B.TECH. (CSE)
IV SEMESTER

UE21CS251B – MICROPROCESSOR AND COMPUTER ARCHITECTURE LABORATORY

PROJECT

SYNOPSIS

ON

<RFID Based Attendance System>

SUBMITTED BY

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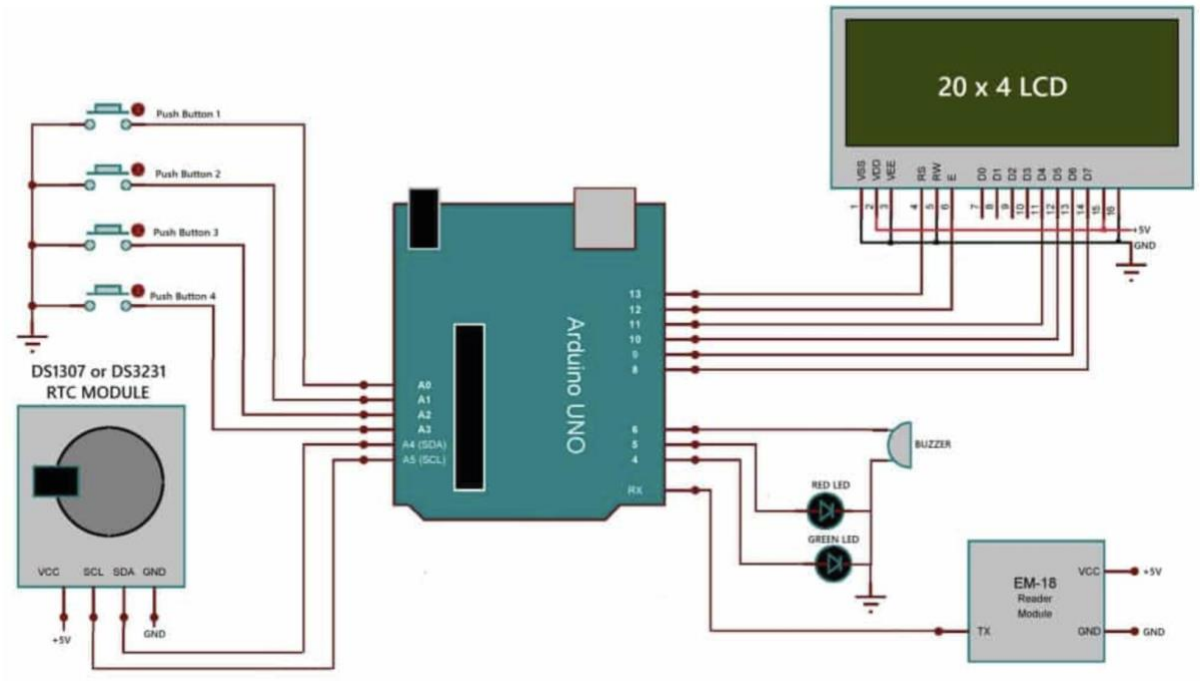
ABSTRACT OF THE PROJECT:

This project aims to design and implement an RFID-based attendance system using Arduino. The system uses RFID tags to identify and track students' attendance in real-time, eliminating the need for manual attendance taking.

The system consists of an Arduino microcontroller, EM-18 RFID reader, a LCD display, and a database to store and manage attendance records. When a student swipes their RFID tag, the reader sends the information to the Arduino, which updates the attendance record in the database and displays it on the LCD screen.

The project provides an efficient and accurate method of taking attendance, reducing the workload on teachers and providing timely and accurate attendance reports. It is extensively used in offices where employees are issued an RFID card and their attendance is marked when they touch their card to the RFID reader. RFID Technology is a new emerging technology. The system is cost-effective, easy to use, and has the potential to be scaled up to accommodate larger student populations.

CIRCUIT DIAGRAM:



WORKING OF PROJECT

Functioning Principle of RFID Device:

RFID is a wireless technology that uses radio waves to identify and track objects or people. It consists of a reader and a tag, which contains a microchip and an antenna. The reader emits a signal, and when the tag receives it, it generates a response with a unique identification number. The reader decodes the response and sends it to a computer system for identification and tracking purposes.

In this project, we have designed an **RFID based attendance system using Arduino**.

We set up the RFID based attendance system which includes an Arduino microcontroller, an RFID reader, an LCD display, and a database to store the attendance records. A unique RFID tag is assigned to each person which is registered in the database, and it is used to identify them when they swipe their tag. The RFID reader is connected to the Arduino using its digital input pins, and the LCD display is connected to the Arduino using its analog input pins.

When a person with the correct RFID card comes & swipes his RFID card, his arrival time will be stored on the system using the EEPROM command. A "Welcome" message is displayed on the LCD. When the same person swipes his RFID card for the second time, the system will save it as his leaving time displaying "See You".

The interval between first card swap and second card swap is the total working hours that are stored as data.

We will provide a menu to View attendance which shows whether a person is present or not along with their total working hours.

View all displays the total number of people and the number of people present.

Clear is an access given only to the admin where he can delete the previous attendance data and reset the system.

the RFID-based attendance system using Arduino provides an efficient and accurate method of taking attendance.