SECJ2203: Software Engineering

System Documentation (SD)

Hotel Booking System

Version 1.0

School of Computing, Faculty of Engineering

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Revision Page

a. **Overview**

The content of the current version of System Documentation includes the introduction of a hotel booking system named Sunny Hotel. Other than that, this document also includes the external Interface Requirements, System Features, design and others.

b. **Target Audience**

The target audience for this project are students and staff of UTM.

c. **Project Team Members**

Member Name	Role	Task	Status
Difa Ega Adrian	Leader	Do a Data design, containing data dictionary and data description and make a user interface design	Complete
Nurul Najwa Binti Hussein	Member	Do system architectural design, complete package diagram, detail description for hotel booking subsystem	Complete
Nur Azizah binti Mohammad Mokhtar	Member	Package, class and sequence diagram of payment and room availability subsystem	Complete
Muhammad Haziq bin Azli	Member	Package, class and sequence diagram of invoice browser	Complete

Table of Contents

3. System Architectural Design

3.1 Architecture Style and Rationale

The chosen architectural style for this hotel booking system is layered architectural style.It gives the view of the system as a whole while providing the details and gives the future understanding on each of the layers. Layered architecture is also simple, thus the overall concept can easily be comprehend at the first grasp.

3.2 Component Model

User Interface – form or interface windows are suitable for this layer. Any component which supports the development of the interface or form i.e. javascript, vbscript, applet or active X control are also suitable for this layer.

Business logic layer – any components which can be used for the development of the business logic for the automated banking i.e. application server; or any server side programming i.e JSP, ASP, Servlets is a candidate for this layer. Any business logic subsystem can be in this layer are hotel booking, room availability, payment, invoice browse. All of them are suitable for this layer.

Data Access layer – Contains subsystems or components for data access to hotel booking information

