Software Requirements Specification

for

Hotel Management System, Release 1.0

Version 1.0 approved

Prepared by Group 2

Process Impact

September 30, 2021

Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Group 2	30/9/2021	initial draft	1.0 draft 1

1. Introduction

1.1 Purpose

This SRS describes the functional and nonfunctional requirements for software release 1.0 of the Hotel Management System (HMS). This document is intended to be used by the members of the project team who will implement and verify the correct functioning of the system. Unless otherwise noted, all requirements specified here are committed for release 1.0.

1.2 Document Conventions

No special typographical conventions are used in this SRS.

1.3 Project Scope and Product Features

The HMS will permit Hotel Staff to manage hotels off-line more easily and efficiently. A detailed description is available in the *Hotel Management System Vision and Scope Document* [1], along with the features that are scheduled for full or partial implementation in this release.

1.4 References

1. *Group 2, Hotel Management System Vision and Scope Document,* https://docs.google.com/document/d/12JWo4THLJEoi1ONdw-jxfQ6DY-OVCJB7/edit?usp=sharing&ouid=116791822988339723734&rtpof=true&sd=true

2. Overall Description

2.1 Product Perspective

The Hotel Management System is a new software system that replaces the current manual processes for hotel check-in, check-out and management in the <<Hotel Name >> hotel. The context diagram in Figure 1 illustrates the external entities and system interfaces for release 1.0. The system is expected to evolve over several releases.

