EMBEDDED PRAYER TIME SYSTEM USING GPS MODULE

by

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APPROVAL AND DECLARATION SHEET

This project report entitled Embedded Prayer Time System Using GPS Module was prepared and submitted by Che Muhammad Nor Bin Che Isa (Matrix Number: 031080570) and has been found satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the Bachelor of Engineering (Communication Engineering) in Universiti Malaysia Perlis (UniMAP).

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WAKTU SOLAT SISTEM TERBENAM MENGGUNAKAN MODUL PENGESAN KEDUDUKAN GLOBAL

ABSTRAK

Projek tahun akhir ini adalah mengenai pengiraan sistem waktu solat di dalam mikro-pengawal menggunakan data dari ruang angkasa yang diperolehi daripada satelit menggunakan Modul Penerimaan Pengesan Kedudukan Global. Sistem ini dapat mengenalpasti kedudukan latitut dan longitud bumi. Untuk projek ini, satu set lengkap papan mikro-pengawal DS89C450 dibina. Mikro-pengawal berfungsi untuk mengira lima waktu solat iaitu Subuh, Zohor, Asar, Maghrib dan Isyak. Pengiraan waktu solat dibuat menggunakan bahasa Pengaturcaraan C. Kemudian ia dibenam ke dalam mikro-pengawal DS89C450. Papan mikro-pengawal akan disambung pada Modul Penerima Pengesan Kedudukan Global untuk mendapat maklumat kedudukan latitut dan longitud sebagai data masukan. Selepas itu, pegiraan waktu solat dilakukan oleh mikro-pengawal dan keputusan waktu solat akan dipaparkan pada Paparan Cecair Kristal. Matlamat projek ini adalah untuk memastikan waktu solat akan terpapar pada Paparan Cecair Kristal dan ia berlaku secara automatik tanpa perlu meletakkan kedudukan latitut dan longitud secara manual kepada mikro-pengawal.

ABSTRACT

This final year project is about to calculate of prayer time system in microcontroller using the spatial data retrieve from satellite via Global Positioning System (GPS) receiver module. This system is able to determine the position of latitude and longitude of the earth. For this project, a complete set of DS89C450 microcontroller board is developed. The microcontroller work to calculate the five prayer time Fajr, Zuhr, Asr, Maghrib and Isha. The calculation is performed using C language programming. Then it is need to embed into the DS89C450 microcontroller. The microcontroller board will be connected to the GPS Receiver Module to get the latitude and longitude as the input data. Then the microcontroller calculates the prayer time and the result will be displayed through Liquid Crystal Display (LCD). The aim of this project is to make sure the prayer time will be displayed via Liquid Crystal Display and it will occur automatically without any manually load position into the microcontroller.

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LIST OF ABBREVIATIONS

No.	Abbreviations	
1	GPS	Global Positioning System
2	LCD	Liquid Crystal Display
3	CPU	Control Processing Unit
4	RTC	Real Time Clock
5	PC	Personal Computer
6	PCB	Printed Circuit Board
7	I/O	Input / Output
8	ALU	Arithmetic Logic Unit
9	Acc	Accumulator
10	SP	Stack Pointer
11	PSW	Program Status Word
12	PC	Program Counter
13	DPTR	Data Pointer Register
14	LED	Light-emitting Diode
15	H/L	High/Low
16	NMEA	National Marine Electronics Association