LAB MARKS AUTOMATION SYSTEM

by

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Report submitted in partial fulfillment
of the requirements for the degree
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APPROVAL AND DECLARATION SHEET

This project report titled Lab Marks Automation System was prepared and submitted by Chuah Lee Kien (Matrix Number: 031020572) has been found satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the Bachelor of Engineering (Computer Engineering) in University Malaysia Perlis (UniMAP).

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SISTEM AUTOMATIK MARKAH MAKMAL

ABSTRAK

Sistem Automatik Markah Makmal menpunyai satu alatan yang dikenali sebagai WiDSTAC (Wireless Data Storage and Acquisition) yang diguna oleh pensyarah atau pembantu makmal untuk memasukan markah dan melihat kembali markah yang telah disimpan ke dalam sistem. Sistem ini guna penghantaran tanpa wayar. Perkakasan yang diguna ialah LCD, papan kekunci, modul RF, pengawal mikro 8051, MAX 232, TIP 31C, transistor BC547 dan kuasa regulator. Bahagian perisiaan mengguna bahasa penghimpuan pengawal mikro 8051, Microsoft Access dan Visual Basic untuk membuat antaramuka bagi papar markah makmal. Microsoft Access digunakan untuk menyimpan data dan ia diguna sebagai pangkalan data. Sistem ini berfungsi dalam dua hala-separa dimana hanya satu penghantaran dibuat pada satu masa. Dalam menu WiDSTAC, terdapat 2 fungsi yang boleh dipilih oleh pengguna, samaada fungsi ‘Add’ atau fungsi ‘Find’. Fungsi ‘Add’ digunakan untuk memasukan markah ke sistem. Fungsi ‘Find’ digunakan untuk memaparkan markah yang telah simpan. Statistic markah bagi jumlah pelajar, markah tertinggi, markah terendah and graf (Markah berbanding Numbor Meja) bagi satu kumpulan pelajar dalam makmal akan dipaparkan dalam aplikasi Visual Basic. Sistem ini telah berjaya dibina seperti mane yang dinyatakan diatas.

LAB MARKS AUTOMATION SYSTEM

ABSTRACT

Lab Marks Automation System is a system where have one device name as WiDSTAC (Wireless Data Storage and Acquisition) that is used by lecturers or lab tutor to key in student's mark and also can view back the mark that been saved inside the system. The system is using wireless connection. For hardware part, it uses LCD, Keypad, RF module, microcontroller 8051, MAX 232, TIP 31C, transistor BC547 and power regulator. In software part, it is using programming 8051, Microsoft Access and Visual Basic use to make interface program to display the lab marks result. Microsoft Access used to save the data and keep it as database. This system work in half duplex transmission where just one transmission in a moment. In the menu of WiDSTAC there is 2 function that user can choose either 'Add' function or 'Find' function. 'Add' function is to key in student marks to system. 'Find' function is to call the exited marks to display it. Mark statistic for total students, lower mark, higher mark and graph (Mark Versus Table Number) in one group of lab will display in Visual Basic's application. This system is successfully works as mention like above.

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LIST OF SYMBOLS, ABBREVIATIONS OR NOMENCLATURE

ADO	ActiveX Data Objects
ALE	Address Latch Enable
ASCII	American Standard Code for Information Interchange
BJT	Bipolar Junction Transistor
BPS	Bits Per Second
CPU	Computer Processing Unit
DAO	Data Access Objects
DCE	Data Communication Equipment
DTE	Data Terminal equipment
EA	External Access
E	Enable
GND	Ground
GUI	Graphical User Interface
I/O	Input/Output
ISP	In System Programming
Lab.	Laboratory
LCD	Liquid Crystal Display
MOSI	Master Out Slave In
MISO	Master in Slave Out
UniMAP	University Malaysia Perlis
PC	Personal Computer
PCB	Printed Circuit Board
PSEN	Program Store Enable
RAM	Random Access Memory

RDO	Remote Data Object
ROM	Read Only Memory
RF	Radio Frequency
RS	Register Select
RxD	Received Data
R/W	Read/Write
SCK	Serial Clock Output
TTL	Transistor-Transistor Logic
TxD	Transmitted Data
WiDSTAC	Wireless Data Storage and Acquisiton
V	Volt