A
PROJECT REPORT
ON

Scrolling Led Display Using Arduino

Submitted by

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Under the guidance of

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WALCHAND INSTITUTE OF TECHNOLOGY,
SOLAPUR
2018-2019

CERTIFICATE

This is to certify that Mini Project entitled

Scrolling led using display Arduino

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has been approved as the partial fulfillment for the award of Third year of Electronics and Telecommunication Engineering' by **Punyashlok Ahilyadevi Holkar Solapur University, Solapur** in the academic **year 2018-19**.

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Project Guide

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PRINCIPAL

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

WALCHAND INSTITUTE OF TECHNOLOGY, SOLAPUR
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ACKNOWLEDGEMENT

The project has certainly enlightened us with the modern era of Technologies and it has boosted our confidence. The project work has certainly rendered us tremendous learning as well as practical experience.

We are thankful to **Dr. S. A. Halkude**, Principal of W.I.T College, **Dr. R. R. Dube**, Head of Electronics & Telecommunication Engineering Department for granting permission to undertake this project.

We are very grateful to **Mr. P. A. Kamble** for their valuable guidance about hardware implementation and programming.

At last but not least we are thankful to staff of Electronics & Telecommunication Engineering Department W.I.T. Solapur.

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Abstract

The project is based on arduino domain. The idea implemented in this project reduces the total cost that is required in the traditional LED display boards not only it makes easier to send message to the LED display boards.

The project uses a Arduino UNO board at the display side with atmega 328 micro controller to send text to drive the dot matrix LED display board.

For this project a ,a prototype of 32x8 led matrix is capable of displaying a maximum of four characters at a time was constructed. Then scrolling the characters to show the remaining part of the message and repeating the same loop over and over again was achieved. The process can be interrupted by failure in power supply or when the reset button is being pressed and released.
The system can be easily expanded to handle more characters.

The control of this led dot matrix is based on a Arduino UNO. Programming of the project is done by using arduino software. This was done to ensure the project was compact and possible.

Introduction

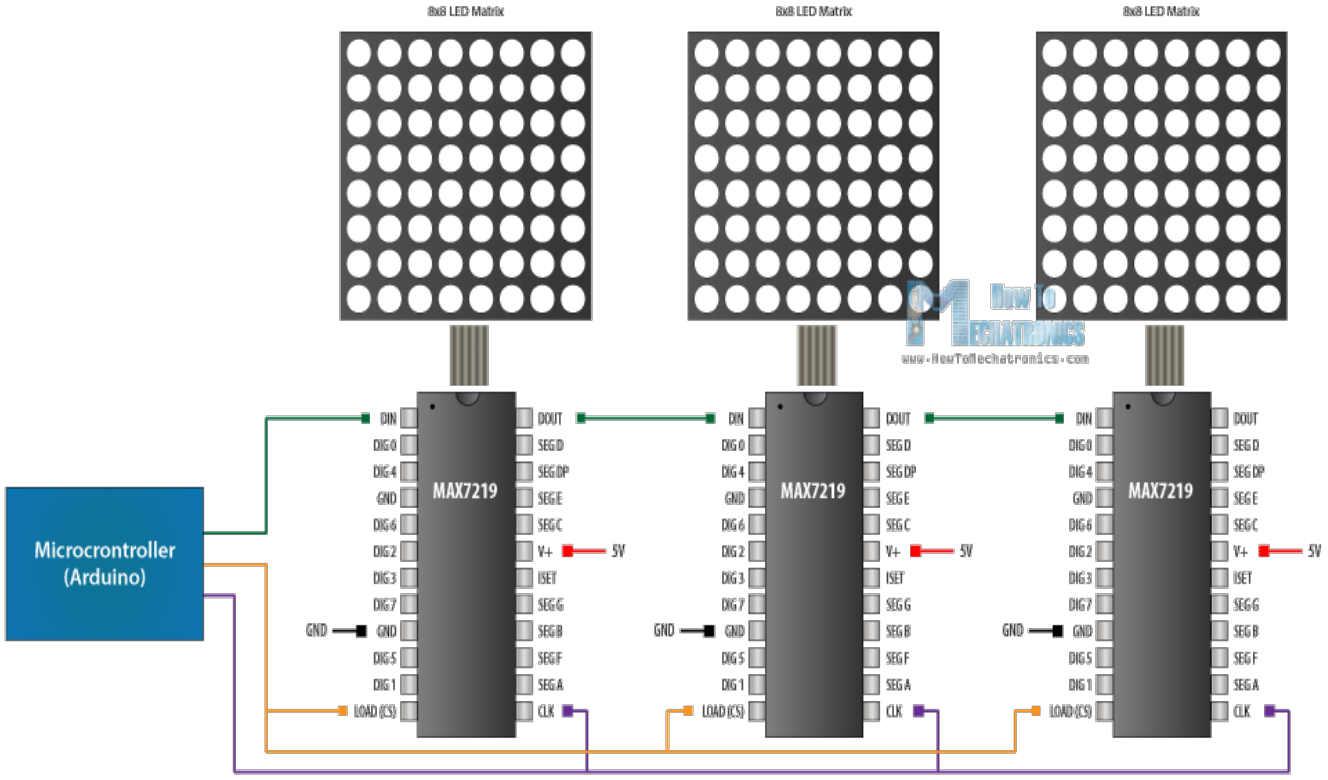
We are developing such a system which can be used to display a message using LED's.

