AUTO SILENT MODE FOR ANDROID SMARTPHONES

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PROJEK SARJANA MUDA II

Tajuk Projek : **AUTO SILENT MODE FOR ANDROID SMARTPHONES**

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ABSTRACT

The project is intended to be developed for an engineering system that can facilitate users to operate their smartphone ringing while in the area or are at an important event. Normally, the user forgot to close their smartphone ringing while in important situations such as the meeting time, in the mosque or surau, while in the learning process and much more. Smartphones can interfere with the ringing of a situation when users receive a call or play a game on their smartphones. Application Project "Auto Silent Mode" is specially developed for users who want to turn off or switch their Smartphone ringer into silence mode automatically. This project focuses on developing applications for smartphones based on Android as its operating system. This application will synchronize or respond with the predefined silent mode signal that broadcasted from a server the bluetooth. The project is developed by using Eclipse to write in Java for their source code. The final result of this project is the smartphone will be turning in silent mode automatically when the Bluetooth connection between the smartphone and server succeeded. For the future work, this project will focus on the upgrading the server which is will used long range and server can receive more than one user.

ABSTRAK

Projek ini dibangunkan bertujuan sebagai satu sistem kejuruteraan yang dapat memudahkan pengguna untuk mengendali deringan telefon pintar mereka ketika berada di kawasan atau berada di majlis yang penting. Pada kebiasaannya, pengguna terlupa untuk menutup deringan telefon pintar mereka ketika berada di situasi yang penting contohnya ketika waktu mesyuarat, di dalam masjid atau surau, ketika berada di dalam proses pembelajaran dan banyak lagi. Deringan telefon pintar dapat menggangu sesuatu situasi apabila pengguna terima panggilan atau memain permainan di dalam telefon pintar mereka. Projek Aplikasi "Auto Silent Mode" ini dibangunkan khas untuk pengguna yang mahu menutup atau menukar deringan telefon pintar mereka kepada deringan senyap secara automatik. Projek ini menumpu kepada pembangunan aplikasi untuk telefon pintar berasakan Android sebagai sistem operasi. Aplikasi ini juga akan menggunakan sambungan Bluetooth sebagai medium penghantaran serta sambungan di antara dua medium Bluetooth. Projek ini di bangunkan dengan menggunakan perisian Eclipse untuk menulis kod sumber berasaskan kod Java. Keputusan akhir projek ini adalah telefon pintar yang akan bertukar ke bunyi senyap secara automatik apabila sambungan Bluetooth antara telefon pintar dan pelayan berjaya di lakukan. Untuk perancangan masa depan, projek ini akan memberi tumpuan kepada menaik taraf pelayan yang akan digunakan jangka panjang dan pelayan boleh menerima lebih daripada satu pengguna.

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LISTS OF ABBREVIATION

SDK	-	Software Development Kit
apps	-	Applications
VM	-	Virtual Machine
JVM	-	Java Virtual Machine
IDE	-	Integrated
ADT	-	Android Development Tools
USB	-	Universal Serial Bus
API	-	Application Programming Interface

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CHAPTER 1

INTRODUCTION

1.0 BACKGROUND

Smartphones are becoming an important belonging due to their multifunction use and sophisticated features. It is one device that can take care of all of your handheld computing and communication needs in a single, small package. It is not so much a distinct class of products as it is a different set of standards for cell phones to live up to. Unlike many traditional cell phones, smartphones allow individual users to install, configure, and run applications of their choosing. A smartphone offers the ability to confirm the device to your particular way of doing things. The most standard cell phone software offers only limited choices for re-configuration, forcing you to adapt to the way it is set up. On a standard phone, whether or not you like the built-in calendar application, you are stuck with it except for a few minor tweaks.

