

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
PULAU PINANG

FINAL REPORT:
SAFE IRON POWER OUTLET

DAYANA BINTI KAMARUL BAHRIN

SYARIFAH MUNIRAH BINTI SYED MOHD FAUZI

SUPERVISOR:
PUAN SITI SOLEHAH MD RAMLI

**This report is submitted to the Faculty of Electrical Engineering,
University Teknologi MARA (UiTM).**

In partial fulfilment of the requirement for the award of Diploma in Electrical Engineering.

This report is approved by :

.....

**Puan Siti Solehah Md Ramli
(SUPERVISOR)**

Date : ...6/10/16.....

ABSTRACT

The Safe Iron Power Outlet is a project which will be carried out in order to solve the difficulties in doing ironing. The idea was obtained based on the observation of many people. For example, the housewife always busy and sometimes forgot to turn of the power supply and can lead burning their clothes or can be dangerous if kids are playing around the iron. The problem statement have been identified where the problem that users usually is their clothes are easily burned because of the temperature of the iron and sometimes users left the iron unattended. The Safe Iron Power Outlet is designed to see how the system can be used to solve these problems. So, with this system, we can cut off the current automatically when there are no movement or sense at touch sensor. Otherwise the system can detect the condition of the iron whether in 90° or 0°. PIC16F877A will detect the condition of the touch sensor ad the angle sensor and the relay will determined the system whether to cut off the current or let the current flow. This project is hoped to renew and to update on the previous to be very helpful for the people.

ACKNOWLEDGEMENTS

In the name of Allah, the most compassionate, the most merciful. We thank Allah for giving us the chance to experience new things and for blessing us with many great people who have been our greatest support. The Final Year Project II was a great chance for learning and professional development. Therefore, we consider ourselves as a very lucky individual as we was provided with an opportunity to be a part of it.

Firstly, we would like to offer our sincere gratitude to our supervisor, Encik Samsul Setumin and Puan Siti Solehah for their careful and precious guidance which were extremely valuable for the process of completing this project. We would also like to thank the lab assistances, who has taught us a lot of new things and for taking care of me during my training.

Last, but not least, our special thanks to our family for all their moral support, financial support and also to our friends for always being around us throughout all the ups and downs we have been through.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

ABSTRACT

LIST OF FIGURES.....1

LIST OF TABLES.....4

CHAPTER 1 INTRODUCTION.....5

 1.1 Background of Study.....5

 1.2 Problem Statement.....6

 1.3 Objectives of Research.....7

 1.4 Scope of Study.....8

CHAPTER 2 MATERIALS AND METHOD.....9

 2.1 Methodology.....9

 2.2 Design Flow Chart..... 10

 2.3 Experimental Setup..... 12

 2.4 Equipment and Component..... 13

 2.5 Coding For Simulation.....18

CHAPTER 3 CIRCUIT DESIGN AND OPERATIONS.....20

 3.1 Schematic Diagram..... 20

 3.2 PCB Designs.....24

CHAPTER 4 RESULT AND DISCUSSION.....27

 4.1 Software Simulation Result.....27

 4.2 Hardware Implementation Result.....31

 4.3 Circuit Testing and Troubleshooting.....40

 4.4 Discussions.....43