Software Requirements Specification

For

Hotel Management System

Version 1.0

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Revision History

Name	Date	Reason for Changes	Version
Use case	08.11.20	Modify use case	1.0

1. Introduction

The Hotel Management System is a tool for booking the rooms of hotel through online by the customers. It provides the proper management tools and easy access to the information of the customers.

1.1 Purpose

The main objective of the Software Requirement Specification (SRS) of Hotel Management System is to provide a base for the foundation of the project. It gives a comprehensive view and complete understanding of how the system is supposed to work and what is to be expected from the newly introduced system which is to be constructed by the end users. Client's expectations and requirements are analyzed to produce specific unambiguous functional and non-functional requirements, so that they can be used by the development team with clear understanding to build a system as per end user needs. This SRS for Hotel Management System can also be used for future as basis for detailed understanding on how project was started. It provides a blueprint to upcoming new developers and maintenance teams to assist in maintaining and modifying this project as per required changeability. The clear understanding of the system 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 Hotel Management System can be designed, constructed, and finally tested. This SRS will be used by the hotel end users and the system development team which is constructing the Hotel Management System.

1.2 Document Conventions

The document is prepared using Microsoft Word 2019 and has used the font type 'Cambria'. The fixed font size that has been used to type this document is 12. It has used the bold property to set the headings of the document.

1.3 Intended Audience and Reading Suggestions

The intended audience of this document would be owner and specific employees like manager and receptionist of a hotel and project team with the objective to refer and analyze the information. The SRS document can be used in any case regarding the requirements of the project and the solutions that have been taken. Finally, the document would provide a clear idea about the system that is building.

Brief outline of the document is,

1. Overall Description
2. System Features
3. External Interface Requirements
4. Non-Functional Requirements

1.4 Scope of the Project

The objective of the automated Hotel Management System is to simplify the day to day processes of the hotel. The system will be able to handle many services to take care of all customers in a quick manner. As a solution to the large amount of file handling happening at the hotel, this software will be used to overcome those drawbacks. Safety, easiness of using and most importantly the efficiency of information retrieval are some benefits that the development team is going to present with this system.

There are three end users for hotel management system. The end users are Owner, Manager and Receptionist. Owner can access to all system functionalities without any restrictions. Manager can access to all system functionalities with limited restrictions. Receptionist can only access to the Reservation management section. To keep restrictions for each end user levels, hotel management system can create different login functions.

The Hotel Management 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 management 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 have an overall end user high subjective satisfaction.

1.5 References

1. https://www.perforce.com/blog/alm/how-write-software-requirements-specification-srs-document
2. https://innsoft.com/hardware-requirements/
3. https://studylib.net/doc/7011876/srs-document---e
4. https://opus.govst.edu/cgi/viewcontent.cgi?article=1199&context=capstones
5. https://educatech.in/functional-requirements-for-hotel-management-system/
6. https://www.siteminder.com/r/technology/hotel-internet-booking-engines/requirements-hotel-reservations-system/
7. https://ukdiss.com/examples/hotel-management-system.php

2. Overall Description

2.1 Product Perspective

The Hotel Management System is a new self-contained software product which will be produced by the project team in order to overcome the problems that have occurred due to the current manual system. The newly introduced system will provide an easy access to the system and it will contain user friendly functions with attractive interfaces. The system will give better options for the problem of handling large scale of physical file system, for the errors occurring in calculations and all the other required tasks that has been specified by the client. The final outcome of this project will increase the efficiency of almost all the tasks done at the hotel in a much convenient manner.

