

## ADVANCED LIBRARY MANAGEMENT SYSTEM USING SMATRTR CARD

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**ABSTRACT:** *In this project library management system using smart card is implemented. In this entire project RFID plays very important role. Whenever RFID reader reads the information of student, then automatically, it will display the information of the student in the corresponding department automatically, And shows the availability of books in each Rack. Hence this project gives effective outcome.*

**Keywords:** *Arduino,RFID,Buzzer,16\*2LCD Display.*

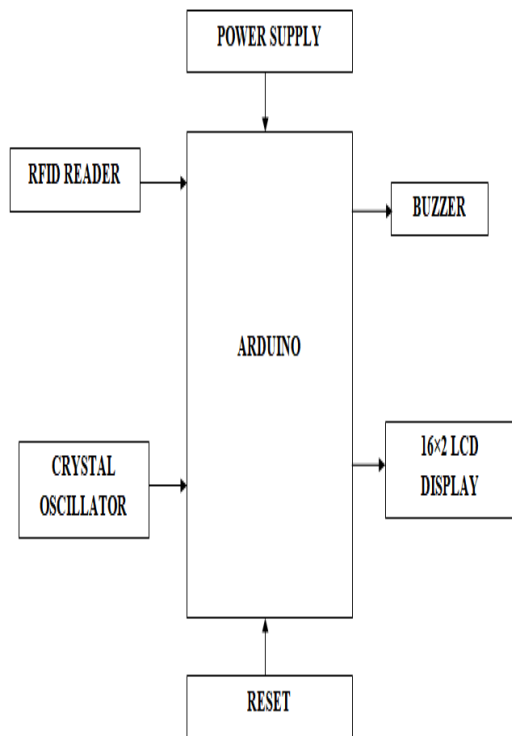
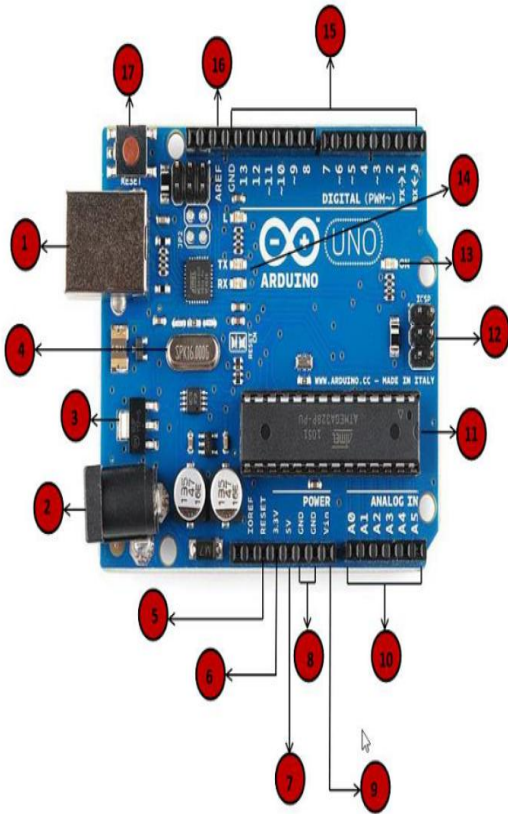
### INTRODUCTION:

The Library management system is a very important issue in schools, colleges and public libraries in villages and towns. Compared to the olden days, the utilization of libraries and books became less due to the development in the field of electronics and computers. Libraries are still successful due to there is a special significance to libraries from the book lovers and people who passionate about reading books. The main consideration in libraries is the database maintenance about users and also books. So, the modern library management systems involved with computer systems to maintain the database

and various technologies for extracting the information about users and books

The basic concept for RFID technology in a library is to embed RFID tags within the books that can retrieve the data by using an automatic identification method. For decades, the barcodes and Electromagnetic (EM) strips were and continue to be used for book detection and identification. A major advantage of RFID over barcodes and EM strips are that they do not require a continuous line of sight. A continuous line of sight is defined as the reading of data from start to end from any machine readable object using a scanner without any interruption.

### PROPOSED SYSTEM:



**WORKING**

The lock diagram of proposed system. In this entire project RFID plays very important role. Whenever RFID

reader reads the information of student, then automatically, it will save the information of the student in the corresponding department automatically and saves how many books are taken. The entire project is divided into three departments. The three departments are named as ECE, CSE and S&H departments. LCD display is used for the purpose of our convenience

**HARDWARE REQUIREMENTS:**

**ARDUINO:**

- The Arduino Uno is a microcontroller board based on the ATmega328.
- It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog
- inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header, and reset button.

