1. **INTRODUCTION**

Ever since the inception of the internet many of the works could be carried out online. So this is the main reason behind developing our project which helps various people to book their rooms in the state based housing in various parts of the country.

The main advantage of booking rooms in Sikkim House is that it is the only guest house of the state situated outside Sikkim which is governed by the state government under the home department, government of Sikkim, so people from around the state who has to go outside for medical treatment and other purposes need not worry about their stays outside Sikkim. The people just needs to apply an application form to the under secretary, home department and if the application is granted then the applicant will be eligible for the stay and then he/she could make the required amount of draft in favor of home department government of Sikkim. After the application has been fully approved, only then the information is entered by the administrator which allows him to allot rooms based on the availability and purpose of visit.

* 1. **Aim and Objective**

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* 1. **Feasibility Study**

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* 1. **Literature Survey**
     1. **Introduction to XYZ**

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* + 1. **XYZ and ABC**

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  + 1. **ZBNMSNACCCCI**
* Use it to add multimedia elements With JavaScript you can show, hide, change, resize images, and create image rollovers. You can create scrolling text across the status bar.
* Create pages dynamically Based on the user's choices, the date, or other external data, JavaScript can produce pages that are customized to the user.
* Interact with the user It can do some processing of forms and can validate user input when the user submits the form.
  + 1. **ABCDEFGH**

So this is the main reason behind developing our project which helps various people to book their rooms in the state based housing in various parts of the country.

* The main advantage of booking rooms in Sikkim House is that it is the only guest under the home department, government of Sikkim, so people from amount of and tabs are ignored.
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* Government of Sikkim. After the applicationJavaScript statements end with a semi-colon(;).
  + 1. **MANFCHEKKKND**

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  1. **Problem Definition**

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* 1. **Analysis of the Problem**

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The problem was analyzed and the following points were considered;

1. Building a simple, user friendly and effective interface for administrator as wellas for house user.
2. Booking the rooms for authorized guest.
3. Modify booking information.
4. A page displaying list of vacant available.
5. Occupancy chart.
6. Generating revenue statement and consolidated revenue statement.
7. Check in and bill preparation for the guest.
   1. **SRS**

SRS document or Software Requirement Specification is a technical specification of requirements for the software. The aim of software requirements definition is to completely and consistently specify the technical requirements of the software in a concise and unambiguous manner.

* + 1. **Functional Requirements**

**R1: Login Process**

**Description:** This requires the user to provide his valid login user id and password in order to enter into his account.

**R1.1: Login for Administrator**

**Input:** Admin id and corresponding password

**Output:** Administrator will be redirected to the homepage of his account.

**Processing:** The username and the password entered by the user are verified against the database entry. If found valid then successful login with the username on top of the account will be displayed, else an error message will be generated “Login unsuccessful. Please try again”.

**R2: Administrator module**

**Description:** The administrator has been given the full control over the site maintenance. The administrator can book room, modify, extend, cancel, display revenue statement from the database.

**R2.1: Book room**

**Input:** select book room option; enter name, designation, address, city, email id, purpose of visit, room category, mobile number etc.

