ONLINE CAR RENTAL MANAGEMENT SYSTEM
A CASE STUDY: AFRICA ONE TRAVELS

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DECLARATION

We declare that this research report is original and has not been published and / or presented to any university for any academic award.

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APPROVAL

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DEDICATION

We dedicate this work to the Almighty God who has given us the wisdom, great fortune in our education and opportunity to do this Research Project oriented work. We thank our dearest parents and business partners for their endless support, by being there for us at all times especially our parents.

ACKNOWLEDGEMENT

To complete this work, we received immense support from a multitude of people to whom we owe gratitude.

First of all, we are very grateful to the Almighty God whose love, peace and mercy led us to complete our studies.

Secondly, we thank our parents and business partners for the support during this course of study, who have granted all their time, encouragement and financial support to pursue this course.

Lastly but not least, sincere appreciation goes to our supervisor Mr. Zirimmenya Joseph for the guidance he has given us through the completion of this project report. We also extend our sincere gratitude to our academic colleagues at the University who have encouraged us during the period of the study.

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ABSTRACT

The centre of this study was to develop and implement an Online Car Rental Information Management and Centralized Database System that helps in capturing the information from Customers and their Booking transactions. This was developed to reduce the effect of Manual System of Registering customers while booking.

Therefore the Project offers an extensive knowledge regarding Online Car Rental Information Management System from Africa one travels.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter covers the background of the project, the statement of the problem, objectives, the scope and the significances of the project.

1.1 Background of the Study

Africa One Travels is a rental car management service Company that offers services such as car hiring to different Customers according to their desires. It was founded by two members, namely, Mr.Kavuma George and Mark Wilths, both Ugandans in 1999. Africa One Travels was formed on self help basis and got first registered in 2000 under registration number P.677890, but it was fully registered in 2004 with registration number T.667908 under the National Company Act. Because of the advancement of technology, the Company has found it viable to introduce a computerized system that should lead to high speed, accuracy and efficiency in daily activities. In addition, a centralized database has become a better choice. From the standpoint of practicality in today's business setting, Africa One Travels is trying to come up with an online database management system that can offer more speed and flexibility.

Centralizing the online database by integrating it according to a business or end-user defined subject area and having the ownership moved to the owners of the subject area can solve the problem of database failure and business stoppage.

Online car rental management information system is vital and Africa One Travels does not possess one, which lead to complexity, uncertainty and required judgments, insight and much inter-personal skill to carry out their tasks. Information flows are essential and so there should be very much reliance on computer dominated systems. In other words, Africa One Travels needed control system with feedback, which were essential in carrying out the monitoring role. There is need for management information systems in order to obtain information about the environment by scanning and information gathering process (Lucey, 1997). This is done to identify potential threats and opportunities. Having no management information system left the organization unprepared for risk and this exposed it to greater disaster.

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An Information System like an online car rental management system can therefore be looked at as a collection of machinery, people and methods used to accomplish functions. Managers at this level are concerned with the implementation and control of day-to-day activities of the organization and hence the absence of management information systems which made the organization vulnerable to risk. This is so because effective and efficient information processing is very essential since controls are numerous, monitoring is constant, data volumes are quite high and immediate response is needed.

The manual file system is extremely slow and time consuming; therefore Africa One Travels Company needs to replace the manual file system with a computerized online car rental management information system to match the day to day increasing volume of transactions. Due to the increased number of customers from 2001 by 2000 to 4000 by 2012, the organization needs to provide accurate, fast and reliable information. And this can only be attained by computerizing the organization's operations; therefore the organization has to shift from the manual system to a computerized online car rental management information system that could help improve storing, retrieving, updating, advertising and deleting unwanted necessary records (Dominick, 2002)

1.2 Problem Statement

Africa One Travels is a company that rents out cars of any size to the business community in Uganda. It uses a Manual File System to store, manipulate and retrieve customer information. Secondly, if customers wanted to make a booking, it required them to physically move to Africa One Travels premises and make a booking. The system has led to information redundancy, time wasting, duplication and difficulties in information retrieval. Therefore, there is need to develop a centralized management information system for the Company that can improve and easily provide information access from anywhere at any time.

1.3 Objectives of the Study
1.3.1 General Objective
To establish an online car rental management information system at Africa One Travels.

1.3.2 Specific Objectives

1. To study the operations of Africa one Travels to establish how car rental information is managed.

2. To change from physical manual paper manipulation to a centralized computerized system.

3. To design the system that has a solution of using computers.

4. To test the new system.

1.4 The Scope of the Study

The study is carried out specifically at Africa One Travels. The study mainly concentrated on the development of the centralized online car rental management information system that helps in processing, advertising and keeping track of information from the customers.

1.5 Significances of the Study

The study enhanced on our knowledge, skills and abilities in systems development and management. It also enhanced on our social behavior through the social interaction with the system users in a bid to identify the user requirements. The system ensures data consistence and easy generation of records; storage and retrieval of stored information hence ensure security of data.

The system also reduces management costs through decreasing paper work and time. The report could be used as a ground for future research and further help to narrow the knowledge gap on the better information.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed literature on information systems, which was published in textbooks, journals, the internet and others, and is relevant to the problem under study. And it also involved a review of previous studies in relation to the research topic of analyzing, developing and implementing an Online Car Rental Management System.

2.1 Information Systems

Information systems are a collection of people, procedures and equipment designed, built, operated and maintained to collect, store, retrieve and display information. Information systems are generally meant to satisfy organizational information requirements. They are responsible for planning information services and designing systems that can meet user requirements. Information is an assemblage of data in a comprehensible form that is recorded on paper or some other medium, which is capable of being communicated to others (Harold K., 1984). Also observed that information is not a commodity which one can afford to collect and possess (Abidi, 1991). It has to be used for increased benefit for solution of problems for appropriate development and decision-making, the observation by Abidi justifies information as indeed a basic resource that is essential for any organization to perform its activities and hence achieve its goals.

Information sources represent facts of knowledge necessary for day-to-day running of any organization. According to Groller et al (1976), data flows from both within and outside an organization. This data is encoded, processed, transmitted and stored in suitable memories and then later retrieved to support decision-making. Therefore the total apparatus for handling information within the organization in all respects (Chapman and Oliver, 1999).

2.2 Management Information System

Management Information Systems are systems that process data from both internal and external sources into information in order to support management decision making. According to McGraw (1989), Management information systems produce information products that   support

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many of day-to-day decision making needs of managers and business professional. The system provides information on the firm's performance in order to help managers in monitoring and controlling the business. Management information systems contain other system embedded within them. Lucey (1997) outlines as follows Database systems which processes and stores information that later becomes the organization's memory. Direct control systems which monitor and report on the activities such as output levels of player scores. Enquiry systems based on database which provide specific information such as performance of categories or individuals. Support system provides computer based procedures for providing forecast.

Management information system is a system by which people apply manual and computerized information system to process data and information needed to solve problems in an organization (Hambrick K, 2007). A management information system is a system or process that provides information needed to manage organizations effectively.

Management information system can also be referred to as a planned system of collecting, processing, storing and disseminating data in the form of the information needed to carry out functions of management. In a way it's a documented report of the activities were planned and executed (Hamel et al, 1994). It must provide for reports based upon performance analysis in areas critical to the plan with feedback loops that allows for titivation of every aspect of the business.

Management information systems actually describe specific systems that "provide managers with reports and, in some cases online access to the organization's current performance and historical records".

