"WEB APPLICATION"- A SOLUTION TO THE HOTEL INDUSTRY

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Abstract— Nowadays everything is becoming digital and the world has become advanced, whether in hospitals, groceries, or even at an institutional level. Information technology plays an important role in the advancement of technologies where everything became faster and easier. This study proposed that by spending money on hotel website development, a trustworthy relationship with clients may be established [1]. This study focuses basically on the shortcomings of technology in the hotel industry. Many are unaware that technology can make the work of clients and guests search for a hotel or any further requirement. This reduces time as well as the cost for the hoteliers and the scalability for this is also good. It is important to build a web application for the hotel industry as it reduces manpower and one can also book a hotel with their mobile or any other device. This paper discusses the problems coming under online hotel booking websites and the solutions to these problems. There are many issues that hoteliers and guests face which is been analyzed, to be identified or even there can be a possibility that an issue is known but a solution is not identified yet or not feasible. There are advantages and disadvantages of online booking;

both can be curbed with good planning and development. The role of Information Technology in the Hotel Industry made it necessary to maintain a standard of creating a website or application based on the issues and also now hoteliers are getting influenced by their competitors and started to approach this method.

Keywords—web application, overbooking, underbooking, Information Technology.

I. INTRODUCTION

In this paper, we have discussed the web application for the online booking of hotels where one can book hotels without going there i.e., physically booking the hotel and also it becomes very hectic for the hotelier as well as the guest to waste a lot of time in searching the hotel. Earlier all these bookings were done via call or by enquiring about the vacancy of hotel rooms. Here, Information technology plays a major role in the functioning of the hotel industry. Through the web application, the problem of over-booking and under-booking arises. Many hoteliers tend to register themselves on many OTA websites. Here OTA stands for Over the Air which is a platform that is used nowadays in hotel booking and many other purposes. This approach is very beneficial but here the issue of overbooking and underbooking arises. Overbooking arises when there is no vacancy in a hotel but it is not updated on the OTA websites so Guests tend to book the rooms and there is no practical solution once the hotel room is been booked whereas the problem of under-booking arises when the hotel rooms are vacant but the website in showing that the rooms are engaged. This is due to the website which is not updated from time to time and this is due to the lack of functionality in these websites. Multiple OTA websites are there now in this digital world and update every hotel room with multiple OTA websites so hence this web application will help in updating the hotel rooms and also it will help in maintaining the decorum of the hotel.

Many hoteliers traditionally manage the data as still many of them are searching for a trustworthy platform that will respect their privacy and also help them to manage the data efficiently. This web application is efficient for all the shortcomings in hotel bookings as well as managing the bulk of data. This approach is very easy once implemented and this increases the feasibility and also easy to maintain the data which required manpower. Also using a third-party web application will reduce the labor cost and in one go the hotel bookings will be managed and also marketing is possible. Many hoteliers subscribe to an organization's web application service, which helps them promote their hotels and manage their bookings. One of the main reasons for this application is to change the approach of the traditional method of booking hotel rooms and also the marketing of these hotels. Along with this last moment, cancellation is also a problem that made it important to build an application. Due to this system, hoteliers can check the availability of rooms with just one click.

The role of Information Technology in the Hotel Industry made it necessary to maintain a standard of creating a website or application based on the issues and also now hoteliers are getting influenced by their competitors and started to approach this method. Currently, these are a smaller number of organizations are working on this issue which made it a good opportunity to establish a web application in this competitive world. Although this approach takes time to develop, it is easy to maintain. It is important to build a relationship between the customers and hoteliers and a medium for them to communicate and showcase their services, web application is important. The quality of web applications is important for the customers to be convinced and access them more and more. This one-click approach can make it easy to update all the hotel room vacancies and can make the process more efficient.

II. LITERATURE REVIEW

In [3], the author proposed a model that allows the user as well as the administrator to keep a track of the bookings as well as ensure that the data is maintained appropriately. It notes the check-in and check-out times of the customer without any difficulty and keep the track of them without further data loss. It also keeps the hotels to be updated with the modernization of technology and even keeps the work on track. It also ensures privacy and security between the guest and the hotelier. The proposed project will look after the functionality of all the booking of hotels as well as other necessary tasks to be done with less manpower.

