

**INTRUDER ALERT VIA SHORT MESSAGE SERVICE (SMS) FOR
PREMISES**

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Dedicated with deepest love to:

My beloved family for their support, guidance and love

My dearest friends for being there whenever I needed them

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ABSTRACT

This project focuses on the programming of microcontrollers using a high-level language. The PIC family of microcontrollers is chosen as the target of microcontroller because of the low power consumption which made this microcontroller popular in portable application. This project entitled Intruder Alert via Short Message System (SMS) for Premises Using PIC provide security for the premises owner from any intruders or any form of robbery by automatically activating the alarm and mobile phone connected to the microcontroller device . Through SMS, the microcontroller unit can immediately advice premises owner that their places are being robbed or an intruder has illegally trespassed their respective places.

ABSTRAK

Fokus utama yang diketengahkan dalam projek ini ialah pengaturcaraan pengawal mikro dengan menggunakan bahasa tahap tinggi. Pengawalmikro famili PIC ini dipilih sebagai sasaran pengawalmikro disebabkan penggunaan kuasa rendah yang mana menjadikan pengawalmikro ini terkenal dalam aplikasi yang mudah dibawa. Tajuk projek ini ialah Amaran Penceroboh menggunakan Sistem Pesanan Ringkas untuk Premis yang menyediakan keselamatan kepada pemilik premis daripada sebarang pencerobohan dan kecurian dengan mengaktifkan sistem keselamatan secara automatik dan telefon disambungkan kepada pengawalmikro. Melalui mesej, pengawalmikro dapat menyedarkan pemilik premis bahawa rumah berlaku kecurian atau pencerobohan dengan pantas.

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LIST OF ABBREVIATIONS

A	-	Ampere
DC	-	Direct Current
EEPROM	-	Electricity Erasable Read-Only Memory
RAM	-	Read Access Memory
ROM	-	Read Only Memory
V	-	Voltage
SMS	-	Short Message Service
PDA	-	Personal Digital Assistant
IR	-	Infrared
PIC	-	Programmable Intelligent Computer
GSM	-	Global System for Mobile Communication
PDU	-	Protocol Data Unit
IDE	-	Integrated Drive Electronic

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CHAPTER 1

INTRODUCTION

This chapter will briefly discuss on the project overview. The objective, problem statement, scope and methodology of project, expected output and thesis outline will be presented in this chapter.

1.1 Project Background

The widespread use of information technology is dramatically improving both the quality and the efficiency of differences services offered to people. The large deployment of wireless network and increased use of handled devices like the personal digital assistant (PDA) and mobile phones has encouraged developer to build different kind of applications and systems in all domains. We can find, for example, IR remote control which is an application that can be installed on a mobile phone to use it as remote control via infrared; this application can be used in a small area and need a line of sight. Figure 1.1 shows the flow of sending messages; the GSM module will send SMS that has been programmed in the PIC when the door or windows is open, the premises owner will receive message from GSM terminal.

