الآدِـــة

قال تعالى:

رَبِّ ٱشْرَحْ لِي صَدْدِي ۞ وَيَسِّرْ لِيَّ أَمْرِي ۞ وَٱحْلُلْ عُقْدَةً مِن لِسَانِيْ ۞ يَفْقَهُواْ قَوْلِي ۞

حدق الله العظيم

سورة طه

DEDICATION

To

My mother and My father

a strong and gentle souls whose taught me to trust in Allah for earning an honest living for us and for supporting and encouraging me to believe in my self

My friends

Special thanks to the engineer Hisham Othman

Because he did not hesitate to help me throughout all these

months

My teachers

My brothers

My sisters

My loves

Whom I always respect and love

ACKNOWLEDGEMENT

First, thanks to God, who lights up my way and my heart and give me the strength and determination

Great thanks and gratitude I offer to my supervisor

Dr. Awadalla Taifour

for his continuous guidance and support during the preparation of this thesis

Thank you

ABSTRACT

Voting is a crucial device to reveal the opinion of a group on an issue that is under consideration. Voting by traditional methods exposed to a lot of mistakes such as someone can voted more than once or the possibility of something goes wrong during the calculation the votes, falsification of the election result, also the delays during collection the result.

This thesis aims to design and implementation electronic voting machine that avoid the mistake and give a better accuracy by eliminating the negative factor of human error and increased speed for tally computation, ensure the security, reliability and guarantee. This was accomplished by using electronic components such as microcontroller, push-button and relays. First the system has been simulated using protues and then designed and implemented. The simulation and practical results showed the good performance of the voting system.

المستخلص

التصويت هو عملية جمع أراء الناس في قضية معينة، وهو عملية حرجة جداً لا تقبل نسبة الخطأ، ونجد أن عملية التصويت بالطرق التقليدية تتعرض للكثير من الأخطاء كأن يقوم شخص ما بالتصويت أكثر من مرة أو أن يحدث تأخير عند جمع نتائج التصويت عند جمع الأصوات وكذلك يمكن أن تتعرض النتائج للتزوير.

يهدف هذا البحث إلى تصميم وتنفيذ جهاز تصويت الكتروني يقوم بتفادي الأخطاء التي يمكن ان يقع فيها الإنسان أثناء جمع الأصوات كما يضمن سرية وموثوقية التصويت. تم تنفيذ ذلك باستخدام أجهزة إلكترونية مثل المتحكم الدقيق والمرحلات ومفاتيح الضغط. كما تم أولا استخدام برنامج المحاكاة Protues من أجل محاكاة النظام، ثم صمم ونفذ. وقد أظهرت نتائج المحاكاة والعملي أداء جيد لنظام التصويت.

TABLE OF CONTENTS

Contact	Page	
الآيـــــــة	i	
DEDICATION	ii	
ACKNOWLEDGEMENT	iii	
ABSTRACT	iv	
المستخلص	V	
TABLE OF CONTENTS	vi	
LIST OF FIGURES	ix	
LIST OF TABLES	xi	
CHAPTER ONE		
INTRODUCTION		
1.1 General concepts	1	
1.2 Problem Statement	1	
1.3 Objectives	1	
1.4 Methodology	2	
1.5 Thesis Layout	2	
CHAPTER TWO		
THEROETICAL BACKGROUND AND LITRETURE REVIEW		
2.1 Voting Technologies	3	
2.1.1 Paper ballot	3	

2.1.2 Mechanical lever voting	3		
2.1.3 Punch card	4		
2.1.4 Mark sense	5		
2.1.5 Direct recording electronic	5		
2.2 Microcontroller	5		
2.2.1 Architecture of microcontroller	6		
2.2.2 Components of microcontroller	7		
2.2.3 Appliances of microcontroller	9		
2.2.4 Advantage of microcontroller	10		
2.2.5 Disdvantage of microcontroller	11		
2.3 Arduino	11		
2.3.1 Definition of Arduino	12		
2.3.2 Types of Arduino	12		
2.3.3 Advantage of Arduino	14		
2.3.4 Disadvantage of Arduino	15		
CHAPTER THREE			
SYSTEM HARDWARE AND SOFTWARE CONSIDERATIONS			
3.1 Introduction	16		
3.2 System Hardware Consideration	16		
3.2.1 Arduino Uno	17		

3.2.2 LCD display	20	
3.2.3 Relay	23	
3.3 System Software Consideration	25	
3.3.1 System code	25	
3.3.2 System simulation	29	
CHAPTER FOUR		
SYSTEM IMPLEMENTAION AND TESTING		
4.1 System Implementation	33	
4.2 System Testing	35	
CHAPTER FIVE		
CONCLUSION AND RECOMMENDATIO	NS	
5.1 Conclusion	39	
5.2 Recommendations	39	
5.3 REFERENCES	40	

LIST OF FIGURES

Figure	Title	page No
2.1	Mechanical lever machines	4
2.2	Punch card ballot	4
2.3	DRE machine	5
2.4	Microcontroller architecture	7
2.5	Basic layout of a microcontroller	8
3.1	Block diagram of the system	16
3.2	Arduino Uno	17
3.3	LCD layer diagram	21
3.4	16x2 LCD	22
3.5	Voting circle for one person	29
3.6	Connect the LCD with Arduino	30
3.7	Install code in the arduino	30
3.8	Schematic diagram of the system	31
3.9	System wait voting	31
3.10	Tested the simulation	32
4.1	voting circuits	33
4.2	Voting circuits with ARDUINO	34
4.3	Connecting of LCD	34
4.4	Installing power supply	35
4.5	Circuit with power supply	35

4.6	Choice entering	36
4.7	No voting case	36
4.8	Different voting (1 yes and 1 no)	37
4.9	Similar voting (3 yes)	37
4.10	Different voting (2 yes and 1 no)	38

LIST OF TABLES

Table	Title	Page No
2.1	Features of each Arduino type	14
2.2	Specification of Arduino Uno R3	18
2.3	LCD pins description	22