BANDWIDTH CALCULATION SYSTEM

NOR AZIANA BINTI AZMI

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS TESIS

JUDUL: <u>BANDWIDTH CALCULATION SYSTEM</u>

SESI PENGAJIAN: <u>2010 / 2011</u>

Saya <u>NOR AZIANA BINTI AZMI</u>

    (HURUF BESAR)

mengaku membenarkan tesis (PSM/Sarjana/Doktor Falsafah) ini disimpan di Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dengan syarat-syarat kegunaan seperti berikut:

1. Tesis adalah hakmilik Universiti Teknikal Malaysia Melaka
2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja
3. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi
4. ** Sila tandakan (/)

    _____ SULIT   (Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA RASMI 1972)

    _____ TERHAD   (Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan)

    _____/____ TIDAK TERHAD

_____   _____

(TANDATANGAN PENULIS)   (TANDATANGAN PENYELIA)

Alamat tetap: 344 – S Kg Bukit   <u>En.Ariff Bin Idris</u>

Jabar, 21800 Ajil Hulu Terengganu,   Nama Penyelia

Terengganu.

Tarikh: 07 / 07 / 2011   Tarikh:_____

CATATAN: **Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa

            Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

BANDWIDTH CALCULATION SYSTEM

NOR AZIANA BINTI AZMI

This report submitted in partial fulfilment of the requirements for the Bachelor of
Computer Science (Computer Networking)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITY TEKNIKAL MALAYSIA MELAKA
2011

DECLARATION

I hereby declare that this report entitled
BANDWIDTH CALCULATION SYSTEM

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT   : _____   Date: 07/07/2011
                              (NOR AZIANA BINTI AZMI)

SUPERVISOR   : _____   Date: _____
                              (EN ARIFF BIN IDRIS)

DEDICATION

To my lovely parent and family, my supportive supervisor, my friends and for those who had given me the inspiration and spirit to move on and not to give up for completing this project on the schedule...

ACKNOWLEDGEMENTS

In the name of Allah, Most Beneficent, Most Merciful

Praise to Allah for giving me the strength and patience to complete the Projek Sarjana Muda throughout this semester. I owe a great many thanks to a great many people who helped and give the supported me during do this project.

Firstly I also would like to say special thanks to my supervisor Mr Ariff bin Idris that will be give more guide line of the project for guiding and correcting various documents with more attentions and patience during I do this project from start of project until the project will be done.

Lastly I would also like to thank my beloved parents and my lovely friends who have been giving me support and motivation throughout my project and for their understanding and sacrifices that I was able to complete the Projek Sarjana Muda.

ABSTRACT

This project of Bandwidth Calculation System will be developing by using the software of Macromedia Dreamweaver MX 2004 as interface to create the web page for this system and the PHP as a programming language. Xampp will be uses as a database to this system where it will be used to keep all the data and the information to this system. This system developed aims to help the user to calculate the bandwidth of video. Apart from that, this system assists users to get the average of video, specification of video and information of video with easier and quickly.

ABSTRAK

Bandwidth Calculation System ini di bangunkan dengan menggunakan perisian Macromedia Dreamweaver MX 2004 sebagai antara muka bagi sistem ini dan PHP sebagai bahasa pengaturcaraan. Xampp di gunakan sebagai pangkalan data bagi sisyem ini dimana ia akan menyimpan ke semua data dan maklumat bagi sistem ini. Sistem ini dibangunkan bertujuan untuk membantu pengguna untuk mengira jalur lebar bagi video. selain itu juga sistem ini membantu pengguna untuk mendapatkan purata video, spesifikasi video dan maklumat video dengan lebih mudah dan cepat.