2.2 Product Functions

- Make Reservations
- Search Rooms
- Add Payment
- Issue Bills
- Manage Guest (Add, Update Guest)
- Manage Room Details (Add, Update, Delete)
- Manage Staff (Add, Update, Delete, View)
- Manage Inventory (Add, Edit, Delete)
- Set Rates
- Retrieve Reports (Staff payment, Income)
- Manage Users (Add, Update, Delete)
- Taking Backups
- E-mail notification

2.3 User Classes and Characteristics

User Classes:

There are three user levels in Hotel Management System of a Hotel.

i. Owner
ii. Manager
iii. Receptionist

Characteristics of user classes:

Owner:

Hotel owner has the privilege of monitoring and authorization of all the tasks handled by the system. He can access every function performed by the system. Owner of the company as well as the system can access to the administration panel which is considered as the core of the system. The main authorized person of the company owner gets the ability to manage the other users including their user levels and privileges. Taking backups of the system and restoring the system can also be done by the owner. Meanwhile he will be able to take all the kinds of reports available in the system. He has the power to set room rates as well. Hotel owner has the sole right of deleting a staff member from the system database.

Manager:

Manager is responsible for managing the resources available in hotel management system. Manager also has most of the privileges mentioned above except the things regarding the payment handling. The reason for using a manager is to reduce the work load done by the owner that cannot be assigned to the receptionist, as those tasks seem much responsible. The user level, Manager has the authority to take all the reports available in the system but here also except the reports related to financial stuff, hotel income. Manager has other abilities that receptionist, user level has. Such as, adding new staff member to the system, modifying them or removing them; adding new guests to the system, modifying them and removing them from the system; adding new inventory to the system, modifying them and removing them; adding new room types to the system, modifying them and removing them.

Receptionist:

As a hotel receptionist, he or her role will be to attain the goals of bookings and to ensure that all guests are treated with a high standard of customer service. Hierarchically receptionist role has the least accessibility to the system functions. Receptionist plays the boundary role of the system. He or she can perform limited functions such as registering new guest to the system, make reservations, sending e-mail reminders for booking confirmation from clients. Management of hotel will prefer to hire receptionist who have a good standard of general education and possibly in subjects such as English, math and IT.

2.4 Operating Environment

Hardware and software requirements:

Hardware:

1. **Operating System:** Supports all known operating systems, such as Windows, Linux
2. **Computer:** 2 GB+ RAM, monitor with minimum resolution of 1024x768, keyboard, and mouse
3. **Hard Drive:** should be in NTFS file-system formatted with minimum 10 GB of free space
4. **A Laser printer:** will need to be used to print these reports and notes

Software:

1. Software is designed to run on any platform above Microsoft Windows 7 (32bit).
2. Microsoft.NET Frameworks 4.0 or above.
3. Microsoft SQL Server Management Studio Express 2010.

2.5 Design and Implementation Constraints

Software development crew provides their best effort in developing the system. In order to maintain the reliability and durability of system, some design and implementation constraints are applied. Availability of an android app for hotel management system could make the system portable but due to time constraint, it is not possible. System will need a minimum memory of 2 GB. But it is recommended to have a memory of 4 GB. Designing interfaces of a system requires the capability to work with new tools such as Dev Express. Considering the client's budget, those interfaces should be created in a simple realistic manner using affordable technology.

2.6 User Documentation

User manuals provided to the client will give a clear idea in interacting with the system. It will be written in a simple understandable language concealing the inner complexity of the system. A hard copy of the user manual will be delivered to the client with the delivery of system.

2.7 Assumptions and Dependencies

Some software used in implementing the system is with high cost and the client has agreed to afford the amount of money needed to purchase them. It's assumed that client won't change that decision on the next phases of the software development and that client is using windows 7 or windows 8 or windows 10. Otherwise, if the client uses an open-source operating system, there is a need of changing the SRS accordingly.

3 External Interface Requirements

3.1 User Interfaces

The dashboard of the system will be user friendly. Customers can be able to book rooms easily and can also give feedback through it easily.

3.2 Hardware Interfaces

A specific computer must match with the above-mentioned requirements in order to gain the maximum benefits from the system in an efficient manner.

Reservation alerts will be sent to the one of the members of hotel staff as an e-mail notification. So, there is a need of broadband internet connection. Client should able to keep a stable internet connection. A laser printer will be needed when printing bills and several reports.

