Automated Hotel Management System

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Contents

1 Introduction

This Software Requirement Specification document provides a complete description of all the functionalities and the specifications of the Automated Hotel Management System. The developers and the testers can use this document as a reference for developing the design and test plan documents.

1.1 Purpose

The purpose of this document is to present a detailed Automated Hotel Management System. It will explain the different functional as well as non functional requirements of the system, the interfaces of the system, what the system will do or how the system will interact with the external users, the constraints under which it will operate. This Software Requirement Specification document will provide a clear understanding of what is expected by the client in the proposed Automated Hotel Management System. This will give a clear idea on how the software should be developed by the development team for the end users. This SRS will provide a solid base or foundation for the project. From this SRS, the designers can design low level design documents and the testers can create test plans and various test case documents.

The main goal of the project is to design a scalable and extensible system for managing the hotel activities. The system will be designed with the user-centric approach that will ensure that the user requirements mentioned in the documents must be full filled and must conforms to the required standards. The new proposed system will operate efficiently by eliminating all the time consuming issues and provides a better and much enhanced services to the customers as well as the management and staff of PANACHE. The proposed software is multi-platform software such that it will work in all the operating systems and most of the browsers.

1.2 Scope

The software to be produced is an Automated Hotel Management System which will help the customers of the PANACHE Group of Hotels to reserve rooms and other facilities of the hotel from anywhere in the world. The core

part of the project is the reservation and the booking system to keep track of the reservations and room availability. There are three types of the end users for this Hotel Management System. The first ones are the receptionist who uses the system for the reservation purposes. The other end users are the admin user and the food cateters who are given separate authentication to the Hotel Management System.
The booking module is used to reserve the hotel rooms. The customer can book the rooms over telephone or in person. The customer needs to enter their personal details and have to pay 10 percentage of the total payment to confirm the booking. When the customer books the room in person, the staff members of the PANACHE Group of Hotels need to enter the customer details by logging to receptionist modules with corresponding authorization. This document will be used as a base document for further project developments.

1.3 Definitions, Acronyms, and Abbreviations

HMS	Hotel Management System
Front-desk staff	administrative staff that work at reception desk
Login ID	a user identification number to enter the system
Password	a word that enables one to gain admission into the system
MySQl	a query language to interrogate the system
GUI	Graphical User Interface
SRS	Software Requirements Speficification

1.4 References

Software Engineering by Rajiv Mall.
https://studylib.net/doc/7011876/srs-document---e
https://www.geeksforgeeks.org/how-to-write-a-good-srs-for-your-project/
https://en.wikipedia.org/wiki/Software_requirements_specification
https://en.wikipedia.org/wiki/Data-flow_diagram

2 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 below and makes them easier to understand.

2.1 Product perspective

This Hotel Management System is a self-contained system that manages activities of the hotel such as customer check in, check out and food tracking.

2.2 Product Functions

The system functions can be described as follows:

2.2.1 Reservation and Booking System

- Allows for typing in customer information
- Has a default room rate that is adjustable
- When a customer checks in, the room number will be changed to occupied in the database
- Ability to modify a reservation
- When a customer checks out the amount owed is displayed
- Records that room is vacant
- Records payment
- Allows for space to write customers feedback

2.2.2 Tracking and Selling Food System

- Tracks all meals purchased
- Charges the current room as necessary based on the token number.

2.2.3 General Management 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 and rates, menu items and prices, user profiles
- Creation of users and assigning passwords

2.3 User characteristics

Educational level of HMS computer software - Low
Experience of HMS software - None
Technical Expertise - Little

2.3.1 Front-desk staff:

They all have general reception and secretarial duties. Every staff has some basic computer training. They are responsible for customer's check-in and check-out and bill generation .

2.3.2 Food caterers:

They all have room service duties. Every staff has some basic computer training. They are responsible for customers food order details and attaching the food bills to the final bill.

2.3.3 Administrators:

They all have post-secondary education relating to general business administration practices. Every administrator has basic computer training. They are responsible for updation of room prices, addition/ updation of details of front desk staff.

