BANGALORE INSTITUTE OF TECHNOLOGY
K.R.Road, V.V. Pura, Bengaluru
DEPARTMENT OF M.C.A

IoT Project Synopsis

Subject Name: Mini Project with IoT Subject Code: 20MCA37

1. **Title of the Project: RFID door lock control access System with Arduino**
2. **Introduction**: (should not exceed 3 pages)

   Radio Frequency Identification (RFID) utilises electromagnetic fields to automatically identify and track various objects. Most RFID systems include a microchip with an antenna (tag), a reader with an antenna and an access control server.

   An RFID system cross-references the data stored on the tag with its own database. If it matches, the access is then granted.

   An RFID access control system is a type of key card or fob system that uses RFID technology to verify a resident's credentials.

   RFID stands for Radio Frequency Identification. At its core, RFID enables wireless communication between a reader and an RFID tag.

   When RFID was invented in the 70s, RFID tags were costly and bulky. However, advances in technology mean today's RFID tags are tiny and inexpensive. Many industries have found countless uses for RFID technology, from shipping to library cataloging and now access control.

   RFID technology, as applied to access control, is found across a variety of buildings. RFID access systems are used in residential apartments and industrial facilities, and commercial RFID door lock systems for office complexes are popular as well.

3. **Objective**:

   The main objective of **RFID door lock control access System**

   - **Easier and Faster Access:**

     A long-range RFID-based electronic ID badge allows an authorised member of staff to access secured areas within the premises without the need to use their hands to present the card to a reader, enabling them to enter the premises with ease.

   - **Increased security:**

     RFID-based access control systems contribute to improved security of business premises. Businesses don't need to worry about unauthorised people entering their building. Each card is connected to an individual's identifying information, so if the card got stolen, it would be easy to pinpoint the intruder using the stolen card.

4. Software/Hardware requirements

a) Arduino Uno R3 board:

b) 16×2 LCD I2C Display:

c) RFID module:

d) Servo motor:

e) Door lock:

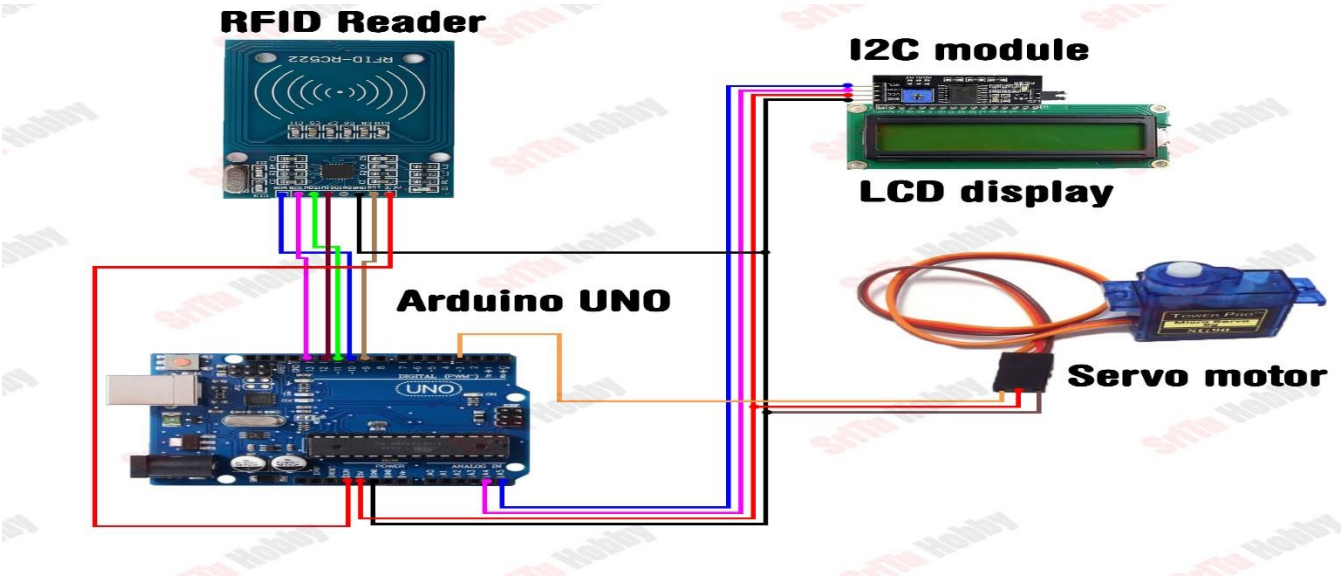
f) Foamboard:

g) Iron stick:

h) Jumper Wires:

i) Arduino IDE:

CIRCUIT DIAGRAM:



5. **Conclusion:**

   Ultimately by using RFID access control System we can provide user Wireless door locking system which can be accesed by usage of tags, readers, and computer servers to allow door access to registered residents who present the correct credentials. This system works similarly to NFC-enabled devices. However, the biggest difference is that RFID works with devices farther in range.

6. **Students Name:**

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