SOFTWARE REQUIREMENTS SPECIFICATION

**For**

**Hotel Reservation System**

**Prepared by:-**

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# Introduction

## Purpose

The main objective of this document is to illustrate the requirements of the project Hotel Reservation system.The document gives the detailed description of the both functional and non-functional requirements proposed by the client.The purpose of this project is to streamline and automate the process of hotel room bookings. By providing an efficient platform for customers to reserve accommodations, it enhances user experience, reduces manual workload for hotel staff, minimizes errors in bookings, improves room occupancy management, facilitates online payment options, and ultimately contributes to the overall operational efficiency of the hotel industry.

## Document Conventions

* + - Entire document should be justified.
    - Convention for Main title

Font face: Times New Roman Font style: Bold

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* + - Convention for Sub title

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Font Size: 12

* + - Convention for body

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## Scope of Development Project

The Hotel Reservation System project aims to modernize and streamline the hotel booking process by implementing a user-friendly platform.This system will provide real-time updates on room availability, facilitating instant and accurate bookings.Reservation management features will empower hotel staff to efficiently handle check-ins, check-outs, and room assignments.Integration with external systems will create a cohesive operational environment, while customer support features will contribute to overall satisfaction and loyalty. In summary our project, the Hotel Reservation System encompasses a comprehensive approach to elevate the efficiency and user experience in the hotel booking domain.

The project can be easily implemented under various situations. We can add new features as and when we require, making reusability possible as there is flexibility in all the modules.

The language used for developing the project is Java as it is quite advantageous than other languages in terms of performance, tools available, cross platform compatibility, libraries, cost (freely available), and development process.

## Definitions, Acronyms and Abbreviations

JAVA -> platform independence SQL-> Structured query Language ER-> Entity Relationship

UML -> Unified Modeling Language

IDE-> Integrated Development Environment SRS-> Software Requirement Specification

## References

* + - Books

 Software Requirements and Specifications: A Lexicon of Practice, Principles and Prejudices (ACM Press) by Michael Jackson

Software Requirements (Microsoft) Second EditionBy Karl E. Wiegers

Software Engineering: A Practitioner’s Approach Fifth Edition By Roger S. Pressman

