HOTEL INFORMATION MANAGEMENT SYSTEM

BY

ALABI OLUWASEUN FARUQ

(MATRIC. NO.: 10N04/003)

BABATUNDE GIDEON OPEYEMI

(MATRIC. NO.: 11N04/014)

A PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.SC) DEGREE IN COMPUTER SCIENCE

DEPARTMENT OF PHYSICAL SCIENCES,

FACULTY OF NATURAL SCIENCES,

AJAYI CROWTHER UNIVERSITY, OYO, NIGERIA.

MAY 2014

CERTIFICATION

This is to certify that that this project was carried out by Alabi, Oluwaseun Faruq (10N04/003) and Babatunde, Gideon opeyemi (11N04/014) in the Department of Physical Sciences, Faculty of Natural Sciences.

_____   _____

Mr Agbo-Ajala O.O   Date

Supervisor

_____   _____

Prof. Jacobs Adeniyi   Date

Head of Department

DEDICATION

This project is dedicated to Almighty God, most Gracious, most Merciful and Determiner of all things without whom we would not have been able to successfully complete this project.

To our parents Dr B.L and Mrs A.I Alabi and Mr J.A and Mrs L.O Babatunde and to our entire family. We love and appreciate you all very much and appreciate your support.

And also to all those who helped us throughout the process of writing this project we are thankful for their support rendered.

ACKNOWLEDGEMENT

Praise and thanks to Almighty God for the success of this project work. It is essential at this point to acknowledge with thanks those who have made useful contributions to facilitate the successful accomplishment of this academic task.

We wish to express or reserved gratitude to our supervisor, Mr. O.O Agbo-Ajala for his comments and suggestions for expanding of knowledge on this our research work. We also wish to express our sincere appreciation to the Head of Department of Physical Sciences Prof A.J Adeniyi and the Dean of Natural Sciences.

Our greetings go to our parents in the persons of Dr & Mrs Alabi and Mr & Mrs Babatunde for your love, care, prayers and sacrifice made us who we are now. We love you all. And also to all our siblings and loved ones for their great support during this time.

Our deepest appreciation goes to our friends and course mates and everyone who helped us throughout the course of writing this project.

Finally, while we acknowledge the contribution of all, we claim total responsibility for whatever shortcomings the project may have or contain. Perfection belongs only to Almighty God.

TABLE OF CONTENTS

CHAPTER ONE (1) INTRODUCTION

CHAPTER TWO (2) LITERATURE REVIEW

CHAPTER FIVE (5) SUMMARY, CONCLUSION AND RECOMMENDATIONS

LIST OF FIGURES

ABSTRACT

This project examines the aspect of the hospitality industry which is Hotel management. In the 21st century the use of the internet, computers and other electronic devices have made handling different jobs and aspects of management very easy. This project is the design and implementation of an electronic hotel management system that provides proper management of data and transactions in a centralized and organized manner and also provides a user friendly interface with which the user can interact easily with the just little or elementary knowledge of operating computers.

This project is designed to create a platform that allows booth the user and administrator to keep track of transactions like room reservations, room booking, financial administration of the hotel, staff record keeping, online reservation and other day to day activities involved in the running and management of a hotel. The implementation is based on the requirements for a hotel management system. The project work is divided into five major categories which are; Front Desk, Accommodation, Catering, Finance & Account and Personnel Staff Record (Human resource management).

This project accomplished the task of building a system that ensures accurate record maintenance which was done through proper identification of customers and the proper designation of user functions with most of the processes being done automatically. An electronic hotel management information system is required to assist management of data in the hospitality industry and also to make the entire hotel management process easier.

The project was designed with the use of Microsoft visual Studio which is an integrated development environment made by Microsoft. It can be used to develop console and graphical user interface applications along with windows form application websites. The database system was created using Microsoft SQL server (MSSQL).

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

One major challenge in Business management in Nigeria is ineffective utilization of resources and lack of proper record keeping leading to wastages and outright fraud by the staff. This is particularly true in the hospitality industry.

The Hotel management information system is a system that aids the management of the Customers' data, Hotel staff data, customers' registration, Customer accommodation or allocation into specific rooms, room reservation and Personnel staff management.

Sacoba Lodge uses manual method for Customer registration and allocation and record keeping by filling up the forms provided by the Hotel Staff and then the filled forms are kept in file-folders. For the hotel staff to know which rooms are free and available they would have to check through their various files or keys and this system is a bit cumbersome and even more so for a business that is trying to expand . The registration is based on manual work and all the processes are done manually. The same manual process is involved in staff record, roster keeping and payroll.

1.2 STATEMENT OF PROBLEM

The phase of system analysis process deals with problems that are affecting the current manual system. The problems are those, which are affecting the hotel in its daily routine work. As the growing trend in most business in InfoTech World of Computers, need of accuracy, perfectness, speed and high memory data storage is a must. Each and every problem must be solved with least amount of time and energy.

The problems faced by the existing system and hope to be solved by the Hotel Management System are described below:

❖ Difficulty in maintenance of records

❖ Time consuming

❖ Editing of data becomes a tedious job

❖ No security of data

❖ Mistakes occurring in Calculation of funds

❖ Lack of efficiency

❖ Data redundancy

❖ Data inconsistency

❖ Incidence of Fraud

➢ Difficulty in maintenance of records: It is very difficult to maintain data record in the system as all the records are entered in the register or the perspective record books. There are chances of the record books or files in which all the Data are stored may be torn or wearied out or some other damages result or files may even be misplaced.

➢ Time Consuming: It is very time consuming and difficult to write each and every entry and exit of customers into the hotel in the register. Also it takes a lot of time if all the entries are to be repeated say to keep in another record for safe keeping. It is also time consuming to check for data quickly. In the current system processes such as making different types of reports, preparing merit lists, and tedious calculations are examples of time consuming processes.

➢ Editing of data: Manually written data cannot be changed or edited once written. If there is a mistake and the administrator tried to cancel it out and write it again this would make the entire register very dirty and disorganized. If data is entered incorrectly the entire system gets incorrect while editing wrongly entered data cannot easily solve errors.

➢ Incidence of Fraud: Fraudulent acts can be perpetuated by the staff arising from record insecurity. The continuous incidence of fraud in the hotel organization may lead to non-profitability of the business and the hotel involved may eventually fold up.

➢ Data Insecurity; As the data is stored in files or registers, it is not a secure place, As the storage media here are files and books or registers, there are chances of getting this storage media lost, torn, or it may go in the hand of the wrong person which can destroy the database or it can also be destroyed accidentally. Also in the system, data should be shown to the person according to his position on the establishment; everybody should not be allowed to use all the data.

If the Data goes into the hand of the wrong person he or she may take advantage of the data. So security is the major aspect of the Hotel Management System.

➢ High Data Redundancy: As mentioned in the current system. Due to maintenance of so many registers there is a high redundancy of data i.e. same data is recorded repeatedly.

➢ Data Inconsistency: Here as mentioned in the above step the same information is written in more than one place that creates the problem, where there is a change or deletion in the recorded data.

1.3 AIMS AND OBJECTIVES

The aim of the proposed system is to provide solutions to the problems stated above and help the user to manage the hotel effectively and efficiently through:

❖ Adequate Record Keeping :
To eliminate manual record keeping and install an electronic record keeping thereby ensuring adequate record of transactions are kept. This ensures a centralized system where all necessary data and information can easily be accessed, Tracked, and monitored

❖ Reduced Incidence of Fraud :
 The program is envisaged to reduce the incidence of fraud both by staff and outsiders through proper record keeping, tracking and monitoring of transaction operations in the organization.

❖ Maximum Accountability: To Instill accountability in the process of management in the hotel organization by not only reducing incidence of fraud, but also eliminate wastages.

❖ Provide Data Security: The study will install security measures by providing different access levels to various staff.

❖ Effective Resource Management: The Human Resource module (HR) and Finance & Account (F&A) module will enable effective utilisation of financial and human resources by comparing the accounts receivable with the account payable and complete record of personnel through the nominal roll module will enhance staff deployment and productivity.

❖ Increased Profit Line for The Organisation: when there is reduced incidence of fraud this and proper management of resources this will enable increased profit line for the organisation

❖ Reduced Time Consumption: A good search algorithm will be implemented on the web application to enhance the search facility whereby users of the system can search for all kinds of data using various criteria.

The system can be handy to the user in the following ways:

➢ To automatize the work such as gathering information, gathering Hotel Staff information, Workers' roster, food ordering and Hotel administration in general.

➢ To atomize different types of reports.

➢ Removal of Data Redundancy.

➢ To create a centralized system where all necessary data and information can be accessed easily.

➢ Data Consistency.

1.4 SIGNIFICANCE OF THE STUDY

The Hotel Management system is developed to overcome the most of the problems occurring in the manual system by computerizing the existing system. The features of the newly proposed computerized system are described in brief below:

➢ 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.

➢ In any manual system if we take the main problem arising is to maintain the number of records and finding a particular record, computerized systems are most helpful in dealing with areas where database comes into existence.

A computer can hold large amount of data in storage devices and it can operate at a very high speed. The user can input all types of information into the computer and can be able to perform any type of task which when done manually is tedious and time consuming.

1.5 METHODOLOGY

This section involves data gathering. Area of study, the data quality controls provided for the study. It also illustrates how the data was analysed and presented.

The visual aspect refers to the method to be used to create the graphical user interface with Visual basic application. Rather than writing numerous lines of code describe the appearance and location of interface elements, you simply drag and drop pre-built objects into a place on screen.

Visual Basic revolves around ready-made objects and it is event-driven that is all the activities in a program are triggered by one event or another. Each object has its own properties, determining its size, colour, appearance and nature of its text and much more. Each object also has its own event-Handling procedures. Visual basic also handles images, menus, dialog boxes, drive and directory list and much more. The application will be web-based using the ASP.NET platform to eliminate system compatibility issues, and ensure it run on all systems provided with web-Browsers.

MS-SQL is used as the backend where Customer Record and Transactions are stored. It serves as the Database.

Information Gathering system details are not left out the specific problems are identified.

1.5.1 INFORMATION GATHERING

Information gathering and record keeping in the hotel system is a crucial aspect that is carried out in an organized way so that.

➢ No system details are left out.
➢ Right problems are identified
➢ Repetitive work is avoided
➢ Wrong or incomplete details are not collected.

To do this, a proper search algorithm must be incorporated; the method involves using specific search criterion to select information from sources. The overall methods which are used while gathering information are:

1. Interviewing
2. Record Inspection
3. Observation

These methods are used in system analysis and design stage.

1. Interviewing: interview allows the analyst to collect or gather the information from the individual or group who are generally the current user of the existing system or potential user of the proposed system. This is a basic source of qualitative and helpful information. It also allows the analyst or developer to discover areas of misunderstanding and problems. User interviews are conducted to determine the qualitative information. These interviews which were instructed interviews, provided opportunity to gather information from the respondents who are involved in the process for a long time.
   These interviews provided information such as:
   ➢ Activities involved in process allocating room to customers
   ➢ Activities involved in the process of verification of rooms
   ➢ Preparing all the various reports
   ➢ Limitation of the existing system
   ➢ Problems faced by the user in the existing system.

2. Record review: It is said to better to believe in records than in people. Thus a good analyst always gets facts from documents. An existing system can be better understood by examining existing documents, forums and files. Records may include:
   ➢ Written policy manuals
   ➢ Rules and regulations
   ➢ Standard operating procedures used in Hotel Management System
   ➢ Forms and Documents

To gather details about Hotel management System, many kinds of records and reports will be reviewed including: Standard operating procedure, Reports generated by the existing system, Document flow (input/output) of Hotel Management, Process of allocating of rooms to customers.

3. Observation: Observation can bring in missed facts, new ways to improve the existing procedures, duplicate work done inadvertently. It can also bring in what other fact finding methods cannot. But his task is delicate because some people do not like to be observed when they work. Observation gives analysts the opportunity to go behind the scenes in a Hotel to learn how things work. Observation should look for:

➢ Operational inefficiencies
➢ Alternative routes and procedures
➢ Interruptions in normal flow of work
➢ Usages of files and documents
➢ Informal communication channels.

1.6 SCOPE OF STUDY

The study is focused on the critical operations carried out within the hotel administrative system. These major operations include

- Front-desk operations (customer management, room allocation, cashier posting)
- Accommodation (Hotel room management, staff schedules, inventory).
- Assets management (Fixed, Floating asset).
- Staff record Management.
- Restaurant & Bar operation.
- Staff payroll (Pay slip).
- Accounts Receivable &Payable.

The goals are achieved based on ability of the computer to store large amounts of data which is very useful to store information regarding the transactions of Sacoba Hotel. The study is limited to the following:

➢ RECEPTION MODULE: The Reception module covers all the customer allocation and booking with the sub-fields (Customer Details, Room Allocation, and Cashier Posting).

➢ ACCOMODATION MODULE: The Accommodation covers all Room Maintenance, Housekeeping Schedules and room inventory.

➢ FINANCE & ACCOUNT: Covers the staff payroll, assets register, accounts receivable and accounts payable.

➢ CATERING MODULE: Covers the food ordering maintenance and bar transactions.

➢ ADMINISTRATION & GENERAL SERVICES: Covers Personnel staff record keeping and the stores with inventory.

1.7 DEFINITION OF SOME TERMS

Hotel: A hotel is an establishment that provides lodging paid on a short-term basis.

Hotel management Information system: An integrated set of components for collecting, storing, and processing data and for delivering information, knowledge, and digital products for a hotel.

Record: A record is a value that contains other values, typically in fixed number and sequence and typically indexed by names.

Database: A database is an organized collection of data. The data are typically organized to model relevant aspects of reality in a way that supports processes requiring this information.

Object: An object is a location in memory having a value and referenced by an identifier.

1.8 ORGANIZATION OF THE STUDY

The project is broadly described in five chapters below:

Chapter One: This part of the work reveals the background of the study and gives a brief account each of statement of the problem, aims and objectives, importance of the study, methodology of the study, scope of the study, layout of the project and the definition of the terms that will be used in this project.

Chapter Two: This chapter has to do with the literature review aspect of this project. It explains different articles on Hotel Management. It also gives a review of an existing online system in relation to the proposed system.

Chapter Three: This chapter explains the system analysis, methodology, and system design of both the existing manual system and the proposed system.

Chapter Four: This chapter deals system implementation and documentation of the new system, which includes the tools, software and hardware requirement of the new system, system testing and maintenance of the new system are also disused here.

Chapter Five: This chapter summarizes the entire project as well as drawing conclusion and recommendations from the project.

CHAPTER TWO

LITERATURE REVIEW

In the literature review we consider and examine the work done by other scholars and researchers who have broached on this particular topic (Hotel Management Information System).

2.1 INTRODUCTION

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" (Jones and Lockwood, 1989, p.6) Really in the last two decades, technology has become far more advanced and far more widely used throughout all types of industry. The tourism and hospitality industry is no exception. Indeed, many tourism and leisure establishments rely on technological systems for the vast majority of their operations.

They use a range of computer programs from everything to bookings, communications, security and payments. If a hospitality establishment does not use some sort of advanced technological system in its operations, it is deemed to be out of date and disorganized. Indeed, James Bardi begins to outline the importance of these programs 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" (Bardi, 2010).

Part of the reason why hotels utilize technological systems in their operations is because it keeps them up to date in terms of where they are placed in the market. It makes work easier

for staff members, allowing them to work more efficiently and taking away time consuming activities which can be carried out by the technology. In some hotels, the utilization of technological systems mean that fewer staff members are needed and this saves considerable costs. For others, especially luxury hotels, this is not the case but it means that the staff can be free to attend to customers on a more personal basis, thus upholding high standards. Therefore, it is understandable that 5 star hotels must ensure that they employ the most advanced technology available. This is because their priority is maintaining their position and status as a luxury brand, rather than cutting costs, which would be more of a priority for budget hotels which cater to a lower end market. Therefore luxury tourist establishments rely on top quality technological systems. Jones and Lockwood (1989) noted "Companies have also been able to produce higher quality products because technology has developed that assists them to do so". For example, many 5 star hotels employ revenue managements systems which aim to ensure the maximising of profits for perishable products. It entails that they 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). With this in mind, hotels and hotel managers implement revenue management systems which are able to monitor how many rooms are being reserved and react to this information. If, for example, there is a short amount of time before the date approaches in which a number of rooms are not sold, managers can decide to offer discounts to entice people to fill these rooms (Phillips, 2005). A room which is unsold is more financially damaging to a business than a room which is sold for a reduced price, due to the perishable nature of the product. The predominant negative factor of RM systems is that they are extremely expensive and can therefore be costly for hotels to maintain. Indeed, Phillips explains that companies with "expensive and sophisticated revenue management systems are going bankrupt". This is why five star hotels are often able to employ them while hotels which are lower down the market are not.(Phillips, 2005, p. 142).

It is clear that technology used in hospitality establishments it is also used to make customers' lives more convenient. Peacock notes "automated hospitality enterprises will become an increasing feature of the industry, particularly at the budget end of the market, but the main

use of information technology will be in enhancing customer service, rather than replacing it". For example, many hotels use technological booking systems which make it easy for clients to book online and to have all the information they need about the rooms available to them. They also use technology within the hotel to benefit the customer during their stay. For example, many have advanced communications systems installed in the rooms which means that those on business trips can continues with their work while they are guests at the hotel. Once again, in 5 star hotels, it is all the more important to provide these facilities; customers pay a lot of money and so expect to have a certain amount of facilities and quality additions provided for them (Peacock, 1995, p.21).

2.2 INFORMATION

Information is an essential part of any society or organization because without it we cannot survive. Information is that which informs i.e that from which data can be derived. Information is conveyed either as a content of a message or through direct or indirect observation of a thing. (Luciano Floridi, 2010)

Furthermore, the information content of a message comprises the effect it has on the image of the person who can understand the message. Therefore, information is the effect to which the meaning of an object is attached.