In smartphones, users can install a variety of applications up to the user. Today's smart phones are one of the assistant to someone in to do and solve things. Smart phone provides a variety of entertainment in the form of music and video. They allow one to access the entire Internet so that they can stay abreast of the latest news, sports, weather, and more. Smartphone allows one to send and receive all types of communication so that information can be communicated quickly and accurately. People carry smartphones wherever they go to connect with others. However, not all the right places to hear the ringing of smartphones like the prayers, lectures, and meetings. In this situation, people may forget to set their smartphone

into the silent mode. As a lifestyle that not only brings discomfort to others but to give effect to the ceremony held.

Most Smartphone in the mobile market is using Android as their operating system. Android operating system is open source for any person to install or develop applications based on Android. Android is essential software for mobile devices including android application which will control system in every device in order to perform the tasks need by consumers. The Android Software Development Kit (SDK) provides the tools and Application Programming Interface (API) necessary to begin developing applications on the Android platform using the Java programming language [1]. The Android operating system is used on smartphones, netbooks, tablet computers, and other devices. For the Android developer, there are open source project called Android-x86 project. This project helps the developer to create the open source application for x 86 platforms which is the most compatible than other platform. There are some features that support the Android-x86 project, and Google project uses a special x86 version of Android such as [2]:

- Application framework
- Dalvik virtual machine
- Optimized browser
- Optimized graphics
- Media support
- Bluetooth, EDGE, 3G, and WiFi
- Camera, GPS, compass and accelerometer
- Rich development environment

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This project aims to improve the lifestyle of society where an auto silent application for Android Smartphones will be developed. The users' smartphone will be automatically set into silent mode according to the predefined schedules such as day, times or places.

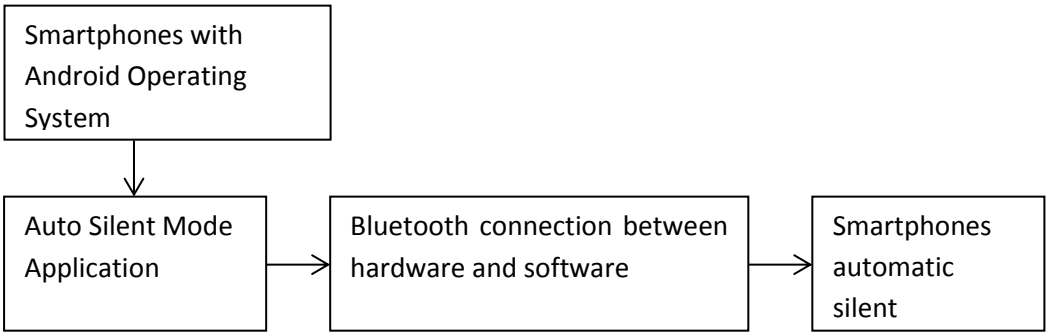

Figure 1.1: Auto Silent Mode Project Process

This auto silent server project was designed to automatically silent the smartphone user by connecting with severs. This project will be designed in the form of software using the Java eclipse to create auto silent mode applications. With this, the software is user friendly that the user just turns on the bluetooth that connected with the server in turn the smartphone into silent mode.

1.1 PROBLEMS STATEMENT

This project addresses current issues such as;

1. People need to do manually to silent their Smartphone by doing some step in the volume setting.
2. People just turn the volume to low but still not silent.
3. The volume for Smartphone can interrupt the other people.

1.2 OBJECTIVES

The objectives of this project were lists as below:

1. To develop an auto silent mode application for Android smartphones using Java Eclipse software.
2. To synchronize the developed auto silent application with bluetooth module.
3. To evaluate the performance of the developed auto silent application.

1.3 SCOPE OF PROJECTS

The scope of the work mainly relates to computer engineering is as follows:

1. Software development including the coding of auto silent mode application that controls the smartphone sound system.

2. Hardware and software synchronization over the bluetooth communication within the meeting or class room area.

1.4 PROJECT SIGNIFICANCE

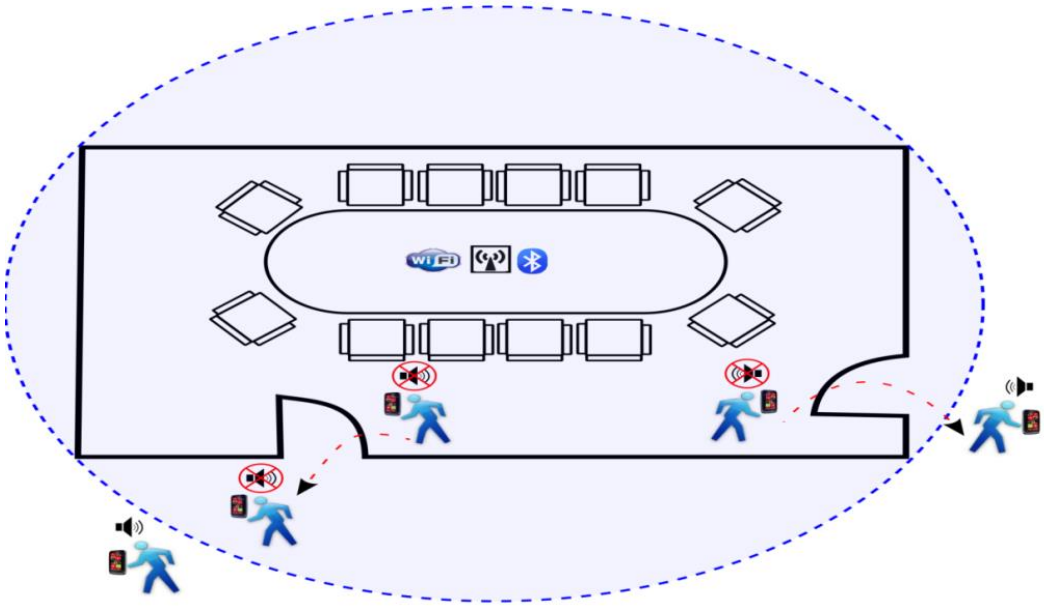

Figure 1.2: Auto Silent Mode Project Process in Real Life

The Figure 1.2 the main idea of this project. For the example this project is used in the meeting room. The meeting room has one of the servers the functioning to silent mode the Smartphone. The server can be connected with communication Bluetooth or wireless. Every person who enters the meeting room that is in the range of silent mode. When the person turn on their Bluetooth or wireless will synchronize with the server for silent mode the Smartphone automatically. Within in the meeting room the Smartphone remains in silent mode unless the person turns off the Bluetooth or wireless. The person can use the Smartphone such as massaging, chatting, or reading while in the meeting that can avoid noise interference to other people. After the meeting is over the Smartphone will turn to normal mode which is when the person who leave the meeting room and stay off of the range of the server.

By developing this project, the importance of this project is;

- Does not require user intervention for mode setting, not even once.
- No need to change manually the Smartphone sound profile.
- This application helps the user who forgets to silent the Smartphone.
- To avoid the noise interference during ceremony or formality events

1.5 THESIS ORGANIZATION

This thesis comprises five chapters: Introduction, Literature Review, Methodology, Result and Analysis, and Conclusion and Recommendations. Introduction has been provided in this chapter whereby it serves as the background for understanding the project described in this thesis. Chapter 2 reviews the theory on hardware using in the project and existing work related to the project. Chapter 3 discusses the methodology that was followed during the course of this project. Experimental results and analysis is presented in Chapter 4. Finally, this thesis ends with Chapter 5 that concludes the project followed by a number of recommendations for future research.

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter describes the theoretical information leading to the development of the project. The chapter begins with the description of the smartphones and the Android software. Then, it explains the hardware that supports the android application. Next, this chapter explains the existing auto silent mode application in the market. Thereafter, this chapter describes the operation of the auto silent mode application in real life. At the end of the chapter, a summary is provided.