LIST OF TABLES

LIST OF FIGURE

LIST OF ABBREVIATIONS

Hypertext Pre-processor   PHP

HyperText Markup Language   HTML

Active Server Page   ASP

Cascading Style Sheet   CSS

Extensible Markup Language   XML

General Public License   GNU

Information Technology   IT

Application Development Partners   ADP

Rapid Application Development   RAD

Local Area Network   LAN

Hard Disk Drive   HDD

Wireless Local Area Network   WLAN

Basic Service Set   BSS

Entity Relationship Diagram   ER-D

Structure Query Language   SQL

CHAPTER 1

INTRODUCTION

1.1   Project Background

This project is developed to be use by user, which they are always making uploaded of video. Before this, users make uploaded of video without know about the quality of video and specification of video that will be sent. To address this problem, the systems that will be develop to solve this problem. This problem will be developed to provide the service give the facilities to all the users to get the information of video with detail. Thus, this system is developed to improve the user knowledge about the video that they upload. So, the sender can know the value of the quality of video that will be send to the receiver immediately. This system is a one of the fastest ways for user gets the information about the type of video, size of video and the temp file of video. In this ways, the user will easily get the detail information through this system. This technology that provided more excellent ways in get knows about the quality and specification of the video by user as soon as possible.

Besides that, this system allows the user to see the information in table. So it can make easily for user to show the information and understand it. Apart from that, user can see the video formats and video size that will be sent during the upload process.

1.2 Problem Statement

The problem that exists until this system will be developed because user difficulty to seek the information that more detail about the quality of video and specification of video that are sent through uploaded video. Apart from that user also difficulties of getting video size that are sent and that will be cause for delivery of video process take a long time. With the existence of this system user can see the information in video specification part in this system. This is can cause difficult to user. Previously, user simply do the uploaded video with regardless about the size that used by the video until sometimes it can be cause video delivery process fail without user knowing the cause why it will be fail. Apart from that, user it also could not find out the video quality that will be sent to receiver whether the quality it staying inside a good nature or not. Through this system user be able to see quality of video that will sent and unsure that the quality of video be always inside in good nature.

1.3 Objective

The purposes of developing this system are:

    i.   To develop a system that able to provide information about the specification of video.

    ii.   To develop a system that able to provide information about the quality of video.

1.4   Scope

Scope for this project is only to be applied only just for video that have a small size. It cannot get the information other than video. This system only can upload the video that have a smaller size it can be uploading the video that have a big size. This system also just affords to allow user see the quality of video and specification of video.

This system will be developing to users that who want to know about the quality for their video. Apart from that, it also been developed for user getting the complete information on video that will be upload. It can make the user to seek the information of video and quality of video with quickly.

1.5   Project Significant

The significant for this project is to make sure that user can know about the detail information of video will be upload. This system allows the user to check the quality of video and specification of video. Then it will be to solve the problem for the user to get their information as soon as possible to do the uploading of video. It can make the process of uploading of video just can take a short time.

1.6   Expected Output

Expected output to this project is that it will ensure the user can see the bandwidth of video, quality of video, specification of video and average of video. It can also ensure the size of video that will be sent should not take a long time through the bandwidth that will be show. The information about the video that will be show by this system is inside a table. All the data of video will be appear to show in this system.

1.7 Conclusion

This system will be developed would be to facilitate of users which always do the uploading of video to seek the detail information on the video that will be upload. This system will be used by everyone that wants to do the uploading of video.

Then the next chapter it will be discus about the literature review and project methodology. A literature review discusses published information in a particular subject area and it will be compare with this system. It cans just a simple summary of the sources and it will discuss about the technique in this system.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1   Introduction

A literature review is a body of text that aims to review the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic. Literature reviews are secondary sources and as such do not report any new or original experimental work. It will discuss published information in a particular subject area and sometimes information in a particular subject area within a certain time period. Most often associated with academic-oriented literature such as a thesis, a literature review usually precedes a research proposal and results section. Its ultimate goal is to bring the reader up to date with current literature on a topic and forms the basis for another goal such as future research that many needed in the area.

A literature review can be just a simple summary of the sources but it usually has an organizational pattern and combines both summary and synthesis. A summary is a recap of the important information of the source, but a synthesis is a re-organization or a reshuffling of that information. A well-structured literature review is characterized by a logical flow of ideas, current and relevant references with consistent, appropriate references with consistent, appropriate referencing style proper use of terminology and an unbiased and comprehensive view of the previous research on the topic.

