
Athlone Institute of Technology

Department of Electronic & Informatics

# Small and Medium-Size Hotel Management Information System Base on JSP

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**BSc. (Hons)Software Design**

**Declaration**

I hereby certify that the material, which is submitted in this thesis towards the award of BSc. Software Design, is entirely my own work and has not been submitted for any academic assessment other than part fulfilment of the above named award.

Future students may use the material contained in this thesis provided that the source is acknowledged in full.

Signed…….

Date……

**Abstract**

This project examines the aspect of the hospitality industry which is Hotel management. In the 21st century, the hospitality industry has developed dramatically couple with the popularization use of internet, computer and other electronic device. The hotel industry is developing with the aspect of information management system. With new technology and management information system, the problem of complicate managing, insecure user data and highly human resources cost can be handler very easy.

To implement the aspect of informatization management, most hotel utilized a management system software to improve the operating efficiency. The management system for big size hotel company has multi- functions that covering financial, human resource and operating management. Such large system had characteristics of fully function, high price and high maintenance cost which is not applicable to small and medium – size hotel.

This project design and implement a browser server management system base on the characteristic of small and medium-size hotel that provide proper management of data and hotel operations. The system provides the functions include guest reservation, room management, front desk cashier, guest check in & check out and the record of daily transaction. The system also provides a user-friendly interface which user can interact easily with the little knowledge of operating computer.

This system development on eclipse EE environment using JSP technology with java programming language. The database system was create using MySQL Server. The system is fully applicable to a small and medium-sized hotel information management system, improve management efficiency and reduce management costs.

**Keywords:** Hotel information management system, JSP, B/S, MySQL.

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**Table of Contents**

**List of Tables**



**List of Figures**

# Chapter 1: Introduction

## 1.1 Introduction

This chapter will introduce the background study of current hospitality industry and state out the research question of this paper to solve;

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## 1.2 Background of Study

Lockwood and Jones states that "Technology has made a considerable impact on the Hospitality industry in recent years and will continue to do so with the increasing use of computer, controlled equipment and the growth of information technology in general" [1, p.6]. Since 20 centuries, the dramatically growth in the information technology and tourism industry are directly driven the development of hospitality industry, which has brought unprecedent opportunities to this industry. The hotel is following the trend of information management system at this era, as the peoples are seeking for easy and efficiency way of working.

The Hotel management information system is a system aid to provide a platform for Hotel to track and manage the customer's data, guest's reservation, room info, room allocation and other operation issues. Its is obviously the information management system can handle the problem much efficiently than traditional human management system. However, the implementation of new technology in different hotel has its own difficulties and the effect can be varies. The difference is cause by the provider of management system software and the size of hotel that adopt the system.

The current Irish hospitality industry has strong potential market for new hotel to enter the market. According to the "2018 Irish hotel Market Briefing "that the market has only seen €79m in hotel transactions in the first nine months of 2018 which is dropping compare to previously year. But Kirsty Rothwell commented "This drop-in volume is due to the limited stock available rather than any decrease in demand – which remains as high as ever." [2, Kirsty Rothwell]. The demand for new entrant hotel is much greater than the available hotel resources on the market. Thus there is great opportunities to implement the management information system for the small and

medium -size hotel, as many new entrant are stating from the basic and develop into big hotel company.

## 1.3 Research Question

1. Why are information systems so essential for running and managing a hotel today?
2. What kind of management information system is most applicable to small and medium-size hotel in current market?

## 1.4 Conclusion

The modern-day world is changing around the new information technology and internet. The business can't operate functionally without the new information technology, it is same in the hotel industry where the competition become focus on the informative development. In-store decoration, number of rooms, room facilities and other quality competition and price competition will be relegated to the second line. The management information system impacts the hotel in three ways.

1. Provide accurate data analyse for hotel manager and decision maker.
2. Proper management system to save operating cost and improve the quality and efficiency of management.
3. Provide better customer service base on the customer's information.

A proper applicable management system are very important to the hotel in the current industry, but what kind structure of the system is suitable and require by small and medium-size hotel, the answer will reveal in the chapter2.

# Chapter 2: Background research/Literature review

## 2.1 Introduction

This chapter introduce the seminal works I studied that influence me with discipline and state out the problems in the subject are that project is going to address. In the literature review we consider an examine the works done by other researchers who investigate on the topic of (Hotel Management information system)

## 2.2 Background research

Hotel is a building that provide lodging, meal and other service to people travel around the world, providing comfortable condition to the customer to earn the money as the return. As a business the management system is required to successfully operating, in tradition hotel use manually system which is inefficiency and difficult to handler the data correctly.

The development in hotel management continued gradually until recently when computer was invented as an electronic device that accepts input, manipulate data and produces information which is the output as required. The first hotel management system is call EECO system generate by Electric Engineering Company of California. The first major EECO system was install at the 1,800- room Sheraton Waikiki in 1974. The EECO is the standard Properties management system for Sheraton Hotel and in the following 20 years over 600 large hotels use EECO system around the world. As the world are changing ECCO system gradually out of date with the development of hotel management system.

Information technology has influenced every sphere of human life in the last few decades in a tremendous way. The tourism and hospitality sector have been a key beneficiary as it has allowed the contemporary traveller to enjoy a plethora of options. Information systems play a crucial role in the hotel industry as they facilitate planning, management, overall operations of the hotels as well as policymaking.

If a hospitality establishment does not implement the management information system in its operations, it is deemed to be out of date and disorganized.

## 2.3 The Hotel Management system.

Information system is an integrated set of components for collecting, storing, and processing data and for delivering information, knowledge, and digital products. The hotel uses information system mainly to manage the room reservation, room management and revenue management. These are the basic service a hotel needs to provide.

### *2.3.1 Hotel Reservation System*

The customer plays the most important role in hotel's daily transaction. The customer need reserve the room before they check in the room, thus the room reservation service is most importance in the hotel management system. Indeed, James Bardic begins to outline the importance of these systems by claiming that "a well-organized reservation system allows hotels to ensure a steady flow of guests into their properties". Furthermore, "Profitable business ventures rely on effective marketing, which includes reviewing people who require hotel products and services, determining their specific needs, developing products and services that meet those needs, and making a profit on the sale of those products and services" [3, Bardi,2011] . The management system is not only providing the functions to run the business, it also available to analyse the information for manager to decide most appropriate way to improve the hotel revenues. Through analyse the customer profile and habit the hotel can set personal offer that meet the most requirement of customer in the way to maximise the hotel revues

### *2.3.2 Hotel Room management system*

A hotel must take into consideration the timing of the sale, to whom they are selling the product and what sort of product they are selling. Pizam illustrates its use by claiming that revenue management in hotel management is the "business practice of selling the right inventory to the right customer at the right price at the right time so as to maximise revenue, profit and market share" (Pizam, 2005, p. 551). The hotel can implement revenue management system with proper room management system to monitor the available of empty room and react to this information. For, example the hotel have specific type of room that haven't been book for a while, the manager can decide to offer discounts to attract people to fill these rooms .

### 2.4 Hotel management information system on B/S structure

In the past hotel management system is mainly Client /Server structure base, it is good to deal with large amount of data as the response is fast and interact securely thought LAN. Usually C/S system are designed with set target, it is not flexible to change thus the make it hard to maintenance. B / S structure (Browser / Server mode) is an effective improvement of the C / S structure with the development of Internet technology, which is realized in the user interface through the browser. According to Xia's statement that "C/S is a fat client that need software install on users computer, while B/S is thin, because most or main business logics are save in Server" [4,p.36]. This reduces the load on the client computers and increases the efficiency of system maintenance and upgrades.

The data access in the B / S mode starts from the presentation layer to the application layer and then to the data layer, so the system architecture of the B / S mode is also divided into the presentation layer, application layer, and data layer, as shown in Figure 2.4.1

Compare to C/S, B/S structure had advantage of simple maintenance , ease setup and obviously cost -less. The B/S structure base system is most applicable for the small hotel management information system.