2.2.1 Benefits of Management Information Systems
Management information systems could be of great importance to organizations when employed in their daily operations since they could quicken and make easier their mode of operation. They are quit vital (important) in the following ways:-

They provide support for structured decision-making at all levels by providing the necessary information needed. The system also provides on-line access to the systems in order to give summarized information on the performance of the organization (Bernamati, 1997). According to Kurtz (2001), management information system also posses ("drilldown") facilities which

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search into depth and provide more detailed information on the organizations operation and performance.

McVeigh (2002), observed that management information system could also be used by institutions for competitive advantage of business rivals because they provide details of the number of Clients registered, indicate the size of the field required and the number of the Clients per booking. This could enhance better planning thus being more competitive. In other wards management information system provide information to an organization on the use of information technology, the type of information to be used, the degree of expertise exiting throughout the organization and availability of equipment needed (lancey, 1987).

2.2.2Challengers / Barriers Associated with Management Systems

Organization implementation of electronic meeting is also a big barrier to management systems. Mackintosh (1987) observed that these meetings cannot yield enough data that will be needed by the system data provided /received from these meetings is limited to the space provided by the electronic tool that is being used.

Information technology and competitors is a big barrier to management information. This is so because competitors tend to block channels of data information from reaching the organization and thus making it difficult for the system to operate well without the data (Ferrat, 1995). Barriers to software re-use adoption. Mint berg (1997) said that organizations are not yet adopted by the method of software re-use. This has greatly hindered the development of management information system

Lack of agency processes supporting distributed records and information management. The transition from central managed records and information management to the centralized environment where records and information management responsibility lies with the users at the desktop, has created problems for identification, management, and preservations of agencies' information assets.

Rapid technological obsolescence. The rapid pace of technological evolution is an issue for electronic records and information that need to be available for long periods of time (e.g more than 10-years). In many cases agencies may need electronic records and information for thirty years or more to conduct ongoing business or to preserve rights, and in other cases they may be needed indefinitely to document the nation experience. For example, FAA needs access to

aircraft safety records for as long as the aircraft is in use, FDA must retain reports of adverse reactions for as long as the drug is used and DOD must keep long term records nuclear waste disposal.

2.3 Approaches

An approach is the particular way you deal with something

The researchers simply put the clients' needs above all else. No matter the car rental event, we place a premium on customer service and strive to simply offer the best in the business. It's a winning approach that has resulted in a scorecard that reflects 24 years of unparalleled results.

There is no such thing as a cookie-cutter car rental event. Rather, the researcher will work with our select group of valued clients to determine their exact needs and then creatively customize car rental events and sponsorships to meet those needs. As a result, our car rental management system sponsorship renewal rate outpaces the industry.

The researcher will do whatever it takes to ensure flawless execution, exceptional value and better-than-expected results. In this approach the researcher describes an approach as a way that lead to the final stage of implementing a database system for online car rental management. As applied to information systems, the system approaches decomposes a system to subsystems and then analyze each subsystems and the way it interacts with other subsystems and with its environment.

2.4 Implementation

Implementation is the realization of an application, or execution of a plan, idea, model, design, specification, standard, algorithm, or policy.

2.5 Computer Science

In computer science, an implementation is a realization of a technical specification or algorithm as a program, software component, or other computer system through programming and deployment. Many implementations may exist for a given specification or standard. For example, web browsers contain implementations of World Wide Web Consortium-recommended specifications, and software development tools contain implementations of programming languages.

2.6 IT Implementation and the Role of Car Rental End users

System implementation benefit the researcher in general benefits from high levels of user involvement and management support. User participation in the design and operation of information systems has several positive results. First, the car rental customers, End users are heavily involved in systems design; they move opportunities to mold the system according to their priorities and business requirements, and more opportunities to control the outcome. Second, they are more likely to react positively to the change process. Incorporating user knowledge and expertise leads to better solutions.

The relationship between users and information systems specialists has traditionally been a problem area for information systems implementation efforts. Car rental customers, End Users and information systems specialists tend to have different backgrounds, interests, and priorities. This is referred to as the user-designer communications gap. These differences lead to divergent organizational loyalties, approaches to problem solving, and vocabularies. Examples of these differences or concerns are below:

2.6.1 User Concerns

- Will the system deliver the information I need for my work?

- How quickly can I access the data?

- How easily can I retrieve the data?

- How much clerical support will I need to enter data into the system?

- How will the operation of the system fit into my daily business schedule?

2.6.2 Designer Concerns

- How much disk storage space will the master file consume?

- How many lines of program code will it take to perform this function?

- How can we cut down on CPU time when we run the system?

- What are the most efficient ways of storing this data?

- What database management system should we use?

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter focused on the techniques and tools which the researchers used to carry out the study. It contains the research methods and research instructions of Online Car Rental Management System at Africa One Travels. The chapter also provided information about the investigation of existing systems and it also includes the system requirements specifications, techniques, systems constraints and the system design tools.

3.1 Data Collection Techniques

The research moved to Africa One Travels (car renting company) to generate data through interviewing, observations and documentation review.

3.1.1 Observations

This method helped the researcher to witness with his eyes activities carried out at Africa One Travels (car renting company) and the researcher being a customer as well as an official at Africa One Travels during the course he took his time to observe about this. For example data collection, recording and hence make judgment on the user requirement, in identifying the systems constraints and the method was the best in identifying those requirements which could not be easily expressed by the staff at the company.

3.1.2 Document Review

The project developer gathered information from the Company's documents, libraries, internet, journals, text books and review other relevant published literature on the development of an effective score processing system.

3.1.3 Interviews

The project researchers carried out interviews directly with the staff of the Company of Africa One Travels by face to face communication. The merits and demerits of the Manual File System

usage by the staff were discussed. The some of the interviews carried out are show in the Appendix 1.

3.2 Data Sources

Data was gathered from both primary and secondary sources. That is primary data which was gathered from the respondents at the Company and the secondary data sources like the internet, text books, magazines and journals.

3.2.1 The Primary Data

The source of primary data was basically from the staff, and the management of Africa One Travels and most especially those involved in the data collection, computing results and registration of customers, users of Company information plus the management of the Company including the program manager and the chief supervisors and was through the use of interviewing.

3.2.2 Secondary Data

Secondary data was obtained through reviewing literature of the already published information from the internet, journals, news papers and other relevant documents.

3.2.3 Data Processing

Data was analyzed using a database approach which was developed using MYSQL database and connectors to the interface with Visual Studio 2010. Continuous editing and modifications were carried out to ensure that the database management system meets the intended objectives.

3.3 Data Presentation

The researchers presented the data using a number of conceptual table framework which was developed using Dreamweaver CS6, Visual studio 2010, MYSQL database and PowerPoint.

3.4 Research Design

The researcher used logical designs when coming up with the actual design of the database application and practically implemented database application design to examine and test how

database application developed which led to efficient management of customer's registration for booking and computation by the staff administrator.

3.6 System Requirements and Analysis of Specifications

Under the System Requirements and Analysis Specification areas investigated included; User requirements, Functional requirements, Non functional requirements and System requirements.

3.6.1 User Requirements

This involved the identification and analysis of the end user requirements through generation of information by conducting a survey on concerned parties. The requirements identified included; Capturing data, Processes of data, storing data, manipulating data and Maintaining and updating of data.

3.6.2   Functional Requirements

The database application was analyzed in order to make sure that it performs the following functions; Support capturing of data from the customer booking form to the system, production of reports, Storing of data Validating and updating of data.

3.6.3   Non Functional Requirements

The following were the non-functional requirements; only the authorized users access the administration database system, only superior users perform the necessary functions on the system, Users were trained to acquire skills to operate the system. The system allow centralized processing of information instead of numerous paper works, User friendly, Secure system (password) thus to the system administrator and Authentication of user.