In information management, information is used in a more general sense to encompass all the different ways of representing facts and events within an information system. Information is a meaningful set of data that tells one something about the relationships between data. In order to produce information, an 'information system' is required to input such data, to process and store that data and to create information. Information system consists of entities, which are connected through relationships. An entity in this sense is something of interest to the user concerning which data to collect or store. (E.g. student information).so data constitute a representation of the perceived attributes of 'information system'. To identity process, store, retrieve, disseminate and information about such entity in a 'system' requires a management information system. According to Cassidy (2005), Information is a critical resource in the operation and management of tertiary institutions. Timely availability of relevant information is vital for effective performance of managerial functions such as planning, organizing, leading and control. He

further discuss that, an information system in tertiary institution is like the nervous system in the human body; it is the link that connects all the tertiary institution components e.g personnel, admission, exams and record, bursary, library, sickbay, student's affaire unit, security and management unit

2.3 INFORMATION SYSTEM

Information system is an integrated set of components for collecting, storing, and processing data and for delivering information, knowledge, and digital products. Business firms and other organizations rely on information systems to carry out and manage their operations, interact with their customers and suppliers, and compete in the marketplace. For instance, corporations use information systems to reach their potential customers with targeted messages over the Web, to process financial accounts, and to manage their human resources. Governments deploy information systems to provide services cost-effectively to citizens. Digital goods, such as electronic books and software, and online services, such as auctions and social networking, are delivered with information systems. Individuals rely on information systems, generally Internet-based, for conducting much of their personal lives: for socializing, study, shopping, banking, and entertainment (Encyclopaedia Britannica).

Any specific information system aims to support operations, management and decision making(SEI report) In a broad sense, the term is used to refer not only to the information and communication technology (ICT) that an organization uses, but also to the way in which people interact with this technology in support of business processes Kroenke, D M.(2008).

There are various types of information systems, for example: transaction processing systems, decision support systems, knowledge management systems, learning management systems, database management systems, and office information systems. Critical to most information systems are information technologies, which are typically designed to enable humans to perform tasks for which the human brain is not well suited, such as: handling large

amounts of information, performing complex calculations, and controlling many simultaneous processes.

Silver et al. (1995) provided two views on IS that includes software, hardware, data, people, and procedures. A second managerial view includes people, business processes and Information Systems. The Association for Computing Machinery defines "Information systems specialists as focusing on integrating information technology solutions and business processes to meet the information needs of businesses and other enterprises."

In an information system, input data consist of facts and figures, which form the System's raw material. Information is data that has been usefully processed. However, an information system does not only contain data and information. There are also other elements inside the system, which are related and are in support of one another. The presence of these related elements makes information more useful ă whereby, it can be made available, can be processed, distributed, manipulated, saved, and so on. This combination gives rise to a

system, which is orderly and as such it is called an "Information System". The activity of converting data into information is called a process. An information system contains FIVE main components; the hardware, software, data, process and human.

- Hardware: Information system's hardware refers to all types of hardware and the media used for input, processing, managing, distributing and saving information that are being used in an organisation. Examples of the hardware are the physical computers, networks, communication equipment, scanners, digital drives, and so on.

- Software: Software consists of two categories; the system software and the application software.

- System Software controls the computer and contains the operating system and device drivers, which can communicate with the hardware. It can also modify data into a new form, prevent viruses and make copies.

- Application Software contains programs which can help users and enable companies to perform business functions. Users can increase productivity with the presence of application software such as spread sheets, word processing, ordering systems, and accounts receivable.

- Data: Data refers to the raw facts on anything or entities like student names, courses and marks. The raw data that has not yet been provided can be processed to become more useful information.

- Information is an organised, meaningful and useful interpretation of data such as a company's performances or a student's academic performance. Information systems change data into information, which is useful and capable of giving a certain meaning to its users.

- Process: Process or procedure explains the activities carried out by users, managers and staff. Process is important for supporting a certain business model available as written documents or as reference materials on-line.

- Human: The main objective of an information system is to provide invaluable information to managers and users, whether inside or outside the company. Users can be broken up into three categories, which are:

  - End-Users, consisting of the staff, customers, suppliers and others who communicate with the information system.

  - Internal Users, including the managers, technicians, sales representatives and corporate officers.

  - External Users, consisting of the customers who use the company's system for performing transactions, suppliers who use the system for planning sales, and the staff who use the system outside office hours. The success or failure of an information system depends on whether the system that has been developed can fulfil the user's requirements, and the users feel satisfied with the results and the system's operation. A successful system requires integrated efforts from information technology experts such as the system analysts, programmers and the information technology managers so as to fulfil business needs and to support company's objectives.

  According to Couger John, (1973), the information systems development process is viewed as consisting of analysis, design and implementation phases, prior to the operation phase. These phases do not ordinarily take place strictly in the order given but rather existing together on a continuing pattern of interaction. The development of information systems then consists of an iterated process of information analysis, system

design and implementation. This system life cycle, "being pointed out, applies to other kinds of development effort as well.

2.3.1 INFORMATION SYSTEM ANALYSIS

The development of information systems is not only a technical process but also a political one. Achieving a major success with large, integrated systems that are combined with the traditional systems requires the organization to analyse the existing system.

Explaining a system analysis approach, researchers assert that a good information system depends slightly on equipment, great deals on human technical backup, and most of all, on how the system is organized (structure, design and its integration) that determines its success. This requires the establishment of information requirements in an effort to organize such systems.

The major challenges of organizations (especially in higher education) are to plan, manage, and control the development and operation of such information systems. This requires an information analysis process as an institutional research activity to establish not only what information is required but also why to what purpose it is to be put.

Various models of information analysis have been developed. The most common approach to analysing systems is the 'systems life cycle'. The systems life cycle model has been widely applied in the analysis of systems. This has been the backbone of research and practice since 1960. The model works on the assumption of steady uni-directional progress through the various stages, without going back or repeating them. The cycle involves conceptualization of the idea initiation, design, assembly and testing of system rules and specifications, installations, operation and maintenance.

Summarizing the model in four stages, we have problem identification, analysis, design and operation. Analysis of the requirements requires studying the technical, legal, organizational, and socio-economic feasibility aspects.

This determines what the system will do distinctively. Describing two features of system design when referring to higher education;

- The major reference entities (individuals, groups, organizations) about data should be collected identifies reference entities as the institution itself, the student body and its critical constituents, and related interest groups. The institution is concerned with the providers of education, and the students constitute potential students and the institution and critical constituents, termed as the remote environment.
- The appropriate descriptors for each of the entities they are able to identify what needs to be known about the reference entities.

2.4 HOTEL MANAGEMENT

Hotel Management refers to the process, agency or level of management which handles the various business duties and day-to-day concerns of a given hotel establishment. Hotel management is responsible for employing, managing and paying the various staff. Hotel Management also involves taking care of paying bills and taxes associated with the hotel and the property where it is located.

The size and magnitude of a hotel management structure varies significantly depending on the size and function of the hotel. A small hotel normally consists of a small core management team consisting of the General Manager and a few key department managers who directly handle day-to-day operations. On the contrary, a large full service hotel often operates more like a large corporation with an executive board headed by the General Manager and consisting of key directors serving as heads of individual hotel departments. Each department normally consists of subordinate line-level managers and supervisors who handle day-to-day operations.

Activities carried out by the Hotel Management vary depending on the size and type of hotel, but may include:

- Planning and organising accommodation, catering and other hotel services
- Promoting and marketing the business
- Managing budgets and financial plans as well as controlling expenditure

- Maintaining statistical and financial records
- Setting and achieving sales and profit targets
- Analysing sales figures and devising marketing and revenue management strategies
- Recruiting, training and monitoring staff
- Planning work schedules for individuals and teams
- Meeting and greeting customers
- Dealing with customer complaints and comments
- Addressing problems and troubleshooting
- Ensuring events and conferences run smoothly
- Supervising maintenance, supplies, renovations and furnishings
- Dealing with contractors and suppliers
- Ensuring security is effective
- Carrying out inspections of property and services
- Ensuring compliance with licensing laws, health and safety and other statutory regulations.

2.4.1 SYSTEM

A system is a set of interacting or interdependent components forming an integral whole. Or a set of elements (often called components) and relationships which are different from the relationships or the set or its elements to other elements or sets. (Merriam Webster online dictionary)

Every system I delineated by its spatial and temporal boundaries, surrounded and influenced by its environment, described by its structure and purpose and expressed in its functioning.
Some systems share common characteristics, including:

- A system has structure, it contains parts that are directly or indirectly related to each other ;
- A system has behaviour, it exhibits processes that fulfills its functions or purpose;
- A system has interconnectivity; the parts are connected by structural and/or behavioural relationships.
- A system structure and behaviour may be decomposed via sub systems and sub processes to elementary parts and process steps.

The term system may also refer to a set of rules that govern structure and or behaviour.

2.4.2 COMPONENTS OF A SYSTEM

2.4.2.1 Environment and boundaries

System theory views the world as a complex system of interconnected parts. We scope a system by defining its boundaries; this meaning choosing which entities are inside 6he system and which are outside-part of the environment. We then make simplified representations9models) of the system in order to understand it and to predict or impact its future behaviour. These models may define the structure and/or behaviour of the system.

2.4.2.2 Natural and human made Systems

There are natural and human made (designed) systems. Natural systems may not have an apparent objective but their outputs can be interpreted as purposes. Human-made systems are made with purposes that are achieved by the delivery of outputs. Their parts must be related; they must be designed to work as a coherent entity else they would be two or more distinct systems.

2.4.2.3 Theoretical Framework

An open system exchanges matter and energy with its environment. Most systems are open systems. A closed systems exchanges energy but not matter with its environment. An isolated system exchanges neither matter nor energy with its environment.

2.4.2.4 Process and Transformation System

A system can also be viewed as a bounded transformation process that is a process or collection of processes that transform inputs into outputs. Inputs are consumed and outputs are produces.

Subsystem

A subsystem is a set of elements, which is a system itself, and a component of a larger system.

2.4.2.5 System Model

A system comprises of multiple views. For a man-made system it may be such views as planning, requirement analysis, design, implementation, deployment, structure, behaviour, input data and output data views. A system model is required to describe and represent all these multiple views.

2.4.2.6 System Architecture

A system architecture using only one single integrated model for the description of multiple views such as planning, requirement analysis, design, implementation, deployment, structure, behaviour, input data and output data views, is a kind of system model. (Checkland 1997, Flood 1999).

2.4.3 ELEMENTS OF A SYSTEM

Following are considered as the elements of a system in terms of Information systems:-

1. Input
2. Output
3. Processor
4. Control
5. Feedback
6. Boundary and interference
7. Environment

➢ INPUT: Input involves capturing and assembling elements that enter the systems to be processed. The input are said to be fed to the systems in other to get the output. For example input of a computer system is input unit consisting of various input devices like keyboard, mouse, joystick e.t.c

➢ **OUTPUT**: Those elements that exist in the system due to the processing of the input are known as output. A major objective of a system is to provide output that has value to the user.

➢ **PROCESSOR**: The processor is the element of a system that involves the actual transformation of input to output. It is the operational component of a system.

➢ **CONTROL**: the control element guides the system. It is the decision-making sub-system that controls the pattern of activities governing input, processing and output. It also keeps the system within the boundary set.

- ➢ **FEEDBACK**: Control in a dynamic system is achieved b feedback. Feedback measures output against a standard in some form of cybernetic procedure that includes communication and control. The feedback may generally be of three parts viz, positive, negative, and informational. The positive feedback motivates the system. The negatives indicate need of an action. The feedback is a reactive form of control.

- ➢ **BOUNDARY AND INTERFACE**: A system is defined by its boundaries- the limits that identify its components, processes and interrelationships when it interfaces with another system. For example in a computer is there is a boundary for number of bits, the memory size e.t.c.

- ➢ **ENVIRONMENT**: the environment is the super system within which the organisation operates. It includes input, processes and outputs. It is the source of external elements that impinge on the system.

2.5 HOTEL MANAGEMENT SYSTEM

Hotel Management System is a web based hotel management software. The software features include revenue management, yield management, booking management, day rate management, booking calendar, guest relationship management, check ins & check outs management, POS & folio management, invoices and receipts and accounting document reports. The Hotel Management System provides complete information about the Hotel and staff of the Hotel. The features of the Hotel Management System are expected to provide the user(s) with; easily accessible information for both the Administration and registered staff, reduce administrative costs, provide information about new management policies, fee structure, date of payment, new rules and keep track of all the rooms in the Hotel and customers. The information should be accurate, consistent, timely, reliable and complete.

2.6 INTEGRATION OF HOTEL MANAGEMENT SYSTEM BY WEB SERVICES

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 (Yang et al, 2003).

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 are fundamentally changed by web services. The World Wide Web Consortium's eXtensibleMarkup Language (XML) (W3C, 2003) and the eXtensibleStylesheet 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 an web service can also be mapped into program (Eric, 2002). 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 (Yang et al, 2003).

2.7 CHALLENGES

Web services technology is developed rapidly as a practical means to integrate heterogeneous systems and develop new applications. Our project successfully integrates

systems in hotel business chains together. Although research has greatly advanced in this area, developing and maintaining integration system in hotel industry remains a lot of challenges (David et al, 2002).

First of all, our experience implicated that in order to deploy a global, or to less scale, national wide hotel reservation system, there is a long road ahead for hotel industry to get IT standardization. Nowadays there are several hotel alliances existing, but these organizations do not touch data exchange standard between enterprises.

Secondly, security is one of the most important and complicated challenges related to our work. There are lots of research papers on providing security solution of integration of heterogeneous computers and resources spread across multiple domains with the intent to provide user services. We intend to obtain three basic targets. One is to keep the contents confidentiality and integrity – that is to ensure nobody ever tampers with or steals the data transferred through public networks. The other is to control access to web services. Before using web services must pass the authorization procedures (Davi et al. 2002)

2.8 BENEFITS OF HOTEL INFORMATION MANAGEMENT SYSTEM

Hotel Information management system is able to automate the process of Hotels. It is useful for the authorities which keeps track of all the users registered in a particular state. The authority can add hotel packages, room details, and availability of rooms, online booking and other packages.

The following steps that give the detailed information of the need for electronic management items are:

➢ **Performance**: During past several decades, the records are supposed to be manually handled for all activities. The manual handling of the record is time consuming and highly prone to error. To improve the performance of the Hotel management System, the computerized system is to be undertaken.

➢ **Efficiency**: the basic need of this application is efficiency. The website should be efficient so that whatever the user submits any detail the application is updated immediately and automatically. This record will be useful for others instantly.

➤ **Control**: The complete control of the electronic system is under the hands of authorized persons only who have the password to access the system and illegal access is not permitted. Control is entirely in the hands of the administrator and the other members have the rights to see the records not to change any transaction entry.

➤ **Security**: Security is the main criteria for electronic hotel management system. Since illegal access may corrupt the database and ensure protection of the sored data.

2.9 REVIEW OF PREVIOUS LITERATURE

2.9.1 DEVELOPMENT OF MANAGEMENT SYSTEM

One project relating to the proposed system was titled "Development Of Management System". The project was done by students of Ajayi Crowther University named Matti Olarenwaju M. and Jenfa Abayomi J. in partial fulfilment to their bachelor degrees in Computer Science. The system is a web based system for management of a hotel and its day to day activities. The technologies used to design and implement this system were: Microsoft Visual Studio, Visual Basic.net and .NET framework Platform Architecture.

As rightly observed by Matti Olarenwaju M. and Jenfa Abayomi J. (Ajayi Crowther University, 2011), Hotel Information Management System is a technique that is used in the hospitality industry to provide satisfactory services to Customers, improve company performance and make Hotel management easier. They also noted that the ability to manage a hotel through electronic means by multitude of choices such as web and mobile technologies is instantly attractive. Such facilities should also overcome constraints associated with the existing manual method of managing a hotel. There is no doubt that electronic hotel management offers a convenience that would be appreciated by many people but it also has many challenges such as security issues within the system itself, large scale deployment of the software and also protecting the server from malicious attacks especially when the service is opened to the internet.

This project study underwent few challenges such as the lack of e-payment system on the customer booking portal, lack of centralized management services (Asset Register, Staff Records, and Payroll System).

2.9.2 HOTEL INFORMATION MANAGEMENT SYSTEM

Another project related to the topic was carried out by Wong PohKian (School of Arts and Science Tunku Abdul Rahman College Kuala Lumpur,2010)in partial fulfilment of his bachelor degrees also noted that Hotel information Management Systems are becoming increasingly popular due to a rise in the need for more hospitality service providers hence any newly developed software must be able to meet all the services that the Manager would require to provide for the ever increasing needs of the customers and these presents a lot of challenges for the Application developers in order to meet these needs.

The system consisted of the following modules:

➢ Payroll Module
➢ Room Maintenance Module
➢ Food Ordering and Delivery Module
➢ House Keeping Scheduling Module
➢ E-Newsletter Subscription Module

The system was designed using .NET Framework (version 3.5), Microsoft visual Studio 2010, and MSSQL Server 2008.

2.10 OBJECT ORIENTED METHODOLOGY

Object-oriented programming is an approach to designing modular, reusable software systems. Although discussions of object-oriented technology often get mired in the details of one language vs. the other, the real key to the object-oriented approach is that it is a modelling approach first (Booch, Grady 1986). Although often hyped as a revolutionary way to develop software by zealous proponents, the object-oriented approach is in reality a logical extension of good design practices that go back to the very beginning of computer programming. Object-orientation is simply the logical extension of older techniques such as structured programming and abstract data types.

Object-oriented analysis and design is the principal industry-proven methodology for developing high-quality object-oriented systems. This prevailing software development methodology involves three aspects: object-oriented analysis, which deals with the design requirements and overall architecture of a system, and is focused on describing what the system should do in terms of key objects in the problem domain; object-oriented design , which translates a system architecture into programming constructs (such as interfaces, classes, and method descriptions); and object-oriented programming, which implements these programming constructs.

The fundamental idea behind an object-oriented language is object decomposition, breaking the complex software system down into its various objects, combining the data and the functions that operate on the data into a single unit, the object. Objects are discussed and built by modeling real-world instances. A typical object oriented system consists of a number of cooperating objects, each of which may or may not collaborate with other objects in order to achieve some task for the user. Real-world objects display the characteristic of high cohesion, they maintain a single theme or focus, in turn, and software objects model real-world objects. This form of object decomposition provides a natural way of breaking the problem down into isolated, manageable parts. In many cases, the development effort shifts from writing a new code, to assembling existing objects in new and innovative ways to solve a problem. Thus, object-oriented analysis and design methodology cuts down development time and costs, leading to faster time to market and significant competitive advantage, and enables producing more flexible, modifiable, easily maintainable object-oriented systems.

