EVENT EQUIPMENT HIRING SYSTEM

(A case study of Sunshine-Occasions Limited)

SIMON MWANZIA MUMO

BTIT/019J/2014

A Project proposal submitted to the institute of computing and informatics in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Information and Communications Technology Technical University of Mombasa

September: 2017

DECLARATION

I confirm that this project is my original work and has not been presented either in whole or part in any other institution organization or company for examination purpose.

Signature **…….....** Date **……**

This proposal has been submitted for examination with my approval as university supervisor

Signature **……** Date **……**

DEDICATION

All the work done in coming up with this system is dedicated to my family for being with/part of me in the whole process especially my dear dad and mum who stood by me in all situations even at the times of financial need.

ABSTRACT

The proposal involves the analysis, evaluation and development of a new Event Equipment Hiring system for Sunshine-Occasions company. The process involved in hiring equipment such as tents, chairs, tables and decoration material and many more has long been traditional, where clients visit hiring firms to give their orders of the items they require. Event Equipment Hiring System is an online platform intended to exploit e-commerce to facilitate the public with equipment's and enable them hire from wherever they are. The problem with the current system is that customers make a physical visitation to renting firms or make telephone calls in order to book an item prior to the day of their event. This process is always cumbersome, time consuming and costly. The objective of this system is to present customers/clients with a web-based platform to hire event material and enable the company's staff to keep track of the customer's orders so they can supply the ordered goods to them. Typically, the customer would access internet and go online hiring the equipment from their comfort wherever they are avoiding the need of visiting hiring firms. The proposed solution will provide a customer with a view of each item against their rental price on a webpage from where they can select and reserve an item then make payment to confirm reservation. A receipt is generated for the transaction and sent to the customer through email. Agile Methodology will be used to define the process of developing a functional system meeting user requirements. The proposed system will use HTML, BOOTSTRAP, JAVASCRIPT, JSPs for the presentation layer, java technologies for the business logic and MySQL database server for data layer, SPRING MVC FRAMEWORK to enhance security. It is also integrated with frontlines SMS gateway for messaging services, PayPal as tool of payment.

Table of Contents

CHAPTER ONE

INTRODUCTION

1.1 Background

In the recent future, business activities have been undergoing technological transformations through automation of transactional activities and operations. Old systems of business services are firstly fading as new internet support systems are firstly gaining roots into commercial world.

Sunshine-Occasions is an event planning and management firm in Nairobi The company was established 10 years ago to address a large market of customers who would like their event be planned, coordinated and managed and also hire equipment such as tents, tables, decorations materials , chair services, wedding flowers, catering. The company serves a large customer base within and outside Nairobi town. With a raising number of events like school haram bees, wedding ceremonies, graduation ceremonies, funeral services, seminars, corporate end year party and many more, the company was established with the need to providing equipment and planning events. This was indeed significant solution for those who could not buy equipment and plan events for their own.

Majority of event rental firms in and outside the country employ a manual process of hiring equipment and other products to its customers. The entire process of transaction is a long process for both the staff and the customers. Sunshine-Occasions is one typical firm employing the manual system. A typical process of hiring event equipment items in the firm would involve the customer making physical visitation of Sunshine-Occasions stores in Nairobi town. The customer would be attended by a staff in the process of booking and hiring equipment's. The customer would identify the type of event, give an estimate number of expected guests, the type and number of equipment items, day of the event, the venue and the description of the installation site.

The duty of the staff entails recording the details given by the customer into files of record so as to keep each details and determine the cost of the requested equipment. The customer is supposed to pay 50% of total amount in order for it to be booked.

Prior to the event date, firm personnel assemble and deliver the items, install them ready for the event before the event-scheduled day. The remaining amount is to be paid upon the end of the event. The entire process proves to be manual and slow. In the proposed solution, online based platform for customers to visit our website select an item from a catalogue and make booking will be introduced.

1.2 Problem Statement

The problem with the current system is that customers make physical visitation of hiring firms to hire an item, this is a costly process both in terms of finance and time. Manual keeping of customers' transaction information in papers which is security risk to the documents in case of fire and theft. Manual computation of data and calculations is prone to errors because of the limiting human mistakes. This compromises on reliability of data and information. The cost of doing business with current system as a result of manual operations like manual record keeping in papers, time in doing operations, the cost of stationary and space. At times it is difficult to reach out to customers living far away in terms geographical proximity since the entire process is costly and time consuming. Furthermore, the firm may not be able to serve large number of customers.

1.3 Objectives

1.3.1 General Objectives

The main objective is to develop a user-friendly web based information system that automate all processes involved in hiring of event equipment's and to provide customers with an online platform for booking and hiring event equipment conveniently and efficiently.

1.3.2 Specific Objectives

- To analyze and interpret the current system used in hiring services in order to develop and establish a better system to improve the operation in hiring services.
- To design a dynamic solution based on information analysis acquired from data collection to develop a functional system
- To construct a fuctional web system to allow convenient customer to access hiring services and efficient customer service delivery
- To implement and test the system

1.4 Justification

The automation of the current manual system of hiring event equipment will enable customers view of different equipment, tents, tables, decoration materials and chairs, each item with their clear description online from anywhere in the world and goods be supplied to them without the buyer having to meet his seller physically. Thus, cutting costs. The company will also be able to penetrate to the areas that were not possible due to cost constraints. Customers will also be able to keep track of all the purchases they ever made with the company for making vital organizational goals and also decisions .The Company will benefit from the website by advertising to their customers and also reaching out to more customers across the country. It will also improve customer response and customer transaction speed at the same time assist staff work efficiently. It also will ease updating, retrieval and production of receipts, reports and statements for target users.

