Rental House Management System

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Abstract-We are stuck with technology when what we really want is just stuff that works. With the current paradigm shift in technological field, there is an urgent need to embrace and appreciate the power of technology. Housing sector remains vigilant to face the challenges of change by employing a new strategy that facilitates easy management of rental houses. Hence there is need to develop a rental house management system that can simplify work for the rental managers so that all their work can be efficient and effective.

To get information about how rental houses are currently being managed, I prepared questionnaires and submitted them to a number of rental house managers and from the information I gathered I realized all work was done manually with a lot of paper work involved. Papers can easily get damaged or get lost leading to loss of data. It is also expensive to keep on buying files to store your records. A lot of files make a place look untidy and also consume a lot of space. Getting a certain file to check data from many files becomes a difficult task.

Considering those facts, I decided to develop a rental house management system that can solve all the problems experienced with the current manual system. The system was developed in such manner that it provides maximum user friendly interface.

Once you the user logs in the system automatically show three forms: houses form, rent payment form and tenants' registration form. Each form has several command buttons; new, save, cancel, delete, next, previous and exit. With the command buttons you can manipulate the database. If you want to add data to the database all you need to do is to click on new then input data in the textboxes provided then click save and the data will automatically be saved. If you want to view data in the database you just click next or previous and the data will be displayed for you. When you click delete you will be able to delete a record that you desire. You may enter data then decide to cancel it, it is simple click on cancel and it will be canceled.

For manager faced with management difficulties here is a perfect solution for you. The rental house management system is made for you.

I. INTRODUCTION

Rental house management has become important factor in modern society hence the need to have a rental house management system.

This chapter will provide a brief understanding about background of study, definition of the project problem statement, its objectives, scopes, project justification, risks, project deliverables and project budget and schedule.

1.1 BACKGROUND OF THE STUDY

Housing has a central importance to quality of life with considerable economic, social, cultural and personal significance. Though a country's national prosperity is usually measured in economic terms, increasing wealth is of diminished value unless all can share its benefits and if the growing wealth is not used to redress growing social deficiencies, one of which is housing (Erguden, 2001). Housing plays a huge role in revitalizing economic growth in any country, with shelter being among key indicators of development.

The universal declaration of human rights gives one of the basic human rights as the right to a decent standard of living, central to which is the access to adequate housing (United Nations, The Human Rights-article 25, 1948).

Housing as a basic human right demands that urban dwellers should have access to a decent housing, defined as one that provides a foundation for rather than being a barrier to good physical and mental health, personal development and fulfillment of life objectives (Seedhouse, 1986).

The focus of this research project is basically managing housing for low income, medium and high incomes households or what is commonly known as affordable housing. 'Affordable' is a term used to describe individuals' capability to pay for certain products or services because their income is enough to do so. Although the term 'affordable housing' is often applied to rental housing; that is within the financial means of those in the lower income ranges of a geographical area, the concept is applicable to both middle and high income individuals.

Most families choose to rent houses based on their income and family situations; unfortunately, there may not be enough good quality rental housing for these families (http://www.ehow.com).

Housing is a major problem in Kenya especially in Nairobi city. Millions of people are living in sprawling slums and also in other informal settlement around Nairobi (UN-Habitat, 2008).

This explains why many people have shifted their focus to developing rental houses in Nairobi and other parts of the country. The demand for rental houses is extremely high and more rental houses need to be put in place.

Developing rental houses comes with many advantages especially to the Landlords who are able to increase their profits through rent paid by the tenants.

Increased number of tenants and Landlords makes management difficult especially for the landlords who are losing huge sum of money through tenants who evade rent.

The above statement gives a clear declaration as to why rental house management system need to be developed.

1.2 STATEMENT OF THE PROBLEM

Over the years landlords/property managers have had a problem in maintaining and managing their customers and their own records.

Management has become difficult because of issues that include:

i) Data growth

Data increase day to day. Storing and maintaining all data manually is very difficult

ii) Lack of computerized system

Currently most landlords/property managers use the manual system in recording and maintaining their property and customers data

iii) Data security is not assured

In a manual way, data is recorded on books/papers which may easily get damaged leading to loss of data.

iv) There is no database to store information

Potential of data loss or damage is very high because data is stored on tangible files.

Lack of these crucial requirements makes management of the tenants and houses very difficult as some tenants may end up not paying rent.