It will even manage the data of staff who will log in and their data would be secured with that application.

In [4], the author proposed the importance of marketing hotels through a web application and how it can have a great impact on the public, and how important marketing is for the hotel industry to run. There are many other media for marketing but a website is an implementation and a practical term. Also, the Internet is a service that everybody uses and marketing through the Internet is possible now in a very efficient way. This approach made the booking of a hotel easier and also made it easy for people to choose their ideal hotel the reviews of genuine customers made it easy to trust the hotel industry. Many other web applications have gained trust over years of marketing and hard work through the internet. This approach requires a lot of technical knowledge along with good marketing skills.

The management of data is been proposed in [5] by the author to resolve the issues related to data storage and loss issues. It illustrates the design of the hotel management system and the architecture of the complete system which considers all the important constraints and all are been discussed layer by layer where all the front end and back end can be managed. The author proposed different modules which are all related to each other and also, they are important terms that have a one-to-many relationship. Based on these terms the research paper is proposed to manage the data in bulk as well as the connectivity between the user and the administrator. This model makes the web application cost-efficient as well as easy to work on. The issue of data redundancy may occur without the use of technology. But with a web application data will not be redundant and this will save the cost and effort of the admin. This model proposes that the web application will be simple to use and that anyone can use it efficiently. Many users want to book a hotel but they are not present there in a particular location and so here technology comes into the picture.

III. PROPOSED SYSTEM

The proposed system consists of certain modules which are all linked with each other but play a different role in each section. The project is divided into a group of modules that consists of the following:

1) Home Page

2) Hotel Page

3) Login/Logout Module

4) Booking

5) Data Management.

This module consists of many functionalities that help the hotel industry manage data and bookings. This web application will look after the problems of overbooking and underbooking which were mentioned earlier the above. The basic modules are the home page comprising all the modules which are linked to it. When opened, the home page is the only module that is the face of the website or web application. It consists of the check-in check-out module where the user can choose the date and the number of rooms to be booked. Here there is also the pre-booking service which is also a feature for the user as well as the hotelier to do the needful. This application allows the user to choose the type of room they want and also can have a view of the services the hotel provides before booking the rooms. Also, users can read the reviews of the customer who had an experience living in that hotel as well as can write a review after staying in that hotel. There is a subscription module where users can get updated with the offers and also it helps a lot in the marketing of the hotels in marketing hoteliers can send mail as well as notify them of their new offers and discount. On the home page, there are also some services where you can see the hotel rooms on basis of their rates and these rates may differ on basis of their services. The About Us page deals with information about the hotel where one can know about its foundation and basic principles of it.

The login page should contain the following fields: Username, Password. **In Login Validation,** once the user enters their login credentials, the system should validate the details against the database. If the details are correct, the user should be redirected to their Homepage or access the couch admin panel, otherwise, an error message should be displayed. The Register page should contain the following fields: Username, Email Address, Password, and Confirm Password This can be implemented as follows:

- The System asks the user to enter their details and password.
- System validates the email to ensure it doesn't already exist in the database If the

email doesn't exist, user details are stored in the database.

The Forgot Password page should contain the following fields: Email Address. This can be implemented as follows:

- The system asks users to enter the email address associated with their account.
- If an email exists in the database, a reset password link is sent to the user's email address.
- If the user clicks on the link and is redirected to a page where they reset their password

