UNIVERSITY TEKNOLOGI MARA

Smart Talking Clock

MUHAMMAD ASHRAFF BIN PUAT
RAFIQ IKHWAN BIN ROSLAN

DIPLOMA IN ELECTRICAL ENGINEERING
(ELECTRONIC)

SEPTEMBER 2015

ACKNOWLEDGEMENT

First of all, we would like to thank ALLAH SWT because for HIS blessing, finally we able to complete our final year project with this thesis as well within allocated time. We would like to thank everyone that has played such an important role for making our final year project successful. The main objective of Final Year Project is to help the student use of the knowledge learned, to construct and modified the problem using the engineering method.

We would also like to thank our supervisor name Pn. Nor Affida Binti M.Zin

That guided we are through our final year project. The support he gave me mademe have patience to continue my project despite the difficulties that I faced during the period.

Our appreciation also beloved family especially our mother for all love, sacrifice, understanding and support, without which, we could never ever walk the first step.

Lastly we would like to than to our friend during our final year project. Without their help our work will not be as efficient during the final year project. They give some opinion that how to make our project become more effective using the latest technology that we not yet noticed.

ABSTRACT

With the development of the watch industry and technology, the existence of technological change many factors, especially the analog clock to a digital clock. Samsung inc. have created smart watches in 2013 that attracted people to try a watch with a variety of functions. Correspondingly, the number of users increases. Clock is an instrument to express, store, and synchronize time, it is important to take care of every human being systematically work with any given time. How to help them keep abreast of time. Many of them complained that very boring analog clock and bell ringing commonly heard. They are difficult to wake up early. So in this project, a new type of system was designed: intelligent system clock with different display modes, audio modes and Realtime clock modes:

LED display modes: LoL Shield were use. The LoL Shield is a charlieplexed LED matrix for the Arduino. The LEDs are individually addressable. We can use it to display anything in a 9x14 drid. Scroll text, play games, display images or anything else. The LoL Shield is just a board with LEDs and headers on it. LOL in this context stands for Load of LEDs.

Realtime clock modes use real-time clock (RTC) is a computer clock that keeps track of the current time.. Address and data are transferred serially through an I²C, bidirectional bus. The end of the month date is automatically adjusted for months with fewer than 31 days, including corrections for leap year. The clock operates in either the 24-hour or 12-hour format with AM/PM indicator. The DS1307 has a built-in power-sense circuit that detects power failures and automatically switches to the backup supply. Timekeeping operation continues while the part operates from the backup supply.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	CANDIDATE DECLARATION	**ii**
	SUPERVISOR'S APPROVAL	**iii**
	ACKNOWLEDGEMENT	**iv**
	ABSTRACT	**v**
	TABLE OF CONTENT	**vi**
	LIST OF FIGURE	**ix**
	LIST OF TABLE	**x**
	LIST OF ABREVIATION	**xi**
	LIST OF SYMBOL	**xii**
1	**INTRODUCTION**	
	1.1 Problem Statement	2
	1.2 Objective	3
	1.3 Scope of Work	
2	**LITERATURE REVIEW**	
	2.1 Speakjet Speech Synthesiser Chip	5
	2.2 Lol Shield	7

	2.3 Real Time Clock Chip DS1307	8
	2.4 Arduino Uno R3	9
	2.5 Temperature Sensor	10
	2.6 Resistor	11
	2.7 Capacitor	
	2.8 LM386	12
	2.7 Smart Talking Clock	13
3	**MATERIALS AND METHODS**	
	3.1 Methodology	14
	3.2 Programming Concept	15
	3.3 Flow Chart	17
	3.4 Equipment and Components	19
4	**CIRCUIT DESIGN AND OPERATIONS**	
	4.1 Schematic Diagram	20
	4.2 Circuit Operation	21
	4.3 Software Simulation	
	4.3.1 Lol Shield LED	23
	4.3.2 Buzzer Sound	24
5	**RESULT AND DISCUSSION**	
	5.1 Result	25
	5.2 Discussion	28
	5.3 Recommendation	29
6	**Conclusion**	
	6.1 Conclusion	31
	REFERENCE	33