Now-a-days LED Message Scrolling Displays are becoming very popular. These displays are used in shopping malls, theatres, public transportation, traffic signs, highways signs, etc...

A Arduino board is connected to the LED display hardware is used to receive the message and send it to the circuit of the LED display. By using this arduino sketch it is possible to change the text in the LED display board from anywhere in the country.

A dot matrix is a 2-dimensional patterned array, used to represent characters, symbols and image. Every type of modern technology uses dot matrices for display of information, including cell phones, televisions, and printers.

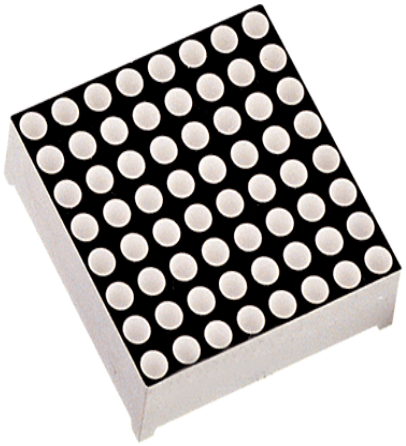
Chapter 1: Block Diagram



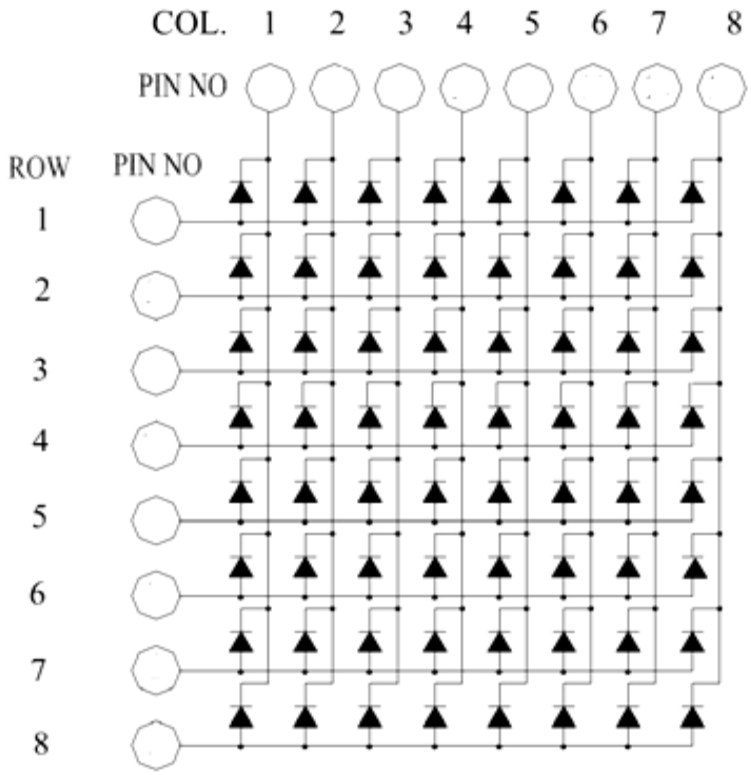
Components Required :