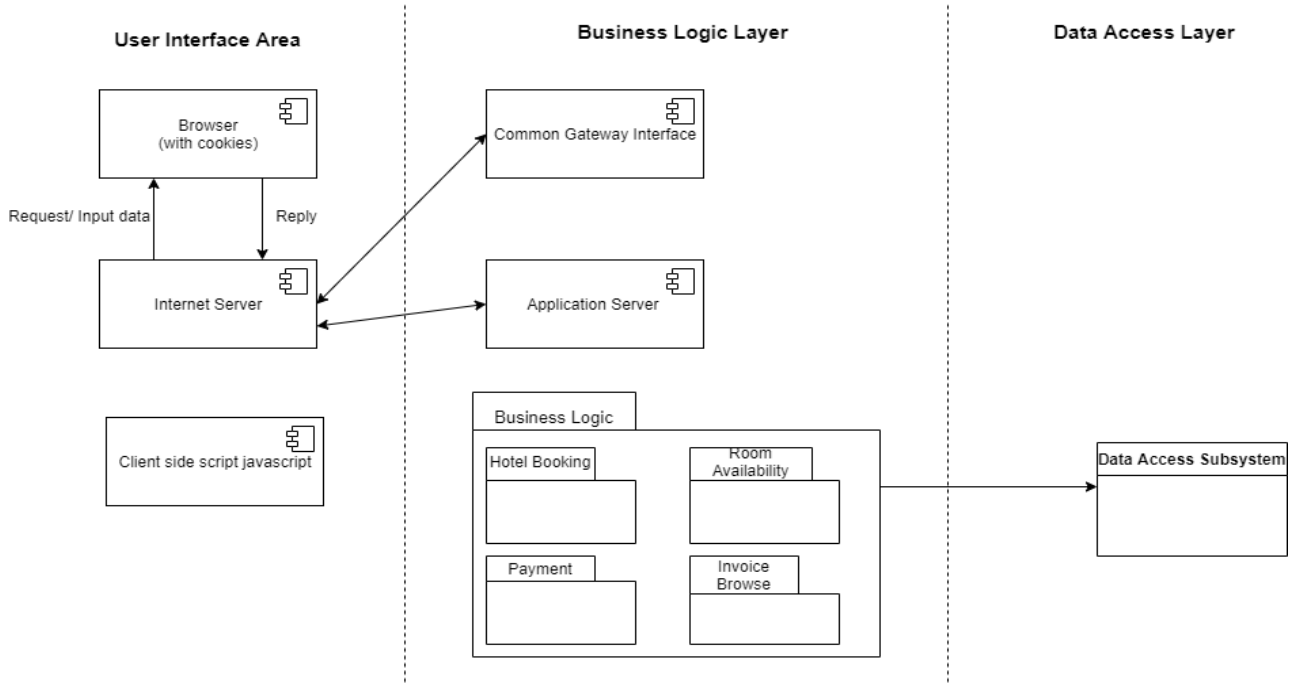

Figure 3.1: Component Diagram of Hotel Booking Subsystem

4. Detailed Description of Components

4.1 Complete Package Diagram

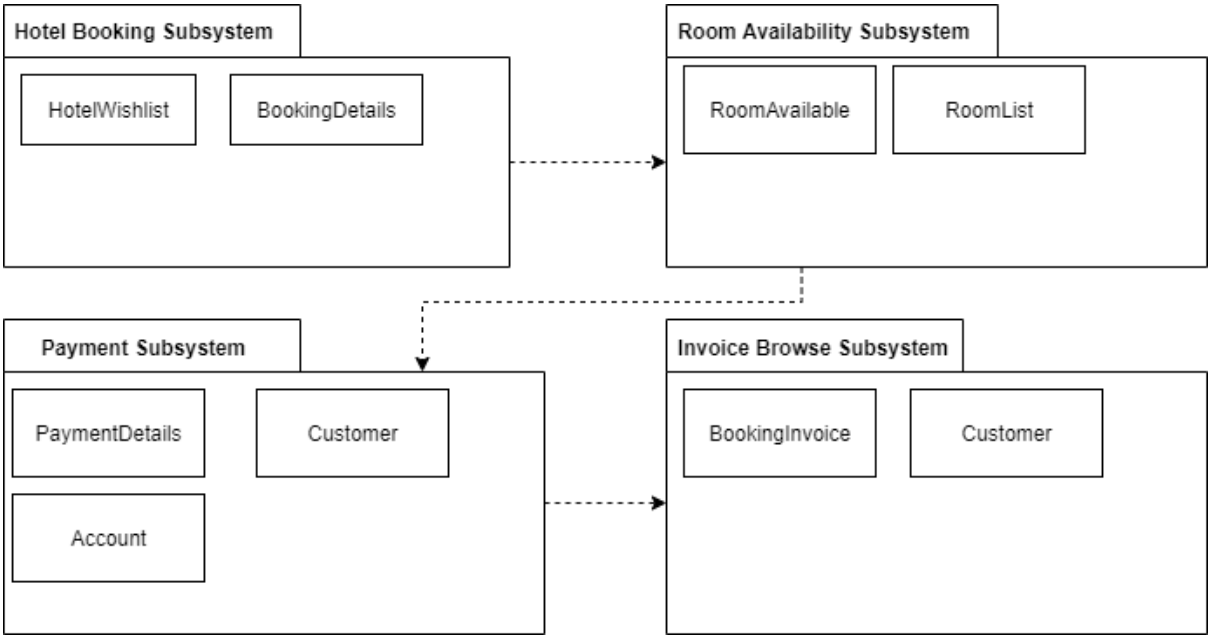

Figure 4.1: Package Diagram for Hotel Booking system

4.2 Detailed Description

4.2.1 P001: Hotel Booking Subsystem

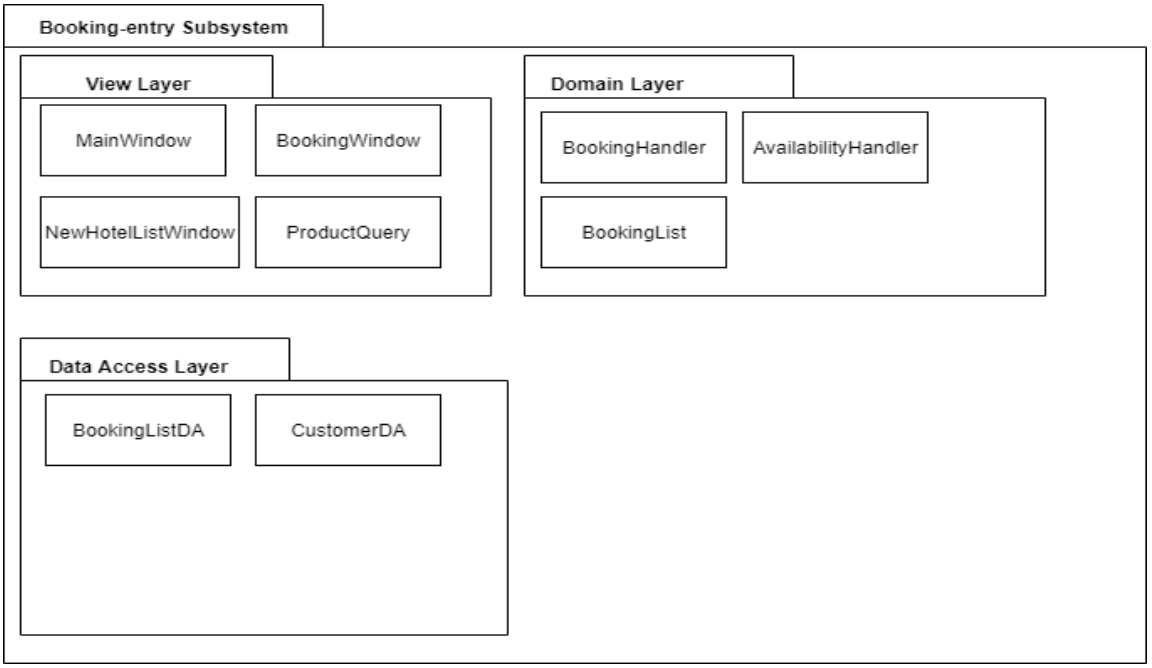

Figure 4.2: Package Diagram for Hotel Booking Subsystem

4.2.1.1 Class Diagram

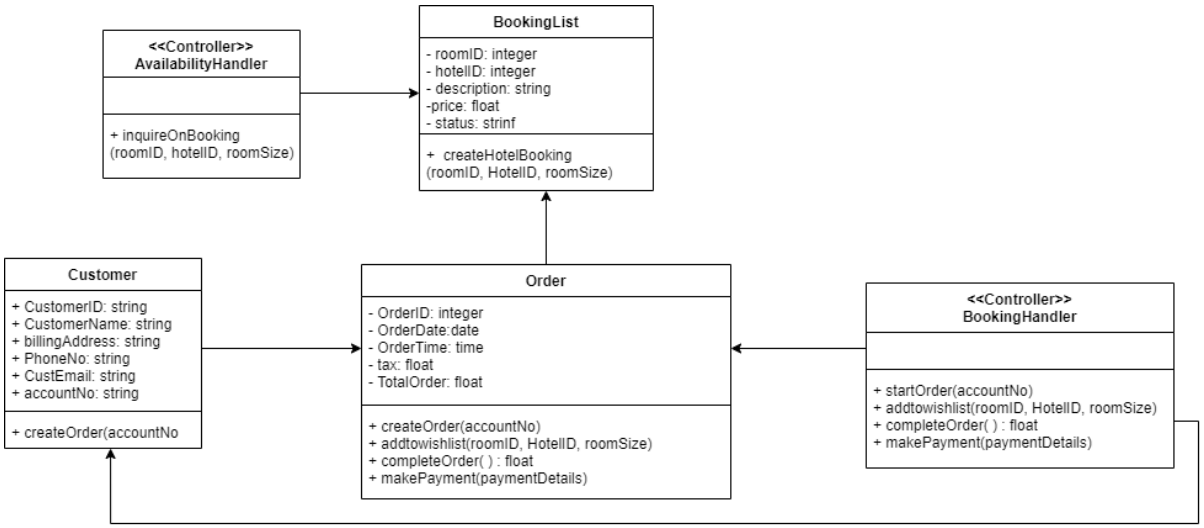

Figure 4.3: Class Diagram for Hotel Booking Subsystem

Entity Name	BookHotel
Method Name	createNewBooking
Input	CustomerID, password
Output	Booking Details
Algorithm	Step 1: Start Step 2: Login with Customer ID and Password Step 3: If valid username and password Then Goto Step 4 Else Invalid Customer ID and password Then Goto Step 2 Step 4: Check availability of rooms Step 5: If rooms available Then Goto Step 6 Else room available Then Goto Step 9 Step 6: If customer book the hotel Then Goto Step 7 Else Goto Step 8 Step 7: Display the booking details Step 8: Cancellation of rooms Step 9: End

