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**BUILDING AND CONSTRUCTION PROJECT SYSTEM**

**DECLARATION**

I Mwaura Susan declare that the project report building and construction system project is based on my own work carried out during the course of our study under the supervision if Evah Njeru. I assert the statements made and conclusion drawn are a result of my research work.

**DEDICATION**

I dedicate this project first and foremost to almighty God who has been thee right from the beginning right to this very point. Special dedication to my ever supportive parents for their relentless support and compassion during this course. Furthermore, I want to dedicate this project to my lecturers for their continued impact of knowledge. Lastly, I would like to thank my friends and colleagues for their continued support. My love for you all can never be measured. Thank you.

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# BUILDING AND CONSTRUCTION MANAGEMENT SYSTEM

# CHAPTER ONE: PRELIMINARY INVESTIGATION

# ABSTRACT.

In the past few decades building and construction was entirely aided by manual use of information. With growing technology it has become easier to keep records of property management. Previously management was difficult but with a developed system in place of building and construction it is easier to keep track of records, estimate costs of production and expected time of completion.

This building and construction management system will include projects such as commercial housings, residential plots, grand stands, Covered Courts and Highways.

With this management system companies can use it to maximize output for clients and save costs of having to travel to manage different projects.

## 1.0 INTRODUCTION

Building and construction management system Is a system that is designed to improve and provide efficiency and transparency in construction companies, small scale constructors and large scale contractors.

The management system will help create innovative ways of construction and lead to competency in projects and time consciousness.

This integration of design and cost information will help overcome the problem of overestimation and reduce fragmentation.

With this system in place there will be reduced ambiguity in construction projects.

This system will widely use standard software development languages like Php, MySql, CSS, Javascipt and html.

## 1.1 BACKGROUND INFORMATION

The management of projects is currently following a manual procedure of keeping records whereby a site manager has to keep tab of various stages of project development.

Constructors acquire information from the management which is paper work mostly.

Information is mainly stored in the main book by the chief engineer.

In most cases a company may have several projects which it has to keep track records of the ongoing progress and expenditure. With such there is increased paper work and traditional filing system which is an added cost.

This records can be easily destroyed by natural environmental hazards or careless storage by staff members. This causes large loss of data and resources.

### 1.1.0PROBLEM STATEMENT

Problem definition of the system is to create an online management system for Construction Companies.

A manual management system has the following problems

* Time consumption
* Poor resource utilization
* Over ambiguity
* Increased paper work
* Over estimation of project duration and materials
* Increased cost of production
* Inaccuracy of layout due to human error

## 1.1.1PROPOSED SYSTEM

From earlier system constructors have to keep in touch with site managers about the progress and continuity of construction sites.

The proposed system will include graphical images that will enable a manager to effectively manage a site without need of having to visit the site in person.

The system will include a way of managing the attendance of members in an organization.

With this a manager can access the progress of the construction without having to travel to visit the site.

Main actions to be performed by the system are:

Login

-where system user will submit their system credentials to access the system.

-Home

- where the system user will be redirected by default after logging in.

-Employee List Page

-show a detailed where all company's employees are listed and managed.

-Position

- where system user manages the list of employees position.

-Project Division

- where system user manages the list of project divisions.

-Project Team

-where project teams are listed and can be managed by the system .

-Project List

- where all projects are listed and managed along with their details and status.

-Users

-where system admin manages the list of system users.

## 1.2 OBJECTIVES OF PROPOSED SYSTEM

The main objectives is to overcome challenges faced by traditional systems. Also to develop a system of effectively managing construction projects.

The system will be able to follow this objectives:

1. Ensure the system is user friendly
2. Be able to generate results within a specified period of time
3. To reduce human errors
4. To maximize output
5. Provide correct database
6. Check workers performance

## 1.3PROJECT JUSTIFICATION

This Building and Construction Management System (BCMS) will help in maximizing output and save on construction time.

It will be able to show clients the progress of their projects and help managers easily supervise sites without incurring extra costs.

This system will help create innovative ways in construction.

