AUTOMATED DOOR LOCKING SYSTEM

Abstract

► The percentage of theft in homes is increasing rapidly nowadays. People are in a situation to eradicate this problem.

► We present Automated Door Locking System (ADLS), the mechanism of providing safety to the door by making it open and close automatically.

► We validate our approach to a small door. Our experiment show 100% precision on security purpose.

► The implementation is done using **Arduino Uno** board along with **Sensors** and **Servo motor**.

► The communication between Arduino Uno board and user is done by an Android Application in connection with Bluetooth Module

Working Principle

- The Module is designed in such a way to work in an automatic fashion to open and close door respectively.

- Each door has different locking patterns.

- We have integrated to make communication between Arduino Uno board (connected to a Bluetooth sensor),door lock (connected via Servo Motor) and a magnetic sensor(connected to Ethernet).

- This mechanism can be achieved through an Android Application.

- Initially, the door has to be locked.

- Then, the Application is connected to Bluetooth.

- After the door is unlocked, it is pushed to make it open. As the magnetic sensor is placed on the door, it automatically sends an alert mail to the owner.

- For the above mechanism, we have made bridging between Arduino Board with Ethernet Connection.

Modules Used

- ARDUINO UNO BOARD
- BLUETOOTH SENSOR (hc-05)
- LOCK WITH BOLT
- SMALL WOODEN DOOR
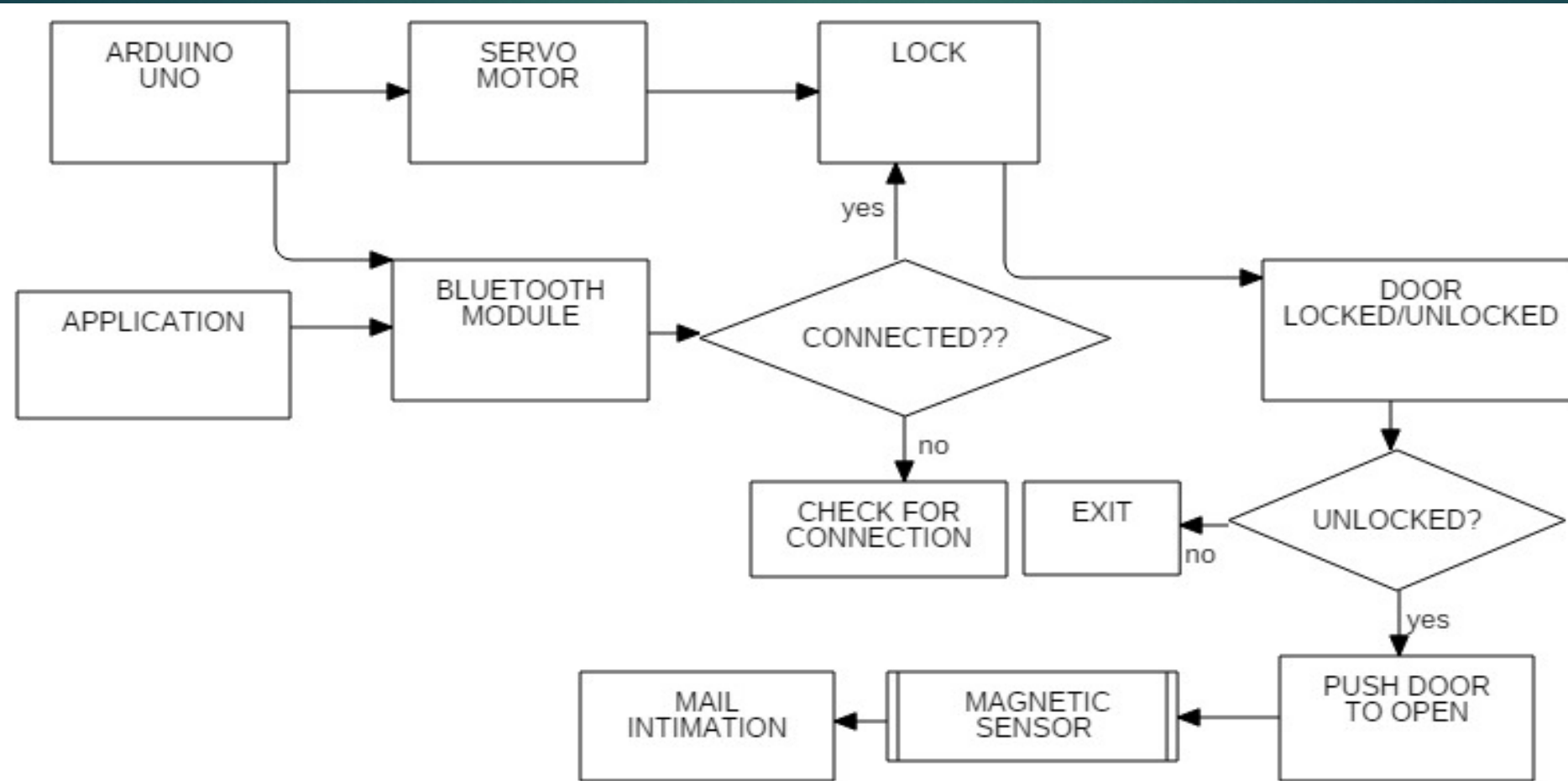- SERVO MOTOR
- MAGNETIC SENSOR