The goals of object-oriented programming are:

- Increased understanding
- Ease of maintenance.
- Ease of evolution.

2.11 MICROSOFT VISUAL STUDIO

Microsoft visual studio is an integrated development environment (IDE) from Microsoft. It can be used to develop console and graphical user interface applications along with Windows Forms applications, web sites, web applications, and web services in both native code together with managed code for all platforms supported by Microsoft Windows, Windows Mobile, Windows CE, NET framework, NET compact Framework and Microsoft Silverlight.

Visual studio includes a code editor supporting IntelliSense as well as code refactoring. The integrated debugger works both as source-level debugger and machine level debugger. Other built in tools include a forms designer for building GUI applications, web designer, class designer, and database schema designer. It accepts plug-ins that enhance the functionality at almost every level-including adding support for source-control systems and adding new toolsets like editors and visual designers for domain-specific languages or tool sets for other aspects of software development life cycle.

Visual Studio supports different programming languages by means of language services, which allow the code editor and debugger to support (to varying degrees) nearly any programming language , provided a language specific service exists. Built in languages include; C/C++ (via visual C++). VB.NET (via Visual Basic. NET), C# (via Visual C#), and F# (as of visual Studio 2010). Support for other languages such as M, Python, and Ruby among others is available via language services installed separately. It also supports XML/XSLT, HTML/XHTML, JavaScript and CSS individual language-specific versions of Visual Studio.

2.11.1 .NET FRAMEWORK PLATFORM STUDIO

Microsoft visual studio programs run on the .NET framework, an integral component of Windows that includes a virtual execution system called the common language runtime (CLR) and a unified set of class libraries. The CLR is Microsoft's commercial implementation of the common language infrastructure (CLI), an international standard that is the basis for creating execution and development environments in which languages and libraries work together seamlessly.

Source code written with Visual Basic is compiled into an intermediate language (IL) that conforms to the CLI specification. The IL code, along with resources such as bitmaps and strings, is stored on disk in an executable file called an assembly, typically with an extension of .exe or .dll. An assembly contains a manifest that provides information on the assembly types, version, and culture and security requirements. (MSDN, 2005)

When the program is executed, the assembly is loaded into the CLR, which might take various actions based on the information in the manifest. Then, if the security requirements are met, the CLR performs lust in time (JIT) compilation to convert the IL into native machine instructions. The CLR also provides other services related to automatic garbage collection, exception handling, and resource management. Code that is executed by the CLR is sometimes referred to as the managed code in contrast to unmanaged code which is compiled into native machine language that targets a specific system.

2.11.2 MICROSOSFT SQL SERVER 2008

The Microsoft SQL server 2008 Database engine is the core service for storing, processing and securing data. The database engine provides controlled access and rapid transaction processing to meet the requirements for the most demanding data consuming applications within your enterprise. The Database Engine also provides rich support for sustaining high availability (MSDN, 2005).

2.12 DATABASE ENGINE

The Database Engine is the core service for storing, processing, and securing data. The database engine provides control, access and rapid transaction processing to meet the requirements of the most demanding data consuming applications within the enterprise. He database engine is used to create relational databases for transactions processing or analytic data processing. This includes creating tables for storing data and database objects such as indexes views and stored procedures for viewing, managing, and securing data. You can use SQL server management Studio to manage the database objects, and SQL Server profiler for capturing server events (MSDN, 2005).

2.12.1 DATABASE ENGINE TASKS

The order of the topics in the database engine documentation follows the main sequence of tasks used to implement a system that uses the Database engine for data storage (MSDN, 2005):

➢ Design and create a database to hold the relational tables or XML documents required by the system.

➢ Implement systems to access and change the stored data in the database. This includes implementing websites or applications that work with the data, and also building procedures that use the SQL server tools and utilities to work with the data

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.1 INTRODUCTION

In this chapter we are taking a look at the management system, the processes, methodology and the steps taken to create the system, we will evaluate the research methodology and elaborate on the basic functionalities of our management system. This approach will be used in order to overcome the challenges highlighted in the previous chapter.

The system is created as an interactive web-based application to replace the current manual system of transaction. This Automated system requires full control on all hotel operations or activities. It is essential due to the fact that the electronic means is more efficient in utility than the manual system.

The Project work will ensure reservation of hotel rooms, staff management, and resource management. A "Use Case" scenario is the room search for room reservation. Users may face difficulties searching between available and booked rooms, but the automated system would search more efficiently with the proficient search algorithm. All details of the rooms are stored in the database servers and can be retrieved or modified with very little stress. Another "Use Case" is the accounts receivable and payable field of the F&A module. The accounts receivable simply captures all funds coming-in with their sources and dates while the accounts payable displays the money going-out of the organization with their destination. The business flow is quite simple; however, to accomplish all these tasks is burdensome for both the customer side and the hotel side without an efficient and integrated hotel management system.

With the HMIS (Hotel Management Information System), Restrictions and access levels can be stipulated to prevent unauthorized or unwanted personnel from any point of operation i.e. workers cannot have access to areas not pertaining to their roles as set by the administrator. The administrator can also decide what operations can be carried out where on the application. For example a staff with the role "Housekeeping" should not be able to modify the schedule set for him/her for the month by the House keeping Manager, and the catering staff should not have access to the "cashier posting" of customer accommodation.

Staff Payroll can be generated and added to records with details from the staff record (HR) and accounting computation.ie specific details from the staff record will be brought up during the preparation of staff salaries and the gross and net pay will be calculated. The Assets Register will enable record keeping of both the fixed asset and floating asset in the organization.

The project simply serves as an ERP (Enterprise resource planner/ Management System) for the hotel organization and should function effectively if utilized properly.

3.2 REQUIREMENT ANALYSIS

In Order for the goals of the automated system to be achieved the design of the HMIS takes the following into consideration:

- The system must make the hotel services fully known to the customer such as the room details and pricing.
- The system must be able to search databases or records to provide quick result based on users query.
- The system should ensure data consistency and no duplication of data no matter how small.
- The system must be accessed only by authorized persons and should indicate the user at any point in time (User Authentication).
- The design (Graphical) must be comprehendible and not clumsy to the user; easy to use, and easy to understand.
- The system should be able to generate reports and print out information on users demand.
- The system must have access levels based on user roles such as Manager-Administrator-Accountant-Other staff.
- The system should generate primary keys in most cases unless specified by user, and the unique keys should be visible.
- The system must carry out only actions specified by the user (browse, modify, delete, add).

3.3 SYSTEM DESIGN

This is the process and art of defining the Architecture, components, modules, interface, and data for a system to satisfy specified requirements by the stakeholder or customer.

The Project is designed in phases to ensure that all necessary fields are covered in the management of the Hotel system. The design entails room reservation which is a crucial aspect of the system, administrator operations which control the entire system, and user activities (Other Staff) and data retrieval.

3.3.1 DATA FLOW DIAGRAMS
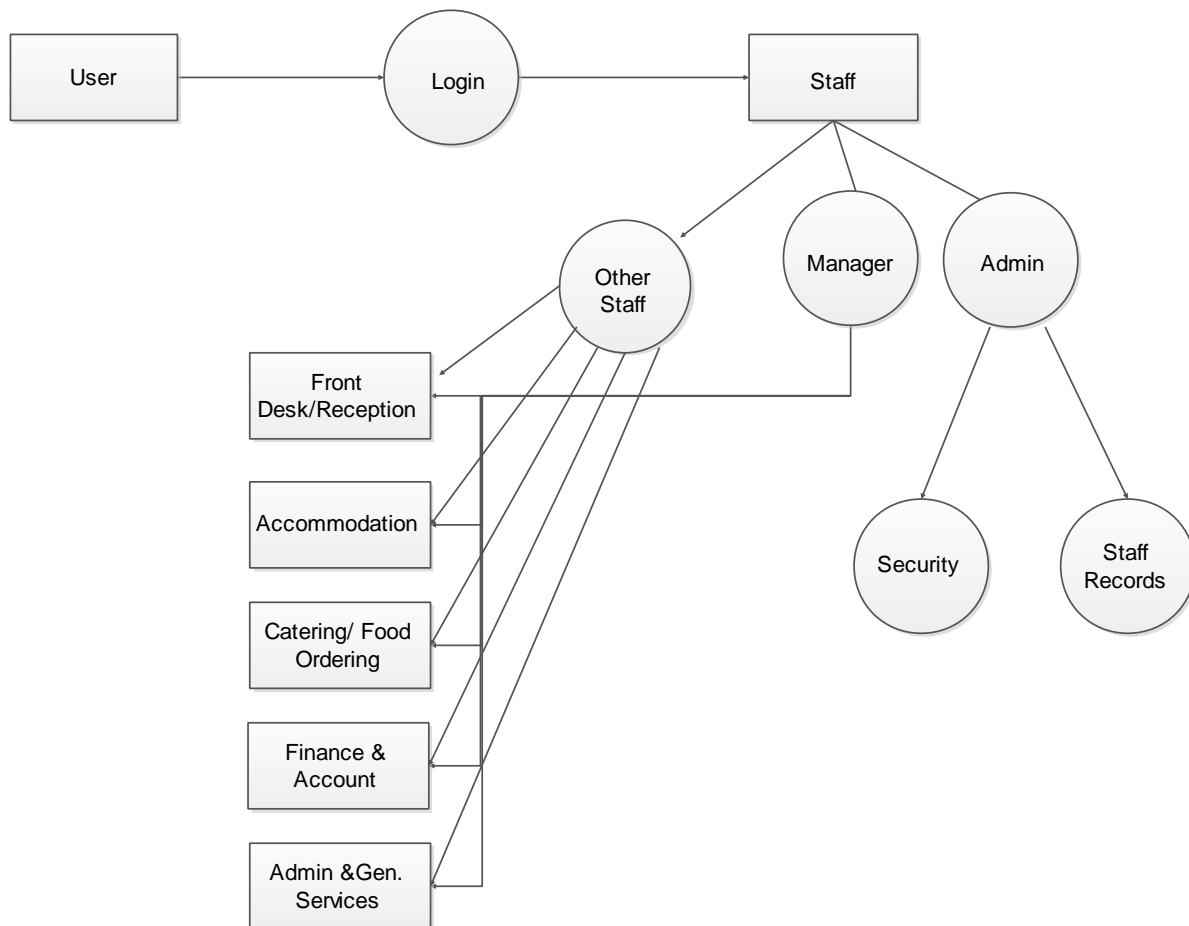
Figure 3.1 Data Flow diagram for Hotel Management System

3.3.2 PROJECT ARCHITECTURE
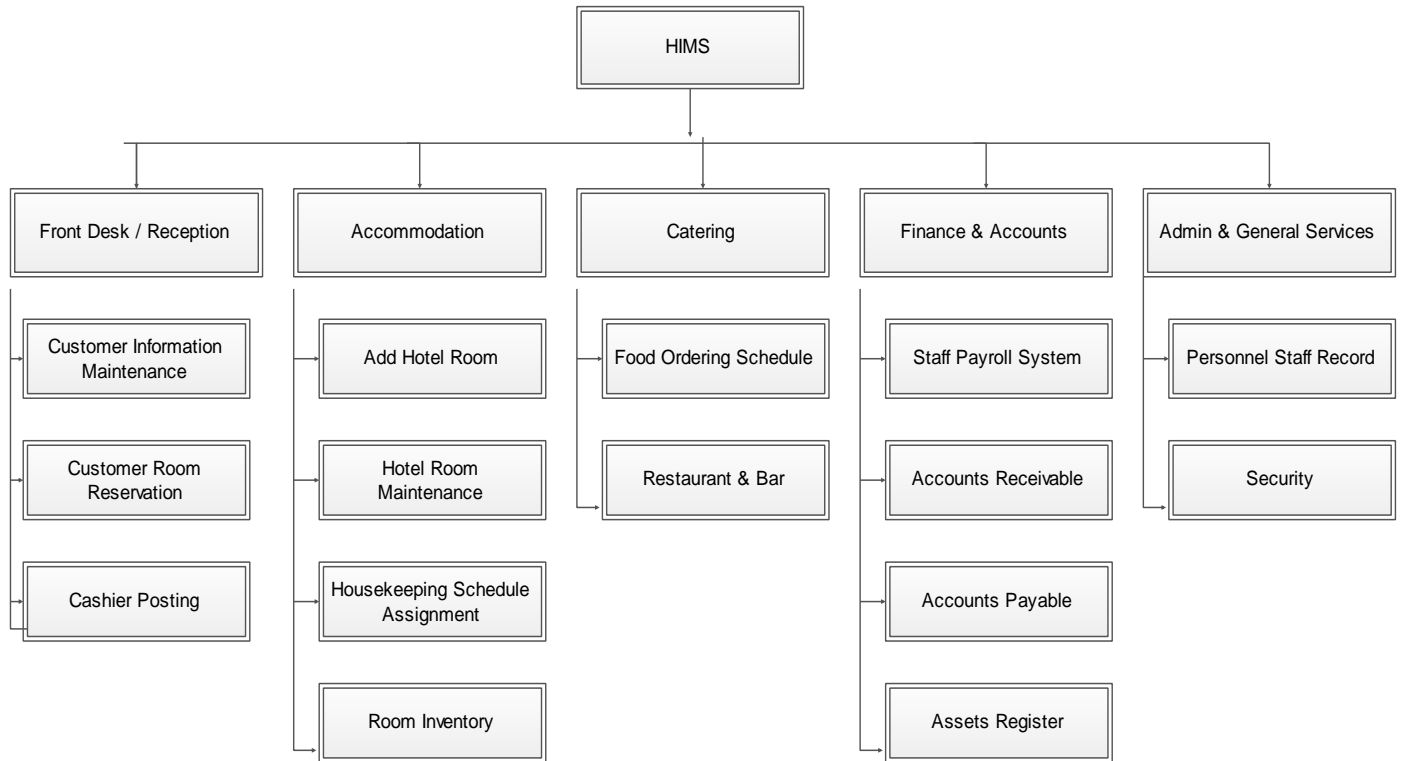
Figure 3.2 Diagram of Hotel Management Information System Project Architecture

3.3.3 PROGRAM ACTIVITY

```
                        ┌──────────┐
                        │  Start   │
                        └────┬─────┘
                             │
                 ┌───────────┴────────────┐
                 │                        │
        ┌────────────────┐        ╱──────────────╲
        │ Authentication │        │   Invalid     │
        │   For Admin    │        │  Username &   │
        │   Password     │        │  Password     │
        └───────┬────────┘        ╲──────────────╱
                │
        ╱───────────────╲
        │ Is Password &  │───────────────────┐
        │ Username Valid │                    │
        ╲───────────────╱
                │ Yes
        ╱───────────────╲
        │ Choose Module  │
        ╲───────────────╱
```
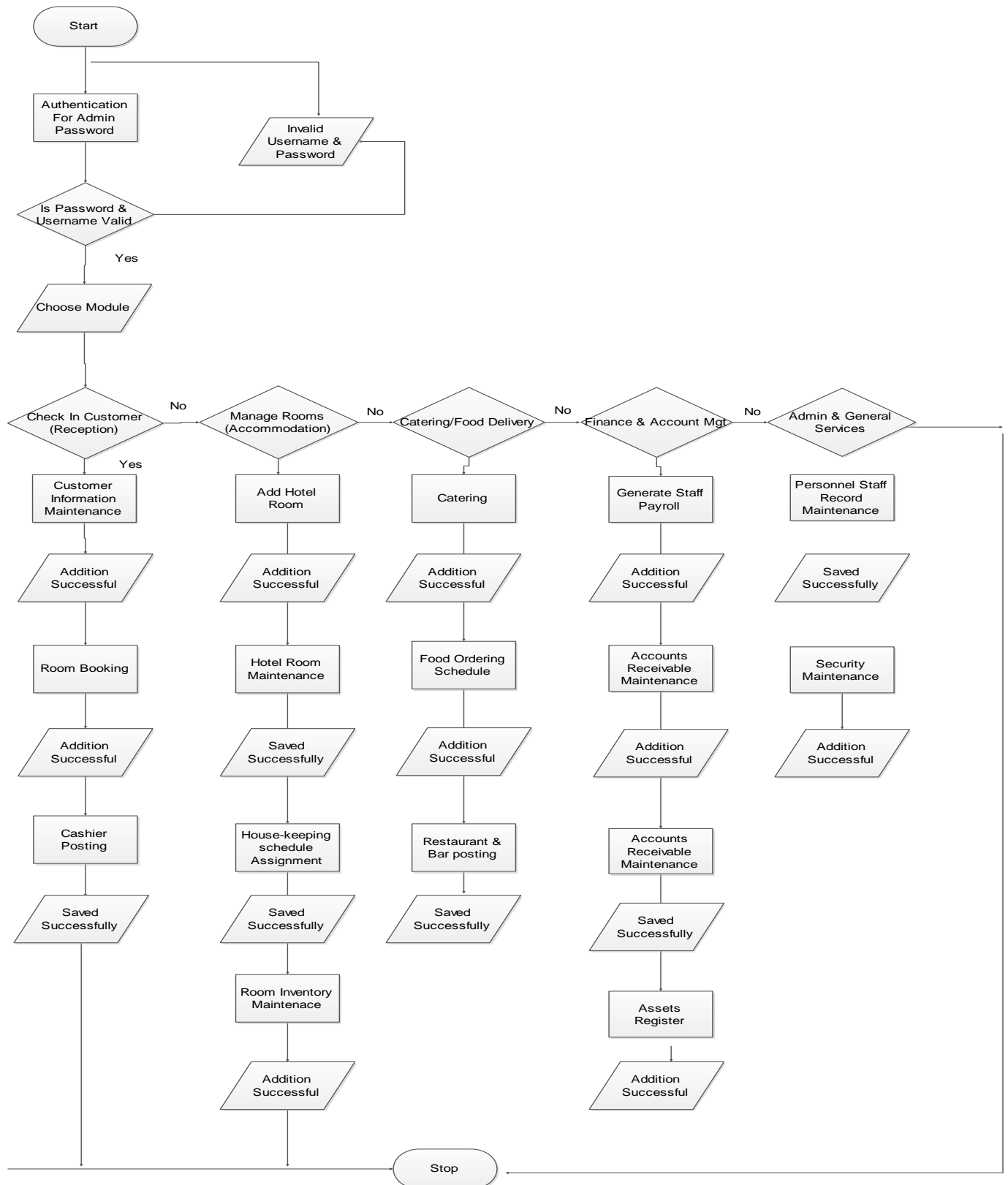
Figure 3.3 Program activity for Hotel Management Information System Modules

