**AN ONLINE HOTEL RESERVATION SYSTEM**

**CASE STUDY: *HOTEL ELIZABETH***

**BY**

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A PROJECT REPORT SUBMITTED TO THE FACULTY OF SCIENCE, DEPARTMENT OF COMPUTER SCIENCE, IN PARTIAL FULFILMENT OF THE REQUIREMENTS   
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# DECLARATION

I, KULOBA HUSSEIN, declare that the work presented in this project proposal is my original work and has not been submitted for any other degree award to this or any other university before.

Signature…………………………………………..………………………………..

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# APPROVAL

This project “**AN ONLINE HOTEL RESERVATION SYSTEM**” has been completed under the guidance and supervision of the undersigned and it is ready to be submitted in for examination.

Signature:…………………….………………….

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# DEDICATION

This research report is dedicated to my father Mr. Wanyaye Ali, my mother Mrs. Mutuwa Christine, Brothers and Sisters, friends, relatives and all those who prayed for me during the whole process of my education, God bless you all!.

**ACKNOWLEDGEMENT**

I want to take this opportunity to express my gratitude to a number of individuals without whose assistance I couldn’t have made this project a success.

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# List of acronyms

OHRS Online Hotel Reservation System

DFD: Data Flow Diagram

ERD: Entity Relational Diagram

HTML: Hypertext Mark-up Language

IMIS: Integrated Management Information System

MySQL: My Structured Query Language

PHP: Hypertext Preprocessor

SQL: Structured Query Language

URL: Universal Resource Locator

WWW: World Wide Web

CSS: Cascading Style Sheet

SMTP Simple Mail Transfer Protocal

WAN Wide Area Network

JS Java Script

IT Information Technology

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**ABSTRACT**

A web based system for publishing hotel services and tracking reservation records in hotel Elizabeth.This system is very fast, secure and produces reports fast and easily.The challange of reserving hotel rooms in uganda by customers, insecurity, updating reservation records and access of information about the hotel have been some of the factors contributing to the failure of hotel Elizabeth to deliver the necessary services to it’s customers. A user-centered approach to software development where usability is a key consideration in the success of the product was used in the development of the project.

The main objective of this project was not only to develop a web-based system for reserving a room in hotel Elizabeth but also a system that was user friendly. The developed system has authentication module that provides system access security and operational components that provide operational information about the hotel.

The developed web-based system addresses problems of the manual information system. Manual system takes long to finish a single transaction, thereby leading to delayed work and time. When reservation reports are needed, it takes a long time to produce a single report for management to take decision. At times reports disappear and tracing them becomes a problem since the system is not automated. This has created a lot of loopholes in the system because there is no tracking of the system for the information available in the hotel .

There was close study of the existing manual information system that was in use, it was compared to the proposed web based system to keep track of records of the hotel. A prototype of a web based system to keep track of records in hotel Elizabeth in Uganda was developed to ease data access and retrieval for instant report production after the administrator’s authority to access the system. A code was written using Mysql with PHP, CSS, JAVASCRIPT and HTML that produced buttons for the authorized users to access the system.

# CHAPTER ONE

# INTRODUCTION

This chapter addresses the background of the study, problem statement, both general and specific objectives of the study, scope of the study, significance of the study and the limitations of the study.

## **1.1 Background of the study**

The term web based system has been defined in many different ways. A vision et al (2001) [2], defined web based system as those applications or services that are resident on a server that is accessible using a web browser and is therefore accessible from anywhere in the world through the web.

(Conolly & Begg, 2001).Record keeping assists managers by retaining and communicating business history in a convenient format. Relevant information must be readily available to allow effective decision and reduce unnecessary repeat procedures.

Harpreet [18] mentioned that the use of World Wide Web (www) or computer system could enhance organizations to improve on their communication and therefore effectiveness in service delivery. Therefore, there was need for web-based computer system that could provide easy access of information online and also provide accessibility to information from anywhere, anytime.

Hotel Elizabeth is a five star hotel located in Banda a suburb area of Kampala along Kampala Jinja highway. It was established to provide accommodation and other hotel services for tourists, citizens, travels and those on a vacation in Uganda.

Hotel Elizabeth was started in 2011 by Mrs. Mukasa Elizabeth and it has an estimated capital of about 700 million worth of Uganda Shillings. It has a total of around 23 workers, 3 of them are professional chefs, 2 receptionists, 2 managers, 4 waitresses, 5 cleaners and 2 gatemen.

There isn’t a centralized management information system to keep track of reservation records, manage automatic generation of the reservation information and reports for efficient and effective management of Hotel Elizabeth.

Currently, management of the hotel records is still based on paper and file system to keep track of information hence leading to a delay in serving a group of customers. Since this approach involves a lot of errors, it’s very hectic and slow in creating reports. This may lead to inappropriate planning and financial losses in future.

## **1.2 Problem statement**

There is no a reliable online reservation system for reserving a hotel room in Uganda. As a usual practice, customers walk in and out of different hotels in search for a vacant hotel room as they arrive in Uganda. In case there is no vacant room, they have to move to next hotel. This is so tedious especially late in the night when all rooms of different hotels are fully booked.

The Hotel currently runs a manual booking system and therefore requires customers to only book for rooms or any other service by walking to the receptionist or calling them on phone. This, among other concerns has caused a lot of difficulty in decision making and this called for an online automated system that can track reservation records and automatically generate reports for easy monitoring service.

## **1.3 Objectives of the study**

### **1.3.1 General objective of the study**

The general objective of the project was to develop a web based system which can be accessed by customers for hotel reservation in Uganda.

### **1.3.2 Specific objectives of the study**

1. To study, analyze, and identify the requirements for building a web based system for hotel reservation in Uganda.
2. To design an online hotel reservation system for Hotel Elizabeth
3. To test and validate the system developed during the course of study.
4. To implement the system developed.

## **1.4 Scope of the project**

The following is the scope of this particular study conducted by the researcher:

### **1.4.1 The subject scope**

This study looked at the design of an online hotel reservation system of Hotel Elizabeth.

The scope of this system was mainly to handle hotel reservations online so as to make reservation of hotel rooms in Kampala easy, fast and simple.

### **1.4.2 The geographical scope**

The study was carried out at Hotel Elizabeth located in Banda along Kampala-Jinja highway in Kampala.

### **1.4.3 The time scope**

This study reviewed documents spanning a period of five (4) years (2012-2016) and will last for six (6) months (February-July 2015).

## **1.5 Significance of the study**

The significance of the study was to make an online hotel reservation system that is of benefit to the following groups of people.

Administrators and shareholders of Hotel Elizabeth are to be able to monitor and generate monthly occupancy rate reports for the hotel, add/Edit hotel rooms and their information, customers of the system, are to be able to book rooms of their choice efficiently with just a click of a mouse button unlike the long and tiresome procedure involved in the manual system, managers of the system, are to be able to monitor and prepare for scheduled reservations hence a decrease in the time spent searching for reservation records. The study helped the researcher to gain skills in data collection through interviews, questionnaires, observation, development of databases and the whole system at large.

