Software Requirements Specification

for

Online Guest House Booking System

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===PROJECT FOR SOFTWARE ENGINEERING LAB===

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1. Introduction

1.1 Purpose

This is a lab course project named ONLINE GUEST HOUSE BOOKING SYSTEM which will help students of IIT Kharagpur and other people to book the guest house online with availability also it will help admin in the management of guest house rooms.

1.2 Document Conventions

This document is written in the English language and all the headings are bold following the important text. The document contains 5 sections and subsections in each section.

1.3 Intended Audience and Reading Suggestions

This document is describing OGHBS will be useful to the software developer, students and real-time guest house owners. You need to read the document sequenced from beginning to end.

1.4 Product Scope

This project will solve all types of booking issues and relieve stress for the managers and workers from the guest house management. This will help the customer to book their rooms from anywhere also, it will assure them of availability, and also help them to find the best rooms.

1.5 References

We need to refer following websites -
www.geeksforgeeks.org
www.python.org
https://youtu.be/6mbwJ2xhgzM
http://www.tgh.iitkgp.ac.in/

2. Overall Description

This section will provide an overview of the system, its perspective and main functions.
OGHBS- Online Guest House Booking System serves as a website for booking guest houses in IIT, Kharagpur, through which customers can check available rooms, select preferred arrival and departure dates and number of guests. They can enter their personal and card details, and confirm booking.

2.1 Product Perspective

The product is designed to be an improved and simpler version of the Online Guest House Booking System, used by the Indian Institute of Technology, Kharagpur. The product will provide an interface for users to book rooms in the various Guest Houses of IIT Kharagpur, and avail various services offered by these Guest Houses.

The basic idea is to replicate the main features of the original website for the IIT KGP Guest House Booking System as well as add a few features and provide an improved or equally efficient user interface. The infrastructure of the product is designed to handle two different types of users, firstly the Admin and secondly the Guests. Guests would have options to book rooms and avail various Guest House services. The Admin would have control over the system such as approval of room bookings and various other decision making. Both the users would work over the same database over different interfaces.
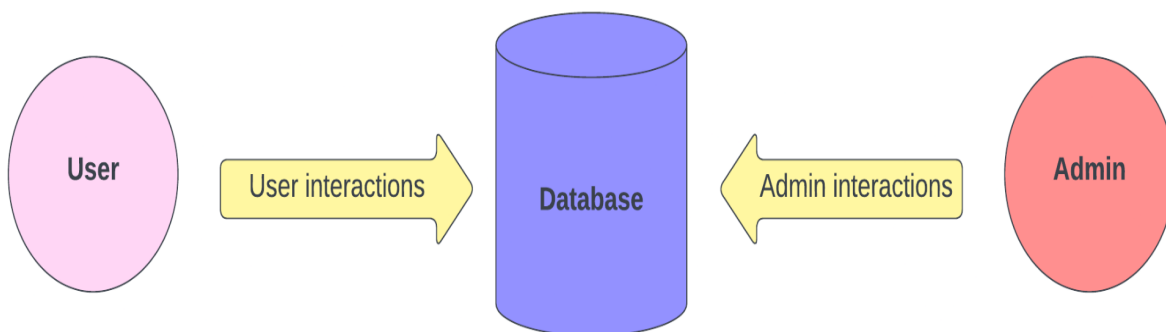
2.2 Product Functions

As mentioned above the system would have two interfaces, one for the Guests and one for the Admin(Guest House authorities). Each of these would have different functionalities depending on the type of user.

The product would offer various functionalities which are listed below:

Guests:
1. *Option to create a new account.*
2. *Option to log in with an existing account.*
3. *Check availability of the rooms in the guest houses*
4. *Check details of rooms*
5. *Check details of services available*
6. *Window for guests to enter their check-in and check-out dates*
7. *Payment window for payment of fees*
8. *Option to cancel their booking*
9. *Option to provide feedback about the service quality of the guest house*

Admin:
1. *Verify and Approve or Reject new accounts*
2. *Access information about the Guests*
3. *Control the services provided by the Guest House*
4. *Approve or Reject room bookings*

Internal System:
1. *Create new users*
2. *Check and update room availability*
3. *Option to filter rooms*
4. *Confirm payments*
5. *Refund on cancellation*