3.3.4 PROGRAM ACTIVITY FOR ONLINE BOOKING/RESERVATION

```
                    START
                      │
                      ▼
              ┌──────────────┐
              │   DISPLAY    │
              │    HOTEL     │
              └──────────────┘
                      │
                      ▼
    ┌──────────────────┐          ◇
    │ PROMPT SYSTEM TO │────────▶ IS
    │     PERFORM      │        OPERATION ──────────────┐
    └──────────────────┘          ◇                     │
                                   │                     │
                                   ▼                     │
                           ┌──────────────┐              │
                           │   DISPLAY    │              │
                           │ RESERVATION  │              │
                           │    N PAGE    │              │
                           └──────────────┘              │
                                   │                     │
                                   ▼                     │
                  ┌──────────────────────┐               │
          ┌──────▶│   ACCEPT ROOM        │               │
          │       │   CHECK-IN AND       │               │
          │       │   CHECK-OUT          │               │
          │       └──────────────────────┘               │
          │                   │                           │
          │                   ▼                           │
          │       ┌──────────────────────┐               │
          │       │ SYSTEM CHECKS IF     │               │
          │       │ SELECTED ROOM IS     │               │
          │       │ AVAILABLE WITHIN     │               │
          │       │      DATES           │               │
          │       └──────────────────────┘               │
          │                   │                           │
          │                   ▼                           │
          │              IS ROOM                          │
          │    NO         WITHIN       YES                │
          │   ◇───────    DATE    ───────◇                │
          │   │                         │                 │
          │   ▼                         ▼                 │
    ┌───────────┐              ┌──────────────┐           │
    │   ROOM    │              │   ACCEPT     │           │
    │ SELECTED  │              │ CUSTOMER'S   │           │
    │    NOT    │              │  DEPOSIT     │           │
    │ AVAILABLE │              │  BASED ON    │           │
    └───────────┘              │  CAPACITY    │           │
                               └──────────────┘           │
                                       │                  │
                                       ▼                  │
                               ┌──────────────┐           │
                               │    SAVE      │           │
                               │ RESERVATION  │           │
                               │ INFORMATION  │           │
                               │   FOR THE    │           │
                               │  CUSTOMER    │           │
                               └──────────────┘           │
                                       │                  │
                                       ▼                  │
                               ┌──────────────┐           │
                               │    SAVED     │           │
                               │ SUCCESFULLY  │           │
                               └──────────────┘           │
                                       │                  │
                                       ▼                  │
                                     STOP ◀───────────────┘
```
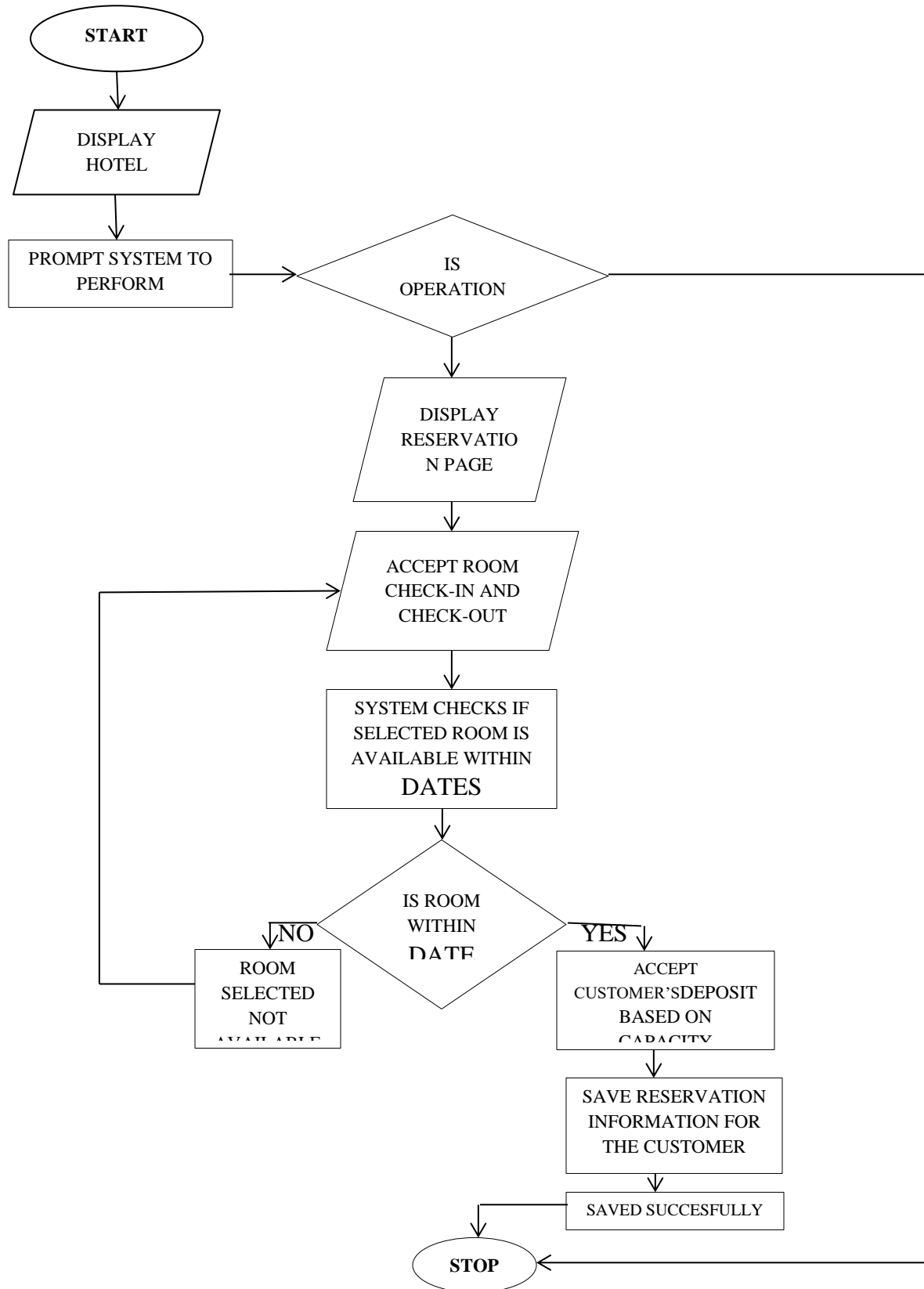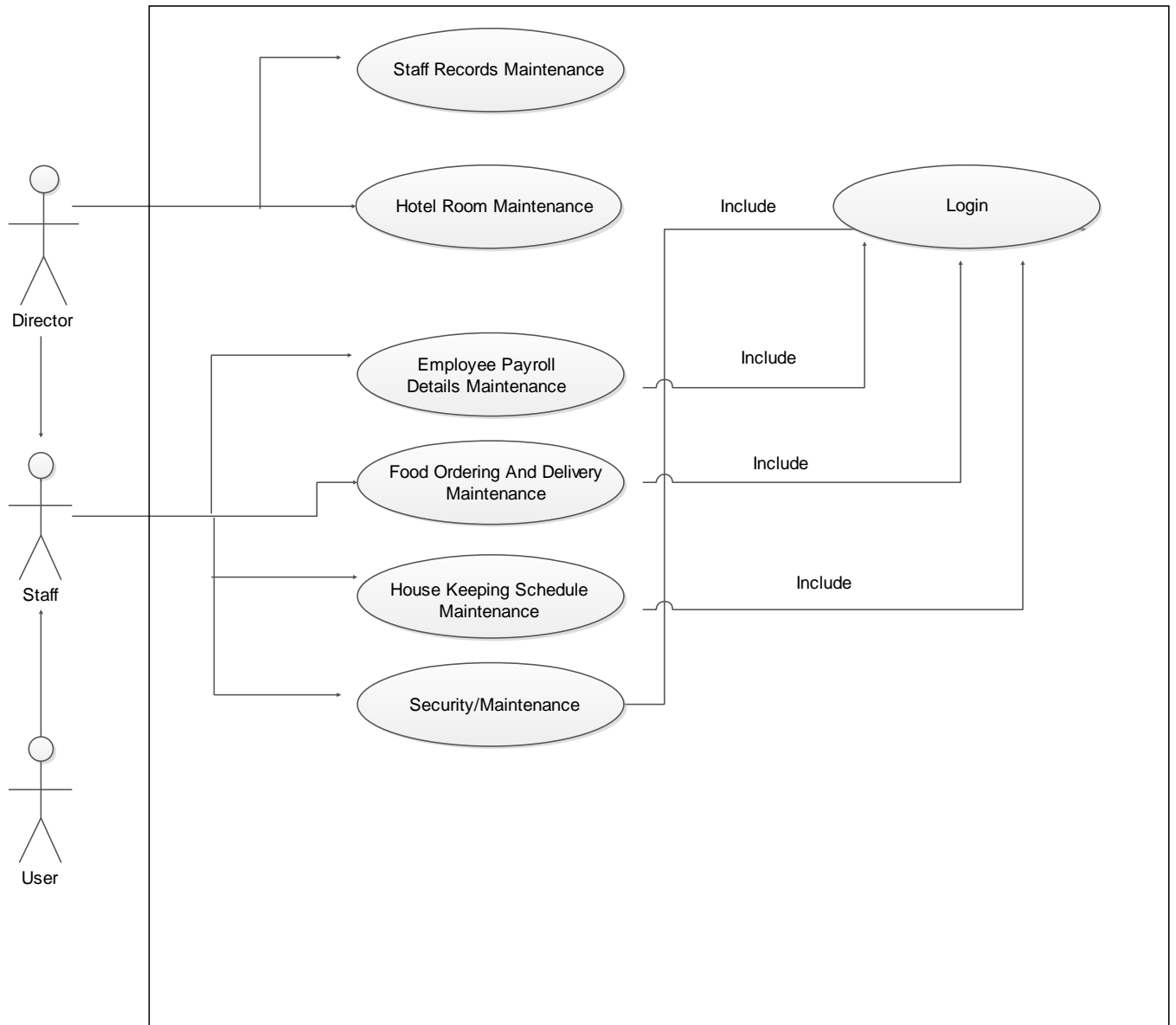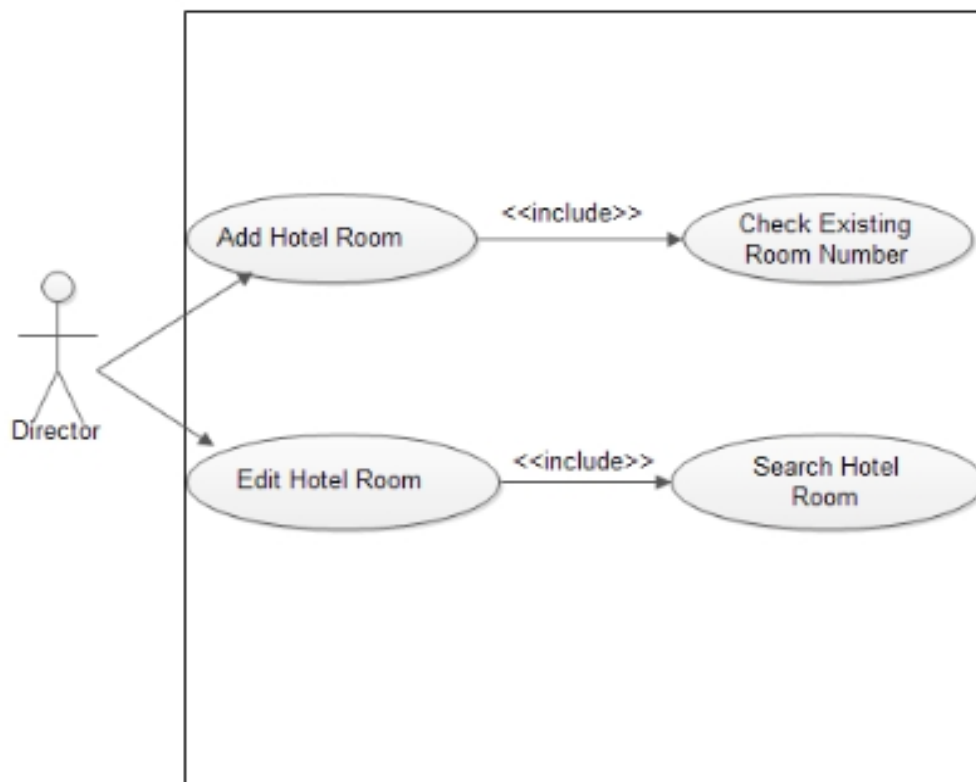
Figure 3.4: Program activity for reservation of rooms

Figure 3.5: Use Case Diagram for the HIMS

3.3.5 Hotel Room Maintenance

Figure 3.6 Use Case diagram for Hotel Room Maintenance

USE CASE DESCRIPTION FOR HOTEL ROOM MAINTENANCE

Use Case Name: Hotel Room Maintenance Module

Brief description: This case enables the director (Accommodation) to add a hotel room and update the room information. It also aids frequent room status update whether room is vacant, occupied, housekeeping, repairs etc.

Actor: Director

Actor Action	System Response
User Selects "Room Maintenance"	Display the Main-menu
	Display sub-Menu: Add Room Number
	Display sub-Menu: Room Type Maintenance
	Display sub-Menu: Room Rates Maintenance
	Display sub-Menu: Room Status Maintenance

- If the sub-menu selected is "Add Hotel Room", The S-1 Add Hotel Room sub-flow is performed.
- If the submenu selected is "Edit Hotel Room", The S-2 Edit Hotel Room sub-flow is performed.

Sub-Flows

S-1

The System will check on all data that user keys in the required field on data type, maximum length, correct format, and a unique ID which does not allow any duplicate data. If all validation is valid, then the operation will be successful otherwise an error message will be displayed.

The system will display all hotel room information in this module. When the director clicks on the "edit" button of the selected field, all data will be post into the text or dropdown-list for the director to update the record. The System will check on all data that user keys in the required field on data type, maximum length, correct format, and unique ID which does not allow any duplicate data. If no error occurs, the director is allowed to update the record and all information will be updated.

3.3.6 Payroll Generation
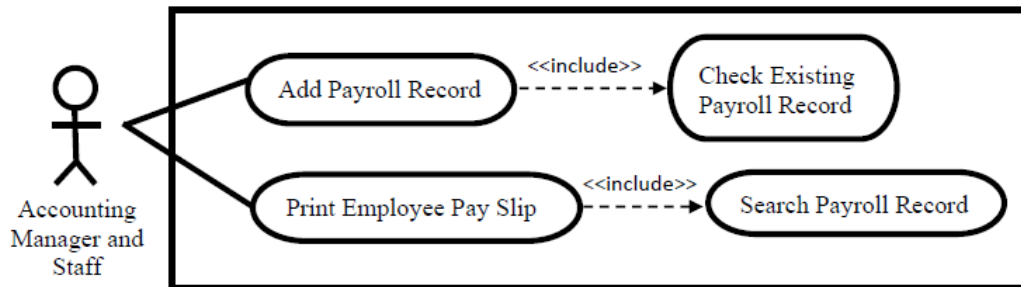
Figure 3.7 Use Case diagram for Employee Payroll Maintenance

USE CASE DESCRIPTION FOR EMPLOYEE PAYROLL DETAILS MAINTENECE MODULE

USE CASE NAME: EMPLOYEE PAYROLL DETAILS MAINTENECE MODULE

BRIEF DESCRIPTION: This use case allows Accounting manager and staff to add and print the entire company employee payroll records.

Actor: Accounting Manager and Staff.

Actor Action	System Response
User Selects "Payroll" In the Finance & Account Module	Display The main menu Display sub-menu: Add payroll record and print employee pay slip.

- If the Sub-menu selected is "Add Payroll Record", The S-1: Add payroll record sub-flow is performed.
- If the Sub-menu selected is "Print Employee Pay slip", The S-2: Print Employee Pay slip sub- flow is performed.

Sub-Flows

S-1

The Accounting Manager and staff are able to add all employee pay roll records by calculating their monthly salary and allowance. They can add the employee records monthly or yearly. Modification is needed when necessary fields need to be updated.

S-2

The accounting Manager and staff are able to print the employee pay slip by entering the desired month and year and generate the report for printing.

Alternative Flows/Exceptional Flow

A-1 step S-1

When the accounting manager or staff is adding the employee payroll record, few fields are required to be entered instead of calling from the database, such as month and year for the employee salary. The data type must be entered correctly; else an error message will be

displayed to alert the user. An example is the basic allowance. The basic salary is stored on the database based on the designation of the staff

A-2 Step S-2

When there is an empty textbox such as selected year in this module, the system will block the update process and will display "The year field cannot be blank' message to the user. Once the format is valid it will be successfully updated.

3.3.7 Food Ordering Maintenance
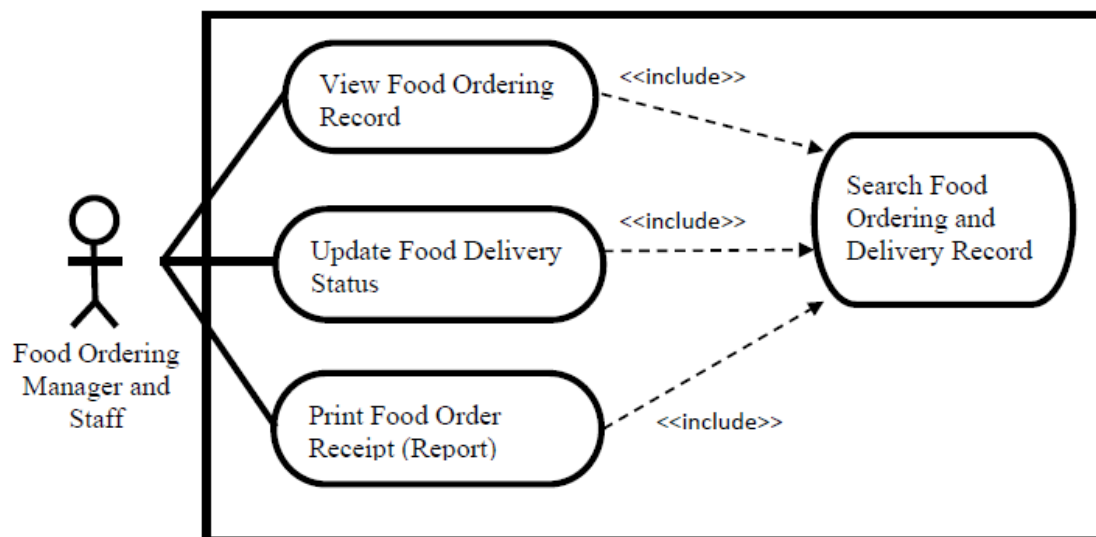
Figure 3.8 Use case diagram for food ordering and delivery

USE CASE DESCRIPTION FOR FOOD ORDERING AND DELIVERY MAINTENANCE MODULE

Use Case Name: Food ordering and Delivery Maintenance Module

Brief Description: This use case allows Housekeeping Manager and Staff to view customer food order and allows them to search for undelivered food, update the food delivery status and print the customer's order receipt.