3.7 System Requirements

This involved finding out the nature and the capacity of hardware and software requirements and tools required for the development of the entire system of the Online Car Rental Management System of Africa One Travels as a study case.

3.7.1 Software Requirements

These included; Windows XP Professional operating system, DotNet Framework4, XAMPP server, MYSQL database, Visual Studio 2010 Application software ,Adobe Dreamweaver CS6, Developer Express 2011.1 Component, Crystal Report Viewer and Google Chrome browser and Microsoft Office 7.

3.7.2   Hardware Requirements

These included; Internet Modem, Flash disk, Laptop computer, CDs and other peripherals like printer.

CHAPTER FOUR

PRESENTATION OF RESULTS AND SYSTEM DESIGN

Introduction
This chapter puts forward the operational documentation of the Online Car Rental Management System and its design structure.

4.0 System Design

System Design refers to the art of defining the architecture, components, modules, interfaces and data for the System to fulfill the project main objective.

The main goal of the design phase is to find the best possible design, within the limitations imposed by the requirements and the physical as well as the social environment in which the system operates.

4.1 Conceptual Design
Conceptual design refers to the construction of the idea or concepts that a user needs to learn about what a product is, what it can do, and how it is intended to be used. This involved various entities and attributes identification in which was seen as follows:

Booking Table 1

Stores information from bookers and orders assigned

Attributes	Datatype	Comment
bookingid	Integer	Auto number, Primary Key
customerid	Integer	
customername	Varchar	
reciptnumber	Integer	
amountpaid	Integer	
starthiredate	Date	
enddatehire	Date	
bookdate	Date	
emailaddress	Varchar	

contact	Varchar	
drivername	Varchar	
carid	Integer	
carname	Varchar	
currentmileage	Varchar	
Permitnumber	Varchar	
Carnumberplate	Varchar	

Car Type Table2

Stores information from car types and orders assigned

Attributes	Datatype	Comment
Carid	integer	Auto number, Primary Key
Cardnumber	Varchar	
Conditions	Varchar	
Car reg number	Varchar	
Currentmileage	Varchar	
Enginenumber	Varchar	
carnumberplate	Varchar	
Booked	Varchar	

Customer Table3

Stores information from customers and orders assigned

Attributes	Datatype	Comment
Customerid	integer	Auto number, Primary Key
Customername	varchar	
customercontact	varchar	
Customeremail	varchar	
Driverneed	varchar	
Date start hire	varchar	
Date end hire	varchar	
Car type	varchar	
Manual/Auto	varchar	

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Address	varchar	
Gender	varchar	

Driver Table4

Stores information for drivers and orders assigned

Attributes	Datatype	Comment
Driverid	integer	Auto number, Primary Key
Drivername	varchar	
permitnumber	varchar	
Permitclass	varchar	
Experience	varchar	
Carid	integer	
Carname	varchar	
Distance covered	varchar	

4.2 Logical Design

The logical design of the system consisted description of the conceptual presentation of data flow, inputs and outputs of the system, this was conducted via modeling, involving theoretical and graphical representation of an actual system's design. On which the modeling undertook the following:

Data Flow Diagram

This refers to a diagrammatic representation of information flow in the system between the different entities and processes. Data flow Diagram shows how data moves through the system but does not show program processing steps however, it provides a logical model that shows what the system does. This diagram was used to exhibit the business processes, inputs and outputs of each process, and the flow of between the process, and the flow of data between the processes plus the data stores.

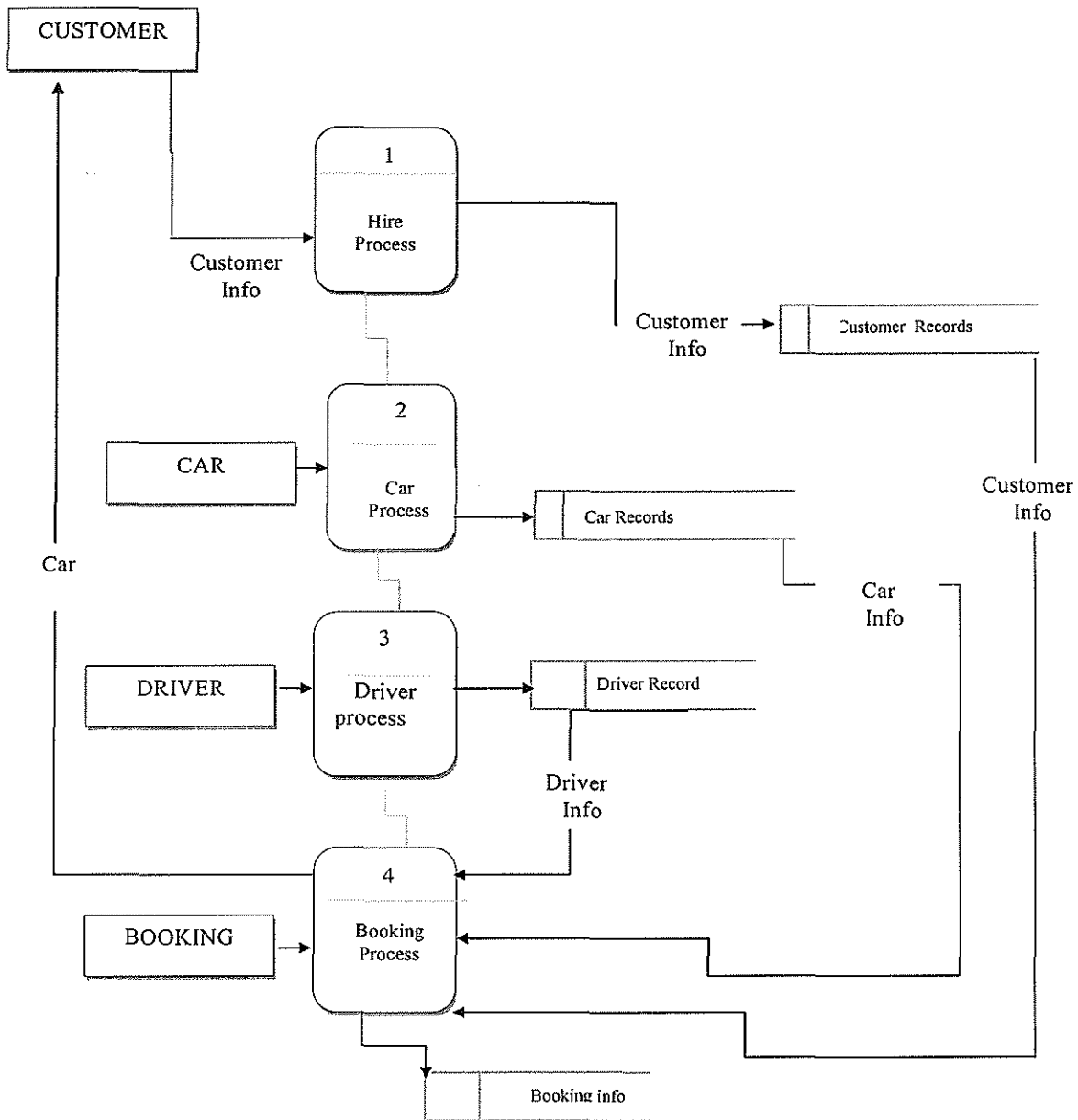**Africa One Travels Car Hire Management System Data Flow Diagram**

Figure 3.1: Data Flow Diagram for the System of Africa One Travels Online Car Rental Management

Entity Relationship Diagram

Entity relationship Diagram was the tools on which were used to show the relationship between different entities that were involved in the system information flow. This tool helped the researcher to identify the attributes of each entity and the cardinalities between the relationships.