# CHAPTER TWO

# LITERATURE REVIEW

## **2.0 Introduction**

This chapter deals with the analysis of existing relevant literature of web based systems used to reserve hotel rooms, their benefits and limitations, it further stretches the development web based systems.

## **2.1 Web-based Systems**

According to Aquino (2005), importance of computer application is increasing day to day. In the latest decade of the Millennium winning organizations are those which are willing to integrate business strategy and computer information technology in their respective businesses.

Dokas (2005)[11] on the other hand noted that in few years’ time, internet notably world wide web (www), evolved rapidly from media of information sharing to a ubiquitous platform of several applications that include web-banking, on-line trading, e-government, digital libraries, e-trouble shooting and e-engineering. Basic reasons for the web records system’s rapid evolution are the numerous benefits of distributing applications to all intended users cheaply, quick implementation with minimal resources, connecting teams and increased customer satisfaction via this medium. It should also be noted that, use of distributed databases is one of the common methods used in distributing information to different users.

A web information system usually consists of one or more applications, specific functionality-oriented components, together with information components and other non-web components. Web browser is typically used as front-end whereas database as back-end. Many systems have been developed as web based systems and these include social media applications like Twitter, and Facebook and LinkedIn, e-commerce applications like EBay, Jumia and amazon, e-payment system for Uganda Revenue Authority.

**Advantages of web based systems**

According to Jalan (2004), organizations are moving fast to deploy web based information systems in business solutions and engineering, so as to maximize the value of enterprise information, applications and resources. Those that are successful will be able to meet today’s higher customer expectations and rapidly changing business environment. In short, they will emerge as winners in the web-based marketplace.

The benefits of using a web based system will include:

Ability to serve many different kinds of data. That is text and multimedia data, it serves a wider market, the whole world can see and use the system via internet, cost effective as the server hardware is a powerful component of the system, easier to manage due to centralization and restrictions to data access. Cross platform compatibility and enhancing productivity of information

**Disadvantages of web based systems**

The application is open to all malicious individuals as the application is open to all sorts of people over the internet, heavily relies on the network infrastructure which on failure renders the application unusable.

## **2.2 Current Systems used for Tracking Records concerning the hotel**

This explains how the currents system used to track records in hotel reservation work, their benefits and their limitations.

### 2.2.1 General booking sites

According to Mr. Tamale (2015) General booking sites like booking.com have supported a variety of hotels which cannot afford a reservation system. These sites integrate and rank information of a different hotels in a specific area or country for customers to take on informed decisions. These sites display hotel room prices, images, google map directions, comments and ranking of a specific hotel.

**Benefits of general booking sites**

They are accessed by a number of customers’ worldwide and are secure.

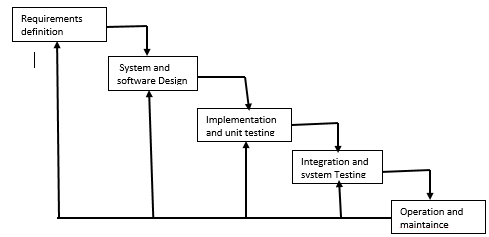
**Limitations of general booking sites**

They involve a lot of competition, they provide limited display for show casing hotel services, they are expensive to maintain advertise with and they don’t enable automatic report generation.

## **2.3 The Development of Web based Systems**

Pete McBreen [2002], The model that is mainly used for development of web based systems is the waterfall model, this model runs through the following phases; requirements definition, system and software design, implementation and unit testing, integration and system testing, operation and maintenance.

An overview of the process is shown in Figure below.



**By Winston W Royce 1976**

**Figure 2.0.1: Waterfall Model**

Waterfall Model is a sequence of stages in which the output of each stage becomes the input for the next. These stages can be characterized and divided up in different ways, including the following:

**Project planning, feasibility study**: Establishes a high-level view of the intended project and determine its goals.

S**ystem analysis, requirements and definition:** Refines project goals into defined functions and operation of the intended application. Analyses end user information needs.

**System and software design**: According to (Levin, 2006) [5] he defines system design as a process of describing how the system will accomplish the task or It describes how the developed system will solve the problem.

**Implementation and unit testing:** According to (Fabrycky 2006) [6] system implementation, involved control tools like Adodc1, were used to connect the interfaces to the database in order for the designed system to perform specific tasks such as editing, saving, deleting and searching data in the database.

**Integration and system testing:** Brings all the pieces together into a special testing environment, then checks for errors, bugs and interoperability.

**Acceptance, installation, deployment:** The final stage of initial development, where the software is put into production and runs actual business.

**Operation and maintaince:** What happens during the rest software life: changes, correction, addition, and moves to different computing platform? This the least glamorous and perhaps most important step of all, goes on seeming forever.

# CHAPTER THREE

# METHODOLOGY

## **3.0 Introduction**

This chapter will focus on the methods which will be used by the researcher to carry out the study. It will contain the research design, research methods and research instruments.

This chapter will also provide some information which will be investigated about the existing system and will include the system requirement specifications, system constraints and the system design.

## **3.1 Identification of requirements**

The researcher moved to the hotel and generated data through interactions, use of questionnaires, interviews and observations.

### **3.1.1 Interviews**

Oral interviews were conducted between the researcher and the staff of Hotel Elizabeth, the manager in charge of the hotel and a customer. This was instrumental in gathering requirement identification information about the current manual system and its loopholes since it gave the researcher a chance to interact with the system users. This helped the researcher to take the decision of developing a standard automated system for tracking hotel reservations online.

**Benefits:**

Interviews gave the researcher the opportunity to motivate the interviewee to respond freely and openly to questions. Also allowed the researcher to probe for more feedback from interviewee, interviews permit researcher to adopt or reward questions for each individual and quick responses from the respondent.

**Demerits:**

Interviewing was time consuming since the interviewees gave information according to their own understanding and therefore difficult to organize data according to their views and therefore costly, success of interviewer is highly dependent on the systems human relation skills and interviewing may be impractical due to the location of interviewees.

### **3.1.2 Questionnaires**

In this approach, printed questionnaires were given to some of the customers and staff members to fill in the blank spaces. This helped the researcher to know the operation of the existing system. Questionnaires allow the analysts to collect data from large number of people while maintaining uniform response.

**Advantages**

Questionnaires were answered quickly, people completed and return questionnaires at their convenience, questionnaires produce relatively inexpensive means of gathering data from a large number of individuals, questionnaires allow individuals to maintain anonymity and responses can be tabulated and analyzed quickly.

**Disadvantages:**

The number of respondents was low, there was no guarantee that an individual would answer some or all questions, questionnaires tend to be inflexible. It was also not possible for the analyst to observe and analyse the respondent’s body language and there was no immediate opportunity clarify vague or incomplete answer to any question.

### **3.1.3 Documentary Review**

Some of the information was collected by studying related documents from various sources which included receipt books, PDFs e-journals and many other documents within Hotel Elizabeth. Information from Literature review clearly brought out the need for a computerized system to serve as a records management system.