2.4 General Constraints

- A maximum of 2 persons can stay in a single AC/Non AC room.
- A maximum of 3 persons can stay in a double AC/Non AC room.
- All customers at the time of check-in need to provide a valid ID Proof (Adhaar Card/ Voter Card)
- The check-in time is 12 Noon and the check-out time is 11AM.
- Only the admin/manager can update the front desk staff details and room price details
- The customers can pay the bills only through cash payments
- Customer can book rooms in advane in 28 days

2.5 Assumptions and Dependencies

- It is assumed that all the staff are well aware about computer and handling the system
- The project should be completed within specified time period including Planning, Designing, Development, Testing and Deployment.
- The project should be completed within specified budget.
- All the Entry and Exit criteria of all the stages should be met.
- The product should be user-friendly, reliable and should maintain the industry standards without compromising the quality.

3 Specific Requirement

3.1 External Interface Requirements

3.1.1 User Interfaces

The user interface screens are described in the following table

Table 1: Hotel Management System User Interface Screens

Screen Name	**Description**
Login	Log into the system as a Receptionist or Manager or Food caterer
Reservation	Add/ update/cancel reservation, adjust room rate.
Check-in	Modify room stay (e.g. Extend Reservation), check-in/check-out customer.
Check-out	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 users ID and password.
Administer Meals	Modify meal prices.
Reports	Select, view, save, and delete reports.

3.1.2 Hardware Interfaces

The hardware interface for the user would be any PC having a conguration of Pentium-4 and above 2GB HDD for loading any OS so that HMS could interact with the system without any problem. The main interface would be monitor, keyboard and mouse.

3.1.3 Software Interfaces

Hotel Automation Software will use database for storing and management of customer and room records. So an access to the database management system is required. When such an event occurs the system establishes connection to the database management system, once the connection is created; the client program can communicate with the database management system. A standard called Java Database Connectivity (JDBC) provides an application programming interface (API), which allows client-side programs to call database management system, as long as PC has the necessary software installed. Most database management system vendors provide JDBC drivers for their systems. A user can actually connect to several database management system and send query and transaction requests using the Java Database Connectivity (ODBC) API, which are then processed at the server side. Any query results are sent back to user, which can process or display the result as needed

3.1.4 Communications Interfaces

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

3.2 Functional Requirements

Functional requirements for the purposed system which define the fundamental actions of the system contain all the information of the software requirements for the development of the booking system for Hotel project.

3.2.1 Reservation/Booking

SRS001 : Search room

- Receptionist will be given the following access.
- The system shall enable front desk staff to check the availability of rooms.

- The system shall generate an error message in case of non availability of rooms . If the rooms are available as per the requirements the system will be redirected to the reservation details page.

SRS002 : Make Resevation/Check-in

- The system shall record the customer's details such as first name, last name, email address, contact number, etc and make reservation .
- The system shall record the room number, update the database and generate a unique token number.
- The system shall have cancel button for booking procedure.
- The system shall provide for modification of reservation details.

SRS003 : Check-out

- The system shall calculate the total bill amount.
- The system shall enable customer to pay the bill through cash.

3.2.2 Food Tracking

SRS004 : Food Orders

- The system shall track all meals purchased in the hotel (restaurant and room service).
- The system shall bill the current room based on the token number if payment is not made at time of service.

3.2.3 Management team interface/admin

SRS005 : Room details

- The system shall display the hotel occupancy for a specified period of time (days; including past, present, and future dates).

- The system shall display options for updating room revenue .

SRS006 : Food details

- The system shall allow for addition / modification/deletion of information regarding food menu items and their prices.

SRS007 : View or edit user

- The system should allow management member to check staff details.
- The system should allow manager/admin to add new user and password.

3.3 Non Functional Requirements

3.3.1 Performance Requirements

SRS008 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.
  item Works for medium size information databases.