A project methodology tells that what should be to do on the project and how to manage the project from start to finish. It describes every step in the project life cycle in depth, so it can easy to know exactly which task to complete, when and how. It will be help to complete task faster than before and complete on time. A methodology for project is a combination of step-by-step methods and techniques for successful planning and delivery of projects. It is a scientifically-proven, disciplined approach to project planning, development and implementation and it controls the entire project management process to assure the success for current technologies and business goals. Project methodology allows implementing efficient approaches and techniques to create successful solutions based upon the effective process of decision making and problem solving.

2.2   Literature Review

A literature review is a body of text that aims to review the critical points of current knowledge and or methodological approaches on a particular topic. Literature reviews are secondary sources and such as do not report any new or original experimental work. It is the process of reading, analyzing, evaluating and summarizing scholarly materials about a specific topic. The result of a literature review may be compiled in a report or they may serve as part of a research article, thesis or grant proposal.

2.2.1   Domain

The domain for this system is to know the calculation of bandwidth for video. In this system will can get more information about the uploading of video such as the quality of video and specification of video.

In this project it more focus about the system. The information in this system that very important for user to get the information of the video that they will be upload.

2.2.2 Keyword

2.2.2.1 Adobe Dreamweaver

In this project to create the system Adobe Dreamweaver will be used. Adobe Dreamweaver (formerly Macromedia Dreamweaver) is a web development application original created by Macromedia and how is now developed by Adobe Systems, which acquired Macromedia in 2005. Dreamweaver is available for both Mac and Windows operating systems. Recent versions have incorporated support for web technologies such as CSS, JavaScript and various server-side scripting language and frameworks including ASP, ColdFusion and PHP. Dreamweaver allows users to preview websites in locally installed web browser.

2.2.2.2 PHP Language

PHP (Hypertext Pre-processor) is a widely used, general-purpose scripting language that was originally designed for web development to produced dynamic web pages. For this purpose, PHP code is embedded into the HTML source document and interpreted by a web server with a PHP processor module, which generates the web page document. It may also function as a graphical application. PHP is available as a processor for most modern web servers and as a standalone interpreter on most operating systems and computing platforms.

2.2.2.3 MySQL

MySQL is a relational database management system that runs as a server providing multi-user access to a number of databases. In this system MySQL will be used as a database that will save all the data. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreement.

2.2.2.4 XAMPP

XAMPP is a free and open source cross-platform web server solution stack package, consisting mainly of the Apache HTTP Server, MySQL database and interpreters for scripts written in the PHP and Perl programming languages. XAMPP is a protocol which allows messages to be sent in XML, the messages are constrained to type, and it can be anything, IM messages or an application talking to another application over the internet.

2.2.3 Previous Research

We have to do the previous research first before starting a new project. This is to seek a little information from that had been present and get weakness that disrepair from that previous system. Indirectly this can help us to develop a new project which can solve problem that insoluble by project that had been present in market.