Actor: Hose keeping Manager and Staff.

Actor Action	System Response
User selects "Food Ordering" and Delivery Maintenance	Display the Main-menu Display Sub-menu: View Food-Ordering Record, Update food Delivery Status and Print Food Ordering Receipt.

- If the sub-menu selected is "view food ordering record', The S-1: view food ordering record sub-flow is performed.
- If the sub-menu selected is "Update food delivery status", The S-2: Update food delivery status sub-flow is performed.
- If the sub-menu selected is "Print Food Order receipt", The S-3: Print Food Order receipt sub-flow is performed.

Sub-Flows

S-1

View Food Ordering Record

Food ordering Manager and staff are able to view all customer food order. They can search or filter customer order by delivery status. For undelivered order, they willprepare the cujstomer order and deliver it as soon as possible.

S-2

Update Food Delivery Status

When the food delivery staff has successfully delivered the customer order, he/she should update the delivery status manually from undelivered to delivered.

S-3

Print Food Order Receipt

Before the food delivery staff should deliver the customer order, he/she should print out the customer order receipt and collect the money from the customer on delivery.

Alternative Flow/Exceptional Flow

A-1 Step S-3

When the food delivery staff wishes to print the customer order receipt, the delivery staff should enter the customer room ID, if the ID doesn't exist or is entered in the wrong format, an error message will be displayed to notify the user. If the delivery staff doesn't enter any room ID a message box with "Please fill in the Room ID" will be displayed.

3.3.8 House Keeping Maintenance
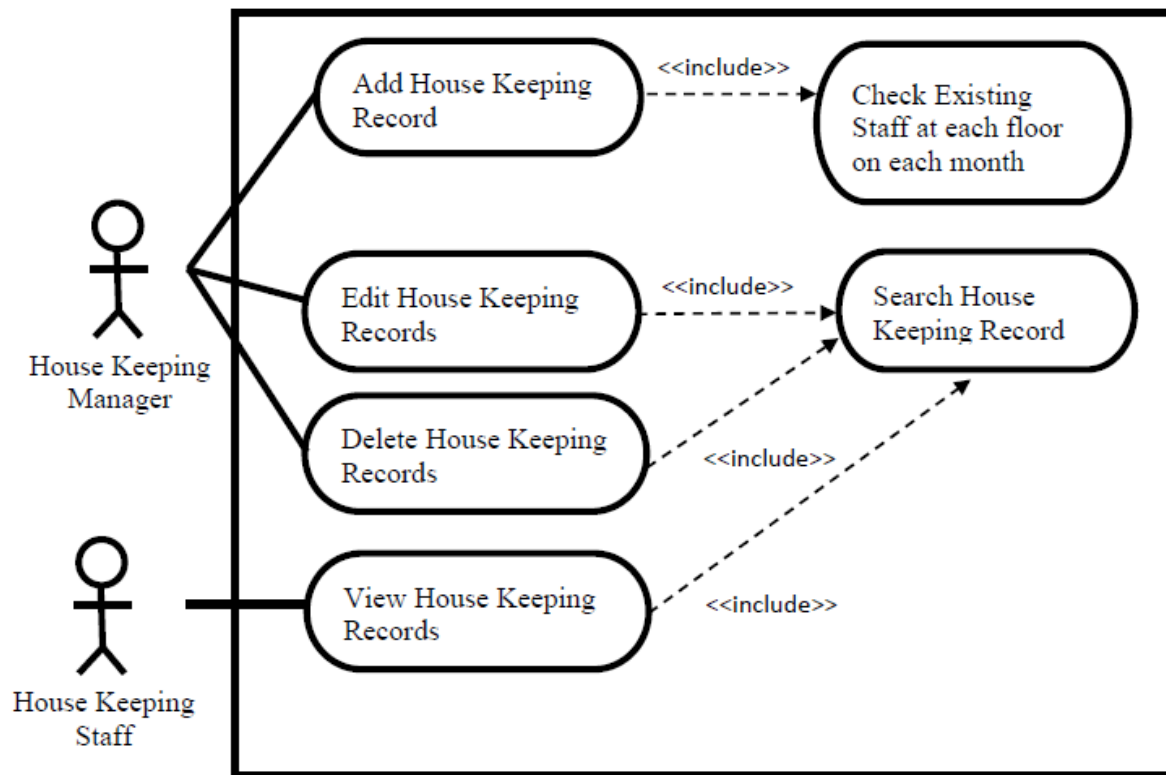
Figure 3.9 Use case diagram for Housekeeping Schedule Maintenance

USECASE DESCRIPTION FOR HOUSEKEEPINGSCHEDULE MAINTENECE MODULE

Use Case Name: House Keeping Schedule Maintenance Module

Brief Description: This use case allows the house keeping manager to assign the duty schedule of housekeeping staff by month. Besides, it also allows the housekeeping manager to update the records and delete the records. The housekeeping staff is only allowed to view their schedule.

Actor: House Keeping Manager, House Keeping Staff.

Actor Action	System Response
User Selects "House-Keeping" in the Accommodation Module	Display The Main-menu Display Sub-menu: Add House-Keeping record, Edit House-Keeping record, Delete and View House-Keeping record.

- If the sub-menu selected is "Add House Keeping Record", The S-1: Add House Keeping Record sub-flow is performed.
- If the sub-menu selected is" Edit House Keeping Record", The S-2: Edit House Keeping Record sub-flow is performed.
- If the sub-menu selected is "Delete House Keeping Record", The S-3: Delete House Keeping Record sub-flow is performed.
- If the sub-menu selected is "View House Keeping Record" The S-4: Add House Keeping Record sub-flow is performed.

Sub-Flows

S-1

Add House Keeping Record

House Keeping Manager is able to add housekeeping record. Every month, two housekeeping staff is assigned to a floor e.g. ground floor. Once the save button is clicked the process is validated, and the record is added successfully else an error message is displayed.

S-2

Edit House Keeping Record

The housekeeping Manager is able to update the records, but only two staff are assigned in the update also. Once the save button is clicked the process is validated, and the record is added successfully else an error message is displayed.

S-3

Delete House Keeping Record

The housekeeping Manager is able to delete the records, and one the record is deleted the "deleted successfully message is displayed".

S-4

View House Keeping Record

Housekeeping staff is able to check on their duty schedule by entering their ID's. The System will Display information about their schedule which includes floor number, month of duty, and partner.

3.4 DATABASE DESIGN AND TABLE STRUCTURES

The data in the system has to be stored and retrieved from the database. Designing the database is part of the system design. Data elements and data structures to be stored have been identified at the analysis phase. They are structured and put together to design the data storage and retrieval system. A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently.

The general objective of the Hotel Management Information System is to make record access quick, easy, inexpensive and flexible to the user. Relationships are established between the data items, and unnecessary data items are removed. Normalization is done to get an internal consistency of data and to have minimum redundancy and maximum stability. This ensures minimizing data storage required, minimizing chances of data inconsistencies and optimizing for updates, The MS Access database has been chosen for developing the relevant databases.

The choice of access id due to the following reasons:

- Access database program and Microsoft SQL-server comes at no extra cost and it is available on every computer running a Microsoft operating system which is the most popular operating system as at the time of the writing of this project report. Designing the prototype database for our expert system which is a desktop based program, Access and its Microsoft SQL-server is cost effective, easy to understand and it is a readily available option.

- SQL which stands for Structured Query Language is a defining standard in database management. With Access having this standard through its Microsoft SQL-server and the provision.

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

Table 3.1: Cashier

FIELD	DATATYPE	WIDTH	CONTRAINT/COMMENT
CustomerId	Nchar	10	Primary Key
AmountPaid	Money		
Receipt	Nchar	10	
NameOfAccount	Char	50	

Table 3.2: Customer details

FIELD	DATATYPE	WIDTH	CONTRAINT/COMMENT
CustomerID	Int		Primary Key
Name	Char	100	
Address	Nvarchar	Max	
ArrivingFrom	Char	100	
TransistingTo	Text		
NoOfNights	Int		
Occupation	Char	250	
telephone	Char	20	
Sign	Char	50	

Table 3.3: Food Order

FIELD	DATATYPE	WIDTH	CONSTRAINT/COMMENT
Food_Order_Id	Nchar	20	Primary Key
Food_Id	Nchar	30	
Food_Type	Char	100	
Quantity	Int		
Total	Money		
DeliveryStatus	Char	10	

Table 3.4: Housekeeping

FIELD	DATATYPE	WIDTH	CONSTRAINT/COMMENT
HousekeepingID	Varchar	50	Primary Key
Floor_ID	Varchar	50	
Month	Text		
AssignTo2	Varchar	50	
AssignTo2	Varchar	50	

Table 3.5: Obtain ID

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
UniversalID	Numeric	18	Primary Key
SourceID	Int		
Description	Char	100	

Table 3.6: Passwords

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
UserID	Varchar	50	Primary Key
UserName	Varchar	50	
Password	Varchar	50	

Table 3.7: Room Rates

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
RoomRateID	Int		Primary Key
Room Number	Int		
RoomFloor	Char	1	
RoomType	Char	1	
RoomRate	Money		
NoofPerson	Int		
ExtraAdultRate	Money		
ExtraChildRate	Money		
DateAdded	Datetime		
AddedByFK	Int		
DateModified	Datetime		
LastUserFK	Int		

Table 3.8: Room Status

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
StatusID	Int		Primary Key
Status	Nvarchar	50	
dateAdded	Datetime		
AddedByFK	Int		
DateModified	Datetime		
LastUserFK	Int		

Table 3.9: Room type

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
RoomTypeID	Int		
RoomNo	Int		
RoomFloor	Varchar		
RoomType	Nvarchar	50	
DateAdded	Datetime		
AddedByFK	Int		
DateModified	Datetime		
LastUserFK	Int		

Table 3.10: Room Allocation

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
CustomerId	Int		Primary Key
CustomerName	Char		
AttendingOfficer	Char		
Date	Datetime		
RoomAllocated	Nvarchar		
Condition	Text		
ActionsTaken	Text		

Table 3.11: User Account

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
UserID	Text		Primary Key
Password	Varchar	50	
FFullName	Text		
MaritalStatus	Text		
ID_Number	Varchar	50	
Gender	Char	1	
Address	Text		
Telephone	Bigint		
RegistrationDate	Date		
Roles	Text		
Email	Varchar	50	
AccountNo	Bigint		
Department	Varchar	50	
Salary	Decimal	(18, 0)	

Table 3.12: Access Role Table

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
RoleID	Char	100	Primary Key
FunctionID	Char	100	
Add	Int		
Edit	Int		
Delete	Int		
Browse	Int		

Table 3.13: Fixed Asset Table

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
AssetNo	Int	(1,1)	Primary Key
Item	Char		
Quantity	Int		
Dateofacc	Date		
Value	Money		

Table 3.14: Function Table

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
FunctionID	Char	50	Primary Key
FunctionName	Char	100	
ModuleID	Char	100	
URL	250	250	

Table 3.15: Inventory

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
InventoryID	Int		Primary key
RoomNo	Smallint		
Item	Char	100	
Unit	Int		
Condition	Varchar		
StaffName	Char	100	

Table 3.16: Module table

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
ModuleID	Char	10	Primary Key
Moduledescription	Char	100	
Diasbled	Int		

Table 3.17: Passwords

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
UserID	Varchar	50	Primary Key
UserName	Varchar	50	
Password	Varchar	50	
RoleID	Char	10	

Table 3.18: Staff Record

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
StaffRecNo	Int	100	Primary key
Surname	Char	100	
Othernames	Varchar	1	
Gender	Char		
DateOfBirth	Date		
DateOfFirstAppointment	Date		
DesignationAndAppointment	Char		
DateOfLAstPromotion	Date		
CurrentPosition	Char	100	
CurrentSalary	Money		
Department	Char	100	
Bank	Varchar	50	
AccountNo	Nvarchar	50	
IdNumber	Nvarchar	15	
PhoneNumber	Nvarchar	100	
Address	Nvarchar	100	
NextOfkin	Varchar	15	
FileNumber	Nvarchar	100	
UserName	Varchar	15	
Password	Varchar	100	
Passport	Image	100	

Table 3.19: Role Type

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
RoleID	Char	100	
RoleDescription	Char	100	

Table 3.20: Room ID

FIELD	DATATYPE	WIDTH	CONSTARINT/COMMENT
RoomID	Int		Primary Key
RoomNo	Smallint		
Price	Money		
RoomType	Text		
RoomFloor	Varchar		

CHAPTER FOUR

SYSTEM IMPLEMENTATION

4.1 HARDWARE REQUIREMENTS

The following are the necessary hardware requirements necessary for the proper implementation of the Hotel Management Information System:

- A 32-bit 2.2GHz processor
- Windows Xp and upwards operating system
- Web Browser (internet explorer recommended)
- 1 GB RAM processor

4.2 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 has to be acquired to implement the new system. In a network backup system no additional resources are require. 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.

4.3 SYSTEM DOCUMENTATION

4.3.1 The Home Page

The Home page of the Hotel management Information system basically consists of five modules which include; the front desk/reception module, Accommodation /Room Allocation module, catering (Restaurant and Bar) Module, Finance and account module and Administration and General Services. It also includes the "Log out" option and an i-frame which posts back all clicked options.
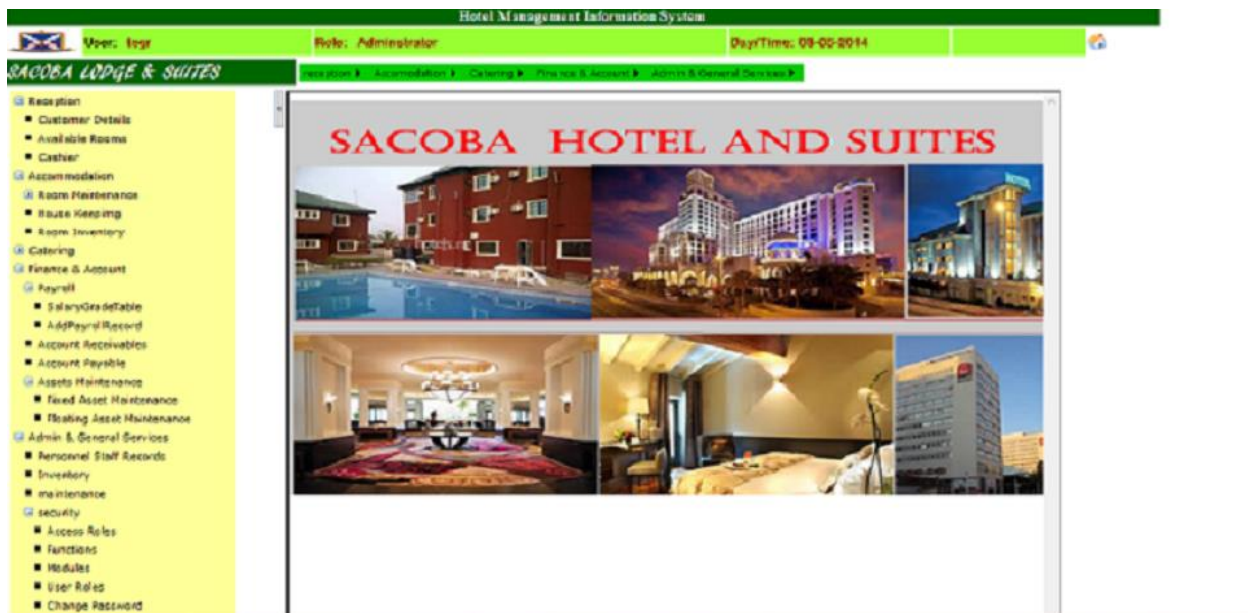
Figure 4.1 Home page

4.3.2 The "Log in" Page

The log in page for the HMIS comprises of a dialog box which allows the user to input their User name and password. It also includes a log in button and a retrieve password for users who forget their password. It was developed using session (user id) to save the user name and password in

order to save the user name and password for future references or uses. The input will be validated when user keys in a value for either of the two required values and when both are deemed correct or validated it advances to the menu page of the application else a message stating that the username and/or password will be displayed.

Figure 4.2 User Login

4.3.3 Front Desk

In the front desk module, customer details will be captured, allocation of customers to a specific room and cashier posting of transactions will take place.

4.3.3.1 Personal details of customer

When a customer arrives at the front desk, the first procedure will be to take down the required details which include His/her full name, number of nights, address, phone number, arriving from and destination, and occupation. This page has also been designed to throw back error messages when certain fields are left blank or unfilled. Added items can be updated (edited), deleted and viewed by authorized staff. A search field has been included to locate specific entries in this record or register.

Figure 4.3 Customer Form

4.3.3.2 Room Allocation of customers

Once personal details of customers have been registered the next procedure will be to allocate the customer to the room of his or her choice (Deluxe, Standard, VIP and Chalet). The page requires most importantly the name of the customer which is selected from the dropdown menu and the room is selected from the list of available rooms in the drop down menu. Entries can also be viewed, edited and deleted. The dropdown list only shows vacant rooms and as each room is allocated to a particular client the room status table is updated to occupy hence excluding the room from the list of available rooms until it is then manually updated to a vacant status.

