DESIGN AND IMPLEMENTATION OF A BIRTH REGISTER

SYSTEM,

CASE STUDY OF

MUHORORO SECTOR.

BY

VALENTINE IZABAYO

IS24221

A FINAL PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF INFORMATION SYSTEMS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A DIPLOMA OF INFORMATION SYSTEM OF DAVIS COLLEGE-AKILAH contain

JULY, 2021

**Declaration**

I, Valentine IZABAYO do hereby declare that this proposal document is my original work and has not been published and/or submitted for any other diploma or degree award to any other university or institution of higher learning before.

**Approval**

This project proposal has been submitted for examination with my approval as the Akilah Institute Information Systems Project Supervisor.

Vedaste NYANDWI

**Supervisor’s names**

...................................

Date

**LIST OF ACRONYMS AND ABBREVIATIONS**

ID: Identity Card

ASAP: Application Assessment and Planning Package

CRVS: Civil Registration and Vital Statistics

REM: Registered Export System

HDI: Human Development Index

SDG: Sustainable Development Goals

Table of Contents

[CHAPTER ONE: INTRODUCTION 6](#_Toc76458435)

[1.1 Introduction 6](#_Toc76458436)

[1.1.1 Background of the study 7](#_Toc76458437)

[1.1.2 Problem statement 7](#_Toc76458438)

[1.2 Objectives 8](#_Toc76458439)

[1.2.1 General Objective 8](#_Toc76458440)

[1.2.2 Specific objectives 8](#_Toc76458441)

[1.3 Research questions 8](#_Toc76458442)

[1.4 Scope 9](#_Toc76458443)

[1.4.1 Geographical scope 9](#_Toc76458444)

[1.4.2 Content scope 9](#_Toc76458445)

[1.4.3 Time scope 9](#_Toc76458446)

[1.5 Significance of the study 10](#_Toc76458447)

[1.5.1 to the organization 10](#_Toc76458448)

[1.5.2 to the country 11](#_Toc76458449)

[1.5.3 to the researcher 11](#_Toc76458450)

[1.5.4 to the future researchers 11](#_Toc76458451)

[CHAPTER TWO: LITERATURE REVIEW 13](#_Toc76458452)

[2. Introduction 13](#_Toc76458453)

[2.1 Review of related literature 13](#_Toc76458454)

[2.2 Similar systems 14](#_Toc76458455)

[2.3 Critics of existing systems 15](#_Toc76458456)

[2.4 Conceptual framework and models 15](#_Toc76458457)

[CHAPTER THREE: METHODOLOGY 17](#_Toc76458458)

[3.1 Introduction 17](#_Toc76458459)

[3.2 Data collection methods 17](#_Toc76458460)

[3.3. Research instruments 18](#_Toc76458461)

[3.4. Data analysis tools 18](#_Toc76458462)

[3.5. Development technologies 18](#_Toc76458463)

[3.6. Limitations of the study 19](#_Toc76458464)

[CHAPTER FOUR: SYSTEM ANALYSIS, DESIGN AND IMPLEMENTATION 20](#_Toc76458465)

[4.0 Introduction 20](#_Toc76458466)

[4.1 Analysis of the old system 20](#_Toc76458467)

[4.2 Analysis of the new/improved system 20](#_Toc76458468)

[4.3 New system requirements 20](#_Toc76458469)

[4.3.1 User requirements 20](#_Toc76458470)

[4.3.2 Functional requirements 21](#_Toc76458471)

[4.3.3 Non-functional requirements 21](#_Toc76458472)

[4.4 System Design 21](#_Toc76458473)

[4.4.1 Logical design 21](#_Toc76458474)

[4.4.2 Physical design 21](#_Toc76458475)

[4.5 System implementation 21](#_Toc76458476)

[CHAPTER FIVE: EVALUATION, CONCLUSION, AND RECOMMENDATION 22](#_Toc76458477)