**Output:** A message is displayed “Information entered successfully”

**Processing:** The room details will be stored in the Sikkim house database.

**R2.2: Modify room details**

**Input:** Select modify option and press modify button.

**Output:** A message is displayed “Modification has been done successfully”.

**Processing:** The room details will be modified from the database.

**R2.3: Extend room stay**

**Input:** Select extend option and press extend button.

**Output:** A message is displayed “Extension has been done successfully”.

**Processing:** The stay of room will be extended from the database.

**R2.4: Cancel**

**Input:** Select cancel option and press cancel button.

**Output:** A message is displayed “Cancellation has been done successfully”.

**Processing:** The booking information is removed from the database.

**R3: House user**

**Description:** The house user has the ability to check in, prepare bills.

**R3.1: Check in**

**Input:** Select check in option and press check in button.

**Output:** A message is displayed “information entered successfully”

**Processing:** The check in information will be stored in Sikkim house database.

**R3.2: Prepare bill**

**Input:** Select prepare bill option, enter the number of days and press prepare bill button.

**Output:** A message is displayed “Billing information”.

**Processing:** The billing information will be stored in the database.

* + 1. **Non-Functional Requirements**
* **Response Time**: Response time is the expected time for the completion of an operation under specified circumstances. In order to function the software efficiently, the response time should be low. There is as such no strict response time constraint in this case. The lesser the response time, the more the traffic. The Response to any request should be reasonably fast.
* **Processing Time**: the main Processing Time involved will be downloading the different web pages with the data retrieve from the database. Static pages will be displayed quicker than the dynamic pages where the data needs to be retrieved from the database.
* **Stress Handling**: The software that is developed is competent to be worked out in various circumstances. Certain situation may arise when large numbers of data entries are required to be done. Still, the software will function smoothly and be able to handle out such overwork easily.
* **User Friendliness**: This web application has been developed keeping in mind the user friendliness. Any person with good knowledge over the internet and computers can be the user of the product.
* **Accuracy**: It provides an accuracy of keeping he records that cannot be done manually. This is because, if incorrect data are given as input, the expected results will not appear.
* **Reliability and Efficiency**: The software is found to be very reliable and consistently good to use. It is expected to produce desired and efficient outputs.
* **Throughput**: Throughput is the expected number of operations that can be performed in a unit of time. Throughput should be maximum in order to have an efficient output.
  + 1. **Goals of Implementation**
  1. **Solution Strategy**

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1. **PROJECT PLAN**
   1. **Hardware and Software Requirements**
      1. **Developmental Requirements (if any)**
      2. **Operational and Maintenance Requirements (if any)**
      3. **Minimum Requirement (if any)**
   2. **Team Structure**
   3. **Software Development Life Cycle**
   4. **Gantt-Chart**
2. **DESIGN STRATEGY FOR THE SOLUTION** 
   1. **Architecture Diagram**

**Client Machine**

**Printer**

**Server Machine**

Data

Data

Data

Data

Data

Data

*Fig 2.1 Block Diagram*

* 1. **Data Flow Diagram**
  2. **Entity Relationship Diagram**
  3. **Relational Schema**

1. **DETAILED TEST PLAN**

This being a web application project, we need to consider various dimensions of quality. It is incorporated into a web application as a consequence of good design.

The whole test plan is based on reviewing and examining the following dimensions:-

1. **Content**: this includes evaluation at both syntactic as well as semantic level. At the syntactic level, spelling, punctuation and grammar are assessed for hard-coded tests appearing on the client screen of the website. At the semantic level, correctness of information presented, consistency and lack of ambiguity are all assessed.
2. **Function**: all the functions specified in the requirements specification document will be tested. The errors in main function that can confuse and disappoint the client needs to be handled with appropriate error messages. The three levels of testing were done i.e. unit testing, system testing and integration testing.
3. **Usability**: this is tested to ensure that each category of user is supported by the interface and can learn and apply all require navigation syntax and semantics.
4. **Navigability**: this is tested to ensure that all navigation syntax and semantics are exercised to uncover any navigation errors (e.g. dead links, improper links etc). Every link on each pages and frames were tested.
5. **Performance**: performance is tested under a variety of operation conditions, configuration and loading to ensure that the system is responsive to user interaction and handles extreme loading without unacceptable operational degradation.

This document describes the testing plan of the web application. Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. The application will be successful with the acceptance of the testing. All the major testing activities are specified here.

* 1. **Test Units and Methods:**

The testing process is divided basically into three major components i.e. unit testing, integration testing and the system testing. A test case is a document that describes an input, action or event and an expected response to determine if a feature of the application is working properly. For proper functioning of the application these three levels of testing are necessary. The basic units to be tested are:

* + 1. **Unit Testing:**

In Unit Testing, we are required to identify the test units and test them separately after the development of each module. The units to be tested are as follows:

* Unit 1-Administrator Module
* Unit 2-House User Module
  + 1. **Integration Testing:**

In Integration Testing, we are required to integrate the testing units from the unit-testing phase and then test then as a whole unit. The testing to be done is Unit 1 and Unit 2 together after integration.

