SOFTWARE ENGINEERING PROJECT CONFERENCE ROOM BOOKING SYSTEM

SRS DOCUMENT

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# Introduction

This section of the document provides purpose, system scope, list of definitions, acronyms, abbreviations & references.

# Purpose

The purpose of this document is to create a list of detailed requirements for Conference room reservation system (CRRS). This document will capture interactions between different internal web pages, environment scenarios of usage, constraints and Conference room reservation system prototype.

This document will capture all stakeholders’ preferences, different conflicts and their resolution. Also, it could be used by potential developers, design engineers, testers, project managers, etc. Eventually this document can be used while preparing user documentation.

This document will be proposed to different stakeholders for their approval and can be used as a reference guide in different phases of system development.

# System Scope

The scope of the Conference Room Reservation System is to create an online web-interface for the users to check the availability and book the room from any part of the world. This system will be an alternative to the traditional offline way of checking available rooms and book them.

# Acronyms

|  |  |
| --- | --- |
| **Acronym** | **Definition** |
| CRRS | Conference Room Reservation System |
| OFR | Other Functional Requirement |
| User Interface | User Interface is the landing page where the customer can use the functionalities described in this document. |
| SYSF | Abbreviation representing System Function – used as a prefix of function IDs |
| API | Application Programming Interface |
| GDPR | General Data Protection Rules |
| PAGE | The term page is used to refer a component of the system (website) which accommodates different functionality across the website. For example, customer details page has functions that enable customers enter information, while payment page has functions regarding card details. |
| Precondition | the precondition realizing a functional requirement might be that the hardware meets a specific performance requirement |
| Post condition | Describing the state the system is in after all the events in the use case have taken place |
| Evolution | Satisfies – if artefact A is realized in the system, artefact B is realized as well |
| System | CRRS is referred as System. It is the all the functions that CRRS has including those not discussed in this document. |
|  |  |

Table 2 – Definitions and Acronyms

# References

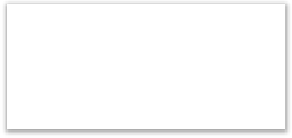
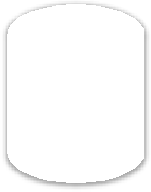
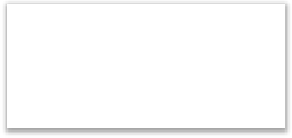
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# Overall Description

This section will provide overview of the system, its perspective and main functions.

CRRS- Conference Room Reservation System serves as a website of a hotel, through which customers can check available rooms, select preferred arrival and departure dates and number of guests. Theycan enter their personal and card details, confirm booking. The system as a response sends a confirmation mail to them.

# Product Perspective



Common database

Conference room reservation system (CRRS)

Administrative system

Figure 1 – System Perspective

The system considers customer and Conference Room manager perspectives. It has CRRS – where customersare able to book the rooms and use system functions described in his document, while for the administrative use there is a separate environment, where accounting, logistics and all relevant operations run. Both systems are based on the common database. They are integrated with each other, meaning the relevant data is exchanged.

The subsystem “User Interface” is an element of CRRS and it represents the web-interface for customer to book rooms online according to their choice of selection.

# Product Functions

|  |  |
| --- | --- |
| SYSTEM FUNCTION SHELL | |
| VER. | Version of system function |
| SYSTEM FUNCTION ID | Unique identification code of system function |
| SYSTEM FUNCTION | Name of system function |
| DESCRIPTION | Description of system function |

|  |  |  |  |
| --- | --- | --- | --- |
| Ver. | System Function ID | System Function | Description |
| V1 | SYSF1 | Checking availability | Customer shall be able to check the availability of rooms |
| V1 | SYSF2 | Selection of room | Customer shall be able to view available Conference rooms with briefdetails and price information |
| V1 | SYSF3 | Customer details | Customer shall be able to enter their details for communication purposes |
| V1 | SYSF4 | Payment page | Customer shall be able to enter payment details for authentication & Conference room booking  confirmation purposes |
| V1 | SYSF5 | Confirmation Page | Customer shall be able to view all entered details on confirmation page |

Table 3 – System Functions

# User Characteristics Characteristics

There are two user classes in CRRS: customer and Conference Room manager.

# Customer

Customer is the main stakeholder of the software intensive system. Customer would be able to check available rooms. Customer can select and sort rooms by price. Enter personal and payment details, as well as confirm booking. Customer input is required for making successful reservation.

# Conference Room Manager

Conference Room manager is the administrative stakeholder of the software intensive system. Hotel manager would able to update the information about listed rooms, see reports and check thebooking information.

