

MOBILE CHATTING VIA BLUETOOTH

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DECLARATION

I hereby declared that this project report entitled
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is written by me and is my own effort and that no part has been plagiarized
without citations.

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DEDICATION

Special dedication to my family members

My beloved father (Hairrizaman Bin Ramli), mother (Jasanah Bte Md Ali),

Also to my brother (Hanif) and

My youngest sister (Miza) that always loves me,

My supervisor, My friends, my fellow colleague

And all faculty members

For all your care, support and believe in me.

Sincerely

Mohd Bazli Bin Hairrizaman

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ABSTRACT

Mobile Chatting via Bluetooth system is a system that helps student and lecturer to communicate with each other an easy way and at no cost. Generally, this system is targeted for users that have difficulties to communicate directly with their lecturer especially in learning progress. User can use this system in some range that Bluetooth support and depend on their laptop Bluetooth receiver receive the signal from the other user. The project methodology selected in develop this system is Rapid Application Development (RAD) and was design to make it user friendly.

ABSTRAK

“Mobile Chatting” melalui sistem Bluetooth adalah sistem yang berkembang untuk membantu mahasiswa dan pensyarah untuk berkomunikasi antara satu sama lain tanpa dikenakan bayaran. Secara umum, sistem ini adalah untuk pengguna yang sukar untuk berkomunikasi dengan pensyarah mereka terutama dalam pembelajaran. Pengguna boleh menggunakan sistem ini dalam laptop yang menyokong Bluetooth dan bergantung pada penerima Bluetooth laptop mereka menerima isyarat dari pengguna lain. Metodologi projek yang dipilih dalam membangunkan sistem ini adalah “Rapid Application Development (RAD)” dan direka untuk memudahkan pengguna.

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CHAPTER I

INTRODUCTION

1.1 Project Background

Bluetooth Chat is a mobile application for chat with other mobile device via Bluetooth. It is aimed to provide an easier way for users to communicate. The application is similar to chatting over the Internet, but the media for current chatting system is through Bluetooth Technology. Bluetooth is one of the wireless connectivity options available for mobile application development. It is characterized by a short range, low-power consumption; ad hoc networking; and usage-oriented design.

Through Mobile Chatting via Bluetooth system, student and lecturer can communicate anytime in the class as long as the Bluetooth device is on. Indirectly it can also help lecturer to answer student questions through this system. Thus, it does not consume much time. Any user can just install the application to his/her laptop and stay in touch with their chatters. This system can be installed in the laptop and it used Bluetooth device as a connection to the other laptop or personal computer. When connection is already established, users may start private messaging with each other. This system is developed with the goal of bringing ease and benefits to users and to developed a mobile application that enable users to communicate in a real time environment.

1.2 Problem Statement

There are several issues that happened to occur among students. The problem that become issues are:

- Nowadays students having difficulties to communicate with their lecturer directly.
- Less of communication between students and lecturers while having class, in addition to student gender and academic standing.
- Lecturer communication style also, may influence classroom interaction.
- The use of SMS communication requires the cost of delivering messages between student and lecturers.

1.3 Objectives

- To implement a mobile chatting application via Bluetooth Technology.
- To allow communication between laptop and laptop.
- To develop a communication system that does not require cost.
- To establish connection using COM Port in order to communicate between personal computers or laptop.

1.4 Scope

- Develop mobile chatting via Bluetooth with built in Bluetooth technology in each device. The Bluetooth mobile chatting allows private messaging only. It is a one to one communication.

The system is limited to text-based communication methods which consist of three ways, that is:

- Sending Messages
- Receiving Messages
- Displaying Messages

- **Target User :**
 - Lecture and Students consist of 3 to 5 users connected.

- **Module :**
 - 1) **Log In**

Log in module only requires a username as identification, and it does not require a password. Anyone can communicate using this system

 - 2) **COM Port**

COM port is used as a connection. Each laptop or personal computer has its own COM port's. Communication between two or more laptops, requires a different COM port's, and both of the laptop need to enable bluetooth devices before connection to the COM port is made.

1.5 Project Significance

In this project, user may get the benefits because they can communicate without any cost and enable student seek help and inquire queries to lecturers easily. The reason of using the Bluetooth as a medium communication device between user and the lecturer, is the effective way and costless. Apart from that, the chatting system via Bluetooth concepts is to enable students that are embarrassed to inquire queries may ask directly in a faster and easy way of communication.

1.6 Expected Output

In the end of this develop project of complete Mobile Chatting System via Bluetooth with its function as stated in the scope is expected. Student and lecturer will be able to use application and it can communicate between two mobile using Bluetooth and free to use. In situation the Mobile Chatting System via Bluetooth help student inquire query without feeling embarrassed.

1.7 Conclusion

The introduction actually state the brief of project background, problem statement to solved, objective to be achieve and project significant. The Mobile Chatting via Bluetooth will be developed to allow the student and lecturer communicates with each others.

The next chapter to be describes is, the literature review and project methodology. The research of the project system will elaborate in next chapter.

CHAPTER II

LITERATURE RIVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter will discuss about literature review and project methodology of the related project. The research that needs to make is about the scope of the project, what the main objective, understand about the system requirement and make a comparison with the existing system.

In order to develop a successful project, the current system needs to be reviewed. The related preview researches regarding Mobile Chatting via Bluetooth are ValhallaChat, Bluechat and Blueeeee!. Studies of this system are significant to develop a valid, reliable and efficient.