1.3 PROJECT OBJECTIVES

The following are the project objectives:

To develop a rental house management system that allows the user to view customers' data as well as houses record

To develop a system that allows the users to add, edit, search and delete data from the database

To study and analyze the requirement specifications of the rental house management system

To produce the Software Requirement Specification of the system

To produce the Software Design Document of the system

1.4 PROJECT SCOPE

The project scope defines the description of the work that is required in delivering the rental house management system. The following are the scopes of work during the course of the project:

Study and understand the requirement of this project

Construct Software Requirement Specification document of the system

Construct Software Design Document of the system

1.5 PROJECT DELIVERABLES

The main deliverables of this project will be the complete software system and the software engineering document that include:

Software Requirement and Specification

Software Design Document

The Software engineering document will be constructed

1.6 TIME SCHEDULE

ACTIVITY	DATES	DURATION
Feasibility Study	7th June-20th June	2 weeks
Project Proposal	21stJune-17th July	4 weeks
Analysis	18th July-17th August	4 weeks
Design	18th August-14th Sept	4 weeks
Development	15th Sept-2nd October	8 weeks
Testing	3rd October- 14th October	2 weeks
Implementation	15th Oct- 27th October	1 week
Report writing 28th October-12th Nov 2 weeks		

1.7 PROJECT COST

ITEM	COSTS
HARDWARE	
Laptop Computer	KSH 35,000
Flash disk	KSH 1,000
SOFTWARE	
Microsoft Windows 7 Operating System	KSH 12,000
Microsoft Office Word 2007	KSH 5,000
Microsoft Office Access 2007	KSH 5,000
Visual Basic studio 6.0 KSH 5,000	
OTHER COSTS	
Printing	KSH 5,000
Miscellaneous	KSH 5,000
Total	KSH 73,000

II.   LITERATURE REVIEW

Literature review is a text written by someone to consider the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic. Main goals are to situate the current study within the body of literature and to provide context for the particular reader (Cooper, 1998).

2.1 GOVERNMENT STRATEGY AND INCENTIVES IN THE HOUSING SECTOR

Some of the dominant strategies for housing and service provision for the Kenya's urban poor include slum upgrading and site and service schemes. However, the efficiency of these strategies has been limited by ambivalent government attitude to irregular settlement. These strategies have failed because of a reliance on inappropriate building by-laws and infrastructural standards and modern designs, construction technology and conventional building materials that all make housing unaffordable to the poor, even after subsidies.

Thus, government initiatives in assisting house owners in management have proven to be pathetically slow with many of the houses provided being economically and socially irrelevant, this further prompting the rise of informal settlement (Macoloo, 1994).

2.2 THE ROLE OF THE PRIVATE SECTOR IN HOUSE MANAGEMENT

Private sector housing management is defined as any process which is not connected at all with the actions of the state neither directly constructed by state nor financially sponsored by the state where production is not expected to have a social element (Golland, 1996).

(Ambrose and Barlow, 1987) have argued that three factors are important in influencing the level of new house building. These are direct capital investment by the state for public housing, state support for production and consumption and changes in the profitability of house builders in the private sector.

The private sector can play an important role in housing provision provided that the state offers sufficient and appropriate incentives to the sector (Mitullar, 2003).

The clear motivation that underlies the private sector is profit (or potential profitability) with profit maximizing options being in the context of housing, producing and selling more of the product; reducing the cost of production through lower raw material and wage costs and finally increasing the price of the product or service (Hancock, 1998).\

Profitability in housing is advocated to be based on three variables; House prices, land prices and building costs, where:
Profit=House prices-{Land prices + Building costs} (Golland, 1996).

2.3 THE ROLE OF OBJECT ORIENTED PROGRAMMING (OOP)

The concept of object-oriented modeling is becoming increasingly practical because of its ability to thoroughly represent complex relationships as well as to represent data and data processes in a consistent manner. This concept has been implemented in computer software engineering; ranging from system analysis, system design, operating system, computer programming and database management system (Cohn, 1996).

2.4 THE ROLE OF RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)

(Levin, 1999) Database Management System (DBMS) has replaced the file system data management by having a pool of data that can be shared by multiple application programs and users concurrently. DBMS also provide logical and physical data independence, so that changing of data structure or application program will not affect one another.

III. METHODOLOGY

The term methodology means the technique and procedure adopted by conducting a research study. It outlines how data will be collected and the tools for collecting data, system methodology, the proposed system input and output, users and systems development tools.

3.1 FACTS FINDING TECHNIQUES

It shows how data will be collected from the users of the system. The data collection techniques to be used include:

3.1.1 Objectives

It will use this technique to collect information about how the current system operates and its processes. This involves systematically watching and recording the behavior and characteristics of operations and processes.

It gives more detailed and context related information and can adapt to event as they occur however the method may be time consuming.

3.1.2 Questionnaires

I will prepare a number of questionnaires whereby I will submit them to business owners (Landlords) to get a deeper insight of how the system is going to work. I prefer this method because it gives more information from various individuals and offers greater flexibility as the opportunity to restructure questions.

This technique is preferred because it will provide a closer contact between the users and the developer hence dispelling the probability of the completed system being rejected by user(s).

This technique also:
Permits clarification
Has high response rate than interviews.
Helps get full range and depth of information

3.1.3 Secondary Data Collection

This data I will collect from existing sources e.g books, internet, journals and magazines that was collected by other researchers and analysis was done. It is from that data that I will then compare with the primary data and make a decision and conclusion.

### 3.2 SYSTEM DEVELOPMENT AND METHODOLOGY

System development methodology is a technique that is used to show how the proposed system will be developed. In this case, the methodology used will be a waterfall model.

