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JUDUL: UTeM LAN Voice Chat

SESI PENGAJIAN: 1 - 2007/2008

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UTEM LAN VOICE CHAT SYSTEM

AHMAD HAMIDON BIN ALI

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

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2008

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DECLARATION

I hereby declare that this project report entitled

UTeM LAN Voice Chat

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

STUDENT : ..... Date : __/ 4 / 2008

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SUPERVISOR : ..... Date : 30/ 4 / 2008

(EN. MOHAMMAD RADZI BIN MOTSIDI)

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DEDICATION

To my beloved family members...

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ACKNOWLEDGEMENTS

Please take a few minutes to read the names of the people who have contributed for the completion of my final year degree project (PSM 2) report – they have earned it, and I am humbly grateful to them all.

I gratefully acknowledge my beloved parents who have been a source of inspiration, giving me endless support and motivation throughout PSM 2 in terms of financial and moral support.

I would like to extend my gratitude to En Mohammad Radzi bin Motsidi for guiding me throughout the PSM 2. Thank you for giving me the guidance and support all along this project. I really appreciate the time you have spent with me.

Thanks to my friends who have been supporting me and motivating me to give my very best all the time.

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ABSTRACT

The UTeM LAN Voice Chat system is developed for Universiti Teknikal Malaysia Melaka. The problem with previous system is not having a voice chat function on it. Using voice chat, the conversation between users becomes easier. The main module of this system is login, main, chatroom, chat, and server modules. Researches were carried out to gather the information about the proposed system by using the current available systems. Software Development Life Cycle (SDLC) was chosen as the methodology of this project. Object-Oriented approach applied in drawing the diagrams with Microsoft Visio 2003 software. The software requirement includes Microsoft Windows as the operating system for server and independent platform for client, Apache as the web server, MySQL as the database and Internet Explorer as the web browser. Others hardware requirement is headphone.

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ABSTRAK

UTeM LAN Voice Chat sistem dibangunkan untuk Universiti Teknikal Malaysia Melaka. Masalah system semasa ialah tiada fungsi berbual menggunakan suara. Modul utama system ini adalah login, main, chatroom, chat, dan server modules. Penyelidikan telah dilakukan untuk mengumpul maklumat tentang system yang ingin dicadang dengan membandingkan dengan yang lama. Software Development Life Cycle (SDLC) telah digunakan sebagai metodologi untuk membangunkan projek ini. Orientasi objek yang telah digunakan digambarkan menggunakan Microsoft Visio 2003. Keperluan perisian seperti Microsoft Windows sebagai system pengoperasian untuk pelayan dan platform bebas untuk pelanggan. Apache sebagai pelayan web, Java sebagai bahasa pengaturcaraan, MySQL sebagai pangkalan data dan Internet Explorer sebagai pelayar web. Keperluan perkakasan pula meliputi headphone dan komputer-komputer yang mampu menyokong sistem ini.

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LIST OF ABBREVIATION

UTeM		Universiti Teknikal Malaysia Melaka
LAN		Local Area Network
IDE		Integrated development environment
GUI	-	Graphical User Interface
UML		Unified Modeling Language
JVM		Java Virtual Machine
JSE		Java Standard Edition
JDK		Java Development Kits
JRE		Java Runtime Environment
VBR		Variable bitrate
PLC		Packet Loss Concealment
iLBC		Internet Low Bitrate Codec
DBMS		Database Management System
RDBMS		Relational Database Management System
API		Application Programming Interface
IP		Internet Address
SDLC	-	systems development life cycle
DFD	-	Data Flow Diagram
RAM		Random Access Memory
CMS		Course Management System
SPI		Service Provider Interface
HTTP		Hypertext Transfer Protocol
WWW		World Wide Web
UAT		User Acceptance Test

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Appendix A	**Gantt Cart**
Appendix B	**User Manual**

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CHAPTER I

INTRODUCTION

1.1 Project Background

This project is carried out to provide an easy communication which to be used within UTeM Local Area Network (LAN). Using computer with headset, users will be able to send audio messages to groups or individuals across a LAN network environment. This will help students and lecturers in UTeM to have a communication between them without meet. There are others alternative device for communication such as handphone but it will cause a lot of money. Whereas this LAN Voice Chat system will reduce the cost of money. The system will integrate various components including headsets devices or speakers and microphone, computers, Local Area Network and a Voice Chat server.