1.5 Project Scope

The work that has to be done in order to deliver the final product features and Functions includes analyzing the current manual system used and come up with the system requirements for the new system. The researcher will design the new system based on the system requirements, develop the system and then test the system to check whether it conforms to the set goal objectives and user requirements.

1.6 Target Users

Event Equipment Hiring System is an all-integrated system that would serve its users efficiently. The administrator is one of the entities to use the system. He/she is allowed with privileges of logging in, adding and removing staff and adding products and their information. The staff will also use the system to handle customer orders and handle payments. The customer will be using the system to access products and services, placing and also cancelling order.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Over the years different web-based systems have been developed for different business entities. However, little focus has been directed to such systems that have been developed to meet certain target customer population based on their specifications. They have had both advantages and limitations of the systems. With a view to developing a better system, review of the existing literature and systems was done so as to source information on their functionality. This involves identifying the functionalities of various modules of the existing system so as to gain base idea of developing a system dynamic enough to compete strongly in the market.

This chapter provides the literature review that is related with the system that will be developed later. This chapter comprises two sections: The first section reviews about the existence of other systems. The second section describes the review on method, equipment, and technology. The reference of source is taken from books, articles, journals, magazines, conference paper, interview and also sources from Internet.

2.2 Theoretical Review

Under the great evolution of e-commerce in many service industries, hiring and rental business has undergone dynamic changes with a view to reaching a wide customer base and providing a highly competent service delivery. Virtual companies through the internet are changing traditionally accepted economic practices and making competition even fiercer than it has ever been in the past. As the internet opens up larger markets, competitors are entering the online to take advantage of more and more flexible market, all utilizing the benefits of internet in order to steal market share.

Event Planners plays an important roles in order to make an event successful, implementing and regulating the entire event capable of supporting elements that work together to produce a successful events, both the organization and the purpose of the event, they also manage and oversee many people who supported the event and event need to fit the predetermined concept (Fifiyanti, 2015).

The competition in the field of activity management service or event organization has increased significantly because of its role and contribution in the controlling activities. Event management or companies provide services for an activity .it involves the movement of many resources from one unit activity to another through the process of transformation to achieve the purpose of an event. Event organizers must achieve the identified goal to realize the wishes of user. the goal can be for the event to become an attraction for the community or for the number to increase through the event, or to attract enthusiastic customer with a series of event to increase the flow of series of events capable of bringing emotion and for the series of event to run well without any problems (Sutawidjaya, A. H., & Nawangsari, L. C. 2017). Therefore, the event organizers must prepare the implementation of the event in accordance with the goal set by the client company.

The use of Event organizers or Event companies sometimes make the wedding ceremonies, graduation ceremonies interesting and more systematic, other events may be talk shows, competition in drawing, fashion shows and exhibition shows .Event organizers can be hired either before or after or during the activities and their work include provision of space, building

reservation, interior preparation, provision of sound system, provision of performers and many more. The ease offered by event management has now become a kind of need whenever an institution, company or person wants an event to be held with the event companies becoming easiest solution. Activities undertaken by event organizers before the activity is implemented includes creating the initial plan concerning items from theme selection, scale of activities, stage ,tent, budget as well as places (Sutawidjaya, A. H., & Nawangsari, L. C. 2017).

With Increasing cost of Event equipment such as tents ,chairs, tables, decoration material, it is not possible for firms or individual to own such equipment for its use, therefore they need to access this equipment in order their event to shine and happen (Singh, 2017).In addition there is need to have a method or system for processing rental transactions in an equipment rental business, information associated with the equipment is received and digital imaging and analysis is used during the process of assessing physical damage to the equipment (Bruch et al, 2003).

In the institution or organization that offers rental services or hiring products, there is need to have a system that efficiently allows a number of equipment to be efficiently rented out in a desired plan and thus enable charges to be calculated based on the actual usage of equipment (Yamaguchi, 2002).there is also a need of coordinating and managing renting of items among multiple parties. Participants of the system interact with each other through server connected via communication channel, the server computer maintains all the required information as to which items are to be rented ,and which items are currently being requested for renting ,rental transaction occurs when all certain criteria are met (yoon, 2014).

To maximize the utilization of equipment or assets ,there is need to allow idle equipment to be put to work through a third party to ensure a smooth transaction and generate profit to the organization, there have to be a venue such as web based platform for equipment or asset owner to lease or rent out their equipment (cho, 2004).

2.3 System Review

2.3.1 Existing Systems

2.3.1.1 Case Study 1: Bucks-Mont Party Rental

This is a party rental firm located at 238 West Butler Avenue in New Britain, PA. Bucks-Mont Party Rentals specializes in the renting tents, tables, chairs, linens and lightings and other accessories like costumes, catering services to its customers. They also provide installation services to its customers of their on the day of their events. Each item has a different rental fee based on the type and rental period.

