

DECLARATION

I, MUCYO Fred hereby declare that this dissertation submitted for the diploma of A₂ level in computer electronics, at Ecole technique Saint Kizito Save, is my own original work and has not previously been submitted to any other institution of higher education. I further declare that all sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references.

MUCYO Fred

Signatures

.....

Date...../...../.....

BONAFIDE CERTIFICATE

I, NDINDIRIYIMANA Eric hereby certify that this project report entitled "VIDEOSTREAMING" is the bonafide work of MUCYO Fred who carried out the research under my supervision. I certify further that, to the best of my knowledge, the work reported herein does not form part of any other project report or dissertation.

Signature of the supervisor

.....

Mr NDINDIRIYIMANA Eric

DEDICATION

- ✓ To the Almighty GOD,
- ✓ To my beloved parents and relatives,
- ✓ To my supervisor,
- ✓ To my families and friends,
- ✓ To our computer scientists young brothers and sisters academic year 2013 and classmates,
- ✓ This dissertation is dedicated.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank the government of Rwanda through the ministry of education to sponsor our studies.

I would like to express my sincere thanks to my supervisor Eric NDINDIRIYIMANA for his encouragement, suggestions, guidance and valuable advice.

I would also to express my appreciation to both staff members and students of research groups at Ecole technique Saint Kizito. Their comments and criticism helped to improve the quality of this work.

I'm also grateful to my father GAKWAYA Desire, my family and relatives for their patience and constant love, their support and comfort has been very fulfilling and they encouraged me to proceed with my three years of diploma A₂ studies.

MAY THE ALMIGHTY GOD BLESS YOU ALL!

ABSTRACT

Videostreaming website occurs through a variety of websites that allow users to view videos Online , interact and develop communities around similar interests.

How the website work you start by the index page that has five

Links home login for user when you are new you can create

A new account to by filling the form on sign up page from the index page.

When you have an account you can do more things as website deliver it likes

Uploading videos, change profile information, and others....

When you upload video which isn't flv or mp4 format the website convert it into flv format Automatically then create its thumbnail to present it.

Table of content

DECLARATION	i
BONAFIDE CERTIFICATE	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
LIST OF FIGURES	viii
LIST OF TABLES	viii
LIST OF ACCRONYMS USED	ix
CHAPTER I .GENERAL INTRODUCTION	1
1.1 Background	1
1.2 Introduction to the website	1
1.3 Problem statement	1
1.4 Scope of the project	2
1.5 Objectives	2
1.5.1 General Objective	2
1.5.2 Specific objective	2
1.6 Project interest	2
1.7 Organization of the project	2
CHAPTER II. LITERATURE REVIEW	3
2.1 Introduction	3
2.2 Tools and languages	3
2.2.1 HTML	3
2.2.2 PHP	4
2.2.3 CSS	4
2.2.4 JAVASCRIPT	5
2.2.5 SQL	6
2.2.6 Apache	7
2.2.7 FFMPEG LIBRARY	7
2.10 MOZILLA FIREFOX	8

CHAPTER III. RESEARCH AND METHODOLOGY	11
3.1 Introduction	11
3.2 Analysis of existing system.....	11
3.3 Techniques	11
3.3.1 Document study technique.....	11
3.3.2 Techniques of investigation	11
3.3.3 Software Development Process Methodologies	11
3.3.3.1.1 ADVANTAGES OF WATERFALL	12
3.3.3.1.2 DISADVANTGES OF WATERFALL	13
CHAPTER IV. WEBSITE DEVELPMENT	14
4.1. Minimum system requirement	14
4.2 The basic hardware requirement includes:	14
4.3 Function diagram	14
4.4 Ways of recording information.....	14
4.5 Entity relationship diagram.....	14
4.6 Designing the ERD	15
4.7 Entity relationship Diagram (ERD)	16
Data dictionary.....	18
Some pages of the website	20
Chapter V: CONCLUSION AND RECOMMANDATION	23
5.1 CONCLUSION.....	23
5.2 RECOMMANDATION	23
BIBLIOGRAPHY	24
Books and Publications	24

LIST OF FIGURES

Figure 1 water fall model	12
Figure 2 : entity relationship diagram.....	16
Figure 3 website organization.....	17
Figure 4 index page	20
Figure 5 view page	21
Figure 6 profile page	22

LIST OF TABLES

Table 1 admin table	18
Table 2 video table.....	18
Table 3 user table.....	18
Table 4 comments table.....	19

LIST OF ACCRONYMS USED

ERD: Entity Relationship Diagram

HTML: Hyper Text Markup Language

GB: Gigabyte

PHP: Hypertext preprocessor

SQL: Structured query language

URL or URI: Uniform Resource (Locator) or (Identifier)

XAMPP: Extended apache mysql php Perl

DB: Database

I.T: Information technology

DDL: Data definition language

DML: Data manipulation language

DCL: Data control language

ICT: Information and Communication Technology

ISAPI: internet server application programming interface

SDL: Simple DirectMedia Layer

AJAX: Asynchronous JavaScript and XML

CHAPTER I .GENERAL INTRODUCTION

1.1 Background

All over the world for many countries, we want to improve or promoting information technology using new technology which uses a high capacity and multi capacity tools such as computer and its devices but it is used by human to realize and to do many functions in various domain of his life.

Rwanda is stilled in those countries and in the world general has not remained insensible to the opportunisms provided by that technology. It has tried to computerize some domains according to computers functionalities.

