Software Requirement Specification

For

Hotel Reservation System

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Table of Contents

1 Introduction

The following subsections of the Software Requirements Specifications (SRS) document provide an overview of the entire SRS.

1.1 Purpose

The Software Requirements Specification (SRS) will provide a detailed description of the requirements for the Hotel Reservation System (HRS). This SRS will allow for a complete understanding of what is to be expected of the HRS to be constructed. The clear understanding of the HRS and its' functionality will allow for the correct software tobe developed for the end user and will be used for the development of the future stages of the project. This SRS will provide the foundation for the project. From this SRS, the HRS can be designed, constructed, and finally tested.

This SRS will be used by the software engineers constructing the HRS and the hotel end users. The software engineers will use the SRS to fully understand the expectations of this HRS to construct the appropriate software. The hotel end users will be able to use this SRS as a "test" to see if the software engineers will be constructing the system to their expectations. If it is not to their expectations the end users can specify how it is not to their liking and the software engineers will change the SRS to fit the end users' needs.

1.2 Scope

The software product to be produced is a Hotel Reservation System which will automate the major hotel operations. The first subsystem is a Reservation and Booking System to keep track of reservations and room availability. The second subsystem is the Tracking and Selling Food System that charges the current room. The third subsystem is a General Reservation Services and Automated Tasks System which generates reports toaudit all hotel operations and allows modification of subsystem information. These three subsystem's functionality will be described in detail in section 2-Overall Description.
There are two end users for the HRS. The end users are the hotel staff (customer service representative) and hotel managers. Both user types can access the Reservation and Booking System and the Food Tracking and Selling System. The General Reservation System will be restricted to Reservation users.

The Hotel Reservation System's objectives is to provide a system to manage a hotel that has increased in size to a total of 100 rooms. Without automation the Reservation of the hotel has become an unwieldy task. The end users' day-to-day jobs of managing a hotel will be simplified by a considerable amount through the automated system. The system will be able to handle many services to take care of all customers in a quick manner. The system should be user appropriate, easy to use, provide easy recovery of errors and havean overall end user high subjective satisfaction.

1.3 Definitions, Acronyms, and Abbreviations.

SRS – Software Requirements Specification
HRS – Hotel Reservation System
Subjective satisfaction – The overall satisfaction of the system
End users – The people who will be actually using the system

1.4 Overview

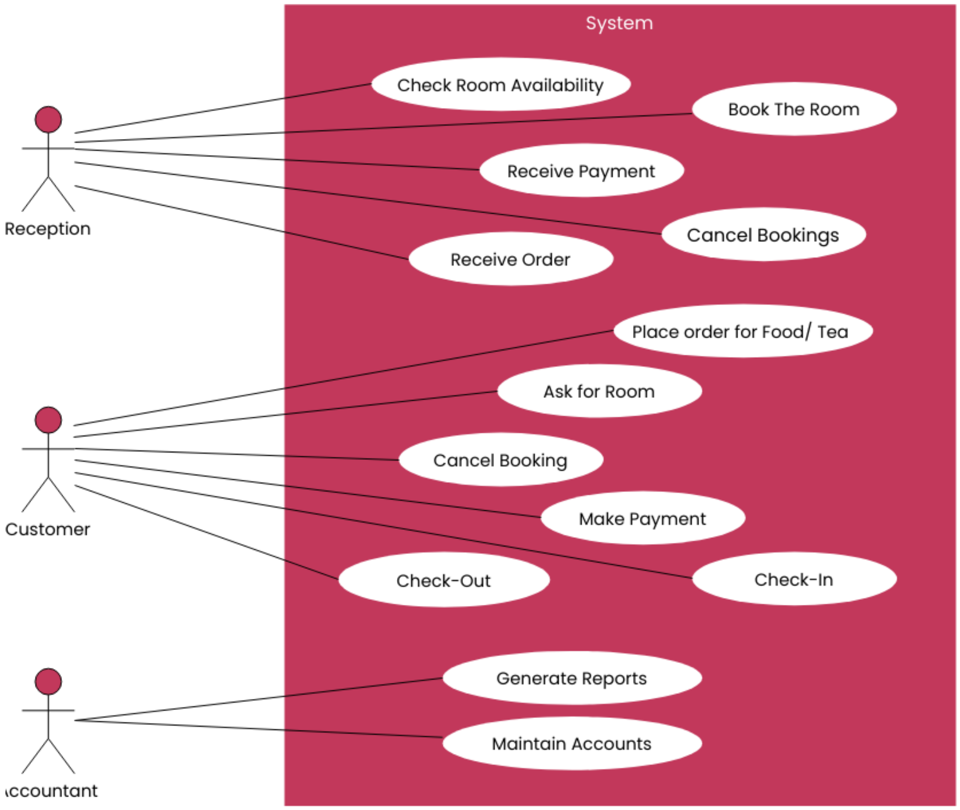
The SRS is organized into two main sections. The first is The Overall Description and the second is the Specific Requirements. The Overall Description will describe the requirements of the HRS from a general high level perspective. The Specific Requirements section will describe in detail the requirements of the system.