It will take into account programming languages such as Php, Html, CSS and JavaScript.

A login system will enable included to ensure that the administrator has full control of the system and projects details.

## 1.4CONSTRAINTS AND LIMITATIONS

Constraints are conditions that impede progress towards an objective. Some of the major constraints:

* Design constraints – This may be inherent in the type of building requirement, site or a client. This may be due to available technology, skills, materials, labor and finances.
* Technical constraints – This generally refers to processes involved in completing construction activities. This may include site access routes, co-ordination of work, space, storage, or holding areas.
* Time constraints – This include key dates on project schedule. This constraints may be imposed by clients or legal forces.
* Economic constraints – this may be the use of hazardous materials , resilience to climate change, noise, dust, energy consumption, waste management etc.

# 

## 1.5. SCOPE OF THE SYSTEM

# 

# The proposed system is being developed an aim of targeting large scale constructors, foreign investors, real estate developers and domestic investors.

In addition the system will also be used by contractors and private home developers.

## 1.6. RISKS

The following are the risks the project is likely to face

* Errors through coding
* Fast adaptability to changes in technology
* Arising of new factors.

## 1.7. ACRONYMS AND SYNONYMS

Html – Hypertext Markup Language

BCMS – Building Construction Management System

SQL – Structured Query Language

PHP – Hypertext Preprocessor

CSS – Cascade Style Sheet

JS - JavaScript

# Traditionally user documentation was provided as a user guide, instructions CHAPTER TWO: LITERATURE REVIEW

## 2.0 INTRODUCTION

A comprehensive review of literature has been conducted to identify the issues relating to this project. This chapter provides a sketch of these projects reviewed and organized in a chronological manner from international to national level.

This research used a systematic review on risk assessment of construction project review.

There are many organizations that have computerized record-keeping systems in our Country.

This tells us that the systems are reliable, efficient and their operations are accurate. The systems are user friendly such that they require little knowledge to operate and work with effectiveness. They have a very high speed taking a very short time to perform tasks that can be performed by many people, for example, recording transactions and keeping records.

In teamwork project, I was involved in design and implementation of a time tabling system that had several user security levels. This code would be used to implement and improve the security level of this system.

## 2.1Conduct of the Literature review

The architecture, engineering and construction industry has experienced declining productivity due to deficiencies in building designs. The focus on energy efficiency and sustainability makes it important to reduce such issues.

The managing of building design phases will be one of the most improved management in managing both outputs as layouts and creativity.

There must be enough room for creativity so that the building projects can evolve to solve client’s needs. Many projects are not able to realize their full potential due to managerial problems in the design phase (Hamzeh et al, Hansen & Olson 2011).

One of the reason for this complexity of design phase is where iterations are essential for value creation (Ballard 2000).

The management of mass projects can always be planned sequentially where an activity A must be completed before B can start. This is seldom the case for building design management where several iterations are included to generate value hence making design phase a complex process to manage.

According to AI-Aidaleh,2008- IS can be defined as a set of interrelated components that collect, store, process and report data and information that can be used to enhance the process of decision making.

Kettinger (1995) argued that IS function can be defined as production and a service activity performed by a centralized IS department in the organization. IS has gone through many phases. In the 1960s data processing was backroom function with little customer interaction. The main purpose at that time was to develop and maintain a highly reliable transaction-based system. In the 1970s, the role of IS was distributive computing and decision support technology, which require an increased level of user interaction and participation. In the 1980’s the IS was known to be decentralized with nine sub-functions: delivery systems, system development, support centre, information centre, R&D technology diffusion, planning, internal auditing and administration. Recently, IS has come to handle business transactions between IS service providers and customers.