It features a website which provides a display of products and services on a webpage. Each product is displayed in form of its image, description and against its rental price. Bucks-Mont Party Rentals feature an online quotation system. The customer is supposed to submit an online quotation of the product or products online. The quotation would involve filling a form about their details, for instance address, item details and those of the event including dates and delivery address. The Bucks-Mont staff analyze the quotation and reach back to the customer through a telephone within two days so as to give a final pricing of the product or products. Alternatively, the customer would call the staff over a telephone and make reservation directly. A reservation fee is always required to make a reservation of any product. After the payment of the booking/reservation fee, the staff prepares the booked items right before delivery to the venue of the event prior the event day.

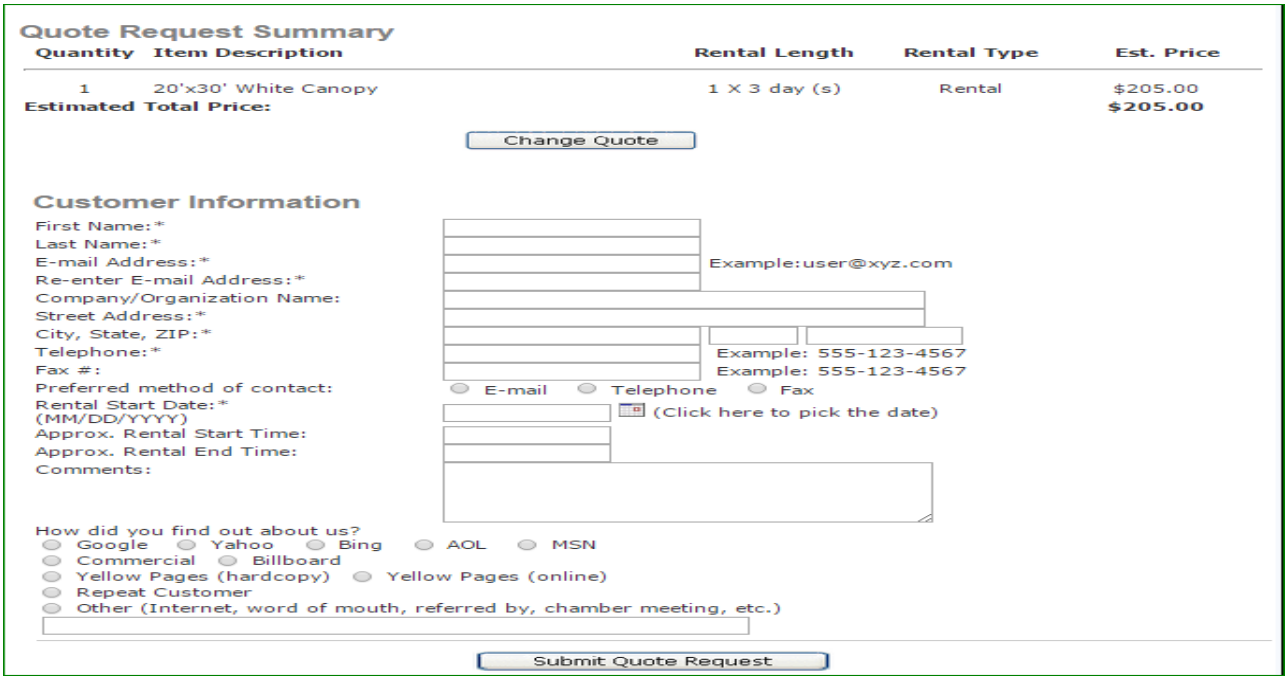


Figure 1.0. Qoute Request Form for Bucks-Mont Party Rentals

2.3.1.2 Case Study 2: Hamilton Tent and Party Rent

Hamilton Tent and Party Rent is an tent and party equipment rent firm located in Hamilton Canada. It provide rental services of different products including chairs, tables and linens. They employ an online system of renting its products to customers in different places. A customer selects a product from a catalog of different categories. Price tag displayed against the product and the customer is required to add the product to cart, checkout complete a billing form before making payment. Payment is made through pay pal.