4.2.1.2 Sequence Diagram

a) SD001: Sequence diagram for Create New Booking

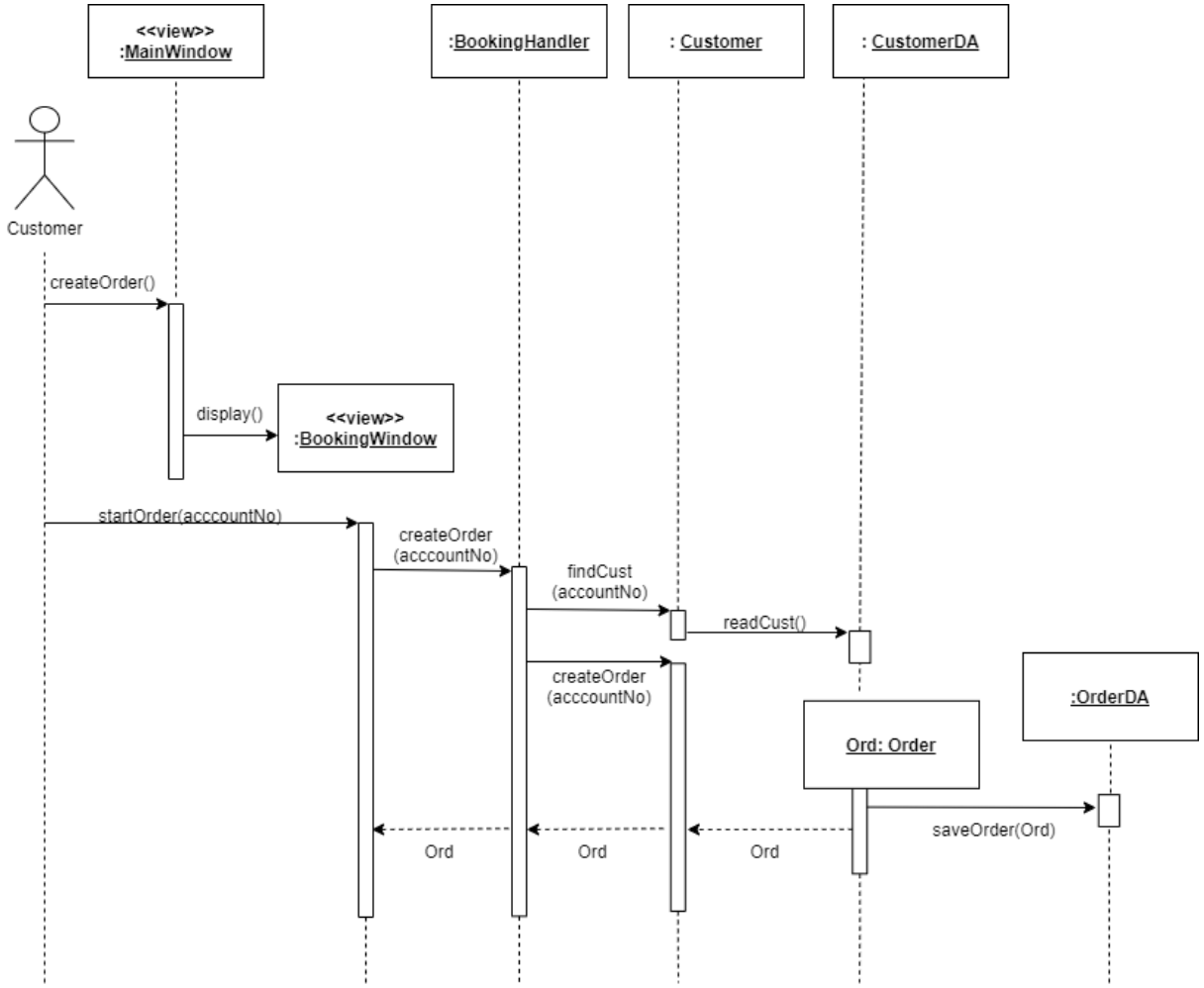

Figure 4.4: Sequence Diagram for Create New Booking

4.2.2 P002: Invoice Browser Subsystem

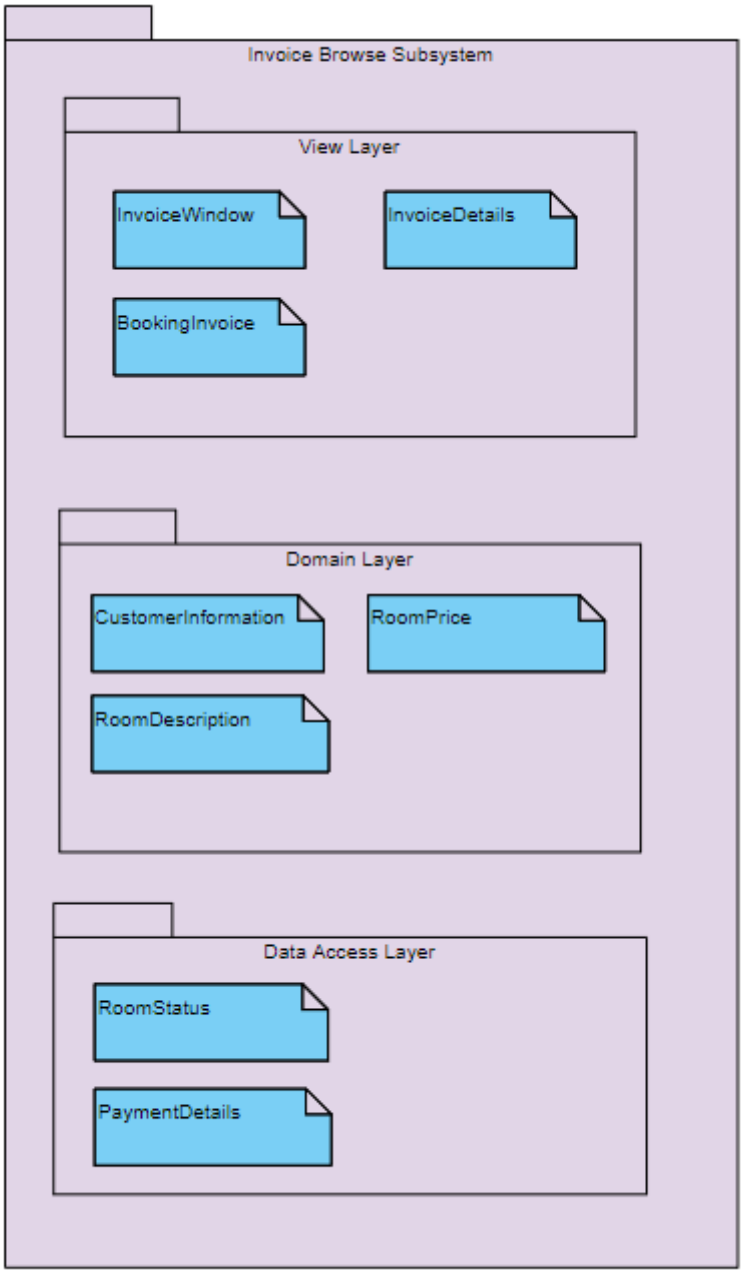

Figure 4.5: Package Diagram for Invoice Browse Subsystem

4.2.2.1 Class Diagram

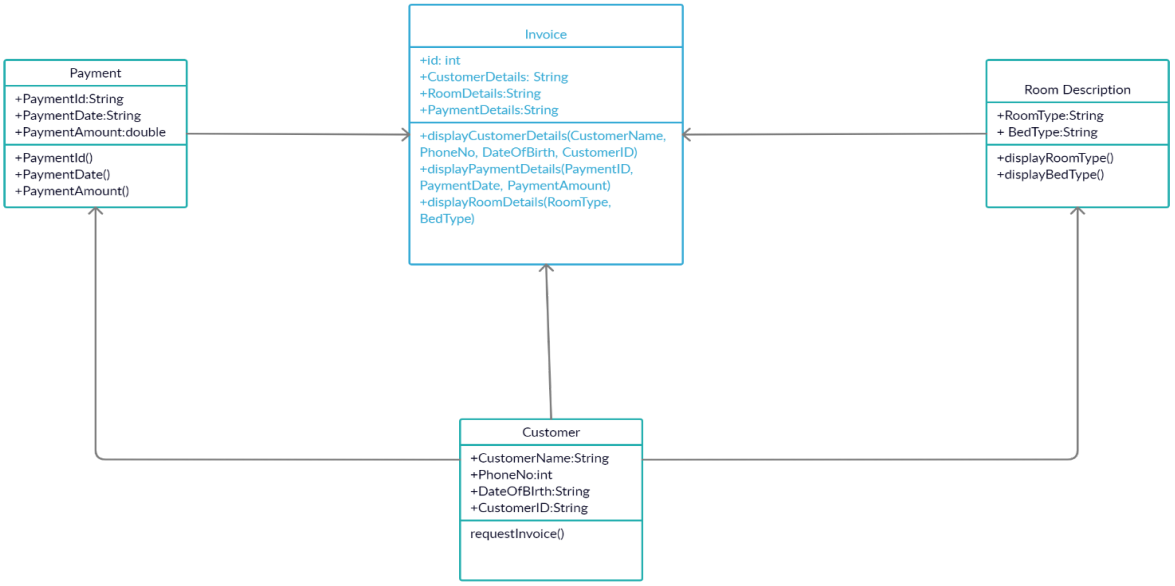

Figure 4.6: Class Diagram for Invoice Browse Subsystem

Entity Name	Invoice
Method Name	browseInvoice
Input	InvoiceDetails
Output	Display invoice details
Algorithm	Step 1: Start Step 2: Go to invoice browser Step 3: Open invoice browser Step 4: It will display invoice window Step 5: Invoice window will display invoice details Step 6: End

