenshot is attached below and also jpeg is uploaded with this docx)

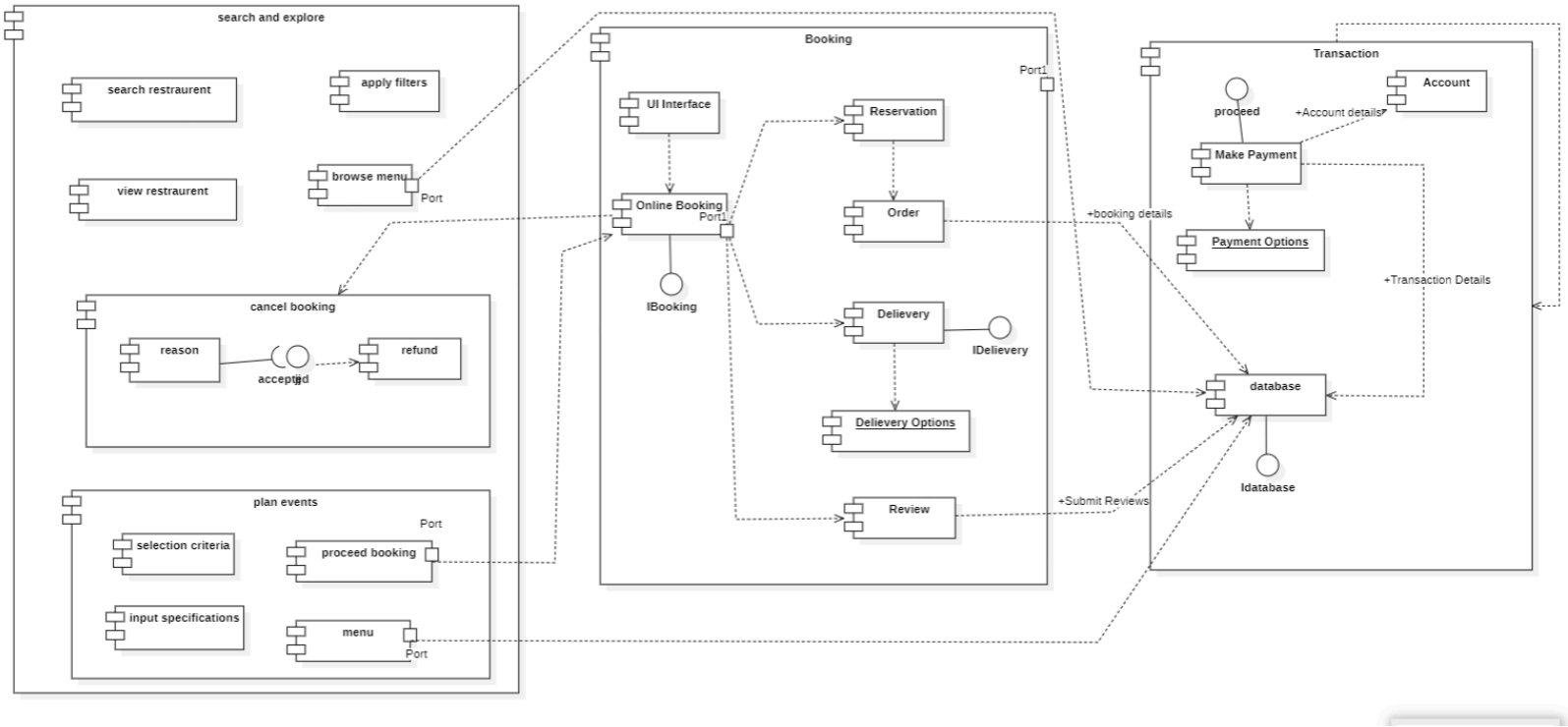
SCENARIO 1 : REGISTRATION AND AUTHORIZATION (USER& ADMIN)