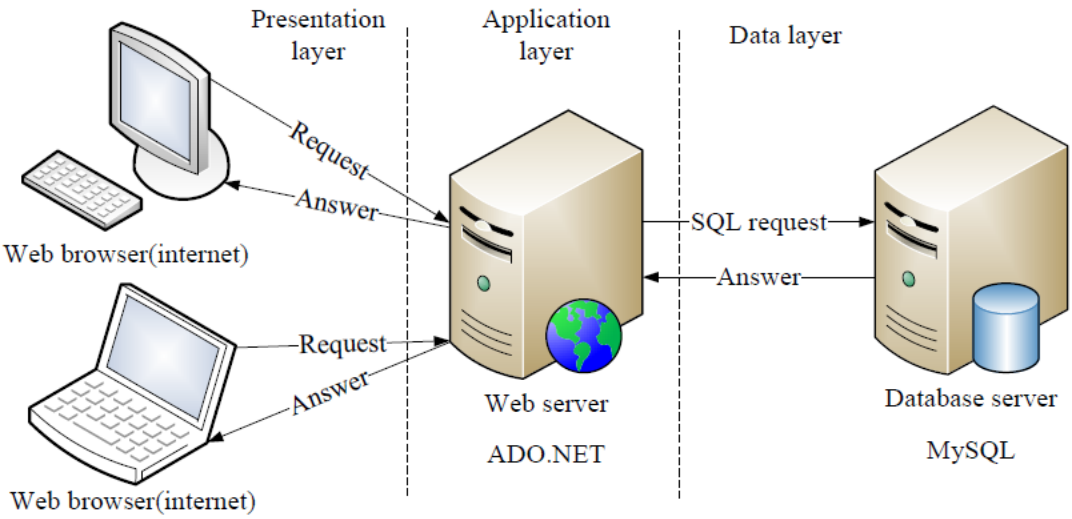


Figure 2.4.1: C/S structure

## 2.5 Statement of Problem

There are difficulties to implement a management information system in different hotel. On the current market the management information system usually is applicable to big size hotel, the system cost lot resource, high maintenance cost, low usage for some functions.

### *2.5.1 Resources cost*

'The proper functional hotel management information system can greatly improve the operating efficiency, but the system is accompanying with high price and maintenance cost. Use "Opera PMS" as example, the world most comprehensive, flexible and most complete -front end management system .However Opera PMS are applicable to the star hotel especially 4 or 5 stars hotel ,as the price of model are starting with $15,000 and increase up to $250,000 based on the company profile .Even though the systems is almost omnipotent to manage the hotel ,but the price and maintain cost are too high for small and medium-size hotel to afford.

### *2.5.2 Low usage of functionality's*

The system for star hotel is powerful that functionality can cover almost any branch of hotel, but not all functionality is use by the staff working in the hotel. For the small and medium-size hotel the system is require only to deal daily operating and transaction management.

### *2.5.3 Flattens Organizations*

It is easy to implement a technology at start of business rather than innovation. These situation are often occur in large companies, Laudon stated "bureaucratic organizations, which primarily developed before the computer age, are often inefficient, slow to change, and less competitive than newly created organizations" [5,P120].With the implementation of information system company can reduce the number of level in organization with information provided to supervise large number of workers , this is call as "flattened" ,show as in the figure2.5.1;

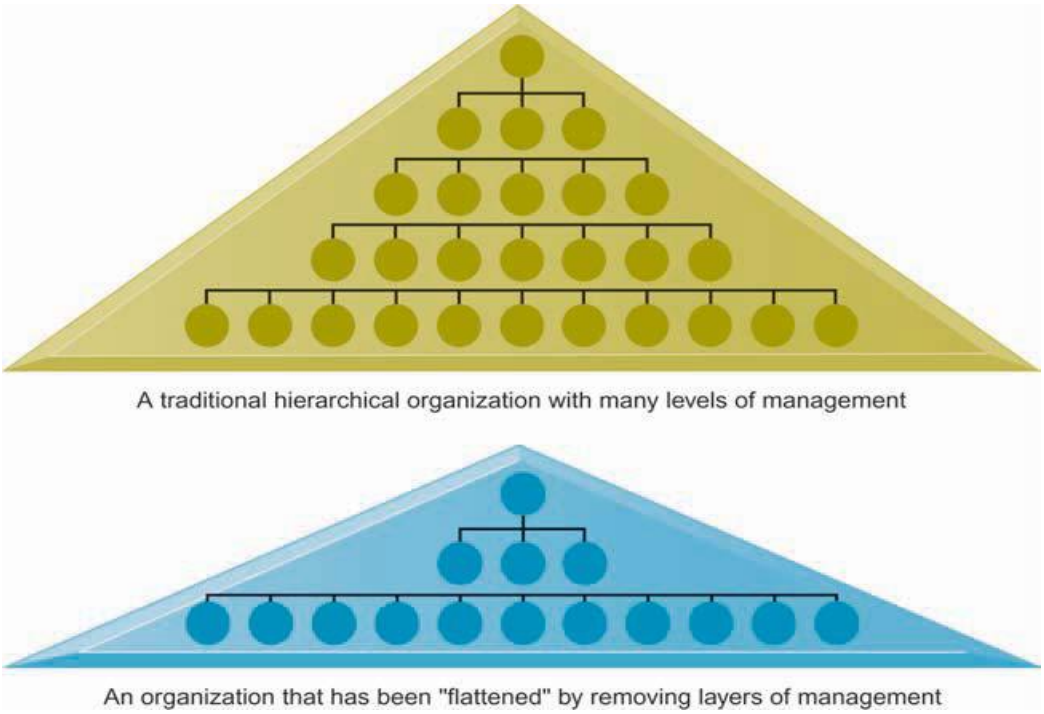


Figure 2.5.1: Flatten By information

The information system the reduce the cost in human management, but the structure of big company are complicate. Implementing information systems has consequences for task arrangements, structures, and people.

## 2.6 Research Aims and Objectives

This paper aims to provide a user friendly, intelligent, safe, hotel management information system. The system takes B / S as the software development architecture, and MySQL as the database development tools, combined with JSP dynamic web development technology, to achieve re-development and operations in most computer hardware. There are three Objective for this project

### *2.6.1 Simple operation system*

The system is targeted to develop for small and medium-size hotel management information system. Which is design for the staff work in front office with little operation system knowledge. This can reduce the train cost as the system is user friendly.

### *2.6.2 Practicality functions*

The system should be proper functional to manage the hotel in the aim to improve the operating efficiency, reduce the operating cost. The system are easy to use with basic function and will develop base on the hotel requirement, thus the system should able to maintenance and update easily.

### *2.6.3 Security*

The system should be reliable to transfer the hotel data's and login verification to access the system with different level of authority.

## 2.7 Conclusion

By study the previews literature that relate to our research topic "Hotel management information" I found the answer for research questions

1. Why are information systems so essential for running and managing a hotel today?
   a) The information system replaces the manually management system which improve the efficiency, accuracy of data transaction and reduce the operation cost.
   b) The information system can implement revenue management system be help manager choose decision through analyse the customer and hotel information.
2. What kind of management information system is most applicable to small and medium-size hotel in current market?
   a) The small and medium-size hotel require simple use and cost-less system with proper functional to support the hotel management. The B/S structure base system will be most applicable for these hotels, as the system model fee and maintenance charge are as cheap as the hotel can afford.

# Chapter 3: System Design

## 3.1 Introduction

In this chapter we are looking through the architecture of the management system, the technology used, and steps taken to create the system. By evaluate the research methodology the requirement is set for our management system to achieve in order to overcome the challenge highlight in the previous chapter.

The system is created as user interactive browser /server application for the hotel management system, so the system required fully control over the operation and activities.

The project requires the functional of hotel room reservation, staff management, room management and resource management in order to achieve the design of the HMIS. The UML unified modelling technique is adopted to describe the system, and the design thumbnail images of the model diagram are design. The user case will be used to describe the user role, manager and front-desk cashier. The flow chart describes step by step of the process of maintain room management and reservation maintain.

## 3.2 Requirements Analysis

In order to meet the goal of automated system to be achieve the design the hotel management information system the following functionality are consider in the requirement:

- The system must display information of hotel to the users, such as the room information, customer information's.
- The system must allow the user to search the data with user's query
- The system should ensure data consistency with no duplicate data are exists.
- The system must be access only by the authorized persons an should know the information of user operating the system. (User Authentication)
- The system should be user friendly that is easy to use.
- The system must generate and export the data report.

- The system must carry out only action specific by the user (Read, create, modify and delete);
- The system must be extendable for the system to be update as the requirement of hotel changed.

### *3.2.1 Room management requirement analyse*

To maintain and manage the room resource are one of important component in the system. The information of room can be modifying by manager base on the room type and floors. The flow chart diagram of modify a room are show in the Figure 3.2.1

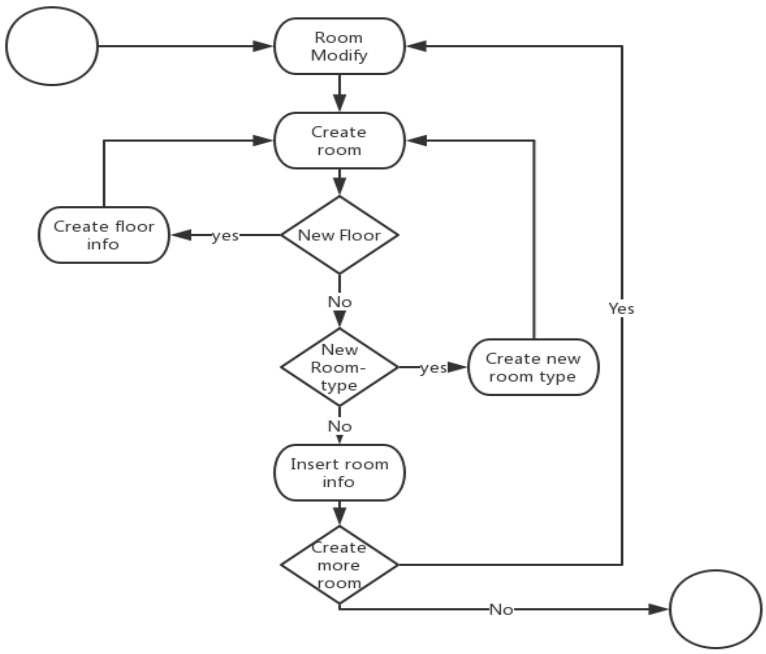


Figure 3.2.1: Room management flow chart

In this flow the manager creates a new room need to check is the room are on the floor that haven't record in the database, if there is not create the floor Infor. Next step check is the new room are new room type if yes, then create new room type in the database. Finally, the room information are fill and the location of room are base on the floor and price are base on the type of room.

