

**FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
TERENGGANU**

**ARDUINO WIFI POWER SWITCH APPLIANCES AND MOTION
SENSOR FOR ENERGY SAVER**

**MUHAMMAD FAKHRUL NAIM BIN NASARUDIN
SYED MUHAMMAD SHAHIR BIN SYED HASAN**

**SUPERVISOR :
HASRUL HAFIZ BIN ABU BAKAR**

ACKNOWLEDGEMENT

First and foremost, we would like to thankful to Allah S.W.T, which have helped and guided us in completing our final year project. Without His blessing, none of this is possible.

Many people assisted us in completing this Final Year Project thesis. We would like to express my special gratitude and thanks to our supervisor, En. Hasrul Hafiz Abu Bakar who has patiently guiding and helping us from FYP 1 until FYP 2. In addition, we would like to thank to our lecturer that taught us and all of student that has contribute and sharing the knowledge with us. Lastly, we also would like to thank our parent and friend who always giving us support whether from morally or financially.

The support and encouragement from all the people above will always be a pleasant memory throughout our life. May God bless all of us.

ABSTRACT

This report is describe the development of the low cost WIFI-power switch appliances and motion sensor for energy saver and safety using Arduino. Energy saver and safety is one of the crucial things nowadays. The demand of electricity has become higher than what electric company can supply. It make the price of electricity become higher. That's why it is important to save energy as much as possible. Also, electric energy is dangerous for human body to take, therefore, it is crucial too to have a safety measures in everything that is connected to electric. In this project, WIFI module esp8266 esp-01 is used as a receiver that will receive signal from cloud server which is either to turn on the switch or turn off the switch without directly touch to the electric source. Other than that, motion sensor also being used in this project. This sensor will detect any motion and then turn the switch on. If there is no movement, the switch will turn off automatically. This will encourage more of energy saver. Commonly, a company need to spend a lot of money to cover their worker that get injured by electric shock and they also need to spend money on waste things such as electric that run without anyone using it. But with this device, a company could save their money and workers safety become more secure. This device can turn on or off switch from far which is more safe than directly touch from source and also, if there is no movement, the switch will not turn on which is will be as a backup plan if worker forget to close the switch before go back home from work. It will save energy and secure the worker safety. Thus, the objective of this project has been achieved.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	i
	ACKNOWLEDGEMENTS	ii
	ABSTRACT	iii
	TABLE OF CONTENTS	iv
	LIST OF FIGURE	vi
	LIST OF TABLES	vii
	LIST OF ABBREVIATIONS	viii
1	INTRODUCTION	
	1.1 Background of Study	1
	1.2 Problem Statement	2
	1.3 Objective of Research	3
	1.4 Scope of Study	4
2	THEORETICAL BACKGROUND	5
	2.1 Theoretical Background	5
	2.1.1 Internet	6
3	METHODOLOGY	9
	3.1 The Methodology Process	9
	3.1.1 Block Diagram	9
	3.1.2 Operation	10
	3.2 Proteus 8 Professional	11

3.2.1	PCB Layout Process	11
3.3	Arduino IDE	13
3.3.1	Making coding to upload into Arduino	13
3.4	Circuit Implementation	15
3.5	Etching circuit and soldering process	15
4	RESULT AND DISCUSSION	20
4.1	Simulation Result	20
4.1.1	Breadboard Result	21
4.1.2	Prototype Result	22
4.1.3	Overall Result	22
4.2	Discussion	23
5	CONCLUSION AND RECOMMENDATION	24
5.1	Conclusion	24
5.2	Recommendation	25
	REFERENCES	26
	APPENDICES	27
	Appendix A	