admin resgistration and authorization

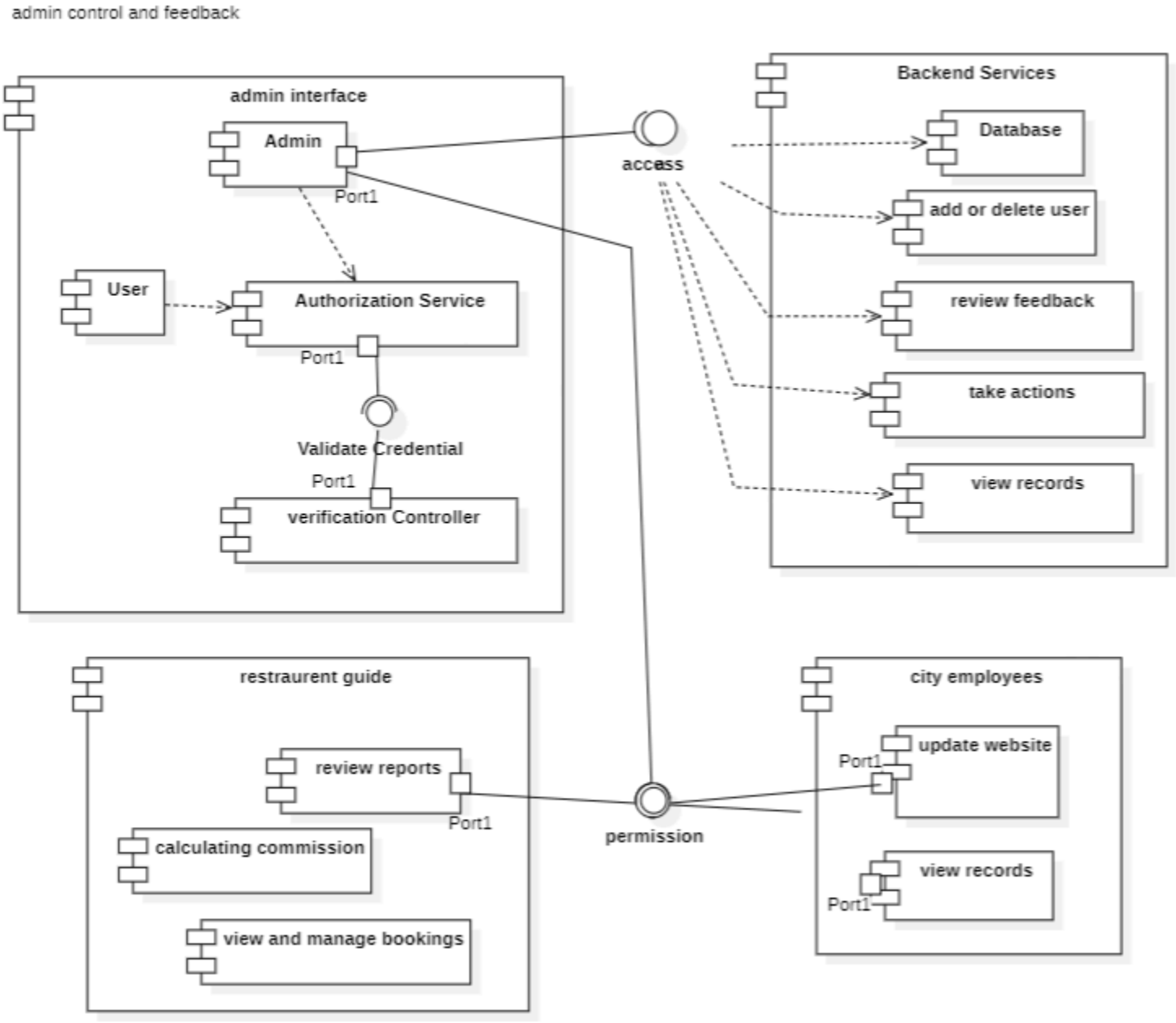


SCENARIO 2 : SEARCH AND EXPLORE

Search and Explore scenario



SCENARIO 3 : ADMIN CONTROL AND FEEDBACK



DEPLOYMENT DIAGRAM