Payment

PaymentID
Amount
Date

processPayment()
checkTransactionStatus()

1..*

1

Customer

CustomerID
Name
PhoneNumber
Email

createRservation()
cancelReservation()
payBill()

0..*   1..*

Reservation

CustomerID
Name
PhoneNumber
Email

CheckReservation()
CheckAvailability()
ConfirmReservation()
createRservation()
SuggestNextDate()

1   0..*

Table

TableID
TableNumber

CheckAvailability()
assignTable()

1

1..*

1

Order

OrderID
TableID
CustomerID
MenuItems
IsReady
Date

createOrder()
prepareOrder()
serveOrder()

1..*

1..*

Staff

StaffID
Name
PhoneNumber
Email

processPayment()
checkTransactionStatus()

0..*

Menu

MenuID
Price
Name

checkAvailable()

Make Reservation → Specify Date, Time, and Guests

Check Table Availability → Suggest Next Available Time (No) / Yes → Confirm reservation → Update the waitlist

Arrive at Restaurant

Follows to restaurant staff
Leads the customer to their table → Restaurant Staff presents the menu to the customer

Order Food

The kitchen starts preparing the food

Order to the kitchen → Serve meal to the customer → Give the bill to the customer

Customer makes a payment → CC declined? → Yes → Choose another payment method / No → Clean the table → Yes → Customer leaves the restaurant → Staff prepares the table for the next customer

Business Use Case Diagram

Customer
- Dine at Restaurant
- Make a reservation

Restaurant Staff
- Manage Reservations
- Do Dining Service

Manager
- Handle customer complaints/disputes

Simulation view result:

https://github.com/heev7777/IPB/blob/main/normal%20version.pdf

Simulation view result:

https://github.com/heev7777/IPB/blob/main/Automated_version.pdf

Based on those 2 different simulation. Some metrics are improved such as;

In normal version cash was taking about 2 minutes.

In automated version cash takes about 30 seconds to finish.

Also in automated version much more instances have been used until the process over.

In automated version customer leaves the restaurant has 937 instances,

On the other hand normal version has 22 instances.

Therefore as we can see automated version is much more efficient.