Therefore, IS roles have changed from manufacturing activity to distribution and technology transfer that require higher levels of user interactions and service delivery. It is wise for IS developers to refer to the corporate business plan and corporate culture before developing MIS. In many industries, survival and even existence is difficult without extensive use of IT. ISs have become essential for helping organizations operate in a global economy. Organizations are trying to become more competitive and efficient by transforming themselves into digital firms where nearly all core business processes and relationships with customers, suppliers, and employees are digitally enabled. Businesses today use IS to achieve six major objectives: operation excellence, new products, services and business models, customer or supplier intimacy, improved decision making, competitive advantage and day-to-day survival. From a technical perspective, an IS collects, stores and disseminates information from an organization’s environment and internal operations to support organizational functions and decision making, communication, coordination, control, analysis and visualization. ISs transform raw data into useful information through three basic activities: input, processing and output. From a business perspective, an IS provides a solution to a problem or challenge facing a firm and provides real economic value to the business.

An IS represents a combination of management, organization and technology elements. The management dimension of ISs involves leadership strategy and management behaviour. The technology dimension consists of computer hardware, software, data management technology and networking or telecommunications technology (including the internet).

**Importance of Electronic Management System (EMS)**

According to businessdictionary.com (2015), a system is a set of detailed methods, procedures and routines created to carry out a specific activity, perform a duty or solve a problem. It is an organized, purposeful structure that consists of interrelated and interdependent elements (components, entities, factors, members, parts etc.). These elements continually influence one another (directly or indirectly) to maintain their activity and the existence of the system in order to achieve the goal of the system.

All systems have inputs, outputs and feedback mechanism, maintain an internal steady-state (homeostasis) despite a changing external environment, display properties that are different than the whole (emergent properties) but are not possessed by any of the individual elements and have boundaries that are usually defined by the system observer.

In our case, the system will consist of the employee task and payment management system, the employees, company or business management staff, computers (hardware & software), network resources (e.g. internet connectivity) etc. The application will be able to process input data, process the data and output it in such a way that it can be easily understood. This is to say that occurrences that happen will be recorded and will act as the entry point of the system. The occurrences are processed and displayed as reports of which will assist in the monitoring part.

The system will have a feedback mechanism whereby the customers will have an application field in which they can use it to interact with the system and send their feedback. Also the application will have entry or login screens to be used by the manager or employees to check on the stock details so as to give an essential feedback to the customers.

Oxford dictionary indicates that electronic is a way of operating by means of a computer i.e. involving a computer system to process information that follows a program to perform sequences of mathematical or logical operations. This means that the application to be developed will run and operate on a computer.

Components of Management Information System

These are complete IT subsystems that make the reservation information system operational. They are compactible in nature and the failure of one component may affect the operations of others within the system. They consist of computer resources, data, people procedures used in the modern business enterprise.

1. Hardware

According to Avison D. and Fitzgerald G. (2003), hardware are the physical and materials used in the information processing. Specifically, it includes not only machines like computers, but also the data media ie. all tangible objects on which data are recorded from sheets of paper to magnetic disks. Others include keyboards, mouse, scanners, etc.

1. Software

These includes all sets of sets of information processing instructions and it comprises of different types of programs that enable the hardware to carryout different tasks. Software is further categorized into system software and application software. System software is concerned with keeping the computer system working while application software is the general purpose or written for a specific task like stock control. It may be written using programming languages or more general piece of software like database.

1. People

According to Avison D. and Fitzgerald G (2003), these are required for the operation of all ISs. They include end-users and information system specialists. End-users are people who use an IS. The reservation IS specialists help in the development and operation of IS. They include system analysts, programmers, computer operators and others. People are probably the component that most influence the success or failure of information specialists.

1. Database

Merrill Wells (2002), defines Database as a collection of non-redundant data, which can be shared by different application systems. Or database is a collection of data as well as programs required to manage that data. According to Merrill Wells the importance of data has been obvious from time immemorial. Before the advent of computers, this was written in books or registers; these could be considered as “manual” databases. Ever since computers were introduced as a means of sorting data, the concept and structure of a database have undergone a sea change. Database creation and maintenance is a gradual and continuous procedure being influenced by system software such as database management systems. Database users state their requirements to the database using the data definition languages (DDL) and the data manipulation languages (DML) via the database management systems. The database management system surely provides an interface between the users programs and contents of the data base. During the creation and subsequent maintenance of the data base contents, the DDL and the DML are used for the following, add new files, expand the database, delete the absolute records, adjust data, and expand the database capacity, link up the data items and many others.

