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Fingerprint Cabinet Lock

Authors: Jinghan Zhang, Zheliang Zhang, Danny Wu, Benjamin Vu

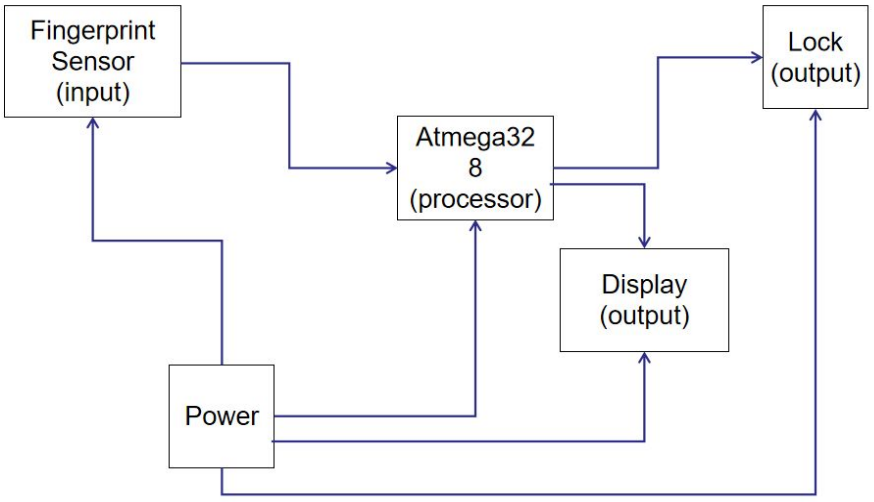
(1) Executive Summary / Concept of Operations

The device is a cabinet lock that is gated by a fingerprint scanner. This device may be used in order to lock out certain areas/safes from unauthorized individuals and thus increasing security. It will be simple to use allowing anyone to use it for personnel use or for businesses. Before the device is used, fingerprints need to be entered. The device will store the entered fingerprint information inside the device. When using the device, the fingerprint scanner will scan the visitor's fingerprints and compare the scanned information with the previously entered information. For comparison, if the information matches, the cabinet lock will be controlled to open otherwise remain locked.

(2) Requirements

- Must be able to save users fingerprint(s)
- Must unlock when fingerprint matches
- Should have a display informing the user whether the door is locked or not.
- Should be able to save fingerprint and use system within 10 minutes
- Powered by grid/outlet or rechargeable LIPO battery
- Should achieve 98% uptime when deployed
- Should be dust tight, able to resist splashing, able to withstand shock as well as vibration
- Should be easy to install on any cabinet/drawer
- Should be simple to operate

(3) System Architecture



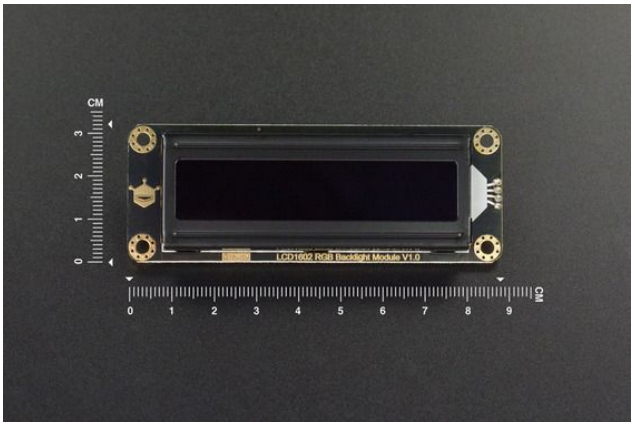
(4) Design Specification

1. **Sensor :** Fingerprint Sensor with 5 Fingerprint Projects (Link)
2. **Processor :** ATMEGA328P-PN **(**Link)
3. **Actuators :** Gravity: I2C 16x2 Arduino LCD with RGB Font Display (Link), Solenoid lock (Link)
4. **Power :** AC outlet, Battery, or USB power
5. **Development environment:** Arduino IDE

(5)

Sensor

Display



Lock