# DEVELOPMENT OF FLOOD WARNING SYSTEM USING GSM (GLOBAL SYSTEM FOR MOBILE COMMUNICATION)

This thesis is presented in partial fulfillment for the award of the

Bachelor of Electrical Engineering (Hons.)

**UNIVERSITI TEKNOLOGI MARA**

**FADZILAH BINTI ARIFIN**
**FACULTY OF ELECTRICAL ENGINEERING**
**UNIVERSITI TEKNOLOGI MARA**
**40450 SHAH ALAM SELANGOR,**
**MALAYSIA**

# ACKNOWLEDGEMENT

In the name of ALLAH the Most Gracious and the Most Merciful, all good aspiration's devotions, good expressions and prayer are for ALLAH whose blessing and guidance have helped me throughout the entire project.

I would like to express my gratitude and appreciation to my project supervisor, Encik Syahrul Afzal Bin Che Abdullah for providing me with valuable guidance, support, commitment, ideas and constructive comment during the course of this project.

I am also indebted to the various help and discussions offered by my friends. Last but not least. I am grateful to my family for their understanding, courage and advice.

Thank You.

# ABSTRACT

The aim of this project is to develop Flood Warning System via SMS sent using Rabbit Microprocessor 3000 and integrate it with Global System for Mobile Communication (GSM) module. This thesis presents an application of the system that detects the level of flood rises and gives warning through message sent to mobile hand phone. The message is sent through Short Message Service (SMS) only to certain rescue organizations at each level of flood rises and reduces. The whole system is run using Rabbit 3000 microprocessor with Rabbit Core Module 3100 Application Board and using Enfora GPRS/GSM modem. SIM card from Digi starter pack had been used to operate the GSM/GPRS modem. The programming language used for Rabbit Microprocessor is the Dynamic C.

The developed prototype is fully functional and tests have been successful. In conclusion, this system is applicable and can be replace the already flood warning system have today. In this thesis, the whole project will be described briefly in each chapter. All results obtained from this study would be beneficial to others for future planning and monitoring purpose.

# TABLE OF CONTENTS

# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction

The flood disaster is being very serious problem nowadays due to unpredictable weather especially in urban area thus this idea comes up. This system not only indicates the amount of water increase but also gives an early warning by light up the LED and sent SMS automatically to certain rescue organizations. The flood warning system already present today only includes the siren and lamp as warning tools to warn community nearby but not provides the information through SMS sent. The worse case there was neither siren nor lamp provides but only the meter reading placed to indicate the amount of water rises at frequently flood area occurred.

Mobile phone capabilities are not only for voice communication but also text communication called SMS. The SMS became popular services for faster, cheaper, short and reliable text communication. This service was chose to be used for this system since mobile phone becomes an important gadget to our lives today. Due to this system the rescue institutions no need to monitor the flood condition frequently and can give a warning at early stage or move the public to safer place. It is capable to can save many human lives and properties.

An 8 bit Rabbit Microprocessor 3000 use is a programmable which contains memory to program the information and data that controls an operating system. It was innovative development tools for the embedded control industry and commonly used to design control system. Using this microprocessor for control application can be beneficial in terms of reduced chip since all of the components needed for a controller were built right onto one chip.