PC BASED ELECTRICAL DRIVE SWITCHING CONTRLLER

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I would like to dedicate this project to my family, lecturer and all my friends.

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ABSTRACT

The objective of this project is to build one system that can recognize human voice and then activate the electrical appliances at home. This system called PC Based Electrical Drive Switching Controller; it is software designed using Visual Basic 6.0. The System is designed to help people with disabilities to do their works at home. Two main parts in this system is voice train process and voice recognition process. Main objective of this project are design a Graphical User Interface (GUI) and source code that can active the command button. In other word, user can active the command button by using personal computer. Then, systems send the data to hardware that has been connected to home electrical appliances through parallel port connector. Otherwise, connection from PC's to household electrical appliances used parallel port (DB25) and the interface circuit. Interface circuit functions as the main switch to controls the operation of the electrical appliances.

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ABSTRAK

Objektif utama bagi projek ini untuk membina satu sistem yang dapat mengecam suara dan mengaktifkan peralatan elektrik dirumah. Sistem ini dikenali sebagai ‘PC Based Electrical Drive Switching Controller, ianya menggunakan perisian Visual Basic 6.0. Sistem direka untuk membantu pengguna yang hilang upaya untuk membantu mereka semasa berada dirumah. Terdapat dua komponen utama yang terdapat dalam sistem iaitu grafik antaramuka pengguna dan litar pensuisan pengguna . Pengguna hanya perlu menekan butang arahan untuk mengaktifkan litar. Seterusnya, sistem ini akan menghantar data kepada perkakasan yang sedia tersambung kepada perkakasan elektrik melalui penyambung port selari. Selain itu, sambungan daripada peralatan elektrik hanya menngunakan penyambung port selari (DB25) dan disambung dengan litar antaramuka sebagai litar pengawal suis untuk keseluruhan operasi peralatan elektrik.

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LIST OF ABBREVIATION

A Graphical User Interface	(GUI)
Palo Alto Research Center	(PARC)
Object-oriented programming	(OOP)
Integrated Development Environment	(IDE)
Automated teller machines	(ATM)
Real time operating system	(RTOS)
Integrated Circuit	IC

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CHAPTER 1

INTRODUCTION

1.1 Introduction

PC Based Electrical Drive Switching Controller project is a project to produce one system that can control any electrical appliances in the house, factory or any assembly hall such as lamp, fan, radio, television, etc by using command button. Command button is an input to activate the electrical appliances through this system. From this control system user can manage their electrical appliances by using a personal computer to communicate with hardware.

PC Based Electrical Drive Switching Controller which is consist of combination two stages of software and hardware development where these two main part will be combine together so that it will work and function properly and related with each other. This chapter also will cover about the overview of this

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project, objectives, scope, project methodology. In the new millennium, technology has been assimilates into our whole life without we realized it.

1.2 Project Overview

This project is aims to control the electrical appliances using command button and Graphical User Interface (GUI) through the computer so that user can control electrical appliances easily their personal computer. This project is the renovation from the current system where the remote control has been used to manage their electrical appliances. Otherwise, by inventing this project it can help the disable people like weak and old folk which are not able to handle their own self can undergo their routine easier. For industrial application, workers can control the electrical appliances consumption and manage the operation in industrial field. Worker can decrease their human energy to control all electrical appliances in the factory or company.

For GUI interface there have some command button and indicator for display the status of electrical appliances condition. The user can click the command button to control the system. The indicator can display the present condition of system. When user click the command button, the indicator can show the green indicator for show this operation was initially on operation. So for the off this operation user only click at the same command button and the indicator can shows the red one. This system is very easy to install and this is very useful for application in any place, especially to control the electrical appliances. In the GUI interface, data send to the hardware by using parallel port as connection to data transfer to hardware circuit for trigger the relay and active the electrical appliances.

In the hardware circuit, there have some component for trigger the circuit and active electrical device. Diode use as protection for relay when any short circuit occurs so can damage the relay. This hardware circuit using 5V relay as switching for connect to electrical appliances. The electrical wiring in 240V used normally open relay and command relay for connection in electrical diagram.

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1.3 Objective

There are several objectives involved in this project. The objectives are:

1. The main objective, design a Graphical User Interface (GUI) and source code that can recognize command button and then activate the electrical home appliances. It makes the daily home work easier for people with disabilities to do their work.

2 Design and built the interfacing circuit and understand its functionality and make it connected to household electrical appliances and personal computer.

3. Produce and improve the security level of the system by increasing the percentage of accuracy to activate the appliances. Only the real or trained user and right command can activate the appliances.

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1.4 Problem Statement

In this part, statement of the problem and why the problems selected to be improved are explained below. The problems statements are:

1. Many systems today have used remote control to activate certain home electrical appliances, the appliances such as air-conditioner, television, radio, and so on. This method is difficult to a person who can't move or paralyzed.

2. Many human energy use for active and control the electric device in industrial field. Worker active and control electric device in manual method.

3. By inverting this project, hopefully it will make all people easy to manage their time and energy more effective and efficient. So that it can make human lifestyle become more simple and easier.

4. Wasting of electrical consumption by negligence of human attitude. The power of electric energy wasting by no one user used.

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1.5 Scope of Project

The scope of project that has been used to complete this project is explained as below:

1. Design a Graphical User Interface (GUI). The designed GUI will make the system or software more interactive and easy to use.

2. Design a connection between systems to hardware through parallel port. The system or software can transmit data to hardware and receive data from hardware. Without hardware the system can't be connected to electrical appliances.

3. Design a switching circuit for connect to electrical appliances and can function properly. The switching can received the data transfer from the software and trigger the switching for active the electric device.

4. The interface circuit is use switch circuit and parallel port to interfacing with the computer and the user.

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1.6 Methodology

In this report structure, the short explanation for each chapter in this report it will be discussed.

1. Chapter I. In this chapter, the topic discussed is about introduction for PC based electric drive switching controller, project objectives, problem statements for other project that has been analyzed, involved project scope, and project methodology that has been used to complete the project.

2. Chapter II. Literature review about project. All results from analysis of literature review discussed in this chapter. Analysis that has been conducted is analysis method, project theory explanation

3. Chapter III, chapter that involved project methodology explanation. The methods that has been used to complete the project overall. Contents of methodology is, project initial planning, searching of resource material, software construction process, and for the final part, project test, seminar, and report writing is involved.

4. Chapter IV. Discussion for produced results after the PC Based Electrical Drive Switching Controller completed. The results that will be discussed are software flow chart, Graphical User Interface (GUI) and programming.

5. Chapter V. Conclusion and suggestion to improve the project in the future. Summary for all results found after completed the whole project.

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