2 The Overall Description

Describes the general factors that affect the product and its requirements. This section does not state specific requirements. Instead it provides a background for those requirements, which are defined in section 3, and makes them easier to understand.

2.1 Product Perspective

The HRS is an independent stand–alone system. It is totally self contained.



2.1.1 Hardware Interfaces

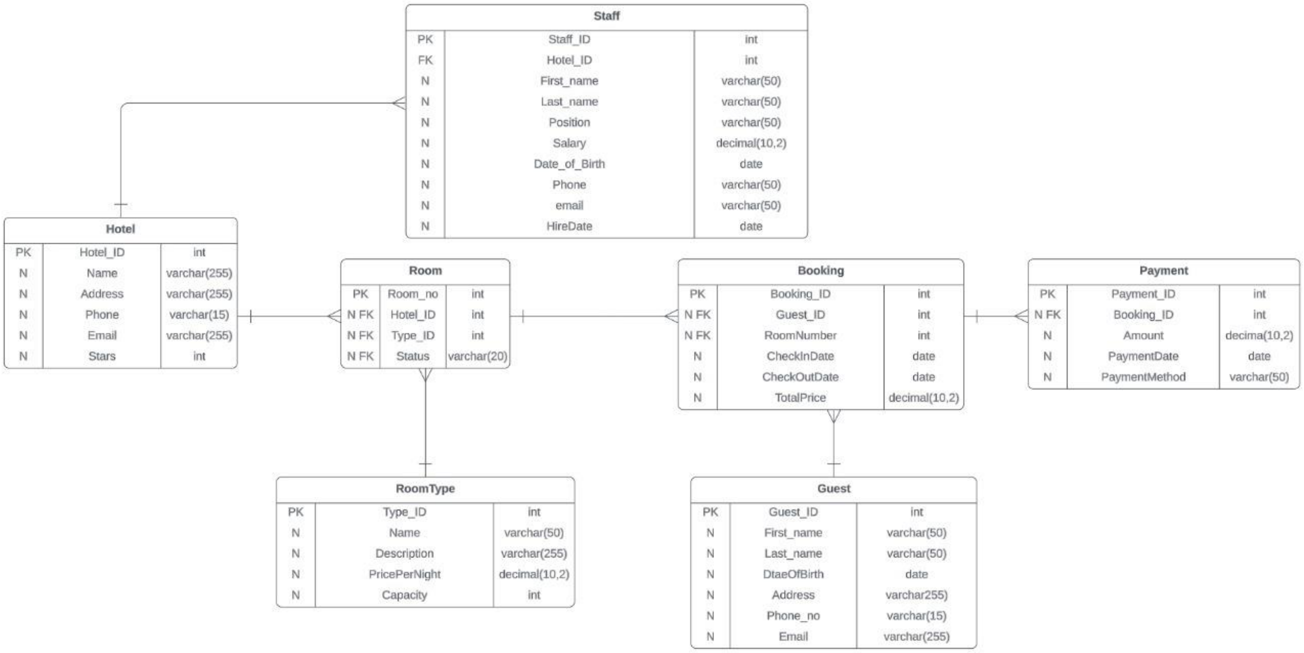
The HRS will be placed on PC's at every reception of the hotel Servers process reservations, databases store guest info , workstations facilitate staff interaction, POS systems handle transactions , and printers generate physical documents. The network connects these components, while security systems safeguard sensitive data.

2.1.2 Software Interfaces

All databases for the HRS will be configured using MySQL. These databases include hotel rooms and customers information. These can be modified by the end users. The room database will include the room numbers and if they are vacant or occupied. The customers information database will contain all the information of the customer such as first name, last name, number of occupants, assigned room, default room rate(may be changed), phone number, whether or not the room is guaranteed, credit card number, confirmation number, automatic cancellation date, expected check in date and time, actualcheck in date and time, expected check out date and time, amount owed by customer, andabbreviated customer feedback.

