

# Automated Hotel Management Information System

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## Abstract:

The aim of an automated hotel reservation management system is to handle all aspects of the hotel's information and booking system. This application attempted to cover all operations that occur in residential hotels. It is all identified, from employee management to booking, floors, offices, and room type management, among other things. We demonstrate how data/information is processed in hotels in our project, automated Hotel Management System. The hotel management overview was achieved by splitting the project into different modules. Customers are offered various facilities such as check-in, checkout, and entry editing, as well as advance payments. Customer has the option to cancel his or her reservation if he or she so desires. Customer Identity or customer name may be used to search for any customer or employee. It is also possible to inquire about available spaces. It will produce reports for customers, employees (who work in the hotel), and a bill for the customer when the customer checks out. We've only included a few modules because our aim is to get an idea or learn more about how hotels are managed. With the addition of several more components, this type of project may be used in a variety of hotels. The efficiency of any hotel is determined by the method used to obtain and prevent information from customers' personal data for use in the hotel's various services. It has been a complex and difficult operation to manage their outcome revealed, particularly when information flow is consistent. This project focuses on creating a client-side and user interface in Java Script, as well as a backend in Hypertext Pre-processor (PHP) to support panorama data processing and management, Structural system analysis and design methodology (SSADM) was used to develop the new system to enable the old system run concurrently with the new system.

*Keywords: Hotel Management Information, Customer, Booking System, Bill, Facilities*

## INTRODUCTION

Hotel Management System operates a global online hotel reservation system for business and leisure travelers. To compete with the international e-marketplace, a great deal of attention should pay towards the optimization of user requirements to generate recommended hotel alternatives [1]. In general sense, hotel management is the way of maintaining different activities of a hotel where a number of staffs are engaged to perform a number of these activities. At first let us take a glance to an ordinary hotel. For hiring a room in this type of hotel, the client needs to meet with the receptionist to collect the information of hotel facilities [2]. After that he is to fill up the pro forma provided by the hotel authority, then he has to pay the defined amount of money and is offered room key for his/her rented room. He/she is then finishing the formalities a reception zone through these undergoing customs. But client always wants greater privacy and reliable security. Koolmanojwong *et al.* [3] developed an intelligent e-marketplace for the tourism based on fuzzy to serve the customers who wants to travel but has no idea about the accommodation. An intelligent e-marketplace for the tourism based on fuzzy to serve the customers who wants to travel but has no idea about the accommodation. This system is global

in the sense that anyone can use this to find the appropriate hotel according to his/her affordable means [4].

With due consideration to the numerous benefits offered by the computer system and the internet, it is imperative that business organizations such as hotel industries take advantage of the computer system and internet so as to reach more clients, gain more patronage and to be known globally. With dynamism in the information technology world, it is important that customers are offered convenient and accessible services to enable them stay at edge among other competitors that are also taking advantage of information technology to enhance their business operations. It is in view of this need to digitize hotel operations that this research study is carried out to develop a front desk management solution [5]

### **Detailed Significance of Study**

The study is primarily aimed at increasing efficiency in operation, reducing time and running cost, monitoring and the recording of the activities and total administration in hotel by introducing a web-based Hotel management system. After computerizing the system, the Hotel Administrator can finish their work in the least amount of time possible and with very little effort. The computerized system has many gains and efforts which the manual system cannot give in any type of situation. The research was also intended to aid in advancing both the theoretical and practical knowledge and aimed at getting the „best practice“ to act as a benchmark used in organizational problem solving. It would therefore establish a relationship between marketing practices and ICT concepts, greatly impacting in the hotels“ performance. The Hoteliers and any firms using these concepts will be the principle beneficiaries and are likely to experience increased profits and improved production, while enjoying better organizational skills in decision making. It also provides avenues for future research for academicians.

### **Specific Objectives of this Study**

The aim of this study is to design and develop an online hotel management system that will perform the following:

1. Provide an easy way to automate information about the day-to-day activities of hotel such as record of attendance, computing of bill, tariff plan, as well as online facility for checking availability of rooms, ordering of food and also booking of the room and event hall.
2. Facilitate increase in productivity, decrease paperwork, and ability to analyze trouble spot.
3. Maintain security and secrecy of the hotel details.
4. Provide reliable and efficient data of customers and bookings.