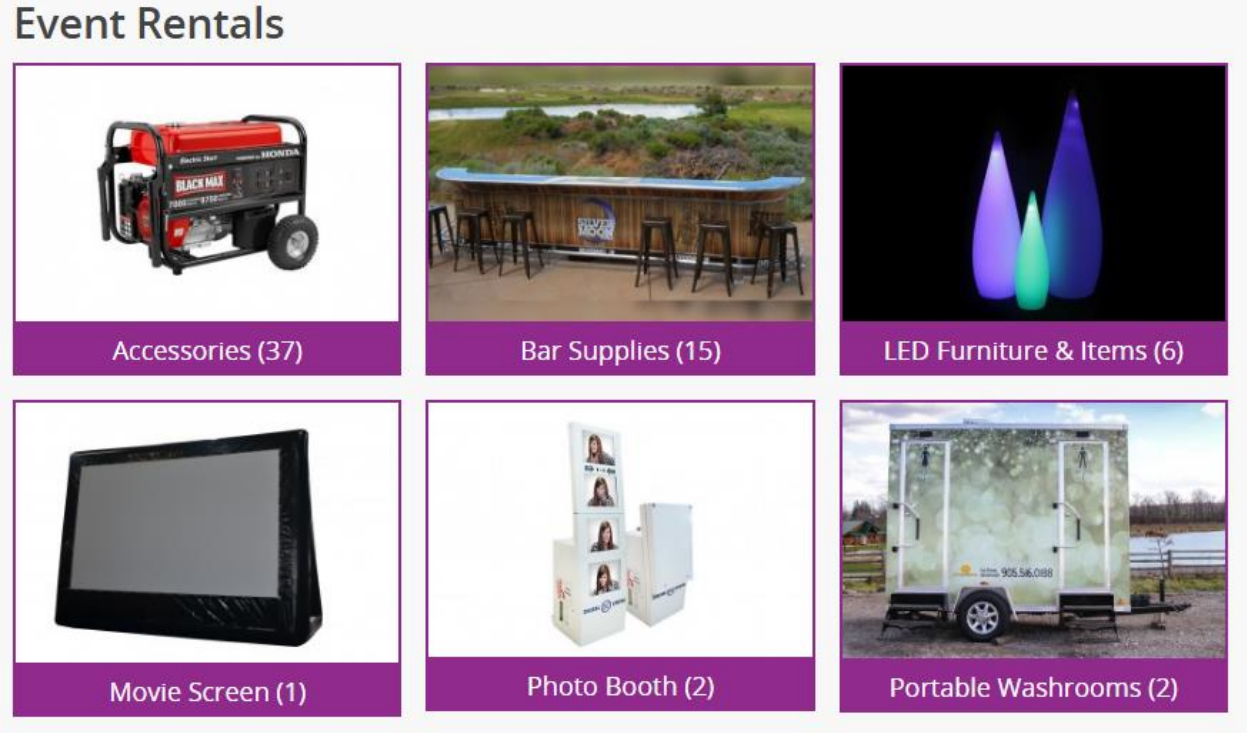


Figure 1.1. equipment Selection and Booking at the ancatster Hamilton Rentals

Hamilton party and Tent deliver items to its customers at a fee before installing the items prior to the event.

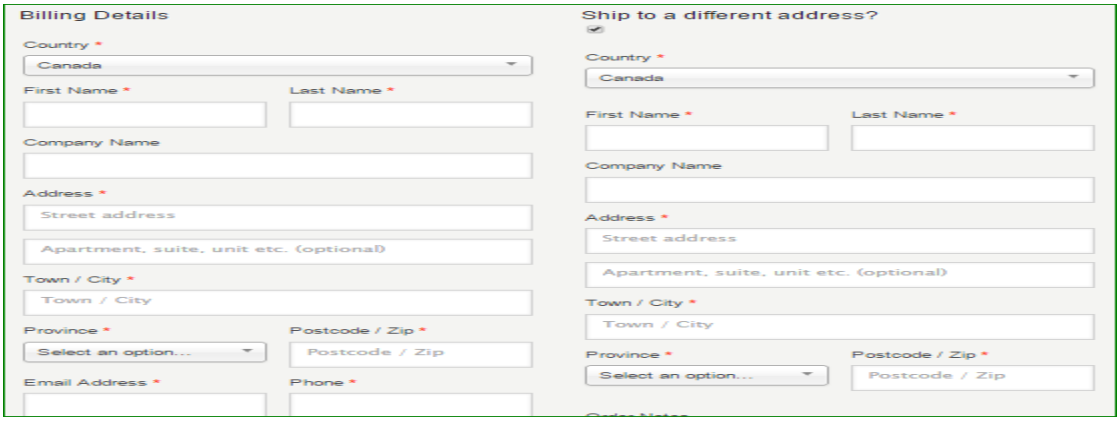


Figure 1.2. Billing Form at ancaster Hamilton Rentals

2.4 Critiques of existing system

2.4.1 Case Sudy 1: Bucks-Mont Party Rental

Bucks-Mont Party Rentals, it only features a quotation system and therefore a customer would need to make a telephone call at a later time to confirm of the booking. A shallow information has been given about the products. A customer needs to clearly understand conditions of operation and use of a particular item to allow them select an item under informed choice. This a significant item to be implemented in the proposed system to enable the customer understand the right conditions of use of the items like a tent or chairs. This ensures there safety and a good experience for the customer event.

2.4.2 Case Study 2: Hamilton Tent and Party Rent

Hamilton Tent and party rental delivers equipment to its customers at a fee before installing the items prior to the event.it has a poor communication with the customer, once the customer submits the quotation he/she does not get receipt at that particular time, the other limitation with this system is has only one method of payment which is PayPal and once it fails, brings a challenge to the customer and also the company.

2.5 Summary

From the above findings Event Equipment Hiring System caters for the above drawbacks. The system provide many communication channel such as SMS notification and Email to alert customer on successful transaction .the system also will provide a detailed information of every product for the customer understand the product functionality and compare whether will fit his/her need to make an event beautiful and interesting. The system will provide many payment method including credits card to avoid the above drawbacks. The system has also enabled access control mechanisms to secure the system against security threats such as DOS attacks. This has been made possible by the use of java programming language which is a good rich language in security control.

CHAPTER THREE

3.0 ANALYSIS AND DESIGN

3.1 Introduction

The analysis and design involves stating precise specification of end user requirements, the business needs and the design of the systems architectural and interface design. It would involve identifying user requirements as the guiding metrics so that the set objectives are attained.