[5.1 Introduction 22](#_Toc76458478)

[5.2 Discussion 22](#_Toc76458479)

[5.3 Findings from the questionnaires and/or observations 22](#_Toc76458480)

[5.4 Evaluation of the new system 22](#_Toc76458481)

[5.5 Limitations of the study (encountered problems) 22](#_Toc76458482)

[5.6 Conclusion 22](#_Toc76458483)

[5.7 Recommendations 22](#_Toc76458484)

[5.8 Further areas of the study 22](#_Toc76458485)

[References 23](#_Toc76458486)

# CHAPTER ONE: INTRODUCTION

## Introduction

A well-developed and well-functioning civil registration system enable the registration of all important events, such as births and deaths, and issues certificates as proof of registration. Civil registration facilitates government planning, resource allocation, and help. In addition, more precise tracking of progress toward attaining the sustainable development strategy is required. (Unicef, for every child, 2016).

In making civil registration the ones who need that service need to go to the sector, sometime is hard for the registrar to register all people who come to the sector and people waste their time in registering their child. According to this and other different reasons people need a system that help them to use that service online.

That case study describes how people can register their child without movement, it shows how that birth register system works, its significance, and the positive impact it brings within society.

The main objective of that case study is to help people to register a child born easily and this helps people to make registration at the right time and this helps people to do it anytime they want and especially it helps countries to make a real budget according to real population number.

So, that chapter contains the overview of that study, and it shows the related details of the birth register system because people have to recognize further specifics about that study.

### Background of the study

The death record is drawn up according to the declaration of one of the relatives or spouse of the deceased, or any other person who has sufficient information on the civil status of the deceased. If a person dies in prison, the prison must declare the death to the civil registrar of the place of death. This action works 30 days after the death of someone.

Child born registration, an effective and efficient birth registration system is critical both as a fundamental right and a strong device to wars promoting the wellbeing of children and their protection against all forms of violence and deprivation. International law, regional and national legal frameworks as well as scholarly articles acknowledge that the child’s registration immediately after birth guarantees the rights from birth to a name, nationality, family relations, and all the related privileges (InstantKB, 2015).

### Problem statement

Penalty for late registration after 30 days for a child born and 15 days for death register.

Late registration will be fined according to the new law, but this is not yet enforced; in case of dispute, a capable court’s decision will be required. Any person wishing to receive a birth record but not having declared the child’s birth within the period provided for by the law is liable to an executive reasonably determined by an executive law.

Holidays of leaders, when a leader who is responsible to record children born are not around, is possible some people may miss in the record of a child born or dead person.

Children born with some infections and other problems such as low body mass, or other problems and this causes parents to stay in hospital until the child is fine

The incorrect number of population growth. When people don’t register and unregister the country may get wrong statistics in population growth. In that way also some people delay registering and she or he doesn't want to give penalty fees. These people decide to stay with children who aren’t registered.

Loss of documents, and reduction of paperwork. In the registration of children born a long time ago, the sectors use paper or notebooks before entering those data in a database or record of the sector. So that culture is analogous because it is possible where the recorder to skip one record or wrote the wrong record.

## Objectives

### General Objective

The main objective of that case study will make the system that will give service of register born child passing through online. That study starts with one sector as a sample and user of the system her or his data goes on in the register database. The sector will recognize that formal information and it will transfer to the country database official.

### Specific objectives

1. The system must have a configuration to run smoothly and efficiently in hardware and software applications.
2. On the existing system civil get the certificate only. That study will work on registering that certificate.
3. Trial and certify if the birth register system meets with civil needs.
4. Gain together system and sector register databases.

## Research questions

1. Description of more people needs about birth register system.
2. What are the weakness and strengths of an existing system?
3. When this system will be implemented haw it helps people to serve time and get penalize for penalty fees? Haw, it brings an impact on society?
4. In which ways this system will bring sustainable development for the country, and the owner of the system?
5. What if that project doesn’t succeed, what challenges do you think can cause those failures? And how will it be overcome?