## **BACKGROUND STUDY AND RELATED WORKS**

### **Background of the Study**

Nowadays web services technology is widely used to integrate heterogeneous systems and develop new applications. An application of integration of hotel management systems by web services technology is presented by various groups of researchers. The Hotel management system integrates lots of systems of hotel industry such as Front Office system, Property Management System, Property Management System, Enterprise Information System (EIS), Enterprise Information Portal System (EIP), Customer Relationship Management System (CRM) and Supply Chain Management system (SCM) together. This integration solution can add or expand hotel software system in any size off hotel chains environment [5].

It is generally accepted that role of web services in business is undoubtedly important. More and more commercial software systems extend their capability and power by using web services technology. Today e-commerce is not merely using the internet to transfer business data or supporting people to interact with dynamic web page, but is fundamentally changed by web services. The World Wide Web Consortium's extensible Markup Language (XML) (W3C, 2003) and the eXtensible Style sheet Languages (XSL) (W3C, 2003) are standards defined in the interest of multi-purpose publishing and content reuse and are increasingly being employed in the construction of web services. Since XML is seen as the canonical message format, it could tie together thousands of systems programmed by hundreds of programming languages. Any program can be mapped into web service, while a web service can also be mapped into program [6] And we found that this system greatly improves both the hotel customer and hotel officer's experience in the hotel business work flow. Because current technologies are quite mature, it seems not to be difficult to integrate the existing system and the new coming systems (for example, web –based applications or mobile applications). However currently in hotel industry there re few truly integrated systems used because there are so many heterogeneous systems already in existence. Scalability, maintenance, price, security issues then become huge to overcome.

This system is developed to integrate the business flow of hotel management by using web services and software integration technologies. These involve a scenario of hotel reservation and discuss the interaction between the system and the users including the design and implementation of this system [7].

### **Related Works**

Delizo and Esguerra [8] designed and implemented an online hotel reservation and management system for the college of international tourism and hospitality management. Though, the reservation was automated, as shown in their reservation model, it lacks the flexibility to accommodate multiple reservations with breaks, such as check-in/check-out and re-check-in/checkout. Thus, the customer will have all bookings in a single reservation instead of in multiple, individual reservations.

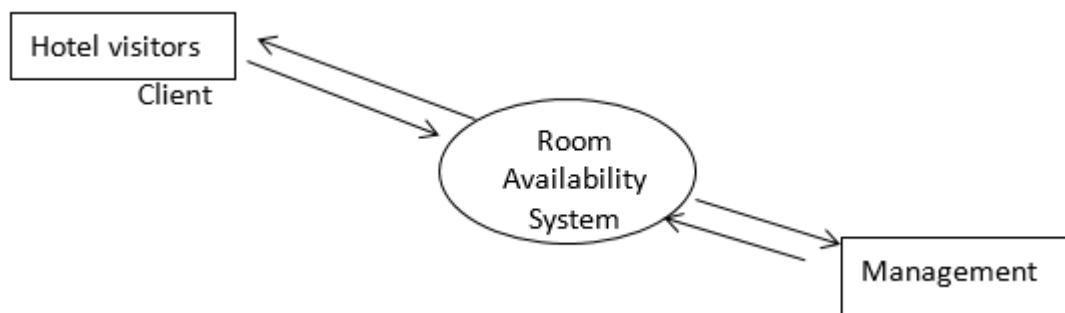
To maximize their revenues and protect their market share against traditional competitors (e.g., formal lodging businesses) and disruptive business models (e.g., Airbnb), the lodging industry increasingly relies on technology in various operations [9]. While acknowledging the benefits of digital transformation in saving time, supporting the decision-making process, and yielding more revenues, the high cost of RM software emerges as a key barrier for digital transformation. Their findings also reveal that the automation of various manual heuristics in RM is far from being possible, and therefore, digital transformation is unlikely to pose a threat to the future of the RM profession.