2.3 User Classes and Characteristics

There are 3 user classes who will be accessing the software:

● *Guest: The first class of users are the Guests. The Guests will have access to the room details, booking details, available food options and other services provided. Additionally they will also have access to the payment interface and feedback system.*

● *Guest House staff: The second class of users are the Guest House Staff. The staff will have access to the details of the Guests and their plan of stay along with the services they want to avail during their stay. They will also have access to the information on availability of rooms in the guest house.*

● *Guest House Admin: The third class of user is the Guest House admin. The guest house admin will have access to all visitor information, information on the Guest Houses, and rooms, details of bookings, along with access to visitor feedback. They will also have the authority to accept or reject new sign ups, based on the verification details provided by the Guests on new account creation.*

2.4 Operating Environment

Operating System:The product will operate on any device regardless of the Operating System the device uses as long as it can run python programs.

Cloud Service Provider: Operating environment for this system will be hosted virtually using any cloud service provider.

2.5 Design and Implementation Constraints

The product will be deployed using a development server and as such will not be a fully functional website. The product would also require a device that can provide an environment for running python programs. Certain improvements can still be made to make the code more efficient. As the product runs on a server, a good internet connection is also necessary.

2.6 User Documentation
A user manual will be provided to the client using the software detailing the prerequisites required to run the software along with the guidelines on how to access a particular functionality

2.7 Assumptions and Dependencies

It is assumed that the client has the necessary operating environment that meets all the necessary prerequisites for running the software.

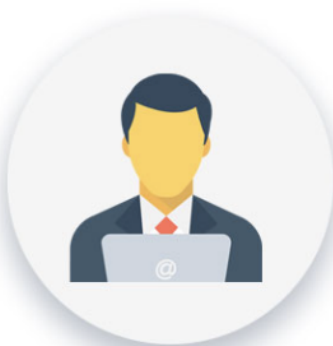# 3. External Interface Requirements

3.1 User Interfaces
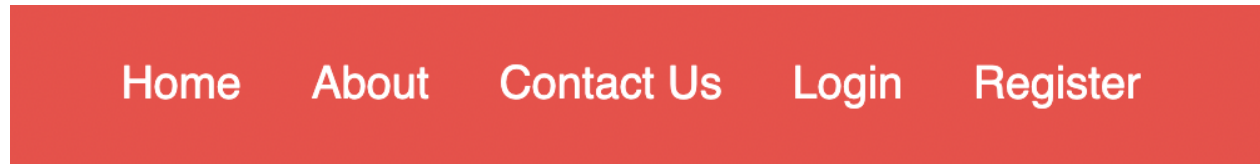
 Home*- On this page, there will be a sign-in option with a username and password.*
There will be information about the guesthouse with name and some photos, Taking reference from IIT Kharagpur website.
-Technology Guest House -Visveswaraya Guest House
-Kolkata Guest House

About- *Here we will explain all the conditions and rules of the guest house also we will attach the link of official iit kgp website ,to know more about iit kgp and other workdomains.*
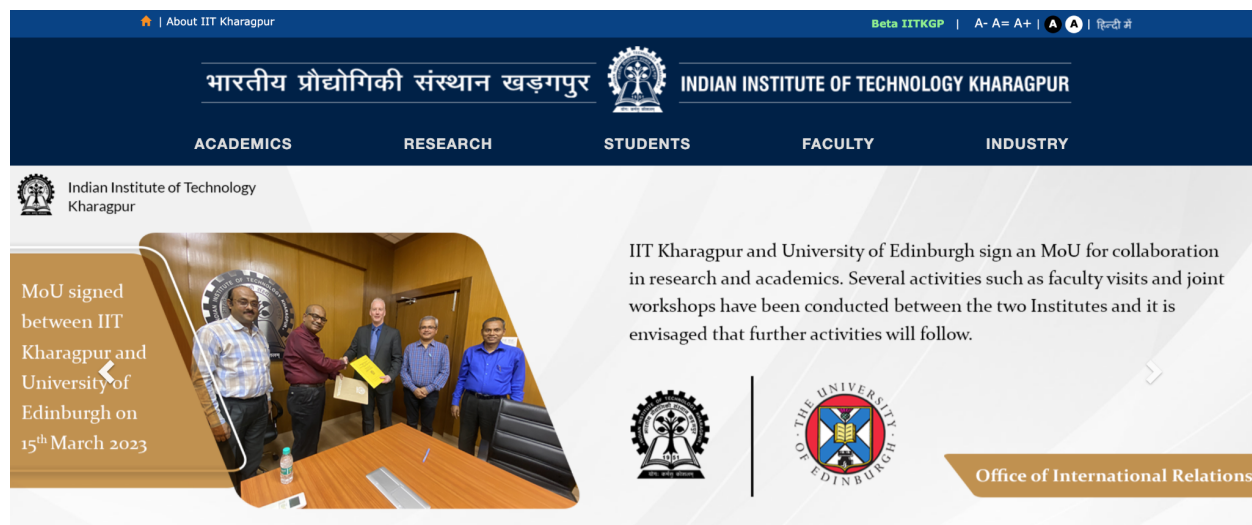
Contact Us - *Here we will provide information of IIT Kharagpur guest house contacts . We may use some random numbers here as this is not active in reality.*
We will also use IIT Kharagpur logo here for design purpose.

