**Software Requirements Specification**

**For**

**Hotel Management System**

Version 1.0 approved

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# 1.0. Introduction

## 1.1. Purpose

The Software Requirements Specification (SRS) will provide a detailed description of the requirements for the Hotel Management System (HMS). This SRS will allow for a complete understanding of what is to be expected from the newly introduced system which is to be constructed. 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 system development team which is constructing the HMS and the hotel end users. The Project team will use the SRS to fully understand the expectations of this HMS to construct the appropriate software. The hotel end users will be able to use this SRS as a “test” to see if the constructing team will be constructing the system to their expectations or not. If it is not to their expectations the end users can specify how it is not to their liking and the team will change the SRS to fit the end users’ needs.

## 1.2. Document Conventions

The document is prepared using Microsoft Word 2010 and has used the font type “Times New Roman”, “Arial” .The fixed font size that has been used to type this document is 12pt with 1.5 line spacing. It has used the bold property to set the headings of the document. Standard IEEE template is the template used to organize the appearance of the document and its flow.

## 1.3 Intended Audience and Reading Suggestions

The intended audience of this document would be owner and specific employees like Manager and Receptionist of Hotel Taj, 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. The document would final provide a clear idea about the system that is building.

Brief outline of the document is,

1. Overall Description

2. Requirements Specification

3. System Features

4. Non Functional Requirements

## 2.0 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 notifications

## 2.3 User Classes and Characteristics

### **2.3.1 User Classes**

There are three user levels in Hotel Management System of Hotel Taj:-

1. Owner

2. Manager

3. Receptionist

### **2.3.2 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 the administration panel which is considered to be the core of the system. As 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 system can also be done by the Owner. Meanwhile he will be able to take all the kinds of reports available in the system. As the owner of the system and the company 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 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, his 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 to clients for booking confirmation. Management of hotel will prefer to hire receptionist who has a good standard of general education and possibly in subjects such as English, math and IT.

## 2.4 Operating System

Hardware**:-**

1. **Operating System** Supports all known operating systems, such as Windows, Linux.
2. **Computer** 512MB+ 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.

## 2.5Design 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 512MB. But it is recommended to have a memory of 1GB.

## 2.6 User Documentation

User manual 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. Although we assume that client is using windows 7 or windows 8 or windows 10. Otherwise if client use an open source operating system, there is a need of changing the SRS accordingly.
* We assume that inside the Hotel, Customers will make payments on the front desk alone and no “Cellular based” payment methodology is implemented with the system. The system is storing all the data at one place but the access is restricted among its users as per prior knowledge about the requirements.

# 3.0. Requirements Specification

## 3.1User Interfaces

1. User friendly dashboard of system containing the icons like:-
2. Guest
3. Room details
4. Inventory
5. Reservation
6. Search
7. Staff

vii. Report

viii. Backup

1. Login interface is used to login to the system using username and password for three different users

# 4.0 System features

## 4.1. Functional Requirements

**Functional Requirements**

|  |  |
| --- | --- |
| Function 1 | **Make Reservations** |
| Description | We need to reserve/book the rooms as per the customer’s requirement and maintain the record of the duration for which the booking is being done and save the clients personal information at the time of booking. |
| Input | Code, Number of children, Number of adults, check-in date, check out date, status, Number of nights |
| Output | Database Record, Database successfully updated message. |
| Validation | All the fields are mandatory hence, validate the given details and record the information to the database. |
| Security | The receptionist will handle this requirement and authorize the clients information by checking valid identity card (Aadhaar card/passport), making sure that the person making the reservation is either 18 or above. |

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| --- | --- |
| Function 2 | **Add Guest** |
| Description | We need to accept the generated reservation code from the previous requirement and personal contact information of the guest. |
| Input | Member code, Phone number, Company, Name, E-mail, Gender, Address. |
| Output | Database Record, Database successfully updated message. |
| Validation | All the fields are mandatory, Phone number and e-mail address should be validated. |
| Security | The receptionist will handle this requirement; phone number will be validated through OTP. |

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| --- | --- |
| Function 3 | **Add staff** |
| Description | For registration of the staff members, we need to accept and validate their personal information and generate a code that would be used for future reference. |
| Input | Code, Employee Name, Employee Address, NIC, Salary, Name Age, Occupation, E-mail |
| Output | Database Record, Database successfully updated message |
| Validation | All the fields are mandatory hence, validate the given details and record the information to the database. Phone number and e-mail address should be validated. |
| Security | The manager will handle this requirement and authorize the staffs information by checking valid identity card (Aadhaar card/passport), making sure that the staffs are either 18 or above, and the phone number will be validated through OTP. |

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| Function 4 | **Search Rooms** |
| Description | For searching rooms , we need to go through the database records generated during the "make reservations" requirement to see if the rooms are available for allotment or not and display a proper message confirming the availability. |
| Input | Period, Check-in, Check-out, Guest. |
| Output | Display a message with available room details. |
| Validation | Validate the given details and check for the available rooms in a given time period and return it’s availability. |

