

MAASAI MARA UNIVERSITY



SCHOOL OF SCIENCE AND INFORMATION SCIENCES.

DEPARTMENT OF COMPUTER SCIENCE

ONLINE BIRTH REGISTRATION SYSTEM

COURSE: COMPUTER SCIENCE PROJECT II

CODE: COM 423

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degree of Bachelor of Science in Computer Science.**

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DECLARATION

I declare that this project is my original work and has not been done by anybody or presented to any institution. The details of the work and any other expression are from the knowledge gained from the various sources acknowledged.

SANG VICTOR KIPROB

Sign.....

Date: ____ / ____ / 2016.

This project has been submitted for the examination and as per the requirement of Computer Science Project II Course with the Approval of my Supervisor.

MR. ABRAHAM MUTUA

Sign

Date: ____ / ____ / 2016.

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DEDICATION

I dedicate this work to the Department of computer science Maasai Mara University, computer science lecturers, friends, my supervisor Mr. Mutua, my beloved parents Wilson and Emily and finally my siblings.

ACKNOWLEDGEMENT

Without any help, I would have not engineered the development of the online birth registration alone. Thanks to God for the gift of life and good health.

To all lecturers from the Department of Computer Science, who have tirelessly imparted knowledge in me, I pass my regards to you. I am grateful to Dr. Esther Imbamba and Mr. Ope Justus for your immeasurable knowledge on Software engineering you have armed me with, which enabled me to develop my software through an engineering approach. Thanks to Mr. Mutua Abraham and Mr. Noseli Lemayian Moses for your programming knowledge you imparted in me since I joined this institution.

To my colleagues who we invariably shared a lot as far as programming in PHP, HTML and others are concerned. The knowledge I got from them enabled me to implement the software with ease.

ABSTRACT

A birth certificate is becoming one of the crucial documents a Kenyan must possess. For instance, it is becoming a requirement for standard eight pupils and form four students to produce a birth certificate, in which a copy will be send to Kenya National Examination Council, for them to be registered as candidates. Similarly, most institutions require a birth certificate for identification purposes if one is not an adult also when processing identification card you have to produce the document. It is also an important document when people are travelling abroad because it shows the nationality of someone.

A problem normally arises when applicants are many especially prior to registration of national examinations. The office of Registrar of Births is therefore flooded by a multitude of applicants during this period. Apart from long queues, the process is normally slow and expensive since more workers are employed. There is also lack of fairness due to cases of corruption whereby the greedy rich bribe the workers for their applications to be processed immediately. The poor citizen will persevere the long queues only to be told to collect the birth certificates in a month's time or more. The main cause of the above problems is that we still use the manual system in the application process.

Therefore, to maintain smooth and fast application of a birth certificate, there is rapid need for development of an Online Birth Certificate Registration System (OBCRS) that can automate and simplify these activities. I have therefore developed OBCRS to cater for this compelling need.

CHAPTER ONE

1.1 INTRODUCTION

1.1.1 Background

The law governing registration of births in Kenya is known as the Births and Deaths Registration Act Cap. 149 Laws of Kenya. It came into force in 1928 with its commencement date on 9th June 1928 as Births and Deaths Ordinance.

Before then ordinances in local councils (authorities) had the force of the law, however after this, the Minister in charge was empowered to apply the law throughout Kenya through legal notices. The Attorney-General was appointed the first Minister in charge and who subsequently appointed the Registrar General as officer in charge of registration of births and deaths throughout the country assisted by a deputy registrar general and as many assistant registrar generals as possible to carry out its mandate.

The mandate of the Registrar General was:

- (a) Registration of births and death.
- (b) Preservation of births and deaths records.
- (c) Issuance of birth and death certificates.
- (d) Production of births and deaths statistics.

Eventually in 1990, all registration functions were transferred from the Attorney General's office to the Office of the President with the ultimate creation of the Civil Registration Department on 1st July 1990. The Minister in charge appointed Principal Civil Registrar as the registrar of births and deaths in the entire country assisted by many district civil registrars and assistants as possible to carry out its mandates.

The core functions of the civil registration department are to

- (a) Registration of births and deaths.
- (b) Preservation of birth and death records.
- (c) Issuance of birth and death certificates upon application.
- (d) Production of birth and death statistics.

Many processes involved in civil registration is expensive, time consuming and tiresome. Expensive because there is duplicity of offices such as partnership of Civil Registrar and Medical Officer of Health. Cost of obtaining a birth certificate is the distance involved between the farthest parts of the district to the district civil registrar office at district headquarters. The living standards of most Kenyans would not allow most of them to be registered making the whole

1.1.2 PROBLEM STATEMENT

The current manual civil registration works well but drawbacks surpass its usefulness which calls for improvement. This has been due to the overcrowding in the civil registrations offices in rush hour to meet the dateline which eventually lead to discouragement when it is not met. This should not be the case as registration is a right stipulated in the constitution which everyone must get.

Frequenting the civil registration offices more than two time before getting the registration is mostly annoying as much time is lost. A mobile and web-based system which entails procedures of registration such as submitting the registration details and obtaining the certificate of registration with the details submitted. The proposed system will be helpful for parents and guardians who will need to register their children's details by using the phones and computers. Also the government can organize computers to be placed in areas where there is no proximity.

System is proposed after the frustrations passed by many in obtaining birth certificates for their children. The certificate was needed in registration of Kenya National Examinations (KCPE and KCSE). Most students were locked out from examination registration due to lack of the important document.

The current manual civil registration system has problems amongst which are:

- 1) **Distance** - the distance involved between the farthest parts of the district to the district civil registrar office at district headquarters. This long distance coupled with bad roads make bus fares to be very high hence no one bothers to follow up on their certificate even after registration.
- 2) **Government Bureaucracy** – This has made many people to shy away from applying for registration of births of their children where an applicant is made to travel more than two or three times to the district headquarters to apply for a birth certificate. This has made many people not to bother about registering their children and applying for their birth certificate in addition to the tell tales they have heard from those who have had an experience before.
- 3) **Lack of information and awareness** - This lack of information has bred misinformation regarding birth registration.
- 4) **Corruption** - different applicants with the same set of documents for either birth registration/ birth certificate application one is turned away for lack of one requirement or another while another one is served and issued with the a birth certificate. In other instances one is served at the Central Division Registry while the other applicant is turned away to go to his district of birth.
- 5) **Duplicity of offices** such as the partnership between Principal Civil Registrar and Medical Officer of Health.

- 6) **Fee overcharged** - charges for registration of death and birth in the entire country is contrary to the births and deaths regulations.
- 7) **Ambiguity of civil registration department services** - where services is located different from its Administrative headquarters.

1.1.3 JUSTIFICATION

The Online Birth Registration System shall reduce time spent queuing in civil registration offices. Since it is a web-based system it shall enable parents and Guardians to register from any part of the world. Congestion in registration since the system is distributed and allows concurrency of users. Duplicity of data shall be avoided since the database is developed from MYSQL data when well queried. Also the users will have ample time when and how to register at his or her convenience.

1.1.4 SCOPE

The system will limit its scope to County where the applicants can do their application online and request the applied copy of the birth certificates. The applied certificates should be approved by the county registrar of births following the registration done by various guardians in various locations within the county most specifically the hospitals.

The proposed system will ensure that details about applicants and people doing the application should be necessary for the purpose of meeting the birth registration act. The system should capture all details required from the applicant.

