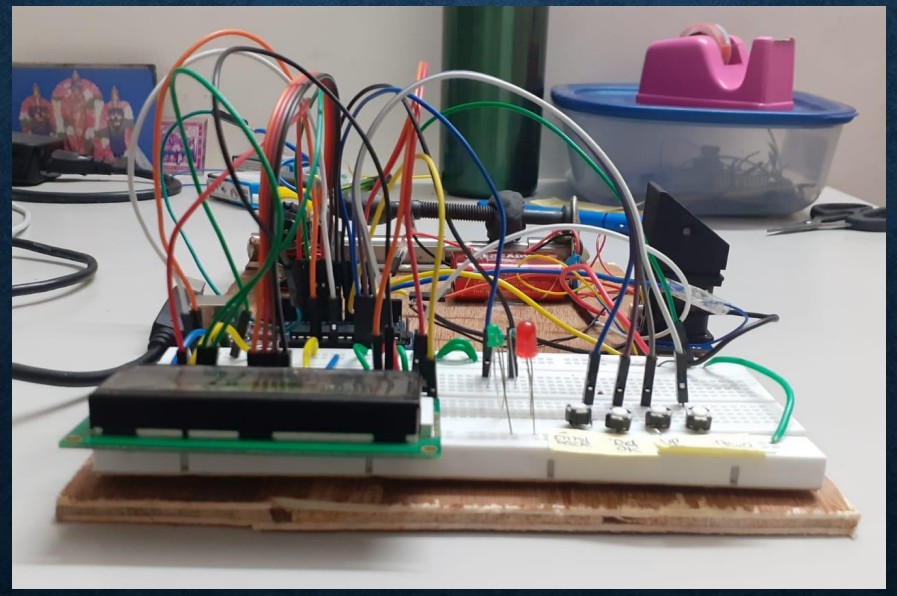
ID INTEGRATED SECURITY SOLUTION

KEY TO A MORE SECURE FUTURE



AIM OF THE PROJECT

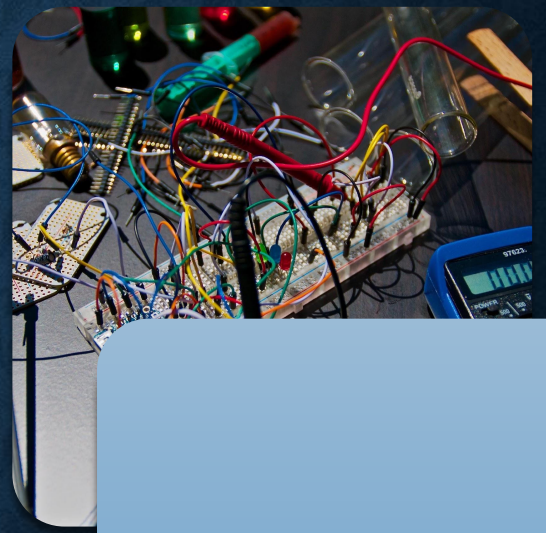
Security is a major concern in our day to day life, and digital locks have become an important part of these security systems.

The aim of the project is to develop a generic solution to replace lock and key based systems and to potentially create a network of interconnected security devices to provide for a modern synergized security ecosystem.

HOW IT WORKS :