### *3.2.2 Room Reservation management requirement analyse*

The process of room reservation includes the participate of customer and front-desk cashier. The user Login in to the system and start the fill the information and choose the room. Once the booking is success the customer will receive a SMS message with the booking information's. Because the system is created for small hotel, add the online payment increase the cost of system. The checking and out and payment can all made on the front-desk cashier; The flow-chart of reservation management are show in the figure 3.2.2.

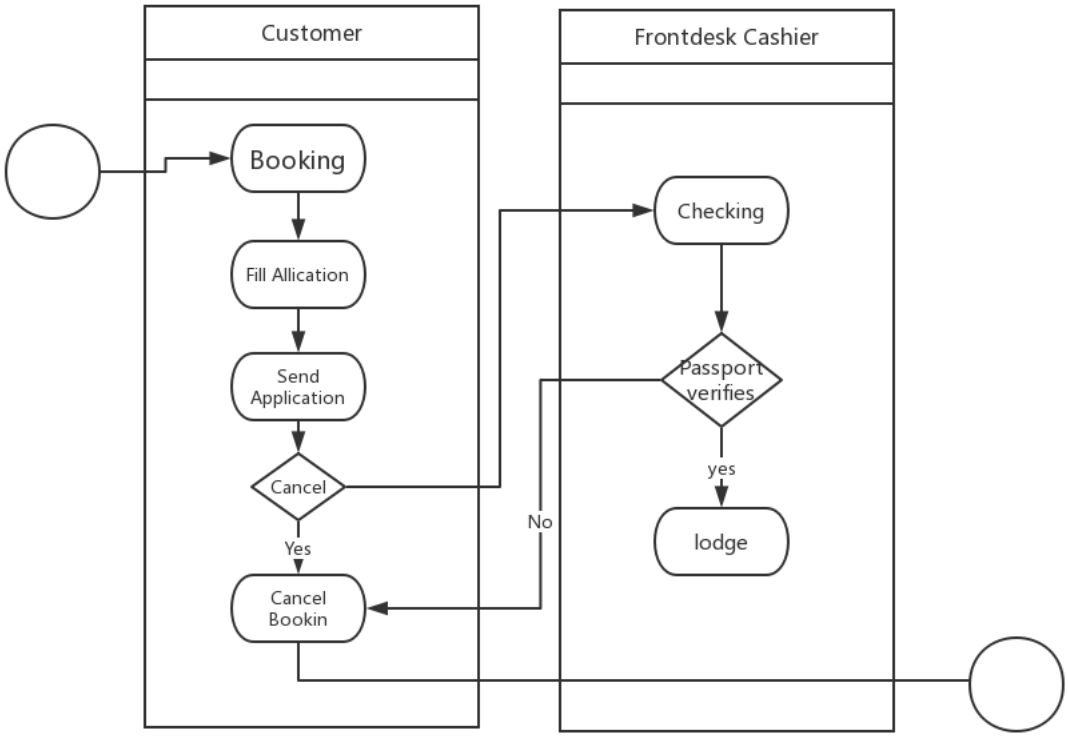


Figure 3.2.2: Reservation flow chart

## 3.3 Architecture

The system includes management of various information of the hotel, such as room information management, hotel affairs management, passenger information management, basic data management, etc., and each module has sub-modules, wherein each information management function generally includes View, add, delete, modify operations. The main functional modules of the system are displayed using the functional framework diagram, as shown in Figure 3.3.1:

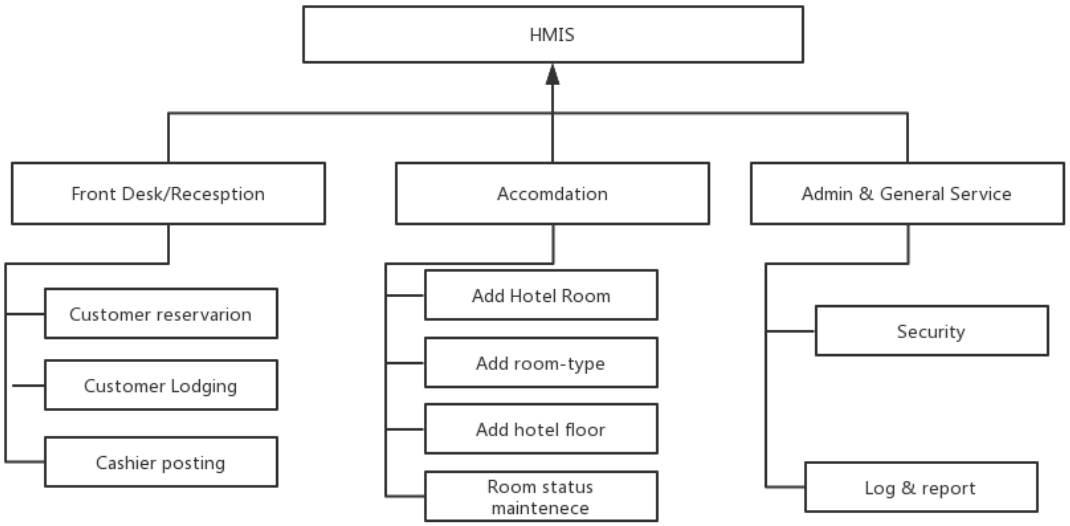


Figure 3.3.1: Diagram of Hotel Management Information System Project Architecture

## 3.4 System user case analyses

### *3.4.1 Manager user case*

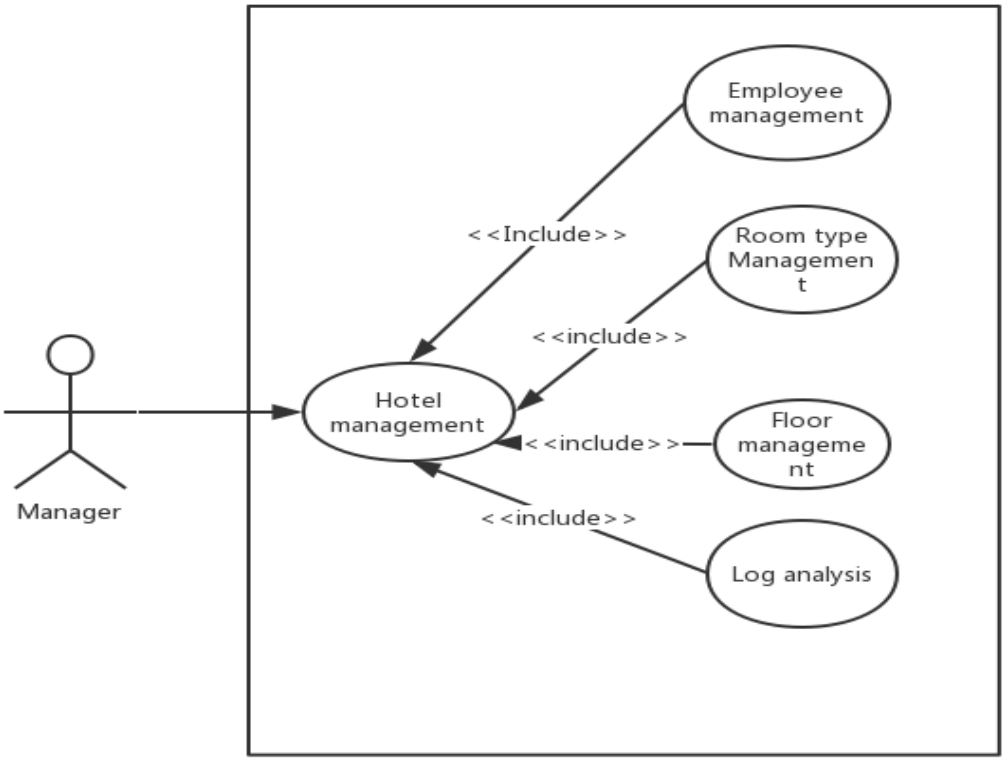


Figure 3.4.1: Manager use case

USE CASE DESCRIPTING FOR HOTEL MANAGER

The manager doesn't interact with the transaction work in the hotel, rathe to make decision from analysis. The hotel manager usually manages the hotel resources like human resource and room resources. The user case is shown in the Figure 3.4.1;

- **Manager Action: Employee management**
  - ✧ Add a new employee with the user name and password
  - ✧ Modify the password of the employees
  - ✧ Delete the account of employees.
- **Manager Action: Room type management**
  - ✧ Search for the room types
  - ✧ View, modify, create and delete the room types.