The methodology used in developing Mobile Chatting System via Bluetooth is Research and Development (RAD). Methodology tells developer what he or she has to do and how to manage the projects from start to finish. It describes every step in the project life cycle in depth, so developer knows exactly which tasks to complete, when and how. Whether they are an expert or a novice, it helps in completing tasks faster than before. Choosing the right methodology will help to produce a better quality product, in term of documentation standard, acceptability to the user, maintainability and consistency of software.

2.2 Literature Review

Literature review is a body of text that aims to review the critical points of current knowledge on a particular topic. It might give a new interpretation of old material or combine new with old interpretations. There are good reasons for spending time and effort on a review of the literature before embarking on a research project. These reasons include:

- To carry on from where others have already reached (reviewing the field allows you to build on the platform of existing knowledge and ideas).
- To identify other people working in the same fields (a researcher network is a valuable resource).
- To identify information and ideas that may be relevant to your project.
- To identify methods that could be relevant to your project.

2.2.1 Domain

The domain of this application is new networking that can benefit the community especially student and lecturer to communicate each others. This application will be designed to fulfill needs because of many reasons. Therefore, the system may help the student in the class or lab who is difficult to ask lecturer what they want to know.

For this reason, the literature review towards the bluetooth technologies, Mobile Device, Serial Port and Chat should be analysis in details so that it can help to reach the objective of this project system.

2.2.2 Keyword

Some of keywords that are related to this project includes Bluetooth, mobile device, Serial Port and Chat.

2.2.2.1 Bluetooth Definition

According to Bradley Mitchell (2010), Bluetooth is a specification for the use of low-power radio communications to wirelessly link phones, computers and other network devices over short distances. The name Bluetooth is borrowed from Harald Bluetooth, a king in Denmark more than 1,000 years ago.

Bluetooth technology was designed primarily to support simple wireless networking of personal consumer devices and peripherals, including cell phones, PDAs, and wireless headsets. Wireless signals transmitted with Bluetooth cover short distances, typically up to 30 feet (10 meters). Bluetooth devices generally communicate at less than 1 Mbps.

Bluetooth networks feature a dynamic topology called a piconet or PAN. Piconets contain a minimum of two and a maximum of eight Bluetooth peer devices. Devices communicate using protocols that are part of the Bluetooth Specification. Definitions for multiple versions of the Bluetooth specification exist including versions 1.1, 1.2 and 2.0.

Although the Bluetooth standard utilizes the same 2.4 Ghz range as 802.11b and 802.11g, Bluetooth technology is not a suitable Wi-Fi replacement. Compared to Wi-Fi, Bluetooth networking is much slower, a bit more limited in range, and supports many fewer devices.

As is true for Wi-Fi and other wireless technologies today, concerns with Bluetooth technology include security and interoperability with other networking

standards. Bluetooth was ratified as IEEE 802.15.1. Below is a specification of Bluetooth Class

Table 2.1 : Specification of Bluetooth Class

Class	Power (signal loss)	Range
I	100 mW (20 dBm)	100 metres
II	2.5 mW (4 dBm)	15-20 metres
III	1 mW (0 dBm)	10 metres

2.2.2.2 Mobile Device

Mobile devices can be separated into a few types such as computer, pocket pc, laptop, mobile phone and PDA. The list is growing, as more new devices are being introduced. Mobile devices allow you to communicate with others and get information anywhere, at any time. In this project, the mobile device that been focus is communication device between Personal Computer.

According to Blair Alpert-Sandler (1999), A laptop computer, usually called a notebook computer by manufacturers, is a battery- or AC-powered personal computer generally smaller than a briefcase that can easily be transported and conveniently used in temporary spaces such as on airplanes, in libraries, temporary offices, and at meetings. A laptop typically weighs less than 5 pounds and is 3 inches or less in thickness. Among the best-known makers of laptop computers are IBM, Apple, Compaq, Dell, and Toshiba.

Laptop computers generally cost more than desktop computers with the same capabilities because they are more difficult to design and manufacture. A laptop can effectively be turned into a desktop computer with a docking station, a hardware frame that supplies connections for peripheral input/output devices such as a printer or larger monitor. The less capable port replicator allows you to connect a laptop to a number of peripherals through a single plug.

Laptops usually come with displays that use thin-screen technology. The thin film transistor or active matrix screen is brighter and views better at different angles than the dual-scan screen. Laptops use several different approaches for integrating a

mouse into the keyboard, including the touch pad, the trackball, and the pointing stick. A serial port also allows a regular mouse to be attached. The PC Card is insertable hardware for adding a modem or network interface card to a laptop. CD-ROM and digital versatile disc drives may be built-in or attachable.

2.2.2.3 Serial Port

Serial communication is a popular means of transmitting data between a computer and a peripheral device such as a programmable instrument or even another computer (Gregory, 2004). Serial communication uses a transmitter to send data, one bit at a time, over a single communication line to a receiver. You can use this method when data transfer rates are low or you must transfer data over long distances. Serial communication is popular because most computers have one or more serial ports, so no extra hardware is needed other than a cable to connect the instrument to the computer or two computers together. Serial communication requires that you specify the following four parameters:

- The baud rate of the transmission
- The number of data bits encoding a character
- The sense of the optional parity bit
- The number of stop bits

2.2.2.4 Chat

In general, chatting is a communication between people who are in chat room and basically it consists of voice and language that can be understood among them. Chatting is a system that allow user to read and reply the message instantly. For the example, one user writes the message and sends it to the other user and the other users read and reply the message.

According to Dave (1995), Online conversations in which you are immediately able to send messages back and forth to one another is called chat.