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Microcontroller Based Library Books Location Searching System

Priyanka Mane¹, Minhaj Momin², Bhagyashri Mande³, Prof.S.M.Tondare⁴

B.E. Student, Department of E&TC Engineering, Sandipani Technical Campus, Latur, India¹

B.E. Student, Department of E&TC Engineering, Sandipani Technical Campus, Latur, India²

B.E. Student, Department of E&TC Engineering, Sandipani Technical Campus, Latur, India³

Associate Professor, Department of E&TC Engineering, Sandipani Technical Campus, Latur, India⁴

ABSTRACT: Automatic issue of book is requirement of any library management system. It may be very important function of issuing the book to student automatically. This project will help every student to find the books as per his/her branch and semester.

KEYWORDS: Microcontroller AT 89C52, LCD Display HD44580, 4X4 Matrix keypad, Push Button.

I. INTRODUCTION

In this project, we are using microcontroller 89C52 that we have programmed in such manner that one can or moreover a student can find the book available in the library. This project will help every student to find the books as per his/her branch and semester. For this purpose one has to use Keypad which is interfaced with microcontroller and the LCD display will help to display the location of the required books. This project aims at reducing human effort and saves time of the librarian also.

II. LITERATURE REVIEW

In [1], Umar Farooq has describes Automatic book placement and book searching technique for performance enhancement of existing library systems that the book placement mechanism issued to ensure the placement of book according to assigned code to facilitate manual searching. In [2], Veeramuthu Venkatesh has proposed Enactment of smart library management system ubiquitous computing that the Web services are intended for realizing, storing, processing and disseminate data from environmental resources. Context aware is concerned with reasoning and adapting the environmental context on the server side and providing services to the clients in an efficient way.

III. OBJECTIVE

- To find the location of the available books in library.
- Shows the Rack No. of desired book on LCD display.
- Reduces human efforts and saves time of the librarian.

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IV. BLOCK DIAGRAM

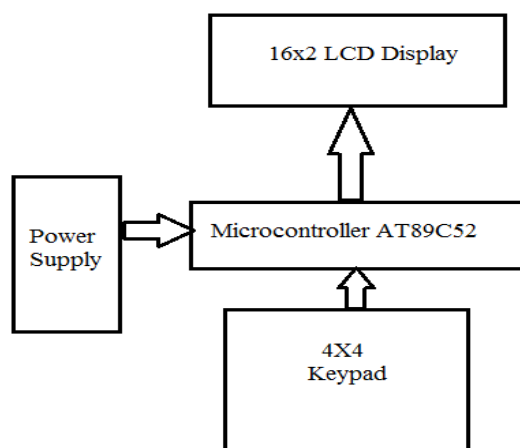


Figure 1: Block Diagram of Microcontroller Based Library Books Location Searching System.

- A. Microcontroller AT 89C52:** Basically a microcontroller is small computer on integrated circuit including one or more CPUs that is processor cores along with memory and programmable input/output peripherals. This low power, high performance CMOS 8-bit microcomputer has 8K Bytes of In-System reprogrammable Flash Memory with 32 programming I/O lines.
- B. LCD Display:** A Liquid Crystal Display (LCD) uses light modulating properties of liquids crystals and widely used in various applications including LCD television, computer monitors, calculators, mobile telephones including smart phones whereas 16x2 LCD is one of the most used display unit.
- C. 4X4 Matrix keypad:** This 4x4 Matrix Keypad is used to load the commands into the microcontroller containing total 16 buttons arranged in a form of array having four lines and four columns.
- D. Power Adaptor:** The power adaptor is a type of external power supply also named as chargers or rechargers here used to provide 5V to the microcontroller.

V. WORKING

Microcontroller is the brain of the library automation system this includes the complete logic program therefore it sends signals to LCD along with microcontroller interfaced keypad.

To interface the keypad to the microcontroller we need to connect 8 pins of it to the any of the port of the microcontroller however for LCD we here used the conventional 8 bit mode which uses 8 data lines and RS, R/W, E pins for proper functioning. The crystal is used to supply the clock frequency to microcontroller in often 11.0592MHz is used which can be divided to give clock rates for common baud rates.

The power supply that 5V is provided to the microcontroller through power adaptor. Thus, on getting the signals from interfaced keypad to the microcontroller, it shows the output status on LCD display.

VI. RESULTS

It was an opportunity for us to see how theory is put into practice. We learnt how some concepts of microcontroller were modified according to a particular industry or situation.



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VII. FUTURE WORK

In future the system can be implemented using RFID i.e. a new generation of auto identification which allows identification of large no. of tagged objects like books using radio waves. It can be also used in laboratories for tracking of equipments. In future the system can be implemented in multinational offices to keep the track in their files, often DVDs. With the help of available resources & few extra components, we can implement the 'BANK TOKEN SYSTEM' i.e. automatic increment of token numbers with display of calling number.



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BIOGRAHY

	Prof. S.M.Tondare is an assistant professor (Dean- Quality Assurance Cell) in Sandipani Technical Campus, Latur. He is an expert in DC and has more than 4 years of experience in these fields.
	Priyanka Mane is the final year student in the Electronics and telecommunication engineering of Sandipani Techial Campus, Latur. Currently she is doing her B.E. project "Microcontroller Based Library Books Location Searching System".





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	<p>Minhaj Momin is the final year student in the Electronics and telecommunication engineering of Sandipani Techial Campus, Latur. Currently she is doing her B.E. project "Microcontroller Based Library Books Location Searching System".</p>
	<p>Bhagyashri Mande is the final year student in the Electronics and telecommunication engineering of Sandipani Techial Campus, Latur. Currently she is doing her B.E. project "Microcontroller Based Library Books Location Searching System".</p>