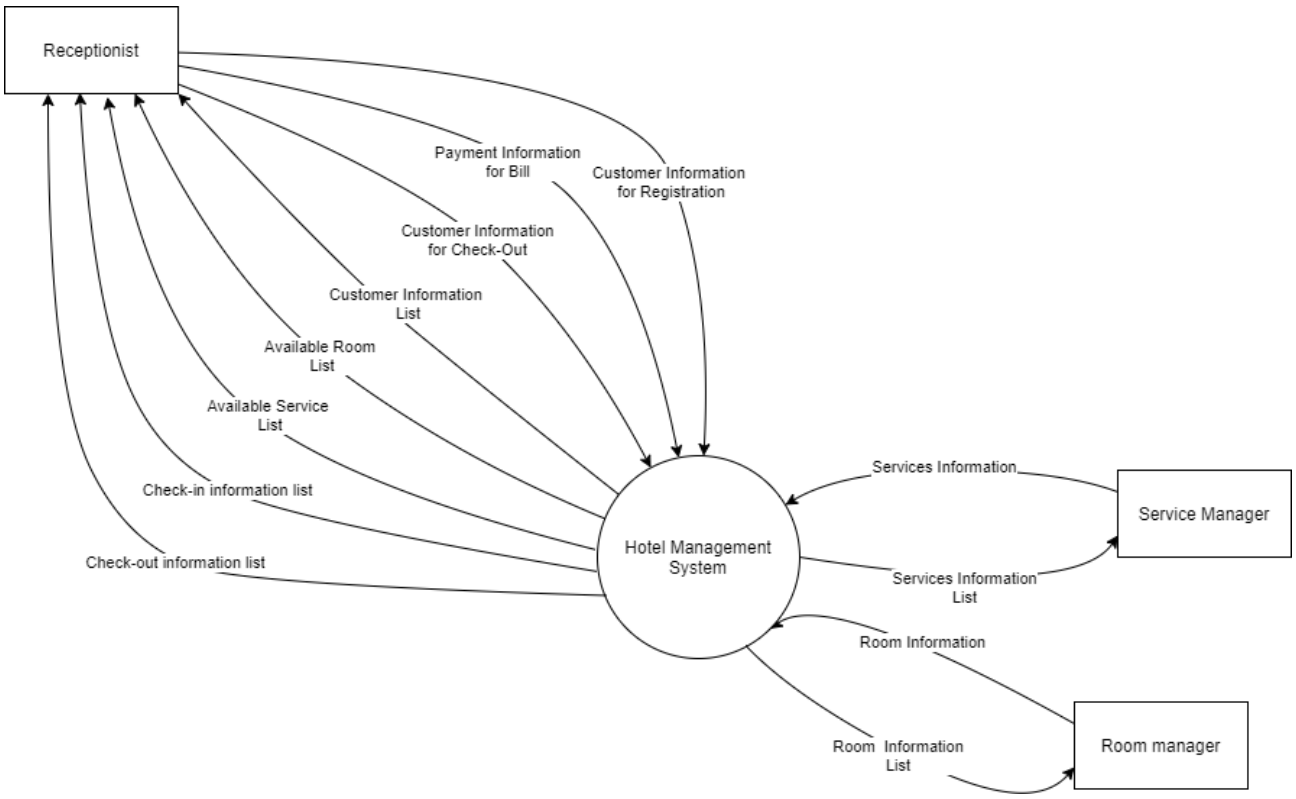

Figure 1. Context diagram for release 1.0 of the Hotel Management System.

2.2 User Classes and Characteristics

Receptionist	A Receptionist is a <<Hotel Name>> employee who works as a receptionist to handle the customer check-in and check-out of the hotel and manage basic information of customer for that. There are about 12 Receptionists they will provide room information and services for customers to select and use. Most of the Receptionist will need training in the use of the hardware and software for the HMS
Room Manager	The Room Manager is a hotel employee who establishes and maintains rooms available in the hotel. Some rooms may not be available because they are already taken. The Room Manager will need to edit existing rooms for any hotel room changes.
Service Manager	The Service Manager is a hotel employee who establishes and maintains services available from the hotel. Some services may not be available for some reason.The Service Manager will need to edit existing services periodically.

2.3 Operating Environment

OE-1: The HMS shall operate correctly with the following OS: Windows version 7, 8 and 10, Linux, macOS versions 10.12 and above.

OE-2: The HMS shall operate on a server running using LAN connection.

OE-3: The HMS shall permit user access from the LAN in the hotels.

2.4 Design and Implementation Constraints

CO-1: The system shall use Microsoft SQL Server 2019 with SSMS 18.

CO-2: The system will be built by C# and following it convention rules.

2.5 Assumptions and Dependencies

AS-1: The hotel is open everyday and users (hotel staff) will be on it.

DE-1: The operation of the HMS depends on changes being made in the Payroll System to accept payment requests for check-out procedures in the HMS.

DE-2: The operation of the HMS depends on changes being made by the Receptionist to update the availability of room and services as HMS accepts check-in requests.

DE-3: The operation of the HMS depends on changes being made by the Room Manager to update the room condition for the Receptionist to provide information for the Receptionist check-in.

DE-4: The operation of the HMS depends on changes being made by the Service Manager to update the service's condition or add a new service to provide information for the Receptionist check-in.

DE-5: The operation of the HMS depends on changes being made by the Receptionist to update the customer information or add a new customer to provide information for the system to help check-in and out more easily.

3. System Features

3.1 Check in

3.1.1 Description

A Receptionist will make a check in request based on customer information, room and services they selected to give access permission for customers to use it.

3.1.2 Functional Requirements

Check-in.Information:Provide customer information	
.ID:	Customer ID number must be valid or using another identity card number instead..
Check-in.Room: Viewing and select available room	
.Available:	The HMS shall display the available room list with no one having taken for which at least one unit is available
.Search:	The HMS shall permit Receptionists to search rooms by category for which at least one unit is available
.Multiple:	The HMS shall permit the user to select multiple rooms for group check-in
Check-in.Service: Viewing and select available service	
.Available:	The HMS shall display the available services list of the hotel now for which at least one unit is available.