- ✧ Export the data of room type into excel.

- **Manager Action: Floor management**
  - ✧ Search for the Floor information
  - ✧ View, modify, create and delete the floors
  - ✧ Export the data of floor information into excel.

### *3.4.2 Front desk Cashier user case*

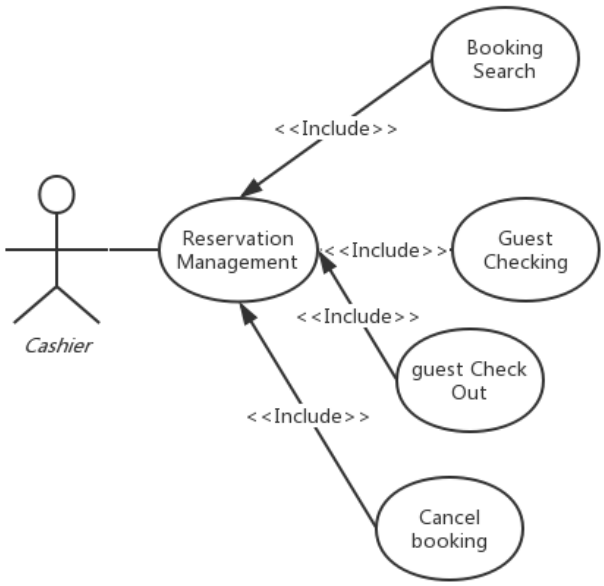


Figure 3.4.2: Cashier use case

USE CASE DESCRIPTING FOR HOTEL front desk Cashier

The cashier uses the system, most often to interact with customers for room reservation, customer checking checks out and cancel the booking. the user case is shown in the Figure 3.4.2;

- **Manager Action: Booking search**
  - ✧ Search the reservation of customer base on the name or room-type
- **Manager Action: Checking**
  - ✧ When the customer arrive hotel with the booking time, cashier apply checking base in the booking id and verification of the passport.

- **Manager Action: Guest Check out**
  - ✧ Guest need to check out and made final payment to the cashier before they leave.
- **Manager Action: Cancel booking**
  - ✧ Cashier can cancel the booking if customer is not checking within the time or the cancelling are contact by the customer.
  - ✧

### 3.5 Design

Designing the main component of system in order to run the system. The design is set into three major part: User login, room maintenance, and reservation maintenance.

#### *3.5.1 System framework design*

The framework is design with MVC mode, the framework split the system structure into three layers which are application layer, business logical layer and database layer." MVC help us to implement a test-driven development approach, in which we implement automated test cases before we write the code. These unit test cases help us predefine and verify requirements of new code before writing it." [Majeed,p3]

1. **Application layer (user input layer):** in application layer user can access to the system through web browser. The front-t end page implemented by JSP technology and involve the Ajax to set up the connection with the server.
2. **Business logical layer:** once the user access to the system from application layer, the method can be call through interface. There are 4 interfaces which are room maintenance, reservation management, cashier management and report export.
3. **Database layer:** The database server used are MySQL, it is connection by JDBC connection, and the Driver are provided by C3p0; The MySQL database is relational which provide standard format of database.

#### *3.5.2 User Login module design*

User need authenticate by the username and password in order to access the main system. on the login page login.jsp. username and password are entered by user and pass to the Servlet as parameter. The Dao class retrieve the queries to check if the

user exists. Once the verification success, page direct to the home page. the sequence diagram are shown in the Figure 3.5.1

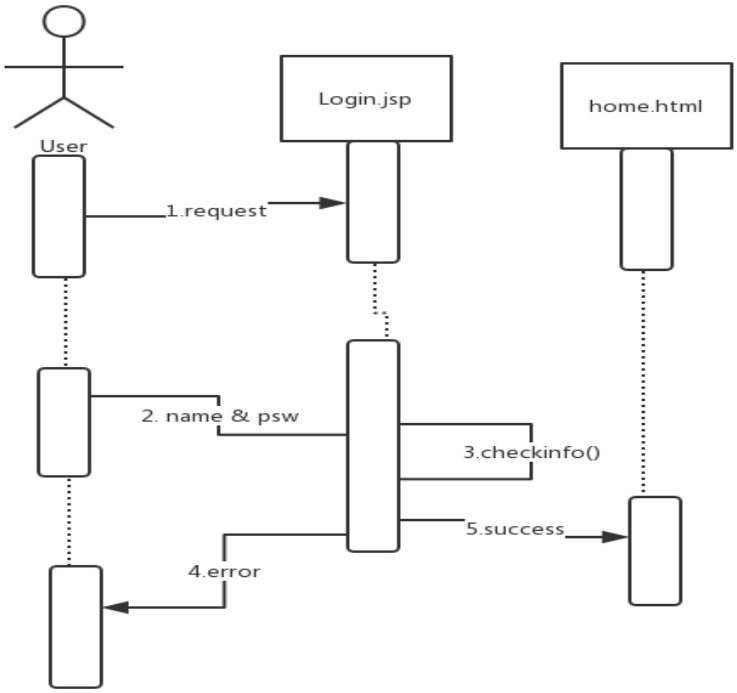


Figure 3.5.1: User login model

### 3.6 Database Design and Table Structures

The system stored and retrieved the data on the database, thus designing the database is also part of system design. The data structure to be store into the database are identifies at the analysis phase. The collection of interrelated data in the database should minimize the redundancy to improve the efficiency.

The structure of table in database are design base on the business logical. The relationship established between the data items, the normalization is done to create consistency in data, thus reduce the redundancy.

The proper design table are very important to the system, as un- structure well table affect the coding logical for the whole system.

The following are the tables that involved in the management system:

Table 3.6.1: Login logs

| Column name | Data Type | Length | CONSTRAINT |
|---|---|---|---|
| **LogID** | INT | 11 | PRIMARY KEY |
| **logName** | Varchar | 45 | |
| **loginId** | Int | 11 | |
| **loginName** | var | 45 | |
| **logDate** | date | 45 | |

Table 3.6.2: billinfo

**Chapter 4:**

| Column name | Data Type | Length | CONSTRAINT |
|---|---|---|---|
| **billID** | INT | 11 | PRIMARY KEY |
| **checkID** | Varchar | 45 | |
| **costMoney** | Int | 11 | |
| **costDate** | varchar | 45 | |
| **remark** | varchar | 45 | |

Table 4.1.1: Check in information

| column | Data type | Length | CONSTRAINT |
|---|---|---|---|
| **checkId** | varchar | 45 | Primary ky |
| **orderID** | varchar | 45 | |

| | | | |
|---|---|---|---|
| **checkName** | varchar | 45 | |
| **Checkohine** | varchar | 45 | |
| **checkIDcard** | varchar | 45 | |
| **TypeID** | varchar | 18 | CONSTRAINT |
| **Leavetime** | varchar | 45 | |
| **arrivetime** | varchar | 45 | |
| **checkNum** | int | 45 | |
| **RoomId** | varchar | 20 | CONSTRAINT |
| **PRICE** | varchar | 11 | |
| **Checkprice** | varchar | 45 | |
| **discount** | int | 20 | |
| **Discount reason** | varchar | 20 | |
| **Addbed** | varchar | 11 | |
| **OrderMoney** | varchar | 60 | |
| **money** | varchar | 10 | |
| **ischeck** | varchar | 20 | |
| **checkMoney** | varchar | 20 | |
| **CheckDATE** | varchar | 20 | |
| **remark** | varchar | 500 | |
| **operatorId** | varchar | 45 | |

Table 4.1.2: Floor info

| Column name | Data type | Length | CONSTRAINT |
|---|---|---|---|
| **Floorid** | Int | 11 | Primary key |
| **Floor name** | CONSTRAINT | 45 | |

Table 4.1.3: Room info

| Column name | Data type | Length | CONSTRAINT |
|---|---|---|---|
| **roomID** | VARCHAR | 45 | Primary key |
| **typeID** | VARCHAR | 45 | |
| **Type name** | VARCHAR | 64 | |
| **Florid** | INT | 11 | |
| **BED NUM** | VARCHAR | 11 | |
| **RATENum** | INT | 11 | |
| **roomDescripton** | INT | 45 | |
| **Remark** | VARCHAR | 100 | |
| **Status** | VARCHAR | 10 | |
| **issplice** | VARCHAR | 10 | |
| | | | |

Table 4.1.4: Room type

| Column name | Data type | Length | constraint |
|---|---|---|---|
| **Typeid** | Varchar | 45 | Primary key |

| | | | |
|---|---|---|---|
| **Type name** | Varchar | 45 | |
| **Price** | Varchar | 20 | |
| **splicprice** | varchar | 20 | |
| **issplice** | Int | 11 | |
| **exceedance** | varchar | 10 | |

### 4.2 Conclusion

This chapter use a lot of table and UML diagram to explain the structure of the system. The thumbnail image of use case and flow chart clearly describe the process of system that aim to meet the requirement. As the design for the project has done, the next chapter will describe how to implement the project.