## **3.2 System Design**

The analysis of the requirements acquired in the requirements identification phase led to the development of the web based system for tracking reservation records in hotels. The Database system was developed using MYSQL and the programming frame work of the system were achieved using HTML, CSS, PHP, and JavaScript. For redundancies, normalization of the data was used in order to get the right material to be entered into the tables to be used for the system.

## **3.3 System Implementation**

During system implementation, the system was able to run on windows XP and it was best suited for Pentium 4 computers or higher processors with a speed of at least 500MHZ considerable amount of Ram and 80GB hard disc space was required for proper functionality of the system. RAM of 512 MB and above was recommended and a computer monitor with a high resolution and a standard keyboard and mouse connected to the system.

## **3.4 System testing and validation**

Software testing is a fundamental component of software quality assurance and represents a review of specification design and coding. Unit and module testing was used during the process. During unit testing, individual functions were tested to prove their functionality. This helped to reduce errors during module testing where units were combined as one to form a module. A successful testing resulted into a complete system that was tested as a whole to check for its capabilities and also techniques like black box testing were also employed so as to achieve the system’s final objective. The validation process involved checking the implemented system whether it confirms inputs to the specifications. Several validation tests such as data and security were carried out to ensure that the system can validate data input from the users, reject any data which is supplied in wrong format and prevent unauthorized users from accessing the system resources.

# CHAPTER FOUR

# SYSTEM STUDY, ANALYSIS AND DESIGN

## **4.0 Introduction**

In this chapter, the researcher studied the existing system to identify its strength, weaknesses as well as detailed design issues, design requirements and system functionalities. It addresses the conditions that were necessary for the effective functioning of the system and also the tools that were used in the development and design of the new system.

## **4.1 Analysis and Description of the current system.**

The information that was acquired from this study by employing a number of techniques and tools such as observation and interview guides gave the basis for the design of the new system. An interview guide with open ended questions was prepared and administered to the respondents so as to enable them give their views freely. This technique helped the researcher to get full range and depth of information. Observation was also used to gather accurate information about how the system actually operates. Although the method was time consuming, it gave more detailed and context related information. The researcher realized that the existing system is manual. This system is associated with risks like loss of reservation records accompanied with hotel losses. This has created a need for a system that will allow stake holders access records immediately anywhere in the country, provide security by authentication and also reduce redundancy and theft.

## **4.2** Weakness and Strength of the Current Systems

### **4.2.1 Weakness**

The following are the limitations of the current manual systems;

Records can get lost or destroyed so easily. This is mainly attributed to the fact that paper files and counter books are prone to disaster like fire which can destroy all business data, it’s very difficult to update data. That is to say it is very hard to update or edit records without compromising with neatness in the book and on the papers on which business information is recorded, Redundancy and duplication thus wastage of space and resources. That is to say some information may be entered several times thereby wasting stationery and business money, also the system has poor security features and as result unauthorized persons can be able to access data, searching and sorting of data records is very difficult to the fact that it takes very long time to search for a given data record in the files and counter books in case a reference is needed.

### **4.2.2 Strength**

However the following are the advantages of the current manual systems;

The current system is cheaper in the short run. That is to say it does not depend on electricity power and internet hence making reservation cheap and convenient.

It’s very easy to use as compared to the system we intend to implement. That is to say the level of training required for a user of the current system is not as serious and vigorous as that of the computerised system.

### **4.2.3 Comparison of the strength and weaknesses using the SWOT analysis**

The table below illustrates a brief and concise comparison of the strengths and weaknesses of the current system by the help of a SWOT analysis.

|  |  |
| --- | --- |
| **Strengths.** | **Weaknesses.** |
| No need of training workers | Takes long time searching records |
| Easily accessible | Inadequate in paper records |
| System is not affected by power surges and outages | Paper is fragile and does not last permanently |

**Table 4.1: Strengths and weaknesses of the current system using SWOT analysis**

## **4.3 Requirements Specification**

The requirement analysis stage of a software engineering is the practice of obtaining, collecting and analyzing information that is used to identify the users and managers requirement of the new system. The term elicitation is used in research to raise the fact that good requirement cannot just be collected from users as would be indicated by the name requirement engineering. Requirement elicitation is not trivial because you can never be sure that you will get all requirements from users by asking them what the system would do and it includes the process like interview, observation, workshop, brain storming and questionnaires. Identifying the required functionality of the system is very important as a system with the incomplete functionality may lead to it being rejected. A description of the aim of the project is given here along with the details of the functional and non-functional requirements for the system.

### **4.3.1 Functional Requirements**

Functional requirements describes what the system should do. That is to say they define what is needed in term of processing and handling data. Some of the functional requirements include;

The system has got the capability to perform automation of the process of clients’ reservation details, transactions and reports made through quick retrieval of required reports basing on the set criteria. It ought to overcome the anomalies of the manual system.

The system has got the capability that enable the administrator to send mails by using Simple Mail Transfer Protocol (SMTP) to enable easy communication with the client who has successfully reserved a room. That is to say when a customer successfully reserves a room, the system can be used to write a mail to a customer to let him or her know about his or her reservation. The mail involves a Confirmation Number that a customer can use to modify or cancel a reservation.

Customers only have privileges to view all ideal rooms that are available in order for them to make an informed decision. On the other hand administrators of the system have all privileges the customers have on the system. He is able to view, edit, update and delete all reservations records that took place, that are pending and active in a given period of time.

### **4.3.2 Non-Functional Requirements**

These basically refer to constraints to the system. That is to say how or to what level something should be done.

The new system ensures a security system that prevents unauthorized users from accessing the administrative part of the system. This was achieved by using usernames and passwords and privileges.

User interface are designed bearing the hotel’s images and colors.

A concurrency control system allowed shared access to the database. As different clients linked to the system, there would be concurrently accessing since it was of preferred support of a higher number of users and the enormous traffic.

An integrity system maintained the consistent users accessing the database.

### **4.3.3 System Requirements**

These requirements are required by the system to be able to perform its expected functionalities efficiently and effectively. The following are required to run the system: -

### **4.3.3.1 Hardware Requirements:**

The Client: A PC computer of at least 128Mb but 256Mb recommended of RAM (133MHZ). CPU at least 20GB free Hard Disk space and The CD ROM drive.

The server: 256Mb of RAM but 512Mb recommended, a universal hard disk drive Intel and Pentium Xeon 2200 MHZ FC-PGA Processor.

### **4.3.3.2 Software Requirements**

The system ran on the principles of a Relational database management system with all the embedded advantages over other database management systems. MySQL application supported the front end of the system and the database coupled with PHP, CSS, JavaScript and HTML programming. The system was a web based using Linux Operating System. Antivirus software was essential.

### 4**.3.4 Environmental Requirements**

1. Before use, there should be a staff capacity development to enable users adopt to the new system and learn its PROS and CONS and whatever they were required to do at whatever stage in processing information.
2. Some Computer table and good chairs.
3. A server as a backup for the system.
4. Dust free environment and burglarproofed rooms for safety.
5. Power outlet sockets in the rooms.
6. Computer network set up all in place.

## **4.4 Structured Requirements Analysis**

This section describes the flow of data or information between entities and the processes involved before the information reaches the destination which can be a data store or an entity. Context diagrams and DFDs were used to achieve this. There are mainly four components of a data flow diagram and are represented by the symbols as discussed below.