2.2 Product Functions

Entity Relationship(ER) Diagram :



Staff

PK	Staff_ID	int
FK	Hotel_ID	int
N	First_name	varchar(50)
N	Last_name	varchar(50)
N	Position	varchar(50)
N	Salary	decimal(10,2)
N	Date_of_Birth	date
N	Phone	varchar(50)
N	email	varchar(50)
N	HireDate	date

Hotel

PK	Hotel_ID	int
N	Name	varchar(255)
N	Address	varchar(255)
N	Phone	varchar(15)
N	Email	varchar(255)
N	Stars	int

Room

PK	Room_no	int
N FK	Hotel_ID	int
N FK	Type_ID	int
N FK	Status	varchar(20)

Booking

PK	Booking_ID	int
N FK	Guest_ID	int
N FK	RoomNumber	int
N	CheckInDate	date
N	CheckOutDate	date
N	TotalPrice	decimal(10,2)

Payment

PK	Payment_ID	int
N FK	Booking_ID	int
N	Amount	decima(10,2)
N	PaymentDate	date
N	PaymentMethod	varchar(50)

RoomType

PK	Type_ID	int
N	Name	varchar(50)
N	Description	varchar(255)
N	PricePerNight	decimal(10,2)
N	Capacity	int

Guest

PK	Guest_ID	int
N	First_name	varchar(50)
N	Last_name	varchar(50)
N	DtaeOfBirth	date
N	Address	varchar255)
N	Phone_no	varchar(15)
N	Email	varchar(255)

Reservation and Booking System

- Allows for typing in customer information
- Has a default room rate that is adjustable
- Includes a description field for the changed rate
- When a customer checks in, the room number will be changed to occupied in thedatabase Ability to modify a reservation
- When no rooms are available and a customer would like to extend their reservation their information will be placed in a database and when there are rooms available the first customer on the list will have the room
- When a customer checks out the amount owed is displayed
- If the internal clock states that is a customer's time to have checked out and customer has not checked out, adds an extra night to amount owed and provides a report
- Records that room is vacant
- Records payment
- Allows for space to write customer's feedback

Tracking and Selling Food System

- Tracks all meals purchased
- Charges the current room as necessary

General Reservation Services and Automated Tasks System

- Reports generated to audit hotel occupancy, future occupancy, room revenue, and food revenue
- Exception reports listing exceptions to the normal cost
- Allows addition, deletion and modification of information on rooms and rates, menu items and prices, user profiles

2.3 User Characteristics

Educational level of HRS computer software – Low
Experience of HRS software – None
Technical Expertise – Little

2.4 Apportioning of Requirements

The audio and visual alerts will be deferred because of low importance at this time.

2.5 Assumptions and Dependencies

- The system is not required to save generated reports.
- Credit card payments are not included

- Creation of users and assigning passwords

3 Specific Requirements

This section contains all the software requirements at a level of detail, that when combined with the system context diagram, use cases, and use case descriptions, is sufficient to enable designers to design a system to satisfy those requirements, and testers to test that the system satisfies those requirements.

3.1 External Interfaces

The Hotel Reservation System will use the standard input/output devices for a personal computer. This includes the following:

- Keyboard
- Mouse
- Monitor
- Printer

3.1.1 User Interfaces

The User Interface Screens are described in table 1.

Table 1: Hotel Reservation User Interface Screens

Screen Name	Description
Login	Log into the system as a CSR or Manager
Reservation	Retrieve button, update/save reservation, cancel reservation, modify reservation, change reservation, adjust room rate, accept payment type/credit card
Check-in	Modify room stay (e.g., new credit card), check-in customer (with or without a reservation), adjust room rate, special requests, accept payment type/credit card
Checkout	Checkout customer, generate bill
Hotel Payment	Accept payment for room and food
Room Service/Restaurant	Create order, modify order, view order, cancel order, generate meal bill
Customer Record	Add or update customer records
Administer Rooms	Availability and rates
Administer User	Create, modify, and delete users; change password
Administer Meals	Create, modify, and delete meal items and prices
Reports	Select, view, save, and delete reports

3.1.2 Software Interfaces

The system shall interface with an Oracle or Access database.

3.1.3 Hardware Interfaces

The system shall run on a Microsoft Windows based system. The hardware interface mandates compatibility with Microsoft Windows. This ensures the system's seamless operation within a Windows-based environment. The specified requirement aims to optimize performance and user experience on Windows platforms. It signifies a strategic choice in the system's technological framework, aligning with the Windows ecosystem.

3.1.4 Communication Interfaces

The system shall be a standalone product that does not require any communication interfaces.

3.2 Functional Requirements

Functional requirements define the fundamental actions that system must perform.The functional requirements for the system are divided into three main categories, Reservation/Booking, Food, and Reservation. For further details, refer to the use cases.

