BORANG PENGESAHAN STATUS TESIS

JUDUL: UTeM LAN Voice Chat


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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
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.

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SUPERVISOR : .............................................. Date : 30/4/2008
(EN. MOHAMMAD RADZI BIN MOTSIDI)
DEDICATION

To my beloved family members...
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.
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.
ABSTRAK

# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>SUBJECT</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DECLARATION</td>
<td>ii</td>
</tr>
<tr>
<td></td>
<td>DEDICATION</td>
<td>iii</td>
</tr>
<tr>
<td></td>
<td>ACKNOWLEDGEMENTS</td>
<td>iv</td>
</tr>
<tr>
<td></td>
<td>ABSTRACT</td>
<td>v</td>
</tr>
<tr>
<td></td>
<td>ABSTRAK</td>
<td>vi</td>
</tr>
<tr>
<td></td>
<td>TABLE OF CONTENTS</td>
<td>vii</td>
</tr>
<tr>
<td></td>
<td>LIST OF TABLES</td>
<td>xii</td>
</tr>
<tr>
<td></td>
<td>LIST OF FIGURES</td>
<td>xiv</td>
</tr>
<tr>
<td></td>
<td>LIST OF ABBREVIATIONS</td>
<td>xv</td>
</tr>
<tr>
<td></td>
<td>LIST OF APPENDICES</td>
<td>xvi</td>
</tr>
</tbody>
</table>

## CHAPTER I

### INTRODUCTION

1.1 Project Background  
1.2 Problem Statement  
1.3 Objectives  
1.4 Scope  
1.5 Project Significance  
1.6 Expected Output  
1.7 Conclusion
CHAPTER II  LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction  5
2.2 Fact and Finding  6
  2.2.1 Domain  6
    2.2.1.1 System Architecture  6
    2.2.1.2 Development Tools Integrated Development Environment (IDE)  7
    2.2.1.3 Programming Language  9
    2.2.1.4 Codec  12
    2.2.1.5 Database  13
  2.2.2 Existing System  16
    2.2.2.1 Skype  16
  2.2.3 Technique  17
    2.2.3.1 Email  17
  2.3 Project Methodology  17
    2.3.1 Planning  17
    2.3.2 Analysis  18
    2.3.3 Design  18
    2.3.4 Implementation  18
  2.4 Project Requirements  19
    2.4.1 Software Requirements  19
    2.4.2 Hardware Requirements  19
  2.5 Project schedule and milestones  20
  2.6 Conclusion  21

CHAPTER III  ANALYSIS

3.1 Introduction  22
3.2 Problem Analysis  22
  3.2.1 Analysis of the Current System  23
  3.2.2 Analysis of new System  25
3.3 Requirement Analysis
   3.3.1 Data Requirement 26
   3.3.2 Functional Requirement 26
   3.3.3 Non-functional Requirement 31
   3.3.4 Other Requirements 31
       3.3.4.1 Software Requirements 31
       3.3.4.2 Hardware Requirements 33
       3.3.4.3 Network Requirements 33
3.4 Conclusion 33

CHAPTER IV DESIGN
4.1 Introduction 34
4.2 High-Level Design 34
   4.2.1 System Architecture 35
   4.2.2 User Interfaces Design 36
       4.2.2.1 Navigation Design 41
       4.2.2.2 Input Design 42
       4.2.2.3 Output Design 43
4.3 Detailed Design 43
   4.3.1 Software Specification 43
   4.3.2 Data Dictionary 44
4.4 Conclusion 45

CHAPTER V IMPLEMENTATION
5.1 Introduction 46
5.2 Software Development Environment Setup 46
   5.2.1 Software Environment Setup 47
       5.2.1.1 Software Development Tools 48
   5.2.2 Hardware Environment Setup 53
   5.2.3 Network Environment Setup 54
5.3 Software Configuration Management 54
5.3.1 Configuration environment setup
  5.3.1.1 Identify and Store Source Code in Secure Repository
  5.3.1.2 Control and Audit Change of Source Code
  5.3.1.3 Version Control Procedure