### **4.4.1 Data Flow Diagram**

A data flow diagram (DFD) or a bubble chart is a graphical tool for structured analysis. It was De Marco (1978) and Gane and Sarson (1979) who introduced DFD.DFD models a system by using external entities from which data flows to a process, which transforms the data and creates, output-data-flows which go to other process or external entities or files. Data in files may also flow to processes as arrows. There are various symbols used in the DFD. Bubbles represent the processes. Named arrows indicate the data flow. External entities are represented by rectangles and are outside the system such as vendors or customers with whom the system interacts. They either supply or consume data. Entities supplying data are named as sources and those that consume data are called sinks. Data are stored in a data store by a process in the system. Each component in a DFD is labeled with a descriptive name. Process names are further identified with a number. Data Flow Diagrams are made up of a number of symbols, which represents system components. Data flow modeling method uses four kinds of symbols, which are used to represent four kinds of system components. These are;

**Process**

Process shows the work of the system. Each process has one or more data inputs and produce one or more data outputs. Processes are represented by rounded rectangles or ovals in Data Flow Diagram. Each process has a unique name and number.

This name and number appears inside the rectangle that represents the process in a Data Flow Diagram.

The process symbol represents the activity that transforms the data

**Data flow**

Data flows show the passage of data in the system and are represented by lines joining system components. An arrow indicates the direction of flow and the line is labeled by name of the data flow.

**External entity**

External entities are outside the system but they either supply input data into the system or use other systems output. They are entities on which the designer has control. They may be an organizations customer or other bodies with which the system interacts. External entities that supply data into the system are sometimes called source. External entities that use the system data are sometimes called sinks. These are represented by rectangles in the Data flow Diagram.

The external entity symbol represents sources of data to the system or the destination of data from the system.

**Data store**

A data store is a repository of data. Processes can enter data, into a store or retrieve the data from the data store. Each data has a unique name.

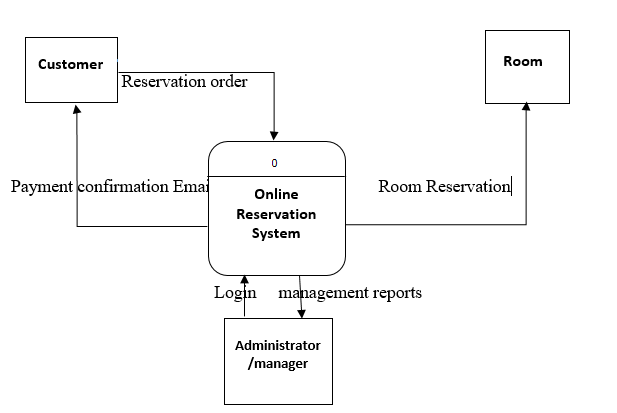
**Figure 4.0.1 : data store**

The data store symbol represents data that is not moving or delayed data at rest.

### **4.4.2 Context Diagram**

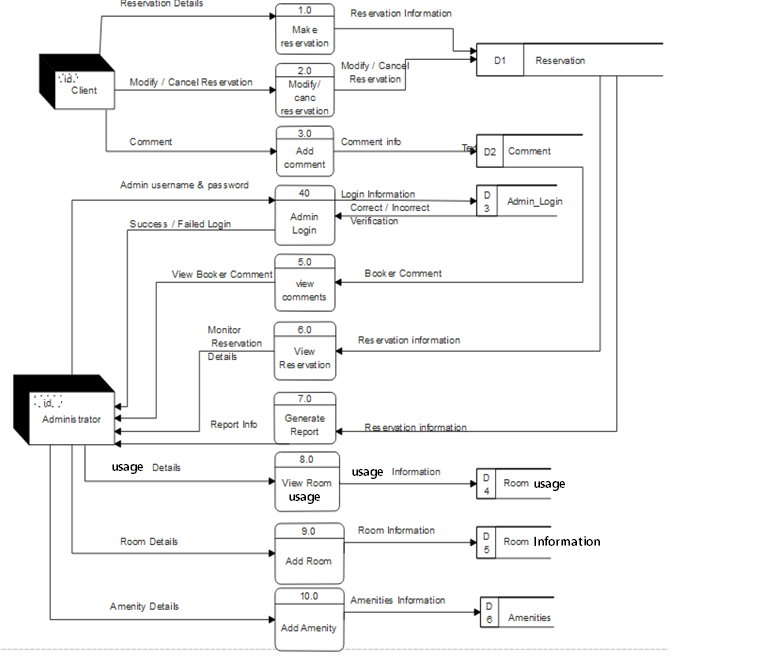
The external entity symbol represents sources of data to the system or destination of data from the system. The data flow symbol represents movement of data. The process symbol represents an activity that transforms or manipulates the data into information. The Timetabling Management Information system can be represented as shown below.

**The Context Diagram of the Developed System**



**Figure 4.0.2: The Context Diagram for OHRS**

### **4.4.3 The level 1 Diagram of the System is shown below**

****

**Figure 4.0.3: the level 1 Diagram for OHRS**

**Data Dictionary of the Level 1 data Flow Diagram**

|  |  |
| --- | --- |
| **Entity** | **Description** |
| Customer | A person who inputs the necessary reservation details to make a hotel reservation. |
| Admin / User | A person who makes the decision for the business. They are in charge of the general functioning of the business. |

**Table 4. 2: Data dictionary showing description of entities**

|  |  |
| --- | --- |
| **Process** | **Description** |
| Make reservation | This is a process that enables a client to make a reservation. |
| Modify / Cancel Reservation | This is a process that enable a client to be able to cancel or modify a reservation. |
| Add comment | This is a process that enable a client to make a comment about the hotel and its services. |
| Admin/User Login | The process through which an administrator gain access to the system so as to carry out different functions he or she is entitled to. |
| View Comment | This is a process that enable an administrator to be able to view all the comments |
| Monitor Reservation | This is a process that enable users or administrators to be able to monitor all reservations at any given time. |
| Generate Reports | This is a process that enable users to be able to generate reports for easy management. |
| Add Rooms | This is a process that enable an administrator to be able to add a room |
| View Room Usage | This is a process that enable administrators to be able to view room inventory of the business. |
| Add Amenities | This is a process that enable an administrator to be able to add Amenities. |

**Table 4. 3: Data dictionary showing description of processes**

|  |  |  |
| --- | --- | --- |
| **Store No.** | **Data Store Name** | **Store Description** |
| D1 | Reservation | Holds all reservation details recorded into the system |
| D2 | Comment | Holds comments of clients who access the system |
| D3 | Admin/user login | Holds username and password of the Administrator/user used to access the system. |
| D4 | Room Inventory | Holds the inventory of the rooms that were chosen by the clients on the system |
| D5 | Room | Holds details of all rooms recorded into the system |
| D6 | Amenities | Holds all amenities that are recorded into the system |

**Table 4.4: Data dictionary showing description of data stores**

## **4.5 Database Design**

This sectiondescribes the process of creating a design for the database that supports the operation of the developed application. There are basically three phases that make up this process; the conceptual, logical and physical database designs.