1.1.5 PROJECT OBJECTIVES

The specific objective of this system is:

- To ease access to information and increase efficiency and effectiveness in the birth certificate application in Kenya.
- To provide Kenyans with relevant information pertaining the birth certificate application and guidelines.
- To replace old and tedious filling system in registrar of persons offices in the country.
- To enable Kenyans to attain birth certificates on time.
- To avoid forgery and corruption in registrar of persons offices.
- To reduce time wasted during the entire process of application in the current way of application.
- To avoid duplication of Birth certificate numbers
- To enable easy censing by the Government

CHAPTER TWO

2.1 LITERATURE REVIEW

The introduction of digital technology to all works of life has had a lot of implications. Organizations of all kinds have had to adopt these information systems in order to improve the quality of service delivered to their clients. In order to acquire a system that meets the intended purpose, it is important to investigate the background of the problems the information system is supposed to serve.

Birth certificate application for a long time has relied on the traditional manual system for processing and file system to keep records. For some time this method of keeping records was considered best but due to growing number of applicants every day, the current system has been put to test and its weaknesses exposed. The quality of services offered to applicants and the response to their needs have been poor. This calls for a better system to address the challenges facing the current method.

Birth registration is the process of registering a child's birth or adult and this is the first right of any person after birth. Birth registration not only guarantees a child's right to a name and Nationality, but is also the first legal acknowledgement of a child's existence. It also gives someone the priority of travelling abroad.

The process of applying for a birth certificate is not yet advanced in Kenya hence much needs to be done in order to bring efficiency and effectiveness to the process.

Protocol Documentation Services together with the Principal Civil Registrar's office has undertaken a research with the aim of providing relevant and practical information on birth registration in Kenya. According to the research;

There are two modes of birth certificates application in Kenya.

- Through postal service (traditional method of application),
- Personal presentation of application forms to the Registrar (most frequently used).

In making a birth certificate application for any of the two types mentioned, it is mandatory for the applicant to fill in the prescribed details provided for in the birth certificate application form.

The prescribed details include the county, location and finally the sub location of birth of the child, exact place of birth of child, name of child, date of birth, gender, name of mother and name of father (optional depending on marital status of the mother).

There is a lot of prohibitive cost towards obtaining a birth certificate from respective district civil registrars' office that has hampered birth registration. These include:

- a.** The distance involved between the farthest parts of the district to the district civil registrar office at district headquarters. This long distance coupled with bad roads make bus fares to be very high hence no one bothers to follow up on their certificate even after registration.
- b.** Government bureaucracy which has made many people to shy away from applying for registration of births of their children where an applicant is made to travel more than two or three times to the district headquarters to apply for a birth certificate. This has made many people not to bother about registering their children and applying for their birth certificate in addition to the tell tales they have heard from those who have had an experience before.
- c.** Lack of information and awareness. This lack of information has bred misinformation regarding birth registration and birth certificate application.
- d.** Corruption- is a very varied term and does not only refer to bribes and or favoritism it is not unusual to find, that two different applicants with the same set of documents for either birth registration/ birth certificate application one is turned away for lack of one requirement or another while another one is served and issued with the a birth certificate.

There are two types of application of birth certificate in Kenya.

2.1.1 Current birth certificate application

A child born in Kenya should be registered immediately after birth or within the first six months. This should be done by the parents or the designated guardians.

If your child is born in the hospital, all medical facilities in Kenya provide a birth notification card. However if your child was born at home, the child will be registered at the first clinic service. Adults can also get their certificate at the registrar of births and the location or the county level.

Once through, all correctly filled the guardian will collect the certificate when leaving the hospital using the birth reference number. This certificate will be bear the hospital stamp and the signature of the Registrar in charge.

2.1.2 Late birth certificate application

Adults can apply for birth certificate by going to the nearest hospital or county registrar of person's office. They must provide a document that can validate their date of birth which can be the baptism card or the hospital reference number. Once validated they can then fill form B1 to apply for a birth certificate.

The above highlighted prohibitive cost calls for a system to overcome them and provide a solution. The Online Birth Certificate Application System will minimize the cost incurred during the application of a birth certificate as well as providing vital information about the whole process.

CHAPTER THREE

3.1 METHODOLOGY

In developing the system there is need to determine ways and procedures to go through. These procedures occur step by step thereby allowing the developers measure their progress in developing the system. This is to ensure that the most optimal system is delivered timely. It therefore requires the developing team to seek different approaches so as to meet the system requirements and measure their progress by setting deliverables for every stage.

3.1.1 Life Cycle Model

There are various software life cycle models that can be used to complete this software namely:

- Evolutionary Model
- Spiral model
- Reuse Oriented Model
- Waterfall model
- Incremental Model

3.1.2 Recommended solution strategy

3.1.3 Waterfall Model

The most recommended solution strategy is the waterfall model. It is the best strategy because of the following reasons:

- When this model is used the software is well engineered.
- It ensures that each and every activity is carried out to completeness before moving to the next stage.
- Using this model it is easy to detect errors early long before the software project is almost completed. Hence reducing costs that may have been used to debug or correct the error after the system has been developed.
- It is the most recommended method for student projects according to (Ian S. , 2003).

This models segments the life cycle into a series of successive activities. Each activity results in a well-defined product. It is also referred to as linear sequential model, phased life cycle model or classic life cycle model.

Following is a diagrammatic representation of different phases of waterfall model.

Waterfall Model

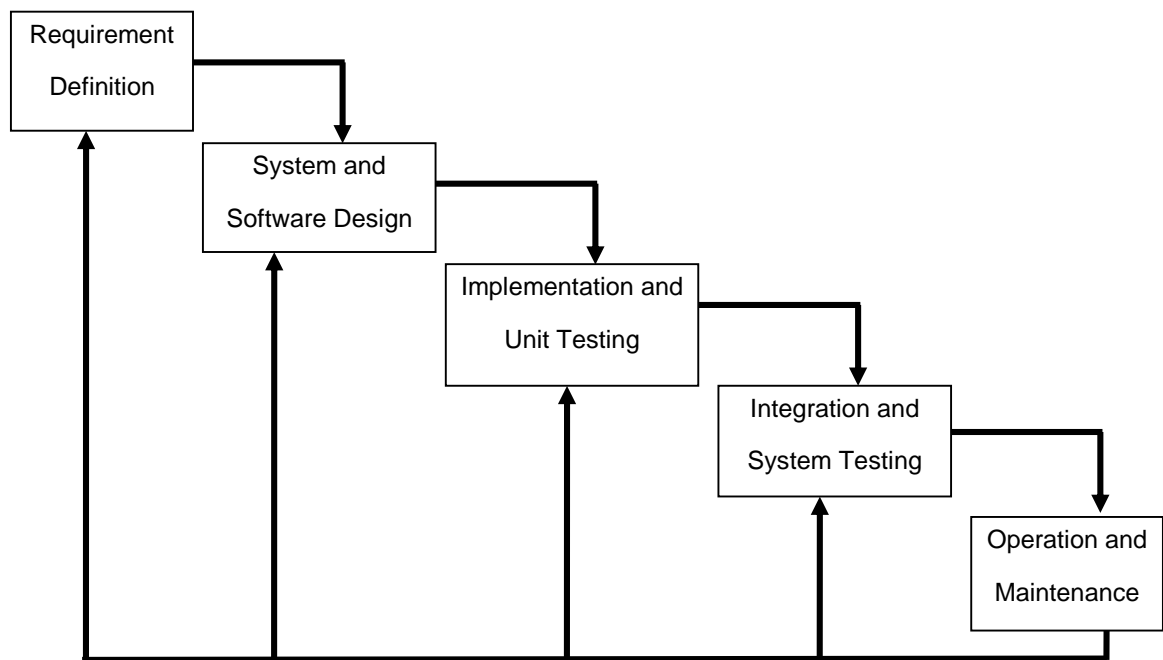


Fig 1.1 Waterfall Model

The following are the sequential phases in Waterfall model are:

- **Requirement Gathering and analysis:** All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification document.
- **System Design:** The requirement specifications from first phase are studied in this phase and system design is prepared. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture.