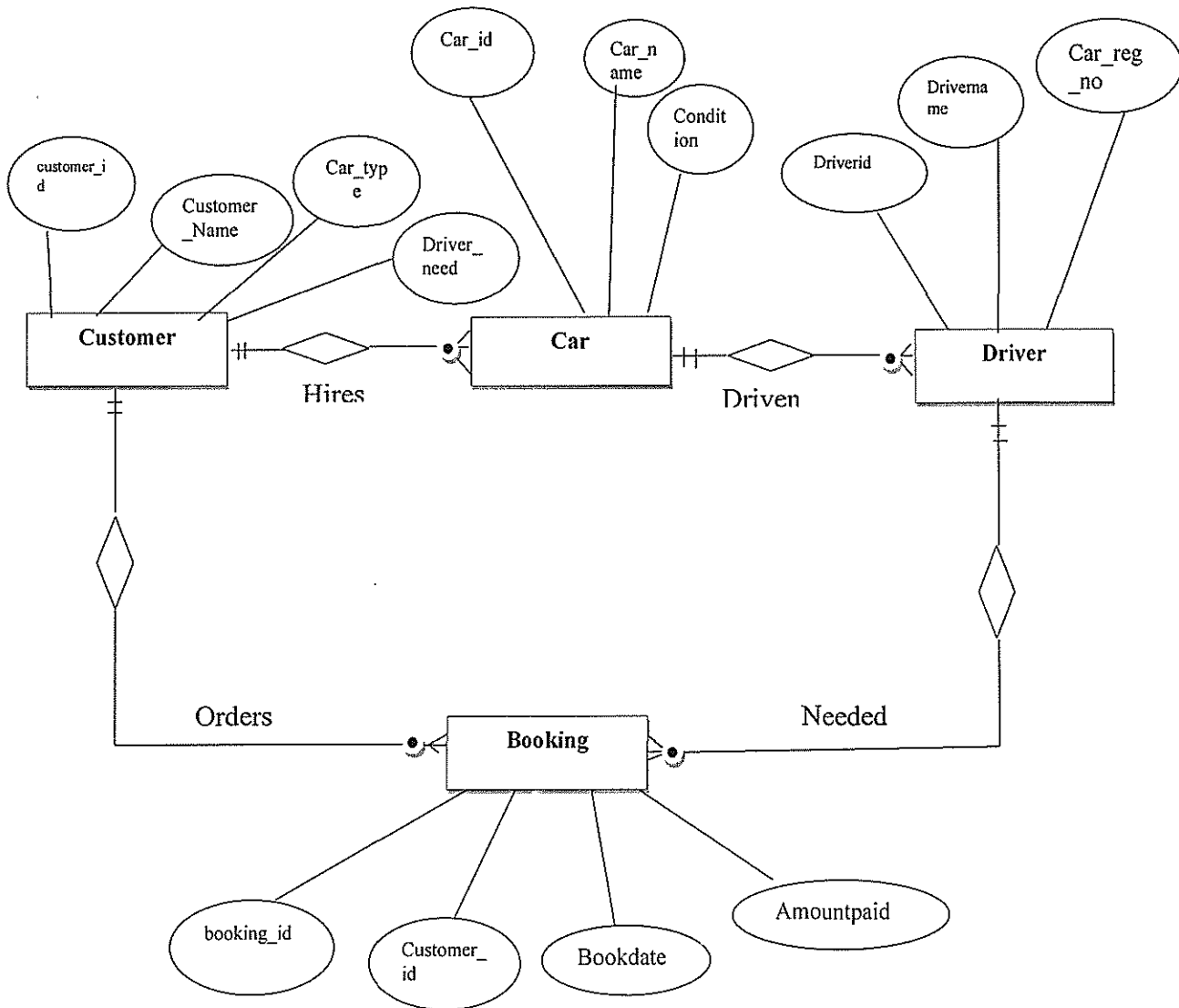**AFRICA ONE CAR HIRE MANAGEMENT SYSTEM ENTITY RELATIONSHIP DIAGRAM**

Figure 3.2: Showing Entity-Relation Diagram of Online Car Management System for Africa One Travels

4.3 System Development Life Cycle (SDLC)

The System Development Life Cycle involved stages through which the system passed before completion, where waterfall application design was used for development of the entire System.

The Waterfall Model

The waterfall model is a sequential development approach, in which development is seen as flowing steadily downwards (like a waterfall) through the phases of requirements analysis, design, implementation, testing (validation), integration, and maintenance. To follow the waterfall model, one proceeds from one phase to the next in a purely sequential manner.
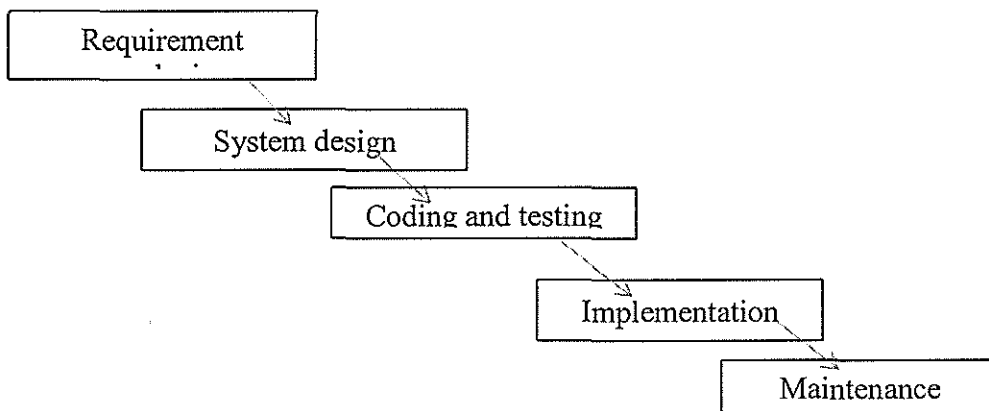

Figure 4.1: Waterfall model, Source Author (Paul Smith).

4.4 Prototyping

This was designed and built to a scaled down working version of a desired System. A prototype was developed with a computer aided software engineering tool. This software automated the system development life cycle steps easier and more creative by spotting the design of screen and reports the system. The initial designed system was found to input and output the required results.

CHAPTER FIVE

PROJECT IMPLEMENTATION, TESTING AND EVALUATION

5.0 Introduction

This chapter illustrates how the Software Designed System works to solving the Company (Africa One Travels) problems to achieve its objectives.

5.1 Implementation

There are mainly two forms of new systems implementation which comprises of; the direct form of implementation and the parallel one. The parallel form of implementation was used.

5.1.1 Direct Implementation

Under this form of implementation there is a direct cut over of the old system while the new system takes its course. In direct implementation, the users stop using the manual system and start using the computer system there and then. The lead of this method is that it doesn't need more man power hence making it less costly, however on its depressing point of view if the new system fails to operate effectively either due to an expected error this can lead to loss of data since it was implemented. I therefore don't recommend serious organization that deals with serious information to use this method of system implementation.

5.1.2 Parallel Implementation

In this line, a new system is implemented alongside an Old System; this implies both the new and the old system will be running simultaneously until when the new system proves its integrity over the old one. Due to advantages the parallel implementation method has over the direct cut over, the parallel implementation method is recommended.

5.2.0 The Start Up of the System

The startup is simple as normal programs; one enters in the web browser on internet the **Uniform Resource Locator (URL) Website Address** which is "Localhost/car2" for access of the services offered, for the Online Car Rental Management System by Africa One Travels. The website main Homepage will be displayed to get all the information he/she wants.

Security to the company database is enforced on the 'Administration' webpage of the system. Therefore, we the researchers came up with a login form that permits the use of the System, on which none authorized users, cannot access the Administration System information. Only valid users in administration of the company's data and information will enter correct **user name** **"africa or one"** and **password "123"** to login into the system.