3.3.2 Logical Database Requirements

SRS009 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 Adhaar Number
- Customer address
- Customer phone number
- Number of occupants
- Assigned room
- Default room rate
- 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)
- Total Bill

Food Services

- Meal item

- Meal Price
- Meal order
- Meal payment (Bill to room/Cash)

3.3.3 Design Constraints

The Hotel Management System shall be a stand-alone system running in a Windows environment. The system shall be developed using Java and Mysql database.

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

System is thorougly tested at the time of delivery so that errors are minimised. The system shall provide the capability to back up the data in case of power failure.

3.3.6 Availability

The system shall be available all the time.

3.3.7 Security

Receptionist, Food caterers and Managers will be able to login to the Hotel Management System. Front desk staff will have access to the Reservation/Booking and Food caterers will have access to the menu details. Managers will have access to the Management subsystem as well as the room details. Access to the various subsystems will be protected by a user log in screen that requires a user name and password. Different users can login only to their respective subsystems and have no access to other user's subsystems.

3.3.8 Maintainability

The Hotel Management System is being developed in Java. Java is an object oriented programming language and shall be easy to maintain.
To ease maintainence the user manual and the system manual is provided at the time of delivery. Each module is designed independently so that any change requests can be modified easily.

3.3.9 Portability

The Hotel Management System shall run in any Microsoft Windows environment that contains Java Runtime and the MySql database.