# Goal Modelling

|  |  |  |  |
| --- | --- | --- | --- |
| **Goal ID** | **Goal Name** | **Goal Description** | Traceability attribute |
| **G1** | Book a room | Booking a room is higher level goal and main purpose of the system. It is broken down to lower level goals. | **System Functions** |
| **G01** | Check availability | Customer checks availability of rooms by dates, number of attendees and price | SYSF1 |
| **G02** | Sort rooms by price | Once available rooms are displayed customer has option to sort them by price |  |
| **G03** | Select a room | Customer selects desired room in order to proceed with booking | SYSF2 |
| **G04** | Enter customer details | Customer enters their personal details necessary for  booking |  |
| **G05** | Enter payment details | Customer provides card details to confirm  booking. Actual payment at this stage is not required. |  |
| **G06** | Confirmation | Customer confirms booking of the selected room |  |
| **G08** | Add new room Information | Hotel manager adds new information, photos and/or details about rooms |  |
| **G09** | Check reports | Hotel manager can see predefined report |  |
| **G10** | See latest bookings | Hotel manager checks latest bookings by customers |  |
| **G11** | Provide reports | System provides reports for hotel manager |  |
| **G12** | Send confirmation mail | System sends confirmation email to customer once booking is done |  |
| **G13** | Contact by phone/face to face | Customers can contact Conference Room manager by phone or face to face to book a room |  |
| **G14** | Confirmation of reservation | Conference Room manager can confirm customers that the room is booked |  |
| **G15** | Payment | Conference Room manager collects payment from customer at the Conference Room |  |
| **G16** | Update Information | Conference Room manager manually updates  information about customers before CRRS started running |  |
| **G17** | Check availability  by date | System checks available rooms according to entered dates |  |
| **G18** | Check availability by room type | System checks available rooms according to entered room type |  |
| **G19** | Check availability by price | System checks available rooms according to prices |  |
| **G20** | Enter Date by inbuilt calendar | System pops up inbuilt calendar to enable customer enter date |  |
| **G21** | Change price range | Customer can change price range when looking for rooms |  |

# Design and Implementation Constraints

* 1. The system has dependency on the database and the Conference Room ’s existing traditional system.
  2. Internet connection is a constraint for this system because system is available from cloud therefore customer needs to have good network connection to connect to our web interface

# Assumptions and Dependencies

1. The requirements for the user interface is developed under the assumption that user interface is a subsystem of existing larger system for Conference Room reservation management, which keeps and processes information about existing, booked and free rooms at the Conference Room , including the data about room type, number of total rooms at Conference Room , time of checkouts and other factors that influence the room availability at any given time.
2. The process and algorithm for calculating available rooms are assumed to be given prior.

# System Functional Requirements

This section illustrates the functional requirements for CRRS web interface which is having 5 different web pages that enables customer to select and reserve room online. Each web page is supported by set of specific requirements given in below tables.

The requirements below are developed within the scope from customer perspective only.

# Checking Availability Page

|  |  |
| --- | --- |
| REQUIREMENT SHELL | |
| VER. | Version of requirement |
| REQ ID | Unique identification code of requirement |
| DESCRIPTION | Description of requirement |
| PRIORITIZATION ATTRIBUTE | Prioritization of requirement according to prioritization plot |
| TRACEABILITY ATTRIBUTE | Traceability relation to other artefacts |

Requirement Shell in the table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V1 | R1.1 | This page shall have a field for arrival and departure time selection | High |  |
| V1 | R1.2 | This page shall have an option for selecting room type | High | Content of R1.3 |
| V1 | R1.3 | Page shall show check availability and rates button to redirect customer to select a room page | High | Precondition to the requirements from SYSF2 |

Table 5 – Checking Availability Page Note: \* denotes mandatory field

# Selection of a Room Page

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V1 | R2.1 | Check the availability of rooms | High | Precondition to R2.2 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| V1 | R2.2 | Page shall display available rooms according to R2.1 | High | Evolution of R2.1 |
| V1 | R2.2.1 | Page shall display room pictures of all types of available rooms | Medium | Content R2.2 |
| V1 | R2.2.2 | Page shall display room prices per hour of all available rooms | High | Content of R2.2 |
| V1 | R2.2.3\* | Page shall display select & continue button which will redirect the customer to customer details page | High | Precondition to requirements to SYSF3 |
| V1 | R2.3 | Page shall have sorting function to sort by price | High |  |
| V1 | R2.4 | Price shall be displayed in Rupees | High | Miscellaneous of R2.2.2 |
| V1 | R2.5 | Page shall display button to previous page with previous page name on the button | High |  |
| V1 | R2.6 | Page shall display cancel button which will redirect the customer to Conference Room home page | High |  |

Table 6 – Selection of Room Page

# Customer Details Page

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V1 | R3.1\* | Page shall display text field for Firstname | High |  |
| V1 | R3.2\* | Page shall display text field for Lastname | High |  |
| V1 | R3.3\* | Page shall display field for Telephone number | Medium |  |
| V1 | R3.4\* | Page shall display field for E-mail address | High |  |
| V1 | R3.5\* | Page shall display mandatory checkbox field for agreement of terms and conditions | High |  |
| V1 | R3.6 | Page shall display submit details button which will redirect to payment page | High | Precondition to requirements of SYSF4 |
| V1 | R3.7 | Page shall display button to previous page with previous page name on the button | High |  |
| V1 | R3.8 | Page shall display cancel button which will redirect the customer to Conference Room home page | High |  |