Figure 4.4 Room Allocation

4.3.3.3 Cashier Posting

This page is the page that follows immediately after the Room allocation process. The page has also been designed to generate Customer Id numbers automatically. There is also a look up field

which allows search for customers already existing in the database. It also has a button or function that generates receipts using Crystal reports. The "Generate" button generates random receipt numbers that cannot be repeated.

Figure 4.5 Cashier Posting

4.3.4 ACCOMMODATION MODULE

4.3.4.1 Room maintenance

This module is to be used by the accommodation Director. It is used to carry out room maintenance on the Hotel Management System. This includes room number, room type, room rates and room status.

Room Type

Add New Items

Room Type ID	
Room Number	
Room Floor	
Room Type	Select Room Type
Date Added	
Added By	
Date Modified	
Last User	

Add New Items   Cancel

Figure 4.6   Room Type

Room Status

Add New Items

Status Id	
Room Number	
Room Floor	
Room Type	
Status	Select Status
Date Added	
Added By	
Date Modified	
Last User	

Add New Items   Cancel

Room Rates

Edit Existing Items

Room Rate ID		Extra Adult Rate	
Room Number		Extra Child Rate	
Room Floor		Date Added	
Room Type		Added By	
Room Rate		Date Modified	
Last User		No of Persons	

Edit Existing Items   Cancel

Figure 4.7 Room Status and Rates

4.3.4.2 Room Inventory

This page simply keeps stock of each room and the state of the room.

Figure 4.8

4.3.5 CATERING MODULE

4.3.5.1 Food Ordering and Delivery

This keeps a record of the food orders of customers in the Hotel. It has entries detailing the food, quantity and selected destination/room. It generates a food order Id on its own and also allows the user/administrator to confirm whether the order/food has been delivered or not.

Figure 4.9 Food Delivery Status

4.3.5.2 Bar Module

This page allows the user/manger to enter the details of the drinks ordered by customers, the quantity and price. This is used in keeping the account of the Hotel.

4.3.6 FINANCE AND ACCOUNT

4.3.6.1 Salary grade Table

This page allows the Manager to input the Salary, allowances and grade of each employee for references and worker's pay check.

Figure 4.10

4.3.6.2 Payroll Record

On this page the administrator can supply all of the employees' earnings and deductions and calculate the total salary of each employee.

Figure 4.11

4.3.6.3 Asset Maintenance

This comprises of fixed asset maintenance; the coordination and maintenance of all assets which cannot be easily converted into cash and floating asset maintenance; care and coordination of movable assets.

Fixed Asset Register

AssetNo	ITEM	NUMBER	DATE	VALUE

Browse

Clear

AssetNo	Item	Quantity	Dateofacc	Value
2	Hiace Bus	4	13/12/2014 00:00:00	7200000.0000
4	Mikano Generators	2	13/12/2014 00:00:00	3800000.0000

Floating Asset Register

AssetNo	ITEM	NUMBER	DATE	VALUE

Add New

Add New Items   Clear

Figure 4.12

4.3.7 PERSONNEL STAFF RECORD

This page allows the administration keep record of all personnel staff in the hotel organization.it captures various details about each individual such as Full name, Next Of Kin, Date Of Birth, Role, ID-Number , Address, File Number, Department,Bank , Account Number as well as passport. All entries can be viewed and deleted.

ID	Document Type	Image	IDD		StaffRecNo	Surname	OtherNames	Gender	DateOfBirth	DateOfFirstAppointmen
9	Babatunde		View	Delete	9	Babatunde	Gideon opeyemi	M	02/09/1992 00:00:00	03/05/2005 00:00:00
8	Albert		View	Delete	8	Albert	Folarin Tolulope	M	08/04/1988 00:00:00	09/05/2006 00:00:00

Figure 4.13

4.3.8 SECURITY

The security of the application is the most crucial aspect of the application as it provides restriction to modules based on authorization. This security entails

-Assign Group Rights: assign specific group to various modules.

-Assign Individual Rights: assign specific individuals to various modules.

-User Profile: Grants access to individual user into the system.

-Change of a Password: Enable change of login parameters into the system.

These pages allow only the System administrator and General Managerto assign group rights and individual rights on the system. For instance a group like the "Front Desk" can be prevented from viewing entries in the "Finance & Accounts" module however a specific user in the group (Front Desk) will be allowed to view entries in the "Finance & Accounts" module.

Assign Individual Rignts

[Errormsg]

MultiView1

View1

UserID	[ ] [...]
UserName	[ ]
Module	[▼]

☐ Add All   ☐ Edit All   ☐ View All   ☐ Delete All

View2

[   ] Search

UserAcess

UserId	[ ]
UserName	[ ]
Password	[ ]
RoleId	[ ]

[Save]   [Cancel]

User Profile

Add New Customer

User ID	[ ]	Staff Name	[ ] [...]
User Name	[ ]	Role	[▼]
Department	[▼]	Access Group	[▼]
Password	[ ]		

Disabled ☐   This is a global user ☐

Figure 4.14

Figure 4.15

4.4 APPLICATION AND SYSTEM TESTING

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 also a complete verification to determine whether the objectives are met and the user requirements are satisfied. The ultimate 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.

4.4.1 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.

4.4.2 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 as a whole. 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.

4.4.3 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.

4.5 SYSTEM MAINTENANCE

Maintenance involves the software industry captive, typing up system resources. It means restoring something to its original condition. Maintenance follows conversion to the extent that changes are necessary to maintain satisfactory operations relative to changes in the user's environment. Maintenance often includes minor enhancements or corrections to problems that surface in the system's operation. Maintenance is also done based on fixing the problems reported, changing the interface with the other software or hardware enhancing the software. Any system developed should be secured and protected against possible hazards. Security measures are provided to prevent unauthorized access to the database at various levels. An uninterrupted power supply should be so that the power failure or voltage fluctuations will not erase the data in the files. Password protections and simple procedures to prevent the unauthorized access are provided to the users. The system allows the user to enter the system only through proper user name and password. After designing and coding the application it only runs in the visual studio environment in order to make the application stand alone and employable to other computer systems it needs to be compiled into an executable format (.exe). Visual studios have an inbuilt program that allows for a one-click solution for this.

4.6 ANALYSIS OF RESULTS FROM THE IMPLEMENTATION OF THE WORK

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.

4.6.1 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.

Therefore, in this phase, we are able to reserve a room each customer based on the day he/she wished to check in and out. This is done by collecting some information from the customer such as arrival date, departure date, customer name, country, state, town, phone number, including number of adult and children. With the acceptance of these data the system display available rooms and compute the changes after which the system accepts the prepaid amount and the store in the database. The above process is depicted in figure 4.7 showing the reservation form. After the first reservation the system is able to identify the customer when next he comes for reservation by entering his/her number. The system ensures data room reserved with the specified data is not made available during reservation for another customer

4.6.2 Administrator's Activities

The administrator controls all the activities of the hotel. The administrator access 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, rate amount, adult charge and child charge after which it saved in the database. The administrator can also perform some other function such as data retrieval.

4.6.3 User's Activities

Some people apart from the administrator can access the system to perform some function. The function performed is based on privilege granted to them by the administrator. Here, the user login to the system as shown in figure 4.2. The user after login tom the system can also reserve rooms for customers. Also, the user takes control of checking in and out of customers through accepting the balance of the customer when checking in as shown in figure 4.4. Similarly, the user can also display data stored in the database.

4.6.4 Retrieval of stored Hotel Record

Another tradition in hospitality sector is to find stored data of the hotel information in the database. In this phase, we are able to get the list of customers, list of rooms available in the hotel, list of reservation, check-in details as well as check-out details. Figure 4.8, shows all the list of reservation with respect to customer's data displaying information about them at a glance. Also the record of rooms available in the hotel can also be displayed. The record of check-in and nut details of customer can also be displayed in the same manner.

4.6.5 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 also 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.
- ➢ **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 and various benefit incurred from the system is enough to entice all hotels and these will go a long way to improve the quality of service provided to the customer. It is therefore suitable for all hotels where high performance of service is of prime importance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY

Traditionally hotel management is done using pen and papers. Hotel Management Information System is required to assist in the management of data and records in the hospitality sector. The system automates the entire process of managing staff information, financial transactions within the hotel (Cashier Posting, Accounts receivable, Accounts payable) monitoring resources (Asset & Personnel). This new system also helps with easy reservation of rooms to the customer thereby minimizing efforts in the process.

The study revealed that several software systems exist for Hotel Management, some of which includes "GuestPoint", "FrontdeskAnywhere", "SKYWARE Hospitality Solution" and much more. A scalable HMIS can be developed and implemented to suit the environment in which it is to be used.

Furthermore it can be concluded from the above discussion that a reliable, secure, fast, and efficient system has been developed replacing the manual and less reliable system the HMIS system can be implemented in hotels for better results regarding the management of customer's data.

5.2 CONCLUSION

In conclusion we believe this project if properly utilized will save time, reduce the amount of work the administration has to do, and will replace the stationery material with electronic apparatus. The system should also serve as a major tool to improving the efficiency in Hotel management. Hence a system with expected results has been developed but there is still room for improvement.

In terms of experience gained through the duration of this project study, the students have been able to have broader knowledge about the management of Hotel organization using manual

and automated procedures. The students have also been able to improve their knowledge in developing enterprise applications. We believe this project will serve the university efficiently in their efforts to automate the Hotel management process of the "SACOBE LODGE".

5.3 LIMITATION

As earlier mentioned the project study covers Reception, accommodation, finance and account, catering, food ordering, administrative, security, and general services transactions in the Hotel management.

However the project has limitations based on these facts

- ➢ The "finance and account" aspect of the HMIS will not capture the budget function; it only captures the accounts receivables and accounts payable.
- ➢ Another limitation of the system is that customer's signature will not be captured. This process might make procedures cumbersome, which is what the study hopes to eliminate; however it captures full details of the customer.
- ➢ The system does not have an online payment option on the online room reservation menu.
- ➢ The system is not designed to run off-line.
- ➢ Due to time constraints certain fields were not included; the software was therefore reduced to covering critical aspect of hotel management.

These limitations were encountered in the course of the study, and appropriate techniques have been applied to ensure the system functions properly thereby eliminates the "stale mate"

5.4 RECOMMENDATIONS

Various benefits associated with this work and the results of the implemented system make it suitable for any hotel. Therefore it is recommended for any hotel especially those with a large turnout of customers and where loss of customer's information is common. This will protect the interest of the Hotel owners and enhance good performance of the services provided.

Due to the fact that there will always be an increase in the expectations and demand of customers and Hotel owners and administrators will always demand greater effectiveness and efficiency of any system and prevention of unauthorized access into the system it is recommended that constant research be carried out and regular updates made to increase the reliability of the present system.

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.

5.5 SUGGESTIONS FOR FURTHER WORK

- ➢ Biometric measures such as fingerprint, retinal scan etc. should be included in the system to ensure good security of the system thereby avoiding impersonation and unauthorized access to stored data thereby preventing loss of vital information.
- ➢ Implementation of a multi modal hotel management control system in delivery of service to customers.
- ➢ Implementation of more modern online facilities that might help prospective customers interact (limitedly) more with the system and the Hotel in general such as PayPal for making online transactions.
- ➢ Adequate provision should be made for customers to interact with authorized users of the hotel for reservation using their mobile phones.

REFERENCE

Bardi J.A (2011). Wiley: Hotel Office Management 5th Edition. [online]. Available :

http://eu.wiley.com/WileyCDA/WileyTitle/productCd-

EHEP0001784.html?filter=TEXTBOX [Accessed 27th May 2011].

Ben Ghalia M. and Wang P.P., "Intelligent system to support judgmental business forecasting: the case of estimating hotel room demand," Fuzzy Systems, IEEE Transactions on, vol. 8, pp. 380-397, 2000.

Chandra Narayanaswami, Noboru Kamijoh, Mandayan Raghunath, e.t.c., IBM's Linux

Watch: The Challenge of Miniaturization, IEEE Computer, 33-41, January 2002.

Cognizant Communication Corporation [online]: available at

http;//www.cognizantcommunication.com/[Accessed 15 June,2011]

David Trastour, Claudio Bartolini, Chris Preist, Semantic web support for the Business-to-business e-commerce lifecycle, Proceedings of the eleventh international conference on World Wide Web, May 2002.

Eric Newcomer, understanding Web Services: XML, WSDl, SOAP and UDDI, Addison-Wesley, 2002.

Fallon M.J.O' and Rutherford D.G. (2011). Hotel Management and Operations | CA College of Ayurveda [online]. Available at:

http://www.ayurvedacollege.com/amazon_store/item/0470177144 [Accessed 24 June, 2011].

G.Jingzhi, et al., "Alibaba International: Building a Global Electronic Marketplace," in e-Business Engineering, 2006. ICEBE '06. IEEE International Conference on, 2006, pp. 545-548.

Ghassan Z. Qadah, Requirements, Design and Implementation of E-services, In: IADIS International Conference on Applied Computing 2005, pp 405

Guo J., et al., "CONFENIS Special session on the International Symposium on Electronic Marketplace Integration & Interoperability (EM21'07), in Research and Practical *Issues of Enterprise Information Systems II.* Vol. 255, L. Xu , et al., Eds., ed: Springer Boston, 200, pp. 823.

Koolmanojwong S, "Analysis and Design of b to CE Marketplace for Tourism with UML" M.S. Thesis, Faculty of Science and Technology, Assumption University, Bangkok, Thailand 2000

Liebowitz J.and Beckman T. knowledge Organizations. Saint Lucie Press, Washington, DC, 1998.

Microsoft Developer Network (MSDN) Library for Visual studio 2005: SQL Server 2005, Visual C#.

Ming-Ju Y., et al., "Multicast Services of Digital Television in a new Management Framework," in Intelligent Information Technology Application Workshops, 2008. IITAW '08. International Symposium on, 2008, pp. 269-299.

Ngai E. W.T and Wat F.K.T., "Design and development of a fuzzy expert system for hotel selection," Omega, vol. 31, pp. 275-286, 2003.

Riemer K. and Lehrke C., "Biased Listing in Electronic Marketplaces: Exploring Its Implications in On-Line Hotel Distribution," Int. J. Electron. Commerce, vol. 14, pp. 55-78, 2009.

Santiprabhob P and Koolmanojwong.S, Intelligent Electronic Marketplace for Tourism. 2005"

Special Issue on e-services (SIOE); The problems and potentials of electronic systems, Communications of the ACM, Vol. 47, Iss. 10, October 2004.

W3C, Extensible Markup Language (XML) [online], Available at http://www.w3.org/XML, 2003 [Accessed 22 March, 2014]

Weiser M, The Computer of the 21st century, Scientific American, vol. 265, no. 3, 66-75, 1991.

Wikipedia (Hotel): http://en.wikipedia.org/wiki/Hotel. [Accessed 14 April, 2014]

Wong Poh Kian: The One Hotel Management System. School of Arts and Sciences Tunku Abdul Rahman University, Kuala Lumpur, 2011.