3.2 Development Approach

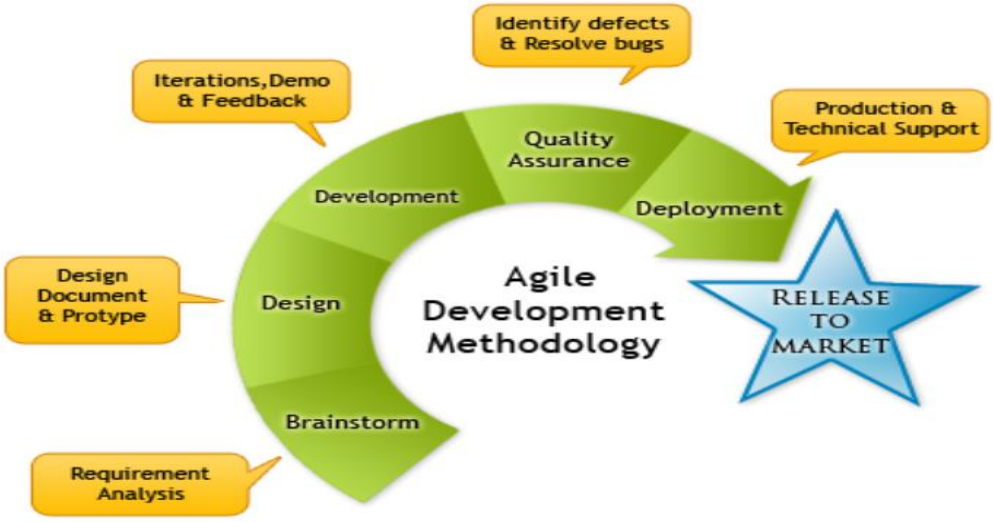
In order to develop a system that will meet the user functional requirements, a framework that is used to structure, plan, and control the process of developing an information system will be provided.

3.2.1 System Design

System design is the process of producing a design that would define specification of user requirements stated at the system analysis stage. This involves transforming the previously defined specifications into a design that approves the earlier analyzed requirements of the system.

3.2.2 System Design Method

Agile method will be used for the system design method. The tasks that will be carried out in development of project are as follows (www.agile.com).



1. Requirement analysis.

Business requirements are gathered in this phase. This phase is the main focus of the project managers and stake holders. Meetings with managers, stake holders and users are held in order to determine the requirements like; who is going to use the system? How will they use the system? What data should be input into the system? What data should be output by the system? After requirement gathering these requirements are analyzed for their validity and the possibility of incorporating the requirements in the system to be developed is also analyzed.

2. Design.

In this phase the system and software design is prepared from the requirement specifications which is studied in the first phase. System Design helpes in specifying hardware and system requirements and also in defining overall system architecture. The system design specifications serves as input for the next phase of the model.

3. Development.

It involves several iterations during the phase. There is a backlog in which adjustments and new requirements can be added during the development phase. First initial functionality is delivered where the system is reviewed by the stakeholders in order to identify any inadequacy and incorporate changing requirements. This is made possible by the flexibility of the agile methodology.

4. Testing.

In system testing the behavior of whole system/product is tested as defined by the scope of the development project. It includes tests based on risks and/or requirement specifications, business process, use cases, or other high level descriptions of system behavior, interactions with the operating systems, and system resources. System testing also investigates both functional and nonfunctional requirements of the testing.

5. Deployment.

After the system has passed the testing phase and is operationally satisfactory it will be released to the Sunshine-Occasion limited company.

3.2.3 Justification of the System Design Method to be used

The methodology has various advantages that suits this project. The methodology greatly emphasizes collaboration with stakeholders. Stakeholders are engaged in the development process before, during and after a project is done. Through this the developer is able to understand a client's actual needs. On focusing around the needs of the customers, there is more value addition to the development process. The methodology is also very flexible and allows changes even on the middle of the development process. Changing backlog features can be incorporated in the following iteration. It has the ability to respond to changes quickly while reducing risks.

3.3 Fact Finding Approach

This section discuss the research design, target population, sample size and sampling technique, research instruments, data collection procedures and various methods of Data collection instruments that is being used in the course of the project.

3.3.1 Research Design

The type of research for this system is structured interview and unstructured interview. Structured research interview is the type of research where all questions are asked in a predetermined order from a prepared schedule and all the interviewers involved strive to ask each question in the same way and same emphasis. Unstructured interviews are undertaken in a question-and-answer format. This is of a much more flexible nature than the structured and can be very rightly used to gather general information about the system.

3.3.2 Population

The population comprises of the stakeholders of the system, its staff and the customers. It also constitute the administrator who will provide administrative tasks to the system.

3.3.3 Sample and sampling techniques

The sample will be drawn from the customers and the staff of the rental business. A few number of customers of staff to represent their entire population will be selected. The top management will be engaged in a face to face conversation with the analyst where they will explain all their functionalities that they would wish the system to have such that the level of paper work could significantly reduce and the security of data could also be guaranteed, the result from management will be put in writing and a clear evaluation and analysis of the stated requirements will be made and a clear picture of the system will be drawn.