## Scope

### Geographical scope

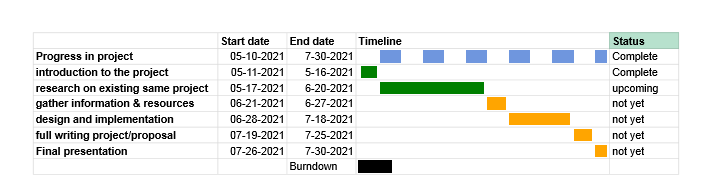
This study will be conducted at MUHORORO sector, in NGORORERO district, the WESTERN province of Rwanda country. Also, this case study will be applied by people which are Rwandans and some migrant people according to what the laws say.

### Content scope

This study investigates the journey people walk to get to the sector. The research of the system examines the delay fault and helps people when the leader is on holiday. This system helps people to save their time and help in the improvement and that system helps the country to know enough information to the new child born and help the country to make the correct plan and budget.

### Time scope

This study will cover three months (May 2021-July 2021)



#### 1.5 Significance of the study

### 1.5.1 to the organization

This study helps parents to register children born without moving to their sector. This system also helps the people to unregister family dead members.

Especially to the sector that studies it. It helps sectors to get information in easy ways and it helps in the reduction of paper usage in sectors.

The study wakes up some people who are always busy and some people who are always working. Researchers mean people who never take breaks, even always have a full activity to register their child born and unregister their relative who died in a short time.

### 1.5.2 to the country

Country get implication on that study of haw register action moved on and this helps the country to get sustainable development from the records of that sector.

That case study helps the government to implement what the real population needs according to infrastructure. If the government can build more schools according to what statistics show.

Accordingly, that study brings more information to the country of how they come up with the solutions according to what the population needs. Also, it can affect the millenniums’ project on future vision. Yet that case study helps the sector of where that study applied and how it can appear in all sectors even in people outside of the country.

### 1.5.3 to the researcher

People who make research in that study, get a chance of knowing how that system works and this helps them to give comments, and this helps in that study to take some creativity and innovation according to the feedback it gets from the researcher.

That study is major for many researchers. Maybe some researchers are searching about which preference people use in that case study, also others search about the statistics about those users, others searching about what the people need. This case study helps them to get all anticipated information related to their research.

### 1.5.4 to the future researchers

Future researchers will operate the findings of this study to board on a related study. However Future researchers make research according to what that study did before and this helps and encourages them to make deep research.

In that way, that study is about helping people to get full and meaningful information about a register, so the future researcher will make more research about how that case study works and how it brings impacts in society.

Accordingly, future researchers will make research about that case and how that study can be evolution according to what the researcher did before. Future researchers will operate the findings of this study to board on a related study.

# CHAPTER TWO: LITERATURE REVIEW

## 2. Introduction

Literature review launch clearly on research problem and questions, suitable and opening literature. This chapter completes a summary of previous research on the birth registration system and state documents of this system. Shortly that chapter is about researching and evaluating the existing literature about that system.

This chapter was afforded the literature review which is related to the project development and makes reference to the existence of the system. The sources are referred to from the book, articles, journals, and other sources from the internet.

### 2.1 Review of related literature

The register web system is a web created by JavaScript. The researcher software application aims to complete a solution for web-based register action with the support of call center functionality in the Rwanda sector region. This is easy and helps the citizens to register and unregister online. The system works like a website where you can find the different Rwanda sectors according to where you live, you can register.

(Birth registration, 2020) the website shows one in four children under the 5 age does not legitimately record, yet birth registration becomes the aim of providing legal identity for all citizens. That article showing the birth registration circumstance by producing animated figures and how it is base reaching on sustainable human and economic progress.

(birth registration, n.d.)Civil registration and vital statistics (CRVS) system record all major life events especially births. So this website shows that CRVS systems are not operated in many regions. Yet without the CRVS system, a child is invisible to the government and it possible to be weak with some forms of abuse.