3.3 Software Interfaces

The computer this software going to be install need to have Windows Operating System equal or above, Windows 7. On that Windows platform. Net 4.0 will be installed and that will be the platform the software will be run. There will be an ADO.NET data transmission with the Microsoft SQL Server Management Studio Express 2010 R2 edition that will be installed in the same computer.

3.4 Communication Interfaces

When a specific reservation reserved at the same time an e-mail notification will be sent to both relevant staff member's e-mail account and guest's account. Guest will be notified in the check-out date. To achieve that functionality, it requires having a stable internet connection. Mostly a broadband connection with the client's computer will provide the efficient service.

4. System Features

1. Sometimes it happens that the rooms get booked soon when one visits the place therefore the user can make advance booking using this system.

2. It saves user time in search of rooms.

3. The system is useful as it calculates an exact cost for requested number of days.

4. It saves organization resources and expenses.

5. This system is effective and saves time and cost of users.

6. The system is portable i.e. can be used from anywhere.

7. Easy registration.

4.1 Data 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.

1. Booking/Reservation System

2. Customer first name

3. Customer last name

4. Customer address

5. Customer phone number

6. Number of occupants

7. Assigned room

8. Default room rate

9. Rate description

10. Guaranteed room (yes/no)

11. Credit card number

12. Confirmation number

13. Automatic cancellation date

14. Expected check-in date

15. Expected check-in time

16. Actual check-in date

17. Actual check-in time

18. Expected check-out date

19. Expected check-out time

20. Actual check-out date

21. Actual check-out time

22. Feedback from customer

23. Payment received (yes/no)

24. Payment type

25. Total Bill

4.2 Functional Requirements

Function 1	**Form Fill/Make Reservations**
Input	Code, Number of children, check-in date, check out date, status, Number of nights
Output	Database Record, Database successfully updated message
Processing	Validate the given details and record the information into the database.

Function 2	**Add Guest**
Input	Member code, Phone number, Company, Name, E-mail, Gender, Address
Output	Database Record, Database successfully updated message
Processing	Validate the given details and record the information into the database.

Function 3	**Add staff member**
Input	Code, Employee Name, Employee Address, NID, Salary, Name Age, Occupation, E-mail
Output	Database Record, Database successfully updated message
Processing	Validate the given details and record the information into the database.

Function 4	**Search Rooms**
Input	Check-in, Check-out, Guest
Output	Display a message with available room details
Processing	Validate the given details and check for the available rooms in a given time and return its availability.

Function 5	**Add Payments**
Input	Total, pay time, Credit card details
Output	Database Record, Database successfully updated message
Processing	Validate the given details and record the information into the database.

Function 6	**Prepare Bill**
Input	Billing number, Quantity, Price, Taxes, Date, Services, Unit
Output	Printed version of the bill
Processing	Validate the given details and total cost is calculated according to the services gained by the customer.

Function 7	**Budget/Set Rates**
Input	Check-in, Check-out, Day, No. of guests, First night price, Extension price
Output	Database Record, Database successfully updated message
Processing	Validate the given details and record the information into the database.