4.2.2.2 Sequence Diagram

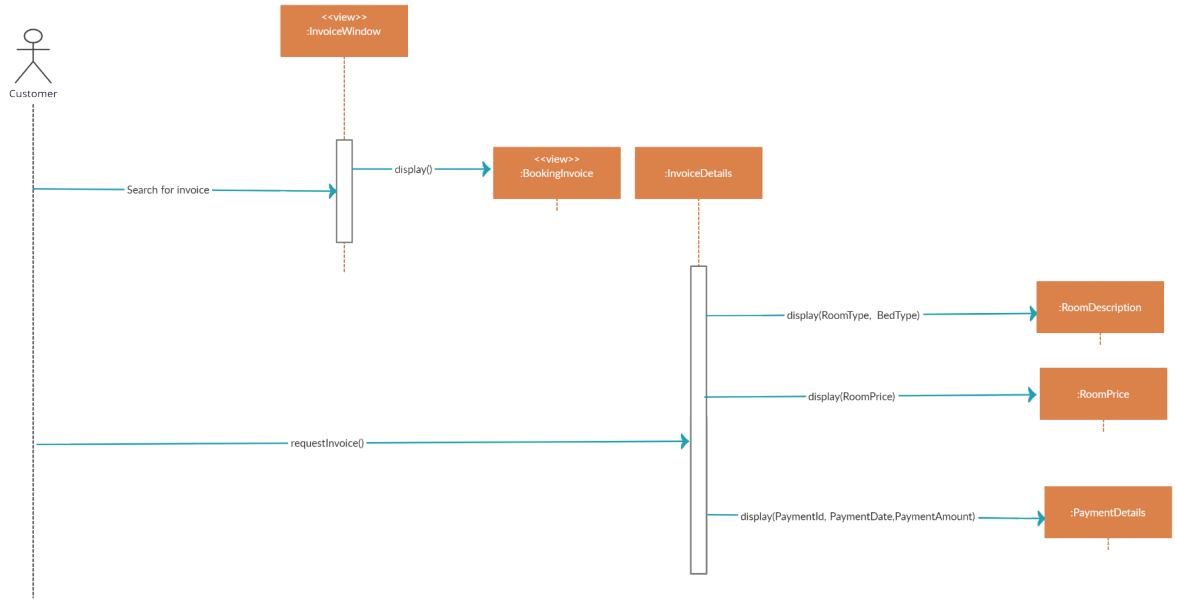

Figure 4.7: Sequence Diagram for Invoice Browse Subsystem

4.2.3 P003 : <Payment> Subsystem

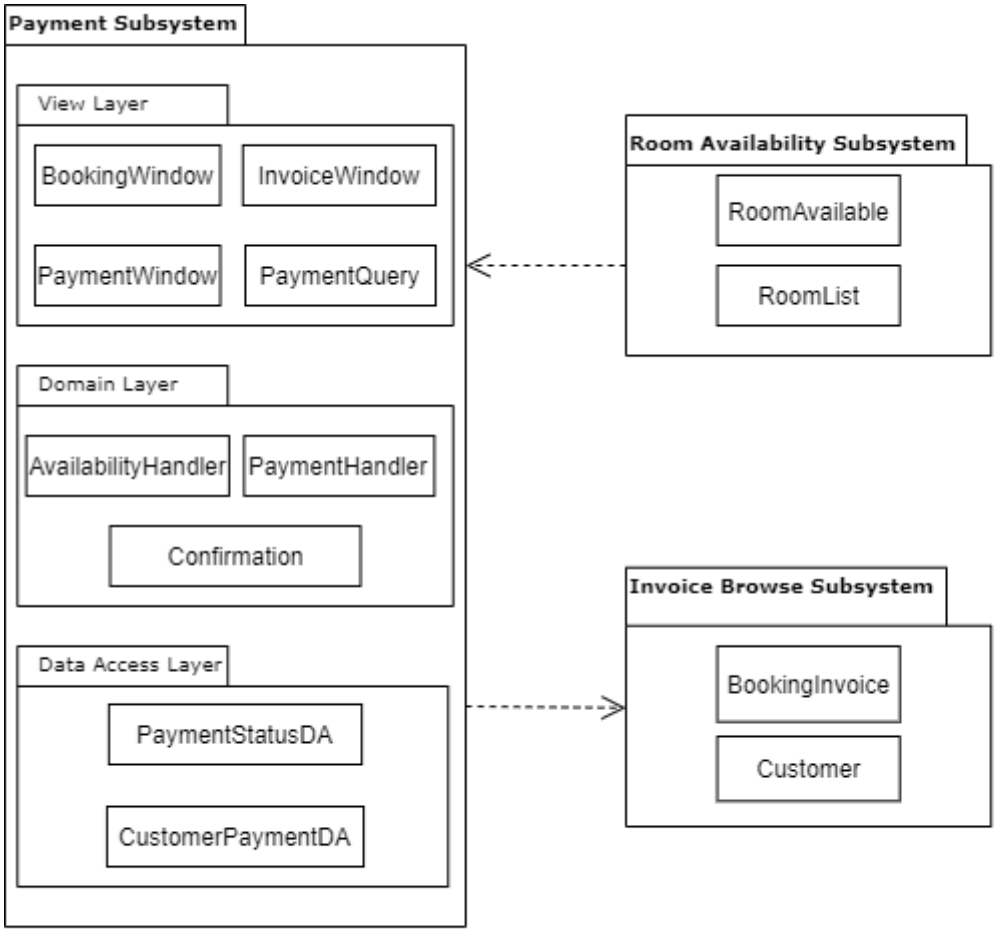

Figure 4.8: Package Diagram for Payment Subsystem

4.2.3.1 Class Diagram

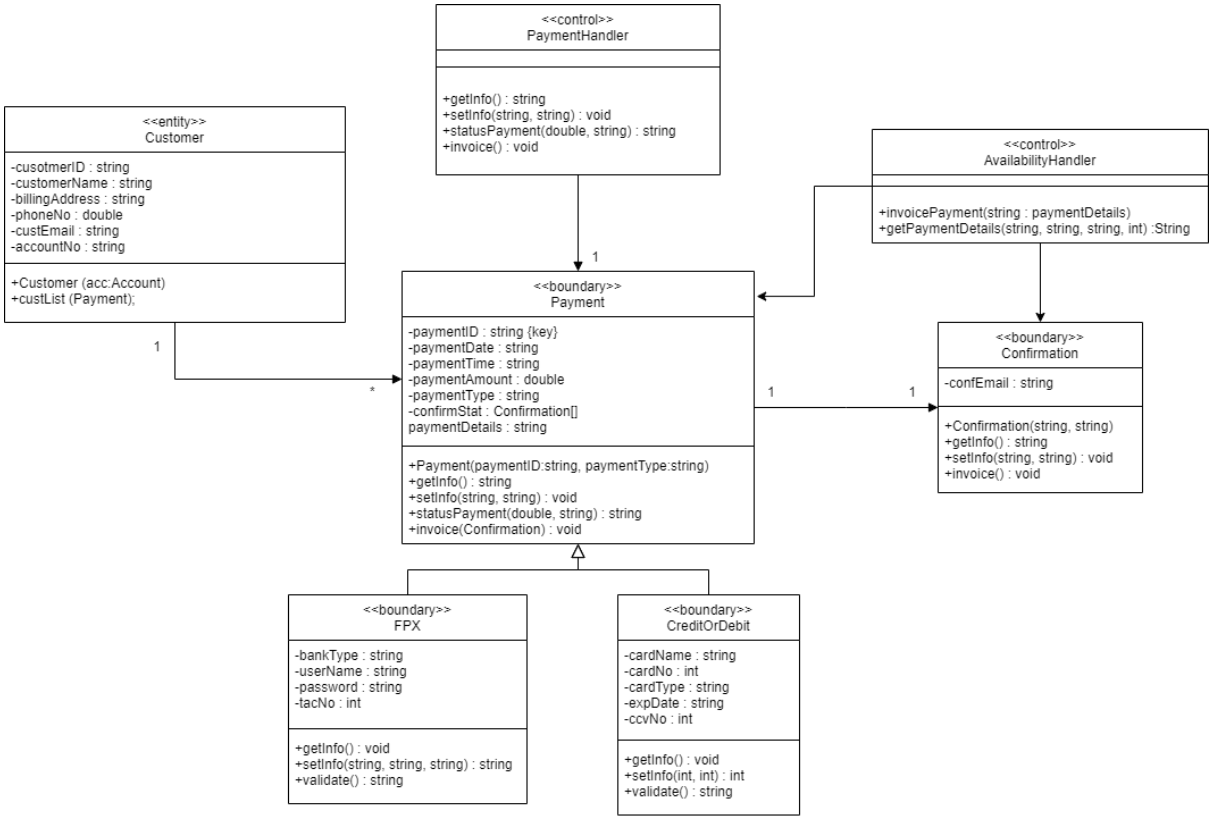

Figure 4.9: Class Diagram for Payment Subsystem

Entity Name	Payment
Method Name	makePayment
Input	paymentType, paymentAmount
Output	Invoice
Algorithm	Step 1 : Start Step 2 : Choose payment type Step 3 : If (paymentType == FPX) Step 4 : Customer insert bankType, userName, password, tacNo Step 5 : System validate tacNo Step 6 : If (tacNo == true) Step 7 : System confirm payment Step 8 : System send invoice to customer Step 9 : Update customer database Step 10 : If (tacNo == false) Step 11 : Ask customer to insert the correct details Step 4 : If (paymentType == CreditOrDebit) Step 13 : Customer insert cardName, cardNo, cardType, expDate, ccvNo Step 14 : If (cardDetails == true)

	Step 15 : goto Step 7, 8, 9 Step 16 : If (cardDetails == false) Step 17 : goto Step 11 Step 18 : End