3.3.4 Data collection tools

Interview is a very important data gathering technique as in this the analyst directly contacts system and the potential user of the proposed system .One very essential aspect of conducting the interview is that the interviewer should first establish a rapport with the interviewee. It should also be taken into account that the interviewee may or may not be a technician and the analyst should prefer to use day to day language instead of jargon and technical terms.

The advantage of the interview is that the analyst has a free hand and he can extract almost all the information from the concerned people but then as it is a very time consuming method, he should also employ other means such as questionnaires, record reviews, etc. This may also help the analyst to verify and validate the information gained. Interviewing should be approached.

3.4 Requirement Analysis

3.4.1 Functional Requirement

Functional requirements are used for describing the behavior of the system as it relates to the system's functionality. They are the main functionalities of the system drawn from the user requirements. The following are the functional requirements of the project;

1. The system should allow the administrator to login securely with his/her username or password .
2. It should allow administrator to add staff and assign different role or authorization depending on what staff will be doing in the system.
3. Administrator should add or update more equipment materials and display their description,their rental price.
4. Administrator should be able to generate reports and process customer orders
5. Provide a simple interface forms for customer information
6. should allow customers make reservations and ordering of any product efficiently.
7. Provide a clear display of the products offered against their description on a webpage.

8. Provide an interactive system for customers to give the description regarding the kind of event they would hold and the choice of their equipment and their delivery address.
9. It should allow customers cancel orders when necessary.

3.4.2 Nonfunctional Requirements

Non-functional requirements are qualities or standards that the system under development must have or comply with but which are not tasks that will be automated by the system.
The following is a list of the non-functional requirements:

1. Usability for all users
2. Should allow reliability to operation at any time when needed
3. Security: the system must be protected from all kinds of network attacks (i.e. sniffing, hacking,) and virus attack.
4. A user-friendly interface for the staff and the customers

3.5 Logical Design

3.5.1 Use Case Diagrams

Figure 3.1. Usecase Diagram of the system

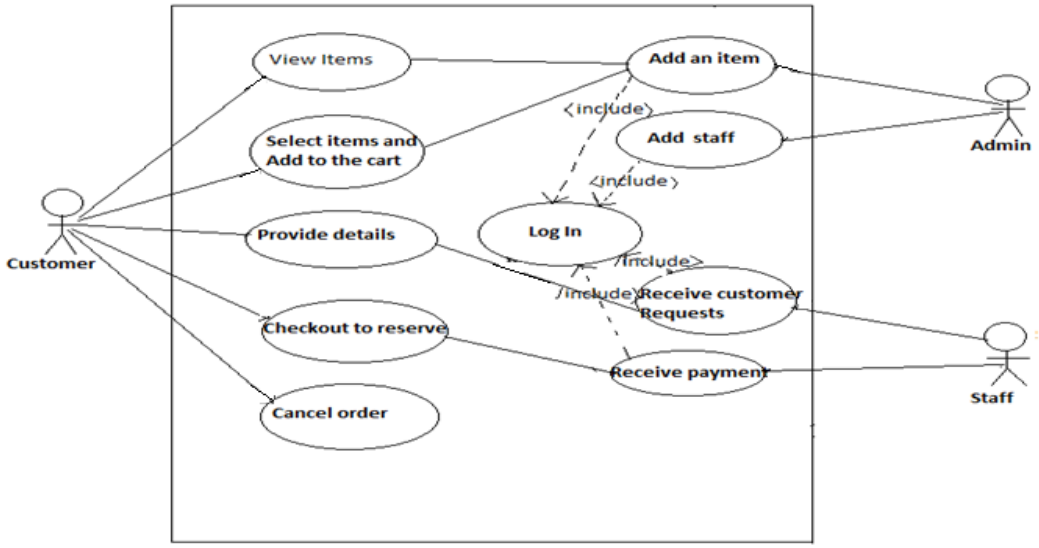
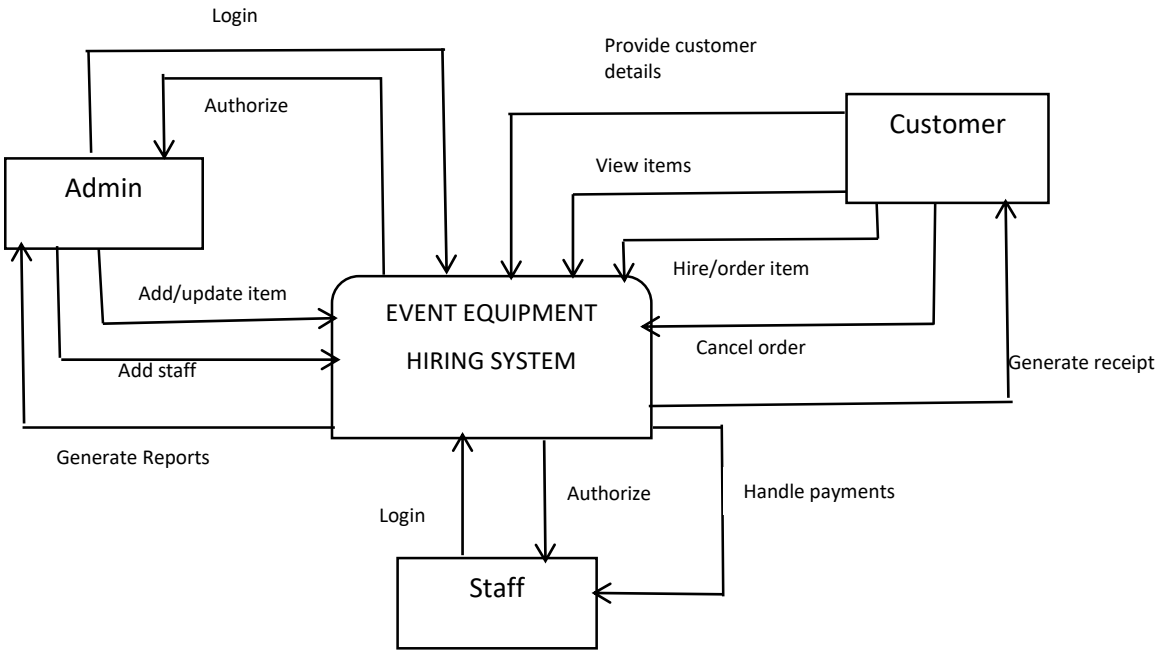