## Chapter 5: Testing and Evaluation

### 5.1 Introduction

This chapter will describe the implementation of the project and how to test the project has running well-functional that achieve the requirement.

### 5.2 Implementation

Implementation is the stage in the project where the theoretical design is turned into a working system. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover, an evaluation of change over methods. Apart from planning major task of preparing the implementation are education and training of users. The implementation process begins with preparing a plan for the implementation of the system. According to this plan, the activities are to be carried out, discussions made regarding the equipment and resources and the additional equipment must be acquired to implement the new system. In a network backup system, no, additional resources are requiring. The most critical stage in a achieving a successful new system is giving the users the confidence that the new system will work and be effective. The system can be implemented only after thorough testing is done and is found to be working according to specification.

This method also offers the greatest security since the old system can take over if the errors are found or there is an inability to carry out a certain transaction while using the new system.

## 5.3 System implementation

### *5.3.1 The home Page*

The Home page of the hotel management information system can be access after the user care pass the authentication at the login.jsp. In the home page there are 5 five major functionalities for the hotel system. Which are room booking service for the customer, guest check in ,room management ,system management and employee management.

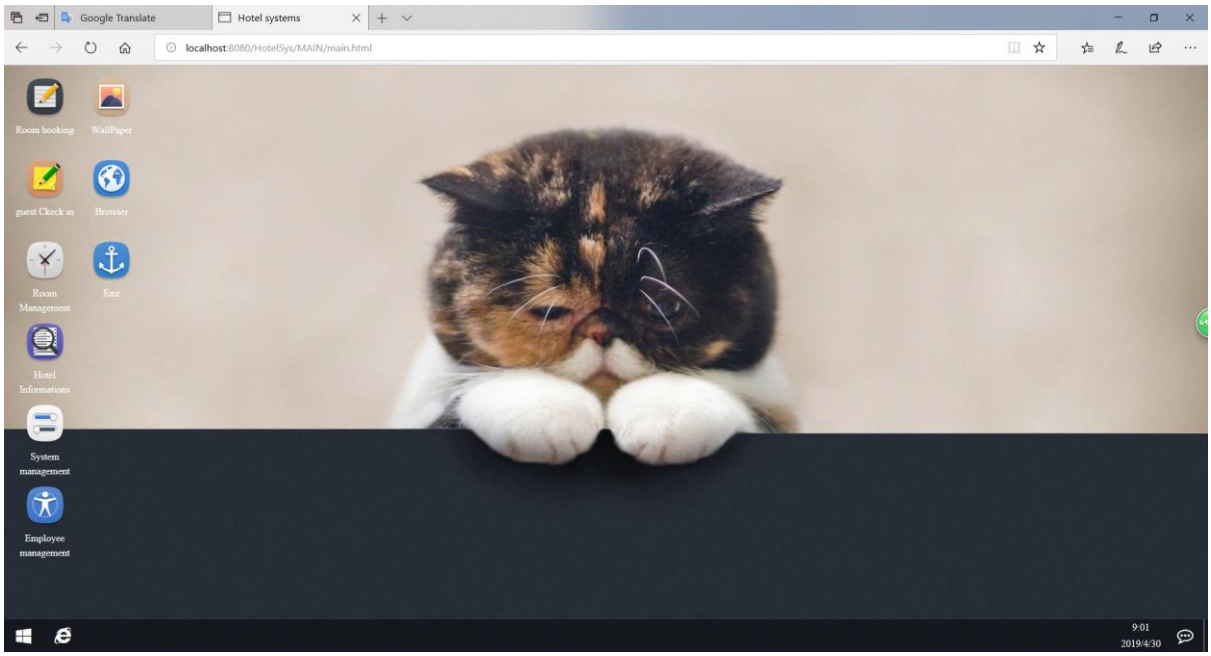


Figure 5.3.1: Home Page

### *5.3.2 The "Log in "page*

This the log in page for the HMIS, which provide form with the input for username and password. Once the details enter by user are validate the session save user information based on the userID and then direct to the home page.

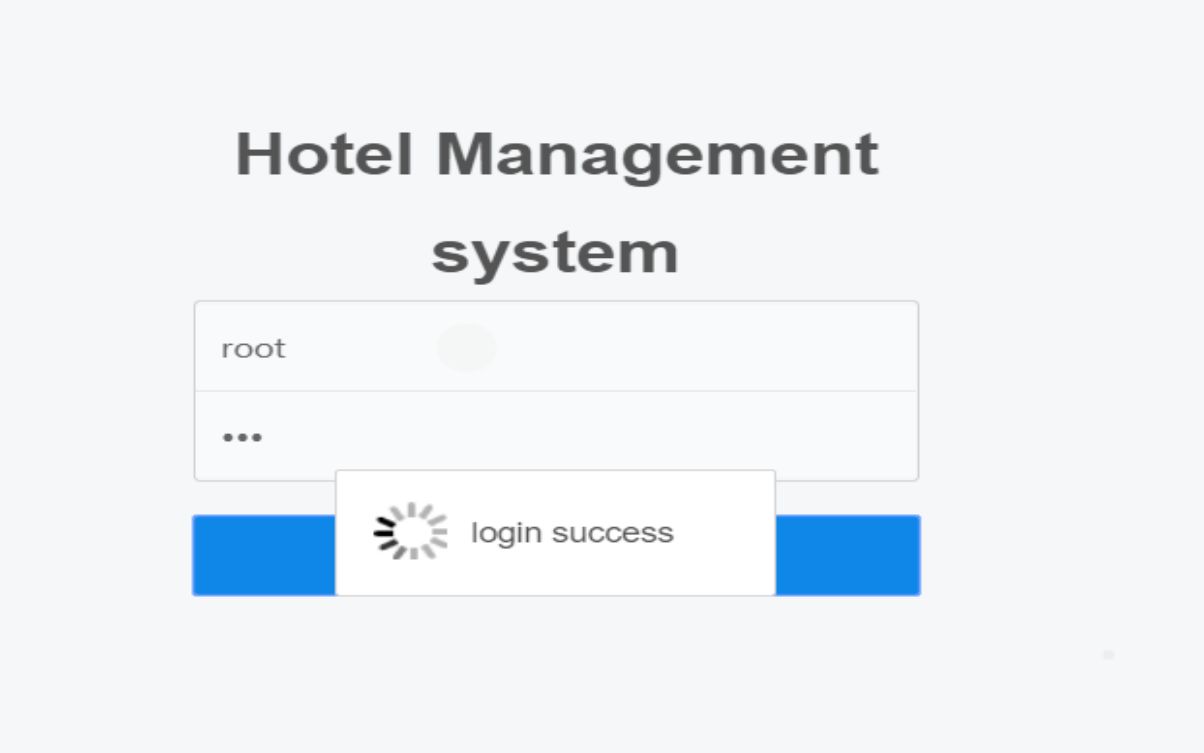


Figure 5.3.2: The Log in page

### *5.3.3 The room booking page*

The customer can access to this page with their account to make a room reservation. The details that must fill are the name, contact number, passport ,date ,length of the lodge in , choose of the room and deposit that need to pay. Once form is fill and the submit button are click a SMS message will be send to the customer about the confirmation of the booking if the booking are successfully made