The conceptual involves the creation of a theoretical data model of the part of the system that we are interested in. Logical database design is the process of constructing a data model of information used in the system based on the specific data model but independent of a particular database management system. Physical database design is the process of producing the description of the implementation of the database on a secondary storage media. It describes relations, file organization and indexes used to achieve efficient access to data and associated security measures and integrity constraints. In this case, actual programming of the database is done, taking into account the features and the limitations of the data base being used and clients. Within this particular project, the relational data model was used. Data and relationships are represented as tables, each of which has a number of unique names also known as attributes, represented as tables, each of which has a number of unique names also known as attributes.

### 

### **4.5.1 Identification of Entities and Their Attributes**

|  |  |  |
| --- | --- | --- |
| **Entity** | **Description** | **attributes** |
| Reservation | This refers to the kind of booking by a client | amenities\_id(pk), pic, des |
| Room | This is a place in a hotel that is to be booked. | room\_id(pk), type, rate, description, image, qty, max\_adult, max\_child |
| Comment | This feedback from a client about the hotel. | comment\_id(pk), name, email, content |
| Admin/staff | This allows in the administrator to login into the system. | user\_id(pk), username, password, position |
| Room Inventory | This refers to detailed list information of a room | roominventory\_id(pk), arrival,departure, qty\_reserve, room\_id, confirmation, status |
| Amenities | These are things that make life a little easier and pleasant | amenities\_id(pk), pic, des |

**Table 4. 5: Entities and their attributes**

### 4.5.2 Relationships between Entities

Two forms of relationships were identified that is, one to one and one to many relationships. A one to one relationship represents a single Association between a sole entity occurrence and a single entity occurrence as shown below.

# 4.5.2.1Mapping Entity Relations to Relational Schema:

Room

\*..1 Reserved 1..1

Reservation

The relationship \*..1 means that many rooms are reserved by one client and 1..1 means one client registers one room at a time.

Staff

\*..1 Registers 1..1

Amenities

The relationship \*..1 means that many Amenities are registered by one Staff and 1..1 means one Staff registers one amenity at a time.

\*..1 Checks 1..1

Staff

Room inventory

The relationship \*..1 means that many room inventories are checked by one Staff and 1..1 means one Staff checks one amenity at a time

Comment

\*..1 Added 1..1

Reservation

The relationship \*..1 means that many comments are added by a client in a reservation entity and 1..1 means one client Adds one comment at a time

**\*.**.1 Checks 1..1

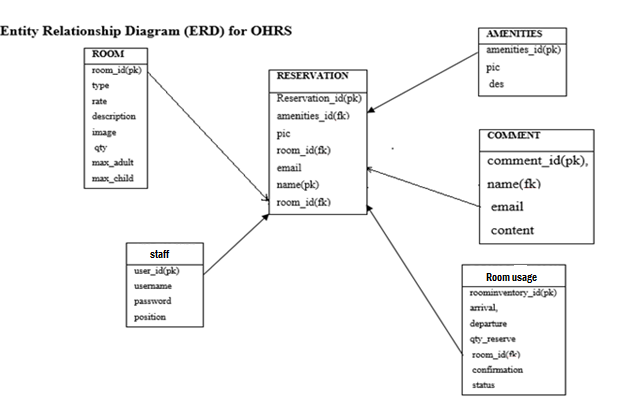
Staff

Reservation

The relationship \*..1 means that many reservations are checked by one Administrator and 1..1 means one Administrator checks for reservation at a time

### **4.5.3 Entity Relational Diagram**

An entity relational diagram (ERD) is used to visualize the system and represent the user’s requirements. This is used to represent entities and how they relate to one another. Figure below is an ER diagram that shows the relationships between the entities, their occurrence (multiplies) and attributes.

****

**Figure 4.0.4: Entity Relationship Diagram**

**Assumptions**

A System user captures customers’ details.

A reservation recorded earlier on may be dropped.

Management may check for a pending reservation.

### 4.5.4 Tables of Entities and their Attributes

This attributed to how the data types will be coded and appended to the entities in the Database. The structure of relations constructed in the database. This section presents the structure of the relations to be constructed in the database during implementation. The tables show the field name, data type and constraints of attributes of the different entities.

**TABLE: CUSTOMER**

|  |  |  |
| --- | --- | --- |
| **Field** | **Data type** | **constraint** |
| comment\_id | int(11) | Not null, primary key, AUTO\_INCREMENT |
| Name | Varchar(60) | Not null |
| Email | Varchar(100) | Not null |
| Content | Text | Not null |

**Table 4.6: customer**

**TABLE: USER**

|  |  |  |
| --- | --- | --- |
| **Field** | **Data type** | **constraint** |
| user\_id | int(11) | Not null, primary key, AUTO\_INCREMENT |
| Username | Varchar(30) | Not null |
| Password | Varchar(30) | Not null |
| Position | Varchar(45) | Not null |

**Table 4.7: user**

**TABLE: RESERVATION**

|  |  |  |
| --- | --- | --- |
| Field | **Data type** | **constraint** |
| reservation\_id | int(11) | Not null, primary key, AUTO\_INCREMENT |
| Firstname | Varchar(30) | Not null |
| Lastname | Varchar(30) | Not null |
| City | Varchar(30) | Not null |
| Zip | int(11) | Not null |
| Province | Varchar(30) | Not null |
| Country | Varchar(30) | Not null |
| Email | Varchar(50) | Not null |
| Contact | int(20) | Not null |
| Username | Varchar(30) | Not null |
| Password | Varchar(30) | Not null |
| Arrival | Varchar(30) | Not null |
| Departure | Varchar(30) | Not null |
| Adults | int(11) | Not null |
| Child | int(11) | Not null |
| Result | int(11) | Not null |
| room\_id | int(11) | Not null |
| no\_room | int(11) | Not null |
| Payable | int(11) | Not null |

**Table 4.8: reservation**

**TABLE: ROOM**

|  |  |  |
| --- | --- | --- |
| **Field** | **Data type** | **constraint** |
| room\_id | int(11) | Not null, primary key, AUTO\_INCREMENT |
| Type | Varchar(30) | Not null |
| Rate | Varchar(11) | Not null |
| Description | Varchar(300) | Not null |
| Image | Varchar(100) | Not null |
| Qty | int(11) | Not null |
| Max\_adult | int(11) | Not null |
| Max\_child | int(11) | Not null |

**Table 4.9: room**

**TABLE: ROOM INVENTORY**

|  |  |  |
| --- | --- | --- |
| **Field** | **Data type** | **constraint** |
| roominventory\_id | int(11) | Not null, primary key, AUTO\_INCREMENT |
| Arrival | Varchar(30) | Not null |
| Departure | Varchar(30) | Not null |
| qty\_reserve | int(11) | Not null |
| room\_id | int(11) | Not null |
| confirmation | Varchar(10) | Not null |
| Status | Varchar(30) | Not null |

