**CONTENT**

TITLE

RATIONALE

OBJECTIVES OF THE STUDY

FRAMEWORK OF THE STUDY

**ARDUINO BASED MICROCONTROLLER FOR LIGHTING**

**AUTOMATION SYSTEM**

**Rationale**

Microcontroller most often considered as a single integrated circuit that is typically used for application and designed to perform a specific task. Products and devices that must be automatically controlled in certain situations, like appliances, car engines, computers and electronic gadgets are great examples, but microcontroller reach much further than just these applications.

In the advancement today’s technology, several mechanisms are now integrated in order to create an advance and much more sophisticated controllers that would give an edge in any microcontrollers available in the market. This could mean that, most electronic manufacturers are competitively progressing to discover way much more advanced components, testing and developing more circuits in a such to achieve greater use.

The recent evaluation, one of the most common microcontrollers in the market today is an Arduino. This is an open-source flat form used for building electronic projects. It consists of programmable circuit board (often referred as microcontroller) and a piece of software or IDE (Integrated Development Environment) that runs on computer, used to write and upload codes to the physical board.

Arduino flat form has become quite popular with people starting out with electronics, and for good reason. It does not need a separate piece of hardware in order to load a new code onto the board, it can simply use USB cable.

In many years, home lighting system I solely dependent in such basic electrical devices that are installed like switches, receptacles, bulbs, wires and other needed materials in order the lighting system will work. This conventional approach of wiring installation is still in use today and it is proven that it quite effective. But in the advent of technology, house wiring installation in now integrated with microcontrollers to make it more efficient, conserve energy, and can make smarter home lighting system.

Designing and developing an Arduino based microcontroller for lighting it eagers student to achieve an output in order to improve the way of lighting system that is smart, intelligent, time efficient and energy saving. Students doing these experiments are engaged both in electrical and electronics technology in which these are among the skills they need to develop. To determine the significance of this device among students it is measure based on the aspect of functionality, durability, workability and aesthetics. The researcher as being the instructor of this course sensed the need to investigate further the effectiveness and usefulness of this device which also influenced the creativity skills of the student to think deeper on how to innovate things and able to the community.

**Objectives of the Study**

The main objective of this study is to assess the characteristics of Arduino based microcontroller for lighting system which focus on the functionality, durability, workability and aesthetics and to test the significance of the device.

The specific objectives are:

1. To design a Arduino based microcontroller lighting system devices using the pre-establish parameters.
2. To develop and integrate the design elements of the device utilizing a general acceptable protocol.
3. To implement the commissioning, testing and troubleshooting of the device.
4. To evaluate the device performance and acceptability using the pre-established parameters.

**Framework of the Study**