- **Implementation:** With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.
- **Deployment of system:** Once the functional and non-functional testing is done, the product is deployed in the customer environment or released into the market.
- **Maintenance:** There are some issues which come up in the client environment. To fix those issues patches are released. Also to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

3.2 Requirements.

3.2.1 Definition

This step involves gathering of requirements, studying the requirements to establish their feasibility and then specify them.

This is done through the use of various stages of software requirements engineering stages:

- Requirements investigation/elicitation.
- Feasibility study

3.2.2 Requirements Investigation/Elicitation

Requirements elicitation

In this stage, Information is gathered from the multiple stakeholders identified. The Requirements Analyst draws out from each of these groups what their requirements from the application are and what they expect the application to accomplish.

Considering the multiple stakeholders involved, the list of requirements gathered in this manner could run into pages. (Daniel A and Yeates, 1992)

The level of detail of the requirements list is based on the number and size of user groups, the degree of complexity of business processes and the size of the application.

The information used to understand the problem and to help in finding a solution to the current crisis was from different sources of knowledge like the internet, books and interactions between different applicants of birth and offices of registrar of births.

3.2.3 Tools used in Requirements Elicitation

Techniques used include:

- Interviews
- Questionnaires
- Observation
- Use cases

The following methods were used to obtain information about the system:

I. Observation:

- i. The system should cater for ultimate security
- ii. The software should be flexible.
- iii. Applicants need to register.
- iv. Child birth must be registered before application of birth certificate.
- v. The system ought to be effective.
- vi. A child should only be registered only once to reduce redundant records.
- vii. The system should allow changes of child particulars if need be.

II. Interview:

Office of Registrar of Births were interviewed to obtain the characteristics of the System:

- i. Should be able to detect errors.
- ii. Should be accessible to applicants.
- iii. Should be able to generate birth certificate on request- real time processing.
- iv. Should be fast.
- v. Should provide for authentication.
- vi. Admin should have the upper hand in controlling the site like update or altering information that have been requested. Deleting information if necessary and producing and verifying documents.

Applicants were key people to be considered in this process

- vii. Should guide and direct.
- viii. Should be able to change application details whenever they want before submission.
- ix. Should assure quality service.
- x. Should be transparent enough.
- xi. System should always be accurate.

CHAPTER FOUR

4.1 SYSTEM ANALYSIS AND REQUIREMENT MODELING

4.1.1 Introduction

The process of system analysis involves collection of all the necessary information about the elements of the current system of an organization. The development of a computer based application is intended to automate the activities within a particular existing manual system. This enhances efficient operations within the system. In order to meet the needs of a particular system, it is important to understand the roles played by each element existing within the system of that particular organization.

4.1.2 Aim

- To find out the types of elements that exists within the system of the organization.
- To record and analyses finding on the roles and characteristics of each element.
- Find out how the current system is running.
- To document and understand the findings.

4.1.3 HOW CURRENT BIRTH CERTIFICATES APPLICATION IS DONE.

Birth certificate application for a long time has relied on the traditional manual system for processing and file system to keep records. For some time this method of keeping records was considered best but due to growing number of applicants every day, the current system has been put to test and its weaknesses exposed. The quality of services offered to applicants and the response to their needs have been poor. This calls for a better system to address the challenges facing the current method. The filing system exposes a lot of weakness. Birth registration is the process of registering a child's birth and this is the first right of any child after birth. Birth registration not only guarantees a child's right to a name and Nationality, but is also the first legal acknowledgement of a child's existence.

The process of applying a birth certificate is not yet advanced Kenya hence much needs to be done in order to bring efficiency and effectiveness to the process.

Protocol Documentation Services together with the Principal Civil Registrar's office has undertaken a research with the aim of providing relevant and practical information on birth registration in Kenya. According to the research;

There are two modes of birth certificates application in Kenya.

- Through postal service (traditional method of application).
- Personal presentation of application forms to the Registrar (most frequently used).

In making a birth certificate application for any of the two types mentioned, it is mandatory for the applicant to fill in the prescribed details provided for in the birth certificate application form.

The prescribed details include District and Province of birth of the child, exact place of birth of child, notification number, name of child, date of birth, sex of child, name of mother and name of father (optional depending on marital status of the mother).

There are two types of application of birth certificate in Kenya.

i. Current birth certificate application

A child born in Kenya should be registered immediately after birth or within the first six months. This should be done by the parents or the designated guardians.

If your child is born in the hospital, all medical facilities in Kenya provide a birth notification card. However if your child was born at home, the child is registered at the first attendance of the clinical services usually required for the new born babies. You can also get birth registration services at the District Birth and Death Registries. The baby registered immediately after birth will get his/her certificate after a day or 12 hours this time is to allow the administrator to sign the certificate. The child born at home will be Registered and the certificate will be collected at the attend of the next clinical service. This child can also acquire the certificate through registrar of birth at the district level or any government Registrar of birth countrywide.

ii. Late birth certificate application

Adults can apply for birth certificate by going to any of the Government Hospital or their district birth registry office. They must provide a document that can validate their date of birth. Birth notification cards from hospitals or baptism cards from churches are accepted. Once validated they can then fill form B1 to apply for a birth certificate.

The above highlighted prohibitive cost calls for a system to overcome them and provide a solution. The Online Birth Certificate Application System will minimize the cost incurred during the application of a birth certificate as well as providing vital information about the whole process. This online facility will provide will be an end to the long waits to acquire the certificate ,the rampant corruption that have rocked the ministry of immigration.

4.1.4 STEPS FOR APPLYING BIRTH CERTIFICATE

(a) Current birth certificate application (should be done within the first 6 months after birth)

(1) Child is given a notification card in hospital or any medical facility. However if your child was born at home; the hospital notification cards is issued at the first attendance of the clinic. You can also get birth registration services at the Government hospital Birth Registries.

(2) Fill the **B1 form** (available at registrar of persons at any hospital in Kenya or at the location or county registrar of birth) which should contain all child details and parents' details.

(3) Attach all testimonials required e.g. child parents' ids, applicant id (photocopies)

(4) Take the form to your chief or sub chief to be approved.

(5) Proceed to registrar of person's offices and hand in the application form for processing of birth certificate

(6) Once through, the registry office will provide you with an Acknowledgement of Birth card with a serial number

(7) Collect your child's birth certificate after 3 week using the above mentioned serial number.

(b) Late application of birth certificate (When the first 6 months is over after birth)

(1) Fill the **B1 form** (available at registrar of person's offices country wide or in the local bookshops) which should contain all child details and parents' details.

(2) Attach all testimonials required e.g. child parents' ids, applicant id (photocopies)

(3) Take the form to your chief or sub chief to be approved.

(4) Proceed to registrar of person's offices and hand in the application form for processing of birth certificate

(5) Once through, the registry office will provide you with an Acknowledgement of Birth card with a serial number

(6) Collect your child's birth certificate after 3 week using the above mentioned serial number.