FINGERPRINT SCANNED

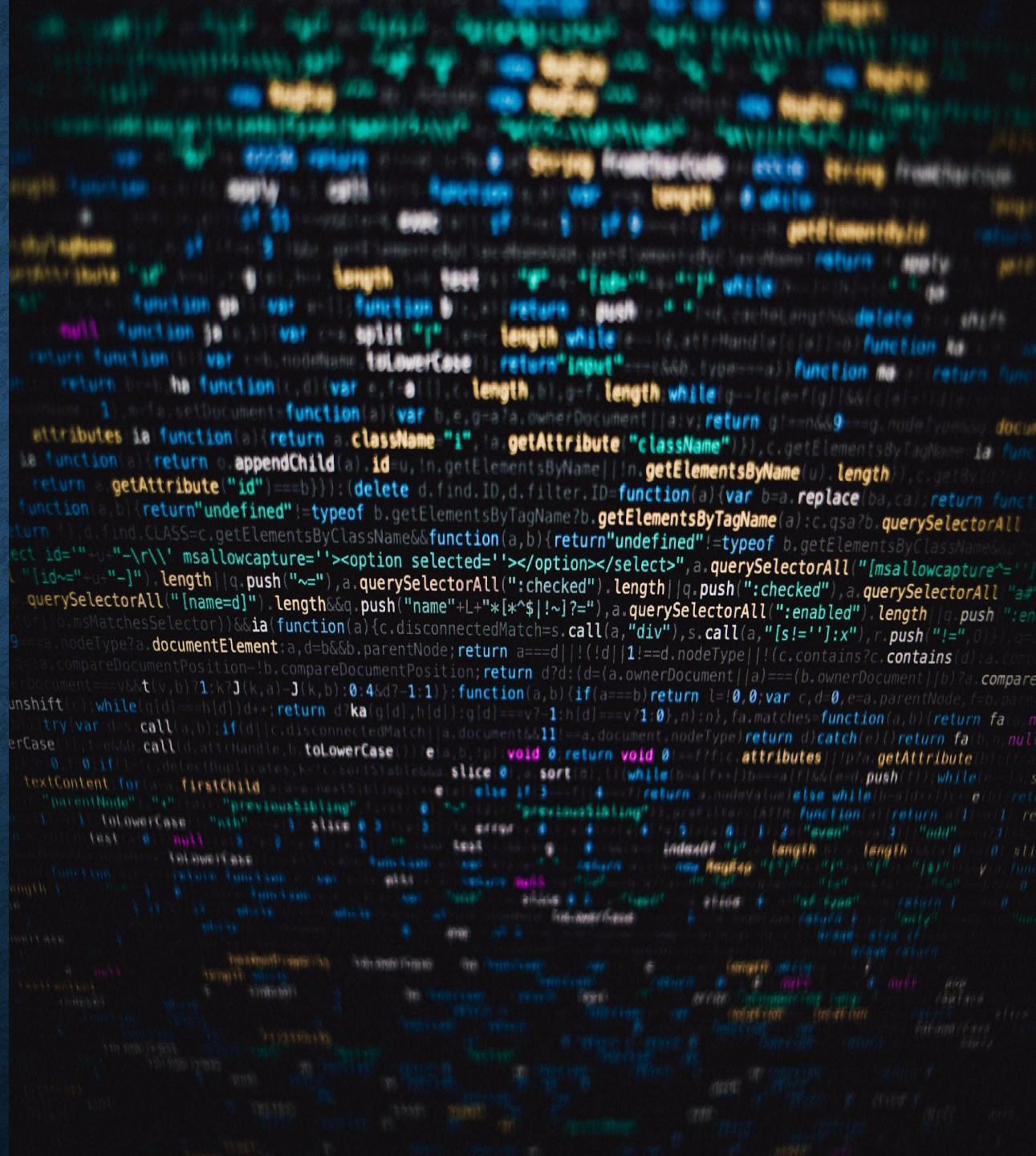
SOFTWARE PROCESSES

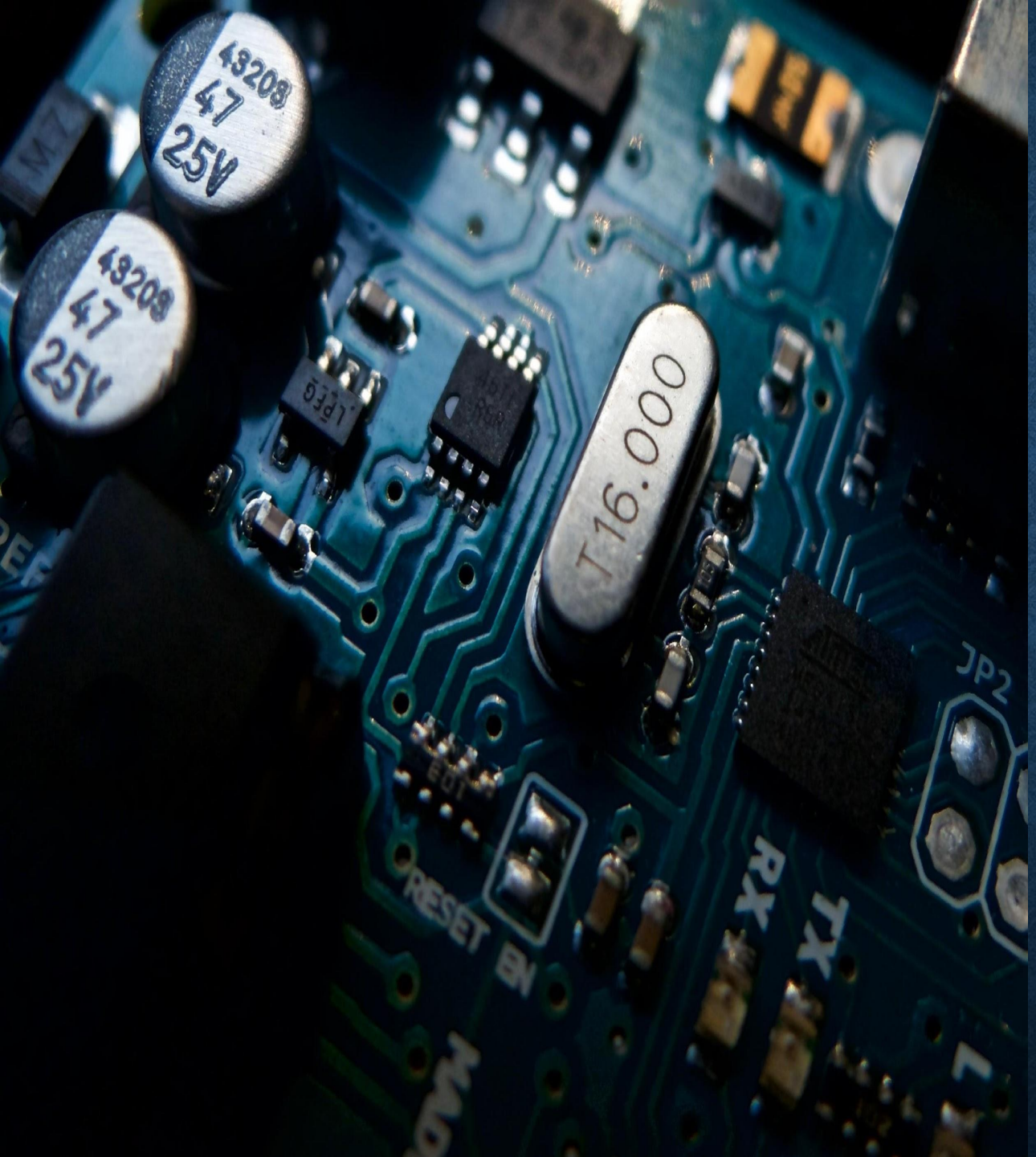


LOCK OPENS

SOFTWARE FUNCTIONALITY

- In the program, we have used ‘Adafruit Fingerprint Sensor Library’ for interfacing fingerprint module with Arduino board.
- Use of different scanning devices like RFID scan and Barcode scan would require different versions of similar code and use of different libraries
- In case of use of a camera to be able to use image recognition, change of language to Python would be needed to be able to use specially designed libraries like OpenCV and PyZBar to take and decode images