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| Function 5 | **Add Payments** |
| Description | For payment, we need to compute the expenses and provide options for the various payment methods,We need to check for the duration of stay and compute the expenses accordingly. |
| Input | Total, pay time, Credit card details. |
| Output | Database Record, Database successfully updated message |
| Validation | Validate the given details and record the information in to the database. |

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| Function 6 | **Set Rates** |
| Description | Here, the receptionist will set the rate as per the details given keeping in mind the various factors like checking in, checking out etc. and conveying the same to the customer. |
| Input | Check-in, Check-out, Day, Number  Of guests, First night price, Extension price. |
| Output | Database Record, Database successfully updated message |
| Validate | Validate the given details and record the information in to the database. |

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| Function 7 | **Food rates** |
| Description | The system shall track all meals purchased in the hotel (restaurant)  The system shall record payment and payment type for meals  The system shall accept reservations for the restaurant. |
| Input | Quantity, Price, Taxes, Date, Services, Unit |
| Output | Printed version of the bill |
| Validation | Validate the given details and total cost is calculated according to the services gain by the customer. |
| Security | Scanning the bill and storing in the database for future references to add in the final bill issued. |

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| Function 8 | **Issue Bill** |
| Description | We need to process the payment and issue the corresponding bill inclusive of all the additional charges as well as food charges, generating the final bill. |
| Input | Billing no, Quantity, Price, Taxes, Date, Services, Unit |
| Output | Printed version of the bill |
| Validation | Validate the given details and total cost is calculated according to the services gain by the customer. |
| Security | Scanning the bill and storing in the database for future references. |

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| --- | --- |
| Function 9 | **Feedback** |
| Description | While checking out the customer needs to fill up the feedback form as provided by the receptionist during checking out. |
| Input | Name, E-mail, Address, Phone number and the review. |
| Output | Database Record, Database successfully updated message. |
| Validation | All the fields are mandatory, Phone number and e-mail address should be validated. |
| Security | The receptionist will handle this requirement; phone number will be validated through OTP. |

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| Function 10 | **Taking Backups** |
| Description | We need to maintain a proper back up for all the available and computed information for future reference and tallying purposes in a specified location and confirm the success of the back up |
| Input | Location to save the backup file. |
| Output | Display a message showing backup successfully created |
| Validation | Validate the user given location to save the backup file. Save the backup file to the user specified location. |
| Security | Confirmation mail to the manager after a successful backup, which can be accessed by manager and the owner only through their pin code. |

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# 5.0. Other Nonfunctional Requirements

## Performance Requirements

Performance requirements define acceptable response times for system functionality. Although the system is developed suiting for the least system performances, the performance of the system will highly depend on the performance of the hardware and software components of the installing computer. When considering about the timing relationships of the system the load time for user interface screens shall take no longer than two seconds. It makes fast access to system functions. The log in information shall be verified within five seconds causes’ efficiency to the system. Returning query results within five seconds makes search function more accurate.

## 5.2 Safety Requirements

There are several user levels in hotel management system, Access to the various subsystems will be protected by a user log in screen that requires a user name and password. This gives different views and accessible functions of user levels through the system. Maintaining backups ensure the system database security. System can be restoring in any case of emergency.

## 5.3 Security Requirements

Customer Service Representatives and Managers and owner will be able to log in to the Hotel Management System. Customer Service Representatives will have access to the Reservation/Booking and subsystems. Managers will have access to the Management subsystem as well as the Reservation/Booking subsystems. Owner has the maximum privilege to all subsystems. Access to the various subsystems will be protected by a user log in screen that requires a user name and password.

## Software Quality Attributes

* Availability: - The system shall be available during normal hotel operating hours
* Correctness: - extent to which program satisfies specifications, fulfills user’s mission objectives
* Efficiency: - How much less number of resources and time are required to achieve a particular task through the system.
* Flexibility: - Ability to add new features to the system and handle them conveniently.
* Integrity: - How the system would secure the information in the system and how it avoids the data losses. Referential integrity in database tables and interfaces
* Maintainability: - How easy it is to keep the system as it is and correct defects with making changesand what design, coding standards must be adhered to exclusions created.
* Portability: - The Hotel Management System shall run in any Microsoft Windows environment
* Reliability: - 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
* Reusability: - What is the ability to use the available components of the system in other systems as well.
* Testability: - Effort needed to test to ensure performs as intended
* Usability: - How easily a person can be taken the benefits of the system and the user friendliness.
* Robustness: – Strength of the system to handle system functions accurately and maintain the database without facing to unexpected failures

## 5.5 Business Rules

Taj Hotel Management System will perform under three users which are Owner, Manager and Receptionist. The system is designed in a way where responsibility and privileges are decreased in the order of owner, manager and receptionist. The role of manager is elected in the aim of making the owner’s hands free from regular interfering with the system. So, most of the privileges that owner has are given to manager, except the ones are critical and important. Some features like that are, taking backup, restoring of the system and handling financial details, hotel income reports of the system. Receptionist is given with the most frequently used features of the system which has less responsibility than the other two users. Deleting of any information in the system is only allowed for the owner of the hotel.