Figure 3.1. Usecase Diagram of the system

3.5.2 Data Flow Diagram

A data flow diagram is a graphical visualization for depicting the flow of data in an information system.



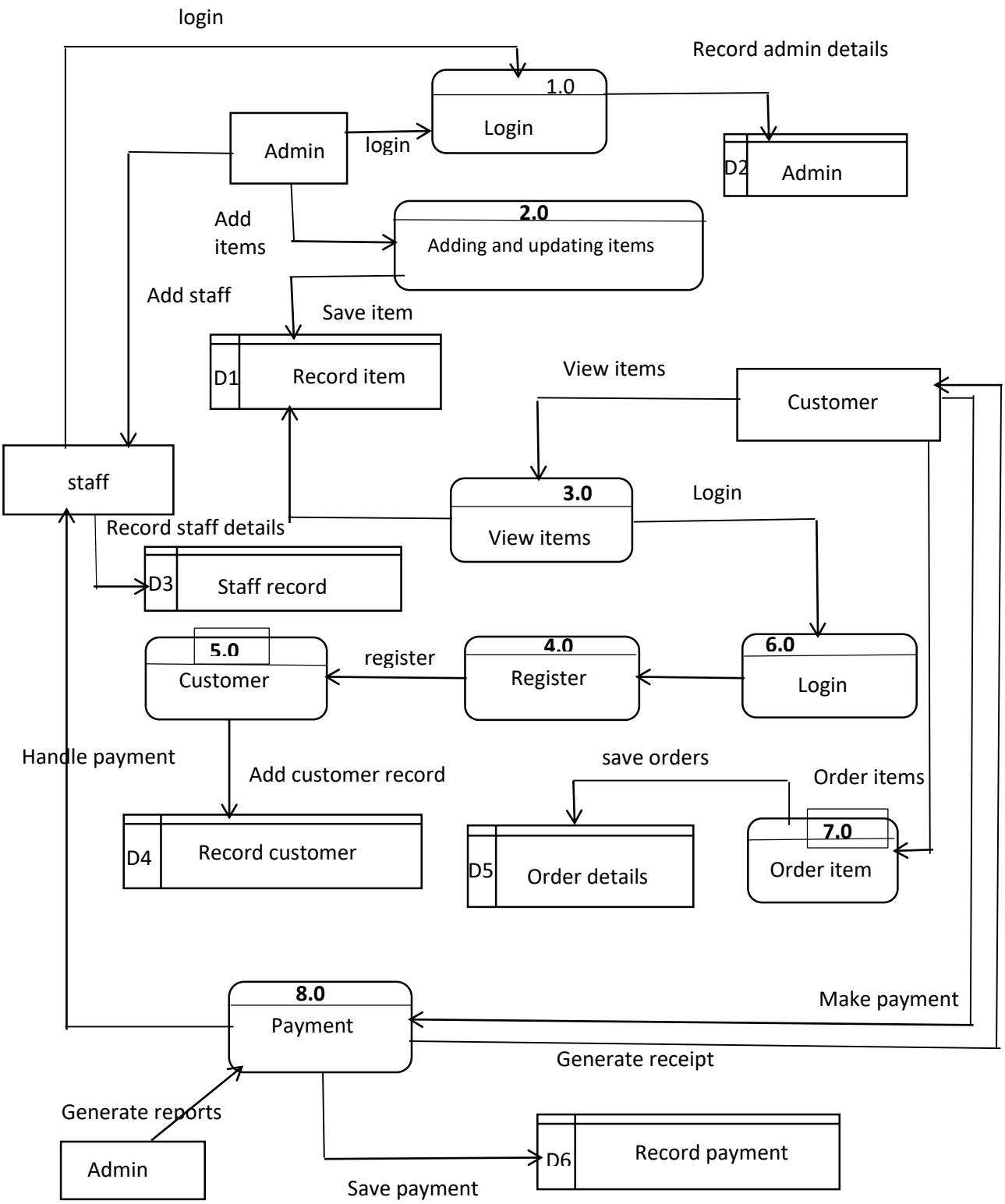

login
Record admin details
1.0
Login
Admin
login
D2
Admin
Add
items
2.0
Adding and updating items
Add staff
Save item
D1
Record item
View items
Customer
staff
3.0
View items
Login
Record staff details
D3
Staff record
5.0
Customer
register
4.0
Register
6.0
Login
Handle payment
Add customer record
save orders
Order items
D4
Record customer
D5
Order details
7.0
Order item
8.0
Payment
Make payment
Generate receipt
Generate reports
Admin
D6
Record payment
Save payment