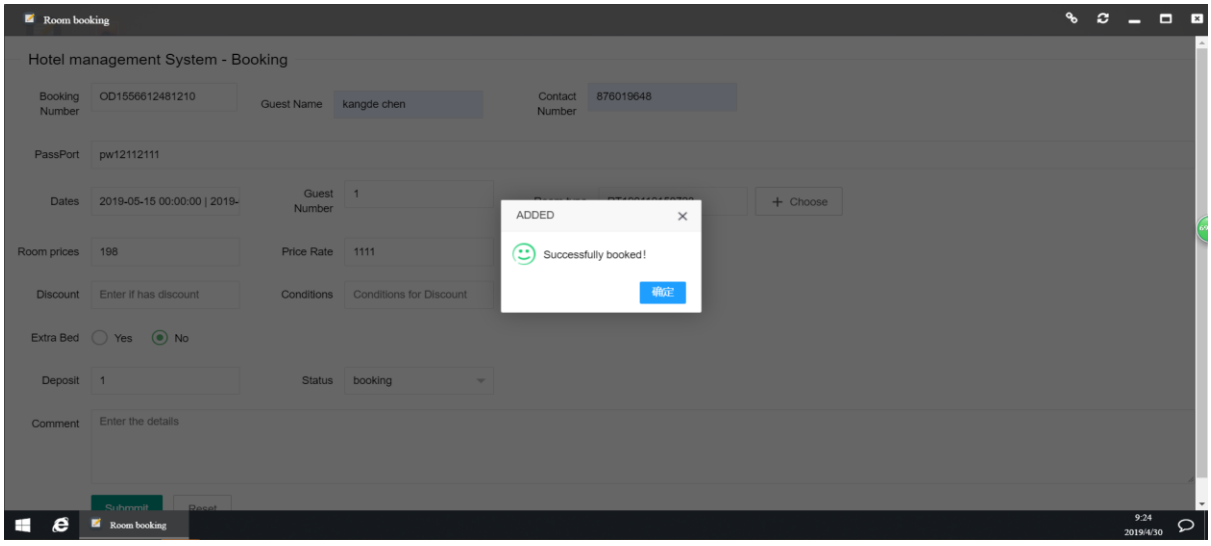

Figure 5.3.3: Booking page

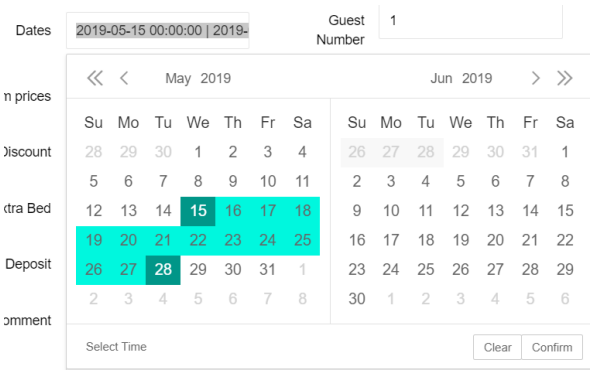


Figure 5.3.4: Choose the length and date

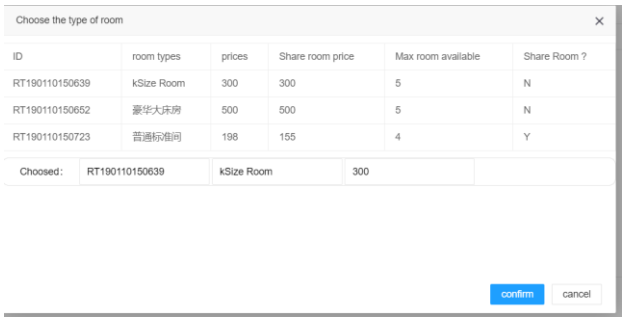


Figure 5.3.5: Choose the room

### *5.3.4 Check in page for at front desk*

Once the customer that has reservation arrive the hotel, the front desk cashier need to deal the checking process with the customer. The system provides this function as the details of customer can be found from the booking tables.

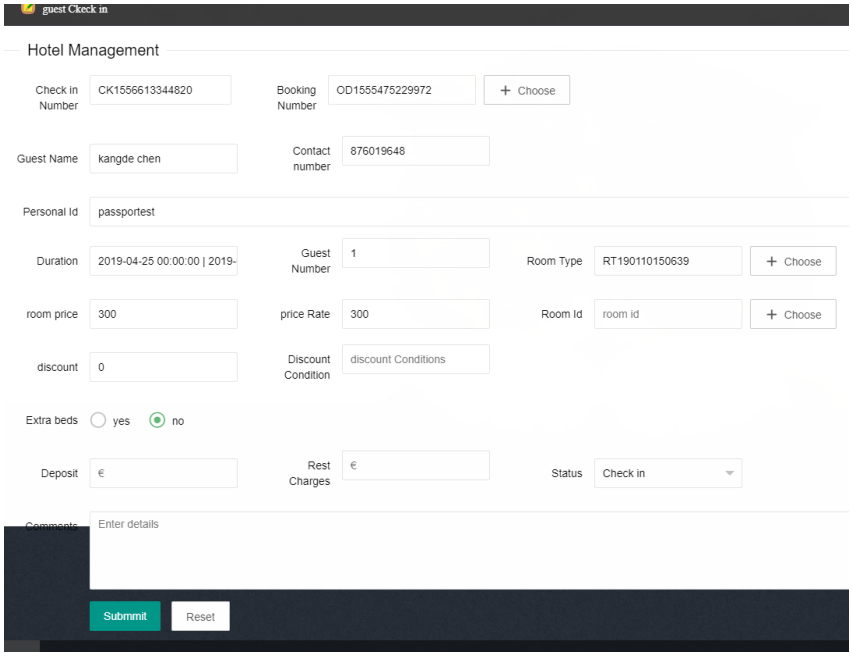

Figure 5.3.6: Check in Page

### *5.3.5 Room management*

This is the page allow the manager to see the information and status of the room. The whole details of room in the database are shown in the table it and can search by the roomID. On the right panel of the table there are options to read, delete and modify the room properties base on room ID. By modify the room details, user can change the room type which mean the price will be change, user can also edit the room status for “checking” “available” and “cleaning”;.