5.2.1 Sitemap for Website of Africa One Travels webpage Structure

```
┌─────────── HOME
│
├─────────── ABOUT
│
├─────────── BOOKING
│
├─────────── TERMS
│
├─────────── CONTACT
│
└── ADMINISTRATION ─── LOGIN
                          │
                          ├─── BOOKING
                          │
                          ├─── CAR
                          │
                          ├─── DRIVER
                          │
                          ├─── HIRE
                          │
                          ├─── REPORT
                          │
                          └─── LOGOUT
```
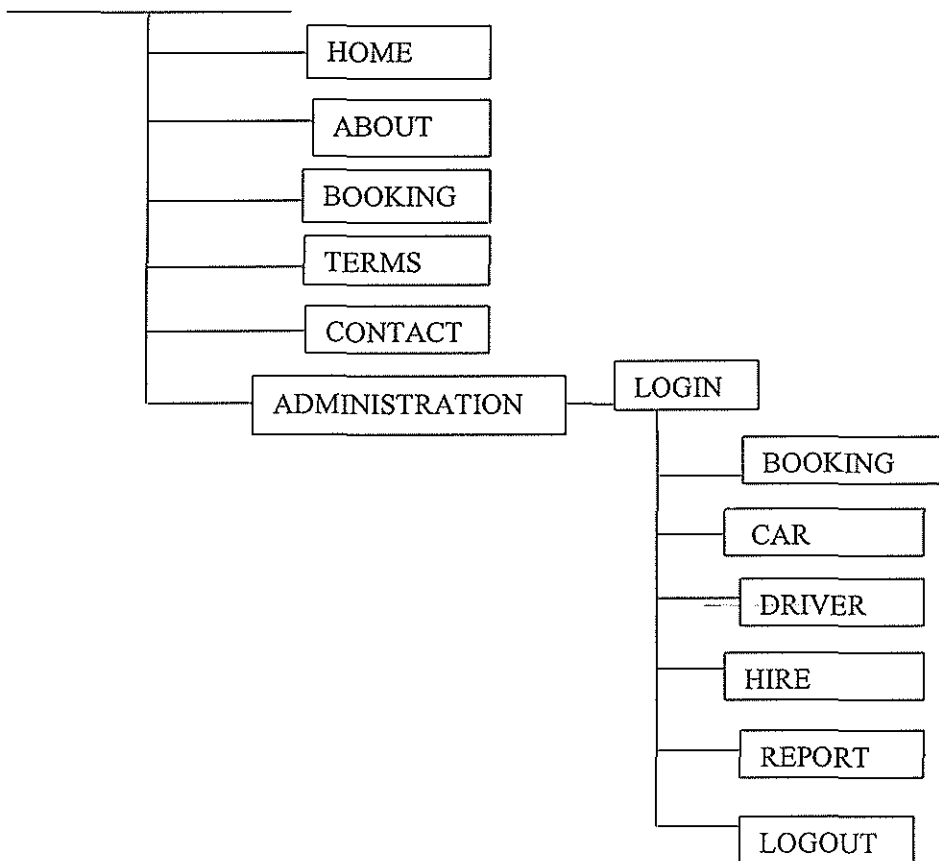
Figure 5.1: showing website sitemap

## 5.3.1 System Interfaces
Main Website Homepage

The main website Homepage (index page) acts as a navigation point of all pages of the system. Through the main webpage, you can access any part of the system depending on your level of authentication. Clients can access only five WebPages that are in their areas of concern and they include; Home, About us, Booking, Terms, and Contact. Only the administrators will be allowed to access the entire System.
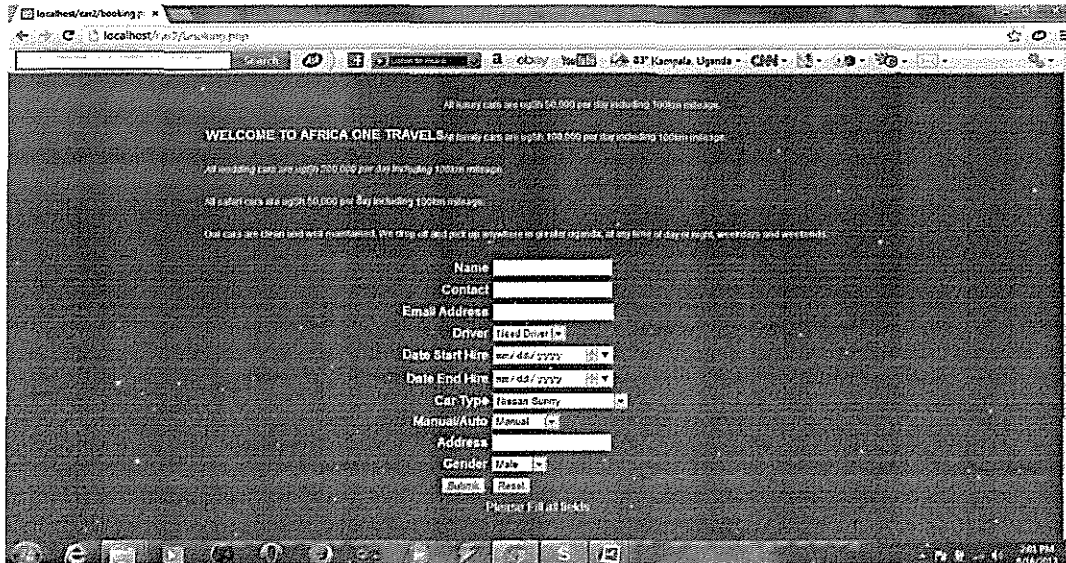
Figure 5.1: Main Website Homepage
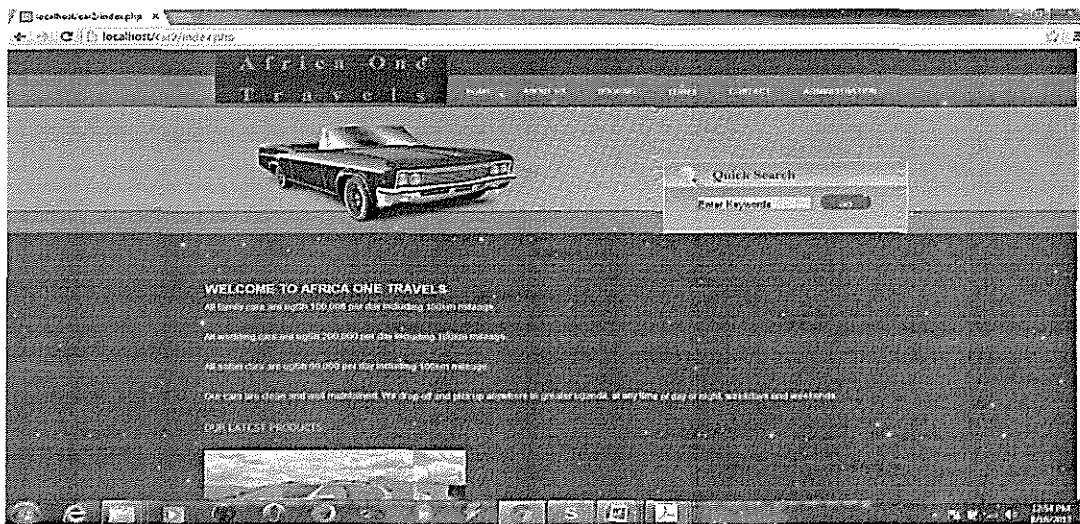
Status Information