Merits and Demerits

MERITS:

▶ It can be more secure that we can access the Bluetooth by having a separate password

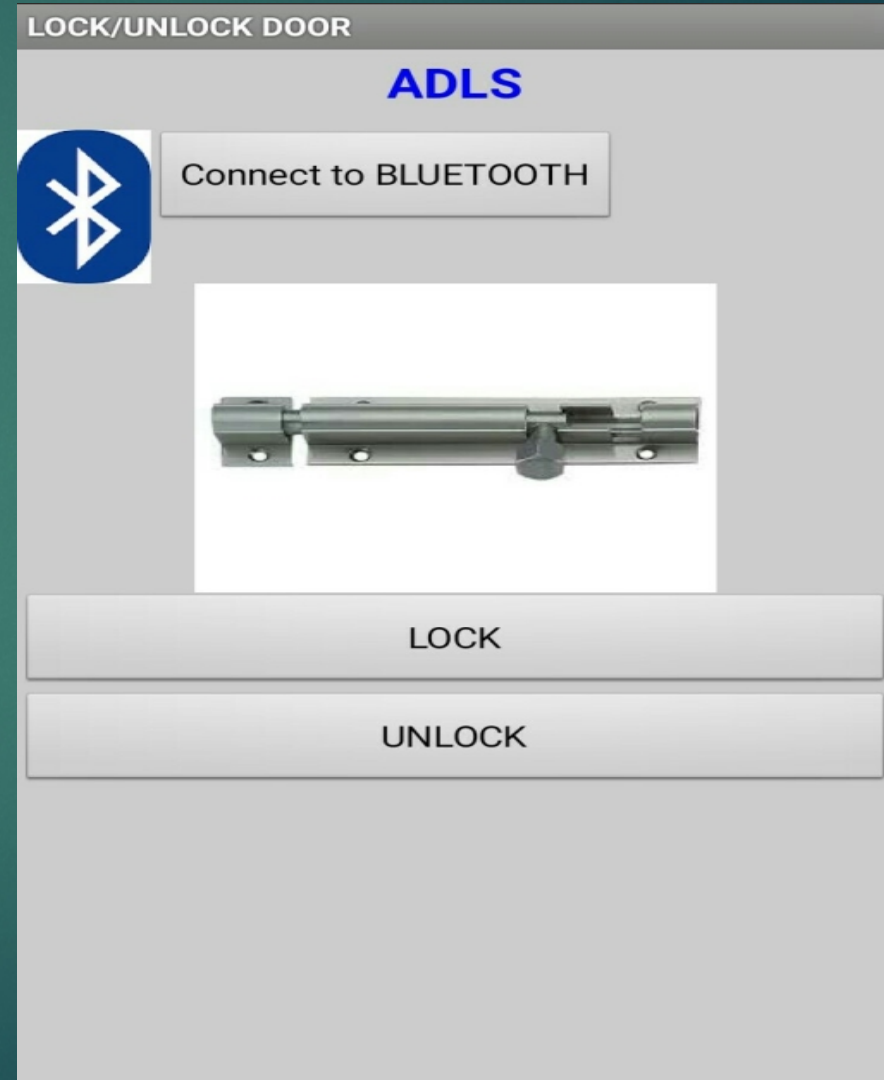▶ It can be further updated by using a Wi-Fi module

DEMERITS:

▶ ADLS can be accessed within a range of 10 meters

▶ Continuous power supply required

▶ Locking System cannot be activated when phone is switched off/lost

Flowchart

Android Application

▶ We created ADLS application using MIT App Inventor

Future Enhancement

- To implement this project using a Wi-Fi module
- To create an Android Application for ADLS
- To make ADLS, a global product to make it useful for Banking Sectors, Home Security and so on..

THANK YOU