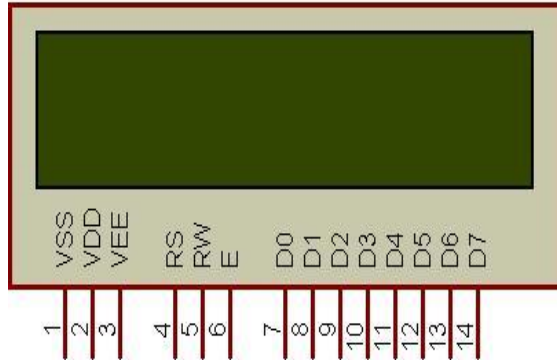
**POWER SUPPLY:**

- Transformer :12V step down
- Filter :1000uf/25V
- Voltage Regulator :7805

**LCD DISPLAY**

LCD (Liquid Crystal Display) screen is an electronic display module and find a wide range of applications. A liquid-crystal display (LCD) is a Flat-panel display or other electronically modulated optical device.that uses the light-modulating properties of liquid crystals. Since LCD panels produce no light of their own, they require external light to produce a visible image. 16x2 LCD module is one of the

most common devices on the market. The liquid crystal display has been replacing many other displays like 7 segment and others. This is because of the multiple benefits of LCDs



**RFID READER:**

Radio frequency identification reader (RFID reader) is a device used to gather information from an RFID tag, which is used to track individual objects. Radio waves are used to transfer data from the tag to a reader. The RFID tag it must be within the range of an RFID reader, which ranges from 3 to 300 feet.



**BUZZER:**

A buzzer or beeper is an audio signalling device, which may be mechanical, electromechanical or piezoelectric. Typical uses of buzzers and beepers include alarm devices, timers.

Early devices were based on an electromechanical system identical to an electric bell without the metal gong.



**BUZZER**

**RESET:**

- Reset button restart the Arduino.
- It means that the program memory ROM set to the starting position or address.
- Your code starts from the beginning and hardware resets.

➤ **SOFTWARE DESIGN:**

➤ **ARDUINO IDE-SOFTWARE :**

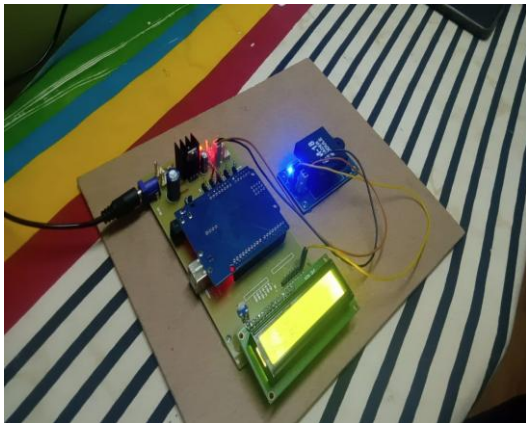
- Node MCU flasher is a firmware programmer for Node MCU DEVKIT V0.9. You can use it to program Node MCU DEVKIT or your own ESP8266 board. You MUST set GPIO0 to LOW before programming, and Node MCU DEVKIT V0.9 will do it automatically.

➤ **Arduino Software:**

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing and other open-source software. This software can be used with any Arduino board.

## ➤ RESULT:

Here we are shown the “Advanced Library Management System Using Smart Card” project was successfully implemented. Whenever the person need to take book from the library need to place smart card on the reader and need to enter the details of the book. So that book will added into our account and that data will be stored into the smart card. While returning the smart card again need to place the card on the reader and need to enter which book returning that was successfully implemented in our project.



## CONCLUSION

➤ By using this project the capability of making our personal lives and our work lives in the library more convenient. Libraries should not yet implement smart card systems. Libraries that choose to implement smart card technologies in advance of policy safeguards being put in place should take extra precautions to follow evolving best practices guidelines. Libraries should continue to protect privacy by ensuring that they are not seen as proponents of smart card before it can be safely deployed.

## Future Scope

The different areas where we can use this application are:

Any education institute can make use of it for providing information about author, content of the available books.

It can be used in offices and modifications can be easily done according to requirements.

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