Figure 5.2: Status Website About us webpage

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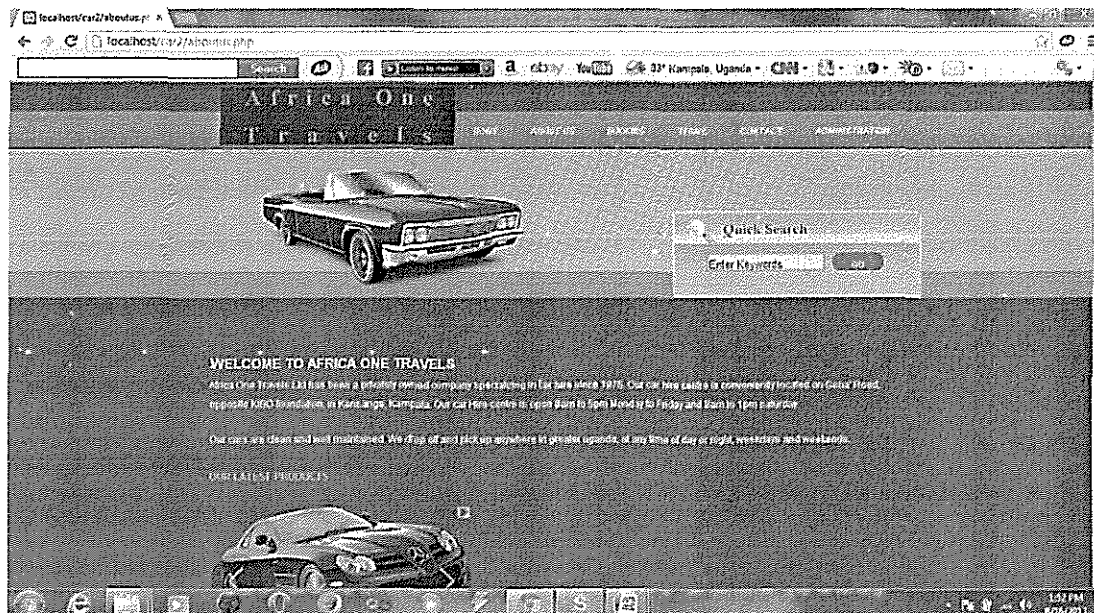
On this webpage, the customers can access and get to know the vision, mission, history and current status information of the company of Africa One Travels.
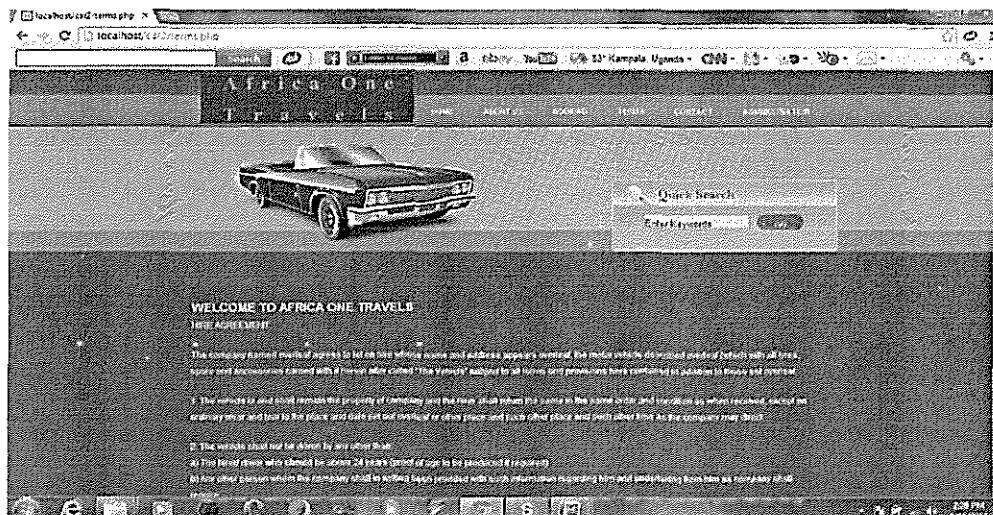
Booking Information

Figure 5.3: Booking Webpage

On this webpage, the customers can book for the vehicles using this page on the website by filling in the requested information and submitted to the company database server online.
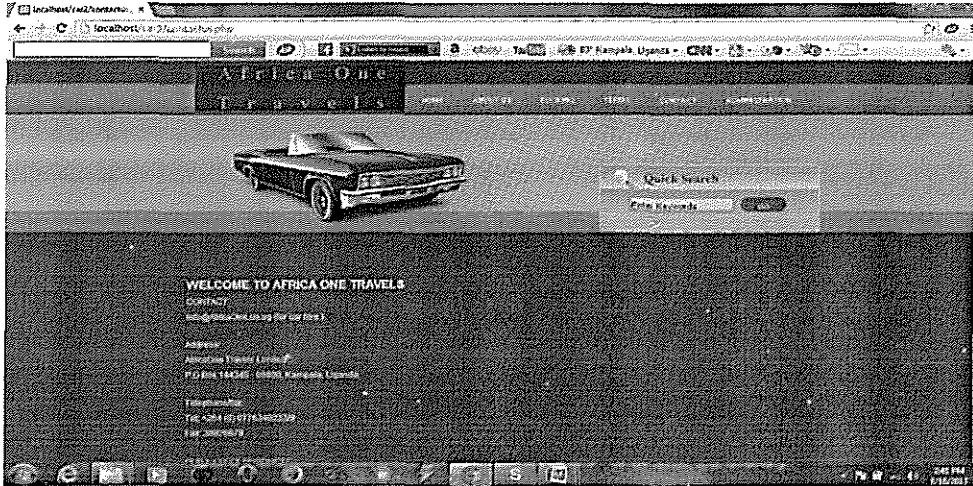
Terms & Agreement Information

Figure 5.4: Terms Webpage

On this webpage, the client can read and agree with company business Terms agreement when ready to hire their cars.
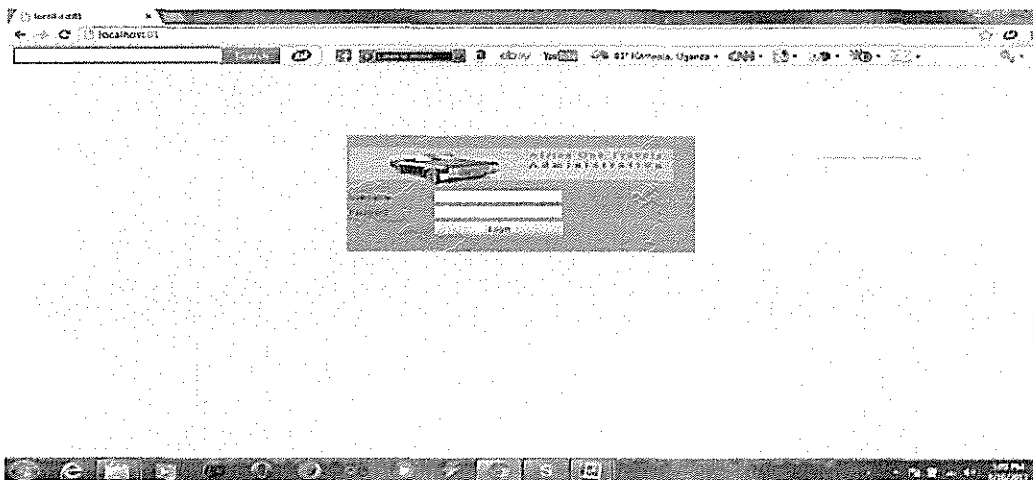
Contacts Information

Figure 5.5: Contacts Webpage

On this webpage, the customers can access and get to know the location, telephone and address of Africa One Travels.