The below figure illustrates how the login page is been used and implemented. Here new users can also register themselves as well as can use the website as a guest.
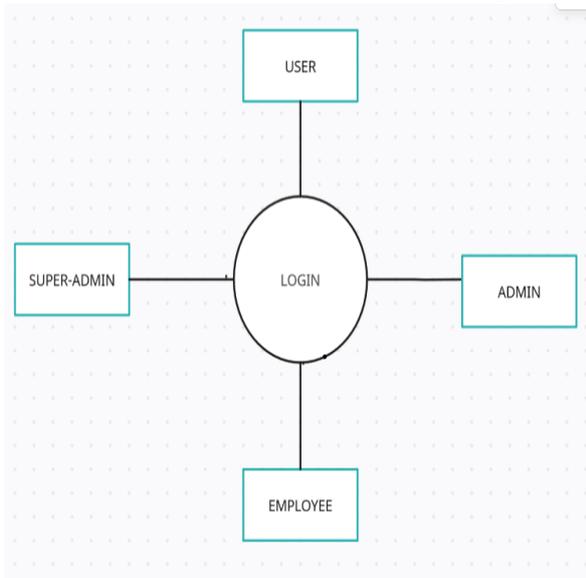
Fig.1: Data flow diagram of the Login page

The hotel module contains the following –

- hotel list view
- hotel page view
- hotel creation page
- hotel edit and deletion view

In the hotel list view the user can access the hotel list view based on user access level. If we *logged in as the guest then* the user will be able to see the normal list of hotels according to his searches and if we *logged in as the owner* will be able to see a list of hotels created by him, he will be able to create and delete hotel created by him. In the hotel page view the user can access the hotel page view based on user access level. If we *logged in as guests* the user will be able to see detailed information about hotels and when we *logged in as an owner then* the owner will be able to detailed information about hotels and he will be able to edit the information of the hotels created by him. This hotel page view contains the following details - Banner images of the hotel, information about the location of the hotel, social media links of the hotel, and details information about the rooms of the hotel and their images.
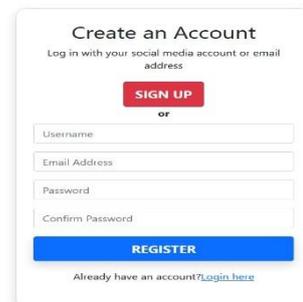
A list of amenities is provided by the hotel. Information about the nearby transport (Bus stop, Bus stand, Railway station, Airport). The review section includes the rating and reviews provided by the other users and in the rating section, the user can write his experience with the hotel. It also includes a list of the near hotels. In the create view of the hotel module the part of the site will be only accessible to the owner of the hotel, by using this he will able to create a list of new hotels.

In the edit view of the hotel using this, the hotelier will be able to edit the hotel listed by him and in the delete view of the hotel, the hotelier will be able to delete the hotel listed by him.
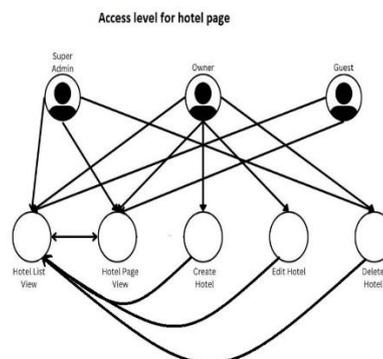
Fig 2: Diagram of Access level for hotel page

IV. IMPLEMENTATION

The implementation is the result of the proposed system where the actual implementation is shown. This module is the actual working phase wherein the stages of requirement gathering, Planning, and then Implementation occur. Also, here the Software is tested after this, and with the implementation, there is also a feedback stage where changes can be done with this. In this project, the problems of overbooking and underbooking are been solved. Also, the auto-updating is overcome. Wherein there is a hotel web page in which you can look for hotels and choose the hotel you want. Fig. 3 shows the login module where the user can create an account and sign up or even go through the page as a guest.
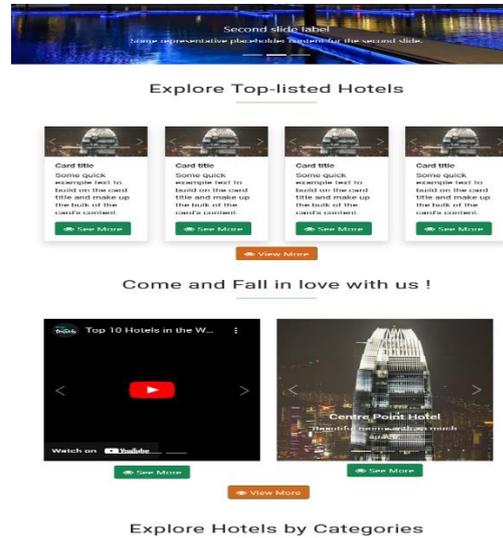