Dyshkantiuk et al,[10] on Modern hotel business management tools opined that high-tech innovations are largely dictated by the requirements of the modern hospitality industry. Also, the innovative technologies in the hotel are advanced multifunctional services that can perform many tasks that are characteristic of this particular type of business as a hotel. Using advanced automation tools within a few months of use will prove its effectiveness, positively affecting the number of room orders and eliminating human errors in the formation of the most critical reports. Advanced hotel management tools as PMS, Channel Manager, booking module, Internet Acquiring, Website, Chatbots were discussed. Particular attention is paid to the consideration of

the Revenue Management system. They analyze hotel data, find growth opportunities and predict what price changes need to be made to earn more money. Several basic models for demand forecasting are considered that allow the revenue management system to maximize hotel profits. Rahim et. al, [11] designed an intelligent hotel management system that seeks to automate hotel customers' interaction with hotel facilities in a zero-touch using voice processing. The model incorporated the automatic control of lighting, cooling, and so on. Unfortunately, the reservation module of the system was still the same rigid module that is found in all available hotel reservation systems. Once again, the model lacks the flexibility to accommodate multiple reservations with breaks in between a check-in/check-out and re-check-in/check-out pattern.

### DESCRIPTION OF THE PROPOSED FRAMEWORK

The program structure describes the way the program is being structured using the Modularity, Context Diagram, System and Program flow chart. The software design methodology that was used to achieve the system is the Structured System Analysis and Design Methodology (SSADM) because of its effectiveness and the feature of breaking down a system into its simplest modules. Also, with the SSADM, the system was analyzed in different stages, steps and tasks. These will be clearly illustrated by the context diagram and the system modularit



**Figure 1. Context Diagram: The context diagram showing the system and the agents (Hotel visitors and the management) that interact with it.**

This research work was designed in modules, which could be compiled into a single application. The modules of this program form different parts of the application which are built separately due to their different functions according to the current user level. These modules form up the application which is named "Room Availability System". Some of the modularity created on the application includes: -

**HOME:** This module is also known as the landing page. It is the welcome module of the system which provides access to other parts and function of the system.

**LOGIN:** This module is the security module of the system. It detects the intending user of the system if he is authorized to use the system or not. Also, it restricts who make a request to view photos or not.

Data preparation is the process of cleaning and transforming raw data prior to processing and analysis. It is an important step prior to processing and often involves reformatting data, making corrections to data and the combining of data sets to enrich data. In the context of the research many data were prepared in different way, the customer data which allows the easy collection of customer details prepared and store in a file (MySQL) and so other data in the system

User data is been prepared in the system in such a way data generated and manipulated is been validate in the system. User data can be collected in the system through forms and input field in the system.

**System Flowchart**

The system flow chart shows the key inputs and output associated with the program. It is made up of or built with different shapes or symbols. The shape of the symbols indicates the types of input or output devices.