* + 1. **System Testing:**

In System testing we need to install the application on the server machine and then access it from the other machines connected via intranet.

* + 1. **Features to be Tested:**

All the functional features specified in the requirement documents will be tested. Functional features are like booking room, modifying, extension, Check in, cancellation and the flexibility of the administrator and user will be tested. As software is a web application, system configuration for the server as well as for the client plays an important role. Therefore it should be properly tested with the requirements of the application so that the generality of the application is maintained. Not only this, even the platform on which the website will be hosted needs to be checked to compensate with the minimum requirements of this web application.

* 1. **Approach for Testing:**

As the system is hierarchy of modules, and the development of the system has been done in a bottom-up manner. This will facilitate integration testing and finally overall system testing. For unit testing, structural testing on the branch coverage criterion will be used. System Testing will be largely functional in nature. The focus is on invalid and valid cases, boundary values and special cases. Any special observations during the testing will be noted down and the cause of that will be further determined.

* 1. **Test Deliveries:**

The following documents are required during testing besides test plan:

* Test case specifications for unit testing.
* Test case specifications for integration testing.
* Test report for system testing.

The test case specifications for unit testing, test case specification for integration testing will be reviewed before system testing commences.

* 1. **Schedules for Testing:**

The entire Testing will start from April and will be finished within 1st week of May. The schedule is consistent with overall schedule of the whole project.

* 1. **Test Case Specifications:**
     1. **For System Testing:**

Here we specify all test cases that are used for system testing. First he different conditions that need to be tested, along with the test cases used for testing those conditions and the expected outputs are given. The test cases have been selected using functional approach. The goal is to test the different functional requirement, as specified in the requirement document. Test cases have been selected for both valid and invalid inputs.

|  |  |  |  |
| --- | --- | --- | --- |
| Sl. no. | Test Cases | Condition being checked | Expected Output |
| 1. | Concurrency Control | Whether more than one client  can access the site from the server. | Positive |

*Fig 3.1: Test Case for System Testing*

* + 1. **For Unit Testing:**

**Testing for Unit 1:**

|  |  |  |  |
| --- | --- | --- | --- |
| Sl. no. | Test Cases | Condition being checked | Expected Output |
| 1. | Login for administrator | Whether the administrator is authentic | Print message  and proceed. |
| 2. | Book room | Whether the booking already exists or not. | Print message successful. |
| 3. | Cancellation | Whether the cancellation is allowed or not | Print message  Successful. |
| 4. | Modificaiton | Whether the modification is allowed or not | Print message  Successful. |
| 5. | Extension | Whether the extension is allowed or not | Print message  Successful. |

*Fig 3.2: Test Case for Unit 1*

* + 1. **Testing for Unit 2:**

|  |  |  |  |
| --- | --- | --- | --- |
| Sl. no. | Test Cases | Condition being checked | Expected Output |
| 1. | Login for house user | Whether the house user is authentic. | Print message  and proceed. |
| 2. | Check in | Whether the check in is allowed or not. | Check in allowed. |
| 3. | Prepare bill | Whether billing is allowed or not. | Bill prepared and can be printed. |

*Fig 3.3: Test Case for Unit 2*

1. **For Integration Testing:**

|  |  |  |  |
| --- | --- | --- | --- |
| Sl. no. | Test Cases | Condition being checked | Expected Output |
| 1. | All modules are tested simultaneously. | Whether the modules are working in coordination with one another. | Positive |

*Fig3.4: Test Case for Integration Testing*

1. **IMPLEMENTATION DETAILS**
   1. **Pseudo Codes:**

Following are the pseudo codes of some of the important algorithms used in developing the application:

* + 1. **Pseudo Code for Administrator login**

Begin

Admin\_login ()

{

getVal(login\_id);

getVal(password);

//Press login button to login successfully

If( the login\_ID or password entered is wrong) then

Display(“Login unsuccessful Try again”);

Else

//Redirect to home\_page

}

End

1. **RESULT AND DISCUSSIONS**
2. **SUMMARY AND CONCLUSIONS**

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