3.2.1 Waterfall Model

It is comprised of the stages that the developer will use when developing the system. It is a sequential model hence, the name waterfall. The developer has to finish with one stage before going to the next one. It comprises of the feasibility study, analysis phase, design phase, coding phase, testing phase, implementation phase and finally the maintenance phase. It is a simple model and easy to use and understand.

With waterfall development based methodologies, the analysts and users proceed sequentially from one phase to the next. The deliverables from each phase are voluminous and are presented to the project sponsor for approval as the project moves from phase to phase. Once the phase is approved by the sponsor it ends and the next phase begins.

Figure
Diagram of waterfall model
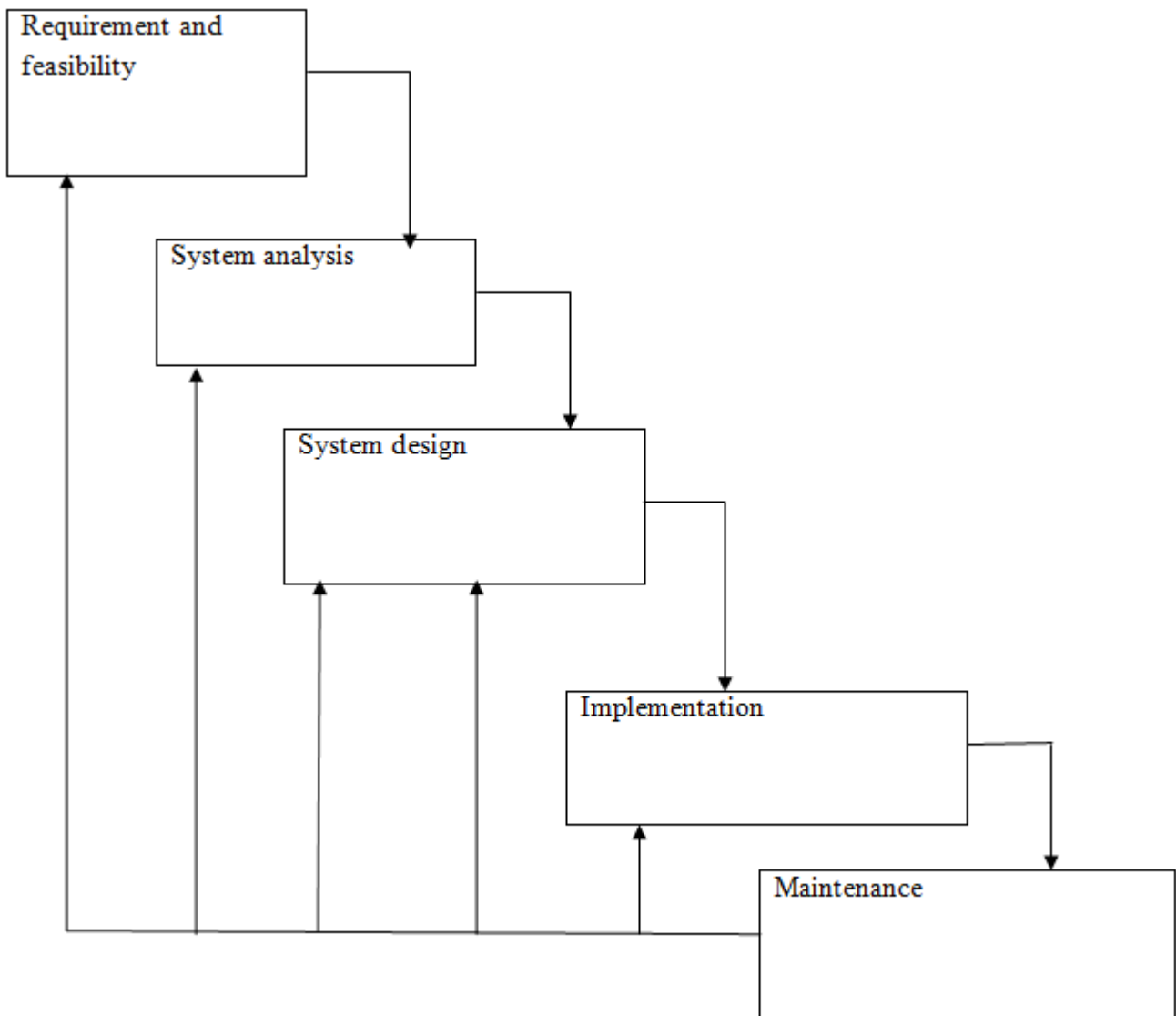
Figure 3.0 waterfall diagram

3.2.1.1 Feasibility study

Here, I will carry out a study to gain an understanding of the customers (tenants) current system and problems experienced in this system through interviews, observations, and participations. I will use the obtained data to determine the viability of the system being proposed in terms of technical, economic and social feasibility.

3.2.1.2 Requirement and analysis

At this stage, I will gather information about what the customer needs and define the problems the system is expected to solve. I will also include customers' business context, products functions and its compatibility. I will gather requirement such as software like the programming language to use, database model and hardware needed such as laptop, printers etc

3.2.1.3 Design

At this stage, I will make an overall design of the system architecture and physical design which includes User Interface and Database design. It is at this stage that I will identify any faults before moving onto the next stage. The output of this stage is the design specification which is used in the next stage of implementation.