Types of information system

Information System is a combination of people, hardware, software, communication devices, network and data resources that processes (can be storing, retrieving, transforming information) data and information for a specific purpose. These types are:

1. Transaction Processing System

Information System is a combination of people, hardware, software, communication devices, network and data resources that processes (can be storing, retrieving, transforming information) data and information for a specific purpose. These types are:

FIGURE shows five stages of TPS

Figure 1.

Data Entry

Processing

Report

Generation

Ad hoc

Inquiries

Data

Base

1. Management Information System

These are mainly concerned with internal sources of information. MIS usually take data from the transaction processing systems and summarize it into a series of management reports. Hence MIS provides information for managing an organization. Information from MIS helps managers to monitor and direct the organization.

**Difference between manual and computerized system**

In the manual system the data was stored in form of paper work and records while in the computerized system data is stored in the database ,hence the data is more safe and secure from loss and being altered with.

In the manual system work is a bit tedious and tiring because one had to use a lot of energy writing and arranging forms in the cabinets while in computerized system it’s easy to store data and retrieve.

In the manual system a lot of time is consumed and requires a lot of manpower while in computerized its fast for instance if is to search for a document a search engine is used where you just write/key in the clients and members details hence saving time and energy

Product functionality

The product functions are as follows:

i) Registration of users and client who give orders in the company

ii) The system will save the data in the system database for future reference in case there is need to review

iii) Keeping of clients’ orders and monitoring records of the progress reported

iv) Running all the operations that are usually undertaken in the organization

v) Adding, deleting of users.

Users and characteristics

1. Admin

An administrator is someone who can make changes on a computer that will affect others users of the computer, the administrator can change security settings, install software and hardware, access all files on a computer and make changes to other users account.

User documentation

Documentation refers to the documentation that describes how a product or service operates for example software code documentation, technical specification and API documents. User documentation refers to the documentation for a product or service provided to the end-users .the user documentation is designed to assist end users to the use of product or services .this often referred to as user assistance. The user documentation is part ofmanual/online help, however user documentation is increasingly being delivered online today .this has enabled technical writers to be more imaginative in how they assist users.

Entity relationships

1. Entity users

Users entity makes an entity that uses a service organization and whose financial report is being activated.

1. User id.

It’s a logical entity used to identify a user on a software system website /within any generic IT environments .it’s used within an enabled system to identify and distinguish between users who access /use it , a user ID may also be termed as username /user identifier.

a) User-name

A username is a name that uniquely identifies someone on a computer system .this username /password combination is referred to as a login and is often required for user to log in o websites to access your email via the web you are required to enter your username and password

1. Password

A password is a string of characters used to identify a user during the authentication process, password are typically used in conjunction with a username: they are designed to be known only by the user to gain access to the device, application website. Passwords can vary in length and can contain letters, numbers and special characters .other term that can be used interchangeably are pass phase for when the password uses more than one word and passcode and passkey for when the password uses only numbers instead of mix of characters.

Technologies, research and development

The section will help us to explain why use visual technology to plan development of this project and compare the other open source technology.

Objectives of visual projects

The main objective of visual basic project is to manage the details of the clients, employees, admin rights and the reports production of the clients

Functionalities of Hypertext Preprocessor

i) Provides the searching of facilities based on various factors

ii) Manages information of the clients

iii) Deals in monitoring the information and transaction of the store

Advantages of PHP

1. the structure of PHP is very simple particularly the executable code
2. The PHP IDE has been highly optimized to support rapid application developments.
3. Easy to Learn. PHP is easy to learn
4. Familiarity with Syntax
5. User-Friendly. ...
6. Supports All of the Leading Databases
7. Efficiency in Performance
8. Platform Independent.
9. Supports All Major Web Servers.