CHAPTER FIVE

5.1 SYSTEM DESIGN

5.1.1 Introduction

In this document, the conceiving, planning out and specification of both internal and external characteristics of the software is indicated. This design document describes a system that will satisfy the requirements of the SRS. Decisions made in creating this design document are based on those requirements and an understanding of available technologies and components. Once the design has been drafted, work on the system implementation and unit testing may begin. It is divided into two namely:

- Internal design: involves both architectural and detailed design. These are the systems internal characteristics.
- External design: involves the externally observable characteristics of a software product.

5.1.2 Design Goals

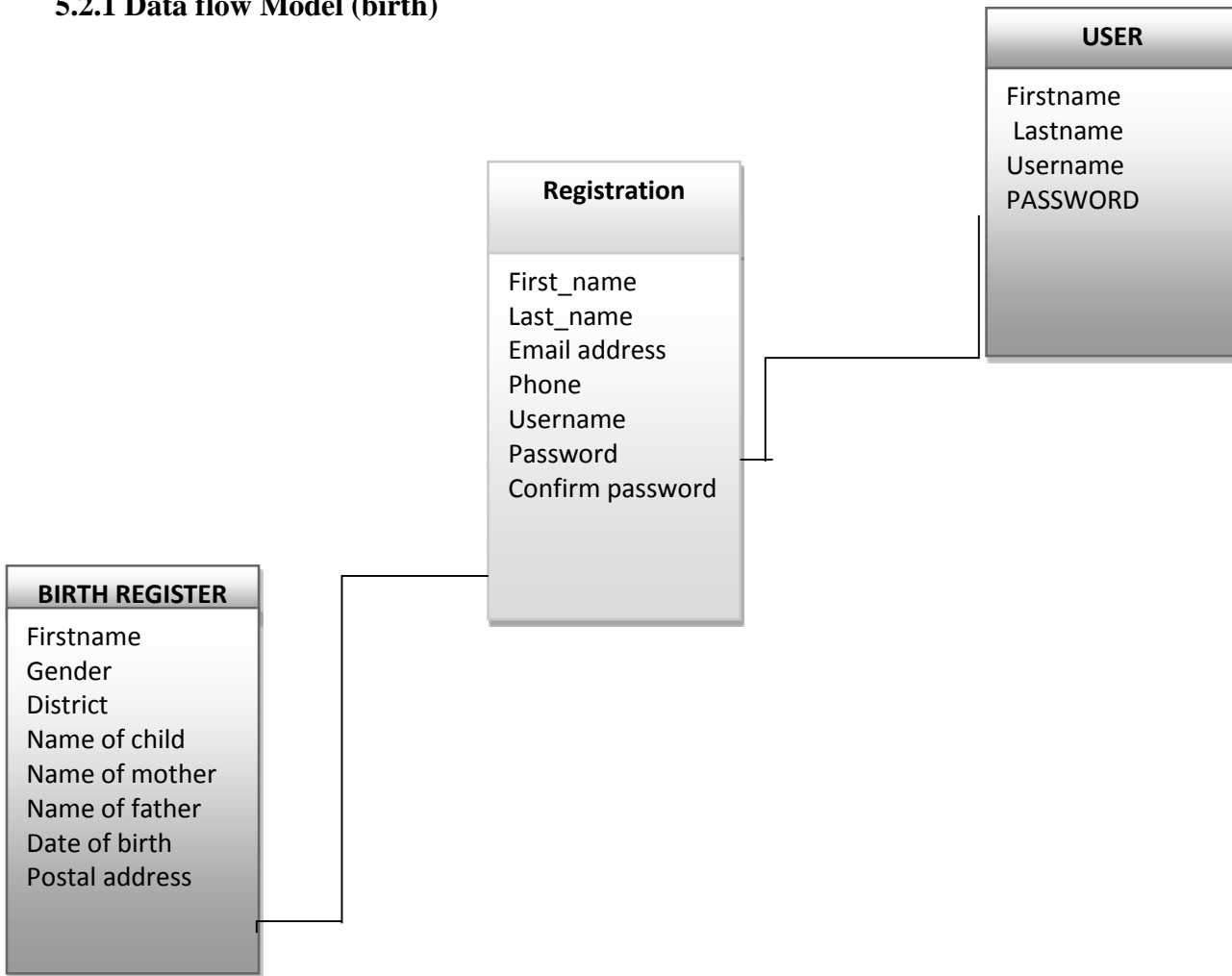
- Correctness
- Feasibility
- Understandability
- Implementation phase guidance
- Modularity
- Extensibility
- Testability
- Efficiency

5.2 Data design

This section transforms the information domain model created in the software requirement analysis into a data structure. The data dictionary forms the basis of this. The database to be employed by the system is MySQL server database. And To be linked using php.

The basis for data design is from data dictionary and data object and the Entity Relation Diagram.

5.2.1 Data flow Model (birth)



5.2.2 Data Dictionary

User_Login(TABLE)

Field	Type	Null	Default	Extra
username	varchar(200)	No		Unique
password	varchar(200)	No		

User_Registration (TABLE)

Field	Type	Null	Default	Extra
first_name	varchar(20)	No		
Last_name	varchar(20)	No		
Email_Address	varchar(20)	No		
Phone_Number	varchar(20)	No		
username	varchar(20)	No		
Password	varchar(20)	No		
Confirm_password				

Application(TABLE)

Field	Type	Null	Default	Extra
FirstName	varchar(20)	No		
gender	varchar(20)	No		
District of Birth	varchar(20)	No		
Name of Child	varchar(20)	No		
Name of Mother	varchar(20)	No		
Name of Father	varchar(20)	No		
Date of Birth	varchar(20)	No		
Postal Address	varchar(20)	No		

5.3 Architectural Design

The architectural design is the preliminary blueprint from which software is constructed. Software architecture of a program or computing system is the structure of the system, which comprises

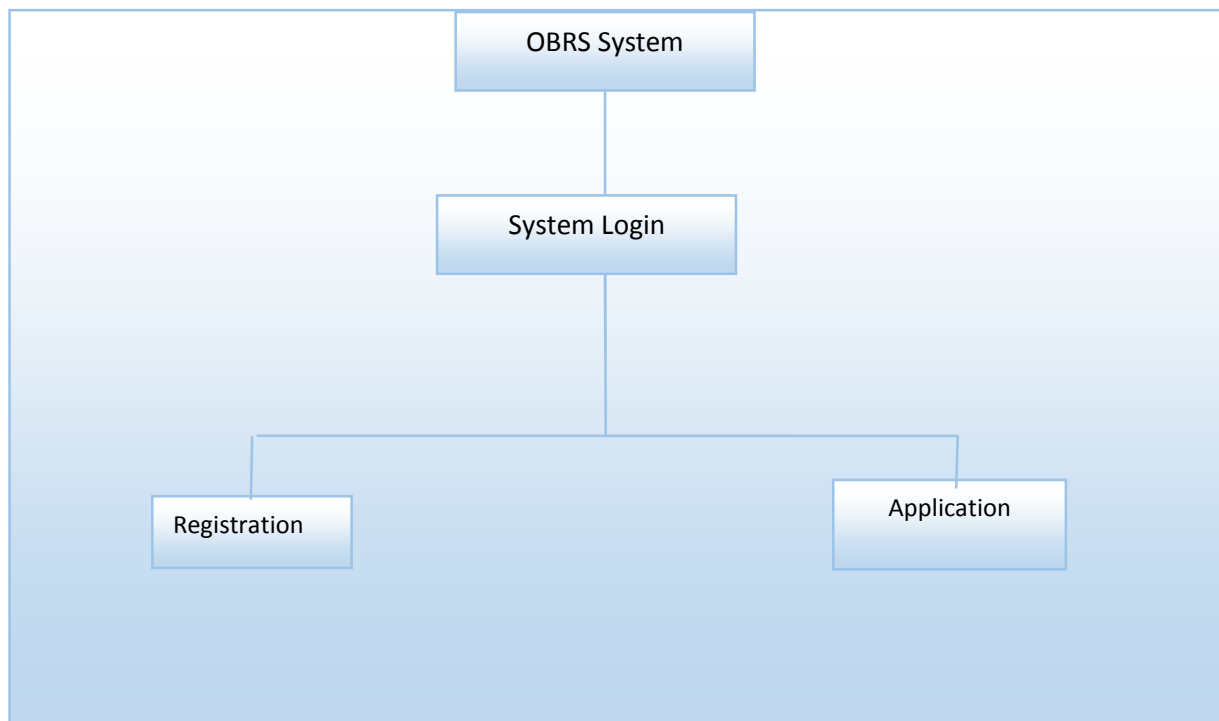
software components, the externally visible properties of those components and the relationship among them.