4.2.3.2 Sequence Diagram

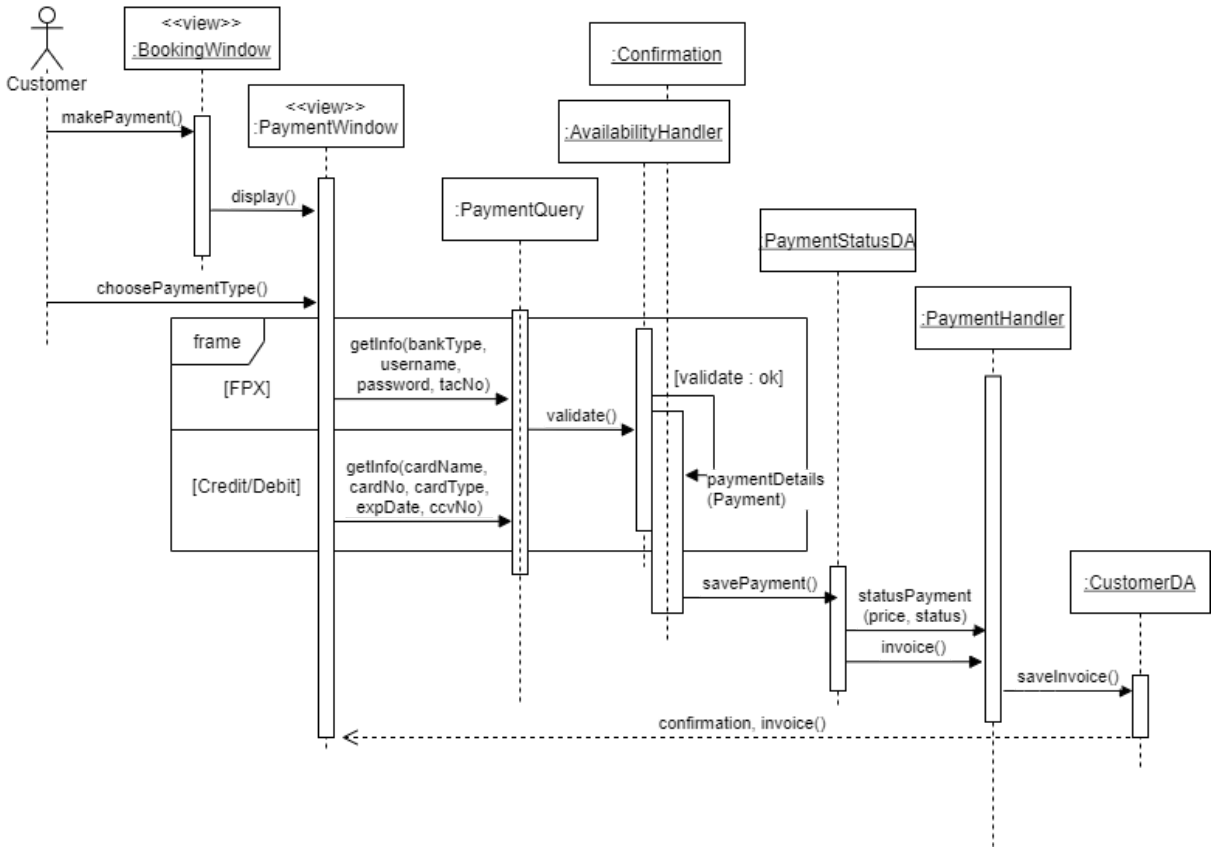

Figure 4.10: Sequence Diagram for Payment Subsystem

4.2.4 P002: <Room Availability> Subsystem

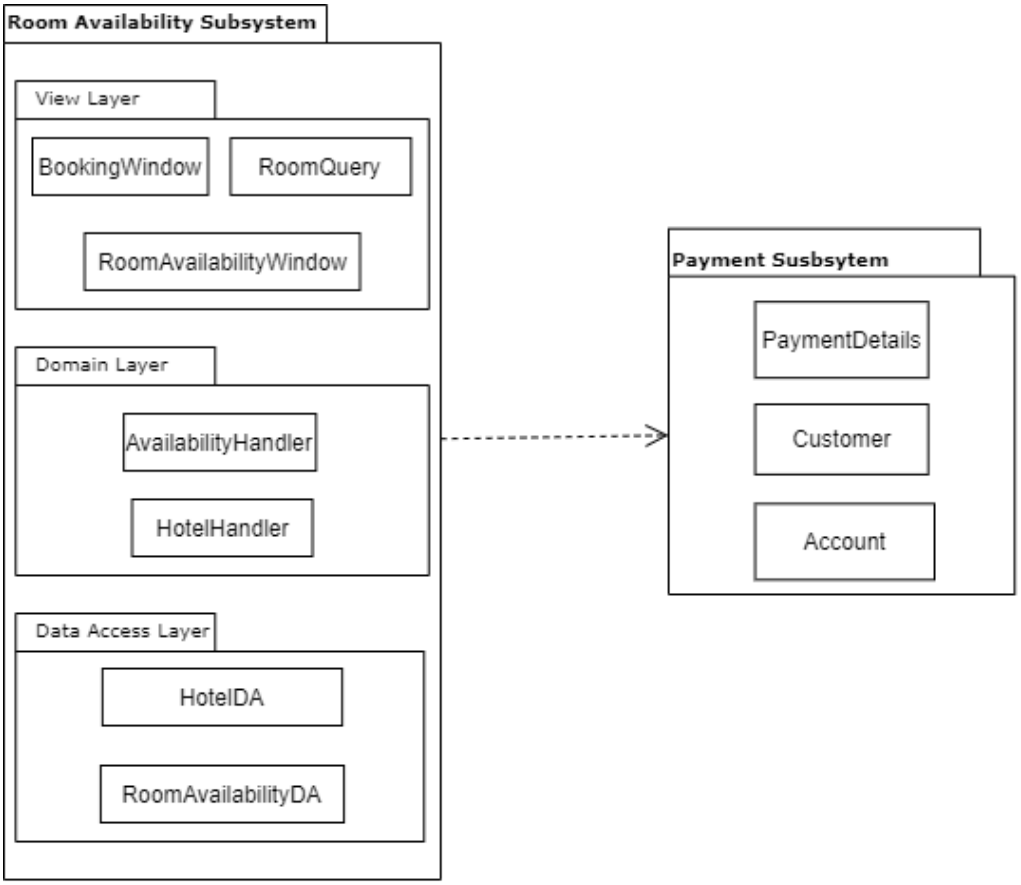

Figure 4.11: Package Diagram for Room Availability Subsystem

4.2.4.1 Class Diagram

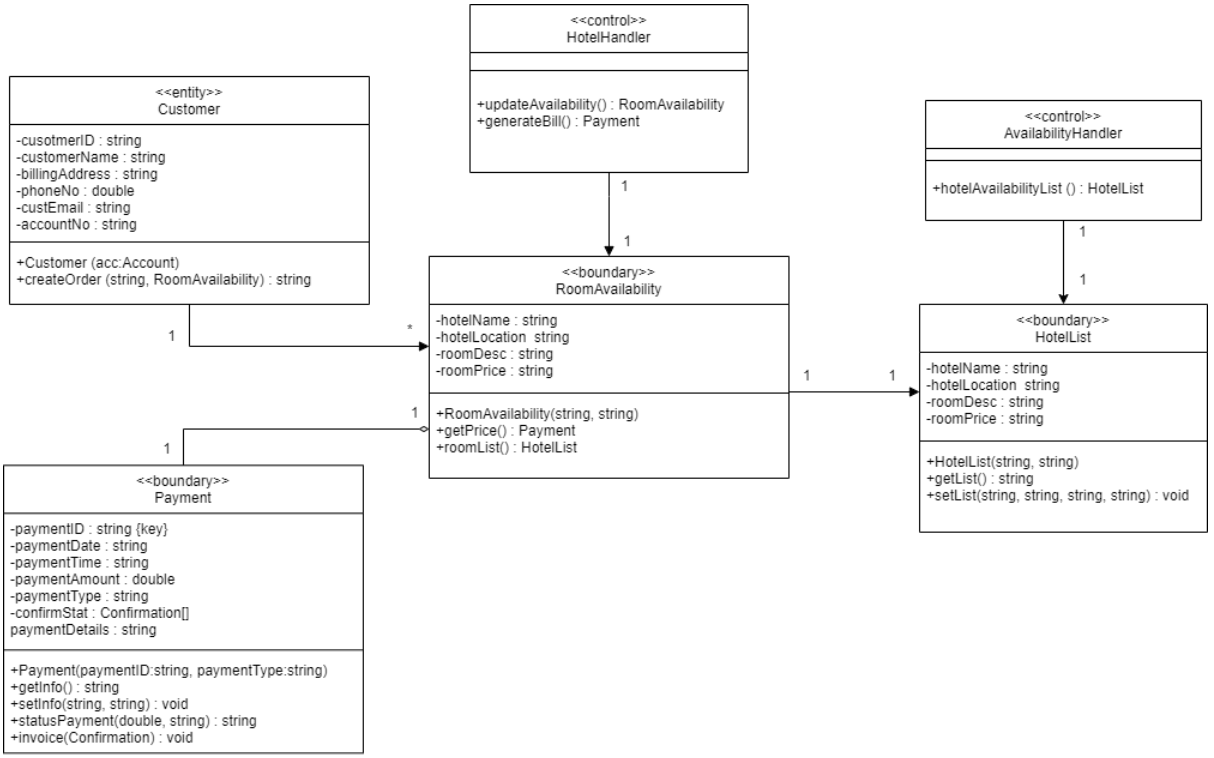

Figure 4.12: Class Diagram for Room Availability Subsystem

Entity Name	RoomAvailability
Method Name	checkAvailability
Input	roomDesc
Output	List of available room
Algorithm	Step 1 : Customer search type of room to book Step 2 : System inquiry list of room at HotelDA