Therefore if we most relegated children are, it is hard to support them and improve their lives because without a birth record no proof showing who you are. To confirm that all children are involved in society we must progress the formal civil registration system and record the birth of every child for purpose of making all children visible (Plan internation, 2005)

(innonavations in birth registrarion, n.d.)In birth registration settings there are some objections. This will overcomes by making innovation in birth registration by set procedures of solutions. We design solutions and collaborate with the users of the system and we overcome all those challenges.

Law requires families in Rwanda to travel to the local government sector office to register their children. Yet lacking registration, children cannot join in social backing plans. Government develops digital methods to get social services nearer to the citizens in this way child registration done immediately after birth at health facilities offers a unique national identification number. (Malik, 2021)

### 2.2 Similar systems

Normally in Rwanda, there are no register systems we had, but in other countries, there are online register systems but all of those don't work in registration but they work as registers on different things.

Irembo service is a platform that is used to request different government services and it assists the citizens to submit the application and make payment for various services. (what is Irembo, n.d.)

The REX system (Registered Exporter System) is a system for certifying the provenance of commodities based on the premise of self-certification. The origin of items is stated by business operators themselves through so-called origin statements. An economic operator must be registered in a database by his competent authorities to make a statement of origin. The economic opportunity converted the export register. (Registered Exporter system, n.d.)

Well-functioning civil registration and vital statistics system are critical for both a country and its residents, as it records significant demographic data such as births, deaths, marriages, and divorces. They are a set of matrices that maintain track of a country's Human Development Index (HDI) concerning the Sustainable Development Goals (SDG). (Marriage Registration System, n.d.)

Register a birth is a free website that helps people to register a child born and it gives the online birth certificate. (birth registration, n.d.)

### 2.3 Critics of existing systems

Well advanced in all sections due to technology or online methods, nowadays people are using those digital methods in their life especial in registrations. The principal is set in different regions and it is implemented into different categories.

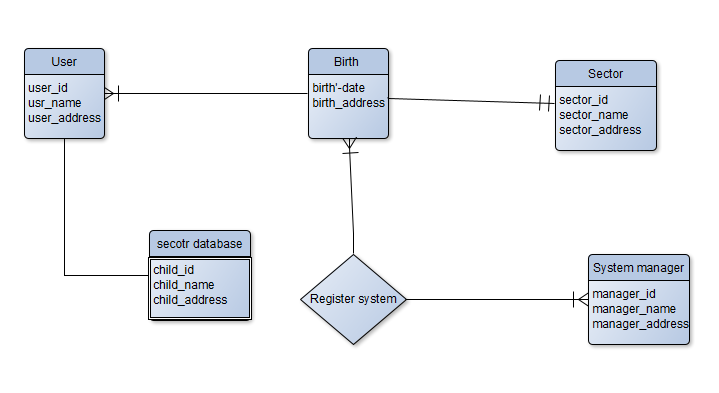
According to data the users of different online registrations were enlarged. For instance, in marriage registration for the areas that apply that register system, they get a larger number of the population who register their marriages compared with before.

Normal in unregister dead people the number of people who use that system was increased. Yet before that system exist people do not deal with these services. But after that system occur civil use that services become bigger than before.

### 2.4 Conceptual framework and models

The role of information systems and technologies in community firms’ managing and daily procedures has been widely acknowledged and assessed as positive, since launching an online presence increase country development, real number and statistics of population growth and competitiveness with international.

About the model, the entity-relationship model is part of system design that is graphical and it approaches the relationship of that specific online registration system.



# CHAPTER THREE: METHODOLOGY

## 3.1 Introduction

This methodology chapter researcher providing is the approach and method which have been used to develop this system. The researcher will deliberate about different types of model objects in this system project and a detailed explanation of each phase in developing this project.

This part is an important technique used to manage and control or research in a project to achieve the specified objectives within a given time.