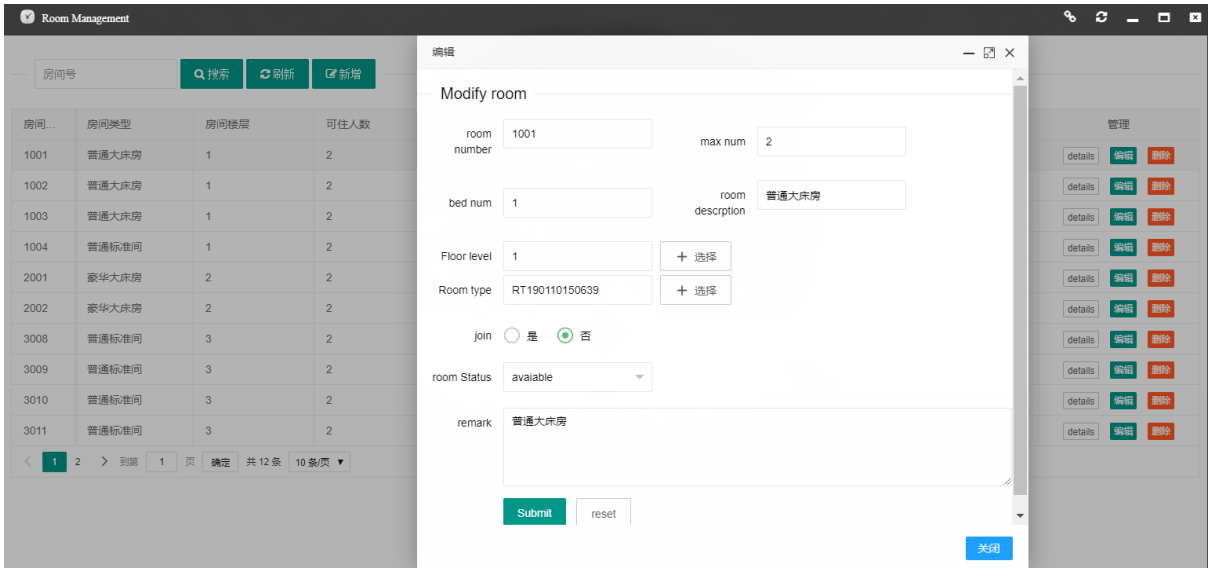


Figure 5.3.7: ROOM MANAGEMENT

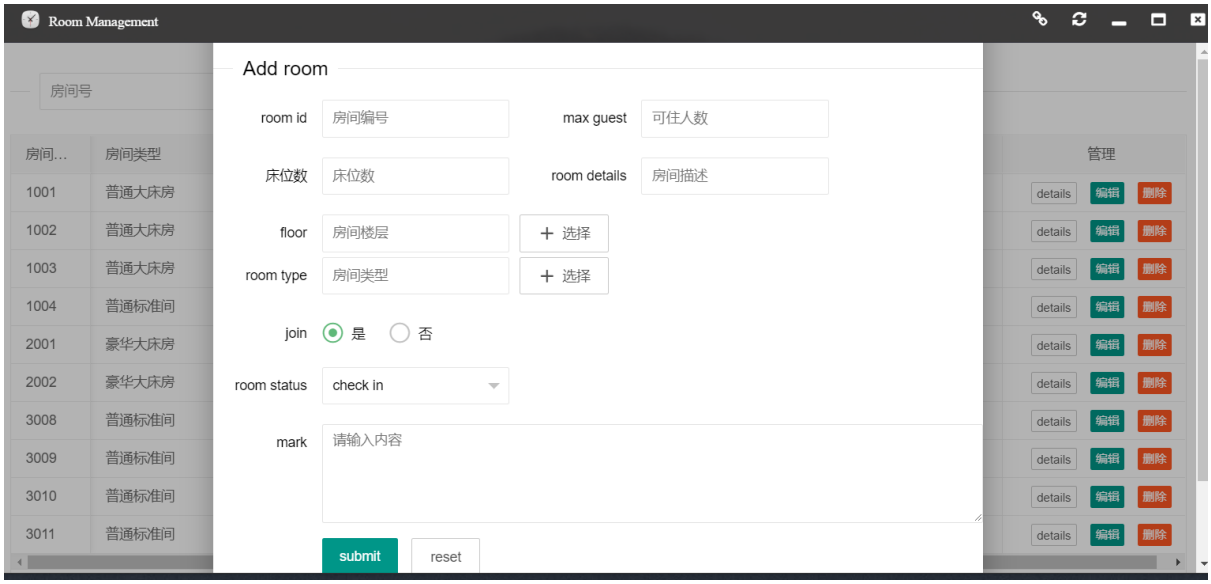


Figure 5.3.8: Add new room

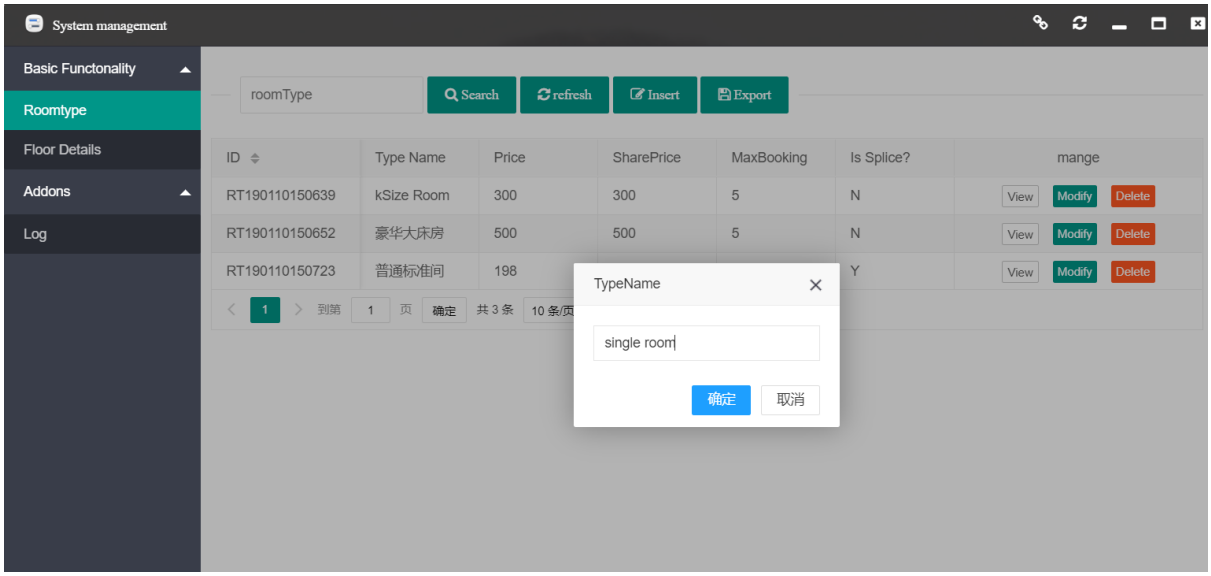


Figure 5.3.9: Mange the Room type

### *5.3.6 Front office management page*

On this page the front-office cashier can manage the booking of the room. If the booking is cancel or the customer are not check in before the check in date, the cashier can delete the booking from the list . When the customer check in the cashier can change the status of booking to checked in and it will display in the checked in tables.

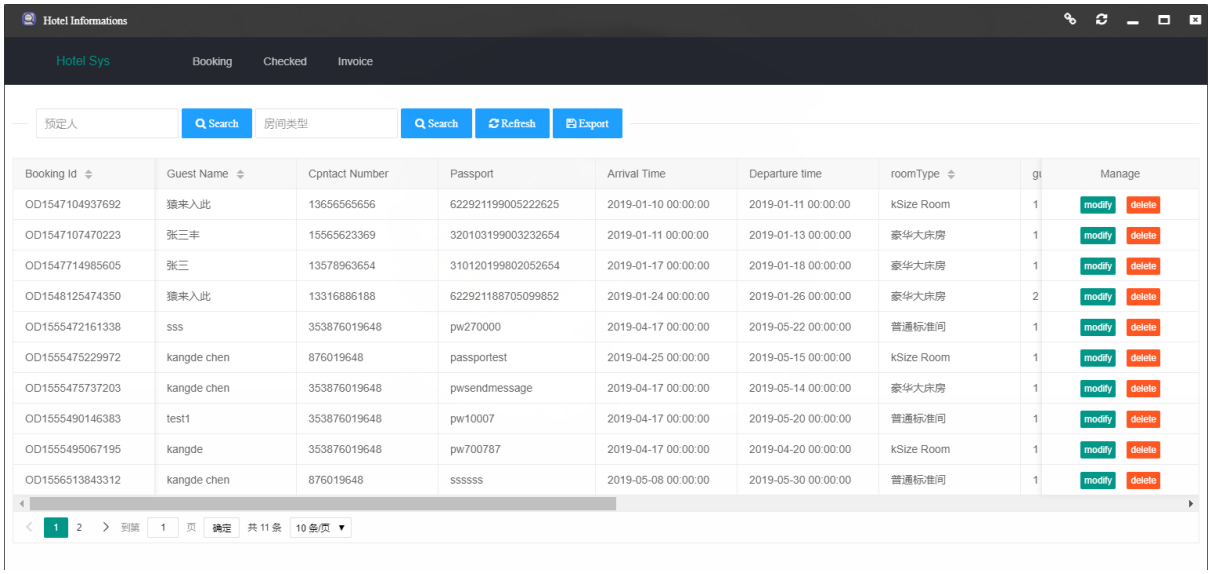


Figure 5.3.10: Front office management page

On the check out page user can modify the value of price or date if customer want to extend. The Checkout button for each column are user when the customer pay the final charge and want to check out.

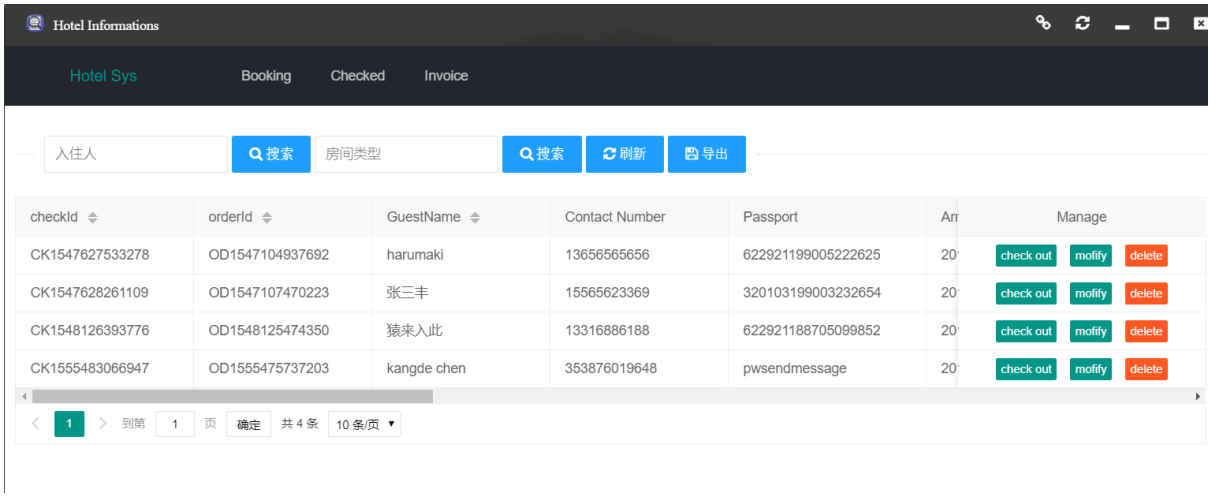


Figure 5.3.11: Checked in page

### *5.3.7 Human resource management*

On this page the manager can create a new account for the employee or change the old password or delete the users from the database.