.Search:	The HMS shall permit Receptionists to search services by category for which at least one unit is available
.Multiple:	The HMS shall permit the user to select multiple services for their needs.
Check-in.Confirm: Confirming check in	
.Display:	When the Receptionist finishes inputting all the customer information HMS shall display all the information with Room information and Services information, prices, and the payment for hotel deposit.
.Prompt:	The HMS shall prompt the Receptionist to confirm the check-in.
.Response:	The Receptionist can confirm, edit, or cancel the check-in.
Check-in.Pay: Check-in payment	
.Method:	When the Receptionist confirms all the information, the HMS shall ask the Receptionist to select a payment method.
.Response.:	The Receptionist can confirm, edit, or cancel the payment information.
Order.Done: When the Receptionist has confirmed the check-in, the HMS shall do the following as a single transaction.	
.Data:	Customer information will be stored in the system, updating the available room and service conditions.
.Permission:	HMS will give the permission for the customer just stored in the system to access their room and use services.

3.2 Create, View, Update, Delete Room Information

3.2.1 Description

A Manager will make a request to create, view, update, delete room information based on the hotel room condition to the system.

3.2.2 Functional Requirements

Room.Create: Add new room information	
.Information:	The system shall permit the Manager to input all necessary information of the new room.
.Interface:	Manager can click on add new room button to start providing information through a form.
.Done:	Room information will be saved in the System, updating current available room.
Room.Update: Update new room information	
.Information:	The system shall permit the Manager to update an existing room information.
.Interface:	Manager will select a room information tuple then click on the update room button to start updating information through a form.
.Done:	Room information will be updated in the System.
Room.Delete: Delete a room information	
.Interface:	Manager will select a room information tuple then click on the delete room button to delete selected room.
.Done:	Room information will be deleted in the System.

Room.View: View room information list

.Information: The system shall permit the Manager to see room information list in the system with formatted data.

.Interface: Manager will select room information tab to see room information list display in data grid..

3.3 Create, View, Update, Delete Services Information

3.3.1 Description

A Manager will make a request to create, view, update, delete services information based on the hotel services condition to the system

3.3.2 Functional Requirements

Services.Create: Add new service information

.Information: The system shall permit the Manager to input all necessary information of the new services.

.Interface: Manager can click on add new services button to start providing information through a form.

.Done: Services information will be saved in the System, updating current available services.

Services.Update: Update new service information

.Information: The system shall permit the Manager to update an existing services information.

.Interface: Manager will select a service information tuple then click on the update service button to start updating information through a form.

.Done: Service information will be updated in the System.

Services.Delete: Delete a service information

.Interface: Manager will select a service information tuple then click on the delete service button to delete selected service.

.Done: Service information will be deleted in the System.

Services.View: View service information list

.Information: The system shall permit the Manager to see service information lists in the system with formatted data.

.Interface: Manager will select service information tab to see service information list display in data grid..

3.4 Create, View, Update, Delete Customer Information

3.4.1 Description

A Manager will make a request to create, view, update, delete customer information for faster check in and saving data to make statistics.

3.4.2 Functional Requirements

Customer.Create: Add new customer information	
.Information:	The system shall permit the Manager to input all necessary information of the new customer.
.Interface:	Manager can click on add new customer button to start providing information through a form.
.Done:	Customer information will be saved in the System, updating current available customer.
Customer.Update: Update new customer information	
.Information:	The system shall permit the Manager to update an existing customer information.
.Interface:	Manager will select a customer information tuple then click on the update customer button to start updating information through a form.
.Done:	Customer information will be updated in the System.
Customer.Delete: Delete a customer information	
.Interface:	Manager will select a customer information tuple then click on the delete customer button to delete selected customer.
.Done:	Customer information will be deleted in the System.
Customer.View: View customer information list	
.Information:	The system shall permit the Manager to see customer information lists in the system with formatted data.
.Interface:	Manager will select customer information tab to see customer information list display in data grid..