APPENDIX

Menu Page

```vbnet
Partial Class MenuExpand
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As
System.EventArgs) Handles Me.Load
        If Not IsPostBack Then
            lblTime.Text = Format(Now, "dd-MM-yyyy")
            lblUserName.Text = Session("StaffName")
            [lblRoleID].Text = Session("RoleID")
        End If
    End Sub


End Class
```

```
                    -------------------------------
                                 PAYROLL
                    -------------------------------
```

```vbnet
Imports System.Data
Imports System.Data.SqlClient
Partial Class payroll
    Inherits System.Web.UI.Page
    Dim MiscClass As New MiscClass

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As
System.EventArgs) Handles Me.Load
        If Not IsPostBack Then
            haccess.Value = "1"
            msg.Text = "Add New"
            MultiView1.ActiveViewIndex = 0
            ' MultiView2.ActiveViewIndex = 0
            Cancelfield()
        End If
    End Sub

    Sub Cancelfield()
        [LblFullName].Text() = ""
        LblRole.Text = ""
        [LblFileNumber].Text = ""
        [LblGender].Text = ""
        [LblBank].Text = ""
        [LblAccountNo].Text = ""
        fldUserID.Text = ""
        fldSearch.Text = ""
```

```vb
        fldBasicSalary.Text = "0.0000"
        fldHousingAllowance.Text = "0.0000"
        fldTransportAllowance.Text = "0.0000"
        fldMealSubsidy.Text = "0.0000"
        fldMedicalAllowance.Text = "0.0000"
        fldDressingAllowance.Text = "0.0000"
        fldLeaveAllowance.Text = "0.0000"
        fldPension.Text = "0.0000"
        fldTax.Text = "0.0000"
        fldSalaryAdvance.Text = "0.0000"
        fldUnionDues.Text = "0.0000"
        fldMotorVehicles.Text = "0.0000"
        fldCoOperatives.Text = "0.0000"
        fldOthers.Text = "0.0000"
        fldGrossPay.Text = "0.0000"
        fldTotalDeductions.Text = "0.0000"
        fldNetPay.Text = "0.0000"

    End Sub


    Sub CollateData()

        Dim conn As New SqlConnection(DataObject.ConnectionString)
        Dim str As String
        str = "select  * from [SalaryGradeTable] where Role= '" &
Trim(LblRole.Text) & "'"
        Dim comm As New SqlCommand(str, conn)
        conn.Open()
        Dim reader As SqlDataReader = comm.ExecuteReader
        LblRole.Text = ""
        While reader.Read

            LblRole.Text = Trim(reader.Item("Role"))
            fldBasicSalary.Text = Trim(reader.Item("BasicSalary"))
            fldDressingAllowance.Text =
Trim(reader.Item("DressingAllowance"))
            fldHousingAllowance.Text = Trim(reader.Item("HousingAllowance"))
            fldTransportAllowance.Text =
Trim(reader.Item("TransportAllowance"))
            fldMedicalAllowance.Text = Trim(reader.Item("MedicalAllowance"))
            fldTax.Text = Trim(reader.Item("Tax"))
            fldPension.Text = Trim(reader.Item("Pension"))
            fldCoOperatives.Text = Trim(reader.Item("Cooperative"))
        End While
        If Trim(LblRole.Text) = "" Then
            Cancelfield()
        End If
        reader.Close()
        conn.Close()
    End Sub


    Sub retrievedata()
```

```vb
        Dim conn As New SqlConnection("Server=(local);database=Hms;user
id=sa;password=Ymwcydfyc1;")
        Dim str As String
        str = "select * from PayrollRecordTable  where IdNumber= '" &
Trim(fldUserID.Text) & "'"
        Dim comm As New SqlCommand(str, conn)
        conn.Open()
        Dim reader As SqlDataReader = comm.ExecuteReader
        [LblFullName].Text() = ""
        LblRole.Text = ""
        [LblFileNumber].Text = ""
        [LblGender].Text = ""
        [LblBank].Text = ""
        [LblAccountNo].Text = ""
        fldUserID.Text = ""
        fldBasicSalary.Text = "0.0000"
        fldHousingAllowance.Text = "0.0000"
        fldTransportAllowance.Text = "0.0000"
        fldMealSubsidy.Text = "0.0000"
        fldMedicalAllowance.Text = "0.0000"
        fldDressingAllowance.Text = "0.0000"
        fldLeaveAllowance.Text = "0.0000"
        fldPension.Text = "0.0000"
        fldTax.Text = "0.0000"
        fldSalaryAdvance.Text = "0.0000"
        fldUnionDues.Text = "0.0000"
        fldMotorVehicles.Text = "0.0000"
        fldCoOperatives.Text = "0.0000"
        fldOthers.Text = "0.0000"
        fldGrossPay.Text = "0.0000"
        fldTotalDeductions.Text = "0.0000"
        fldNetPay.Text = "0.0000"




        While reader.Read
            [LblFullName].Text = Trim(reader.Item("FullName"))
            LblRole.Text = Trim(reader.Item("Role"))
            [LblFileNumber].Text = Trim(reader.Item("FileNumber"))
            [LblGender].Text = Trim(reader.Item("Gender"))
            [LblBank].Text = Trim(reader.Item("Bank"))
            [LblAccountNo].Text = Trim(reader.Item("AccountNo"))
            fldUserID.Text = Trim(reader.Item("IdNumber"))
            fldCurrentMonth.Text = Trim(reader.Item("CurrentMonth"))
            fldCurrentYear.Text = Trim(reader.Item("CurrentYear"))
            fldBasicSalary.Text = Trim(reader.Item("BasicSalary"))
            fldHousingAllowance.Text = Trim(reader.Item("HousingAllowance"))
            fldTransportAllowance.Text =
Trim(reader.Item("TransportAllowance"))
            fldMealSubsidy.Text = Trim(reader.Item("MealSubsidy"))
            fldMedicalAllowance.Text = Trim(reader.Item("MedicalAllowance"))
            fldDressingAllowance.Text =
Trim(reader.Item("DressingAllowance"))
            fldLeaveAllowance.Text = Trim(reader.Item("LeaveAllowance"))
            fldPension.Text = Trim(reader.Item("Pension"))
            fldTax.Text = Trim(reader.Item("Tax"))
```

```vbnet
            fldSalaryAdvance.Text = Trim(reader.Item("SalaryAdvance"))
            fldUnionDues.Text = Trim(reader.Item("UnionDues"))
            fldMotorVehicles.Text = Trim(reader.Item("MotorVehicle"))
            fldCoOperatives.Text = Trim(reader.Item("Cooperative"))
            fldOthers.Text = Trim(reader.Item("Others"))
            fldGrossPay.Text = Trim(reader.Item("GrossPay"))
            fldTotalDeductions.Text = Trim(reader.Item("TotalDeduction"))
            fldNetPay.Text = Trim(reader.Item("NetPay"))


        End While
        If Trim(fldUserID.Text) = "" Then
            msg.Text = "Error"
        End If
        reader.Close()
        conn.Close()


    End Sub

    Protected Sub Button1_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles Button1.Click

        fldGrossPay.Text =
Convert.ToString(Convert.ToDecimal(fldBasicSalary.Text) +
Convert.ToDecimal(fldHousingAllowance.Text) +
Convert.ToDecimal(fldTransportAllowance.Text) +
Convert.ToDecimal(fldMealSubsidy.Text) +
Convert.ToDecimal(fldMedicalAllowance.Text) +
Convert.ToDecimal(fldDressingAllowance.Text) +
Convert.ToDecimal(fldLeaveAllowance.Text))
        fldTotalDeductions.Text =
Convert.ToString(Convert.ToDecimal(fldPension.Text) +
Convert.ToDecimal(fldTax.Text) + Convert.ToDecimal(fldSalaryAdvance.Text) +
Convert.ToDecimal(fldUnionDues.Text) +
Convert.ToDecimal(fldMotorVehicles.Text) +
Convert.ToDecimal(fldCoOperatives.Text) + Convert.ToDecimal(fldOthers.Text))
        fldNetPay.Text = Convert.ToString(Convert.ToDecimal(fldGrossPay.Text)
- Convert.ToDecimal(fldTotalDeductions.Text))
    End Sub

    Protected Sub cmdaddrecord1_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles cmdaddrecord1.Click
        If Trim(fldUserID.Text) = "" Then
            msg.Text = "The UserID field Cannot Be Blank"
            Exit Sub
        End If
        If Trim(LblFullName.Text) = "" Then
            msg.Text = "The Full Name field  Cannot Be Blank"
            Exit Sub
        End If

        If Trim(LblRole.Text) = "" Then
            msg.Text = "The Role field  Cannot Be Blank"
            Exit Sub
        End If
        If Trim(LblFileNumber.Text) = "" Then
```

```vb
        msg.Text = "The FileNumber field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(LblGender.Text) = "" Then
        msg.Text = "The Gender field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(LblBank.Text) = "" Then
        msg.Text = "The Bank field  Cannot Be Blank"
        Exit Sub
    End If

    If Trim(LblAccountNo.Text) = "" Then
        msg.Text = "The AccountNumber Cannot Be Blank"
        Exit Sub
    End If

    If Trim(fldCurrentMonth.Text) = "" Then
        msg.Text = "The CurrentMonth field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(fldCurrentYear.Text) = "" Then
        msg.Text = "The CurrentYear field  Cannot Be Blank"
        Exit Sub
    End If


    If Trim(fldBasicSalary.Text) = "" Then
        msg.Text = "The BasicSalary field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(fldHousingAllowance.Text) = "" Then
        msg.Text = "The HousingAllowance field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(fldTransportAllowance.Text) = "" Then
        msg.Text = "The TransportAllowance field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(fldMealSubsidy.Text) = "" Then
        msg.Text = "The MealSubsidy field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(fldMedicalAllowance.Text) = "" Then
        msg.Text = "The MedicalAllowance field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(fldDressingAllowance.Text) = "" Then
        msg.Text = "The DressingAllowance field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(fldPension.Text) = "" Then
        msg.Text = "The FileNo field  Cannot Be Blank"
        Exit Sub
    End If
    If Trim(fldTax.Text) = "" Then
        msg.Text = "The Tax field  Cannot Be Blank"
```

```vb
            Exit Sub
        End If

        If Trim(haccess.Value) = "" Then
            msg.Text = "The Access Mode Has Not Been Specified"
            Exit Sub
        End If

        Dim conn As New SqlConnection(DataObject.ConnectionString)
        Dim str As String
        'Dim comm As New SqlCommand
        If haccess.Value = "1" Then

            str = "insert into
PayrollRecordTable(IdNumber,FullName,Role,FileNumber,Gender,Bank,AccountNo,Cu
rrentMonth,CurrentYear,BasicSalary,HousingAllowance,TransportAllowance,Medica
lAllowance,DressingAllowance,LeaveAllowance,Pension,Tax,SalaryAdvance,MealSub
sidy,UnionDues,MotorVehicle,Cooperative,Others,GrossPay,TotalDeduction,NetPay
)values(@IdNumber,@FullName,@Role,@FileNumber,@Gender,@Bank
,@AccountNo,@CurrentMonth,@CurrentYear,@BasicSalary,@HousingAllowance,@Transp
ortAllowance,@MedicalAllowance,@DressingAllowance,@LeaveAllowance,@Pension,@T
ax,@SalaryAdvance,@MealSubsidy,@UnionDues,@MotorVehicle,@Cooperative,@Others,
@GrossPay,@TotalDeduction,@NetPay)"
            Dim comm As New SqlCommand(str, conn)
            'StaffRecNo'
            ' comm.Parameters.Add("@StaffRecNo", System.Data.SqlDbType.Int)
            ' comm.Parameters("@StaffRecNo").Value = Trim(fldStaffRecNo.Text)
            'IdNumber'
            comm.Parameters.Add("@IdNumber", System.Data.SqlDbType.NVarChar)
            comm.Parameters("@IdNumber").Value = Trim(fldUserID.Text)
            'FullName'
            comm.Parameters.Add("@FullName", System.Data.SqlDbType.VarChar)
            comm.Parameters("@FullName").Value = Trim(LblFullName.Text)
            'Role'
            comm.Parameters.Add("@Role", System.Data.SqlDbType.VarChar)
            comm.Parameters("@Role").Value = Trim(LblRole.Text)
            'FileNumber'
            comm.Parameters.Add("@FileNumber",
System.Data.SqlDbType.NVarChar)
            comm.Parameters("@FileNumber").Value = Trim(LblFileNumber.Text)
            'Gender'
            comm.Parameters.Add("@Gender", System.Data.SqlDbType.Char)
            comm.Parameters("@Gender").Value = Trim(LblGender.Text)
            'Bank'
            comm.Parameters.Add("@Bank", System.Data.SqlDbType.VarChar)
            comm.Parameters("@Bank").Value = Trim(LblBank.Text)
            'AccountNo'
            comm.Parameters.Add("@AccountNo", System.Data.SqlDbType.NVarChar)
            comm.Parameters("@AccountNo").Value = Trim(LblAccountNo.Text)
            'CurrentMonth'
            comm.Parameters.Add("@CurrentMonth", System.Data.SqlDbType.Char)
            comm.Parameters("@CurrentMonth").Value =
Trim(fldCurrentMonth.Text)
            'CurrentYear'
            comm.Parameters.Add("@CurrentYear", System.Data.SqlDbType.NChar)
            comm.Parameters("@CurrentYear").Value = Trim(fldCurrentYear.Text)
```

```vb
            'BasicSalary'
            comm.Parameters.Add("@BasicSalary", System.Data.SqlDbType.Money)
            comm.Parameters("@BasicSalary").Value = Trim(fldBasicSalary.Text)
            'HousingAllowance'
            comm.Parameters.Add("@HousingAllowance",
System.Data.SqlDbType.Money)
            comm.Parameters("@HousingAllowance").Value =
Trim(fldHousingAllowance.Text)
            'TransportAllowance'
            comm.Parameters.Add("@TransportAllowance",
System.Data.SqlDbType.Money)
            comm.Parameters("@TransportAllowance").Value =
Trim(fldTransportAllowance.Text)
            'MedicalAllowance'
            comm.Parameters.Add("@MedicalAllowance",
System.Data.SqlDbType.Money)
            comm.Parameters("@MedicalAllowance").Value =
Trim(fldMedicalAllowance.Text)
            'DressingAllowance'
            comm.Parameters.Add("@DressingAllowance",
System.Data.SqlDbType.Money)
            comm.Parameters("@DressingAllowance").Value =
Trim(fldDressingAllowance.Text)
            'LeaveAllowance'
            comm.Parameters.Add("@LeaveAllowance",
System.Data.SqlDbType.Money)
            comm.Parameters("@LeaveAllowance").Value =
Trim(fldLeaveAllowance.Text)
            'Pension'
            comm.Parameters.Add("@Pension", System.Data.SqlDbType.Money)
            comm.Parameters("@Pension").Value = Trim(fldPension.Text)
            'Tax'
            comm.Parameters.Add("@Tax", System.Data.SqlDbType.Money)
            comm.Parameters("@Tax").Value = Trim(fldTax.Text)
            'SalaryAdvance'
            comm.Parameters.Add("@SalaryAdvance",
System.Data.SqlDbType.Money)
            comm.Parameters("@SalaryAdvance").Value =
Trim(fldSalaryAdvance.Text)
            'MealSubsidy'
            comm.Parameters.Add("@MealSubsidy", System.Data.SqlDbType.Money)
            comm.Parameters("@MealSubsidy").Value = Trim(fldMealSubsidy.Text)
            'UnionDues'
            comm.Parameters.Add("@UnionDues", System.Data.SqlDbType.Money)
            comm.Parameters("@UnionDues").Value = Trim(fldUnionDues.Text)
            'MotorVehicle'
            comm.Parameters.Add("@MotorVehicle", System.Data.SqlDbType.Money)
            comm.Parameters("@MotorVehicle").Value =
Trim(fldMotorVehicles.Text)
            'Cooperative'
            comm.Parameters.Add("@Cooperative", System.Data.SqlDbType.Money)
            comm.Parameters("@Cooperative").Value =
Trim(fldCoOperatives.Text)
            'Others'
            comm.Parameters.Add("@Others", System.Data.SqlDbType.Money)
            comm.Parameters("@Others").Value = Trim(fldOthers.Text)
```

```vbnet
            'GrossPay'
            comm.Parameters.Add("@GrossPay", System.Data.SqlDbType.Money)
            comm.Parameters("@GrossPay").Value = Trim(fldGrossPay.Text)
            'TotalDeduction'
            comm.Parameters.Add("@TotalDeduction",
System.Data.SqlDbType.Money)
            comm.Parameters("@TotalDeduction").Value =
Trim(fldTotalDeductions.Text)
            'NetPay'
            comm.Parameters.Add("@NetPay", System.Data.SqlDbType.Money)
            comm.Parameters("@NetPay").Value = Trim(fldNetPay.Text)

            Try
                conn.Open()
                comm.ExecuteNonQuery()
                msg.Text = "Addition Successfull"
                conn.Close()
                'Cancelfield()
            Catch ex As Exception
                msg.Text = ex.Message
            End Try
        End If




    End Sub

    Protected Sub fldUserID_TextChanged(ByVal sender As Object, ByVal e As
System.EventArgs) Handles fldUserID.TextChanged
        Cusomerretrievedata()
    End Sub

    Protected Sub ImageButton1_Click(ByVal sender As Object, ByVal e As
System.Web.UI.ImageClickEventArgs) Handles ImageButton1.Click
        msg.Text = "Add New Customer"
        haccess.Value = "1"
        Cancelfield()
    End Sub

    Protected Sub ImageButton2_Click(ByVal sender As Object, ByVal e As
System.Web.UI.ImageClickEventArgs) Handles ImageButton2.Click
        msg.Text = "Edit Existing Details"
        haccess.Value = "2"
        Cancelfield()
    End Sub

    Protected Sub ImageButton3_Click(ByVal sender As Object, ByVal e As
System.Web.UI.ImageClickEventArgs) Handles ImageButton3.Click
        msg.Text = "Browse Existing Details"
        haccess.Value = "3"
        MultiView2.ActiveViewIndex = 1
        Cancelfield()
    End Sub
```

```vbnet
    Protected Sub ImageButton4_Click(ByVal sender As Object, ByVal e As
System.Web.UI.ImageClickEventArgs) Handles ImageButton4.Click
        msg.Text = "delete Existing Details"
        haccess.Value = "4"
        Cancelfield()
    End Sub

    Protected Sub cmdclear_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles cmdclear.Click
        Cancelfield()
    End Sub

    Protected Sub fldLookUpStaff_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles fldLookUpStaff.Click
        MultiView1.ActiveViewIndex = 1
    End Sub
    Sub LoadData()

        Dim conn As New SqlConnection(DataObject.ConnectionString)
        Dim str As String
        str = "select IdNumber,Surname,Othernames  from StaffRecord "
        str += "  where 1=1 "
        If Trim(cmdSearch.Text) <> "" Then
            str += " and Surname+Othernames+Gender+Role+Department+Bank  like
'%" & Trim(fldSearch.Text) & "%'"
        End If
        Dim comm As New SqlCommand(str, conn)
        conn.Open()
        Dim reader As SqlDataReader = comm.ExecuteReader
        GridView2.DataSource = reader
        GridView2.DataBind()
    End Sub


    Protected Sub cmdSearch_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles cmdSearch.Click
        LoadData()
    End Sub

    Protected Sub GridView2_RowCommand(ByVal sender As Object, ByVal e As
System.Web.UI.WebControls.GridViewCommandEventArgs) Handles
GridView2.RowCommand
        Dim Index As Integer = Convert.ToInt32(e.CommandArgument)
        Dim row As GridViewRow = GridView2.Rows(Index), jj As Integer = 0

        Dim x As String
        x = row.Cells(1).Text
        fldUserID.Text = Trim(x)
        Cusomerretrievedata()
        MultiView1.ActiveViewIndex = 0
    End Sub

    Sub Cusomerretrievedata()

        Dim conn As New SqlConnection("Server=(local);database=Hms;user
id=sa;password=Ymwcydfyc1;")
        Dim str As String
```

```vb
        str = "select rtrim (Surname) +' ' + rtrim (OtherNames) as FullNmae
,IdNumber, Gender,Role,FileNumber,Bank,CurrentSalary,AccountNo from
StaffRecord  where IdNumber= '" & Trim(fldUserID.Text) & "'"
        Dim comm As New SqlCommand(str, conn)
        conn.Open()
        Dim reader As SqlDataReader = comm.ExecuteReader
        [LblFullName].Text() = ""
        LblRole.Text = ""
        [LblFileNumber].Text = ""
        [LblGender].Text = ""
        [LblBank].Text = ""

        [LblAccountNo].Text = ""
        fldUserID.Text = ""


        While reader.Read
            [LblFullName].Text = Trim(reader.Item("FullNmae"))
            LblRole.Text = Trim(reader.Item("Role"))
            [LblFileNumber].Text = Trim(reader.Item("FileNumber"))
            [LblGender].Text = Trim(reader.Item("Gender"))
            [LblBank].Text = Trim(reader.Item("Bank"))

            [LblAccountNo].Text = Trim(reader.Item("AccountNo"))
            fldUserID.Text = Trim(reader.Item("IdNumber"))

        End While

        reader.Close()
        conn.Close()
        CollateData()

    End Sub


    Protected Sub LinkButton1_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles LinkButton1.Click

        Dim conn As New SqlConnection(DataObject.ConnectionString)
        Dim str As String
        str = "select * from PayrollRecordTable "
        Dim comm As New SqlCommand(str, conn)
        conn.Open()
        Dim reader As SqlDataReader = comm.ExecuteReader
        transactions.DataSource = reader
        transactions.DataBind()
    End Sub
    Protected Sub transactions_RowCommand(ByVal sender As Object, ByVal e As
System.Web.UI.WebControls.GridViewCommandEventArgs) Handles
transactions.RowCommand
        Dim Index As Integer = Convert.ToInt32(e.CommandArgument)
        Dim row As GridViewRow = transactions.Rows(Index), jj As Integer = 0

        Dim x As String
        x = row.Cells(1).Text
        fldUserID.Text = Trim(x)
        retrievedata()
```

```vbnet
        MultiView2.ActiveViewIndex = 0

    End Sub

    Protected Sub LinkButton2_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles LinkButton2.Click

        reportPath = "\Reports\Rooms\PayrollRecordTableRpt.rpt"

        SessionFormulae = "1 = 1"

        '           If IsDate(Me.txtMaxDate.Text) = True Then
        'eFormulae.Append("name" & ";'" &
MiscClass.FormatDate(Me.txtMaxDate.Text) & "'")
        'eFormulae.Append(":")
        'End If
        Dim strScript As String =
"<script>window.open('../reports/reports/DefaultODBC.aspx');"
        strScript += "</" + "script>"

        Dim cs As ClientScriptManager = Page.ClientScript :
cs.RegisterClientScriptBlock(Me.GetType(), "anything", strScript)

    End Sub
End Class
```