**Disadvantages of PHP :**

* It is not that secure due to its open-source, because the ASCII text file are often easily available.
* It is not suitable for giant content-based web applications.
* It has a weak type, which can cause incorrect data and knowledge to user.
* PHP frameworks got to learn to use PHP built-in functionalities to avoid writing additional code.
* Using more features of PHP framework and tools cause poor performance of online applications.
* PHP don’t allow change or modification in core behavior of online applications.
* The PHP frameworks aren’t equivalent in behavior so does their performance and features.
* While PHP may be a powerful tool supported by an outsized community and plentiful reference documentation, there are easier programming languages for web apps.

# **CHAPTER 3: SYSTEM ANALYSIS AND FEASIBILITY STUDY**

## **3.0. Introduction**

## **3.1. Requirement elicitation**

This is the process of researching and discovering the requirements of a system from users, clients and shareholders. Also known as requirements gathering, the main reason for requirements elicitation in the system is to ensure that the requirements are clearly understandable and relevant and that they meet user requirements.

### **3.1.1 Interview**

This is a two-way exchange conversation where questions are asked by the interviewer to the client facts or statements from the interview. Various type interview can be applied in the data collection, in my research I will use individual interview where I will lay an interview layout to obtain the information from the current employees, clients and the project management that would assist in defining the problem definition and whether there current mode of recording information as feasible.

### **3.1.2 Questionnaires**

# **A list of brief questions was sent to the concerned parties beforehand then latter picked from them after a period of time with the questions already filled. The questions are directly to the point and only need self-explanatory answers. It saves analysts time since the respondent were within the firm. Questionnaire provided a cheap means of data collection especially when there are a large number of people. It allows individuals to maintain anonymity thus there is more likelihood of obtaining real facts**

## **3.2 System model**

A system model is a conceptual model as a result of system modeling that describes and represents a system .A system comprises of multiple views such as planning, requirements (analysis), and design, implementation and data outputs.

Flowchart

In this case, a flowchart is used;

Figure: 2.

Projects

Projects database

Project

Admin

Admin database

Generates acces

Client

Employees

Client’s database

Employee’s database

Clients

Project management

Employees

### 3**.2.2 Use case diagram**

A case diagram is a unified modeling language(UML) is a type of behavioral diagram defined by and created from a use-case analysis .its purpose is to present a graphical overview of the functionality provided by a system in terms of their goals (represented as use case)and any dependencies between those use cases.

Figure: 3

Customer

Admin

Staff

### **3.2.3 DATA FLOW DIAGRAM (DFD’S)**

This is a graphical presentation of the flow of data through an information system .DFD can also be used for the visualization of the data processing (structure design).

*3.2.3.1 Clients detail*

Figure: 4

Client

Client detail

Client

1.1

Add

1.3

Delete

1.2

Update

1.4

Search

Client

Client

Client

Add

Delete

Update

Customer

Customer

Client

Customer

Search

Customer

#### 3.2.3.2 Project detail

Figure: 5

Request

Delete

Request

Add

Update

Request detail

Detail

Search

#### 3.2.3.4 Employee detail

Figure: 6

Employee

Add

Update

Employee

Delete

Employee

Detail

Search

Exit

## **3.3 FUNCTIONAL REQUIREMENTS**

The following are the system functional requirements:

1. User authentication- the system validated users accessing data in the system through use of usernames and password. Validation and verification which eventually enhanced integrity and confidentiality since only authorized users were able to access the system.

2. Data entry, storage and retrieval-Records were inputted using forms and be stored in the database, users queried the system for information based on certain criteria -

3. Reports generation –The developed system allowed the staff to print report for the clients as well as all the reports conducted by surveyors.

4. Software and hardware requirements-:

Software requirements:

I) Operating system- windows 10 will be used as the operating system since its stable and support more features and is also user-friendly’

ii) Database MYSQL- MYSQL will be used as database as it’s easy to maintain and retrieve records by simple queries which were in English language which were easy to understand and to write’

iii) Development tools and programming language –Visual studio 2022 was used to write the whole code.

Hardware requirements:

I) Intel core i5 was used as a processer because its faster than other previous processor and was reliable and stable and can run for long without lags.