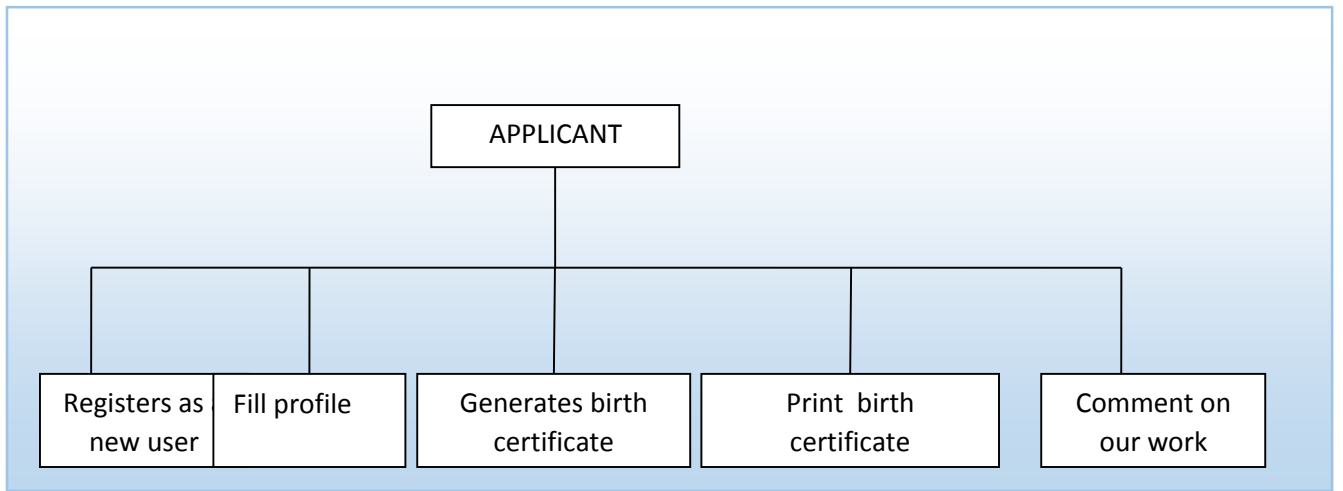
The architectural design designs the relationship between the structural elements of the software e.g., how the subsystems interact with each other. This section describes the hierarchical structure of the program components, the manner in which the components interact and the structure of data that are used by the components.

Reasons why architecture is important:

- i. To enable communication of representation.
- ii. To communicate early design decisions.
- iii. Architecture constitutes a relatively small intellectually graspable model of how the system is structured and how its components work together.

The basis of this is the DFDs



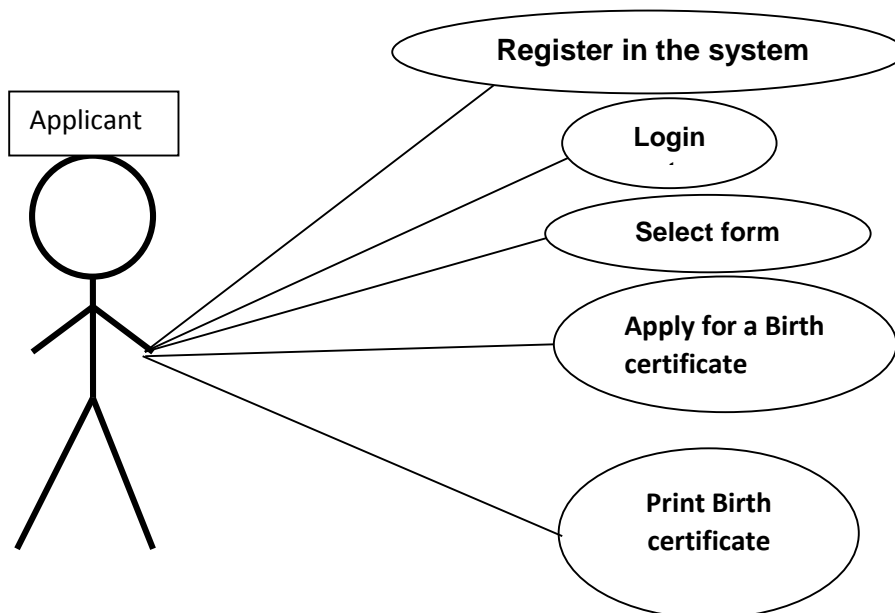


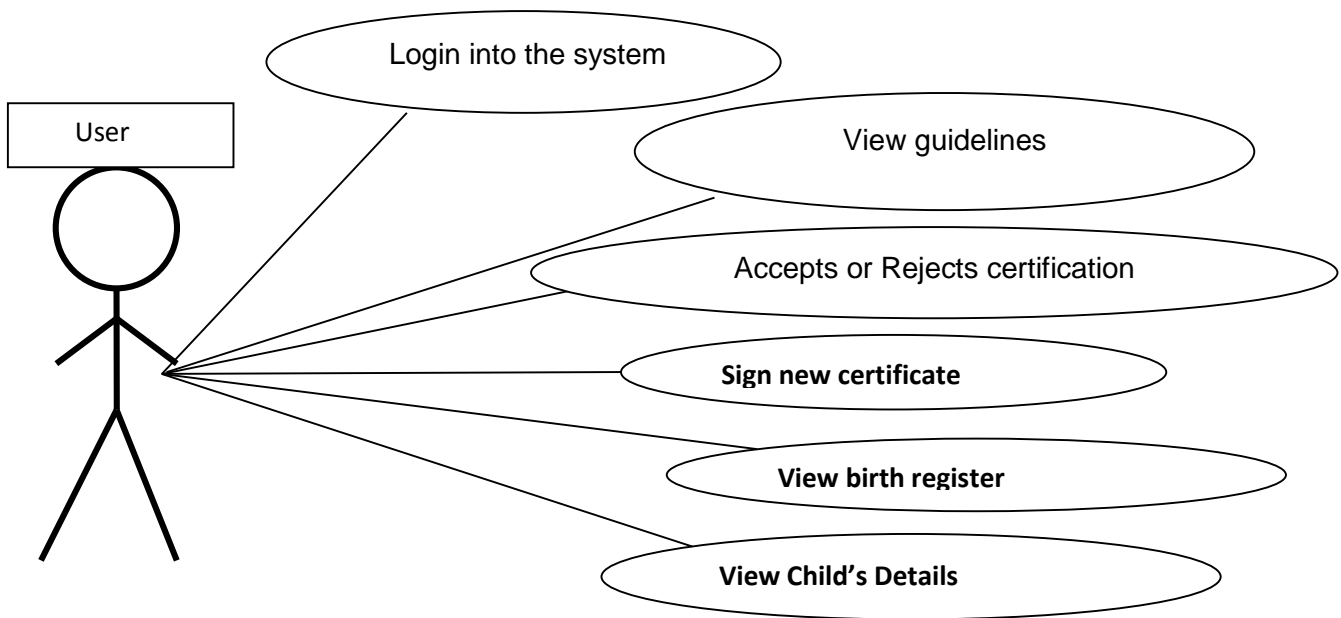
5.3.1 Requirements Elicitation tools used included:

- Use cases
- Data flow diagrams

Use Cases

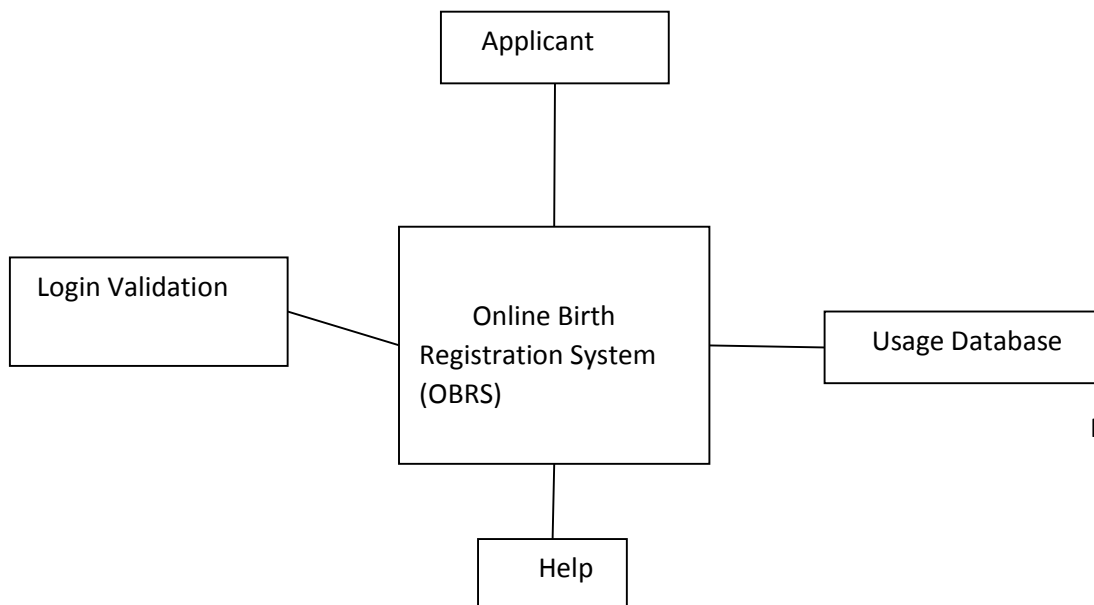
Applicant's use case





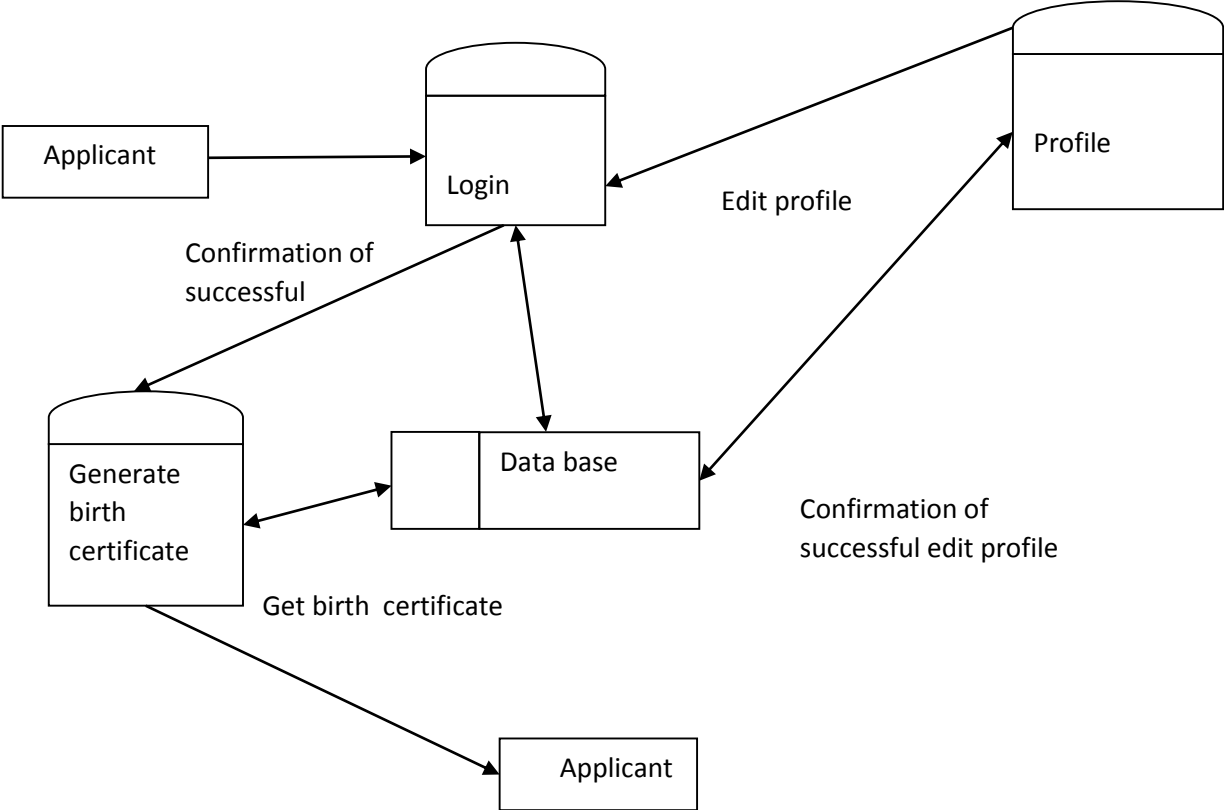
5.3.2 Context level DFD (Level 0)

This shows the sub – system that make up the entire **online birth registration system**.