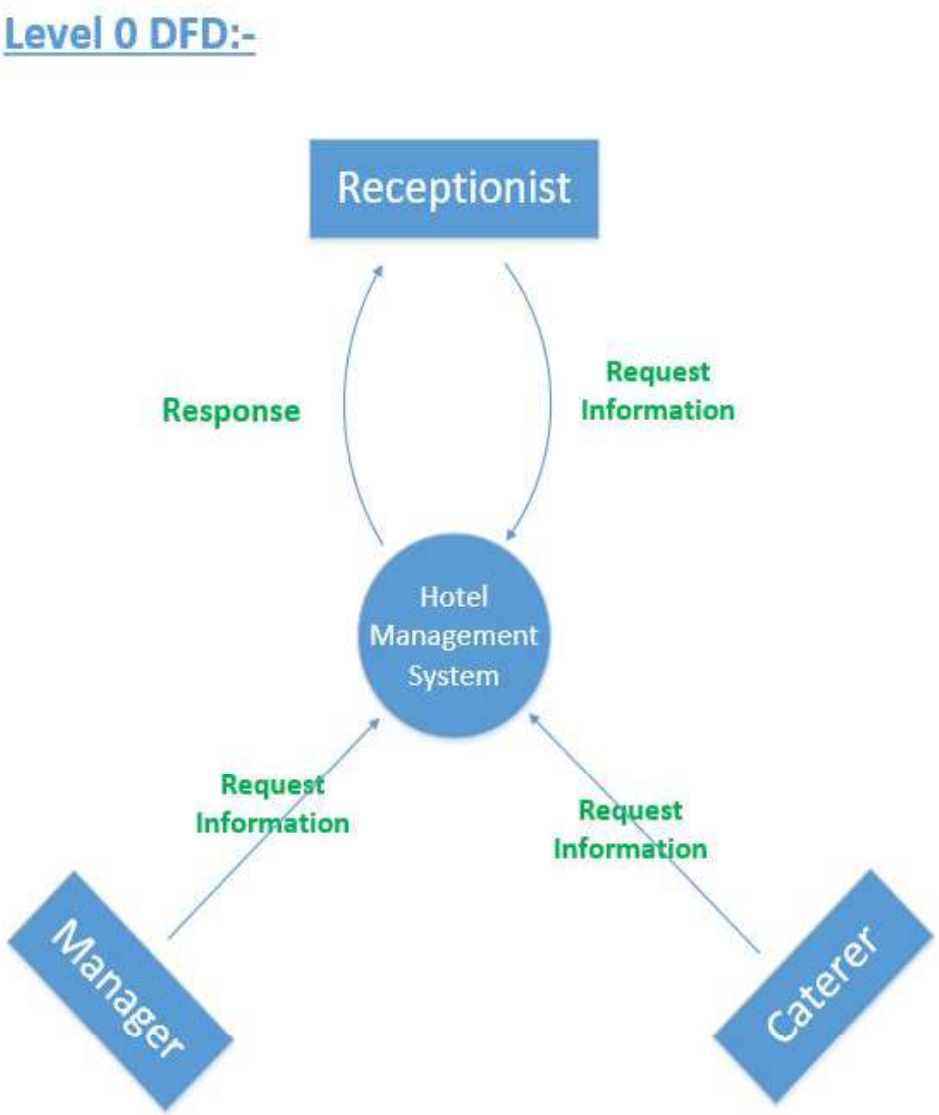
4 Conclusion

Table 2: Hotel Management System Users

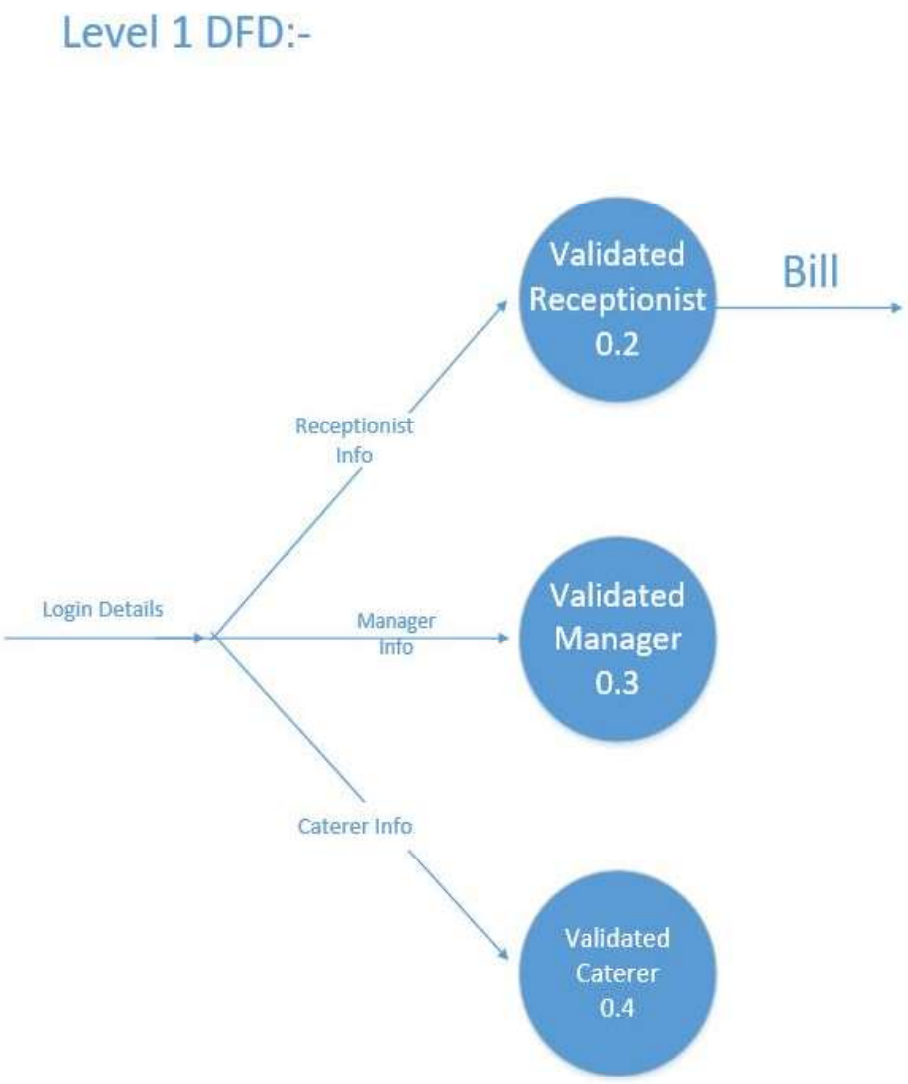
Serial No:	**Role**	**Responsibility**
1	Manager	Add/Modify User, Room Price Updation
2	Receptionist	Check in/out,Billing
3	Food Caterer	Food Orders, Food Bills