Administration Information

Figure 5.6: Administration Webpage

On this webpage, only authorized people in the administration of management with correct username "africa" and password "123" can go further to login into the Company database information management system. The clients cannot go beyond this webpage.

Booking Database Information of Clients Requests

Figure 5.7: Booking Webpage Database

This webpage contains information about bookings of Customers. On this webpage of the company, the database administrator views the sent requests of the booking customers and allocates them vehicles according to their requests manually updating the System. The administrator can also search or delete requests worked on.

Car Types Information Available in the Company

Figure 5.8: Car Types Webpage Database

On this webpage, the Company administrator manages and monitors the cars and their condition at present. The administrator can view, edit the current car information, add new car information

that is bought or delete the car information that has broken down and no longer in use by the Company.

Drivers Details Information of the Company

Figure 5.9: Drivers Webpage Database
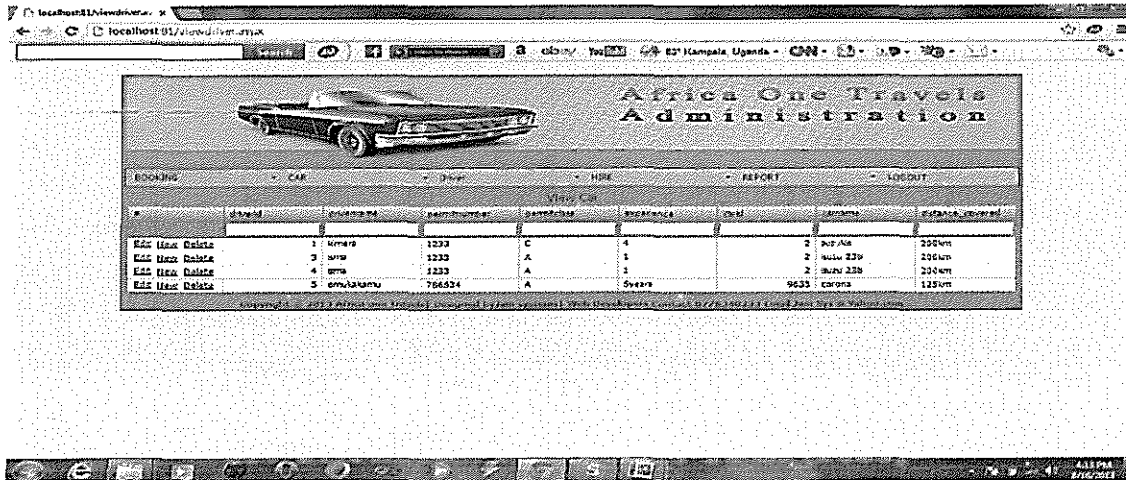
This webpage contains all drivers' details. The administrator can also view, edit, add new or delete the information about drivers in the Company database. All changes that occur can be updated in the company database accordingly.

View Hired Car, Drivers and Payments Transaction Information

Figure 5.10: Final Viewhired Webpage Database
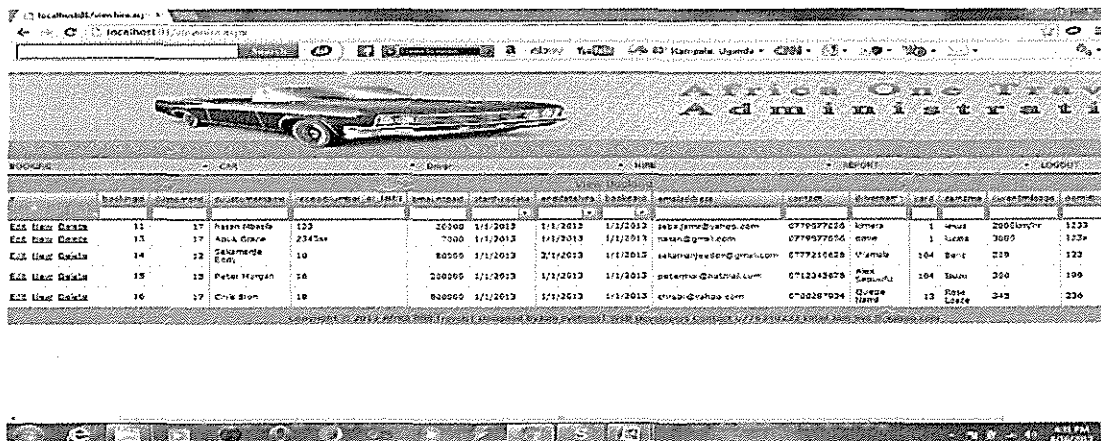
This is a final webpage that contains the transactions carried out between the client and the Company. On this webpage, the administrator edits, adds new or delete information from the Company database. The Systems information manager who is an administrator strongly tracks

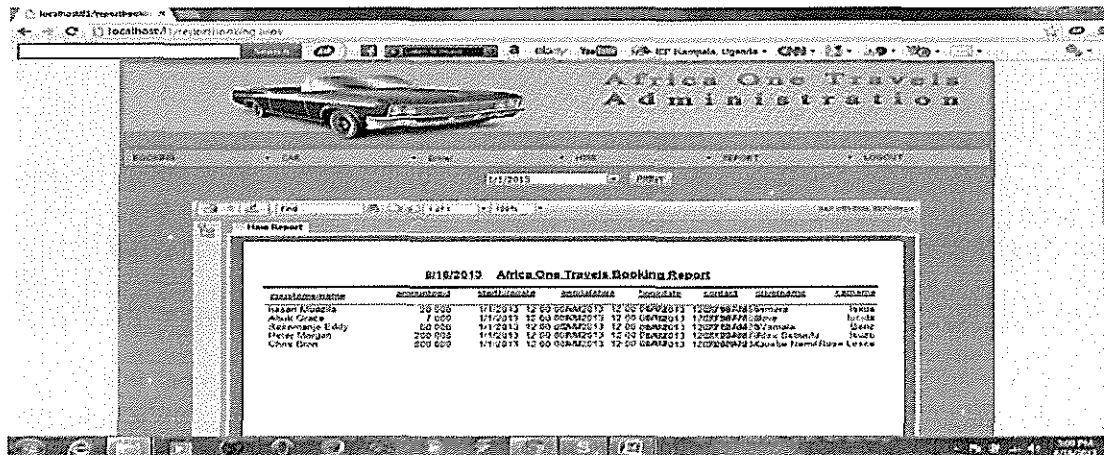the Company's transactions being commenced strictly to avoid losses occurring in the Company to maximize the profits as expected to be the achieved goal, in order to meet its objectives.

Company Business Report

Figure 5.11: Final Report for Booked Cars

This webpage contains the final Report for the booked Cars. The systems information manager can print the report by entering the correct date on which the transactions required were made from the final Viewhired table of the Database.

Finally, the systems information managers can logout of the system by clicking on the Logout button for exit after performing all the activities the system offers.

5.4. Server Software Installation, Configuration and Website Hosting

Under this section, the DotNet Framework4 software was installed for hosting the website. And also Internet Information Services (IIS) in the Administrative Tools within the control panel was configured its settings in order the system to be loaded on the computer server to be accessed directly by logging Online. The Internet Information Services (IIS) needs to be properly configured to allow both internal and external access to the Africa One Travels website. XAMPP Server was installed to enable the system to be accessed online.