By using such processor we could run our projects without any worries’

ii) Ram 8 GB was used as it provided faster reading and writing capabilities and in form supported the processing.

## 3.4 NON-FUNCTIONAL REQUIREMENTS

I) efficiency requirements – when the Project management system was implemented the staff easily accessed system and generated the report at a faster rate .it took staff fewer time to generate them since the system could generate them electronically and no error were encountered

ii) Reliability Requirements- the system accurately performed member’s registration and member’s validation.

iii) Usability requirements –the system was developed for a user friendly environment so that clients and staff of the projects managements team performed the various tasks easily and in an effective way. This was enhanced by use of friendly user interface that were attractive to the clients.

Iv) Implementation requirements- Implementation of whole system used Visual Studio and MYSQL for database .MYSQL help in the storage of the tables for the post. The tables contain information such as username, password and staff personal details.

v) Delivery requirements- The whole system is expected to be developed in six months of time with a weekly evaluation by the project guide

## 3.5 FEASIBILITY STUDY

A feasibility study is undertaken to determine to the possibility or probability of either improving the existing system or developing a complete new system .it helps to obtain the overview of the problem and to get a rough assessment of whether other feasible solution exist.

The need for feasibility study:

* Answer question whether new system should be installed or not
* -Determine the potential of existing system
* Improve existing system
* Know what should be embedded in the new system
* Define problem and objectives involved

Avoid crash implementation of a new system

* Avoid cost repair at better stage when system is implemented

Examples of feasibility study:

### 3.5.1 ECONOMIC FEASIBILITY

It’s the most frequently used for evaluation of the effectiveness of the system commonly known as cost/benefit analysis, The procedure is to determine the benefit and saving that are expected from a system and compare them with cost , decisions is made to implement the system.

This part of feasibility study gives the top managements the justification for the new system. This is an important input to the management, because very often the management does not like to get confounded by the various technicalities that bound to be associated with project of this kind .A simple economic analysis that give the actual compassion of cost and benefits .

### 3.5.2 TECHNICAL FEASIBILITY

Technical feasibility centers on the existing system i.e. the manual system of the test management process and to what extent it can support the system. According to the feasibility analysis procedure, the technical feasibility of the system is analyzed and the technical requirements such as software facilities, procedures, inputs and identified. It’s also one of the important phases of the system development activities. The system offers great levels of users friendliness combined with greater processing speed. Therefore, the cost of maintenance point of view management convince that the project is potentially feasible.

### 3.5.3 BEHAVIOURAL FEASIBILITY

People are inherently resistant to change and computer has been known to facilitate changes .An estimate should be made of how strong the user is likely to move toward the development of computerized system. These are various levels of users in order to ensure proper authentication and authorization and security of sensitive data of the organization.

### 3.5.4 SCHEDULE FEASIBILITY

The feasibility deals with time managements, the proposed system will be developed with the shortest time period attainable which is the time frame of the proposed system.

### 3.5.5 OPERATIONAL FEASIBILTY

The system will be designed using graphical user interface which are easy to use and user friendly .Anyone with basic computer skills will be able to operate the system with ease after they have been trained.

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# CHAPTER FOUR: SYSTEM DESIGN

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## 4.0INTRODUCTION

System design is the evaluation of alternative solutions and specifications detailed computer based solution.

## 4.1 TYPES OF SYSTEM DESIGNS

The system design is an interactive process that involves working together depth and backward for recheck and modification of the system.

**1. Logical Design**

It is the conceptual blueprint of a system, illustrating entities relationships, rules and processes.

In logical design I defined all the input into the system the output to be produced by the system.

**2. Physical Design**

Physical design shows the activities that took place and how the activity took place.

## Example of physical design using client request.

Figure. 7

Client

1

Blocks

Process request

**Process design**

Figure.8

Start

Mainframe

Clients’ form

New record?

Enter clients’ details

End

NO

YES

### 

## 4.2 NORMALIZATION

Shows a list of tables and reduced redundancy

Figure 9.