Our country Rwanda has a long way to attain success in this area. Website development and the use of automated system network system development, the need to share resources within the country and with the outside world, is what among other things that hold largely the certificate of measure of development in the Rwandan society.

Given the typical nature of information technology evolving day by day, there are wide rangers of activities that must be executed to implement ICT strategic activities presented as interactive and online information.

1.2 Introduction to the website

Therefore, me, as researcher, I'm committed to study information technology application in VIDEOSTREAMING WEBSITE. It is crucial issue; I have decided to orient my project research in developing website that would help people to view only videos and also increase their knowledge by viewing tutorials.

This project will help people about what a have said above.

1.3 Problem statement

Video streaming is websites that allows user to view videos online

Today there is a problem of:

- Get videos and tutorials needed
- Time taken by people for seeking new videos.
- Expenses taken by the people to go to study some courses which is available in tutorials.

There is a need to change the existing problems or to solve those problems state above and develop a website that delivers on time and will help people in different manners.

This website will also help people to know information about the new videos and it will reduce all expenses and time taken by the people for seeking the videos.

1.4 Scope of the project

In this project we will focus on the following functions services:

- ✓ Creating an interface with a way in which the user can create his or her own account form where he/she can view his personal data, and perform other operations.
- ✓ A way in which the user can login by using username and their password.
- ✓ A way in which the user can check their profile, upload some profile picture, to change the profile picture to edit or change your profile information
- ✓ The system that can generate some information according to user.
- ✓ The system that help administrator to manage or control website.

Project is limited to what I have said above. The process of live streaming is not included.

1.5 Objectives

The objectives of this website are consists: the general objectives and specific objectives all aiming to benefit people in their activities and also to the Rwandan development.

1.5.1 General Objective

The general objective of this website is to analyze the problems of Rwandan people commit when he/she want some videos.

1.5.2 Specific objective

Facilitating especially Rwandan people for viewing videos also helps to educate itself.

Facilitating people to get online information about videos using this website. By using the video streaming. The people who need to view some videos do not spend their money by going to video shop.

1.6 Project interest

The development of this project will focus on these following interests:

- The implementation of this website “VIDEO STREAMING “ will allow the people to get information about the multimedia and how they can view it.
- This system will allow the administration of the website to check the allowed videos, so that the people view safe information online without taking time to check video before view it online in front of him.
- Improving our knowledge in ICT applications (web application).

1.7 Organization of the project

The work is divided and organized in five chapters:

- ✓ Chapter one deals with the general introduction of the project.
- ✓ Chapter two is merely the literature review. This one is concerned with the consultations of existing literature in this field of study.

- ✓ Chapter three is the Methodology used.
- ✓ Chapter four includes the practical issues of development and implementation of the software.
- ✓ The fifth chapter will give the general conclusion as well as some recommendations

CHAPTER II. LITERATURE REVIEW

2.1 Introduction

This chapter explains related theoretical work or references used to develop the “VIDEO STREAMING” and a background of the website. It also expounds on technologies to be used with a view of providing an overview for the concept of the website’s design.

The World Wide Web uses many languages to develop and perform tasks on websites. The most common languages are html, php, Perl, JavaScript, css, asp, xhtml, xml, dhtml, and many technics like ajax, jquery etc....To facilitate the work to programmers, many other tools have been developed to help programmers. These tools are for example xampp and others library like json, ffmpeg, etc...

2.2 Tools and languages

2.2.1 HTML

HTML (Hyper Text Markup Languages) is used to create a document on the World Wide Web (www). It is simply a collection of certain keywords called “tags” that is helpful in writing document to be displayed using a browser on internet. It is a plat form independent language that can be used on any plat form such as windows, Linux, and Macintosh and so on. A browser understands and interprets the html tags.

HTML, as its acronym means Hyper Text Markup Languages web where:

Hyper means active. When you are on the internet using a browser such as internet explorer or Mozilla Firefox, you can browse through the World Wide Web (www).In this case both navigators interpreted HTML.

Markup comes from the fact that in order to create web pages, you will be typing in text and then “marking up” the next.

Language means that we are using a language with all its syntax. These navigators are commonly called browser.

In order to work with html, you need a browser and a text editor such as edit plus active at the same time. The HTML language is used to create static web pages as well as dynamic web pages with embedded scripts.

The general format of an html document is:

```
<Html>
<Head>
</Head>
<Body>
</Body>
</html>
```

2.2.2 PHP

PHP is a powerful server-side scripting language for creating dynamic and interactive websites.

PHP is the widely-used, free, and efficient alternative to competitors such as Microsoft's ASP. PHP is perfectly suited for Web development and can be embedded directly into the HTML code.

The PHP syntax is very similar to Perl and C. PHP is often used together with Apache (web server) on various operating systems. It also supports ISAPI and can be used with Microsoft's IIS on Windows.

2.2.2.1 What is PHP?

- PHP stands for PHP: Hypertext Preprocessor
- PHP is a server-side scripting language, like ASP
- PHP scripts are executed on the server
- PHP supports many databases (MySQL, Informix, Oracle, Sybase, Solid, PostgreSQL, Generic ODBC, etc.)
- PHP is an open source software
- PHP is free to download and use

2.2.3 CSS

2.2.3.1 What is CSS?

- CSS stands for Cascading Style Sheets
- Styles define how to display HTML elements
- Styles are normally stored in Style Sheets
- Styles were added to HTML 4.0 to solve a problem
- External Style Sheets can save you a lot of work
- External Style Sheets are stored in CSS files
- Multiple style definitions will cascade into one

2.2.3.2 CSS syntax

CSS syntax is made up of three parts: a selector, a property and a value:

Selector {property: value}

The selector is normally the HTML element/tag you wish to define, the property is the attribute you wish to change, and each property can take a value.