* + - Websites

https://library.essex.ac.uk/hotel/referencing-rms

https://opus.govst.edu/cgi/viewcontent.cgi?article=1199&context=capstones

1. **Overall Descriptions**
   1. **Product Perspective**

Use Case Diagram of Hotel Reservation System



*searches*

1

1 *requests*

1

1

1..\*

\*

search\_book

1..\*

check\_limit

check\_availability

User 1

issue\_book

*request\_renew*

<<include>>

*monitors\_request*

1

*monitors\_renew* 1

1

*performs*

*give\_book*

<<include>>

0..\*

1..\*

renew\_book

verify\_member

<<include>>

*take\_book*

1

1 Librarian

Student

0..\*

1..\*

*adds\_new\_book*

*perform\_transaction\_updation*

Staff

\*

\*

return\_book

View\_logs

<<extend>>

add\_book

\*

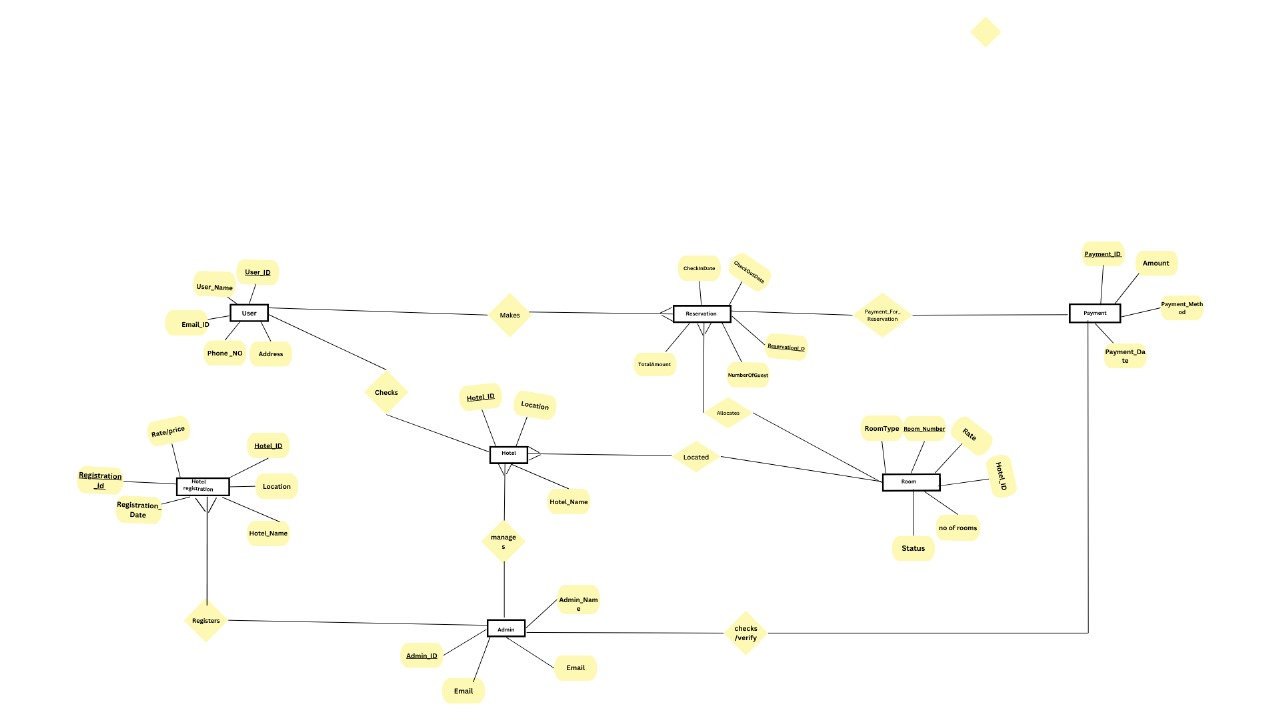
calculate\_fine

update\_record

This diagram showcases how customers, reservations, rooms, hotels, and payments are interconnected in a way that reflects the complex relationships and dependencies within a Hotel Reservation System. It serves as a blueprint for the system's database structure, providing a visual guide for developers and stakeholders to understand and implement the data model effectively. The diagram captures the essence of how different entities collaborate to facilitate a seamless and efficient hotel reservation process.

## Product Function

Entity Relationship Diagram of Hotel Reservation System



The Hotel Reservation System functions as a comprehensive solution for streamlined hotel management. It efficiently manages the reservation process, ensuring real-time updates on room availability and preventing overbookings. The system enhances the guest experience by allowing users to create profiles with personal preferences, facilitating tailored services and recommendations. With secure payment integration, the booking process becomes seamless and trustworthy. Robust reporting and analytics tools empower hotel management with insights into booking patterns, supporting strategic decision-making. The system's multi-platform accessibility ensures convenient reservations across various devices, while integration with external systems creates a cohesive operational environment. Overall, the Hotel Reservation System optimizes hotel operations, from reservation handling to personalized guest services, contributing to enhanced efficiency and customer satisfaction.

## User Classes and Characteristics

In the Hotel Reservation System, two primary user categories are identified: Hotel Administrators and Guests. The system provides tailored features to each category to optimize their respective experiences.

The features that are available are:-

* + - Can Access a User-Friendly Booking Interface
    - Can filter the hotels and price based on the customer requirements
    - Can Manage Customer Profiles
    - Can View Room Information
    - Can Track Booking History
    - Can Provide Feedback and Reviews
    - Can Access Multi-Platform Convenience

## Operating Environment

The product will be operating in windows environment. The Hotel MSystem is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer,Google Chrome,and Mozilla Firefox.Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.

The hardware configuration include Hard Disk: 40 GB, Monitor: 15” Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

## Assumptions and Dependencies

* he reservation system should be error-free to ensure accurate booking information
* . The system should be user-friendly to provide an easy booking experience for users.
* All information related to hotels, room availability, and reservations should be stored in a secure and accessible database.
* The system should have sufficient storage capacity and ensure fast access to the database for efficient operations.
* Quick transaction processing is essential to support a seamless booking process. The reservation system is available 24/7 to accommodate bookings at any time.
* Users can access the reservation system from any device with internet browsing capabilities

Internet connection

* + - Users must have their correct usernames and passwords to enter into their online accounts and do actions

The dependencies are:-

* + - The system is dependent on specific hardware and software configurations for optimal performance. Compatibility with web browsers, server infrastructure, and database management systems is crucial.
    - The end users (admin) should have proper understanding of the product
    - he development and execution of the project rely on accurately listing and adhering to requirements and specifications.
    - Any update regarding the book from the library is to be recorded to the database and the data entered should be correct
    - Any updates or changes to hotel reservations should be recorded accurately in the database in real-time to ensure the data integrity of the system.

## Requirement

Software Configuration:-

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database.

