UNIVERSITI TEKNOLOGI MARA
KAMPUS BUKIT MERTAJAM
2005

FINAL REPORT OF DIPLOMA PROJECT

FACULTY OF ELECTRICAL ENGINEERING

# LIGHT CONTROLLER USING PIC16F873

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# ACKNOWLEDGEMENT.

In the name of God, Most Beneficent, Most Merciful.

Firstly, all the praises and thanks be to Him, the Lord of the universe and peace be upon His messenger Muhammad the last of the prophets and the righteous followers. We are very gratitude to the Almighty God for all the strengths, wisdoms, patience, motivations, perseverance and ability bestowed upon us to complete this KEU380 project.

Secondly, our sincere appreciation must be to our supervisor who have read this project and sent in comments, corrections and suggestions to us complete this project paper.

Then, we also would like to thanks our project coordinator Tuan Haji Hasnain B.Abdullah for the guidance and encouragement.

Throughout dire time making this assessment we would like to express out thank to our lecturers especially En.Khairul Azman B.Ahmad, En.Zakaria B.Hussain and En. Fazlie B.Omar that involved helped us to complete our final project.

Then, we would like to express our thanks to our parents, our friends and technician Uitm that help us in giving ideas , helping in developing the circuit , give us mental support and always be in our side.

Last but not least our sincere appreciation must be to those who helped us directly or indirectly, may Allah accept us as his humble servant in this here and here after. For our incompetence's we ask for forgiveness and with all your kindness showering us, the words of thank you is in adequate to describe.

# ABSTRACT

Light controller is designed to control light in many situations. The mission of this program is to maintain and improve the quality of the light as we desired. The majority of all indoor and outdoor lighting in the home today is provided by incandescent lamps, commonly referred to as conventional "light bulbs".

In this thesis, the light bulb is the most widely used lamp in residential and many commercial and industrial lighting applications for general lighting. Light controller are a type of incandescent lamp that gives "whiter" light, lasts longer, is usually small, is slightly more efficient than normal bulb. Light controller will become more popular for lighting stores, buildings, hotels, and houses.

This light controller can be use at many places. For example it can be a light dimmer, light dimmer allows the knob controlling of the light output (the light intensity) of different lighting instruments. A light dimmer allows controlling of light bulb brightness. The basic idea of dimmer operation is that it limits the electrical power that gets to the light bulb. Dimmers today come in many styles to control different types of loads. There are also some other dimmer types used in some special applications (variable transformers, simple resistors for very low power bulbs and PWM controllers for DC lights). Typical light dimmer circuits use Pulse Width Modulation (PWM) to control the brightness of the bulb. It controls the brightness of the bulb by turning the bulb ON for part of time and then OFF for part of time. The brightness of the bulb is a function of the ON time to the OFF time. Dimmers designed to dim DC light bulbs generally work in this way, they just have an adjustable free-running oscillator with variable pulse width to control the light output.

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# CHAPTER 1

# INTRODUCTION

## 1.1 BACKGROUND

There are not too many residents or domestics house owner in Malaysia whose have automatics system or advanced system provided in their buildings because this aspect that most Malaysians people do not seems to take much notice of. So we decide to design and build a project that can improve the aspect of light system.

Nowadays, people always think of high expenses price to buy a light with controller because of the cost but they don't think twice. In a long time duration, when we talk about the system, it is more effective and cost less. So to encounter this entire problem we decided to make up a project call "LIGHT CONTROLLER".

With this light controller, we can control the light either it bright or dim as we desired or just follow the timer that we set in the light controller itself. Apart from that, this light controller is totally different compare to other project because it has proven can make our life become more perfect because it has many advantages such as it can save time, energy and up grade the life of the owner at their home, hotels or buildings.

At the same time by using this light controller, it can save money and energy of manpower because the system itself can operate as set on it or as we desired. So no electricity wastage and we don't need to spend a lot of money to pay electricity bills.

So we strongly believe that the device or this light controller can be commercialized worldwide as world today are getting more developed and the number of people and building increased day by day.