The website for Africa One Travels is hosted onto the Port 81 of the server. This is as shown in the figure below
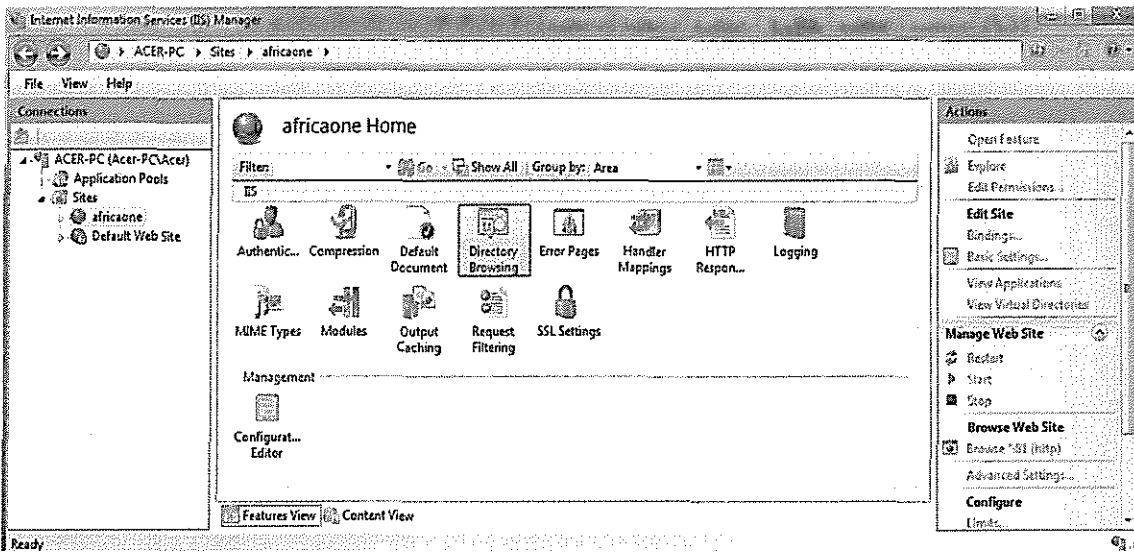
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Figure 5.12: Showing Configured Internet Information Services (IIS) Manager

5.5 Coding and Debugging the System

The interfaces and connections between them were designed by coding using the programming languages such php and visual studio 2010 commands. The system was run and the errors eliminated or corrected as the system is required to function.

5.6 System Testing

System testing is a critical aspect of Software Quality Assurance and represents the ultimate review of specification, design and coding. Testing is a process of executing a program with the intent of finding an error. A good test is one that has a probability of finding an as yet undiscovered error. The purpose of testing is to identify and correct bugs in the developed system. Nothing is complete without testing. Testing is the vital to the success of the system.

The system was tested in units and as a whole in order to ensure that it is working as intended according to the designed specifications. Its performance was compared to that of the existing Old system that helped to look out which one is more efficient. It also was found out that the New system is more efficient in reducing costs and maximizing time usage.

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CHAPTER SIX

DISCUSSION, RECOMMENDATION AND CONCLUSION

6.0 Introduction

This chapter gives a summary of the entire System with emphasis on its achievements and limitations. There are also suggestions on possible areas of enhancement.

6.1 Discussion

The system was designed to fulfill the basic aim and specific objectives that were proposed at the earlier stage of the system development. The system comprises of people, equipments, space and procedure. The researchers were mindful of the input, processing, storing and retrieving requirements necessary for an effective system. The main users to interact with the system are the Clients and the Company Systems Information managers.

In any software development, security is always a very important aspect for consideration. The Administration should therefore make use of the authorized persons to take charge of the part of the administration system that connects to the Company systems database, which is private to users only. It is thus, the Company's management obligation to ensure internal controls and security about the system. Partially part of the system is accessible by the Clients online only, but fully accessible to the Company authorized administrators.

6.2 Limitations

It is not usually possible to design a system that meets all the needs of every user; therefore the system has the following limitations;

There are fixed queries that have been designed by the researchers. This means that the users cannot run procedural Queries of their choice unless the system is upgraded.

The Project was quite limited since the project entails some components that required to be delivered on time with full functionality.

Biased response from some of the people interviewed. And lastly, lack of interest from some of the would-be users of the new system due to fear of loss of jobs as a result of the computerized automation that the new system exhibits.

6.3 Recommendations

First of all, it's important that Africa One Travels continues to use the old manual system alongside per speculations in the implementation section in the report as the Africa One Travels has many clients and the system users have to be trained to the New system as they may lose important information for the Company. Thus the users should first use the Manual system, and then the automated computer system in parallel until fully knowledgeable that the New system is worth their expectations.

Similarly as mentioned above, the Users need to be trained on how best they can use the New computerized automated system. Users with the basic computer skills are required in order for them to appreciate the functionality of the program.

Lastly, the system has a lot more room for further improvement though as it stands. It can be developed, and more advanced features added as required by Africa One Travels in future.

6.4 Conclusion

The Online Car Rental Management System has become an essential technology for Africa One Travels Company in part, because of the information management challenges faced and the need to be advertised countrywide online. Professionals are increasing daily who are competitors in the same business in the country. Technological progress makes it possible for Online Car Rental Management System of Africa One Travels to provide total cost-effective access to more complete, accurate Booking Data from Clients and to offer improved performance and enhancement functionalities that are used to meet the past and future information management challenges.

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APPENDIX 1
Interview Carried Out at Africa One Travels

The interview involved the researchers, manager and the staff (user) and was as follows:

Researchers: We Sekamanje Eddy and Sebuufu Alex from Kampala International University want to carry out our research project with your Company Sir. We would like you Sir to tell us in details about your Company and how it operates.

Manager Ivan Mutesa: You are welcome. We offer car renting services to individuals and organizations in Uganda. Currently our Company uses the Manual File System to reach out services to our Clients.

Researchers: What problems do you face as a Company while using the Manual File System Sir?

Manager Ivan Mutesa: The following are the problems:

1. We spend a lot of time writing and evaluating the customer data which is provided to comply with our Company Terms of Agreement for the business transactions.

2. Customers have to physically move to our Company premises in order to access our Services rendered out.

3. The Company uses a lot of paper work which has increased its Costs to manage data provided from the Clients.

4. High costs are incurred in renting room for storing the Company Files which is a big problem in that it reduces the Company's profits made.

5. We do not reach out very far to Customers who are in other parts of the Country which limits our market.

Researchers: Any advantage you have about using this System Sir?

Manager Ivan Mutesa: Our Customer Information provided is kept confidential which bonds us tightly in business.

Researchers: How best would you like your System to be improved upon Sir?

Manager Ivan Mutesa: We would like to have a System that efficiently economizes the waste of time and Company expenses.

Researchers: Anything else you would like to reveal more to us Sir?

Manager Ivan Mutesa: Oh yes, we also have a File of our document reviews which describes more in details about the Company business.

Researchers: What problems are you facing with the Company's Current System?

User (Kennedy Muwanga): Congestion of Customers at the Office premises and misplacement of customer Files.

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APPENDIX 3

Booking Form Webpage Codes

```php
<?php
error_reporting(E_ALL ^ E_NOTICE);
 include 'connect.php';
 if(isset($_POST['button']) && $nm!='' && $cont !='' && $emai!='' && $add!='' )
 {
$send="insert into customer (customername,
customercontact,customeremail,driverneed,date_start_hire,date_end_hire,car_type,manual_or_au
to,address,gender)
 values('$nm','$cont','$emai','$dri','$sta_hire','$end_hire','$type','$man','$add','$gen')";
}
$result=mysql_query($send) or die ('Please Fill all fields');
if($result)
 {
echo"THANK YOU FOR YOUR ENQUIRY TO AFRICA ONE TRAVEL.
WE WILL RESPOND TO YOU WITHIN THE NEXT 24 HOURS.
IF YOU NEED A FASTER RESPONSE, PLEASE TRY CALLING US ON +254 (0)
776340233.";
 }
?>
```