## 3.2 Data collection methods

The collection of information about that case study was worked through online research, interviewing people, and observations. At the beginning of gathering data researcher was brainstorm about the problem society faced and this give researcher to think on the possible solutions that can solve that issue and come up with idea of creating system.

Firstly researcher makes an investigation about the weakness of the existing system and why the issue is not solved after the researcher sets the unique features that help the system to perform. Researcher make research in different engines and get desirable and useful information help to know more about registration system.

During data collection methods, the researcher gathers more about the ways other system work, and researcher go in line with this data and set strong and unique system.

After the researcher makes different instrument helps to get helpful data on the system and making the clear direction of using those tools in collecting useful data. Hence researcher set an easy way to correct information related to this study.

## 3.3. Research instruments

The research instruments researcher used are surveys, questionnaires, interviews, and observations. Those are tools researcher used to get information from the users of the existing system. Moreover, the survey researcher sent to many different people, especially to people who give birth, and other people researcher meet when they come from to register and unregister, that also researcher sent to the survey and they complete, after researcher get information in that study. Other instruction is did interview with people who penalized on delayed of register their child born, researcher ask more questions and researcher get interesting answers about it.

The same as questionnaire, the researcher uses these tools by enquiring research questions for getting descriptions about research. However, that descriptions of research questions are an instrument for demonstration data.

Observations, to see others existing systems, how they construct, what is the uniqueness of each one, and what requirement has, after to observe this researcher get something new and help the researcher to make that study differ from others study. Hence all this helps the researcher to gain useful data that help the researcher to improve that case study.

## 3.4. Data analysis tools

The Importance of data analytics in the register has generated many openings globally. The first tool is python, python is an object-oriented script language that is easy to maintain, read, write and is a free open source tool. The other one is Excel that is an analytical tool that is popular, basic, and is wide. Especially that tool will be used when there is internal data of a user that must be analytics. Excel will progress in this study to help in modeling.

## 3.5. Development technologies

In this study researcher will install new technology equipment, as nowadays users want fast solutions to satisfy their registrations.

The **Visual Studio Code** is a language that the researcher will use to develop the birth registration system. That language is code edit redefined and improved for structure and fixing recent web and cloud applications. The visual studio code will work on creating a website that enhances user interaction with the system and it will help to make a clear and visual interface of the interface.

The internet has transformed how users communicate and engage with brands as well as with each other across the globe. Sectors have to take note as online review platforms.

In that study, we believe that our future will be mobile-driven. In that way apps are already the lens through which we involve in brands we deal with and in future our every record-keeping interaction will be driven through smartphone technology.

## 3.6. Limitations of the study

Commonly there are some documents needed to fill in the registration form. In the child register, two national ID numbers are needed while in an unregistered dead person, there are needs of the cell leader’s national ID and three national IDs of different people. This means you can’t send and get confirmation messages when you complete all required fills.

When parent is one, especially in the case of teenage pregnancy and rape case. When these cases happen because it is required to give two national IDs of both parents (mother and father), that case study faces that edge. If this happens you are not allowed to fill that form when you don’t have sufficient documents.

# CHAPTER FOUR: SYSTEM ANALYSIS, DESIGN AND IMPLEMENTATION

## 4.0 Introduction

This chapter it conducted for the purpose of studying system and it describe on techniques of improves of the system also this section show process of altering system. This chapter shows determination of structure of the physical system design and ensuring if the birth system satisfy a high level of quality.

## 4.1 Analysis of the old system

Investigations on the old system is all about the weakness of the existing systems. Yet some old system it get weakness of low modern tools. According to the user of the system, their needs the latest version of the system. On the old system there are some features missed on it.

So, the old system it shows some fault like sometimes the level of service connection are low, like when user wont to register on that old system it take whole minutes of waiting that services to open.