Figure 3.2. Level-1 DFD **2**

3.5.3 Database Design

Table 3.5.3.1 shows the customers details records.

customer	**Datatype**	**Not null**	**Constrains**
Id	Int	yes	Primary key
name	Varchar(45)	yes	
email	Varchar(45)	yes	
Phone no	Varchar(45)	yes	
address	Varchar(45)	yes	
City_region	Varchar(2)	yes	
Credit card no	Varchar(19)	yes	
Company name	Varchar(45)	yes	
address	Varchar(20)	yes	

Table 3.5.3.2 lists the category of equipment the customer can hire.

Column	**Data type**	**Constrains**
Id	Tinyint	Primary key
Category Name	Varchar(45)	

Table 3.5.3.3 shows the customer order details

Column	Datatype	Constraints
Id	Int	Primary Key
Customer id	int	Foreign key
Amount	Decimal(6,2)	
Date created	Timestamp	
Confirmation_ number	Int	

Table 3.5.3.4 showing the equipment items customer can hire.

Column	**Datatype**	**Constraints**
Id	Int	Primary key
Category Id	Int	Foreign Key
Name	Varchar(45)	
Price	Decimal(5,2)	
Description	tinytext	
Last_update	timestamp	
Status	Varchar(20)	

Table 3.5.3.5 showing staff details and their role in the system .

Column	**Datatype**	**Constraints**
Id	Int	Primary Key
Role Id	Int	Foreign Key
password	Varchar(45)	
User Name	Varchar(45)	
First Name	Varchar(45)	
Last Name	Varchar(45)	

3.6 Specific Platform

3.6.1 Hardware Specification

1.RAM Size at least 128 MB

2. A printer for printing the output

3. Processor speed of above 200 MHz

4. Hard Disk of at least 15 GB. Free space at least 100MB

3.6.2 Software Specifications

The project will use Net beans as the IDE, Jdk 1.8 will be used to provide for libraries necessary for processing of java language. Bootstrap which is a css library will be used for designing the

interface, it also uses apache-tomcat 8.2.4 as the web server as well as servlet container, MySQL server as the database server.

3.7 Summary

Of all the methodologies, Agile Development methodology is feasible and practical way to implement this project since it's an interactive web applications. As a result the design of this project will take this route to implement the project in order to come up with Event Equipment Hiring System for Sunshine Occasions Limited. The agile methodology, due to its flexibility will ensure that the project is completed within the required time. The agile iterative nature will also ensure that specification and quality of the product is not compromised in any way.

REFERENCES

Agile Methodologies. (n.d.). Retrieved November 13, 2017, from http://www.umsl.edu/~sauterv/analysis/6840_f09_papers/Nat/Agile.html#XP

Bruch, M., Conrad, B., Feser, J., Janda, S., & Roethler, E. (2003, June 26). *US20030120509 A1*. Retrieved from http://www.google.com/patents/US20030120509

Cho, M. (2004, May 13). *US20040093227 A1*. Retrieved from http://www.google.com/patents/US20040093227

Event Rentals Rentals - Ancaster Rental Centre in Hamilton, Burlington, Kitchener & Surroundings in Ontario. (n.d.). Retrieved November 13, 2017, from http://ancasterrentalcentre.ca/rental-category/event-rentals/

Fifiyanti, D. (2015). *FINAL REPORT THE ROLE OF EVENT PLANNER IN NATIONAL COLLEGIAN LEADERSHIP MANAGEMENT TRAINING*. Politeknik Negeri Sriwijaya.

Party Rentals in New Britain PA | Event Rental and Tent Rental in Philadelphia, Doylestown, Lansdale, New Britain, New Hope PA. (n.d.). Retrieved November 13, 2017, from https://www.bucksmontparty.com/

Singh, S. (2018). Farm Machinery Rental Services: Case Studies from Punjab. In *Institutional Innovations in the Delivery of Farm Services in India* (pp. 33–70). Springer, New Delhi. https://doi.org/10.1007/978-81-322-3753-2_3

Yamaguchi, S., Suzuki, K., Omori, S., & Omoto, M. (2002, December 5). *US20020184122 A1*. Retrieved from http://www.google.com/patents/US20020184122

Yoon, H. (2014, March 25). *US8682804 B1*. Retrieved from http://www.google.com/patents/US8682804

APPENDICES

Project Work plan

Period 2017-2018 / Activity	September	October	November	December	January	February	March
proposal							
Requirement analysis							
System design							
coding							
testing							
presentation							
documentation							

PROJECT BUDGET

ITEM	DESCRIPTION	COST
Personal Computer	HP LAPTOP,4 GB RAM,500 GB hard disk	KSH.45,000
Training		KSH.10,000
Transport		Ksh.5000
Development		KSH.20,000
Maintenance		KSH.10,000
Total		KSH.90,000