CSCI 22032 – Group Project

1. **You are tasked with creating a Use Case Diagram for the FoodieFinds application, a popular restaurant reservation and food delivery service. The diagram should capture the various functionalities and interactions within the application. Consider the following scenario:**

   As a user of the FoodieFinds application, you can register as a customer, allowing you to create a new account and access the app's full features. Once registered, you can log in to your account to authenticate and manage your reservations and food orders.

   When you want to dine out, you can search for restaurants and make a reservation for a specified date and time. You should also have the option to cancel the reservation if your plans change. If you prefer to dine at home, you can browse the menu of various restaurants and place a food order for delivery.

   On the restaurant's side, they can update their menu, manage reservations, and process food orders. They can confirm reservations and update the status of food orders (e.g., preparing, out for delivery, delivered).

   Additionally, the administrator of the FoodieFinds application has specific functionalities. The administrator can manage user accounts, including creating new accounts, disabling or deleting accounts if necessary. They also have access to general system settings and configurations, enabling them to maintain and update the application.

   Both customers and restaurant managers can manage their profile information, including personal details and payment information. Additionally, they can access their order/reservation history to review past interactions.

   1. List all the actors and their types (Primary actor, Secondary actor)
   2. List all the use cases
   3. List all the relationships between use cases and actors/use cases (Association, Include, Extend, Inheritance)
   4. Draw the Use Case Diagram for the FoodieFinds application

2. **You are tasked with creating a Class and Object Diagram for the FoodieFinds application, a popular restaurant reservation and food delivery service. The diagram should capture the various classes, their attributes, and methods along with their visibility and relationships between the classes, their types, and multiplicity. Consider the following scenario:**

   In the world of FoodieFinds, various components work together to ensure a seamless reservation and food ordering experience for customers and restaurants. Let's take a closer look at the entities involved in this system.

   At the heart of FoodieFinds is the "Customer" class, representing individuals who use the app to make reservations and order food. Each customer has variables such as name, contact information, and a unique identifier. Customers can access various functionalities, including searching for restaurants, making reservations, placing food orders, and providing feedback.

   On the other side, we have the "Restaurant" class, representing dining establishments that offer reservations and food delivery services. Restaurants have variables like name, contact information, and a restaurant ID. They also have access to functionalities like updating menus, managing reservations, and processing food orders.

   To facilitate the reservation and ordering process, there is the "Reservation" class. This class represents individual reservations made by customers. It contains variables such as reservation ID, date, time, and status. It also has methods to confirm reservations and handle cancellations.

   Another crucial component is the "Order" class, representing food orders placed by customers. It has variables like order ID, items ordered, total cost, and status. The Order class has methods to update order status and calculate the total cost.

   Additionally, the "Menu" class represents the menu of a restaurant, containing variables like item name, price, and description. The Menu class is associated with the Restaurant class, allowing restaurants to manage their menu items.

   To ensure security and privacy, there is the "Authentication" class. It handles user authentication, ensuring that only authorized users can access the system. The Authentication class works with the Customer and Restaurant classes to authenticate and authorize their interactions.

Lastly, the "Payment" class handles payment-related functionalities within the system. It allows customers to make payments for their orders and reservations, ensuring secure transactions. The Payment class interacts with the Order and Reservation classes to process payments.

Tasks

1. List all the classes and their attributes and methods along with their visibility
2. List all the relationships between classes, their types (Inheritance, Association, Aggregation, Composition), and their multiplicity
3. Draw the Class Diagram and Object Diagram for the FoodieFinds application

3. **You are tasked with creating a Sequence Diagram for the FoodieFinds application, a popular restaurant reservation and food delivery service. The diagram should capture the various classes, their attributes, and methods along with their visibility and relationships between the classes, their types, and multiplicity. Consider the following scenario:**

Once upon a time in the world of FoodieFinds, a user named Nimal decided to make a reservation at their favorite restaurant using the FoodieFinds application. Nimal opened the app, searched for the restaurant, and selected the desired date and time for the reservation. Behind the scenes, the app was working to ensure the reservation was confirmed.

The app sent a request to the server, which in turn contacted the restaurant's system to check availability. The restaurant confirmed the availability, and the server sent a confirmation back to the app. Nimal received a notification about the confirmed reservation.

Meanwhile, the restaurant's manager, Mahela, saw the new reservation in their system and began preparing for Nimal's visit. Closer to the reservation time, Nimal received a reminder notification.

When the day arrived, Nimal visited the restaurant, enjoyed the meal, and provided feedback through the app.

Tasks

1. List all the actors and objects
2. List all the messages and the alternative paths
3. Draw the Sequence Diagram for the FoodieFinds application

Notes:

Please create all the diagrams using online tools or by hand drawing them. However, it is essential to provide answers to all the other questions in a PDF document. No other formats, such as hard copies or images, will be accepted.