3.2.1.4 Coding/Implementation

At this stage, I will begin coding as per the design specification(s). The output of this step is one or more product components built according to a pre-defined coding standard and debugged, tested and integrated to satisfy the system architecture requirement.

3.2.1.5 Testing

At this stage, I will ensure both individual and integrated whole are methodically verified to ensure they are error free and satisfy customer requirement. I will involve both unit testing of individual code module, system testing of the integrated product and acceptance testing conducted by or on behalf of customer. I will ensure bugs found are corrected before moving to the next

stage. I will also prepare, review and publish product documentation at this stage.

3.2.1.6 Installation

It is done once the product has been tested and certified as fit for use. The system is prepared for use at customer site.

3.2.1.7 Maintenance

This stage occurs after installation. It involves modifications on the system to improve performance. Such changes are user initiated or as a result of bug being discovered which were initially not known. These modifications are recorded for documentation and system update.

IV.   SYSTEM ANALYSIS AND REQUIREMENT MODELLING

4.1 INTRODUCTION

The system objectives outlined during the feasibility study served as the basis from which the work of system design was initiated. Much of the activities involved at this stage were of technical nature requiring a certain degree of experience in designing systems sound knowledge of computer related technology and through understanding of computers available in the market and the various facilities provided by the vendors. Nevertheless, a system could not be designed in isolation without the active involvement of the user. The user had a vital role to play at this stage too.

Data collected during feasibility study was utilized systematically during the system design. Designing a system is a creative process which calls for logical as well as lateral thinking Logical approach involves systematic moves towards the end product keeping in mind the capabilities of the personnel and the equipment at each design making step.

4.2 EXISTING SYSTEM

Currently the most property managers manage property and tenants details on papers. Once customers finds a vacant house, they can call or email manager of the houses indicating the size of the house they would like rented to them.

The property manager can email them back giving them all the details about the house they are requesting. The details include;

Rent per month
Deposit paid
Terms and conditions to follow acceptance

4.3 PROBLEMS OF EXISTING SYSTEM

With the current system recording the details of various activities of user is completely manual and entails a lot of paper work. Each house has a file that contains the house: number, size, rent per month, expected deposit, occupant and status.

Rent payment table contains tenants: first name, last name, Phone number, date of payment, amount and balance if any.

The existing system only provides text based interface which is not as user friendly as Graphical user interface. Since the system is implemented manually, the response is very slow.

The transactions are not secure as papers may get lost or damaged. Hence, there is need of reformation of the system with more advantages and flexibility. The system eliminates most of the limitations of the existing system.

4.4 REQUIREMENTS ANALYSIS

Requirement analysis involved defining customer needs and objectives in the context of planned customer use, environments and identified system characteristics to determine requirements for system functions.

4.4.1 User Requirements

It entailed user involvement and statements of facts and assumptions that define the expectations of the system in terms of mission objectives, environment, constraints and measures of effectiveness and suitability. Basically the users:

i) A system that improves on the efficiency of information storage and retrieval.

ii) A system that is easy to learn and use

iii) A system that is fast in processing transactions

iv) A system that is flexible, safe and convenient

4.4.2 Functional Requirements

This is a necessary task, action or activity that was accomplished. The proposed system is able to:

i) Allow administrator to add a houses, tenant and defaulters details

ii) Allow the administrator to delete houses, tenants and defaulters details

iii) Allow the administrator to search data in the database

iv) Allow the administrator to edit data in the database

4.4.3 Hardware Requirements

i) Processor 2.0 Ghz processor speed
ii) Memory 2GB RAM
iii) Visual Display Unit 800*600 colors

4.4,4 Software Requirements

i) Operating System- windows 7
ii) Microsoft Office Power point- Used during presentation
iii) Microsoft visual basic 6

V.   SYSTEM DESIGN

5.1 DESIGN PHASES

The user's requirements document was analyzed for better understanding of what was required of the system. Ways of implementing these requirements were analyzed. Physical modules of the system were designed and identifying of the operating environment in which they were to work on. The system was a visual basic system/application. The database was updated each time the administrator; add, deletes or deletes data on the system.

It's only the administrator who has access to the system to view or make changes when necessary. The system was designed to allow the administrator to view, edit, delete and add data to the database

Each time a customer comes, he/she is registered in the tenant registration table of the database with other relevant details about the tenant.

System design involved transforming the software requirements into an architecture that described its top-level structure and identified the software components and developed a

detailed design for each software components. For each requirement, a set of one or more design elements was produced.