2.2.4 JAVASCRIPT

JavaScript is the scripting language of the Web.

JavaScript is used in millions of Web pages to add functionality, validate forms, detect browsers, and much more.

JavaScript is easy to learn! You will enjoy it!

2.2.4.1 What is JavaScript?

- JavaScript was designed to add interactivity to HTML pages
- JavaScript is a scripting language
- A scripting language is a lightweight programming language
- JavaScript is usually embedded directly into HTML pages
- JavaScript is an interpreted language (means that scripts execute without preliminary compilation)
- Everyone can use JavaScript without purchasing a license

2.2.4.2 jQuery

jQuery is a JavaScript Library.

jQuery greatly simplifies JavaScript programming.

jQuery is easy to learn.

2.2.4.2.1 What is jQuery?

jQuery is a lightweight, "write less, do more", JavaScript library.

The purpose of jQuery is to make it much easier to use JavaScript on your website.

jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish, and wraps them into methods that you can call with a single line of code.

jQuery also simplifies a lot of the complicated things from JavaScript, like AJAX calls and DOM manipulation.

The jQuery library contains the following features:

- HTML/DOM manipulation
- CSS manipulation
- HTML event methods
- Effects and animations
- AJAX
- Utilities

Tip: In addition, jQuery has plugins for almost any task out there.

2.2.5 SQL

SQL stands for Structured Query Language.

SQL is a standard language for accessing and manipulating databases.

2.2.5.1 What is SQL?

- SQL stands for Structured Query Language
- SQL lets you access and manipulate databases
- SQL is an ANSI (American National Standards Institute) standard

SQL is a relational database management system(RDBMS)from Microsoft that's designed for the enterprise environment SQL Server runs on T-SQL(Transact-SQL),a set of programming extensions from Sybase and Microsoft that add several features to standard SQL, including transaction control, exception and error handling, row processing, and declared variables.

2.2.5.2 DDL

DDL is a language which permits a user to create and define a table in a database

2.2.5.3 DML

DML is a language which permits data to be manipulated in a database

2.2.5.4 DCL

DCL is a language used to control data in a database

2.2.5.5 MYSQL

MYSQL is a database system used on web basically, a MySQL database allows you to create a relational database structure on a web-server somewhere in order to store data or automate procedure.

If you think of it in comparison to Microsoft access MYSQL is what holds all of your table ,PHP acts as your query (among other things), and your forms are basically web page with field in them with all of this combined you can create tactually a particular project on the web

2.2.6 Apache

Apache is an open-source (source code is freely available and can be shared) HTTP Web software.

It is currently the most popular web server on the Net.

It usually run on UNIX operating system versions like Linux or BSD, but it can also be run on Windows.

It is a full-featured server with many powerful add-ons freely available

2.2.6.1 XAMPP

Apache Friends developed this software to help the people to install and configure Apache web server along with

MySQL, PHP and Perl. XAMPP can be downloaded from Download. . Click start button which opposite to Apache label

- Now try to browse using above URI **http://localhost** or **http://127.0.0.1**

2.2.7 FFMPEG LIBRARY

Ffmpeg is the leading multimedia framework, able to decode, encode, transcode, mux, demux, stream, filter and play pretty much anything that humans and machines have created. It supports the most obscure ancient formats up to the cutting edge. No matter if they were designed by some standards committee, the community or a corporation. It contains libavcodec, libavutil, libavformat, libavfilter, libavdevice, libswscale and libswresample which can be used by applications. As well as ffmpeg, ffmpegserver, ffmpegplay and ffmpegprobe which can be used by end users for transcoding, streaming and playing

FFmpeg provides various tools:

- [ffmpeg](#) is a command line tool to convert multimedia files between formats.
- [ffserver](#) is a multimedia streaming server for live broadcasts.
- [ffplay](#) is a simple media player based on [SDL](#) and the FFmpeg libraries.
- [ffprobe](#) is a simple multimedia stream analyzer.

2.10 MOZILLA FIREFOX

Mozilla Firefox is a free and open source web browser descended from the Mozilla Application Suite and managed by Mozilla Corporation. As of August 2011, Firefox is the second most widely used browser, with approximately 30% of worldwide usage share of web browsers. The browser has had particular success in Germany and Poland, where it is the most popular browser with 55% usage and 47% respectively.

To display web pages, Firefox uses the Gecko layout engine, which implements most current web standards in addition to several features that are intended to anticipate likely additions to the standards.

The latest Firefox features include tabbed browsing, spell checking, incremental find, live bookmarking, a download manager, private browsing, location-aware browsing (also known as "geolocation") based exclusively on a Google service and an integrated search system that uses Google by default in most localizations. Functions can be added through extensions, created by third-party developers, of which there is a wide selection, a feature that has attracted many of Firefox's users.

CHAPTER III. RESEARCH AND METHODOLOGY.

3.1 Introduction

Methodology refers to a set of methods and principles that are used when studying a particular kind of work. Research methods refer to a number of ways of arriving at the knowledge regarding that research. This research is carrying out to develop and implement video streaming. This chapter is a review of analyses of the existing system of a websites, techniques and website development process model that will be used as the methodology, for building this video streaming website.

The software development process model chosen for this project is the “Waterfall “model and the approach are evolutionary. It is commonly used for web application. It is a simplified, partially working version of an application that can be used in discussion with a client as the basis of the final system.