**Table 4.10: room inventory**

**TABLE: COMMENT**

|  |  |  |
| --- | --- | --- |
| **Field** | **Data type** | **constraint** |
| comment\_id | int(11) | Not null, primary key, AUTO\_INCREMRNT |
| Name | Varchar(60) | Not null |
| Email | Varchar(100) | Not null |
| Content | int(11) | Not null |

# CHAPTER FIVE

# SYSTEM IMPLEMENTATION

## **5.0 Introduction**

This chapter basically focused on converting the design procedures and diagrams to an executable code that constructs the necessary interfaces that enhanced user interaction with the system. The system was designed using MYSQL RDBMS because of its ease and ability to store different data types and manipulate it. The researcher also used Xampp, an inbuilt DBMS to implement the backend of the system, here the a graphical user interface is available which enables an administrator to create customized database objects such as tables in case he or she does not prefer using the SQL command prompt. The frontend of the system was implemented using the web pages in PHP programming and scripting, therefore the web pages are accessed using web browsers such as; internet explorer, Firefox and chrome. Using PHP programming and java script, the application’s code was written to implement and ensure the system meets its complete functionality. Therefore this system has a graphical interface which has made it user friendly and easy to use. The system should also run on a computer platform that runs MYSQL Server software like Xampp server or an improved one.

## **5.1 Developed System**

Below are screenshots of the system interface like the Login form, reservation form, contact us form and others described below which employees and administrators use to interact with the system and below is the welcome page.

### **5.1.1 The interfaces or forms**

Anyone can access the home page of the system to make a reservation or view the services of hotel Elizabeth well as to manage reservations of the clients, the administrator or hotel manager has to login into the system using a registered user name and password.

The default login credentials for the administrator are as follows.

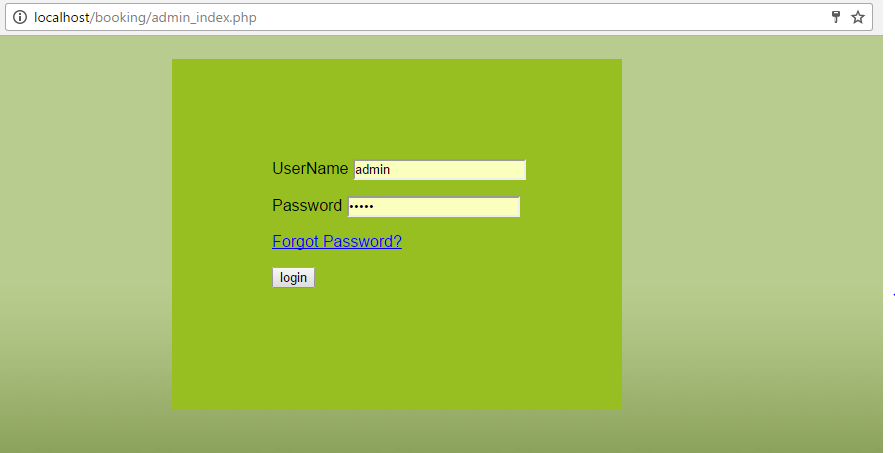
### 

### **5.1.2 Login Page**

A login page is a page accessed in order to access the administrator control page of the system.

When the administrator in puts correct username and password, the page redirects to login home\_admin.php which contains all the necessary links required for the system manipulation. When the administrator in puts wrong username or password, the system doesn’t load any page but reloads the login page admin\_index.php. This authenticates only registered users to login.

**The fig below illustrates the login form.**

****

**Figure 5.0.1: Welcome Form**

### **5.2.2 Login Success Form**

When the administrator in puts correct username and password in the login form, login success form(home\_admin.php) is displayed, this contains all the system manipulations that is to say CRUD which means Create or Add information, Read or View information, Update or Edit information and Delete information.

**Fig below is a log in success form.**

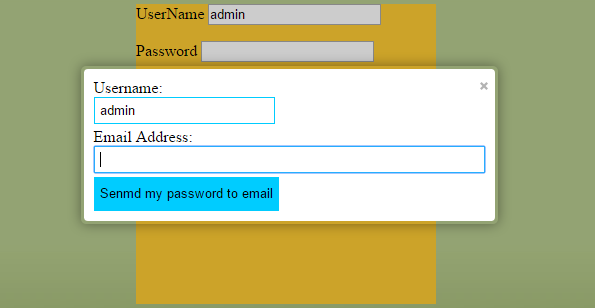
****

**Figure 5. 0.2: the Login Success Form**

### **5.2.3 Forgot password Form**

When the user in puts incorrect username or password or both, a login form (admin\_index.php) is reloaded, this prompts a user to re-enter his username and password to the login page or help him or her regain his or her forgotten password by clicking on a forgot password link which pops up a forgot password form.

**Fig below is of a Forgot password form.**



**Figure 5. 0.3: the Forgot Password Form.**

## **5.3 Available Forms**

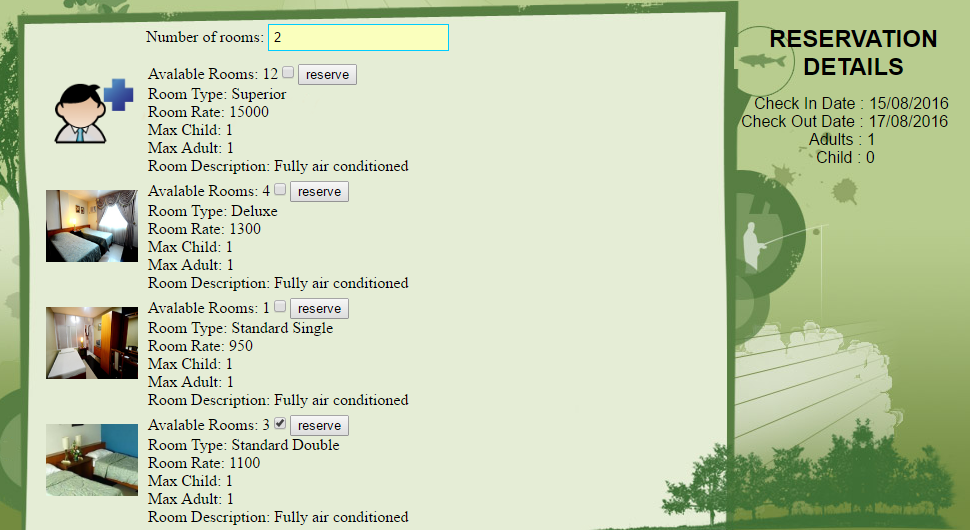
Various forms are available in the login success form after the user has successfully logged in, where administrators of the system can perform various manipulations that is to say, to add reservation information, view or read reservation information and delete reservation information that is no longer wanted from the database. Since all the forms for the available attributes that is the Administrator, Customer, Room has forms that are arranged in order of Add data, View data and Delete data and the manipulations performed are the same, the attribute Amenities with the forms register amenities, view amenities and update amenities was used to represent other attributes (Admin, Customer, Room) since they generally followed the same pattern.

### **5.3.1 Add Information Forms**

The forms available for adding information in the database include add Room form, add amenities form, add Reservation form and add a comment form. These forms have the fields that are necessary to capture the required information that is necessary to be stored in the OHRS database.