5.1.1 Conceptual Design

Conceptual design was the very first phase of design in which drawings or solid models were the dominant tools and products. The conceptual design phase provided a description of the proposed system in terms of a set of integrated ideas and concepts about what it was to do, behave and look like, that was understandable by the users in the manner intended.
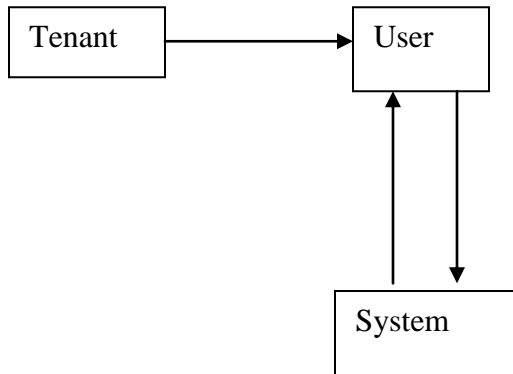
5.1.2 Database Design

The general theme behind a database is to handle information as an integrated whole. A database is a collection of interrelated data stored with minimum redundancy to serve the users quickly and effectively. After designing input and output, the analyst must concentrate on database design or how data should be organized around user requirement. The general objective is to make information access, easy, quick and flexible for other users.

Tables used

User table

Field Name	Data Type	Description
Username	Text (25)	Primary Key
Password	Text (15)	-

Houses table

Field Name	Data Type	Description
number	Text (15)	Primary Key
size	Text (15)	-
rent	Text (15)	-
deposit	Text (15)	-
status	Text (15)	-
occupant_ID	Text (15)	-
Fname	Text(15)	-
Lname	Text(15)	-

Tenants Registration table

Field Name	Data Type	Description
ID_No	Text (15)	Primary Key
first_name	Text (15)	-
last_name	Text (15)	-
phone_No	Text (15)	-
date_admitted	Text (15)	-
house_No	Text (15)	-

Rent Payment table

Field Name	Data Type	Description
tenan_Phone_No	Text (15)	Primary Key
tenant_ID	Text (15)	-
first_name	Text (15)	-
second_name	Text (15)	-
amount_due	Text (15)	-
amount_paid	Text (15)	-
date_paid	Text (15)	-
arrears	Text (15)	-