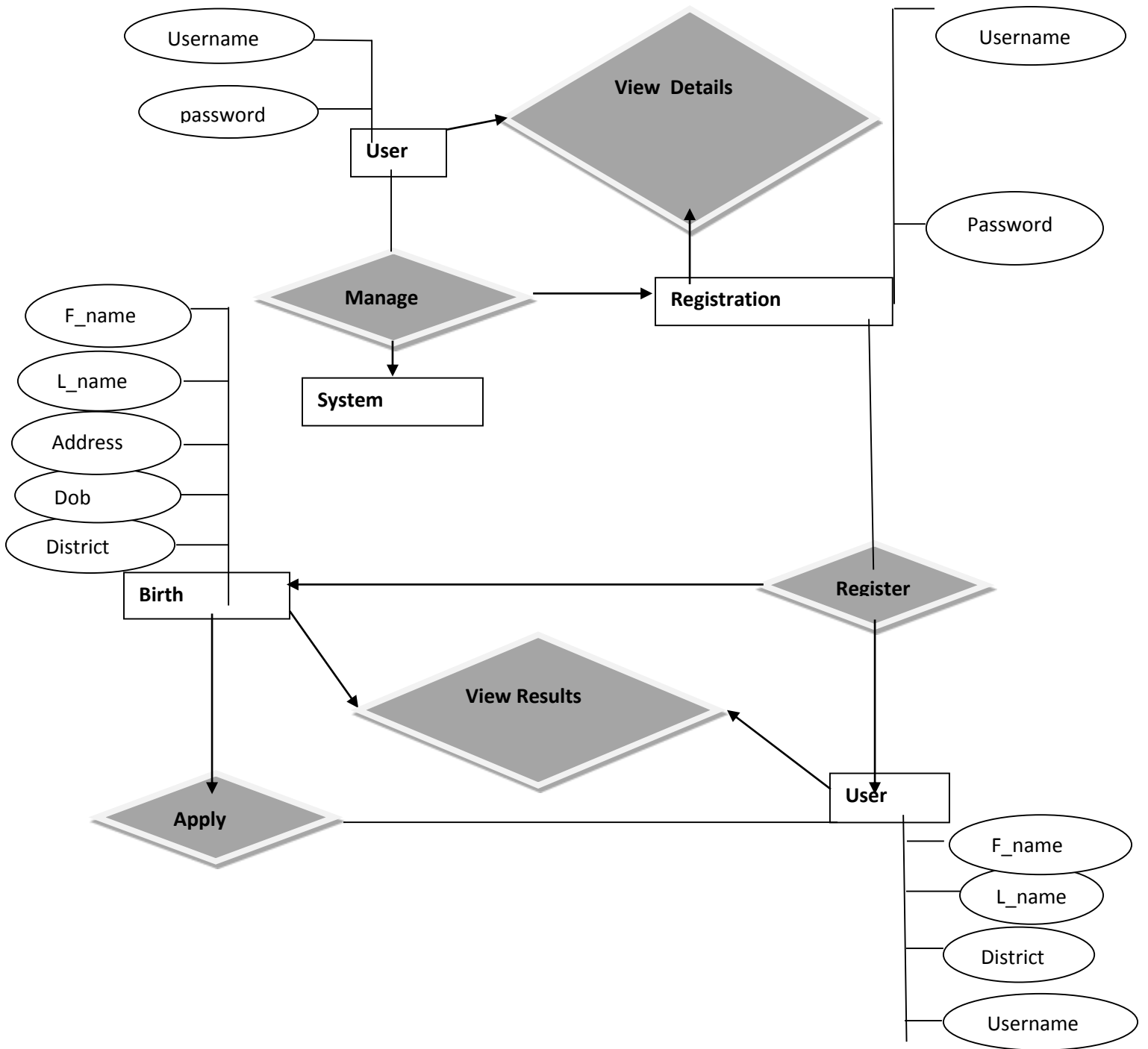


Dataflow diagram (DFD)

Dataflow diagram showing the steps taken by the applicant



5.3.3 Entity relationship diagram (DFD) of OBRS System



5.4 Interface Design

5.4.1 Login Page



Welcome to Our site
services at your hand

User Login

Username :

Password :

[Login](#) [Register](#)

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5.4.2 Registration Page



Welcome To Online Birth Registration System

Please Register so you can Apply for your Birth Certificate.

User Registration

First Name :

Last Name :

Email Address :

Phone Number :

Username :

Password :

Confirm Password :

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5.4.3 Application Page



Welcome To Online Birth Registration System

Enter your correct Details as this is going to appear in your certificate.

Application Details

First Name :

Gender :
 Male Female

District of Birth :

Name of Child :

Name of Mother :

Name of Father :

Date of Birth :

Postal Address :

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5.4.4 Certificate copy design

Birth Certificate
<p>Certificate Serial No: 4</p> <p>Female</p> <p>District of Birth : Homabay</p> <p>Name of Child : nekesa</p> <p>Name of Mother : Nafula</p> <p>Name of Father : Wafula</p> <p>Date of Birth : 2016-05-26</p> <p>Postal Address : 3645</p>

CHAPTER SIX

6.1 CODING, IMPLIMENTATION AND TESTING

6.1.1 Introduction

The major aim of this document is to show the code that was used in major parts of the system. This is to enhance the maintainability of the system. Most of the coding is done in Php, while a small part is done in Java Script, Css and HTML (in interface and validation).

The following code was used to enter applicant detail captured by form into database:

6.1.2 Code for Login

```
<?php
include('connectdb.php');
if(isset($_POST['submit']))
{

$username=$_POST['username'];
$password=$_POST['password'];

$result=mysql_query("SELECT * FROM register WHERE username='$username' AND password = '$password'");
$row=mysql_fetch_array($result);
if($row>0){
    echo "<script>alert('login Successful')</script>";
    echo "<script>>window.location='Apply.php?id='</script>";
}
}
?>
<?php

session_start();
if(mysql_num_rows($result) > 0 ) {
    //Login Successful
    session_regenerate_id();
    $member = mysql_fetch_assoc($result);
    $_SESSION['username'] = $member['username'];
    $_SESSION['password'] = $member['password'];

    session_write_close();
    echo "login Successful";
    header("location:Apply.php?");
    exit();
}

else {
    //Login failed
    echo "wrong username or password";
    header("location: Login.php");
    exit();
}

?>
```

6.1.3 Code for Register

```
<?php
if(isset($_POST['submit']))
{
    $firstname=$_POST['firstname'];
    $lastname=$_POST['lastname'];
    $email=$_POST['email'];
    $phone=$_POST['phone'];
    $username=$_POST['username'];
    $password=$_POST['password'];
    $confirm=$_POST['confirmpassword'];
    $sub="INSERT into register(first_name,last_name,email_address,phone_number,username,password,confirm_password) values('$
    firstname','$lastname','$email','$phone','$username','$password','$confirm') ";
    $query_sub=mysql_query($sub) or die(mysql_error($sub));
    if($query_sub>0)
    {
        echo "<script>alert('Registration was successful')</script>";
        echo "<script>window.location='Login.php'</script>";
    }
    else{
        echo "<script>alert('Confirm you have entered correct details')</script>";
    }
}
?>
```

6.1.4 Code for Apply

```
<?php
if(isset($_POST['submit']))
{
    $firstname=$_POST['firstname'];
    $gender=$_POST['gender'];
    $district=$_POST['district'];
    $child=$_POST['child'];
    $mother=$_POST['mother'];
    $father=$_POST['father'];
    $dob=$_POST['dob'];
    $address=$_POST['address'];
    $checkbox=$_POST['checkbox'];
    $sub="INSERT into apply(first_name,gender,district,name_of_child,name_of_mother,name_of_father,date_of_birth,postal_address,
    newsletter) values('$firstname','$gender','$district','$child','$mother','$father','$dob','$address','$checkbox') ";
    $query_sub=mysql_query($sub) or die(mysql_error($sub));
    if($query_sub>0)
    {
        echo "<script>alert('Application successfully entered')</script>";
        echo "<script>window.location='cert.php?id='</script>";
    }
    else{
        echo "<script>alert('Confirm if you entered correct details and try again')</script>";
    }
}
?>
```

6.1.5 Code for Contact Us

```
<?php
if(isset($_POST['submit']))
{
    $name=$_POST['name'];
    $address=$_POST['address'];
    $subject=$_POST['subject'];
    $message=$_POST['message'];

    $sub="INSERT into contact_us (Name,Email_Address,Subject,Message) values('$name','$address','$subject','$message') ";
    $query_sub=mysql_query($sub) or die(mysql_error($sub));
    if($query_sub>0)
    {
        echo "<script>alert('Message sent successfully')</script>";
        echo "<script>>window.location='ContactUs.php'</script>";
        exit();
    }
    else{
        exit();
    }
}
?>
```

