

AUTOMATIC HANDWASH

**MUHAMMAD AZAM BIN ZULKEFELI
WAN MUHAMAD AUF BIN WAN MOHD
RAZIFF
MOHAMAD IMAN BIN JAMALUDDIN**


A project report submitted in partial fulfillment of the
requirements for the award of the Diploma of
**Electrical Engineering (Electronics /
Telecommunications / Instrumentations /
Computer)**


**Faculty of Electrical Engineering
Universiti Teknologi MARA**


SEPTEMBER 2014

AUTHORS' DECLARATION

"I declare that this report entitled Automatic Hand Wash is the result of my own group research except as cited in the references. The report has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree."

Signature : 
Name : MUHAMMAD AZAM BIN ZULKEFELI
Date : 8/10/2014

Signature : 
Name : WAN MUHAMAD AUF BIN WAN MOHD RAZIFF
Date : 8/10/2014

Signature : 
Name : MOHAMAD IMAN BIN JAMALUDDIN
Date : 8/10/2014

DEDICATION

First of all, we would like to say thank you to my beloved family for the support, financial support, advices and always giving us encouragement. Besides that, we are very grateful because without their encouragement we cannot be able to finish this project.

Secondly, we also want to say thank you to our beloved lecturer and supervisor for teaching us and always helps us while doing our final year project especially for our supervisor sir Mohd Abdul Talib B. Mat Yusoh.

Lastly, we also to say thank you to our friends for their helps and suggestion. Not forgotten for those are helping us directly or indirectly. Thanks all of you.

ABSTRACT

This project is to build and test a system of automatic hand wash. This system is more advanced than conventional hand washing and it is designed to improve the life of a system that is much easier to wash your hands. For example, water, soap and hair all integrated into the system. The machine controls the water, soap and dryer automatically in sequence using the PIC16F877A microcontroller. Water, soap and hand dryers are controlled by programming code programmed into PIC16F877A microcontroller. Therefore, this project uses three infrared sensors to detect user's hand and give signal to the water, soap and dryer for operation respectively. If the infrared sensor (sensor arm) detects the user's hand, the water will be flowing to wash their hands. After that, the infrared sensor (sensor arm) detects the user's hand and the soap will be flowing that serves as a dirt remover in the hands of consumers. Then the infrared sensor (sensor arm) will detect the user's hand, the water will flow out again to remove the effects of soap on hand users. Lastly, the dryer will activate depending on the user's hand.

TABLE OF CONTENTS

CHAPTER	Page
CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR'S DECLARATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vii
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF SYMBOLS	xi
LIST OF ABBRIATION	xii
1. INTRODUCTION	
1.1 Introduction	1
1.2 Problem Statement	1
1.3 Objectives	2
1.4 Scope of Work	2
2. LITERATURE REVIEW	
2.1 Automatic Handwash Circuit	3
2.1.1 Microcontroller	4
2.1.1.1 PIC16F877A	5
2.1.2 IC ULN 2803	6
2.1.3 Voltage Regulator	6
2.1.4 Relay	7
2.2 IR Sensor	8
2.3 Component on the Circuit Board	9
3. METHODOLOGY	
3.1 Automatic Handwash Flow Chart	11