5.2 SOFTWARE INTERFACE
LOGIN MENU

Enter Your Name And Password Then Click Login

name: admin
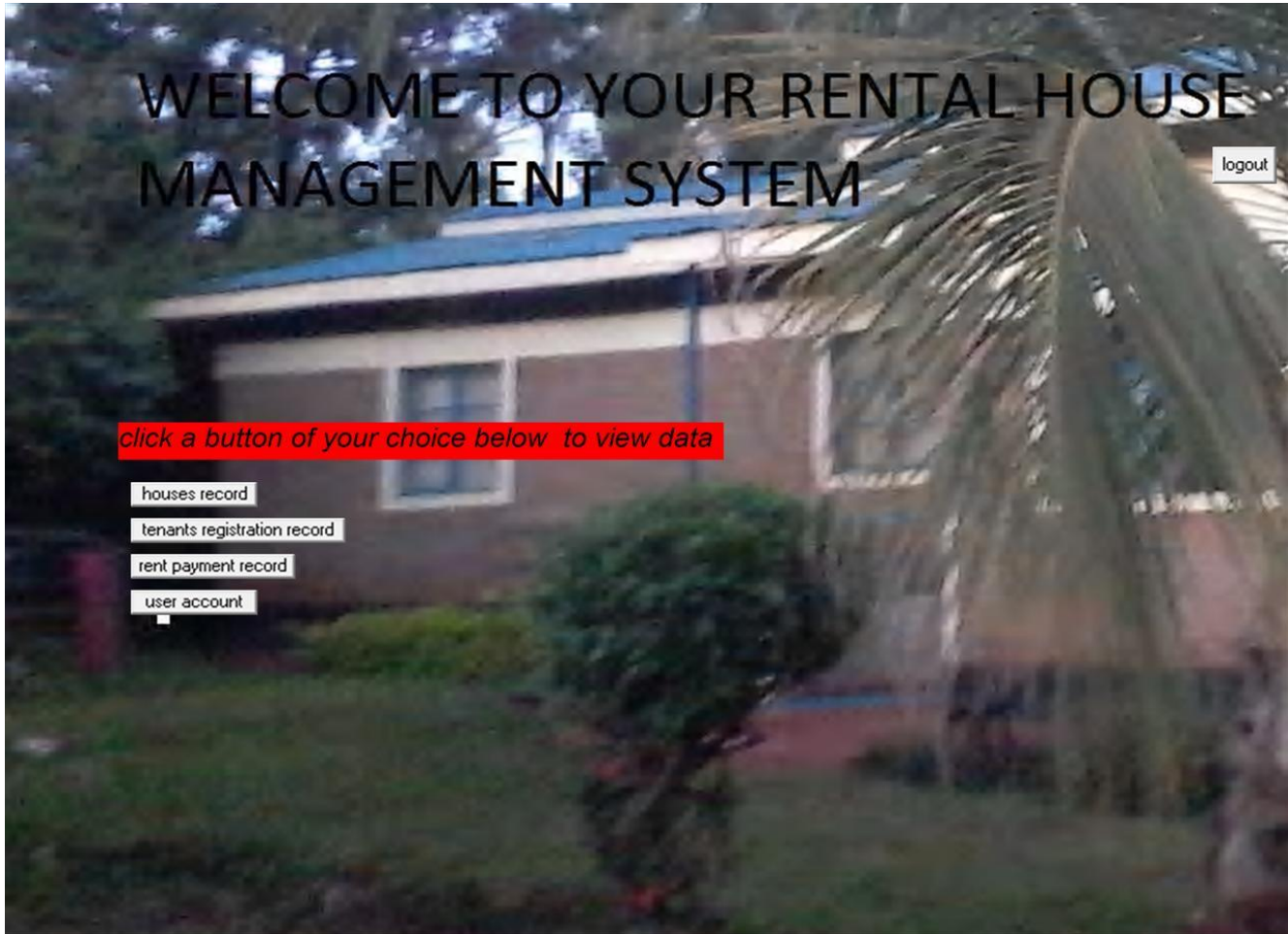
password: ****

login

WELCOME MENU

HOUSES MENU

TENANTS RENT PAYMENT MENU

TENANTS REGISTRATION MENU

USER ACCOUNT MENU

VI.   SYSTEM IMPLEMENTATION

Implementation is the stage in the project where the theoretical design is turned into a working system. The implementation phase constructs, installs and operates the new system. The most crucial stage in achieving a new successful system is that it will work efficiently and effectively.

There are several activities involved while implementing a new project. They are
End user training

End user Education

Training on the application software

Post implementation Review

1. End user Training:

The successful implementation of the new system will purely upon the involvement of the officers working in that department. The officers will be imparted the necessary training on the new technology

2. End User Education:

The education of the end user start after the implementation and testing is over. When the system is found to be more difficult to understand and complex, more effort is put to educate the end user to make them aware of the system, giving them lectures about the new system and providing them necessary documents and materials about how the system can do this.

3. Training of application software:

After providing the necessary basic training on the computer awareness, the users will have to be trained upon the new system such as the screen flows and screen design type of help on the screen, type of errors while entering the data, the corresponding validation check at each entry and the way to correct the data entered. It should then cover information needed by the specific user or group to use the system.

4. Post Implementation review:

The department is planning a method to know the states of the past implementation process. For that regular meeting will be arranged by the concerned officers about the implementation problem and success

6.1 SOFTWARE TESTING

Is it possible to invoke each menu function using logical assumptions that if all parts of the system are correct, the goal will be successfully achieved? In adequate testing or non-testing will leads to errors that may appear few months later. That's why it is very important to always test the new software.

This create two problems

The purpose of the system testing is to consider all the likely variations to which it will be suggested and push the systems to limits.

The testing process focuses on the logical intervals of the software ensuring that all statements have been tested and on functional interval is conducting tests to uncover errors and ensure that defined input will produce actual results that agree with the required results. Program level testing, modules level testing integrated and carried out.

There are two major type of testing they are

1. White Box Testing.

2. Black Box Testing.

White Box Testing

White box sometimes called "Glass box testing" is a test case design that uses the control structure of the procedural design to drive test case.

Using white box testing methods, the following tests were made on the system

a) All independent paths within a module have been exercised once. In our system, ensuring that case was selected and executed checked all case structures. The bugs that were prevailing in some part of the code where fixed

b) All logical decisions were checked for the truth and falsity of the values.

Black box Testing

Black box testing focuses on the functional requirements of the software. This is black box testing enables the software engineering to derive a set of input conditions that will fully exercise all functional requirements for a program. Black box testing is not an alternative to white box testing rather it is complementary approach that is likely to uncover a different class of errors that white box methods like..

1) Interface errors

2) Performance in data structure

3) Performance errors

4) Initializing and termination errors

VII. RECOMMENDATIONS

Our project is meant to satisfy the needs of rental house owners. Several user friendly interfaces have also been adopted. This package shall prove to be a powerful in satisfying all the requirements of the users

It is with utmost faith that I present this software to you hoping that it will solve your problems and encourage you to continue appreciating technology because it is meant to change and ease all our work that seems to be very difficult. I don't mean that my project is the best or that I have used the best technology available it just a simple and a humble venture that is easy to understand.

However, I would encourage anyone who has the ability to advance it using advanced technologies so as to increase its capabilities.

7.1 CONCLUSION

In conclusion, the software can be used as an inventory system to provide a frame work that enables the mangers to make reasonable transactions made within a limited time frame. Each transaction made on the system go hand in hand with the data being updated in the database in our case it is Microsoft Access 2007 which is the back end. Last but not least it is not the work that played the ways to success but ALMIGHTY GOD.

APPENDIX I

MOUNT KENYA UNIVERSITY

QUESTIONNAIRE TO BE ADMINISTERED TO RENTAL HOUSES MANAGERS/OWNERS

Dear respondent;

I am Njiru Mwenda George a student at Mount Kenya University, school of Pure and Applied Science undertaking a research project on Rental House Management. Your support towards this research will be appreciated and be treated with utmost confidentiality and for only academic purposes.

SECTION A: Background information of the respondents

Fill in the questions below by ticking where appropriate

1. Kindly indicate your gender

Male   Female

2. Which is your age bracket?

18-25years   26-32years   33-55years   56 and above

3. What is your highest academic qualification?

PhD   Masters   Degree   Diploma   Certificate

4. What motivated you to venture into rental houses business?

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

5. How many rental houses do you have?

Indicate Number…………………..