1. *Reservation/Booking*

1.1. The system shall record reservations.
1.2. The system shall record the customer’s first name.
1.3. The system shall record the customer’s last name.
1.4. The system shall record the number of occupants.
1.5. The system shall record the room number.
1.6. The system shall display the default room rate.

1.6.1. The system shall allow the default room rate to be changed.
1.6.2. The system shall require a comment to be entered, describing the reason for changing the default room rate.

1.7. The system shall record the customer’s phone number.
1.8. The system shall display whether or not the room is guaranteed.
1.9. The system shall generate a unique confirmation number for each reservation.
1.10. The system shall automatically cancel non-guaranteed reservations if the customer has not provided their credit card number by 6:00 pm on the check-in date.
1.11. The system shall record the expected check-in date and time.
1.12. The system shall record the expected checkout date and time.
1.13. The system shall check-in customers.
1.14. The system shall allow reservations to be modified without having to reenter all the customer information.
1.15. The system shall checkout customers.

1.15.1. The system shall display the amount owed by the customer.
1.15.2. To retrieve customer information the last name or room number shall be used
1.15.3. The system shall record that the room is empty.

1.15.4. The system shall record the payment.
1.15.5. The system shall record the payment type.

1.16. The system shall charge the customer for an extra night if they checkout after 11:00 a.m.
1.17. The system shall mark guaranteed rooms as “must pay” after 6:00 pm on the check-in date.
1.18. The system shall record customer feedback.

2. *Food*

2.1. The system shall track all meals purchased in the hotel (restaurant and room service).
2.2. The system shall record payment and payment type for meals.
2.3. The system shall bill the current room if payment is not made at time of service.
2.4. The system shall accept reservations for the restaurant and room service.

3. *Reservation*

3.1. The system shall display the hotel occupancy for a specified period of time (days; including past, present, and future dates).
3.2. The system shall display projected occupancy for a period of time (days).
3.3. The system shall display room revenue for a specified period of time (days).
3.4. The system shall display food revenue for a specified period of time (days).
3.5. The system shall display an exception report, showing where default room and food prices have been overridden.
3.6. The system shall allow for the addition of information, regarding rooms, rates, menu items, prices, and user profiles.
3.7. The system shall allow for the deletion of information, regarding rooms, rates, menu items, prices, and user profiles.
3.8. The system shall allow for the modification of information, regarding rooms, rates, menu items, prices, and user profiles.
3.9. The system shall allow managers to assign user passwords.

3.3 Nonfunctional Requirements

Functional requirements define the needs in terms of performance, logical database requirements, design constraints, standards compliance, reliability, availability, security, maintainability, and portability.

3.3.1 Performance Requirements

Performance requirements define acceptable response times for system functionality.

- The load time for user interface screens shall take no longer than two seconds.
- The log in information shall be verified within five seconds.
- Queries shall return results within five seconds.

3.3.2 Logical Database Requirements

The logical database requirements include the retention of the following data elements. This list is not a complete list and is designed as a starting point for development.

Booking/Reservation System

- Customer first name
- Customer last name
- Customer address
- Customer phone number
- Number of occupants
- Assigned room
- Default room rate
- Rate description
- Guaranteed room (yes/no)
- Credit card number
- Confirmation number
- Automatic cancellation date
- Expected check-in date
- Expected check-in time
- Actual check-in date
- Actual check-in time
- Expected check-out date
- Expected check-out time
- Actual check-out date
- Actual check-out time
- Customer feedback
- Payment received (yes/no)
- Payment type

Total **Food Services**

- Meal
- Meal type
- Meal item
- Meal order
- Meal payment (Bill to room/Credit/Check/Cash)

3.3.3 Design Constraints

The Hotel Reservation System shall be a stand-alone system running in a Windows environment. The system shall be developed using Java and an Access or Oracle database.

3.3.4 Standards Compliance

There shall be consistency in variable names within the system. The graphical userinterface shall have a consistent look and feel.

3.3.5 Reliability

Specify the factors required to establish the required reliability of the software system at time of delivery.

3.3.6 Availability

The system shall be available during normal hotel operating hours.

3.3.7 Security

Customer Service Representatives and Managers will be able to log in to the Hotel Reservation System. Customer Service Representatives will have access to the Reservation/Booking and Food subsystems. Managers will have access to the Reservation subsystem as well as the Reservation/Booking and Food subsystems. Accessto the various subsystems will be protected by a user log in screen that requires a user name and password.

3.3.8 Maintainability

The Hotel Reservation System is being developed in Java. Java is an object oriented programming language and shall be easy to maintain.

3.3.9 Portability

The Hotel Reservation System shall run in any Microsoft Windows environment that contains Java Runtime and the Microsoft Access databa