Step 3 : If (room == available) Step 4 : System display list Step 5 : Customer choose room Step 6 : System update HotelDA Step 8 : System update RoomDA Step 7 : System generate bill Step 8 : If (room != available) Step 9 : Notify customer room does not available Step 10 : End

4.2.4.2 Sequence Diagram

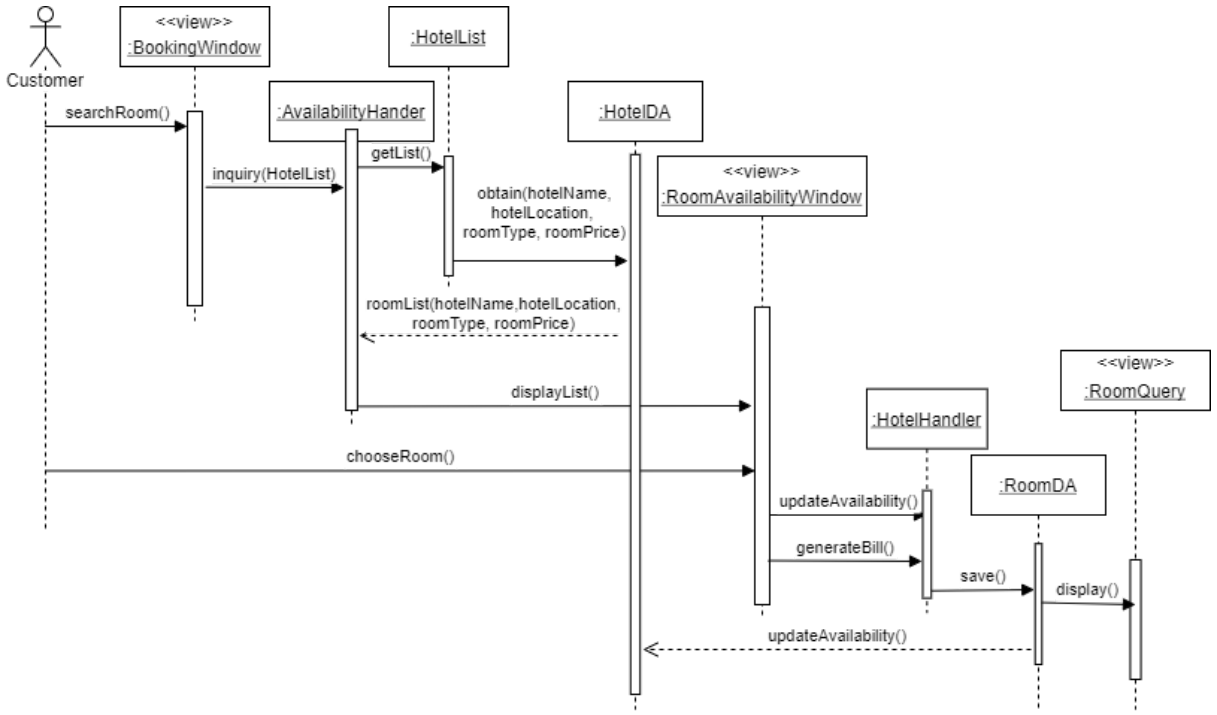

Figure 4.13: Sequence Diagram for Room Availability Subsystem

5. Data Design

5.1 Data Description

The major data or systems entities are stored into a relational database named as…, processed and organized into *n* entities as listed in Table 5.1.