3.2 Analysis of existing system

The initial step while developing a web site consists exactly to find out what to be solved and what should be done. All those features help the developer to find out what are the requirements specifications that the system will use, what are the users, what is the benefit of the web, and so forth.

3.3 Techniques

3.3.1 Document study technique

This technique permits the researcher to consult books, reviews, “project report”, class notes, and Webpages, related to the subject of this work.

3.3.2 Techniques of investigation

To understand deeply the requirements and the problem domain, some techniques will help to achieve the aim of this work. The main technique used is” Interview schedule”.

3.3.3 Software Development Process Methodologies

The software development process focus on the phase of activities directly related to production of the software, for example, design, coding, and testing.

3.3.3.1 Waterfall life cycle model

This is the most common and classic of life cycle models, also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed in its entirety before the next phase can begin. At the end of each phase, a review takes place to determine if the project is on the right path and whether or not to continue or discard the project. Waterfall Life Cycle Model

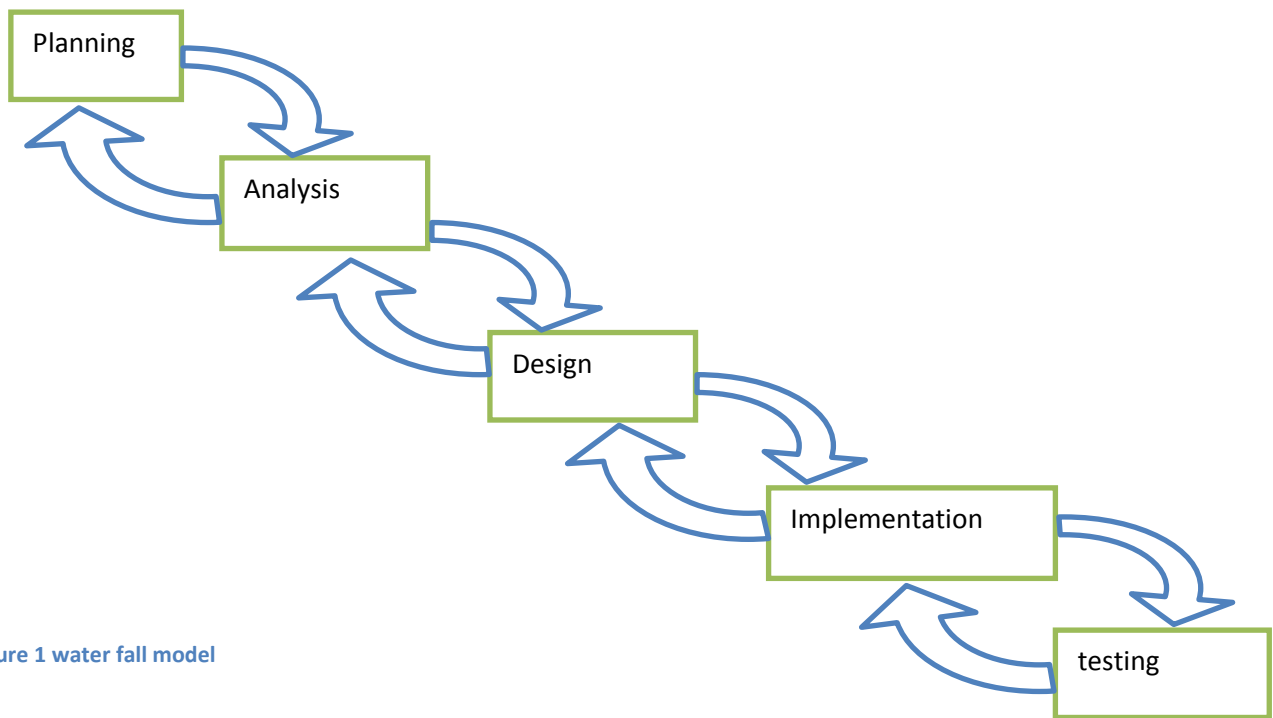


Figure 1 water fall model

3.3.3.1.1 ADVANTAGES OF WATERFALL

The system requirements are identified long before programming begins.

Change to the requirements are minimized as the project processed

Is simple and easy to use

Easy to manage due to the rigidity of the model each phase has specific deliverable and a review process

Phases are processed and completed one at time

Works Well for smaller project where requirements are very well understood.

3.3.3.1.2 DISADVANTGES OF WATERFALL

The design must be completely specified before programming begins

A long time elapses between the completion of the system proposal in the analysis phase and the delivery of the system.

Adjusting scope during the life cycle can replace a project.

No working software is produced until late during the life cycle.

High amount of risks and uncertainty. Poor model for complex object oriented project. Poor model for long and ongoing project.

Poor model where requirements are at a modulated to high risk of changing.

CHAPTER IV. WEBSITE DEVELOPMENT

4.1. Minimum system requirement

The minimum requirements are divided into software and hardware, the software requirement include:

Operating system	window 7		
Browser	Firefox		
Web server	localhost		
Database	phpMyAdmin	Front-end	xampp
Backend	mysql		

4.2 The basic hardware requirement includes:

Processor: Intel Pentium processor

RAM: 2GB

Hard disk 100 GB (recommended)

4.3 Function diagram

A function diagram is used to show website's function that will be constructed and implementation process of data diagram more over function diagram will also be used to determine the appearance frequency of smaller process in the data flow chart

4.4 Ways of recording information

The information will be recorded in php my admin database. A database contains different table which are used to record and manipulate information. The following steps elaborate on the components and design of an entity relationship data model, ERDM

4.5 Entity relationship diagram

Entity relation diagram is a graphical representation of any organization's data storage requirements. ERD is a major modeling tool and will organize the relationship between entities. Entity relationship obstruction of the real world which simplifies the problems to be solved while retaining its essential features one-to-one relationship to just one occurrence of a second entity

The term entity is widely used in database circles and is used to mean any distinguishable object that is to be represented in the database. The entity relationship data model (ERDM) is a base of a collection of basic objects called entities and also of a relationship among these objects.