A LAN Voice Chat is a live connection between people in separate locations for the purpose of communication, usually involving audio and text. This system provides transmission of voice and text between two locations. It also provides transmission of high-quality audio between multiple locations and it will utilize high bandwidth of network. It will cause an additional in network traffic. To overcome that problem this system will using the suitable codec.

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CHAPTER I

INTRODUCTION

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1.2 Problem Statements

- **Difficult communication between lecturer and students.**
  Sometimes student not know their lecturer telephone numbers and it will make the communication between student and lecturer difficult.

- **Waste time**
  Student and lecturer will waste the time because need to meet before they can communicate.

- **Waste money**
  User will use lot of money to communicate using telephone or hand phone and maybe communication will be discontinues if they do not have sufficient credit.

1.3 Objectives

- **Voice chat conversation**
  To provide Voice Chat over UTeM Local Area Network for communication between student and lecturer or among student.

- **Easier Communication**
  To make communication on UTeM Local Area Network (LAN) between student and lecturer or student and student easy because all lecturer will online into this system if they available. Student also no need to remember their lecturer telephone numbers. They only need to remember their lecturer name.

- **Quick communication**
  To provide the quick communication between student and lecturer without meet each others.

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- **Cheaper communication**

  To provide the cheaper communication on LAN as alternative beside using telephone.

- **Knowledge sharing**

  To make the knowledge sharing between them easier and faster.

1.4 Scope

- Developing LAN Voice Chat for Local Area Network (LAN) connection in UTeM

.

- UTeM LAN Voice Chat will be developed using Netbean software to code the Java language with MySql database.

- This project will involve one lecturer at one room with one classroom (students) in one local area network (LAN) connection.

- Modules to develop are Login, Main, Chat room, Chat and Server modules.

1.5 Project Significance

This LAN Voice Chat system gives many benefits and can be used by Universiti Teknikal Malaysia Melaka (UTeM) to make the communication between student and lecturer or among student easy and cheap. It also makes the knowledge sharing between them easier and faster. In UTeM already have a lot of computers connected each others. There only left need is headphone. After this student no need to worry about loses money just to have a communication among them. Using this system student can use it to make an appointment with their lecturer because lecturer not always available in their room.

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CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter will discuss about literature review and project methodology of the related project. Literature review is an extensive search of the information available on a topic which results in a list of references to books, periodicals, and other materials on the topic. The project methodology means technique and type use to complete the project. A literature review is an explanation and summary of key studies relevant to a proposed project. This review will help to design the methodology and help others to understand the research. In this chapter, the literature review is focus on the research of the current system and the new system.

The purpose of a literature review is to explain how the question to be examined suitable into the larger picture and why this approached the topic. This section of a scholarly report allows the reader to be brought up the date concerning the state of research in the field and familiarizes to any contrast perspectives and viewpoints on the topic. Project methodology will discuss detail about type of methodology, techniques, hardware or software requirements and project planning to develop the project, so that the planning for the project proposed to meet project objectives, scopes and requirements.

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2.2 Facts and Findings

In this part, this project will explain about the detail of UTeM LAN Voice Chat. All the information about voice chat, data transmit over network, developing tool are retrieve from the internet for find the right tools to use in developing this system

2.2.1 Domain

This system contains system architecture, development tools, programming language, codec, and database domain.

2.2.1.1 System Architecture

Below is the LAN Voice Chat Client Server architecture..