- Arduino Uno
- IC MAX 7219
- Dot Matrix (8x8)
- Battery (12v)
- Connectors

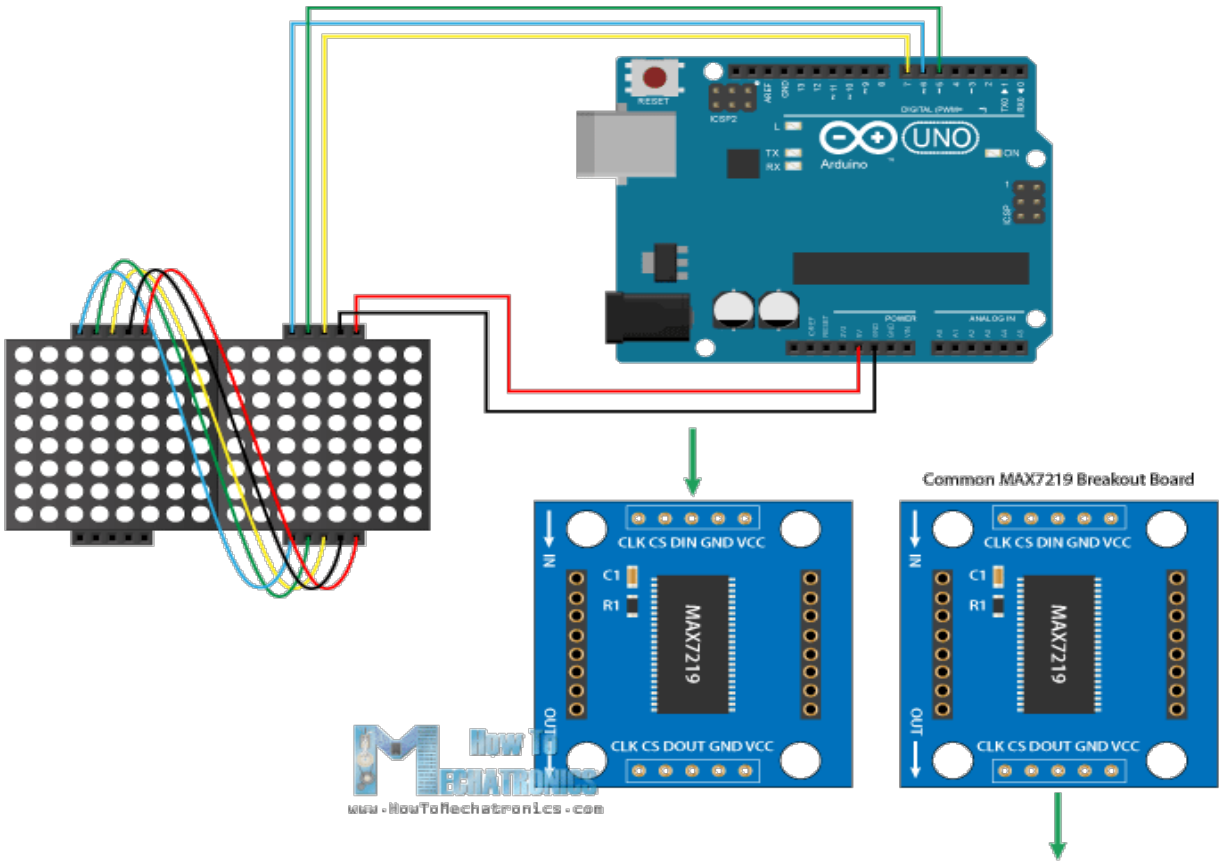
Theory of dot matrix display



The **internal structure of any LED DOT MATRIX MODULE** will be same and is shown below.



Chapter 2: Hardware Description



- The scrolling display using arduino Kit requires 12v 1A power supply. When we give the power supply circuit is ready to use. The connectivity from Arduino Section is given to dot matrix through the IC MAX7219.

- 3 of the 14 available digital input / output pins are used to control the display driver IC MAX 7219. The pins on the MAX7219 IC are clock, data in and cs of MAX 7219 IC.

- A maximum clock frequency of 10MHz can be applied. DIN (Data in) accepts the serial data from the Arduino board. It is 16 bit long where the first 8 bits (D0 – D7) are for driving the columns (SEG A-G and DP of the MAX 7219 IC) of the LED matrix and the next 8 bits (D8 – D15) are for driving the (DIG 0-7 of the MAX 7219 IC) rows of the LED matrix.

Conclusion

This model can be used very efficiently in establishments like chain restaurants wherein the order and special discounts can be displayed at all branches simultaneously, in colleges wherein students and staffs can be informed simultaneously in no time.

It can be set up at public transport places like railways, bus station, and airport and also at roadside for traffic control and in emergency situations, it is cost efficient system and very easy to handle. Latency involved in using of papers in displaying of notices is avoided and the information can be updated by the authorized persons.

Future Scope

A GSM mobile phone is used instead of carrying keyboard or a host computer for generating or sending messages to LED display board.

Refernces

https://howtomechatronics.com/tutorials/arduino/8x8-led-matrix-max7219-tutorial-scrolling-text- android-control-via-bluetooth/