PERSONAL DETAILS

```vbnet
Imports System.Data
Imports System.Data.SqlClient
Partial Class personal_details
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As
System.EventArgs) Handles Me.Load
        If Not IsPostBack Then
            MultiView1.ActiveViewIndex = 0
            haccess.Value = "1"
            Errormsg.Text = "Add New Customer"
            Cancelfield()
        End If
    End Sub

    Protected Sub add_Click(ByVal sender As Object, ByVal e As
System.Web.UI.ImageClickEventArgs) Handles add.Click
        haccess.Value = "1"
        Errormsg.Text = "Add New Customer"
```

```vb
        Cancelfield()
    End Sub

    Protected Sub LinkButton1_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles LinkButton1.Click
        LoadData()
    End Sub

    Protected Sub ImageButton1_Click(ByVal sender As Object, ByVal e As
System.Web.UI.ImageClickEventArgs) Handles ImageButton1.Click
        haccess.Value = "2"
        Errormsg.Text = "Edit Existing Details"
        Cancelfield()
    End Sub

    Protected Sub ImageButton2_Click(ByVal sender As Object, ByVal e As
System.Web.UI.ImageClickEventArgs) Handles ImageButton2.Click
        haccess.Value = "3"
        Errormsg.Text = "Browse Existing Details"
        MultiView1.ActiveViewIndex = 1
        Cancelfield()

    End Sub

    Protected Sub ImageButton3_Click(ByVal sender As Object, ByVal e As
System.Web.UI.ImageClickEventArgs) Handles ImageButton3.Click
        haccess.Value = "4"
        Errormsg.Text = "delete Existing Details"
        Cancelfield()
    End Sub

    Protected Sub cmdcancel_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles cmdcancel.Click
        Cancelfield()
    End Sub

    Sub Cancelfield()
        If haccess.Value = "3" Then
            cmdSave.Visible = False
        Else
            cmdSave.Visible = True
        End If
        If haccess.Value = "1" Then
            fldname.AutoPostBack = False
        Else
            fldname.AutoPostBack = True
        End If
        If AccessRight(Session("UserID"), "FRO", haccess.Value) = False Then
            Response.Redirect("../AccessDenied.aspx")
        End If

         Select haccess.Value
            Case "1"
                cmdsave.Text = "Add New Items"
            Case "2"
                cmdsave.Text = "Edit Existing Items"
            Case "4"
```

```vb
            cmdsave.Text = "Delete Existing Items"
        End Select
        fldname.Text = ""
        fldaddress.Text = ""
        fldarrivingfrom.Text = ""
        fldtransitingto.Text = ""
        fldnoofnightsintended.Text = ""
        fldoccupation.Text = ""
        fldphoneno.Text = ""
        'fldsign.Text = ""
        fldSearch.Text = ""


    End Sub
    Sub LoadData()

        Dim conn As New SqlConnection(DataObject.ConnectionString)
        Dim str As String
        str = "select CustomerID,
Name,Address,ArrivingFrom,TransitingTo,NoOfNights,Occupation,Telephone  from
CustomerDetails "
        str += "  where 1=1 "
        If Trim(fldSearch.Text) <> "" Then
            str += "  and
Name+Address+ArrivingFrom+TransitingTo+Occupation+Telephone  like '%" &
Trim(fldSearch.Text) & "%'"
        End If
        Dim comm As New SqlCommand(str, conn)
        conn.Open()
        Dim reader As SqlDataReader = comm.ExecuteReader
        GridView1.DataSource = reader
        GridView1.DataBind()
    End Sub
    Protected Sub cmdsave_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles cmdsave.Click
        If Trim(fldname.Text) = "" Then
            Errormsg.Text = "The Name  Cannot Be Blank"
            Exit Sub
        End If
        If Trim(fldaddress.Text) = "" Then
            Errormsg.Text = "The address  Cannot Be Blank"
            Exit Sub
        End If
        If Trim(fldarrivingfrom.Text) = "" Then
            Errormsg.Text = "The arriving  Cannot Be Blank"
            Exit Sub
        End If
        If Trim(fldtransitingto.Text) = "" Then
            Errormsg.Text = "The transiting  Cannot Be Blank"
            Exit Sub
        End If
        If Trim(fldnoofnightsintended.Text) = "" Then
            Errormsg.Text = "The no of nights  Cannot Be Blank"
            Exit Sub
        End If
        If Trim(fldoccupation.Text) = "" Then
            Errormsg.Text = "The occupation  Cannot Be Blank"
```

```vb
                Exit Sub
            End If
            If Trim(fldphoneno.Text) = "" Then
                Errormsg.Text = "The phone no  Cannot Be Blank"
                Exit Sub
            End If
            ' If Trim(fldsign.Text) = "" Then
            'Errormsg.Text = "The signature  Cannot Be Blank"
            'Exit Sub
            'End If
            If Trim(haccess.Value) = "" Then
                Errormsg.Text = "The Access Mode Has Not Been Specified"
                Exit Sub
            End If

            Dim conn As New SqlConnection(DataObject.ConnectionString)
            Dim str As String
            'Dim comm As New SqlCommand
            If haccess.Value = "1" Then
                str = "insert into
CustomerDetails(Name,Address,ArrivingFrom,TransitingTo,NoOfNights,Occupation,
Telephone
)values(@Name,@Address,@ArrivingFrom,@TransitingTo,@NoOfNights,@Occupation,@T
elephone )"
                Dim comm As New SqlCommand(str, conn)
                'Name'
                comm.Parameters.Add("@Name", System.Data.SqlDbType.Char)
                comm.Parameters("@Name").Value = Trim(fldname.Text)
                'Address'
                comm.Parameters.Add("@Address", System.Data.SqlDbType.Char)
                comm.Parameters("@Address").Value = Trim(fldaddress.Text)
                'ArrivingFrom'
                comm.Parameters.Add("@ArrivingFrom", System.Data.SqlDbType.Char)
                comm.Parameters("@ArrivingFrom").Value =
Trim(fldarrivingfrom.Text)
                'TransitingTo'
                comm.Parameters.Add("@TransitingTo", System.Data.SqlDbType.Char)
                comm.Parameters("@TransitingTo").Value =
Trim(fldtransitingto.Text)
                'NoOfNights'
                comm.Parameters.Add("@NoOfNights", System.Data.SqlDbType.Char)
                comm.Parameters("@NoOfNights").Value =
Trim(fldnoofnightsintended.Text)
                'Occupation'
                comm.Parameters.Add("@Occupation", System.Data.SqlDbType.Char)
                comm.Parameters("@Occupation").Value = Trim(fldoccupation.Text)
                'Telephone'
                comm.Parameters.Add("@Telephone", System.Data.SqlDbType.Char)
                comm.Parameters("@Telephone").Value = Trim(fldphoneno.Text)
                'Sign'
                'comm.Parameters.Add("@Sign", System.Data.SqlDbType.Char)
                'comm.Parameters("@Sign").Value = Trim(fldsign.Text)
                Try
                    conn.Open()
                    comm.ExecuteNonQuery()
                    Errormsg.Text = "Addition Successfull"
                    conn.Close()
```

```vbnet
                Cancelfield()
            Catch ex As Exception
                Errormsg.Text = ex.Message
            End Try
        End If

        If haccess.Value = "2" Then
            str = "update CustomerDetails set Name= @Name, Address=
@Address,ArrivingFrom= @ArrivingFrom,TransitingTo= @TransitingTo,NoOfNights=
@NoOfNights,Occupation= @Occupation,Telephone= @Telephone,Sign= @Sign  where
CustomerID=@CustomerID "
            Dim comm As New SqlCommand(str, conn)
            'CustomerID'
            comm.Parameters.Add("@CustomerID", System.Data.SqlDbType.Int)
            comm.Parameters("@CustomerID").Value = Trim(fldCustId.Text)
            'Name'
            comm.Parameters.Add("@Name", System.Data.SqlDbType.Char)
            comm.Parameters("@Name").Value = Trim(fldname.Text)
            'Address'
            comm.Parameters.Add("@Address", System.Data.SqlDbType.Char)
            comm.Parameters("@Address").Value = Trim(fldaddress.Text)
            'ArrivingFrom'
            comm.Parameters.Add("@ArrivingFrom", System.Data.SqlDbType.Char)
            comm.Parameters("@ArrivingFrom").Value =
Trim(fldarrivingfrom.Text)
            'TransitingTo'
            comm.Parameters.Add("@TransitingTo", System.Data.SqlDbType.Char)
            comm.Parameters("@TransitingTo").Value =
Trim(fldtransitingto.Text)
            'NoOfNights'
            comm.Parameters.Add("@NoOfNights", System.Data.SqlDbType.Char)
            comm.Parameters("@NoOfNights").Value =
Trim(fldnoofnightsintended.Text)
            'Occupation'
            comm.Parameters.Add("@Occupation", System.Data.SqlDbType.Char)
            comm.Parameters("@Occupation").Value = Trim(fldoccupation.Text)
            'Telephone'
            comm.Parameters.Add("@Telephone", System.Data.SqlDbType.Char)
            comm.Parameters("@Telephone").Value = Trim(fldoccupation.Text)
            'Sign'
            ' comm.Parameters.Add("@Sign", System.Data.SqlDbType.Char)
            'comm.Parameters("@Sign").Value = Trim(fldsign.Text)

            Try
                conn.Open()
                comm.ExecuteNonQuery()
                Errormsg.Text = "Update Successfull"
                conn.Close()
                Cancelfield()
            Catch ex As Exception
                Errormsg.Text = ex.Message
            End Try
        End If
        If haccess.Value = "4" Then

            str = "delete from  CustomerDetails    where CustomerID=
@CustomerID"
```

```vbnet
            Dim comm As New SqlCommand(str, conn)
            comm.Parameters.Add("@CustomerID", System.Data.SqlDbType.Int)
            comm.Parameters("@CustomerID").Value = Trim(fldCustId.Text)
            Try
                conn.Open()
                comm.ExecuteNonQuery()
                Errormsg.Text = "Deletion Successfull"
                conn.Close()
                Cancelfield()
            Catch ex As Exception
                Errormsg.Text = ex.Message
            End Try

        End If


    End Sub

    Sub retrievedata()

        If haccess.Value <> "1" Then
            Dim conn As New SqlConnection(DataObject.ConnectionString)
            Dim str As String
            str = "select * from CustomerDetails  where [CustomerID] = '" &
Trim(fldCustId.Text) & "'"
            Dim comm As New SqlCommand(str, conn)
            conn.Open()
            Dim reader As SqlDataReader = comm.ExecuteReader
            fldCustId.Text = ""
            fldaddress.Text = ""
            fldarrivingfrom.Text = ""
            fldtransitingto.Text = ""
            fldnoofnightsintended.Text = ""
            fldoccupation.Text = ""
            fldphoneno.Text = ""
            'fldsign.Text = ""
            While reader.Read
                fldCustId.Text = Trim(reader.Item("CustomerID"))
                fldname.Text = Trim(reader.Item("Name"))
                fldaddress.Text = Trim(reader.Item("Address"))
                fldarrivingfrom.Text = Trim(reader.Item("ArrivingFrom"))
                fldtransitingto.Text = Trim(reader.Item("TransitingTo"))
                fldnoofnightsintended.Text = Trim(reader.Item("NoOfNights"))
                fldoccupation.Text = Trim(reader.Item("Occupation"))
                fldphoneno.Text = Trim(reader.Item("Telephone"))
                ' fldsign.Text = Trim(reader.Item("Sign"))


            End While
            If Trim(fldCustId.Text) = "" Then
                Cancelfield()
            End If
            reader.Close()
            conn.Close()
        End If

    End Sub
```

```vbnet
Private Sub GetData()
    GridView1.DataSource = LoadfromDB()
    GridView1.DataBind()
End Sub
Private Function LoadfromDB() As ICollection
    ' reading the connection string from web.config file
    Dim strConn As String = DataObject.ConnectionString
    ' Connection object creation
    Dim con As New SqlConnection(strConn)
    ' Set the SQL command to run
    Dim strCmd As String = ""
    strCmd += "SELECT "
    strCmd += " * "
    strCmd += " FROM CustomerDetails    " & strOrderBy.Text

    ' Add a named table to the dataset
    Dim oDS As New DataSet

    ' Execute the command and add a named table to the dataset
    Dim da As New SqlDataAdapter(strCmd, con)
    con.Open()
    da.Fill(oDS, "ResumeList")

    'Close the connection
    con.Close()

    ' DataTable for handling the UI
    Dim dt As DataTable = oDS.Tables("ResumeList")

    'Checking the row count for adding new rows
    'minimum row count of the datagrid is maintained to 10

    Dim rowCount As Integer = dt.Rows.Count

    Return dt.DefaultView

End Function

Protected Sub GridView1_RowCommand(ByVal sender As Object, ByVal e As
System.Web.UI.WebControls.GridViewCommandEventArgs) Handles
GridView1.RowCommand

    Dim Index As Integer = Convert.ToInt32(e.CommandArgument)
    Dim row As GridViewRow = GridView1.Rows(Index), jj As Integer = 0

    Dim x As String
    x = row.Cells(1).Text
    fldCustId.Text = Trim(x)
    retrievedata()
    haccess.Value = "2"
    MultiView1.ActiveViewIndex = 0

End Sub
```

```vb
    Protected Sub GridView1_Sorting(ByVal sender As Object, ByVal e As
System.Web.UI.WebControls.GridViewSortEventArgs) Handles GridView1.Sorting
        'Check to see if same column clicked again
        If UCase(Trim(e.SortExpression.ToString())) =
UCase(Trim(Session("Column"))) Then
            'Reverse the sort order
            If Session("Order") = "ASC" Then
                strOrderBy.Text = " order by " & e.SortExpression.ToString()
& " DESC"
                Session("Order") = "DESC"
            Else
                strOrderBy.Text = " order by " & e.SortExpression.ToString()
& " ASC"
                Session("Order") = "ASC"
            End If
        Else
            'Different column selected, so default to ascending order
            strOrderBy.Text = " order by " & e.SortExpression.ToString() & "
ASC"
            Session("Order") = "ASC"
        End If
        Session("Column") = e.SortExpression.ToString()
        GetData()
    End Sub



    Protected Sub GridView1_SelectedIndexChanged(ByVal sender As Object,
ByVal e As System.EventArgs) Handles GridView1.SelectedIndexChanged

    End Sub

    Protected Sub fldViewEntry_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles fldViewEntry.Click
        LoadData()
    End Sub

    Protected Sub cmdMain_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles cmdMain.Click
        MultiView1.ActiveViewIndex = 0
    End Sub

    Protected Sub fldCustId_TextChanged(ByVal sender As Object, ByVal e As
System.EventArgs) Handles fldCustId.TextChanged
        retrievedata()
    End Sub
End Class
```

```vbnet
Imports System.Data
Imports System.Data.SqlClient
Partial Class SEUN_Demo
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As
System.EventArgs) Handles Me.Load

        If Not IsPostBack Then
            Session.Contents.Remove("name")
            Session.Contents.Remove("login")
            ' Response.Redirect("tttt")'
        End If
    End Sub

    Protected Sub cmdLog_Click1(ByVal sender As Object, ByVal e As
System.EventArgs) Handles cmdLog.Click

        If Trim(txtUser.Text) = "" Then
            PageMessage.Text = "The UserID Cannot Be Blank"
            Exit Sub
        End If
        If Trim(txtPassword.Text) = "" Then
            PageMessage.Text = "The Password Field  Cannot Be Blank"
            Exit Sub
        End If

        Dim conn As New SqlConnection(DataObject.ConnectionString)
        Dim str As String, mAccess As Boolean = False, uid As String = "",
pwd As String = ""

        str = "select UserID,StaffName,Password,Role from UserProfileTable
where UserID= '" & Trim(txtUser.Text) & "'"
        Dim comm As New SqlCommand(str, conn)
        conn.Open()
        Dim reader As SqlDataReader = comm.ExecuteReader
        While reader.Read
            uid = Trim(reader.Item("UserID"))
            pwd = Trim(reader.Item("Password"))
            Session("UserID") = Trim(reader.Item("UserID"))
            Session("StaffName") = Trim(reader.Item("StaffName"))
            Session("RoleID") = Trim(reader.Item("Role"))
        End While
        If uid = "" Then
            mAccess = False
            PageMessage.Text = "Invalid User Name"
            Exit Sub
        End If
        If pwd <> Trim(txtPassword.Text) Then
            mAccess = False
```

```vb
            PageMessage.Text = "Invalid Password"
            Exit Sub
        Else
            mAccess = True
        End If


        If mAccess = True Then
            Response.Redirect("MenuExpand.aspx")
        End If
    End Sub



    Protected Sub LinkButton1_Click(ByVal sender As Object, ByVal e As
System.EventArgs) Handles LinkButton1.Click
        Response.Redirect("RetrievePassword.aspx")
    End Sub
End Class
```