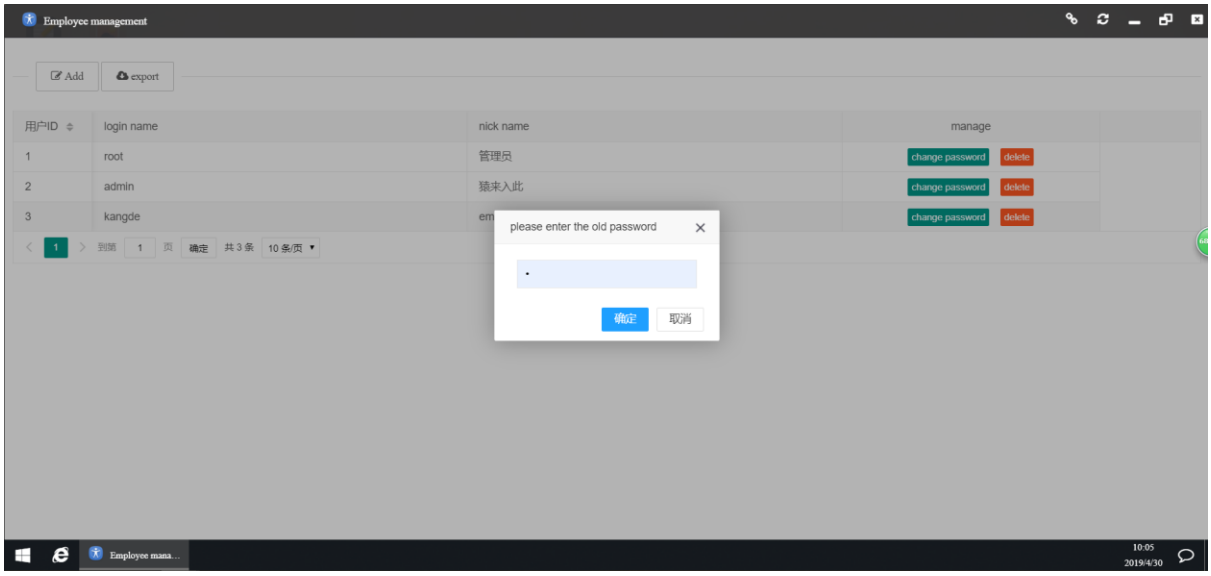


Figure 5.3.12: Employee management

## 5.4 Testing

The development of software system involves many steps of task, which include requirement analysis, functional design, data structure design, system code implementation and software test. Each step will rise the challenge and cause the mistaken to be made. As the result the software could contain the errors and bugs, so introduce the system testing would be require as the last stage of development.

System testing is the stage of implementation which is aimed at ensuring that the system works accurately and efficiently before live operation commences. Testing is the process executing the program with the intent of finding errors and missing operations and a complete verification to determine whether the objectives are met, and the user requirements are satisfied. The aim is quality assurance. Tests are carried out and the results are compared with the expected document. In case of erroneous results, debugging is done. Using detailed testing strategies, a test plan is carried out on each module. The various tests performed are unit testing, integration testing and user acceptance testing

### *5.4.1 UNIT TESTING*

The software units in a system are modules and routines that are assembled and integrated to perform a specific function. Unit testing focuses first on modules, independently of one another, to locate errors. This enables us to detect errors in coding and logic that are contained within each module. This testing includes entering data and ascertaining if the value matches to the type and size supported by ASP.net. the various controls are tested to ensure that each performs its actions as required.

### *5.4.2 INTEGRATION TESTING*

Data can be lost across any interface, one module can have an adverse effect on another, sub functions when combined, may not produce the desired major functions. Integration testing is a systematic testing to discover errors associated within the interface. The objective is to take unit tested modules and build a program structure. All the modules are combined and tested. Here the Server module and Client Module options are integrated and tested. This testing provides the assurance that the application is well integrated functional unit with smooth transition of data.

### *5.4.3 USER ACCEPTANCE TESTING*

User acceptance of a system is the key factor for the success of any system. The system under consideration is tested for user acceptance by constantly keeping in touch with the system users at time of developing and making changes whenever required.

## 5.5 Evaluation

The work was designed based on the methodology stated in the previous chapters and the implementation is based on the requirement for a hotel management system. The project work has four major aspects which include the Reservation of rooms, retrieval of records, user's activities and administrator's activities. The result from the implementation of the work is explained in various sections below.

### *5.5.1 Reservation of rooms*

As a tradition in hospitality management sector, anyone who wished to lodge in a hotel must go for reservation of room within the time such person wishes. This is necessary so that such room is not given to another within the reserved date.

The reservation of room in the HMIS greatly improve the efficiency of operating and able to reserve the room for the customer based on the day he/she want to check in and out.

This can be done by collecting some information from the customer like such as the arrival date, depart date, customer name, booking id, room id. Because the room that select by customer at reservation thus, the status of the room will be change to book, which is no show in the table of empty rooms. Base on the departure day of the customer, the hotel can change the room status to available to book ,because the customer are estimate to check out soon.

### *5.5.2 Administrator's Activities*

The administrator controls all the activities of the hotel. The administrator accesses the system by authentication. After login the administrator can perform some function such as to reserve room for customer, view information that are stored in the database as well as granting privilege to access the system to various users and retrieving it from users. The system is flexible as more rooms can be added to it.

The administrator supplies room details such as room name, room type, room description, room number, price after which it saved in the database. The administrator can also perform some other function such as data retrieval.

### *5.5.3 Discussion on the Observation from the Implemented work*

From various result obtained from the implementation of the work; we have been able to avoid collision in the allocation of rooms and ensure proper management of data through authentication thereby disallow unauthorized person from gaining access to the system. Also, duplication of records is avoided. The customer's data and other information about the hotel are retrieved almost immediately. In a nutshell, we have been able to achieve the aim of the work stated in the beginning of the work. The project can be implemented on real time basis and had numerous benefits some of which are highlighted below.

➢ Performance: The manual handling of the hotel record is time consuming and highly prone to error. This work will improve the performance of the Hotel management system, due to fast retrieval of data and coordination of data in a centralized manner.

➢ Efficiency: The project work enhances efficiency in the activities of the Hotel since there is division of labour through the privilege granted other users.

➢ Control: The complete control of the electronic system is under the hands of authorized person who has the password to access this project and illegal access is not supposed to deal with. All the control is under the administrator and the other members have the rights to just see the records not to change any transaction entry.

➢ The cost: the HMIS implement in this project are simple and easy to use, the maintenance cost is must applicable to the small and -medium size hotel;

➢ Security: Security is the main criteria for electronic hotel management system. Since illegal access may corrupt the database and ensure protection of stored data. Therefore, this project work ensures security of data.

In summary, the result obtained from the implementation of the work, the system is well functional to handler the daily operating issues. The project provide proper service such as authentication, Room reservation, front office management and room management.

# Chapter 6: Conclusions

## 6.1 Introduction

The last chapter of the thesis will summarize the work I had done to progress this paper and the challenge I had and the knowledge I learned by solving the problems.

## 6.2 Summary

The information is the most important resource to keep the world running, the new technology innovated new device generated are greatly improve the life style and obviously the working style. With the information technology business became more informatize and automatic in the management of company. The intelligence management provide better service and greater efficient than the manual management.

The study of 2018 hospitality market reveal the demand of new hotel provide huge potential opportunity for the small and medium-size hotels. The hotel in current market are needed to implement hotel management information system in order to follow the trend of new technology era.

The current market has numbers of software of management information system with complete function, but large system for large company as the cost of system is not a small hotel can afford. The simple for the small, where the hotel only need few basic functional that can operate the daily transaction by information system.

Furthermore, it can be concluded that no matter the difference between the size of company, all the hotel in the industry need to implement the hotel management information system. The reliable, secure, fast, and efficient system has been developed replacing the manual and less reliable system.

### *6.2.1 Conclusion*

The purpose of this project is to develop a small and medium-sized hotel information management system. The user is a hotel administrator and a cashier at the hotel bar. It is suitable for small and medium-sized hotels. The function is to manage the information of the hotel, such as room information, passengers, Passenger

reservations, as well as hotel catering business, because the wine industry is booming and the Internet is widely used, it is necessary to develop such systems.

The development environment of MyEclipse used in this system development, the page adopts JSP technology, the server selects Tomcat, the database selects Java used by MySQL development language, JavaScript of script language. Before developing this system, I inquired and summarized the relevant data. The number of small and medium-sized hotel information management systems has increased rapidly, showing a strong vitality. The development of this system has gone through several stages of system planning, system analysis, system design and system testing. It uses UML unified modelling to describe the specific process, making the system function logic clearer and conceptual structure design. The relationship between the tables is clearer, and the data dictionary is used to describe the processing of the data.

After the development of the system, the system functions are basically realized, and the test is successful. However, there are still many shortcomings that need to be improved. For example, some functions are not perfect. The passenger does not pay the deposit during the reservation process. When the passenger made an appointment, the system does not automatically remind the check in day. Didn't include the catering system where a hotel normally provides to customer. proliferate manual operating system needs to query related information, there are still many details that are not considered well, such as the information that can be modified twice when the room information is modified, and there are no strict restrictions.

### 6.3 Recommendations

There are various benefit to implement management information system, this is applicable to all hotels. When the hotel choosing the application of management system greater in functions doesn't mean the better or suitable especially the medium and small size hotel. The quantity of stock resource is not the major Competitiveness. The Informatization help the hotel to analysis the customer data and that help the decision making for manager.

The growth of a hotel organization also depends on how well their resources (Human, Assets) are managed, how well they treat their customers (Hospitality) leading to large turn-up, quality of service rendered to customers and efficiency of the system in use.

It is therefore recommended to always put these factors into consideration when implementing any policies within the organization.

### 6.4 SUGGESTIONS FOR FURTHER WORK

The development of the hotel information management system in the future will be deeper and the functions will be more perfect. Therefore, based on the functions of the system, it is necessary to discover more intelligent system functions to process hotel information, use more flexible development language and database tools, and control the development cost of the system.

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**Glossary**

**List of Abbreviations**

**Appendix A:**