6. Do you have challenges in managing your houses?

Yes   No

7. If yes, kindly indicate some of the challenges you face

i)……………………………………………………………………………………….
ii)………………………………………………………………………………………
iii)…………………………………………………………………………………………
iv)………………………………………………………………………………………
v)…………………………………………………………………………………………
vi………………………………………………………………………………………….
vii………………………………………………………………………………………….
viii……………………………………………………………………………………….
ix)………………………………………………………………………………………….
x)…………………………………………………………………………………………
8. Kindly indicate the greatest challenge(s)?
i)………………………………………………………………………………………..
ii)…………………………………………………………………………………………
iii)…………………………………………………………………………………………
iv)………………………………………………………………………………………….
v)…………………………………………………………………………………………..

vi)……………………………………………………………………………………………

8. Would you like to have a system that can assist you in management?

Yes   No

[ ]   [ ]

SECTION B: Management System

Please indicate your level of agreement with the statements below

Statement	Strongly Agree 1	Agree 2	Strongly Disagree 3	Disagree 4	Not Sure 5
The main objective of developing rental houses is to make money through rent paid by tenants					
Rental houses need to be managed by a system					
Management will assist to achieve the objective of owning rental houses					
The managing system should be easy to understand, flexible and quickly accessible					

APPENDIX II

Login Code

```
Private Sub cmdlogin_click()
Dim username As String
Dim password As String
Dim admin As String
Dim pass As String
Dim msg As String
register.adorecorddb.Refresh
admin = txtusername.Text
pass = txtpassword.Text
Do Until register.adorecorddb.Recordset.EOF
If register.adorecorddb.Recordset.Fields("username").Value = admin And register.adorecorddb.Recordset.Fields("password").Value =
pass Then
Me.Hide
frmwelcome.Show
Exit Sub
Else
register.adorecorddb.Recordset.MoveNext
End If
Loop
msg = MsgBox("invalid password, try again!", vbOKCancel)
If (msg = 1) Then
login_form.Show
txtusername.Text = ""
txtpassword.Text = ""
Else
End
End If
End Sub
```