4. Data Requirements

4.1 Logical Data Model

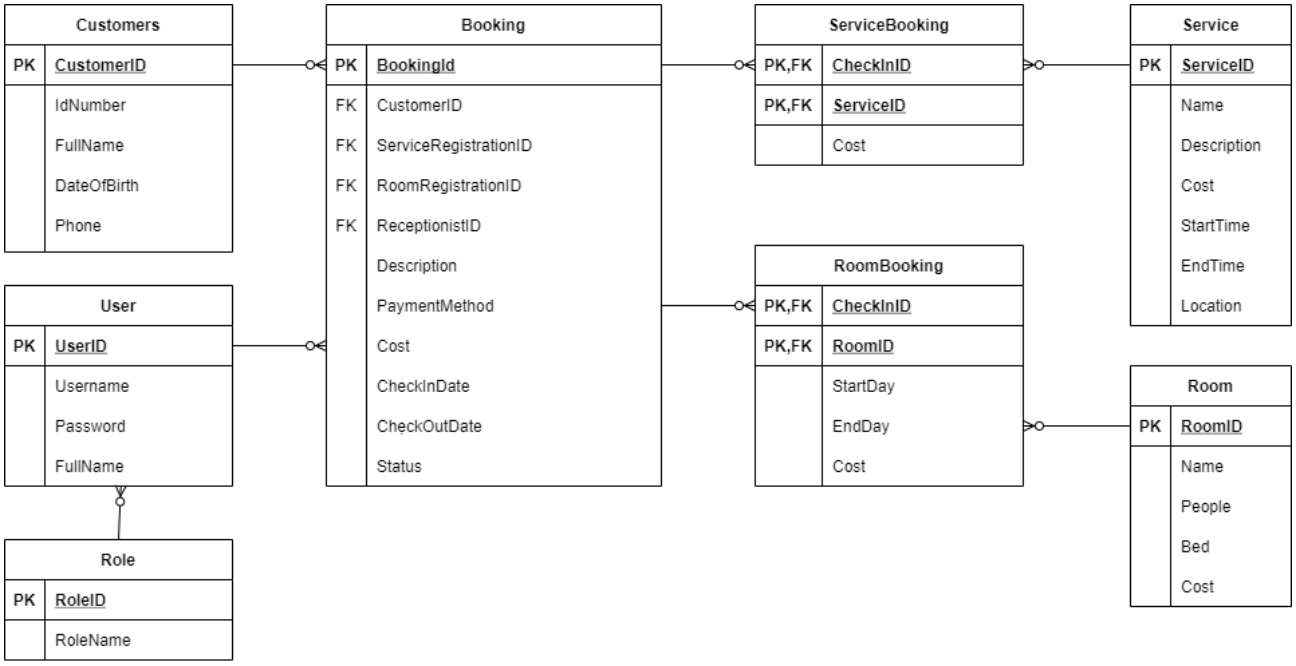

Figure . Partial data model for release 1.0 of the Hotel Management System.

4.2 Data Dictionary

Data Element	Description	Composition or Data Type	Length	Values
UserID	User ID number of the hotel staff	integer	8	
User username	Username to identify a login user of hotel system	alphanumeric	8 - 16	special characters are not allowed
User password	Secret to identify a username login to hotel system	alphanumeric	10 - 20	special characters are allowed
User Fullname	A user full name	alphanumeric	50	special characters are not allowed
Role ID	Role ID number of the hotel staff to identify what kind of user	integer	6	
Role Name	Name of a role	alphanumeric	30	special characters are not allowed
Service ID	Service ID number that available in hotel	integer	6	
Service Cost	Price for a Service in hotel	numeric, Viet Nam Dong		
Service Name	Name of a Service in hotel	alphanumeric	50	special characters are not allowed