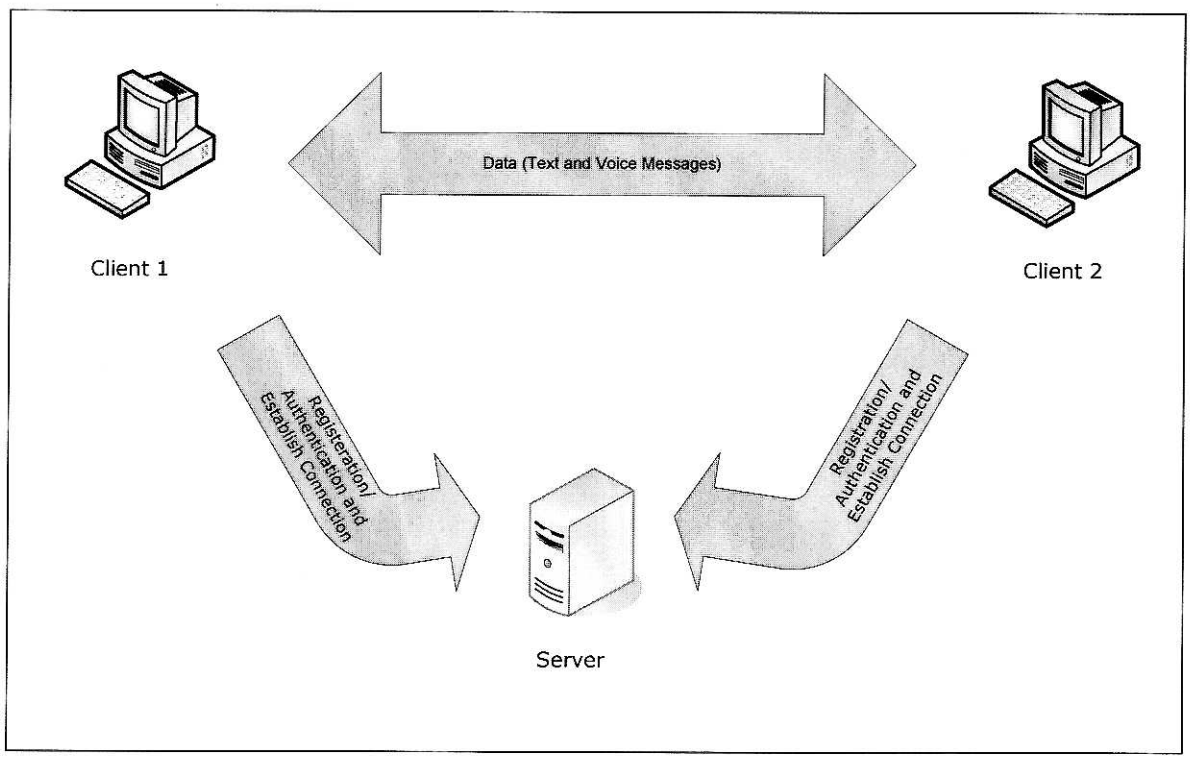

Figure 2.1: Voice chat system architecture

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2.2.1.2 Development Tools Integrated Development Environment (IDE)

In computing, an integrated development environment (IDE) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, a compiler and/or interpreter, build automation tools, and a debugger. Sometimes a version control system and various tools are integrated to simplify the construction of a GUI. Many modern IDEs also have a class browser, an object inspector, and a class hierarchy diagram, for use with object oriented software development.

IDEs are designed to maximize programmer productivity by providing tightly-knit components with similar user interfaces, thus minimizing the amount of mode switching the programmer must do comparing to loose, discrete collections of disparate development programs.

Typically an IDE is dedicated to a specific programming language, so as to provide a feature set which most closely matches the programming paradigms of the language.

i) Netbeans

According to Steve Anglin (2007), NetBeans is the simplest IDE to set up, configure and use from the get go. The NetBeans IDE is a free, open-source Integrated Development Environment for software developers. NetBeans supports core java application, applet based application and SWT application development. The IDE runs on many platforms including Windows, Linux, Solaris, and the MacOS. It is easy to install and use straight out of the box. The NetBeans IDE provides developers with all the tools they need to create the professional cross-platform desktop, enterprise, web and mobile applications.

Also the fact that it can connect to the Database through the Netbeans IDE which has a wonderful feature that allows dragging and dropping database into the application generating the database related code.

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