5.4 Implementation Status

5.5 Conclusion

CHAPTER VI TESTING

6.1 Introduction

6.2 Test Plan
  6.2.1 Test Organization
  6.2.2 Test Environment
  6.2.3 Test Schedule

6.3 Test Strategy
  6.3.1 Classes of Tests

6.4 Test Design
  6.4.1 Test Description
  6.4.2 Test Data

6.5 Test Results and Analysis

6.6 Conclusion

CHAPTER VII PROJECT CONCLUSION

7.1 Observation on Weakness and Strengths

7.2 Propositions for Improvement

7.3 Contribution

7.4 Conclusion

REFERENCES

APPENDICES
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>Comparison of Integrated Development Environment (IDE)</td>
<td>9</td>
</tr>
<tr>
<td>Table 2.2</td>
<td>Comparison of Programming Language</td>
<td>11</td>
</tr>
<tr>
<td>Table 2.3</td>
<td>Comparison of Codec Feature Comparison</td>
<td>12</td>
</tr>
<tr>
<td>Table 2.4</td>
<td>Comparison of Database Management System (DBMS)</td>
<td>15</td>
</tr>
<tr>
<td>Table 2.5</td>
<td>Software requirements</td>
<td>19</td>
</tr>
<tr>
<td>Table 2.6</td>
<td>Hardware requirements</td>
<td>19</td>
</tr>
<tr>
<td>Table 2.7</td>
<td>Project schedule and Milestone</td>
<td>20</td>
</tr>
<tr>
<td>Table 3.1</td>
<td>Data Requirements for user table</td>
<td>26</td>
</tr>
<tr>
<td>Table 3.2</td>
<td>Data Requirements for contact table</td>
<td>26</td>
</tr>
<tr>
<td>Table 3.3</td>
<td>Software Requirements</td>
<td>31</td>
</tr>
<tr>
<td>Table 3.4</td>
<td>Hardware Requirements</td>
<td>33</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>Login Interface Description</td>
<td>36</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Register Interface Description</td>
<td>37</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>FrontPage Interface Description</td>
<td>39</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>Conference interface Description</td>
<td>40</td>
</tr>
<tr>
<td>Table 4.5</td>
<td>Private chat interface Description</td>
<td>41</td>
</tr>
<tr>
<td>Table 4.6</td>
<td>Input Design</td>
<td>42</td>
</tr>
<tr>
<td>Table 4.7</td>
<td>Output Design</td>
<td>43</td>
</tr>
<tr>
<td>Table 4.8</td>
<td>Data Dictionary for User table</td>
<td>44</td>
</tr>
<tr>
<td>Table 4.9</td>
<td>Data Dictionary for Contact table</td>
<td>45</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>5.1</td>
<td>Software Implementation Environment</td>
<td>47</td>
</tr>
<tr>
<td>5.2</td>
<td>Server Configuration for UTeM LAN Voice Chat system</td>
<td>53</td>
</tr>
<tr>
<td>5.3</td>
<td>Server Configuration for UTeM LAN Voice Chat system</td>
<td>56</td>
</tr>
<tr>
<td>6.1</td>
<td>Testing Environment Setup</td>
<td>59</td>
</tr>
<tr>
<td>6.2</td>
<td>Test Schedule</td>
<td>59</td>
</tr>
<tr>
<td>6.3</td>
<td>Test Description</td>
<td>62</td>
</tr>
<tr>
<td>6.4</td>
<td>UTeM LAN Voice Chat Interface unit testing</td>
<td>64</td>
</tr>
<tr>
<td>6.5</td>
<td>User Input Text in Chat text field</td>
<td>64</td>
</tr>
<tr>
<td>6.6</td>
<td>User Acceptance Unit Testing</td>
<td>65</td>
</tr>
<tr>
<td>6.7</td>
<td>Test Input Data</td>
<td>65</td>
</tr>
<tr>
<td>6.8.1</td>
<td>Module 1 Test Case Result</td>
<td>66</td>
</tr>
<tr>
<td>6.8.2</td>
<td>Module 2 Test Case Result</td>
<td>67</td>
</tr>
<tr>
<td>6.8.3</td>
<td>Module 3 Test Case Result</td>
<td>68</td>
</tr>
<tr>
<td>6.8.4</td>
<td>Module 4 Test Case Result</td>
<td>69</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2.1</td>
<td>Voice chat system architecture</td>
<td>6</td>
</tr>
<tr>
<td>Figure 3.1</td>
<td>Current system flow chart</td>
<td>23</td>
</tr>
<tr>
<td>Figure 3.2</td>
<td>Current traditional communication flow chart</td>
<td>24</td>
</tr>
<tr>
<td>Figure 3.3</td>
<td>New system flow chart</td>
<td>25</td>
</tr>
<tr>
<td>Figure 3.4</td>
<td>Context Diagram DFD</td>
<td>27</td>
</tr>
<tr>
<td>Figure 3.5</td>
<td>Level 0 DFD</td>
<td>28</td>
</tr>
<tr>
<td>Figure 3.6</td>
<td>Level 1 DFD for Login Module</td>
<td>29</td>
</tr>
<tr>
<td>Figure 3.7</td>
<td>Level 1 DFD for Main Module</td>
<td>29</td>
</tr>
<tr>
<td>Figure 3.8</td>
<td>Level 1 DFD for Chat room Module</td>
<td>30</td>
</tr>
<tr>
<td>Figure 3.9</td>
<td>Level 1 DFD for Chat Module</td>
<td>30</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>System architecture</td>
<td>35</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Login interface design</td>
<td>36</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>Register interface design</td>
<td>37</td>
</tr>
<tr>
<td>Figure 4.4</td>
<td>FrontPage interface design</td>
<td>38</td>
</tr>
<tr>
<td>Figure 4.5</td>
<td>Conference interface design</td>
<td>39</td>
</tr>
<tr>
<td>Figure 4.6</td>
<td>Private chat interface design</td>
<td>40</td>
</tr>
<tr>
<td>Figure 4.7</td>
<td>Navigation Flow</td>
<td>41</td>
</tr>
<tr>
<td>Figure 4.8</td>
<td>Chat flow</td>
<td>44</td>
</tr>
<tr>
<td>Figure 5.1</td>
<td>Software Development Environment Setup Architecture</td>
<td>47</td>
</tr>
<tr>
<td>Figure 5.2</td>
<td>add mysql-connector-java to nebean</td>
<td>49</td>
</tr>
<tr>
<td>Figure 5.3</td>
<td>Select Component</td>
<td>50</td>
</tr>
</tbody>
</table>
Figure 5.4  Apache Http server configuration  51
Figure 5.5  MySQL Configuration  52
Figure 5.6  Start apache server and mysql database  52
Figure 6.1  Testing environment setup  58
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
LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix A</th>
<th>Gantt Cart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix B</td>
<td>User Manual</td>
</tr>
</tbody>
</table>
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.
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.
- **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.
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.
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.

![Diagram of LAN Voice Chat Client Server architecture](image)

Figure 2.1: Voice chat system architecture
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.