Service Description	Description of a Service to know what service about	alphanumeric	70	special characters are not allowed
Service Start Time	Time when a service starts of the day at the hotel	time, HH:mm:ss	8	
Service End Time	Time when a service ends of the day at the hotel	time, HH:mm:ss	8	
Service Location	Location where the service is held	alphanumeric	100	
Room ID	Room ID number that available in hotel	integer	6	
Room Cost	Price for a Room in hotel	numeric, Viet Nam Dong		
Room People	Number of people can be assign in one room	integer	1- 6	
Room Bed	What kind of bed does this room have	alphanumeric	50	special characters are not allowed
Room Name	Name of a Roomin hotel	alphanumeric	30	special characters are not allowed
Room Quantity	Number of one type of room in the hotel	integer	8 - 12	
Customer ID	CustomerID number that registration to the hotel	integer	6	
Customer Fullname	Full name of a customer	alphanumeric	50	special characters are not allowed
Customer Date of Birth	Date of birth of a customer	date, MM/DD/YYYY	10	
Customer Phone Number	Phone number of a customer to contact	numeric	11	
Customer ID Number	Customer Identification number	numeric	9	
Booking ID	Booking ID number in the hotel	numeric	6	
Booking Customer ID	ID number of customer that belong to the Booking ID	numeric	6	
Booking Service Registration ID	ID number of which services belong to this Booking	numeric	6	
Booking Room Registration ID	ID number of which rooms belong to this Booking	numeric	6	
Booking Description	Description of the Booking if anything need to remind	alphanumeric	100	special characters are not allowed
Booking Payment method	The method customer use to pay for check in, check out of the hotel	MoMo/Internet Banking/Hand Cash	20	
Booking cost	The total cost that the customer have to pay for booking	numeric, Viet Nam Dong		
Booking Check in date	The customer check in date for booking	date, MM/DD/YYYY	10	
Booking Check out date	The customer check out date for booking	date, MM/DD/YYYY	10	

Booking Status	Status of booking which tell that the customer are check in, check out or not	numeric	1	

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4.3 Reports

4.3.1 Check-in history Report

Report ID:	HMS-RPT-1
Report Title:	Check-in history
Report Purpose:	Receptionist wants to see a list of check-in information that he/she had previously saved to the HMS over a specified time period up to three months prior to the current date, so he/she can make a statistics about it
Priority:	High
Report Users:	Receptionist
Data Sources:	Database of Booking
Frequency and Disposition;	Report is generated on demand by Hotel Staff. Data in the report is static. Report is displayed on the user's application screen on a computer. It can be printed if the display device permits printing.
Latency:	Complete report must be displayed to receptionist within 1 seconds after it is requested.
Visual Layout:	Landscape mode
Header and Footer:	Report header shall contain the report title, Check-in id, check-in customer name, room number list, service used list and check-in date with date range specified by Receptionist. If printed, report footer shall show the page number.
Report Body:	Selection Criteria: date range specified by receptionist, inclusive of end points Sort Criteria: reverse chronological order Fields shown and column headings: ● Check-in ID number ● Customer Name ● Customer ID ● Customer Phone ● Room number list ● Service name list ● Check-in Date ● Check-in Time ● Payment method ● Price
End-of-Report Indicator:	None
Interactivity:	Receptionist can drill down to see the entire list
Security Access Restrictions:	Receptionist may only see his own report

4.3.2 Check-out history Report

Report ID:	HMS-RPT-2
Report Title:	Check-out history
Report Purpose:	Receptionist wants to see a list of check-out information that he/she had previously saved to the HMS over a specified time period up to three months prior to the current date, so he/she can make a statistics about it
Priority:	High
Report Users:	Receptionist
Data Sources:	Database of Booking
Frequency and Disposition;	Report is generated on demand by Hotel Staff. Data in the report is static. Report is displayed on the user's application screen on a computer. It can be printed if the display device permits printing.
Latency:	Complete report must be displayed to receptionist within 1 seconds after it is requested.
Visual Layout:	Landscape mode
Header and Footer:	Report header shall contain the report title, Check-out id, check-out customer name, room arranged, service used, description and check-out date with date range specified by Receptionist. If printed, report footer shall show the page number.
Report Body:	Selection Criteria: date range specified by Receptionist, inclusive of end points Sort Criteria: reverse chronological order Fields shown and column headings: ● Check-out ID number ● Customer Name ● Customer ID ● Customer Phone ● Room number list ● Service name list ● Description ● Check-out Date ● Check-out Time ● Payment Method ● Price
End-of-Report Indicator:	None
Interactivity:	Receptionist can drill down to see the entire list
Security Access Restrictions:	Receptionist may only see his own report