All these forms are represented by the add Room form, it has fields; Room type, rate, quantity, Description and Room image.

The fig below shows the register Room form that is available in Hotel Elizabeth.

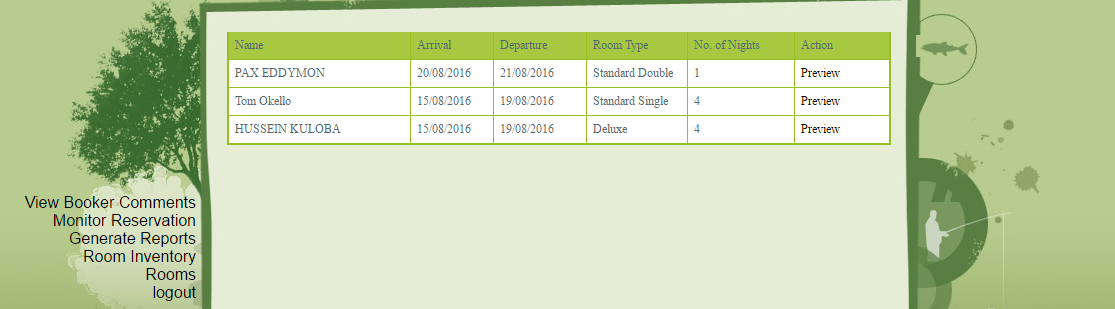


**Figure 5.0.4: the register Room Form**

### **5.3.2 View Information Forms**

The forms available for viewing information in the database include view Room form, view Reservation form and view booker comments. These forms have the fields that are necessary to view the required information from OHRS database. All these forms are represented by the view reservation form. This form acts as a report form and it is essential to view all the information about the reservation that is available in the OHRS database.

**The fig below shows the report of the reservation that are available in Hotel Elizabeth.**



**Figure 5 0.5: The Reservation Form**

**5.3.3 Update Information Form**

The forms available for updating information in the database include update room form, update reservation form and update amenities form. These forms have the fields that are necessary to updating the required information from OHRS database. All these forms are represented by the update room form. This form contains all the system manipulations for the form. These include update or edit, delete and add. This form enables the storage of well-organized data or information in the database.

**The fig below shows updates room form with all necessary manipulations.**

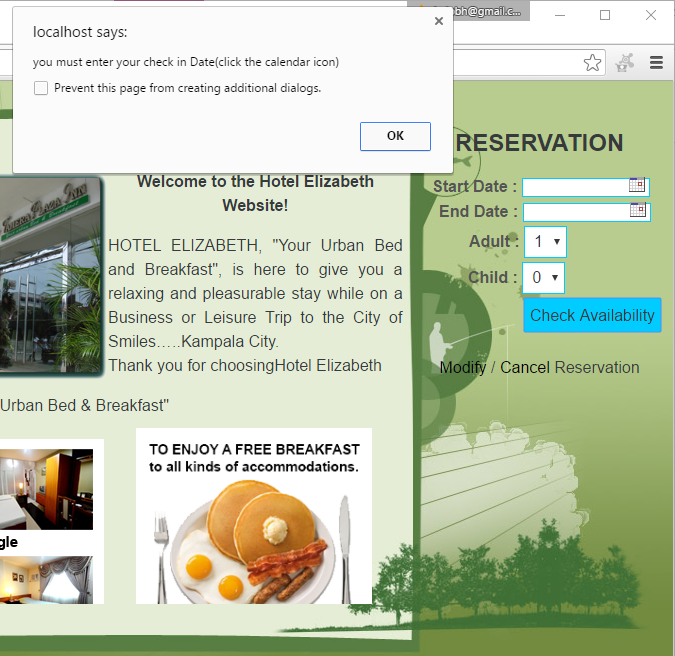


**Figure 5.0.6: The Update room Form**

## **5.4 Register Form Verification**

All the forms for registering information have JavaScript which does not allow to submit empty forms, that is to say all the fields must be filled first in order for the form to submit data to the database.

**The figure below illustrates an example**



**Figure 5.0.7: Illustration showing java script verification**

# CHAPTER SIX

# DISCUSSION, CONCLUSION AND RECOMMENDATIONS

## **6.0 Introduction**

This chapter examines how the objectives of the study were achieved using the system that was developed. The outcomes and contribution of the study to evaluation of changes of the way records in the hotel are handled, discussed and how conclusions are given below as well as recommendations.

# 6.1 Discussion

The designed system can capture, process and retrieve reservation reports easily. The hotel has increased the number of particulars captured against each reservation. This was formerly neglected for fear of bulky processing. Now that the system can capture such details at once then only updates would be required. It has also been noted that room reservations have increased as compared to the past. This was due to limited marketing criteria for the hotel initially.

A user-centered approach to software development was completely adhered to. Furthermore, software engineering principles were strictly followed making the software highly user friendly yet minimizing any undesirable trade-offs. Robustness, usability, interoperability, efficiency and platform neutrality are the major plus for the tool.

The home page consists of secure login, where the user gets the System Operations that have links to other pages that provides necessary information about the reservation reports, edit forms, delete the necessary information all necessary for updating the information. The logout menu exits the system. The login page is fully functional and only permits the system user to access the administrator page where administrative tasks are performed; it requires entering a valid username and password. The developed system module was implemented using HTML, CSS, MySQL, JavaScript and PHP. The system can be availed online by hosting it on a network server like on a WAN (Wide Area Network) or internet. This will require it to be installed on a server platform running MYSQL server software and connected on an internet or WAN network.

The proposed system registered significant degree of efficiency in records management. The cases that were paper based were entered and the officers concerned observed that it is quite easier now to serve customers (i.e. offenders and offended) in time. However it was also noted that further training of hotel staff suffices. Given that hotel managers are relocated regularly, the replacements usually made may not be IT savvy; thus a need for refresher courses. The former practices of bribery have been reduced in that file losses are no longer excuses.

## **6.2 Conclusion**

This study was set out to develop a web-based system for monitoring reservation records in Hotel Elizabeth using a user-centered approach to software development. The scope set at inception was restricted to developing a system for tracking records. The study led to design and implementation of a prototype for a web based system for tracking records. The system was tested and validated for functionality. The system was implemented using a 3-tier approach, with a backend database (specifically MYSQL database), a middle tier of Apache server and PHP, and a front end web browser (client). This report has also discussed each of the underlying techniques used to design and implement the application and the steps undertaken to achieve this.

The system developed can now provide means for the hotel staff to handle various records. The system has removed delays which were experienced through the old system because cross checking through the reservation records has been time consuming. The hotel staff has benefited from the new system because there are no longer delays in storing and retrieving the necessary records.