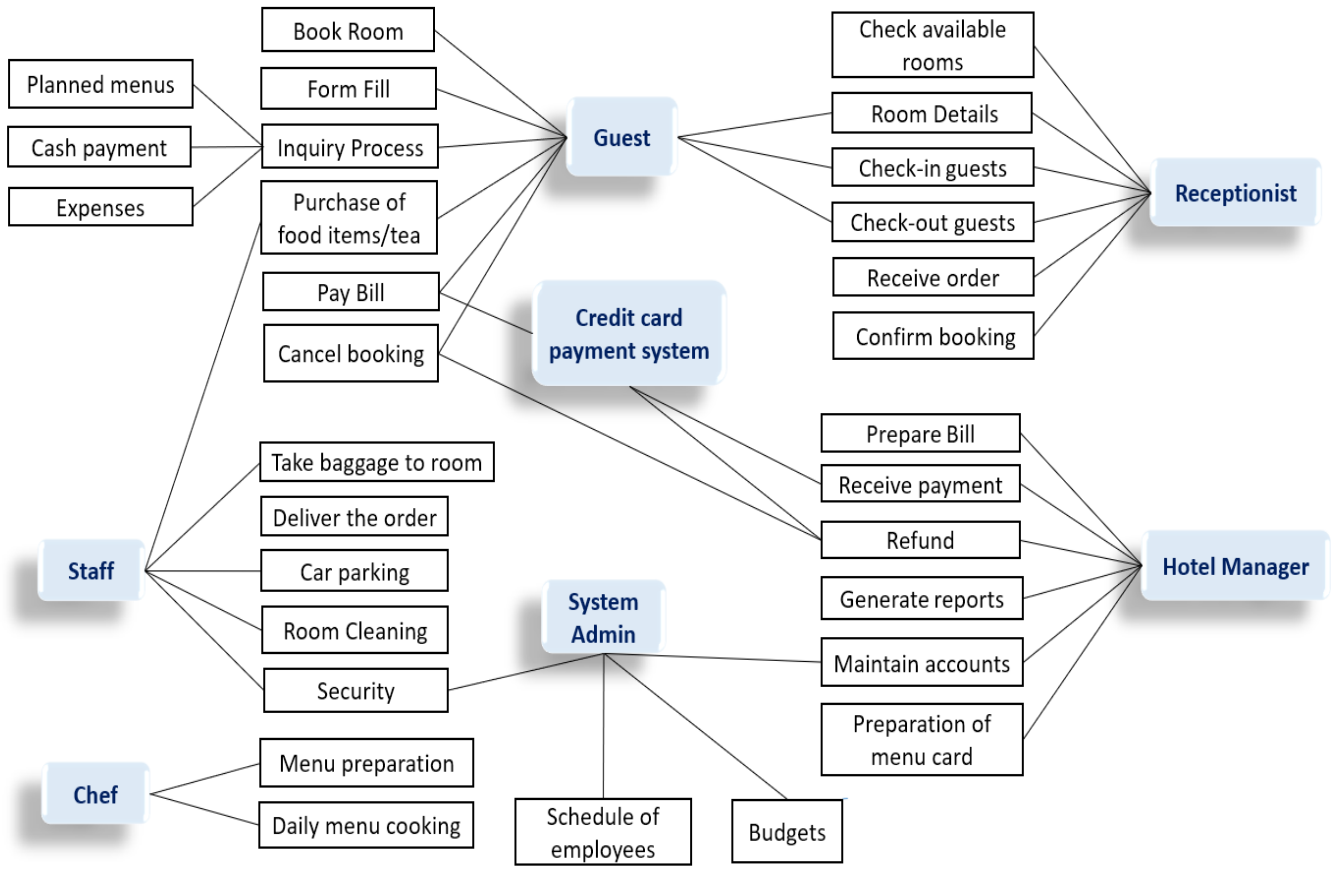
Function 8	**Cancel Booking and Refund**
Input	Billing number, Date, Name, Contact no
Output	If cancel booking is possible, then printed version of refund bill
Processing	Validate the given details and return the amount to guest according to the refund procedure.

Function 9	**Purchase food items**
Input	Selected food, Quantity, Price, Taxes, Date, Service Charge
Output	Printed version of the bill
Processing	Validate the given details and total cost is calculated according to the services gained by the customer.

Function 10	**Maintain Account and Generate Reports**
Input	Name, E-mail, Username, Password
Output	Database Record, Database successfully updated message
Processing	Validate the given details and record the information into the database.

4.3 Use Case Description

Use case Diagram:



Guest

Functions	Description
Inquiry process	Guests can inquire about planned menus, cash payment and expenses.
Form fill	Guests have to fill up the provided form with details.
Book room	Guests can check the available rooms according to their budget and requirements and confirm booking.
Purchase of food items/tea	Guests can ask for food or tea in their room. Extra charge is added for special services.
Pay bill	Guests have to pay the bill after the confirmation of booking.
Cancel booking	Guests shall be able to cancel the booking within two days and after that they will be refunded.