Table 7 – Customer Details Page

# Payment Page

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V1 | R4.1 | Page shall display Total price of selected room for selected number of nights | High | Evolution of R2.2.2 and R1.1 |
| V1 | R4.2 | Page shall display field for Credit card number | High |  |
| V1 | R4.4 | Page shall display field for expiration date of credit card | High |  |
| V1 | R4.5\* | Page shall display mandatory checkbox field for agreement of terms and conditions | High |  |
| V1 | R4.6 | Page shall display a Note: Card details will be used for authentication purposes only and the payment will charged upon customer check-in | High | Miscellaneous of R4.7 |
| V1 | R4.7 | Page shall display continue button which will redirect to confirmation page | High | Precondition to requirements of SYSF5 |
| V1 | R4.8 | Page shall display button to previous page with previous page name on the button | High |  |
| V1 | R4.9 | Page shall display cancel button which will redirect the customer to Conference Room  home page | High |  |

Table 8 – Payment Details Page

# Confirmation page

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V1 | R5.1 | Page shall display previous inputs by customer as SYSF3R3.1-SYSF3R3.4 | High | Evolution of SYSF3R3.1- SYSF3R3.4 |
| V1 | R5.2 | Page shall display arrival and departure times according to customer selection in SYSF1R1.1 | High | Evolution of SYSF1R1.1 |
| V1 | R5.3 | Page shall display room selection details chosen by customer according SYSFR2.2.3 | High | Evolution of SYSFR2.2.3 |
| V1 | R5.4 | Page shall display total price according to SYSF4R4.1 | High | Evolution of SYSF4R4.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| V1 | R5.5 | Page shall display customer payment details entered by customer according to SYSF4R4.2- SYSF4R4.4 | High | Evolution of SYSF4R4.2- SYSF4R4.4 |
| V1 | R5.6 | Page shall display confirm button which will redirect to Home page | High |  |
| V1 | R5.6.1 | Page shall display a pop-up with a message: Thank you for your booking |  |  |
| V1 | R5.7 | When customer clicks confirm button, All details from confirmation page will be stored in the Conference Room ’s common database. | High |  |
| V1 | R5.8 | Page shall display button to previous page with previous page name on the button | High |  |
| V1 | R5.9 | Page shall display cancel button which will redirect the customer to Conference Room  home page | High |  |
| VI | R5.10 | Upon Confirmation “Thank you for your booking” message shall be displayed | Medium |  |

Table 9 – Confirmation Page

# Other Nonfunctional Requirements

This section illustrates the non-functional requirements which includes performance, reliability, security, maintainability, portability requirements, use cases, use-case scenarios, solution- oriented requirements modelling, software quality attributes for CRRS web interface.

|  |  |
| --- | --- |
| REQUIREMENT SHELL | |
| VER. | Version of requirement |
| REQ ID | Unique identification code of requirement |
| DESCRIPTION | Description of requirement |
| PRIORITIZATION ATTRIBUTE | Prioritization of requirement according to prioritization plot |
| TRACEABILITY ATTRIBUTE | Traceability relation to other artefacts |

# Performance Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V1 | PFR1 | Every booking submission & modification should be updated in Conference Room System’s common database within 10 seconds after each submission &  modification activity | High | Constraints to R5.7 |
| V1 | PFR2 | Results for cross checking of availability of rooms in internal database and customer’s choice shall be in 5 seconds | High | Constraints to R2.1 |
| V1 | PFR3 | Webpage UI load time should be within 2 secs | High | Constraints to R1.6, R2.2.3, R2.5, R2.6,  R3.6, R3.7, R3.8,  R4.7, R4.8, R4.9,  R5.9, R5.10, R5.6 |
| V1 | PFR4 | Redirection page load time shall be within 2 secs | High | Constraints to R1.6, R2.2.3, R2.5, R2.6,  R3.6, R3.7, R3.8,  R4.7, R4.8, R4.9,  R5.9, R5.10, R5.6 |

Table 10 – Performance Requirements

# Reliability Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V1 | RR1 | Database should be synchronized to cloud every 5 minutes | High |  |
| V3 | RR2 | System shall be accessible 98% of the time | High |  |

Table 11 – Reliability Requirements

# Maintainability Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V3 | MTR1 | No method in any object may exceed 100 lines of code | High |  |
| V1 | MTR2 | System failure recovery shall be within 40 mins | High |  |

Table 13 – Maintainability Requirements

# Portability requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ver.** | **Req ID** | **Description** | **Prioritization Attribute** | **Traceability Attribute** |
| V3 | PTR1 | System shall be accessible on mobile devices | High | Miscellaneous |
| V3 | PTR2 | System shall be accessible on Google Chrome, Firefox, Safari, Opera and Internet explorer | High | Miscellaneous |

Table 14 – Portability Requirements