### C:\Users\vicsam.DESKTOP-TFFN75E\AppData\Local\Microsoft\Windows\INetCache\Content.Word\IMG_20220530_194043.jpg

4.3 Entity Relationship Mod**els**

The entity relationship model represents the network of relationships between classes of things, which need to have data recorded about them in a system.

**The following shows the general relationship of entities in the Organization.**

**Figure. 10**

###### Login

###### Check user

Check

Check

Check

Check

Check

Lists

Attendancee

Project

Position

Employee

## 4.4 Data Dictionary

This explains data about data

**Employee**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Field Size** | **Constraints** |
| Employee Name | Text | 10 |  |
| Employee Number | Text | 7 | Primary key |
| Employee Address | Text | 14 |  |
| Telephone Number | Number | 12 | Integer >0 |
| Age | Number | 2 | >20 |
| Sex | Text | 8 |  |
| Marital Status | Text | 7 |  |

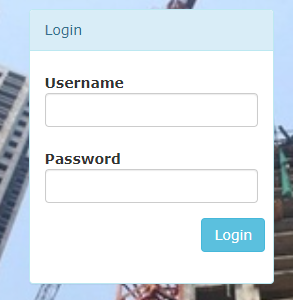
**Users Table File**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Date Type** | **Field Size** | **Constraint** |
| Position | Text | 12 | Primary key |
| User Name | Text | 12 |  |
| Password | Text | 25 |  |

## 4.5 Input Design

This defines the output to be expected after successsfully entering the correct credentials in the system.

The following figure shows the interface generated after checking into the system

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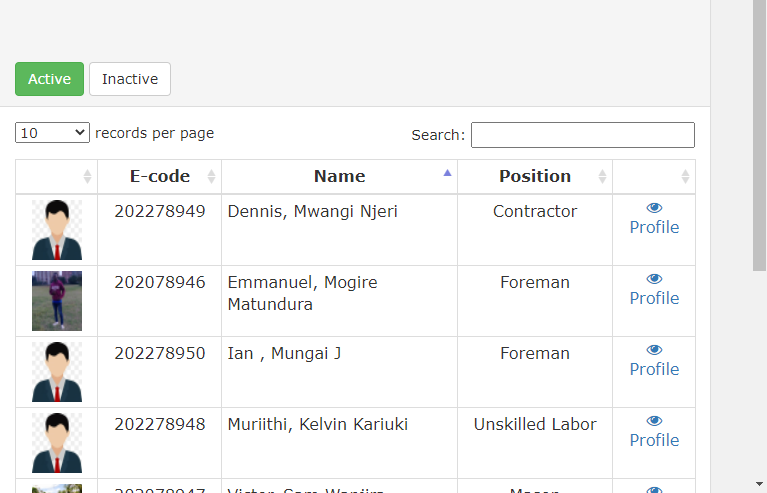
## 4.6 Output Design

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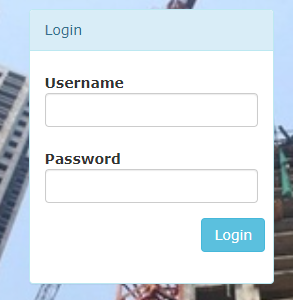
# 5.1 SYSTEM TESTING

|  |  |  |  |
| --- | --- | --- | --- |
| **List** | **Requirement name** | **Test scenario** | **Test cases** |
| 1 | Login | Ok cancel | Valid password and valid username |
| Valid password and invalid username |
| Invalid password and invalid username |
| Invalid password and valid username |
| 2 | Delete | delete | Verify delete |
| 3 | Add | Insert cancel | Verify add with valid and invalid data |
| 4 | Search | Search cancel | Verify search with valid and invalid data |
| 5 | Edit | Update cancel | Verify update with valid data  Verify update with invalid data  Verify update with missing data  Verify cancel |
| 6 | Cancel | cancel | Verify cancel |
| 7 | Exit | Log out | Verify logout |

**Test scenario showing employee details and position**

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**Test scenario showing login**

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## 5.2: SOFTWARE AND HARDWARE REQUIREMENTS

The proposed system will be expected to meet the following minimum software requirements:

* Run on Microsoft Window 7, 9, 8, family and Windows XP platforms (operating system).
* Be able to be compatible and run MySql
* Have a graphical user interface (GUI) upon which commands can be passed to the database manipulating functions. GUIs also help the users in learning by providing interfaces to the user.