Fig.5: Home Page

On the home page, the user can view it as a guest as well as can log in. This home page will lead to other pages and from Fig. 5 users can have an overview of the website. Also, there is a module in which one can view the videos and images of the hotel and also add a review to it.

Fig.4: Forgot Password

In this module, User needs to register themselves with a correct email id and password and confirm it., the User can log in and use the application, and also in Fig. 4 if the user forgets their password, they can add their email id and they will get a mail for confirmation.
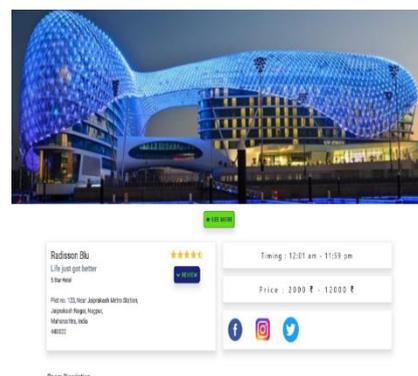
Fig.6: Hotel Page View

In Fig. 6, the module is the page view of the hotel which consists of images of the hotel along with the hotel amenities. On this page, you can know the detail of the hotel and also rate it with stars. You can even follow the hotel on social media and know more about it before booking a hotel.
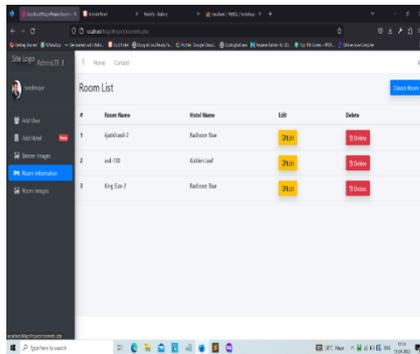
Fig.6: Super-Admin Module

The super admin page is only for the developer or the organization that made it. Hotelier doesn't have the access to this and for the hotelier to access its subscription is important. The super admin is responsible for changing the data as well as inserting a hotel. In this module, all the activities of the admin can be monitored. This makes it easy for the hotelier after subscribing the module it is easy to manage the content of the hotel and the hotelier doesn't need to look after it.

V. APPLICATION

There are very few competitors who are there in the market who are working in this hotel industry as a developer. The use of web technology in the hotel business is being pioneered through this project. Many consumers won't experience booking troubles with this application when reserving hotel rooms, and hoteliers won't experience any overbooking or underbooking issues either when accepting bookings. The hoteliers will be able to handle the bookings in an effective manner with sufficient maintenance and application skills. The marketing and search engine optimization of the web application will both benefit from this application. The breadth of this application is really good and it saves time and money that hoteliers spend on resources because there are fewer businesses that own this type of web application. So this module will help in the management of the data as well as one can access it easily and no need to search it.

VI. CONCLUSION AND FUTURE SCOPE

Through this project, the approach of using web technologies in the hotel industry is been initiated. With this application, many users will not face booking problems while booking hotel rooms and also hoteliers won't be facing any overbooking and underbooking issues while accepting the bookings. With proper maintenance and knowledge of the application, the hoteliers will be able to have an efficient way of dealing with the bookings. This application will be able to help in marketing and also increase the Search Engine Optimization of the web application. As there are many a smaller number of organizations owning this kind of web application the scope of this application is very good and it saves time as well as money which hoteliers spend on resources and manpower. This project is made concerning the maintenance of data and it will ensure that no data is lost. Searching for data and data redundancy is also curbed with this application. This web application is a one-time investment and after that maintenance is required. Although cost is a factor it is low compared to that having a hotel that is not registered in the web application.

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