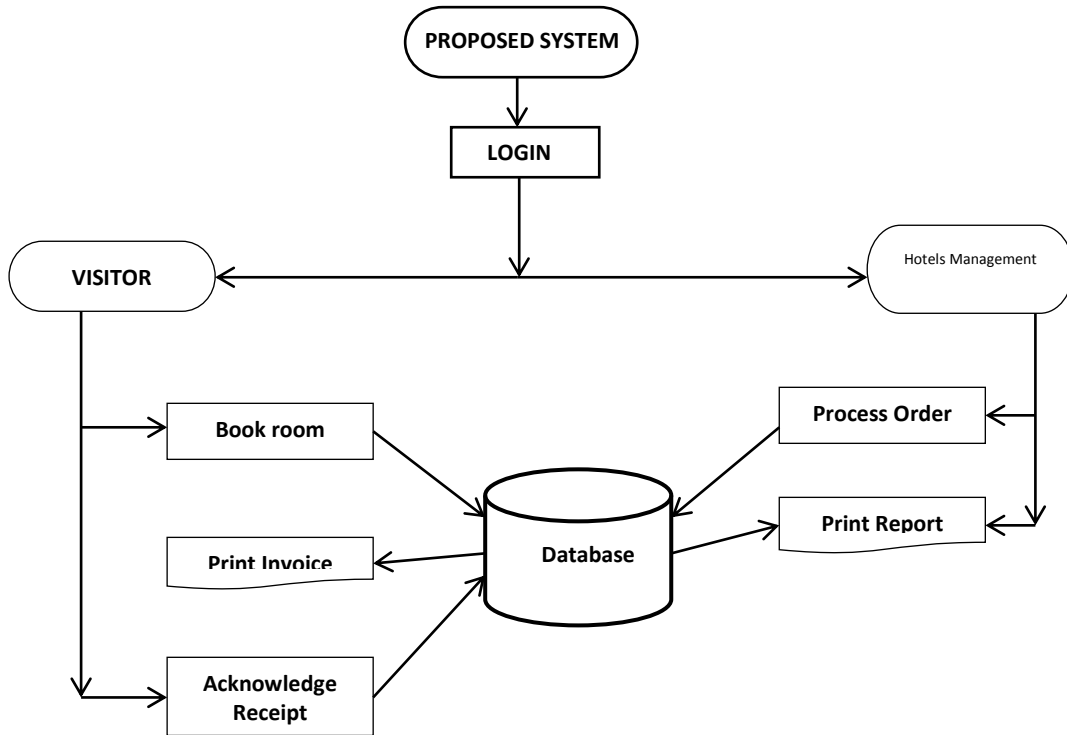
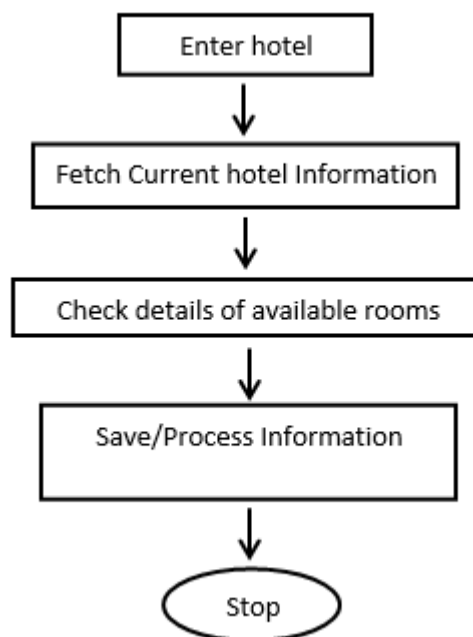