Login-*It will refresh the page and redirects to the sign in option this is just to clear the page in case of any bug or error in typing username.*

Register- *We will add new registration form for new user with detailes like name ,roll no,address,mail id.*

3.2 Hardware Interfaces

We can run this on any os with good internet .Printer may required in case of printing the form or booking details.

3.3 Software Interfaces

The software will require a windows OS with MS SQL Server Management Studio Express 2010 for its functioning.

3.4 Communications Interfaces

It will send email to the admin regarding booking messages and also send email of feedback.

4. System Features

This section includes all the functionalities and requirements for the OGHBS.

4.1 Verify user after Registration

4.1.1 Description and Priority

To create a new account and get it verified so that he/she becomes eligible for booking.

Priority: High

4.1.2 Stimulus/Response Sequence

The feature will get stimulated when the user clicks on the registration button on the main page. He/ She can enter his/her details and present an id card and get verified. On successful completion, a new account will be created for the given user.

4.1.3 Functional Requirements

REQ-1: Option to register . REQ-2: Option to upload id card

4.2 Existing User Login

4.2.1: Description and Priority

Existing users can login into his/her account to check the booking status.

Priority: High

4.2.2: Stimulus/Response Sequence

After clicking the login button the user enters the login details.
Correct details will lead to a screen to display details of the user.

4.2.3: Functional Requirements:

REQ-1: Identify user for verification

REQ-2: Option to sign-up and fill in the details

REQ-3: Allocation of username, password and allocating memory to store it in the database.

4.3 Availability check for a room

4.3.1:Description and Priority

Allows users to check availability of various rooms and select a room of his/her choice after entering booking dates.

Priority: High

4.3.2 Stimulus and Response

When a user chooses the book room option on their dashboard and enters the dates of booking, the system will search for an available room and display the options to allow the user to select the room.

4.3.3: Functional Requirements:

REQ-1: Database of available rooms

REQ-2: Option to enter User preferences for rooms

4.4 Room recommendation

4.4.1 Description and Priority

We recommend the closest vacant date for a room selected by the user

Priority: Medium

4.4.2 Stimulus and response

When user enters a non vacant date for room, we notify the closest available date for the room

4.4.3 Functional Requirements

REQ-1: Option to select nearest available slots from the database

4.5 Food Booking

4.5.1 Description and Priority

Give the user an option to select if food is to be included in the package or not.

Priority: Medium

4.5.2 Stimulus and response

Food options are displayed when the user proceeds with selection of rooms and leads to the confirmation of food option.

4.5.3 Functional Requirements

REQ-1: Option to enter the preferences

REQ-2: Details of rooms offering food

4.6 Price based sorting

4.6.1 Description and Priority

Allows user to sort the rooms based on price on a given date

Priority: Medium
4.6.2 Stimulus and response

Upon selecting the option to sort while displaying the available rooms the rooms are displayed in sorted manner as specified by the user.