4.3.3 Service Using report

Report ID:	HMS-RPT-3
Report Title:	Service using report

Report Purpose:	The service manager wants to see the list of the most used hotel services. This list that he/she has previously saved to the HMS for a specific period of time up to three months prior to the current date. presented, so that he/she can make statistics about it.
Priority:	Medium
Report Users:	Service Manager
Data Sources:	Database of Booking and Services
Frequency and Disposition;	Report is generated on demand by Hotel Staff. Data in the report is static. Report is displayed on the user's application screen on a computer. It can be printed if the display device permits printing.
Latency:	Complete report must be displayed to the receptionist within 1 seconds after it is requested.
Visual Layout:	Landscape mode
Header and Footer:	Report header shall contain the report title,Service Manager Name, and date range specified. If printed, the report footer shall show the page number.
Report Body:	Selection Criteria: date range specified by Service Management, inclusive of end points Sort Criteria: reverse chronological order Fields shown and column headings: ● Service ID number ● Service Name ● Description ● Start Time ● End Time ● Number of Customer used ● Price ● Total Price
End-of-Report Indicator:	None
Interactivity:	Manager can drill down to see the entire list
Security Access Restrictions:	Manager may only see the report

4.4 Data Integrity, Retention, and Disposal

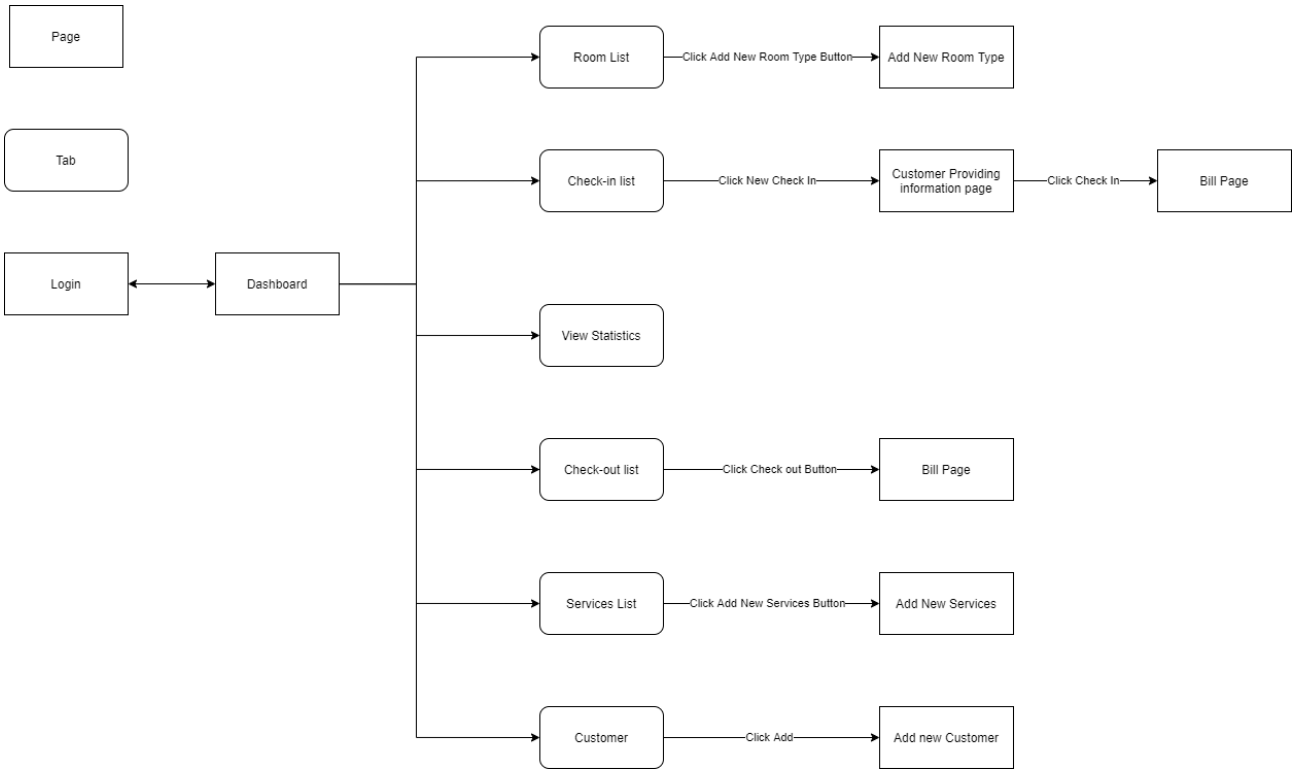
DI-1: The HMS shall retain individual Booking for 6 months following the check-out date.