## 4.2 Analysis of the new/improved system

## 4.3 New system requirements

The configuration of that birth register system must have in order for hardware and software application to run smoothly and efficiently. Normally, system requirements states what the equipment is required to run the system.

### User requirements

User requirements are things the user needs the system to do. In the birth register system the user requirements are the following:

1. client manager
2. systems and end-users
3. client engineers

### 4.3.2 Functional requirements

1. LOG in page: where the user will be able to log in the system.
2. Service: where the available services are posted.
3. About Us: the all information of the system are stored
4. Contact us: where the administrator and users are communicated from.

### 4.3.3 Non-functional requirements

1. security requirements
2. usability requirements
3. operational process
4. ethical requirement
5. regulatory requirements

## 4.4 System Design

This is the progression of outlining components, modules, interfaces and data for birth register system that fulfilled requirements.

### 4.4.1 Logical design

In logical design shows what the system should look to the user.

### 4.4.2 Physical design

Physical haw the system should be built.

## 4.5 System implementation

On system implementation of birth register system it defining the ways system should be built, showing system physical design and if the system it matchs with quality standard.

# CHAPTER FIVE: EVALUATION, CONCLUSION, AND RECOMMENDATION

## 5.1 Introduction

## 5.2 Discussion

## 5.3 Findings from the questionnaires and/or observations

## 5.4 Evaluation of the new system

## 5.5 Limitations of the study (encountered problems)

## 5.6 Conclusion

## 5.7 Recommendations

## 5.8 Further areas of the study

# References

*ASAP*. (2020, jul 28). Retrieved from Software Suggest: https://www.softwaresuggest.com/us/palnetreg#user-reviews

*birth registration*. (n.d.). Retrieved from NSW government: https://onlineforms.bdm.nsw.gov.au/newborn/birth\_registration

*birth registration*. (n.d.). Retrieved from plan internation: https://plan-international.org/early-childhood/birth-registration

*Birth registration*. (2020, june). Retrieved from UNICEF global database: https://data.unicef.org/topic/child-protection/birth-registration/

*hostevent*. (n.d.). Retrieved from Software suggest: https://www.softwaresuggest.com/us/palnetreg#user-reviews

*innonavations in birth registrarion*. (n.d.). Retrieved from plan international: https://plan-international.org/publications/innovations-birth-registration

*InstantKB*. (2015). Retrieved from civil registration and vital statics knowledgeblebase: https://unstats.un.org/unsd/vitalstatkb/KnowledgebaseArticle50795.aspx

Malik, I. (2021, 2 17). *In Rwanda making every life known is enhancing human capital*. Retrieved from World bank blogs: https://blogs.worldbank.org/health/rwanda-making-every-life-known-enhancing-human-capital

*Marriage Registration System*. (n.d.). Retrieved from CSM breaking though barriers: https://www.csm.co.in/offering/marriage-registration-system/

*Microsoft Excel*. (2021, April 13). Retrieved from Wkipedia: https://en.m.wikipedia.org/wiki/Microsoft\_Excel

*Plan internation*. (2005). Retrieved from Where we work: https://plan-international.org/early-childhood/birth-registration

*PlanetReg*. (n.d.). Retrieved from software suggesst: https://www.softwaresuggest.com/us/palnetreg#user-reviews

*Registered Exporter system*. (n.d.). Retrieved from An official website of the European Union: https://ec.europa.eu/taxation\_customs/business/calculation-customs-duties/rules-origin/general-aspects-preferential-origin/arrangements-list/generalised-system-preferences/the\_register\_exporter\_system\_en

*Unicef, for every child*. (2016, nov 18). Retrieved from Monitoring the situation of children and women: https://data.unicef.org/crvs/rwanda/

Weinsterin, J. (2020, sep 12). *Python resources*. Retrieved from Career Karma: https://careerkarma.com/blog/what-python-is-used-for/

*what is Irembo*. (n.d.). Retrieved from Help: https://rdb.irembo.gov.rw/rolportal/faq