2.1 SMARTPHONES

Nowadays, a lot of smartphone has been produced in the mobile market. Mobile phone manufacturers such as Samsung, Apple, HTC, Sony and many more will compete each other to produce their best smartphone with a lot of functions. One of the functions of the smartphone is the ringer volume. In general, all smartphones can be turned into the silent mode by set it manually by pressing volume button. However, there are the software application that turn the volume into silent mode automatically based on predefined setting. Every mobile manufacture just focuses the

technology for the future but forget that the ringer function can be their future technology. Figure 2.1 show the volume setting in every smartphone

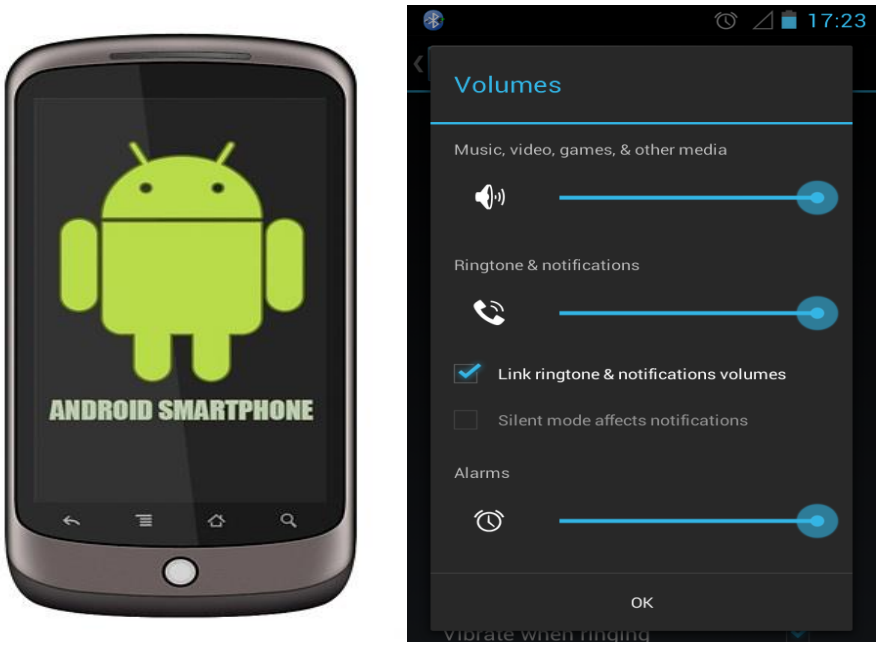

Figure 2.1: Android smartphone with volume setting

2.2 ANDROID SOFTWARE

In android world, the android consist of the developing the operating system for smartphone. This operating system will upgrade by following the technology of the smartphone in order to the operating system can work with the processor using in the smartphone. Next, will be discussed more about the android component.

2.2.1 Android Operating System

Nowadays, Android is one of the wisely used mobile operating system (OS). Android just not act as OS but it is a software that comprising not only operating system but also middleware and key applications. Android was founded in Palo Alto in California, United State of America by Andy Rubin, Rich miner, Nick Sears, and Chris White in 2003[3]. Android develop their own operating system shown at figure

2.1. The original version of Android currently been updated for upgrading the function in the Android OS. Android consists of a kernel based on the Linux kernel, with middleware, libraries, and APIs written in C programming and application software running on an application framework which includes Java-compatible libraries. Android has a large community of developers writing applications (apps) that extend the. This application can be downloaded from online stores such as Android Market provide by Google.

Table 2.1: Evolution of android operating system

Android Version	Features
Android 1.1 (Feb 2009)	• Support saving attachment for MMS • Marquee in layouts • API changes
Android 1.5 (April 2009)	• Bluetooth A2DP and AVRCP support • Uploading video to YouTube and pictures to Picasa
Android 1.6 (sept 2009)	• WVGA screen support • Google free turn by turn support
Android 2.0 (oct 2009)	• HTML5 file support • Microsoft exchange server • Bluetooth 2.1
Android 2.2 (May 2010)	• USB tethering and WI-FI hotspot functionality • Adobe flash 10.1 support
Android 2.3 (Dec 2010)	• Multitouch software keyboard • Support for extra large screen sizes and resolution
Android 3.0 (May 2011)	• Optimized tablet support with new user interface • 3D desktop • Video chat and Gtalk support