Table 5.1: Description of Entities in the Database

No.	Entity Name	Description
1	Customer Information	The Customer information like name, phone number, e-mail, and location
2	Search Hotel History	The history of customer hotel search
3	Hotel Room Information	The information about hotel room status and availability
4	Booking Status	The information about customer booking status
5	Check-in/Check-out Date	The data of customer booking check-in/check-out date
6	Payment	Customer data of payment status/information

5.2 Data Dictionary

5.2.1 Entity : <Customer Information>

Attribute Name	Type	Description
Customer Information	String	The customer information like name, phone number and email

5.2.2 Entity : <Search Hotel History>

Attribute Name	Type	Description
Hotel ID	Int	Specify identification number of hotels
Hotel Name	String	The hotels name

5.2.3 Entity : <Hotel room information>

Attribute Name	Type	Description
Room ID	Int	Specify identification number of hotels room
Hotel room availability	String	The status of hotels room availability

5.2.4 Entity : <Booking status>

Attribute Name	Type	Description
Booking ID	Int	The specific identification number for customer hotels room booking

5.2.5 Entity : <Check-in/Check-out Date>

Attribute Name	Type	Description
Check-in/Check-out information	string	The information about when customer Check-in/Check out date

5.2.6 Entity : <Payment>

Attribute Name	Type	Description
Customer Payment Information	string	The information about customer payment information like customer card number
Payment Status	String	The status of customer payment(success/fail), and the identification number of payment.

6. User Interface Design

6.1 Overview of User Interface

First of all, our hotel booking system can be accessed by customer / user through the internet site / website, users can search for our hotel booking site in "SunnyHotel.com", and then the customer will be asked to login by entering the username and password, if the user does not have an account, the user can sign up by filling in the user's bio such as name, e-mail, phone number, and location. After the user successfully login on the website, the user will be directly on the next page that is the home page where there is a recommended column of hotels located around the customer.

And also on the home page there is a search field to find the hotel that the customer wants, the customer can set the search filter to find a more specific hotel room to suit the customer's wants, after getting the desired hotel room, the customer will go to the page about the selected hotel information, there is availability of the hotel room, the location of the hotel, the facilities available and also the information on the cost of renting a hotel room.

After finding the desired hotel, the customer will be asked to enter a Check-in / Check-out date for booking information, and if you have entered all the information requested by the customer can directly make a booking hotels room, if the customer will go directly to the payment page, there is a field of information that must be filled in such as card information and payment method. After the customer has successfully made a payment, the booking will be processed immediately and if the booking process has been completed the customer will get a successful booking status.

6.2 Screen Images

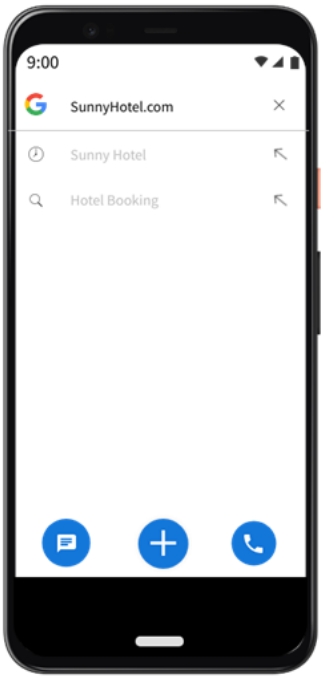

Figure 6.1: Interface for <Website Search>

Figure 6.2: Interface for <User Login Interface>

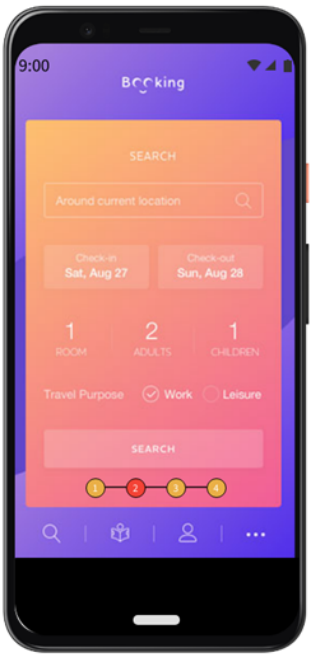

Figure 6.3: Interface for <Home Page Interface>

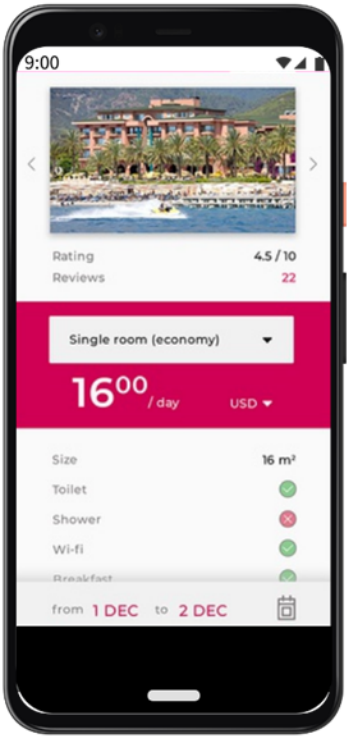

Figure 6.4: Interface for <Hotels Room Information>

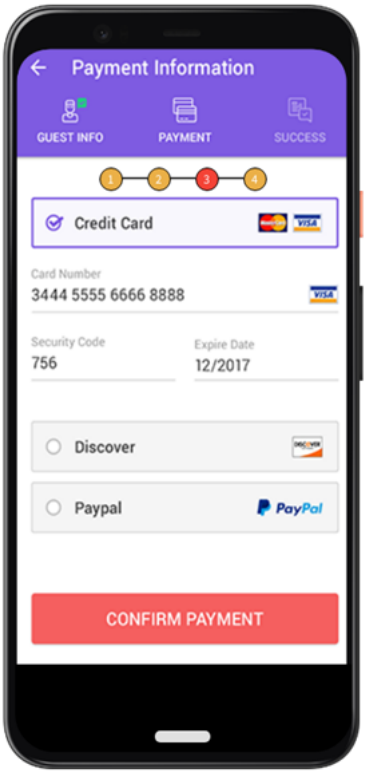

Figure 6.5: Interface for <Payment Page>

7. Requirements Matrix

The sequence diagrams for each use case vs. corresponding classes (entities) are listed as in Table 7.1.

Table 7.1: Description of Entities in the Database

	Customer	Order	Catalog	CatalogProduct	ProductItem	OrderItem	ReturnItem	InventoryItem	…
P001, UC001, SD001	X	None	None	None	None	None	None	None	Customer needs to sign up first
P001, UC001, SD002	X	X	X	X	X	None	None	X	Customer can use search box to search for hotel
P002, UC002, SD003			X	X	X	None	None	X	The system displays a list of hotels available
P003, UC003, SD004					X	X	X	X	The system displays a list of hotels that meets the criteria from search box

P004, UC004, SD005		X				X	X	X	The system will display the information about the check in and check out
…									