Restaurant Automation System

Software Requirements Specification

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Prepared for SE Lab

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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 **Restaurent Automation Software (RAS)**. This SRS will allow for a complete understanding of what is to be expected of the RAS to be constructed. The clear understanding of the RAS and its functionality will allow for the correct software to be 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 RAS can be designed, constructed, and finally tested.

This SRS will be used by the software engineers constructing the RAS and the Restaurent end users. The software engineers will use the SRS to fully understand the expectations of this RAS to construct the appropriate software. The Restaurent 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 **Restaurent Automation Software** which will automate the major Restaurent 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 Management Services and Automated Tasks System which generates reports to audit all Restaurent operations and allows modification of subsystem information. These three subsystems functionality will be described in detail in section 2-Overall Description.
There are four end users for the RAS. The end users are the Restaurent manager, catering service managers, receptionist and customer. The first user types can access the Reservation and Booking System, the second user type can access Food Tracking and Selling System, the third one will enter the data of customers and fouth one will have to reserve room when required. The General Management System will be restricted to management users.

The Restaurent Automation Software's objectives is to provide a system to manage a Restaurent. Without automation the management of the Restaurent RAS become an unwieldy task. The end users day-to-day jobs of managing a Restaurent 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 have an overall end user high subjective satisfaction.

1.3 Definitions, Acronyms, and Abbreviations.

SRS – Software Requirements Specification
RAS – Restaurent Automation Software
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 RAS 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 RAS is an independent stand–alone system. It is totally self contained.

2.1.1 Hardware Interfaces

The RAS will be placed on PC's throughout the Restaurent.

2.1.2 Software Interfaces

All databases for the RAS can be modified by the end users. The room database will include whether the room are single bed or double bed and whether they are air conditioned or not. It also include the room numbers and if they are vacant or occupied, room tariffs for all types of room and average room tariff. The customers information database will contain all the information of the customer such as first name, last name, number of occupants, assigned room, token number, default room rate(may be changed), phone number, actual check in date and time, expected check out date and time, advanced paid, amount owed by customer, and abbreviated customer feedback. The catering service information database will contain about the quality and type of food items.

2.2 Product Functions

Reservation and Booking System

- Allows for typing in customer information.
- RAS a default room tariff that is adjustable.
- Includes a description field for the changed rate.
- Allocation of unique token number to each customer.
- When a customer checks in, the room number will be changed to occupied in the database.
- Ability to modify a reservation.
- If no room is available then it should display an apology message.
- 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 to be payed is displayed.
- Records that room is vacant
- Records payment
- Allows for space to write customer's feedback

Tracking and Selling Food System

- Tracks all meals purcRASed by inputting the quality and type of food items as and when consumed by the guests and corresponding date and time.
- Charges the current room as necessary

General Management Services and Automated Tasks System

- Reports generated to audit Restaurent occupancy, future occupancy, room revenue, and food revenue
- Should issue an identity number to frequest customers which would help them to get special discounts on their bills.
- Allows addition, deletion and modification of information on rooms and rates, menu items and prices, user profiles
- 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 Restaurent Automation Software 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: Restaurent Management User Interface Screens

Screen Name	Description
Login	Log into the system as a Restaurent or catering service Manager
Reservation	Retrieve button, save reservation, cancel reservation, modify reservation, accept payment type/credit card
Check-in	check-in customer (with or without a reservation), enter details, accept payment type/credit card
Checkout	Checkout customer, generate bill
Restaurent Payment	Accept payment for room and food
Room Service/Restaurant	Create order, modify order, view order, cancel order, generate meal bill
Administer Rooms	Availability and rates
Administer User	Create and modify users, avail discount
Administer Meals	Create and modify meal items and prices

3.1.2 Software Interfaces

The system shall interface with a MySql database.

3.1.3 Hardware Interfaces

The system shall run on a Microsoft Windows based system.

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 Management. 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 the token number to the customer.
   - 1.9. The system shall record the advanced paid by customer.
   - 1.10. The system shall record the expected check-in date and time.
   - 1.11. The system shall record the expected checkout date and time.
   - 1.12. The system shall allow reservations to be modified without having to re-enter all the customer inforamtion.
   - 1.13. The system shall checkout customers.
     - 1.13.1. The system shall display the amount owed by the customer.
     - 1.13.2. To retrieve customer information the last name or room number shall be used
     - 1.13.3. The system shall record that the room is empty.
     - 1.13.4. The system shall record the payment.
     - 1.13.5. The system shall record the payment type.
   - 1.14. The system shall record customer feedback.

2. Food
   - 2.1. The system shall track all meals purchased in the Restaurent (restaurant and room service).
   - 2.2. The system shall record payment and payment type for meals.
   - 2.3. The system shall accept reservations for the restaurant and room service.

3. Management
   3.1. The system shall display the Restaurent 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 issue an identity numbers to frequent guests which would help them to get special discounts on their bills.

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.

Booking/Reservation System

- Customer first name
- Customer last name
- Customer address
- Customer phone number
- Number of occupants
- Assigned room
- Default room rate
- Rate description
- Token number
- Actual check-in date
- Actual check-in time
- Expected check-out date
- Expected check-out time
- Customer feedback
- Payment received (yes/no)
- Payment type
- Total Bill

Food Services

- Meal
- Meal type
- Meal item
- Meal order
- Meal payment

3.3.3 Design Constraints

The Restaurent Automation Software shall be a stand-alone system running in a Windows environment.

3.3.4 Standards Compliance

There shall be consistency in variable names within the system. The graphical user interface 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 Restaurent operating hours.

3.3.7 Security

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

3.3.8 Maintainability

The Restaurent Automation Software is being developed in JAVA. JAVA is an object oriented programming language and is platform- independent language.

3.3.9 Portability

The Restaurent Automation Software shall run in any Microsoft Windows environment that contains MySql database.