4.6.3 Functional Requirements

REQ-1: List of rooms along with their prices

REQ-2: Option to include prices of food

4.7 Payment Gateway

4.7.1 Description and Priority

Option to enable the user to complete the payment after making the desired booking.

Priority: High

4.7.2 Stimulus

The feature will get stimulated when the room selection is confirmed. On completion the user will be directed to the payment gateway.

4.7.3 Functional Requirements

REQ-1: Price of room

REQ-2: External payment vendor

REQ-3: Mode of payment

4.8 Waiting List

4.8.1 Description and Priority

It is a list of rooms which have not yet been allotted stored in a queue based on first in first out principle.

Priority: High

4.8.2 Stimulus

The feature will get stimulated when the user does not want to accept a recommendation and is willing to add his room booking to a waiting list. On completion the user will be directed to the payment gateway and get added to the waiting list.

4.8.3 Functional Requirements

REQ-1: Memory to store the list of rooms in the queue

REQ-2: Details of the selected room to be added in the queue.

4.9 Cancellation and Refund

4.9.1 Description and Priority

In case the user decides to cancel his/her visit, then he/she can cancel the booking and avail a refund.

Priority: High

4.9.2 Stimulus

The feature will get stimulated when the user chooses to cancel the booking or does not get room from the waiting list. In response the room will be removed from the waiting list. The room status will get changed. The user will get back the refund.

4.9.3 Functional Requirements

REQ-1: Bank details of user and payment status

REQ-2:External payment vendor

REQ-3:Fraction of money to be deducted

4.10 Feedback

4.10.1 Description and Priority

This is the final step for the user before exiting from the online portal.The visitor would be asked to fill up a form with their experience details, which will help to upgrade the quality of service.

Priority: High

4.10.2 Stimulus

The feature will get stimulated when the user will be leaving the guest house.On completion the feedback will be shown to the manager and saved.

4.10.3 Functional Requirements

REQ-1: Memory to store the feedback details in the database of room

REQ-2: Feedback form to collect database

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Response Time:
The system must update the GUI (website) within 3 seconds of any changes being made so that there is least wastage of time between user interaction and its corresponding result.

The database must be updated within 2 seconds of any changes being made. This would allow for faster registration and confirmations.

Response to any query must be provided by the system within 3 seconds of the request, allowing users to access the data quicker.

Capacity: The system should be able to handle multiple users without any issues

5.2 Safety Requirements

The system must have frequent backups (say once every 20 mins) to protect the data, in case the system crashes or shuts down due to any unforeseen circumstances.

User data such as passwords must be protected and confidential.

5.3 Security Requirements

The system should have user authentication and authorization to prevent unauthorized access. Sensitive data should be accessible only by authorized groups of people.

Payments should be carried out in a secure environment.

5.4 Software Quality Attributes

- *Maintainability: The system should be easy to maintain*
- *Well documented code: The system should be well documented with modular code*
- *Efficiency: The product should be efficient, able to perform all of the desired functionalities in the most efficient ways for smooth functioning.*
- *Reliability: The system should be reliable and must not malfunction under normal circumstances.*
- *Security: The product should be secure. It should protect the user data from misuse by any party.*
- *Error Handling: The system should have proper error handling and recovery mechanisms in cases of malfunction.*
- *Scalability: The system should be scalable with the ability to add new features or modules easily.*
- *User friendly: The system should be user friendly and easy to use. It should be intuitive with a clean and modern design.*

5.5 Business Rules

The Guest House authorities will have access to the admin account and will have access to the admin privileges. The Admin will have access to all the details of the guests, their names, number of people staying in the rooms,

services desired by the guests etc. and other necessary bits of information. The admin would also have control over the do's and dont's of the system, control over payment functionalities and the ability to make changes in the database if necessary. They would also have the right to authorize or unauthorize any accounts or any bookings based on the service policies of the Guest House.

The Guest House Staff will have access to only a portion of data, like availability of rooms, names and room details of the guests, the services desired by them etc.

The Guest House would operate on the policies set up by the authorities of the Guest House and approved by the Institute.

6. Other Requirements

The system would be hosted on an online platform
Admin must verify the documents provided by users for identification or verification purposes
The capacity of the system should be based on the expected traffic as calculated from previous versions of the system or information from Guest House