5 Design Methodology

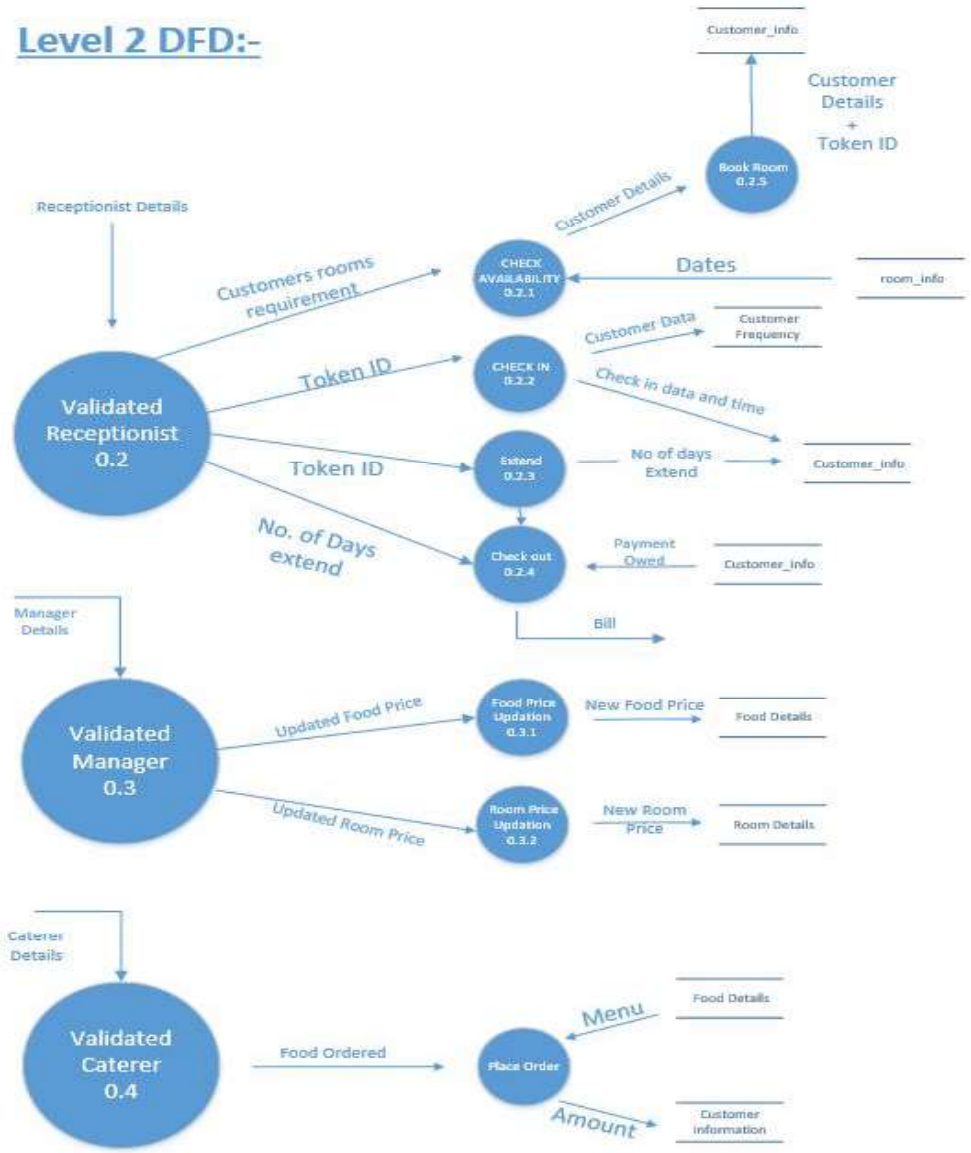
5.1 Data Flow Diagram Level 0



5.2 Data Flow Diagram Level 1



5.3 Data Flow Diagram Level 2



5.4 Data Dictionary for DFD Model

ID :	string
Password :	string
Position of responsibility:	string
Login credential :	ID + Password + Position of responsibility
Item :	string
Price :	float
Menu :	{ Item + Price } *
Amount :	integer
Type of room:	integer
Number of days stay :	integer
Number of guests :	integer
Customers rooms requirements:	Type of room + Number of days stay + Number of guests
Token ID :	integer
New food price :	integer