DI-2: The HMS shall use soft delete (using delete status in the database) instead of real delete.

4.5 User Interfaces

5. External Interface Requirements

5.1 User Interfaces



5.2 Software Interfaces

SI-1: Hotel Inventory System

SI-1.1: The HMS shall transmit the number of people and the number of check-in to the Hotel Inventory System through a programmatic interface.

SI-1.2: The HMS shall poll the Hotel Inventory System to determine whether a requested hotel room is available.

SI-1.3: When the Hotel Inventory System notifies the HMS that a particular room is no longer available.

SI-1.4: The HMS will poll the Hotel Inventory System to determine if the requested hotel menu is available.

SI-1.5: When the hotel Inventory System notifies HMS will remove that item from the menu of the current day.

SI-2: Payroll System

The HMS shall communicate with the Payroll System through a programmatic interface for the following operations:

SI-2.1: To allow Customers to register and unregister from payroll deduction.

SI-2.2: To inquire whether Customers are registered for payroll deduction.

SI-2.3: To inquire whether Customers are eligible to register for payroll deduction.

SI-2.4: To submit a payment request for a booking invoice.

SI-2.5: To reverse all or part of a previous charge because Customers rejected Booking or weren't satisfied with the hotel's service.

5.3 Hardware Interfaces

No hardware interfaces have been identified.

5.4 Communications Interfaces

CI-1: The HMS shall send an email or text message (based on user account settings) to the Customer to confirm Booking acceptance, price, and check-in time.

CI-2: The HMS shall send an email or text message (based on user account settings) to the Customer to report any problems with order room or food order.

6. Quality Attributes

6.1 Usability Requirements

USE-1: The HMS shall allow customers to retrieve their previous reservation and food order in just 45 seconds. After 45 seconds, the hotel staff has confirmed that if you want to cancel the reservation, you must contact the hotel staff.

USE-2: 95% of new users shall be able to successfully check in and check out without errors on their first try.

6.2 Performance Requirements

PER-1: The system shall accommodate a total of 1 user and a maximum of 10 concurrent users during working-time.

PER-2: 100% data will be saved safely.

PER-3: The system shall display confirmation messages to users within an average of 1 seconds and a maximum of 2 seconds after the user submits information to the system.

PER-4: The system shall display data to users within an average of 1 seconds and a maximum of 3 seconds after the user requests to see information to the system.

6.3 Security Requirements

SEC-1: All network transactions that involve financial information or personally identifiable information shall be encrypted

SEC-2: Users must log in to the HMS for all operations.

SEC-3: Only hotel employees are authorized to manipulate, edit and manage all customer information, and manipulate food and menu orders

SEC-4: The system will allow users to review past and current booking information.

6.4 Safety Requirements

SAF-1: The user will be able to see a list of all hotel rooms and hotel menu. Regarding hotel rooms, customers can see reviews of quality, room rates and promotions that customers receive when booking by type. On the hotel menu, customers can see the price of the dish, the ingredients of the dish.

6.5 Availability Requirements

AVL-1: Data update time before working time 8:00 am and after 8:00 pm

6.6 Robustness Requirements

ROB-1: If the payment process fails, allow the system to reuse the saved information to issue a new receipt