Component: Customer	
SuperClasses: n/a	**SubClasses:** n/a
Responsibilities	**Collaborators**
Provide personal details (name, contact information)	n/a
Make reservations ('makeReservation()')	Reservation
Place orders {'placeOrder()')	Order
Receive updates on order status	Order
Save customer details to the database	n/a

Explanation:

The Customer class represents the end-user of the restaurant information system. It holds essential details about the customers, including their contact information which is crucial for managing reservations and orders. The class allows customers to interact with the system, such as making and tracking their reservations and orders, ensuring a personalized and efficient customer service experience.

Component: Reservation	
SuperClasses: n/a	**SubClasses:** n/a
Responsibilities	**Collaborators**
Record reservation details (date, time, number of guests)	Customer, Table
Manage reservation statuses (booked, cancelled, confirmed)	Table (Conceptual)
Check and update table availability	Table (Conceptual)
Save reservation details to the database	n/a

Explanation:

The Reservation class manages all aspects of booking a table at the restaurant. It is designed to hold the reservation's specifics and keep track of the status of each booking. Collaborating closely with the Customer class for inputs and the Table class for availability checks, it ensures that reservations are managed effectively, reducing the chance of overbooking, and improving the utilization of the restaurant's seating capacity.

Component: Order	
SuperClasses: n/a	**SubClasses:** n/a
Responsibilities	**Collaborators**
Track order items	MenuItem
Calculate and update total cost	Invoice
Manage order lifecycle (open, in preparation, served)	Kitchen
Communicate with Kitchen to update on order status	Kitchen
Save order details to the database	n/a

Explanation:

The Order class is central to the restaurant's operations, tracking each customer's selection of menu items. It's responsible for calculating the total cost, incorporating any additions or deletions to the order, and managing the lifecycle of the order as it progresses from being placed to being served. The Order class collaborates closely with Customer to reflect their choices, MenuItem to detail the items ordered, Invoice to generate a bill for payment, and Kitchen to ensure that the meal is prepared according to the order specifications.

Component: MenuItem	
SuperClasses: n/a	**SubClasses:** n/a
Responsibilities	**Collaborators**
Maintain item details (name, description, price)	Order
Load menu items from the database	n/a
Provide information for order customizations	Order

Explanation:

The MenuItem class acts as a digital representation of the restaurant's offerings, detailing each dish or drink, its price, and description. It's a vital part of the order process, providing the necessary information to both the customer placing the order and the kitchen preparing it. The class also includes functionality to update the availability of items, which helps in managing the inventory and informing customers about out-of-stock items.

Component: Invoice	
SuperClasses: n/a	**SubClasses:** n/a
Responsibilities	**Collaborators**
Generate itemized bill from orders ('generateInvoice()')	Order
Process payments ('processPayment()')	Payment
Record transaction details	Payment
Provide digital or printed receipts	Customer

Explanation:

The Invoice class encapsulates financial transactions within the restaurant. It generates a detailed bill based on the customer's order and handles the payment process, ensuring accurate and secure transactions. The class is responsible for issuing receipts and maintaining a record of all financial activities, which is crucial for accounting and customer service.

Component: Payment	
SuperClasses: n/a	**SubClasses:** n/a
Responsibilities	**Collaborators**
Handle payment processing (credit card, cash, online) ('makePayment()')	Invoice
Validate payment methods and details	n/a
Securely manage and store transaction data	n/a

Explanation:

The Payment class is responsible for all aspects of transaction processing within the restaurant information system. It supports various payment methods, ensuring flexibility and convenience for customers. The class collaborates with Invoice to finalize transactions and is designed to safeguard sensitive financial data, adhering to the highest security standards.

Component: Kitchen	
SuperClasses: n/a	**SubClasses:** n/a
Responsibilities	**Collaborators**
Prepare dishes as per order requests	Order
Load orders from the database	n/a
Communication with front of house regarding order status	n/a
Update order status	n/a

Explanation:

The Kitchen class is at the heart of the restaurant's food preparation operations. It manages the flow of orders from the dining area to the kitchen staff, ensuring that meals are prepared correctly and efficiently. The class facilitates communication between the kitchen and the service staff, enabling timely updates about order statuses and contributing to a smooth dining experience.

Component: Table	
SuperClasses: n/a	**SubClasses:** n/a
Responsibilities	**Collaborators**
Track occupancy status	Reservation
Hold information about location and capacity	n/a
Be reserved or released based on customer arrivals/departures	Reservation

Explanation:

The Table class is an abstraction of the physical dining space within the restaurant. It keeps track of each table's occupancy status and features such as capacity and location. By collaborating with the Reservation class, it helps to efficiently manage the restaurant's seating arrangements, thereby optimizing space utilization and customer flow.