Houses Code

```
Private Sub cmdcancel_click ()
txtnumber.Text = ""
txtsize.Text = ""
txtrent.Text = ""
txtdeposit.Text = ""
txtstatus.Text = ""
txtoccupant.Text = ""
End Sub
Private Sub cmddelete_click()
confirm = MsgBox("are you sure you want to delete this record?", vbYesNo, "deletion confirmation")
If confirm = vbYes Then
adorecorddb.Recordset.Delete
MsgBox "record deleted", , "message"
Else
MsgBox "record not deleted", , "message"
End If
End Sub
Private Sub cmdhome_Click()
Me.Hide
frmwelcome.Show
End Sub
Private Sub cmdnew_click()
adorecorddb.Recordset.AddNew
End Sub
Private Sub cmdnext_click()
If Not adorecorddb.Recordset.EOF Then
```

```
adorecorddb.Recordset.MoveNext
If adorecorddb.Recordset.EOF Then
adorecorddb.Recordset.MovePrevious
End If
End If
End Sub


Private Sub cmdnxt_Click()
Me.Hide
rent_payment.Show
End Sub


Private Sub cmdprevious_click()
If Not adorecorddb.Recordset.BOF Then
adorecorddb.Recordset.MovePrevious
If adorecorddb.Recordset.BOF Then
adorecorddb.Recordset.MoveNext
End If
End If
End Sub
Private Sub cmdsave_click()
adorecorddb.Recordset.Fields("number").Value = txtnumber.Text
adorecorddb.Recordset.Fields("size").Value = txtsize.Text
adorecorddb.Recordset.Fields("rent").Value = txtrent.Text
adorecorddb.Recordset.Fields("deposit").Value = txtdeposit.Text
adorecorddb.Recordset.Fields("status").Value = txtstatus.Text
adorecorddb.Recordset.Fields("occupant_ID").Value = txtoccupant.Text
adorecorddb.Recordset.Fields("Fname").Value = txtname.Text
adorecorddb.Recordset.Fields("Lname").Value = txtnm.Text
adorecorddb.Recordset.Update
End Sub


Private Sub cmdhouse_Click()
Me.Hide
form_house.Show
End Sub


Private Sub cmdout_Click()
Me.Hide
login_form.Show
Exit Sub
End Sub


Welcome Code
Private Sub cmdrent_click()
Me.Hide
rent_payment.Show
End Sub
Private Sub cmdtenant_click()
Me.Hide
tenant_data.Show
End Sub
Private Sub cmduser_click()
Me.Hide
register.Show
End Sub


Private Sub cmdbak_Click()
Me.Hide
```

```
tenant_data.Show
End Sub
Private Sub cmdclear_click()
txtusername.Text = ""
txtpassword.Text = ""
End Sub
Registration Code
Private Sub cmdconfirm_click()
adorecorddb.Recordset.Fields("username") = (txtusername.Text)
adorecorddb.Recordset.Fields("password") = (txtpassword.Text)
adorecorddb.Recordset.Update
End Sub
Private Sub cmdhom_Click()
Me.Hide
frmwelcome.Show
End Sub
Private Sub cmdnewaccount_Click()
MsgBox "enter new username and password, then confirm", , "message"
End Sub


Tenants Registration Code
Private Sub cmdbk_Click()
Me.Hide
rent_payment.Show
End Sub
Private Sub cmdcancel_click()
txtidno.Text = ""
txtfirstname.Text = ""
txtlastname.Text = ""
txtphoneno.Text = ""
txtdateadmitted.Text = ""
txthouseno.Text = ""
End Sub
Private Sub cmddelete_click()
confirm = MsgBox("are you sure you want to delete this record?", vbYesNo, "deletion confirmation")
If confirm = vbYes Then
adorecorddb.Recordset.Delete
MsgBox "record deleted", , "message"
Else
MsgBox "record not deleted", , "message"
End If
End If
End Sub
Private Sub cmdexit_Click()
Me.Hide
frmwelcome.Show
End Sub

Private Sub cmdhm_Click()
Me.Hide
frmwelcome.Show
End Sub
Private Sub cmdnew_click()
adorecorddb.Recordset.AddNew
End Sub
Private Sub cmdnext_click()
If Not adorecorddb.Recordset.EOF Then
adorecorddb.Recordset.MoveNext
```

```
If adorecorddb.Recordset.EOF Then
adorecorddb.Recordset.MovePrevious
End If
End If
End Sub
Private Sub cmdprevious_click()
If Not adorecorddb.Recordset.BOF Then
adorecorddb.Recordset.MovePrevious
If adorecorddb.Recordset.BOF Then
adorecorddb.Recordset.MoveNext
End If
End If
End Sub
Private Sub cmdsave_click()
adorecorddb.Recordset.Fields("ID_No").Value = txtidno.Text
adorecorddb.Recordset.Fields("first_name").Value = txtfirstname.Text
adorecorddb.Recordset.Fields("last_name").Value = txtlastname.Text
adorecorddb.Recordset.Fields("phone_No").Value = txtphoneno.Text
adorecorddb.Recordset.Fields("date_admitted").Value = txtdateadmitted.Text
adorecorddb.Recordset.Fields("house_No").Value = txthouseno.Text
adorecorddb.Recordset.Update
End Sub
Private Sub cmdxt_Click()
Me.Hide
register.Show
End Sub


Rent Payment Code
Private Sub cmdarrears_Click()
Dim ad, ap, a As Integer
ad = Val(txtamountdue.Text)
ap = Val(txtamountpaid.Text)
a = ad - ap
txtarrears.Text = a
End Sub


Private Sub cmdback_Click()
Me.Hide
form_house.Show
End Sub


Private Sub cmdcancel_click()
txttenantphoneno.Text = ""
txttenantid.Text = ""
txtfirstname.Text = ""
txtsecondname.Text = ""
txtamountdue.Text = ""
txtamountpaid.Text = ""
txtdatepaid.Text = ""
txtarrears.Text = ""
End Sub
Private Sub cmddelete_click()
confirm = MsgBox("are you sure you want to delete this record?", vbYesNo, "deletion confirmation")
If confirm = vbYes Then
adorecorddb.Recordset.Delete
MsgBox "record deleted", , "message"
Else
MsgBox "record not deleted", , "message"
End If
```

```
End Sub
Private Sub cmdhome_Click()
Me.Hide
frmwelcome.Show
End Sub

Private Sub cmdnew_click()
adorecorddb.Recordset.AddNew
End Sub
Private Sub cmdnext_click()
If Not adorecorddb.Recordset.EOF Then
adorecorddb.Recordset.MoveNext
If adorecorddb.Recordset.EOF Then
adorecorddb.Recordset.MovePrevious
End If
End If
End Sub

Private Sub cmdnt_Click()
Me.Hide
tenant_data.Show
End Sub

Private Sub cmdprevious_click()
If Not adorecorddb.Recordset.BOF Then
adorecorddb.Recordset.MovePrevious
If adorecorddb.Recordset.BOF Then
adorecorddb.Recordset.MoveNext
End If
End If
End Sub
Private Sub cmdsave_click()
adorecorddb.Recordset.Fields("tenant_phone_No").Value = txttenantphoneno.Text
adorecorddb.Recordset.Fields("tenant_ID").Value = txttenantid.Text
adorecorddb.Recordset.Fields("first_name").Value = txtfirstname.Text
adorecorddb.Recordset.Fields("second_name").Value = txtsecondname.Text
adorecorddb.Recordset.Fields("amount_due").Value = txtamountdue.Text
adorecorddb.Recordset.Fields("amount_paid").Value = txtamountpaid.Text
adorecorddb.Recordset.Fields("date_paid").Value = txtdatepaid.Text
adorecorddb.Recordset.Fields("rent_arrears").Value = txtarrears.Text
adorecorddb.Recordset.Update
End Sub
```

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