6.1.6 Code for Certificate Generation

```
<?php

$query=mysql_query("select *FROM apply WHERE app_id >3 ")or die(mysql_error());
while($rec=mysql_fetch_array($query)){
    ?>
    <h1><th>Certificate Serial No:</th></h1>

    <h2><tr><?php echo $rec['app_id'] ?></tr></h2>

    <tr><td><h1><th>Name of Child :</th></h1>

    <h2><tr><?php echo $rec['name_of_child'] ?></tr></h2></td>
    <td><h1><th>Gender :</th></h1>

    <h2><tr><?php echo $rec['gender'] ?></tr></h2></td></tr>

    <td><h1><th>District of Birth :</th></h1>

    <h2><tr><?php echo $rec['district'] ?></tr></h2></td>
    <td><h1><th>Name of Child :</th></h1>

    <h2><tr><?php echo $rec['name_of_child'] ?></tr></h2></td>
    <td><h1><th>Name of Mother :</th></h1>

    <h2><tr><?php echo $rec['name_of_mother'] ?></tr></h2></td>
    <td><h1><th>Name of Father :</th></h1>

    <h2><tr><?php echo $rec['name_of_father'] ?></tr></h2></td>
    <td><h1><th>Date of Birth :</th></h1>

    <h2><tr><?php echo $rec['date_of_birth'] ?></tr></h2></td>
    <tr><td><h1><th>Postal Address :</h1><h2><?php echo $rec['postal_address'] ?></h2></td></tr>
<tr class="head">
```

6.2 Testing

Testing involves running new or revised programs to determine if they process all data properly. The test is done using test data that is made available by the users and developers of the system. This process helps to evaluate the software product developed. Test data is a set of data created for testing new or revised programs. It should be developed by the user as well as the programmer and must contain a sample of every category of valid data as well as many invalid conditions. Validation and verification are important elements of this process. The system was tested with some sample data which was then stored in a database. The system was seen to work well for the given data although later increments will still be welcomed integration after visiting the customer and delivering the product.

The types of testing included:

6.2.1 Functional or black box Tests

Functional tests on the system were implemented by providing the stimulated nominal inputs to the system and observing the **actual output** versus the **expected output** and results noted down. Various test cases were chosen for both boundary and non-boundary values. (Zawodny, 2004)

6.2.2 Structural or White Box Tests.

This one involved checking the internal logic of the program modules. Stimulated data was availed and this test data was input into the system to check the validity of the algorithms and functions that performed the tasks at hand. The major things that were tested during this kind of testing were conditional statements, use of Boolean variables, loops and iterations

6.2.3 Acceptance tests

This include Beta Testing and Alpha testing

Beta Testing- Testing by the customer at the customer's site .this exposes the software to the real environment and any errors are reported to the developers. (Clifton, 2000)

Alpha testing- this is the final stage in the testing process before the system is accepted for operational use. It is done by the customer at the Developers site.

6.2.4 Stress tests

This is testing the software with abnormal or extreme data usually with an intention to break down the system. It attempts to find the limits with which the system will fail through abnormal quantities of inputs.

6.3 Testing Process

The computerized system automatically makes checks on data type entered and the length of the data entered. The system also checks whether the inputs lie within accepted domains e.g the accepted numerical/alphanumeric. This ensures that the data entered is correct and is designated to the correct place. It should also display error messages whenever an error is detected. (Merral, 1998)

The following data tests were performed on the various forms in the system.

The expected results and the actual results obtained are tabulated below. (Thomson, 2001)

6.3.1 Test Data

Login form

Text field	Data Input	Expected Results	Actual Results
username	Nothing input(blank)	Error Message	Error Message
	chief	OK	OK
	Thhhr	Error Message	Error Message
password	Nothing Input(blank)	Error Message	Error Message
	chief	OK	OK

OTHER FORMS

Text field	Data Input	Expected Results	Actual Results
First_name	Nothing input(blank)	Error Message	Error Message
	6756	Error Message	Error Message
	kipkoech	OK	OK
Email address	Nothing input(blank)	Error Message	Error Message
	GHFT	Error Message	Error Message
	Sangvictor30@yahoo.com	OK	OK
Last_name	Nothing input(blank)	Error Message	Error Message
	Alex	OK	OK
	345678%^&\$	Error Message	Error Message

CHAPTER SEVEN

7.1 LIMITATION, CONCLUSION AND RECOMMENDATION

7.1.1 LIMITATIONS

The constraints that limit the project and / or are imposed on the product include:

- The project to be completed in one semester. This is approximately three months. This is a short period of time that is not enough to implement and document embedded software with the effort of a single individual.
- The programming languages used which include the use of PHP and HTML which require plenty of time and effort to master.
- Lack of sufficient support to use the software technology. E.g. use of some automated tools.
- Some of the software to be used are very costly to acquire.
- Maintenance of the product will be costly. This includes patenting as well as running cost.
- Trying to understand the expected logic and concepts required in designing the project is extremely difficult for one software developer.
- Developing the project individually is extremely difficult since software development is recommended to be done by different groups of people.

7.1.2 CONCLUSION

The designing and writing of this system has been a success to some extent. The users of the system were cooperative and gave the relevant information which assisted in the development of the system. However, the system will evolve through intermediate versions as users try to develop a better understanding of their requirements until a final version that fully meets their requirements is met. The system has maximized the use of the database to maintain data integrity and consistency. Reliable and accurate data can therefore be guaranteed by the system.

7.1.3 RECOMMENDATIONS

Duration of the project should be increased, in order to give more time for research and to enable development of quality systems

Students should be encouraged to get involved in activities that will help to expose them and interact with the world. A perfect avenue for doing this is joining the IEEE (Institute of Electrical and Electronics Engineers). This organization serves as the catchments area for the world's think-tanks.

The University administration should provide students with basic equipment and material necessary in developing their projects

CHAPTER EIGHT

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CHAPTER NINE

9.1 APPENDICES

9.1.1. Appendix one.

Hardware Requirements

Hardware Device	Minimum	Optimized
Monitor	<ul style="list-style-type: none">• 800 by 600 screen resolution• 14" Monitor	<ul style="list-style-type: none">• 1024 by 768 resolution• 17" Monitor
Keyboard	<ul style="list-style-type: none">• Standard 101/102 Keyboard.	
Pointing Device (Mouse)	<ul style="list-style-type: none">• PS/2 Mouse or USB Mouse with 3D Scroll/touch pad.	
Processor	<ul style="list-style-type: none">• Intel Pentium 3000 MHz or Celeron 3200 MHz.	<ul style="list-style-type: none">• Intel Pentium IV 3200 MHz Duo Core and above
Memory	<ul style="list-style-type: none">• 512 MB RAM.	<ul style="list-style-type: none">• 1024 MB RAM or more.
Hard Disk	<ul style="list-style-type: none">• 40Gb	<ul style="list-style-type: none">• 80 Gb and above
Modem or WiFi		
Uninterrupted Power Supply (UPS)		

9.1.2 Appendix two.

Budget

ITEM	COST
Laptop (Accer 5349)	45,000
Paper work	1,500
Modem	1,000
Internet bundles	1,000
Travelling	1,000
communication	500
Total	50,000

9.1.3 Appendix three. (Time schedule)

TASK	weeks															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Proposal writing	■	■														
System analysis			■													
System design				■												
Interface design					■											
Implementation/ coding						■	■	■	■	■	■	■	■			
System testing												■	■	■		
System validation														■	■	■
System presentation																■
documentation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■