**Hardware requirements:**

A RAM size of at least 128 MB.

* A powerful processor with a processing speed of 840 HZ.
* Super VGA monitor.
* A CD-ROM drive for installation since the program is stored in a Compact Disk

## 5.3: INSTALLATION

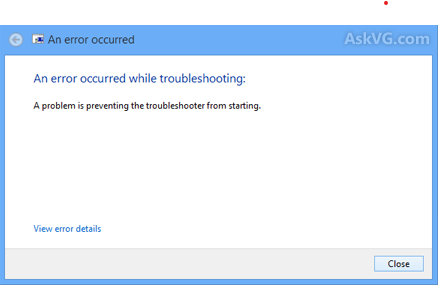
This program has been packaged in a CD-ROM. The Following steps are used when installing the program in the users’ computer:

How to install the software

* Insert the flash disk or CD
* After inserting the CD move to Control panel tab and then double click on the icon.
* The window wizard will guide you through the steps of installation.
* be installed in the computers.

## 5.4 ERROR MESSAGE AND TROUBLESHOOTING

**Error message**

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**Solution**

**1.** Open **Control Panel** and click on **User Accounts** icon.

**2.** Now click on “**Change User Account Control settings**” link.

**3.** It’ll open “Change User Account Control Settings” window. Drag the slider to bottom (**Never notify**) and apply changes.

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# APPENDIX 1

## BUDGET

This is an overview review of various cost involved in the system development life cycle.

|  |  |
| --- | --- |
| **ITEM** | **COST( Kshs.)** |
| Computer | 30000 |
| MySql | 2000 |
| Visual studio | 3000 |
| Stationary | 500 |
| Transport | 3000 |
| Printing | 2000 |
| Bureau | 500 |
| Flash disk | 1000 |
| Photocopy | 700 |
| Operating system | 1500 |
| Installation | 1000 |
| **TOTAL** | **45,200/=** |

# APPENDIX 2

## SCHEDULE

This shows the time schedule taken to complete the development of the system.

|  |  |
| --- | --- |
| Activity | Time taken |
| Problem identification | 1 week |
| Requirement identification | 2 weeks |
| System analysis | 4 weeks |
| System design | 3 weeks |
| System coding | weeks |
| Implementation and testing | 2 weeks |
| Documentation | 2 weeks |
| Presentation | 1 week |

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# APPENDIX 3

## Research procedures

# **The following were the methods of research used to gather information**

**Interview**

This is a two-way exchange conversation where questions are asked by the interviewer to the client facts or statements from the interview. Various type interview can be applied in the data collection, in my research I will use individual interview where I will lay an interview layout to obtain the information from the current employees, customers and the beauty management that would assist in defining the problem definition and whether there current mode of recording information as feasible .I formulated the following question to be used to interview the managerial staff.

i) How many members are currently working in the departments?

ii) Tell me what you would like to be entailed in the system

iii) What are the challenges faced with current system?

iv) Why are you admiring to have a computerized system?

v) How do store the information you get from the customer?

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##### Questionnaires

A list of brief questions was sent to the concerned parties beforehand then latter picked from them after a period of time with the questions already filled. The questions are directly to the point and only need self-explanatory answers.

It saves analysts time since the respondent were within the firm.Questionnaire provided a cheap means of data collection especially when there are a large number of people.It allows individuals to maintain anonymity thus there is more likelihood of providing real facts.Respondents are given opportunity to provide input and suggestions eg.

Q1.What do you think will the new system improve your performance?

Q2. How long have you been working with the Agribusiness management team?

Q3.Have you ever heard of a Agribusiness management system? If yes what is your view about it?

Q4.Have you ever used a management system?

Q5 How can you compare the manual system with the proposed system?

Q6 How is the store being managed currently?

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