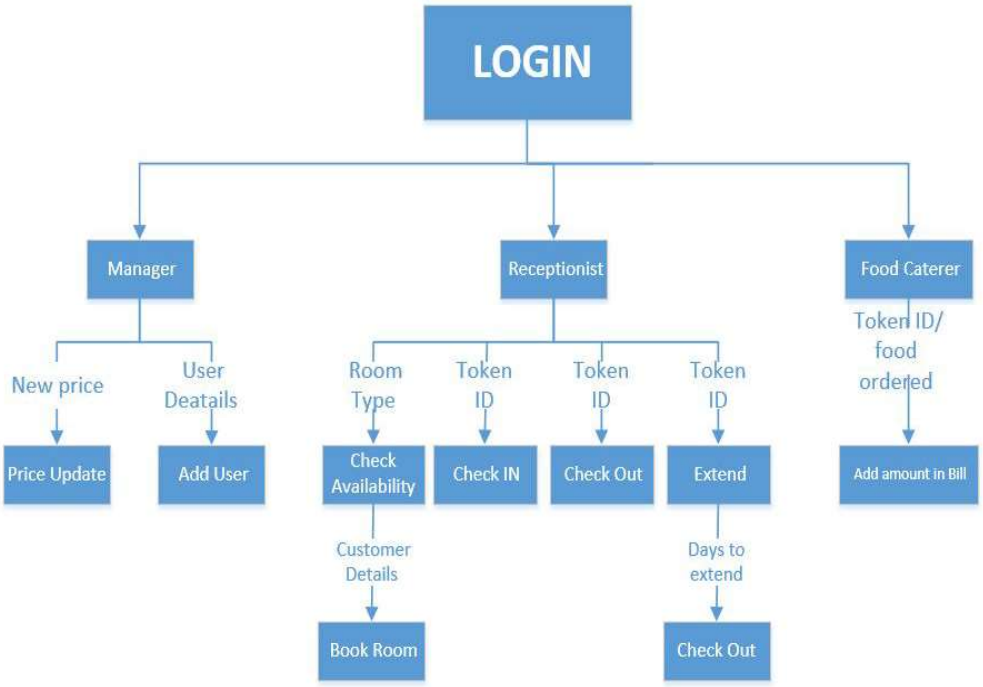
New room price :	integer
First Name:	string
Last Name :	string
Permanent Address :	string
Adhaar ID :	integer
Email ID :	string
Phone number :	integer
Expected Check in date and time :	string
Check in date and time :	string
Checkout date :	string
Room type:	string
Advanced Payment :	float
Dates :	string
Number of guests :	integer

Customer Details :	First Name + Last Name + Permanent Address + Adhaar ID + Email ID + Phone number + Expected Check in date and time + Check in date and time + Checkout date + Token ID + Room type + Advanced Payment + Number of guests
Dates :	string
Customer Data :	Aadhar ID + Token ID
No of days extend :	integer
Payment owed :	float
Bill :	float
Updated food price :	integer
Updated food price :	integer
New food price :	integer
New food price :	integer
Description:	string
Cost :	float
Login info :	{ ID + Password + Position of responsibility } *
Customer frequency :	{ Aadhar no + Token ID + Number of visits } *

Food Details :	{ Item + Price } *
Room info :	{ Room no + {Dates}30 + Description + Cost } *
Customer info:	{ First Name + Last Name + Permanent Address + Adhaar ID + Email ID + Phone number + Expected Check in date and time + Check in date and time + Checkout date + Token ID + Room type + Advanced Payment + Number of guests } *

5.5 Structure Design

STRUCTURE DIAGRAM:-



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