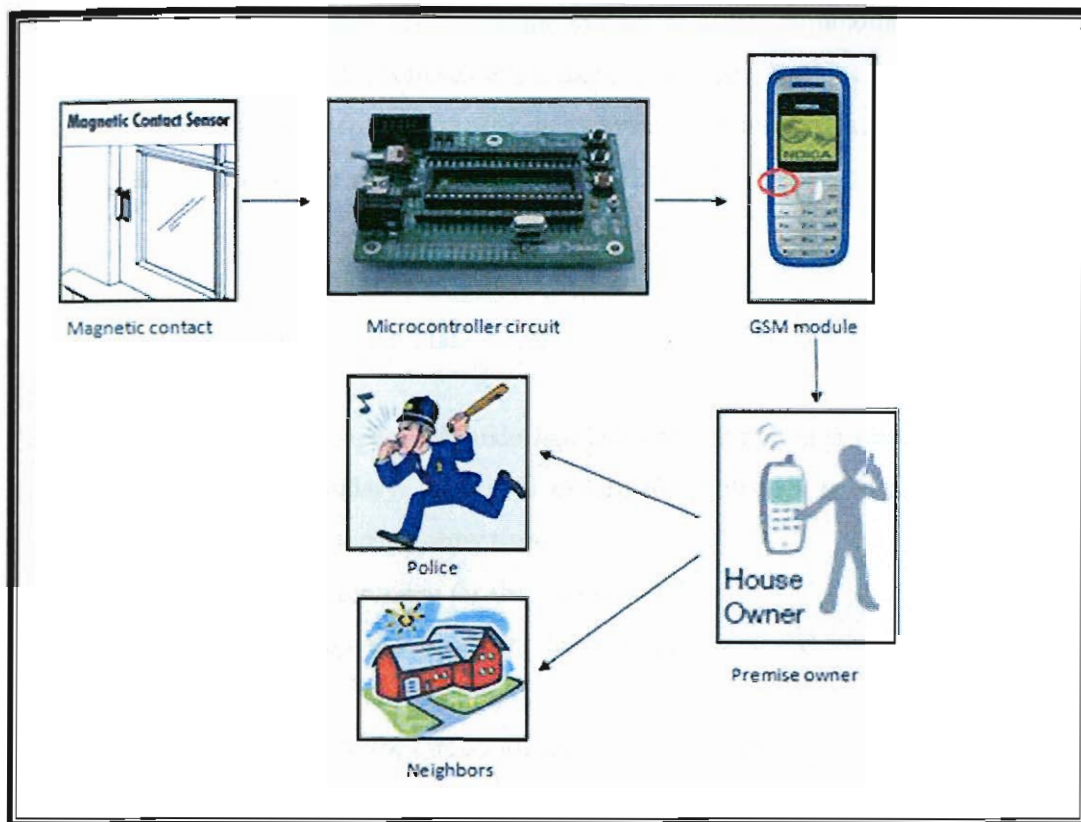


Figure 1.1 : Flow of sending message

1.2 Project Objective

The main objective of this project is to design and develop a security system for premises owner that is capable of monitoring any intruders and other emergency situation by alarming the owner via short message service (SMS). Besides that, its also have target to produce intruder alert system that is having several friendly concept acceptable to users such as economy (low cost), plug and play and portable (easy to bring anywhere).

1.3 Problem Statement

This project was designed based on the current security situation faced by premises owner nowadays. Some of the current intruder alert systems are lack of

effective functional features. Example, the system does not communicate to inform user when they were not at premises when there is intruder. Besides that, if user shift to a new location, the normal/current security system for intruder alert is difficult to move. User might use the system portably.

1.4 Project Scope

There are a few scopes and guide line listed to unsure the project is conducted within the intended boundary. This is to ensure the project is heading in the right direction to achieve its intended objectives.

- i. To design circuitry for the overall system
- ii. To develop the program that can integrate and control the overall system
- iii. To construct the circuit for the overall system

1.5 Project Methodology

The basic research about this project is done first including how the project works, the components used and the best method to make sure this project is successfully. This involved the meeting with supervisor and collected information by using internet facilities and doing some reading. The overall action in achieved the objectives of this project including the workflow of activities, device design and program development. After that, initial construction of circuit is done on a project board for easier testing and modification. It is then is transferred to a PCB or strip board after the circuit is found to be working. Software development includes the programming of the PIC, which interfaces to all the hardware part. A set of instruction code is written to indicate the microcontroller performs the function required. In the interfacing stage, hardware and software work together as a complete system. Figure 1.2 shows the overall project flowchart.