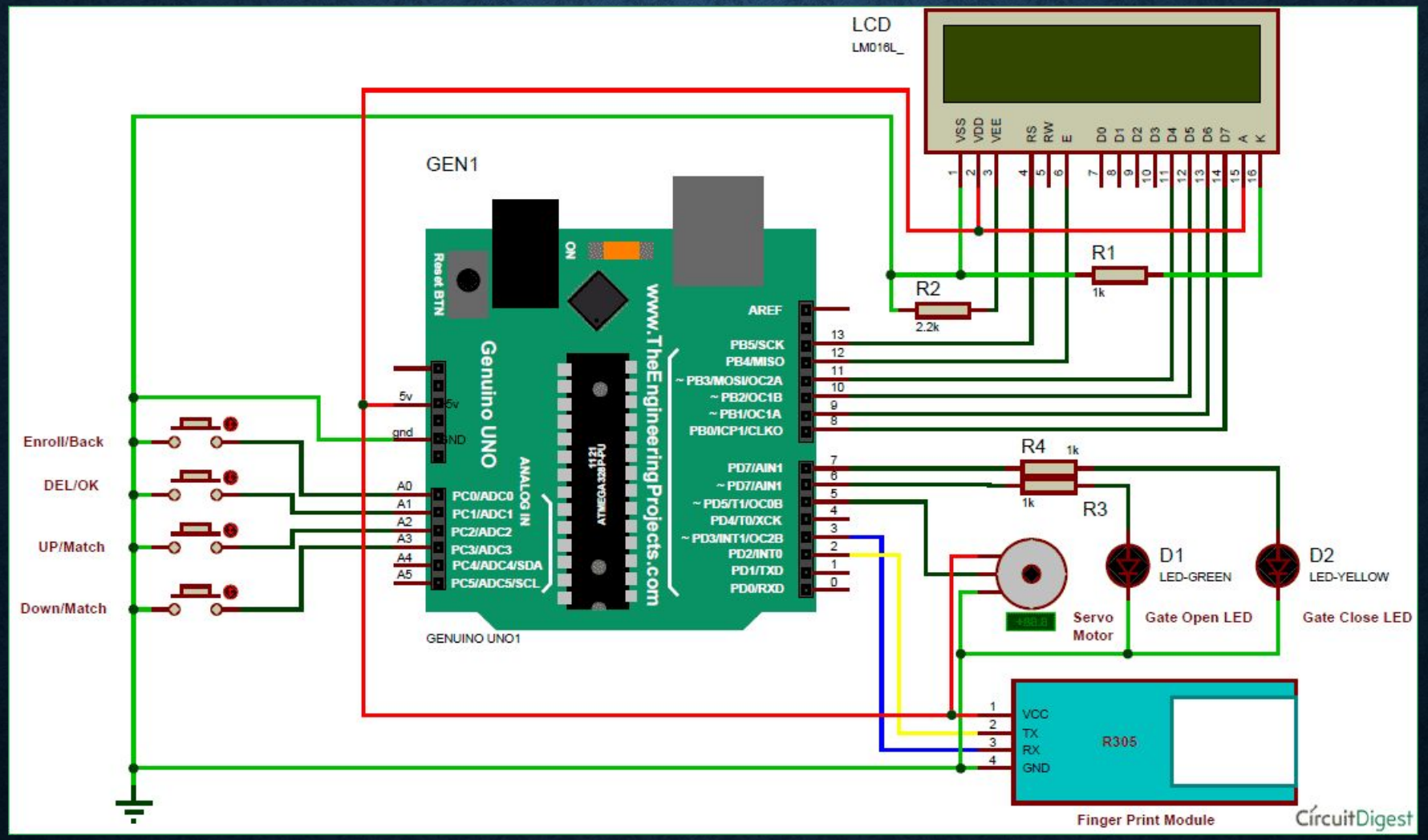


HARDWARE FUNCTIONALITY

Finger Print Scanner is a module which captures finger's print image and then converts it into the equivalent template and saves them into its memory on selected ID (location) by Arduino.

The check for equivalence is run by the software and if a correct match is found, power is supplied to the motor which then opens the latch.

CIRCUIT DIAGRAM



APPLICATIONS OF PROJECT :

1. Replacing lock and key based access to rooms.
2. Attendance of lectures.
3. Track usage of sporting facilities and equipment.
4. Maintaining record of entries in a day and reporting to relevant authorities in case of extreme periods of inactivity.

ATTENDENCE IN LECTURE HALLS

The use of barcode behind our ID cards can serve to function as a viable method of taking attendance quickly during entering or leaving a lecture hall.

The use of fingerprint would be more foolproof and is a better option to do so.
The only drawback is that it would be less economical.

Attendance during exams and in labs can be monitored similarly.

SOURCE OF DATA REGARDING LONELY BEHAVIOUR

A basic check that would monitor the time interval between two unlocks could help in theory to give an early indication of depressed behaviour in an individual.

If the time interval exceeds 12 hours or 24 hours a signal could be sent to hostel unit to get in contact with the individual as soon as possible.

Since the lock will know when the door was opened from inside and when from outside . Knowledge of whether the individual has been inside the room for a long time would be available.

Thank you!

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