2.2.3.1 AXIS COMMUNICATIONS System

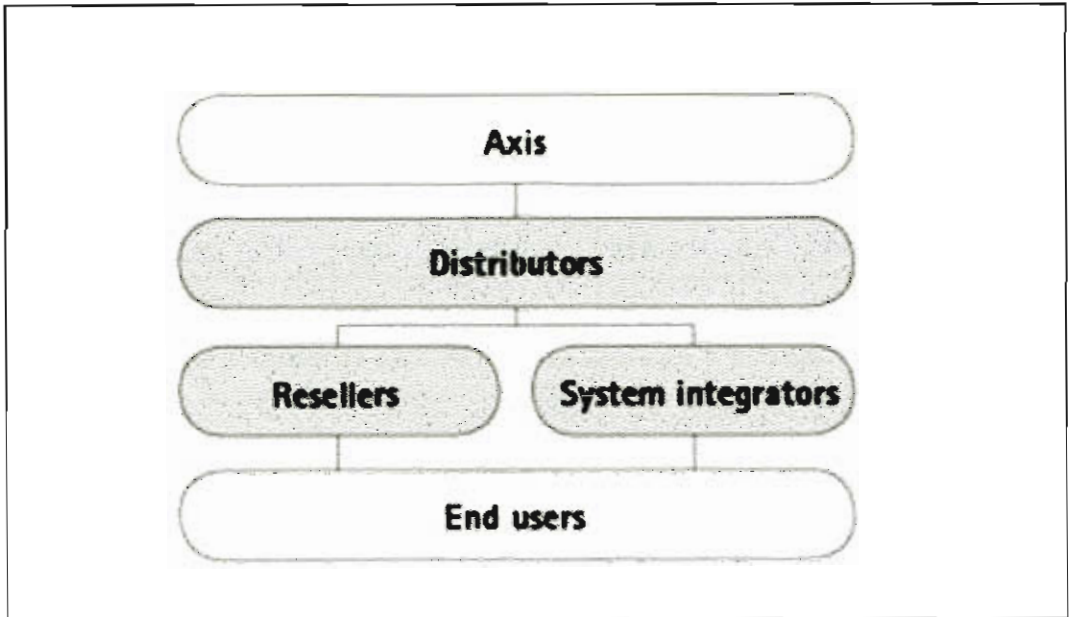**Figure 2.1: AXIS COMMUNICATION System**

a. Axis Communications

Figure 2.1 shown as the AXIS COMMUNICATION system. Axis is an IT company offering network video solutions for professional installations. The company is the global market leader in network video, driving the ongoing shift from analogue to digital video surveillance. Axis products and solutions focus on security surveillance and remote monitoring and are based on innovative open technology platforms. Axis is a Swedish-based company, operating worldwide with offices in more than 20 countries and cooperating with partners in more than 70 countries. Founded in 1984, Axis is listed on the NASDAQ OMX

Stockholm, under the ticker Axis. In this page we can view the bandwidth and storage considerations of video. Network bandwidth and storage requirements are important considerations when designing a video surveillance system. The factors include the number of cameras, the image resolution used, the compression type and ratio, frame rates and scene complexity. Network video product utilizes network bandwidth and storage space based on their configuration. As mentioned earlier, this depends on the number of cameras, whether recording will be continuous or event-based, number of hours per day the camera will be recording, frames per second, image resolution, video compression type such as motion JPEG, MPEG-4 and H.264, image complexity, lighting conditions an amount of motion and how long data must be stored.

b. Methodology

Axis is dedicated to long-term partnerships and the company uses a two-tier business model, with distributors to reach resellers and system integrators. All of Axis's whereas system integrators use Axis products as integrated parts of larger system installations. These include distributors such as Ingram Micro, Tech Data and Anixter. The program for Application Development Partners (ADP) is an initiative that brings application developers closer to Axis while ensuring that there is a board range of application that includes the company's products. Axis also offers a series of outstanding tools for engineers and consultants who design IP security systems. The Axis Technology Partner Program includes industry-leading infrastructure partners which ensure compatibility and optimized installations for the end users. It is use the Rapid application development (RAD). This is a software development methodology which involves iterative development and the construction of prototype. The Figure 2.2 shown Business Model of Axis Communications.

Figure 2.2: Business Model of Axis Communications

c. Technique

The technique will be used in this system to calculate the bandwidth it need in a small surveillance system involving 8 to 10 camera, a basic 100-megabit (Mbit) network switch can be used without having to consider bandwidth limitations. Most companies can implement a surveillance system of this size using existing network. When implementing 10 or more cameras, the network load can be estimated using a few rules of thumb a camera that is configured to deliver high-quality images at high frame rates will use approx. 2 to 3 Mbit/s of the available network bandwidth. The type of video compression used is one of the factors Affecting storage requirements. The H.264 compression format is by far the most efficient video compression technique available today. Without compressing image quality an H.264 encoder can reduce the size of a digital video file by than 80% compared with the MPEG-4. Figure 2.3 show Example of calculation for H.264