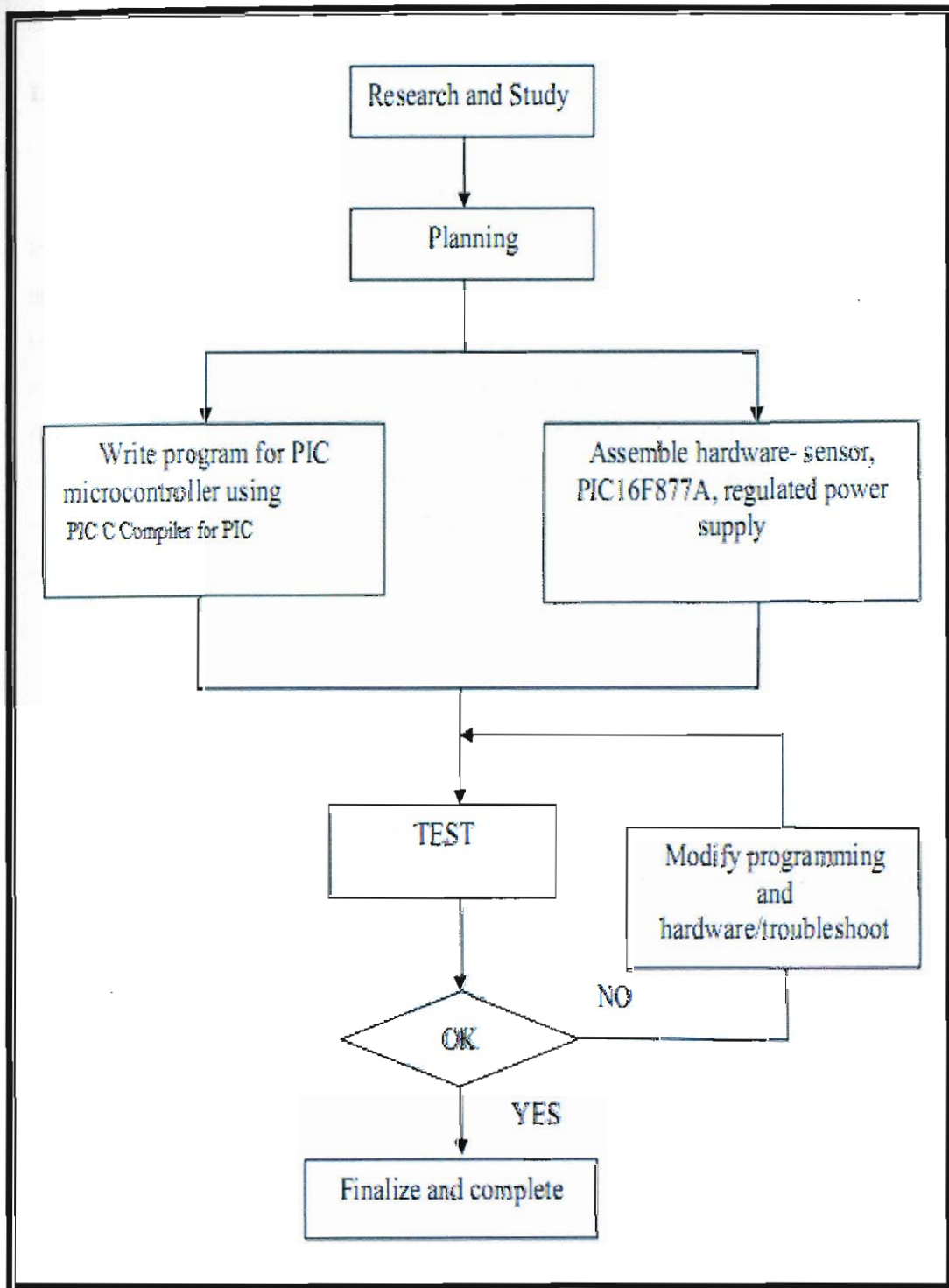


Figure 1.2: Project Development Flowchart

1.6 Expected Output

For short term outcome, at the end of this project, the intruder alert via SMS for premises will operate properly where the hardware and software will combined their roles together to develop security system for premises which capable of monitoring any intruders and other emergency situation by alarming the premises owner via short message service (SMS). Besides that, the cost for this project will be reduced as low as possible by using the components that can give the role for basic operation for this circuit. The objective to make this project portably also will be achieved where the user might use the system at everywhere when they shift to a new location.

For long term outcome, this project will be widely used and commercialize to the people who emphasize security in their premises. The marketing target for this product involving individuals who are not affordable to buy a normal security system such as student or residential. These groups of user who want to have security system installed in their homes or offices is affordable to have low cost and easy plug and play system.

1.7 Thesis Outline

This thesis divided into five chapters. In chapter one, an introduction of 'Intruder Alert System Via SMS for Premises' is presented along with briefly explanation about the objective, problem statement, scope and methodology of project and the expected output of this project.

Chapter two provides about literature review involved gather information of the project in order to complete the whole project. It involved the research of the components that are used in the project.

Chapter three explains about the project methodology where how the project is implemented. The approach for meeting the goals and objectives and project life cycle phase is described in this chapter, along with the tasks needed to complete it.

Chapter four describes the project finding which includes the simulation design. This chapter also discusses and analyze about the project and operation of the software such as the flow chart design. Furthermore, the output from combination of software and hardware also included.

Chapter five will be the conclusion and suggestion to the project in future undertakings.