Receptionist

Functions	Description
Check for available rooms	Receptionist can check the available rooms according to the budget and requirements of the guest.
Display room details	Receptionist will display the facilities and condition of rooms to the guests.
Check-in and check-out	Receptionist has to note down the check-in and check-out time of the guests.
Receive order	When guests ask for food or tea in their room, receptionist receives the order.
Confirm booking	Receptionist will accept and confirm the booking
Cancel booking	Receptionist will cancel the booking if the guests want to cancel the booking within two days.

System Admin

Functions	Description
Maintain account	System admin has full access to all the accounts.
Schedule of employees	System admin will decide the schedule of employees.
Budget	System admin makes decision and fixes the budget.
Security	System admin directs the staffs to maintain security.

Hotel Manager

Functions	Description
Prepare bill	Hotel manager will prepare bill for the guests and the total cost is calculated according to the services gained by the guests.
Receive payment	Hotel manager will receive the money from the guests.
Refund	Hotel manager will check and refund the amount within one day if any cancellation occurs.
Generate reports	Hotel manager will generate reports with details every day.
Maintain accounts	Hotel manager maintains all the accounts.
Preparation of menu cards	Hotel manager will prepare the food menu according to the budget and popularity of food.

Credit Card Payment System

Functions	Description
Pay bill	Guests can also use credit card to pay the bill.
Receive bill	If guests pay the bill using credit card, then hotel manager will also receive the bill from credit card.

Chef

Functions	Description
Menu preparation	Chef helps the hotel manager to prepare the menu.
Daily menu cooking	Chef will cook the food according to the menu.

Staff

Functions	Description
Take baggage to room	When guests arrive at the hotel, staffs carry their baggage to their room.
Deliver the order	Staffs deliver the food item and other things ordered by the guests to their room.
Car parking	Staffs help the guests to park their cars.
Room cleaning	Staffs clean the rooms.
Security	Staffs maintain the security according to the instructions from the system admin.

5. Other Non-Functional Requirements

When the system is completely developed and submitted to the client, few sessions will be required to make the users of the system understand the functionality of it and adapt to the system. After those sessions, it's required that a member from the development team should spend some time in the system background for an agreed time period. That time period will be used in identifying new bugs that could not be reached in the earlier phases of the development process. Client should have a valid e-mail account in order to receive reservation e-mail notifications.

5.1 Safety Requirements

Access to the various subsystems will be protected by a user login screen which requires a user name and a password. Database should be backed up every hour. Under failure, the system should be able to come back at normal operation under an hour.

5.2 Security Requirements

Customer service representatives, hotel managers and owners will be able to log in to the Hotel Management System. Owner has the maximum privilege to all sub-systems. Representatives will have access to the booking and food subsystems. Managers will have access to the management subsystem as well as booking and food subsystems.

All external communications between the data server and client must be encrypted. All data must be stored, protected or protectively marked.

5.3 Performance Requirements

Performance is measured in terms of reports generated weekly and monthly.

1. Data in database should be updated within 2 seconds.
2. The load time for user interface screens will take less than 3 seconds.
3. The login information will be verified within 3 seconds.
4. Queries will return results within 5 seconds.
5. Response to customer inquiry must be done within 5 minutes.

5.4 Quality Attributes

1. **Availability:**

   The system shall be available during normal hotel operating hours.

2. **Efficiency:**

   Less number of resources and time are required to achieve a particular task through the system.

3. **Portability:**

   The Hotel Management System shall run in any Microsoft Windows environment.

4. **Flexibility:**

   The system should be able to add new features to the system and handle them conveniently.

5. **Reliability:**

   The system should specify the factors required to establish the required reliability of the software system at time of delivery. Mean time between failures and mean time to recovery.

6. **Reusability:**

   The system will be able to use the available components of the system in other systems as well.

7. **Correctness:**

   The program should satisfy specifications and fulfill user's mission objectives.

8. **Usability:**

   How easily a person can take the benefits of the system and the user friendliness of the system.

9. Robustness:

Strength of the system to handle system functions accurately and maintain the database without facing unexpected failures.

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