## **6.3 Recommendations**

The findings of the study recommended adoption and usage of the developed system (web based system for tracking reservation records online) to keep track of reservation information in Hotel Elizabeth, so as to improve on the security of the information, centralized access at the head offices and also easy update of information, reduce on time of identification of particular information as well as minimizing repair and maintenance costs. The following recommendations are to be ensured to enhance an organized, maintainable and robust system in place. The system administrator should be properly trained on how to use the system and also recommended to privately keep his or her authentication details that is; the user name and password well so to avoid intrusion into the system. Furthermore, on top of high performance hardware like a hard disk space of about 500GB, RAM of at least 2GB and a processor speed of at least 2.0GHz, the researcher recommends that in order for the system to work efficiently and high performance to be ensured for Hotel Elizabeth, soft wares such as windows 7 or 8 operating system, latest internet browsers such as chrome, Firefox and UC browser and antiviruses such as Avast, Smadv. The web based system for tracking reservation records in Hotel Elizabeth developed can still be improved upon as discussed in the section that follows.

### **6.3.1 Areas for Further Study**

It’s recommended that the following modules, be added to the developed system (Online Hotel reservation System) so as to perform more tasks:

1. The backup module should also be incorporated so as to ensure that the information that is kept is safe and to ensure that there is ready backup information in case the original information gets corrupted or lost.
2. The developed system component can have the capability to be used in different languages. Further work is recommended so that it can have the capability of being usable in other Languages like, French, Arabic Luganda and Swahili.
3. The researcher also thus recommend that to beef up service delivery, the designed system should be integrated with mobile applications that can run on cell phones so that the offended parties can notify and retrieve pertinent data about the offender which will ultimately increase the handling of reservations.

# REFERENCES

1. Richard Bemile1, Akwasi Achampong2 and Emmanuel Danquah (2014): Online Hotel Reservation System, Information Technology Department, Methodist University College Ghana Dansoman, Accra Ghana.
2. Enrado, P. (2000). Staff and patient, Room and Resource scheduling systems. Healthcare IT news, e-connection. Retrieved on February 12, 2005
3. Alter, S. (1992) Information Systems: A Management Perspective. Redwood City, CA: Benjamin/Cummings Publishing.
4. Arnott, S., (2003). Efficiency is hindered by lack of adequate technology: In the Digital Networked Economy.
5. Bing, T., Schubert, R. and Siu, C. (2001). Web information monitoring for competitive intelligent. Taylor and Francis an academic informer Journals, 33(3):235-251
6. Capron, Williams. (2000). Computers and Data Processing 2nd Edition. The Benjamin / Cummings publishing Co. Mentos Park, California.
7. Borovits,I., Neuman S., (1979). Computer Systems Performance Evaluation: Criteria Measurement, Techniques and Costs. Lexington Books, Brooklyn.
8. 17. Frielink, A.B., (1974). Economics of Proceedings of the IBI-ICC International Symposium. Mainz, September 16-20, North Holland Publishing Company, Amsterdam, 1975.
9. Gartner, J. (1997). Design tool for shift schedules - Empowering Assistance for skilled Designers , Groups, International journals of industrial Ergonomics, 21 (3): 221-232.
10. Grammatikou, M., Stamatelopoulos, F., and Maglaris, B. (2003). Distributed information system architecture for healthcare. Retrieved on January 25, 2005 from http://www.ncbi.nlm.gov/entrez/query.fcgi.
11. Harpreet, S.R. (2002).Transferring data between Heterogeneous databases using the web. MSC Dissertation in information systems, presented to Brunel University of information and computing, west London.
12. Roberts(1999)http://www.bestpricecomputers.co.uk/glossary/managementinformationsystem.htm. Retrieved on June 7th, 2012
13. Royce, W.: Managing the development of large software systems: Concepts and techniques. In: Proc. IEEE WESCOM. IEEE Computer Society Press, Los Alamitos (1970)
14. James (Jim) Bruton, Big House: Life inside a Supermax Security Prison, Voyageur Press (July 2004), hardcover, 192 pages, ISBN 0-89658-039-3.
15. Yin, R.K.: Case Study Research: Design and Methods, 3rd edn. Applied Social Research Methods Series, vol. 5. Prentice Hall, Englewood Cliffs (2002)
16. J. Pan, S. Chen, and N. Nguyen (2012), Intelligent Information and Database Systems: 4th Asian Conference, ACIIDS, Proceedings Part 2, and Kaohsiung, Taiwan.
17. R. Malloy (2001), Internet and Personal Computing Abstracts: IPCA, Volume 22 Issues, Information Today, Incorporated.

# APPENDICES

# APPENDIX ONE: QUESTIONNAIRE GUIDE

This questionnaire was aimed at getting information about activities carried out in the hotel and many more, below are my questionnaires.

**Question One**

How many computers and people can use the computers? …………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….....

**Question Two**

Which kind of information to be captured about the customers while reserving hotel rooms? ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

**Question Three**

How many staff members do you have in the hotel?

………………………………………………………………………………………………………………………………………………………………………………………………

# APPENDIX TWO: INTERVIEW GUIDE

**1. FOR TOP ORGANISATION/CENTER ADMINISTRATORS (HOTEL MANAGER)**

i. Do you have computers?

ii. How many computers are available?

iii. How many people use computers?

iv. What percentage of staff is computer literate?

v. How are reports produced and how frequently done?

vi. What method is used?

vii. How are reports presented?

**2. TO THE ORGANISATION/CENTER STAFF**

i. What is your name sir or madam?

ii. Are you a staff member under this hotel?

iii. What services do you get from the current hotel reservation system?

iv. What challenges do you face because of the current hotel reservation system?

v. What benefits do you get from the existing hotel reservation system?

vi. What features would you like the system to be built to include?

vii. What method do you use to get your reports?

ix. How often do you produce reports?

x. Is the information about hotel reservation data readily available?

xii. Do you feel comfortable with the current system used?

**APPENDIX THREE: LOGIN CODE**

<?php

//Start session

session\_start();

//Connect to mysql server

$link = mysql\_connect('localhost','root',"");

if(!$link) {

die('Failed to connect to server: ' . mysql\_error());

}

//Select database

$db = mysql\_select\_db("argie\_tamera", $link);

if(!$db) {

die("Unable to select database");

}

//Sanitizing the code to prevents SQL injection

function clean($str) {

$str = @trim($str);

if(get\_magic\_quotes\_gpc()) {

$str = stripslashes($str);

}

return mysql\_real\_escape\_string($str);

}

//Sanitizing the POST values

$login = clean($\_POST['user']);

$password = clean($\_POST['password']);

//Create query

$qry="SELECT \* FROM user WHERE username='$login' AND password='$password'";

$result=mysql\_query($qry);

//while($row = mysql\_fetch\_array($result))

// {

// $level=$row['position'];

// }

//Check whether the query was successful or not

if($result) {

if(mysql\_num\_rows($result) > 0) {

//Login Successful

session\_regenerate\_id();

$member = mysql\_fetch\_assoc($result);

$\_SESSION['SESS\_MEMBER\_ID'] = $member['user\_id'];

$\_SESSION['SESS\_FIRST\_NAME'] = $member['position'];

session\_write\_close();

//if ($level="admin"){

header("location: home\_admin.php");

exit();

//}

//else{

//header("location: front.php");

//exit();

//}

}else {

//Login failed

header("location: admin\_index.php");

exit();

}

}else {

die("Query failed");

}

//Code by Kuloba Hussein

?>