Figure 2. System flowchart



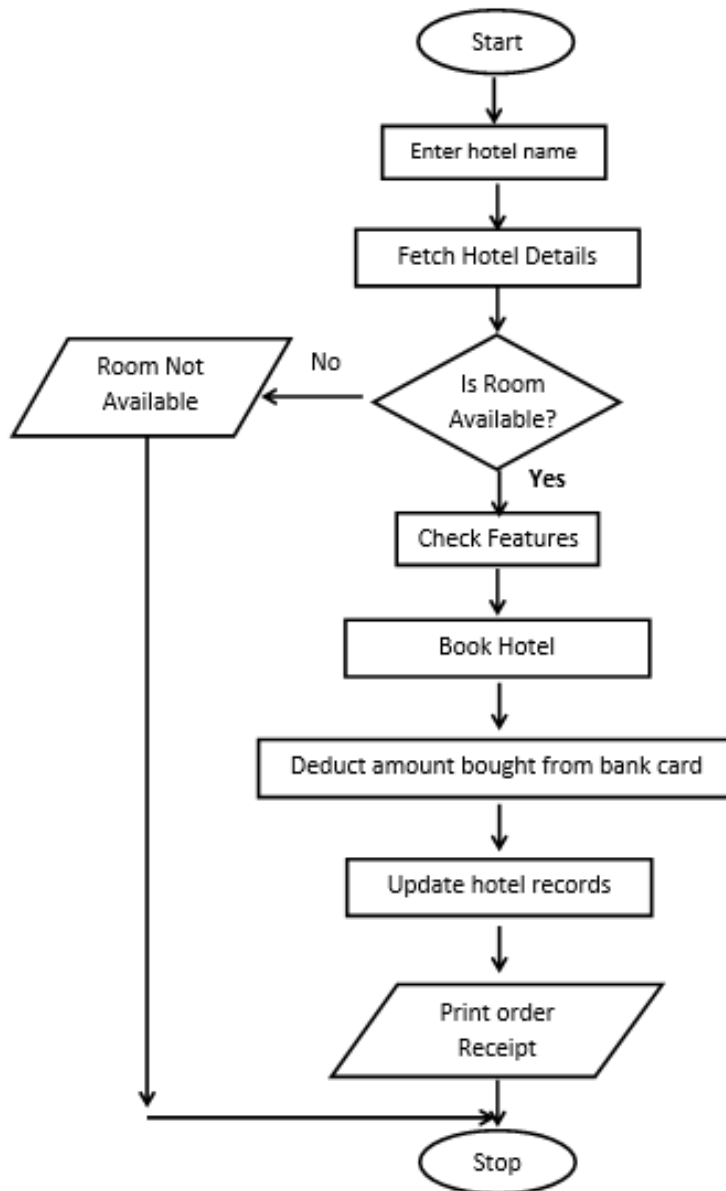


Figure 3. Program Flowchart

## THE HOTEL INFORMATION MANAGEMENT SYSTEM

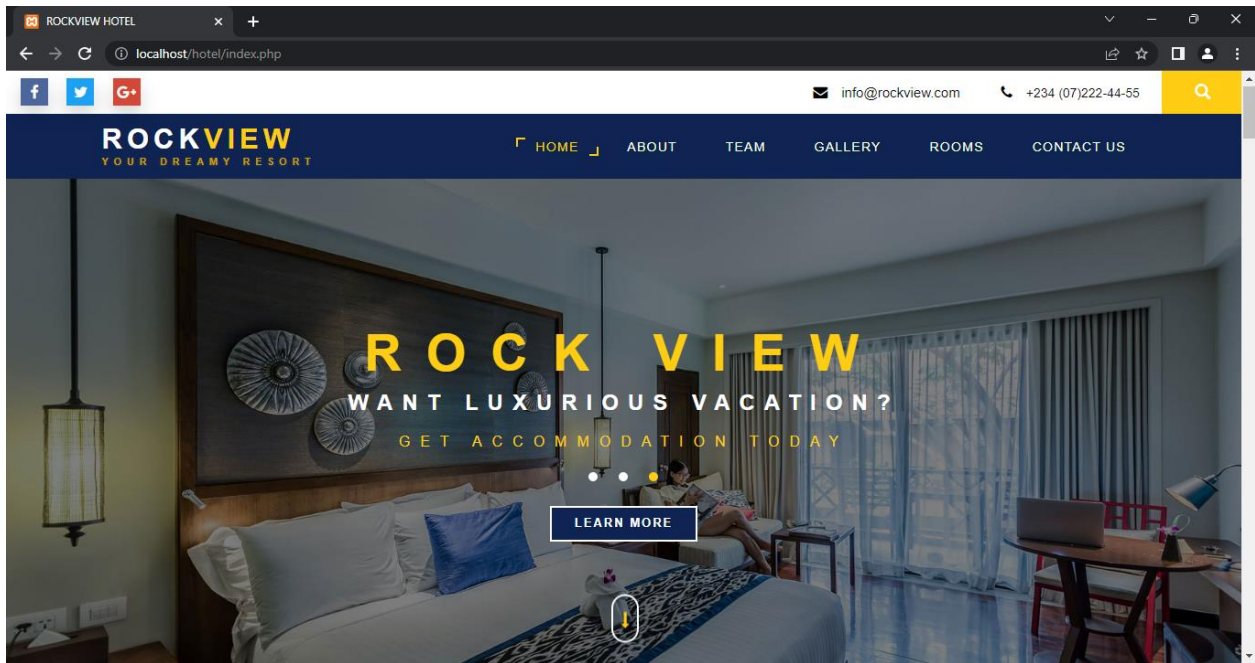


Figure 4. Main Menu

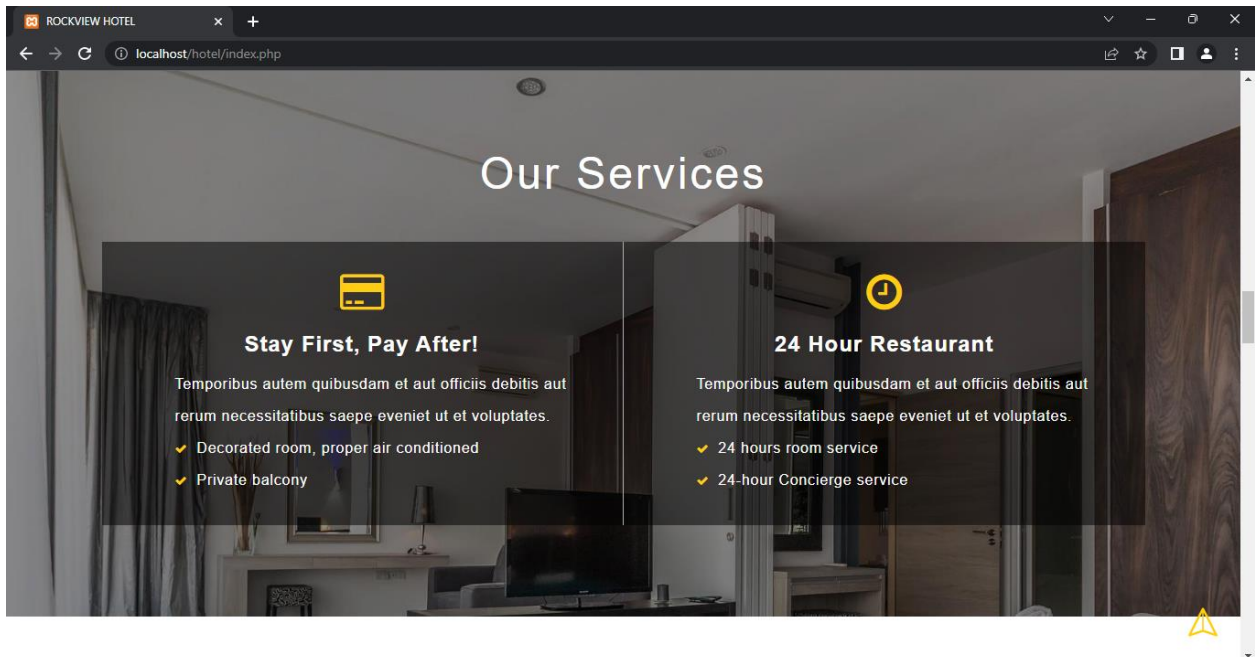


Figure 5. Service Page

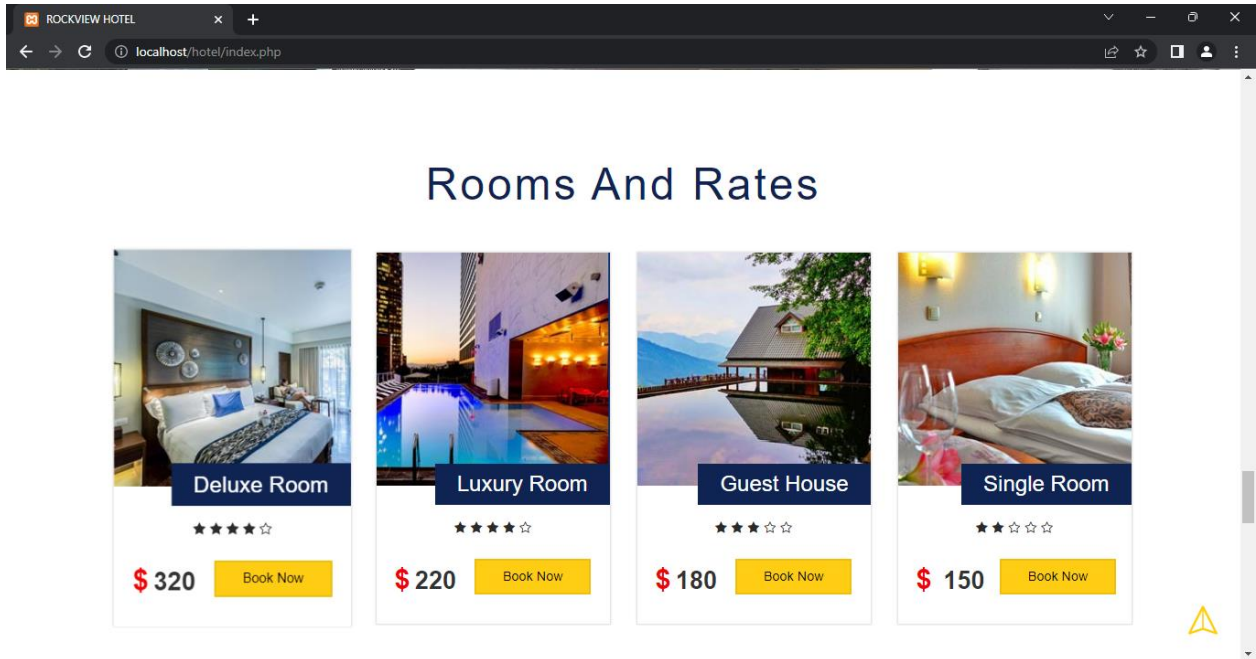


Figure 6. Booking Page

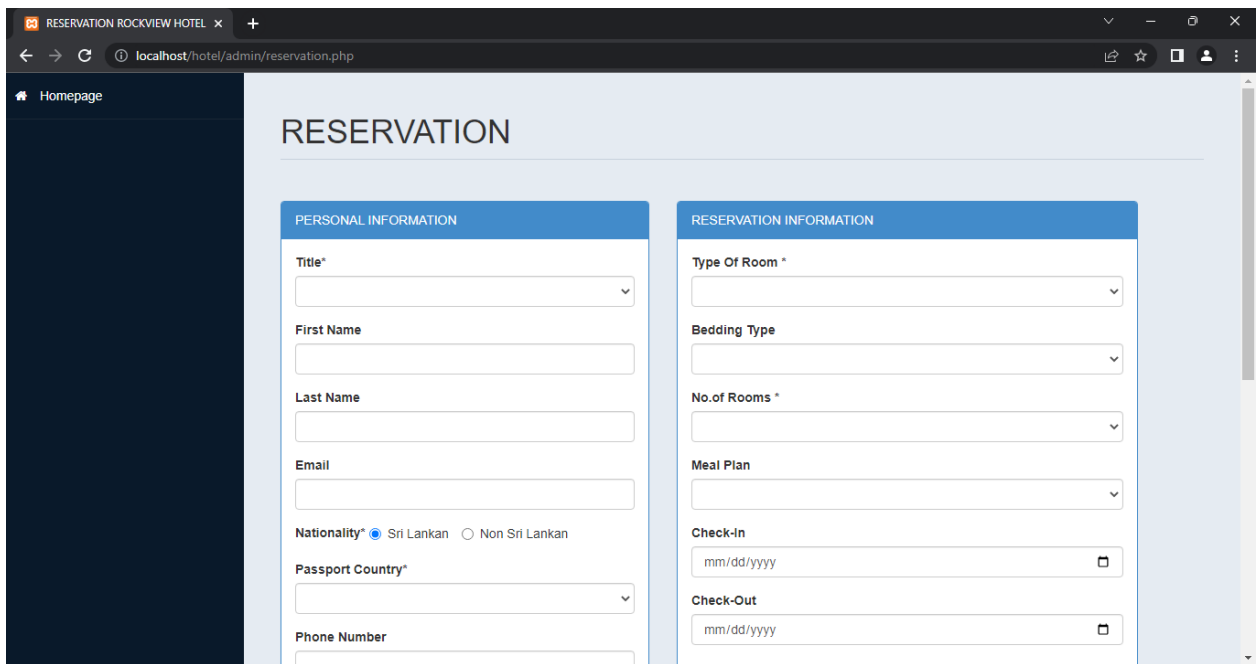


Figure 7. Database design table

### CONCLUSION

The use of computer software based online hotel management forms the basis of the firm's management decision. It aims at providing the management with adequate, effective, well documented up-to-date and formatted output. To help as a tool in planning and decision making/based on the customers' orders. The lack of learner outcome variation of the online system signals the establishment of concurrency between the two measures even though they are measures of same construct. This investigation supports the use the online system delivery structure to broaden the instruction audience in technology education program. The use of online management system in the organization remains at the minimal level as suggested by the 80 percent of the online staff participant, predominantly the organization measures who report that



they have not done online payment previously. Also, 75 percent of online staff participant report that they have not used computer software base online previously. Having come to completion of this project work a lot of achievement was made and they include;

- a) The replacement of error prone manual system with new automated online hotel management.
- b) Data can now be processed with great speed and efficiency.
- c) The application has the ability to update record in various files automatically there relieving the management the stress from working from file to file.
- d) The security of data is ensured.
- e) The use of database server was implemented.

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