4.6 Designing the ERD

Entity are described in a database by set of attribute like, name, quantity and entity like Admin details in ERDM illustrated below the entity relationship are shown in diamond shapes. The set of all entities of the same type are termed as an entity relationship, which is built up from the following components

Rectangle: represent entity sets



Ellipse:



Diamond: represent relationship among or between entity sets



Line: represent the link's attribute to entity sets and entity set to relationship



Each component is labeled with the entity or relationship that it represents

4.7 Entity relationship Diagram (ERD)

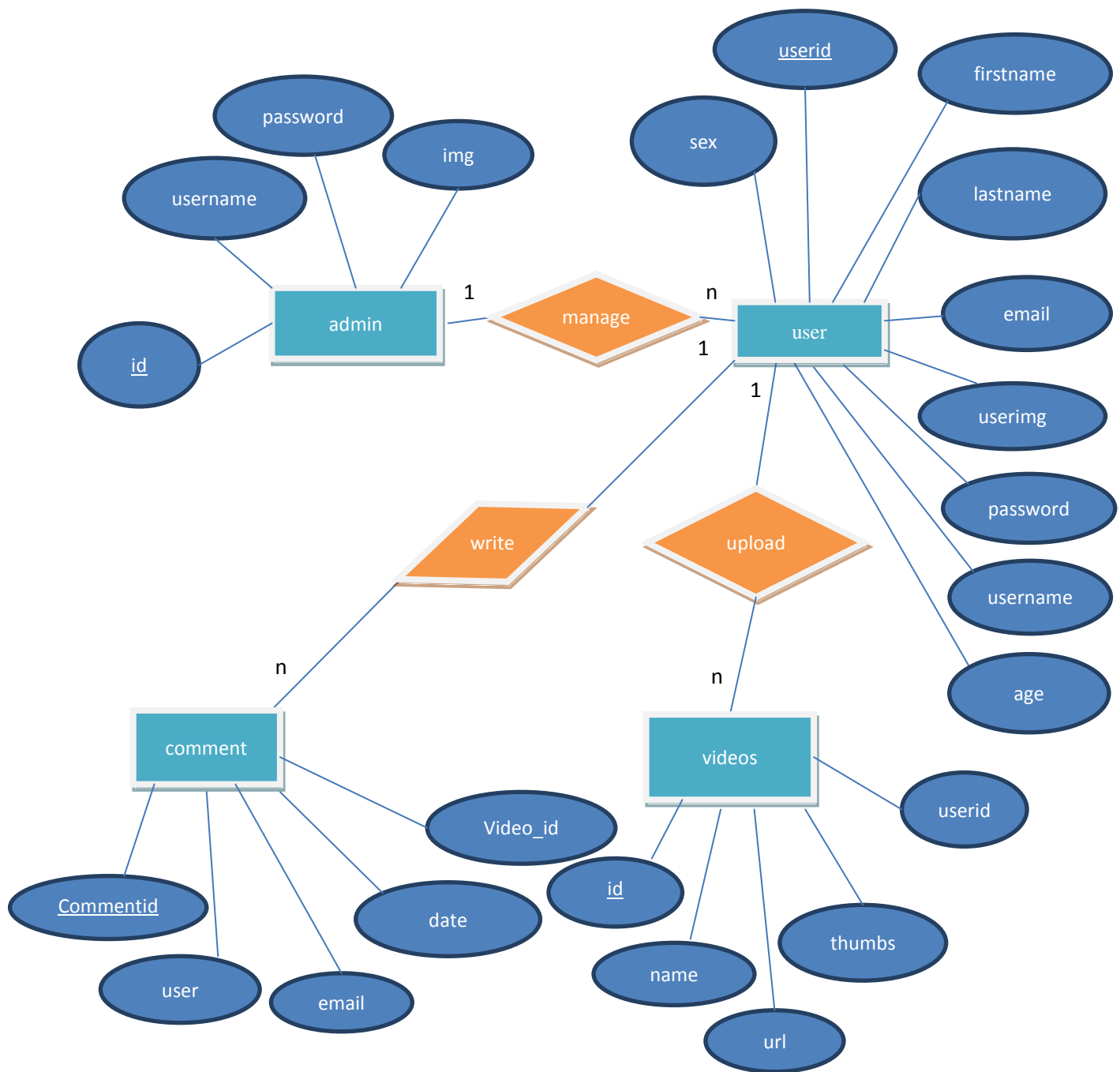


Figure 2 : entity relationship diagram

4. Web site organization

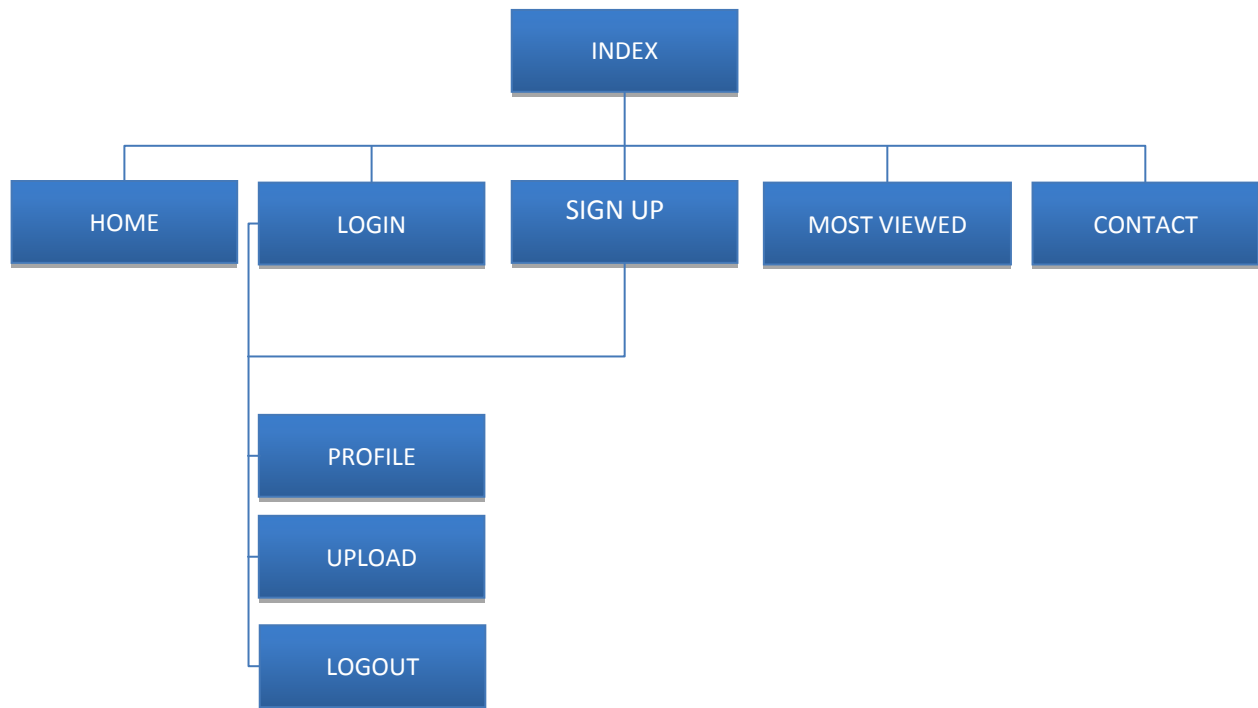


Figure 3 website organization

Data dictionary

5 rows in set (0.08 sec)

```
mysql> describe admin;
```

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
username	varchar(255)	NO		NULL	
password	varchar(255)	NO		NULL	
img	varchar(255)	NO		NULL	

4 rows in set (0.11 sec)

Table 1 admin table

```
mysql> describe video;
```

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
name	varchar(255)	NO		NULL	
url	varchar(255)	NO		NULL	
thumbs	varchar(255)	NO		NULL	
userid	int(11)	NO		NULL	
views	int(11)	NO		NULL	

6 rows in set (0.01 sec)

Table 2 video table

```
mysql> describe user;
```

Field	Type	Null	Key	Default	Extra
userid	int(11)	NO	PRI	NULL	auto_increment
firstname	varchar(255)	NO		NULL	
lastname	varchar(255)	NO		NULL	
email	varchar(255)	NO		NULL	
sex	varchar(255)	NO		NULL	
age	varchar(255)	NO		NULL	
username	varchar(255)	NO		NULL	
password	varchar(255)	NO		NULL	
using	varchar(255)	NO		NULL	
block	varchar(25)	NO		NULL	

10 rows in set (0.04 sec)

Table 3 user table

```
mysql> describe comments;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| comment_id | int(11) | NO | PRI | NULL | auto_increment |
| comment | varchar(255) | NO | | NULL | |
| username | varchar(55) | NO | | NULL | |
| email | varchar(100) | NO | | NULL | |
| date | text | NO | | NULL | |
| video_id | int(11) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.05 sec)
```

Table 4 comments table

Some pages of the website

Index page:

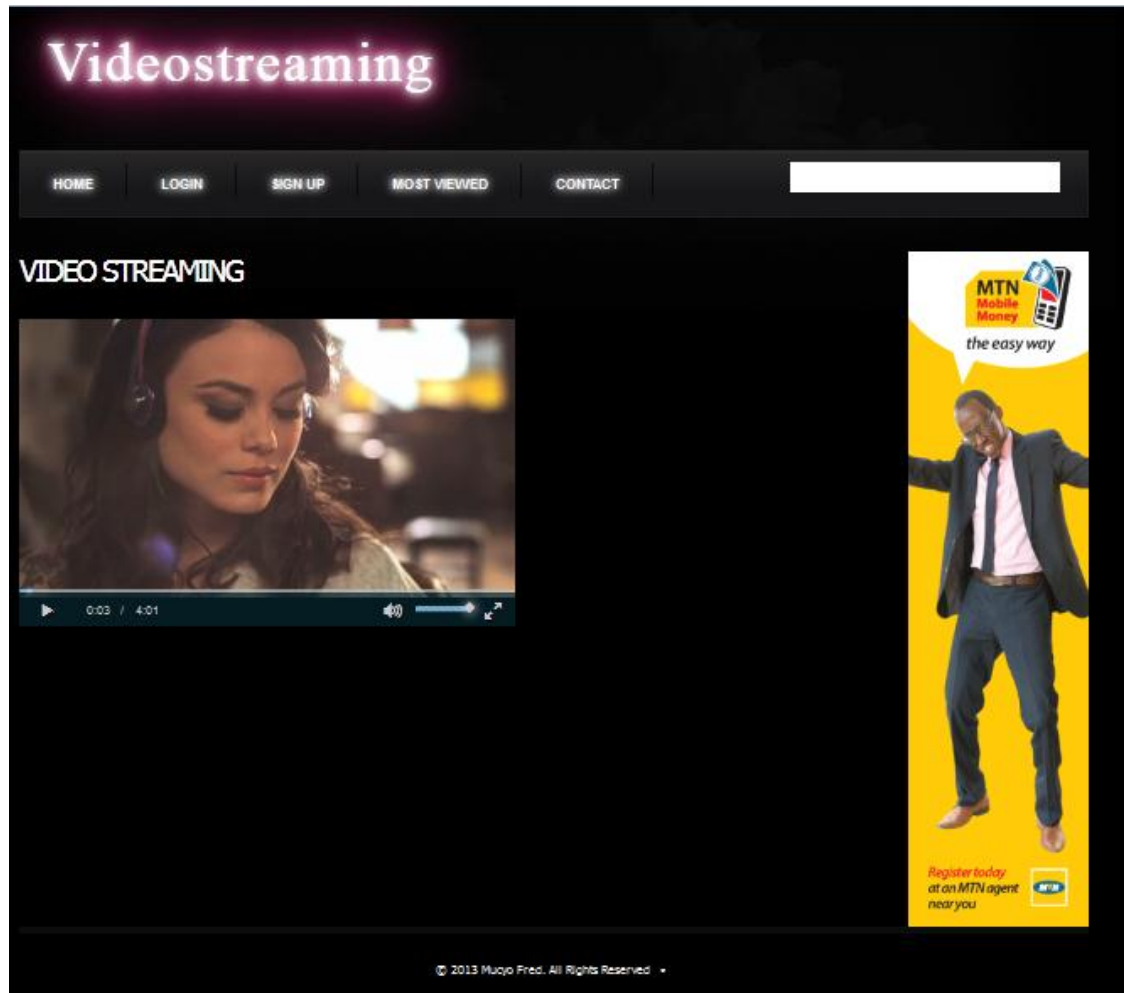


Figure 4 index page

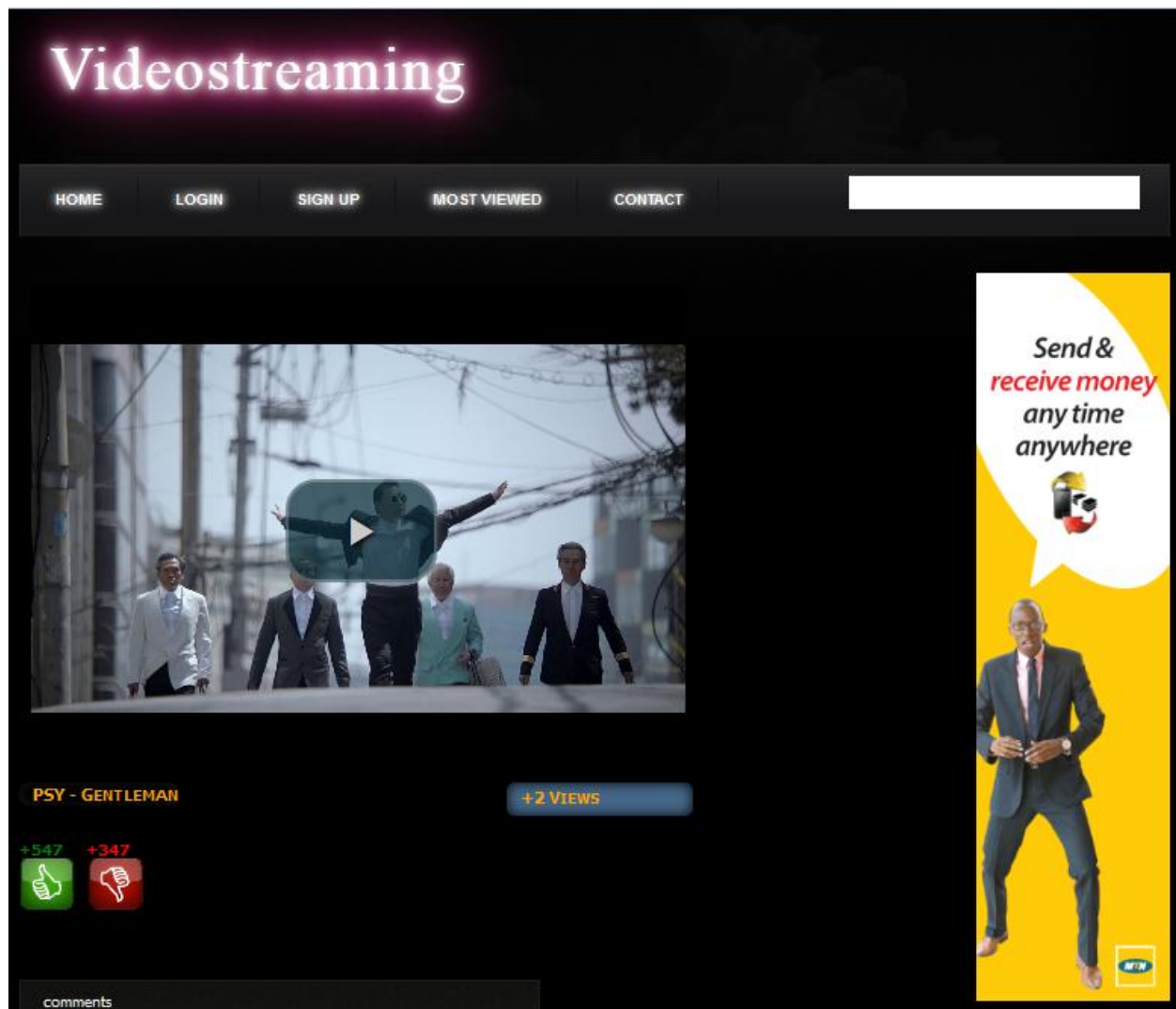


Figure 5 view page

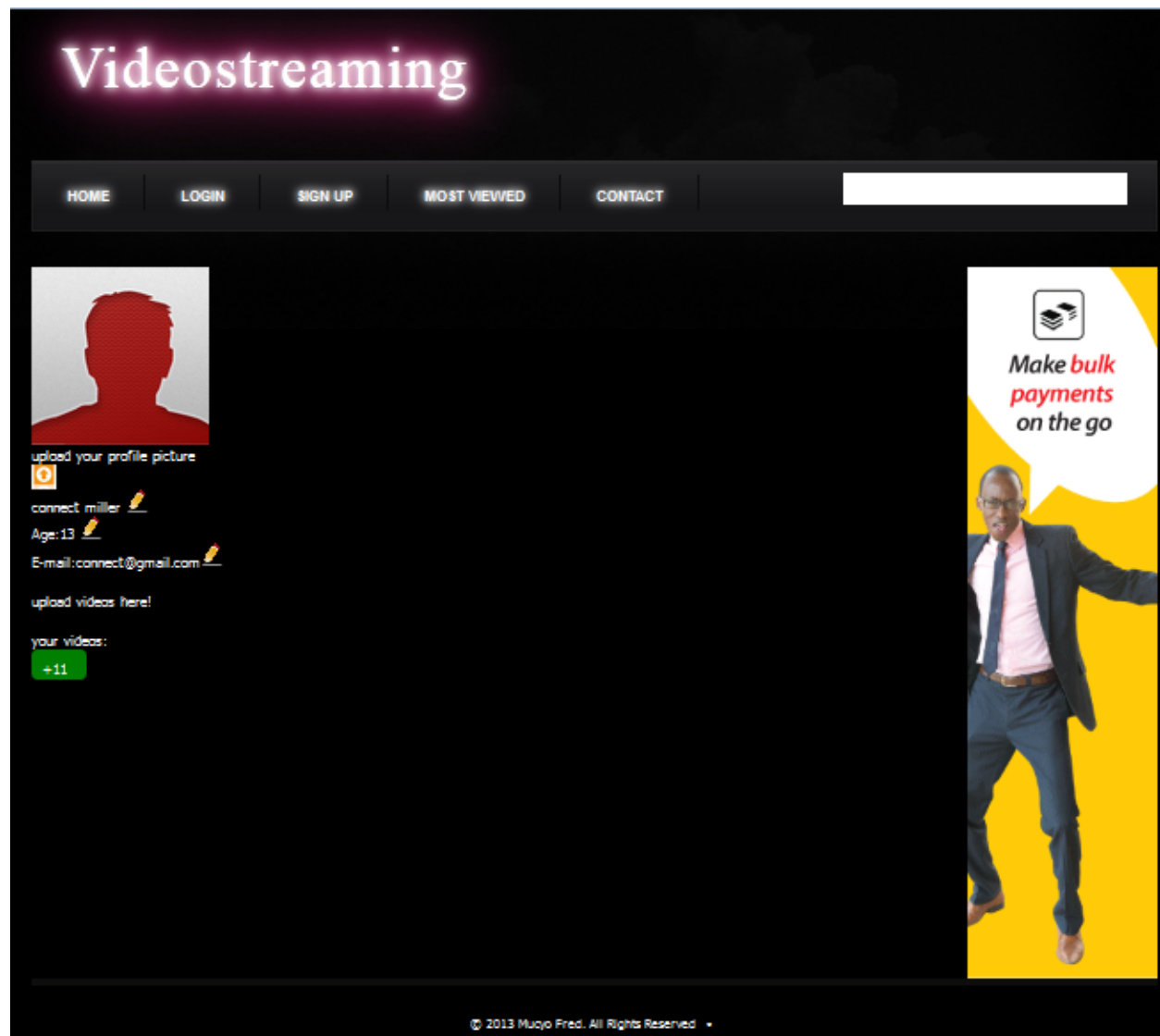


Figure 6 profile page

Chapter V: CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

During the realization of my project I used all possible solution to analyze a system that will facilitate all Rwandan people to view video online without spending a long time. According to what I want, my project was successfully finished as I wish.

5.2 RECOMMENDATION

During this work project, I have met many problems this is the reason why I recommend to our school authorities,

- To provide all needed material, books and other document (such as computer) and to give permission to the students to bring their materials and also to give them enough time in laboratory.
- To provide a precise time for supervisor to meet with the students and, I would also recommend the students to work hard or time during the project.
- I encourage my previous computer scientist's young brothers and sisters to finish this project by adding process of streaming live videos.

BIBLIOGRAPHY

Books and Publications

-Html 5 video how-to Alex ribby in 2012

Css3 for dummies by Richard masfield in 2005

-Web design note book of senior 5 and 6

Electronic references

<http://www.w3schools.com/ajax/default.asp>

<http://css-tricks.com/almanac/properties/c/counter-increment/>

<http://css-tricks.com/search-results/?q=video+views+counter>

<http://stackoverflow.com/search?q=most+popular+color+use+in+webpages>