Operating System: Windows NT, windows 98, Windows XP Language: Java Runtime Environment, Net beans 7.0.1 (front end) Database: MS SQL Server (back end)

Hardware Configuration:- Processor: Pentium(R)Dual-core CPU Hard Disk: 40GB

RAM: 256 MB or more

## Data Requirement

The inputs consist of the query to the database and the output consists of the solutions for the query. The output also includes the user receiving the details of their accounts. In this project the inputs will be the queries as fired by the users like create an account, selecting hotels and booking rooms. Now the output will be visible when the user requests the server to get details of their Hotels in the form of time, date.

# External Interface Requirement

## GUI

The software provides good graphical interface for the user and the administrator can operate on the system, performing the required task such as select, update,viewing the details of the Hotel.

* + - It allows user to view quick reports like Hotel Reserved in a particular time.
    - It provides room availability and search facility based on different criteria.
    - The user interface must be customizable by the administrator
    - All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined
    - The design should be simple and all the different interfaces should follow a standard

Template.

* + - The user interface should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module

Login Interface:-

In case the user is not yet registered, he can enter the details and register to create his account. Once his account is created he can ‘Login’ which asks the user to type his username and password. If the user entered either his username or password incorrectly then an error message appears.

Search:-

The user or guest can enter the type of hotel he is looking for and the room he is interested in,then he can search for the required book by entering the hotel name.

Categories View:-

Categories view shows the categories of rooms available.

# System Features

The users of the system should be provided the surety that their account is secure. This is possible by providing:-

* User authentication and validation of members using their unique member ID
* Proper accountability which includes not allowing a member to see other member’s account. Only administrator will see and manage all member accounts

# Other Non-functional Requirements

## Performance Requirement

The proposed system that we are going to develop will be used as the Chief performance system within the different campuses of the university which interacts with the university staff and students. Therefore, it is expected that the database would perform functionally all the requirements that are specified by the university.

* + - The performance of the system should be fast and accurate
    - Hotel Reservation System shall handle expected and non-expected errors in ways that prevent loss in information and long downtime period. Thus it should have inbuilt error testing to identify invalid username/password
    - The system should be able to handle large amount of data. Thus it should accommodate high number of books and users without any fault

## Safety Requirement

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

## Security Requirement

* + - System will use secured database
    - Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
    - System will have different types of users and every user has access constraints
    - Proper user authentication should be provided
    - No one should be able to hack users’ password
    - There should be separate accounts for admin and members such that no member can access the database and only admin has the rights to update the database.

## Requirement attributes

* + - There may be multiple admins creating the project, all of them will have the right to create changes to the system. But the members or other users cannot do changes
    - The project should be open source
    - The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database
    - The user be able to easily download and install the system

## Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data.This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor member should cross the rules and regulations.

## User Requirement

The users of the system are members and Librarian of the university who act as administrator to maintain the system. The members are assumed to have basic knowledge of the computers and internet browsing. The administrators of the system should have more knowledge of the internals of the system and is able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, user manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.

The admin provides certain facilities to the users in the form of:-

* + - Backup and Recovery
    - Forgot Password
    - Data migration i.e. whenever user registers for the first time then the data is stored in the server
    - Data replication i.e. if the data is lost in one branch, it is still stored with the server
    - Auto Recovery i.e. frequently auto saving the information
    - Maintaining files i.e. File Organization
    - The server must be maintained regularly and it has to be updated from time to time

# Other Requirements

## Data and Category Requirement

Data and category requirements outline how the hotel reservation system should handle user categories, book categories, reservation data, and ensure secure access rights and data management. The system should be designed to provide a tailored experience based on user roles and efficiently manage information related to different categories of users and books.

## Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Books, Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; L: Library, Librarian; M: Member; N: Non-functional Requirement; O: Operating environment; P: Performance,Perspective,Purpose; R: Requirement, Requirement attributes; S: Safety, Scope, Security, System features; U: User, User class and characteristics, User requirement;

## Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

* + - Administrator: A login id representing a user with user administration privileges to the software
    - User: A general login id assigned to most users
    - Client: Intended users for the software
    - SQL: Structured Query Language; used to retrieve information from a database
    - SQL Server: A server used to store data in an organized format
    - Layer: Represents a section of the project
    - User Interface Layer: The section of the assignment referring to what the user interacts with directly
    - Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed
    - Data Storage Layer: The section of the assignment referring to where all data is recorded
    - Use Case: A broad level diagram of the project showing a basic overview
    - Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system’s cases, their attributes, and the relationships between the classes
    - Interface: Something used to communicate across different mediums
    - Unique Key: Used to differentiate entries in a database