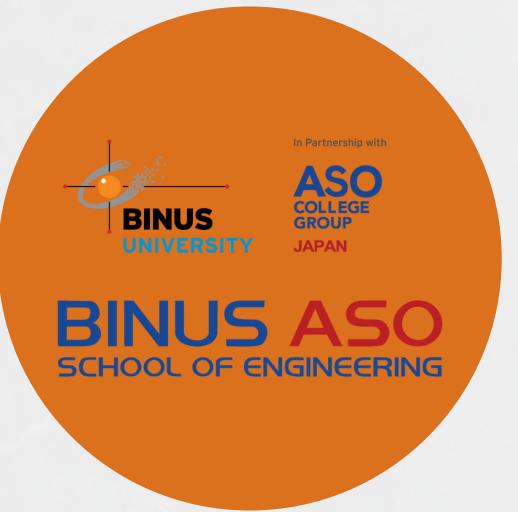


IOT Design and Application



Anggota:

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LATAR BELAKANG

- Tingkat kasus pencurian rumah yang tinggi
- Salah satu penyebab utama adalah kurangnya sistem keamanan pada rumah
- Aksesibilitas pada saat membuka mengunci rumah
- Pengurangan kontak fisik pada masa pandemi

TUJUAN

- Membuat pintu menjadi lebih mudah diakses dan lebih efisien.
- Meningkatkan sistem keamanan pada rumah.
- Membantu mengurangi kemungkinan pencurian.

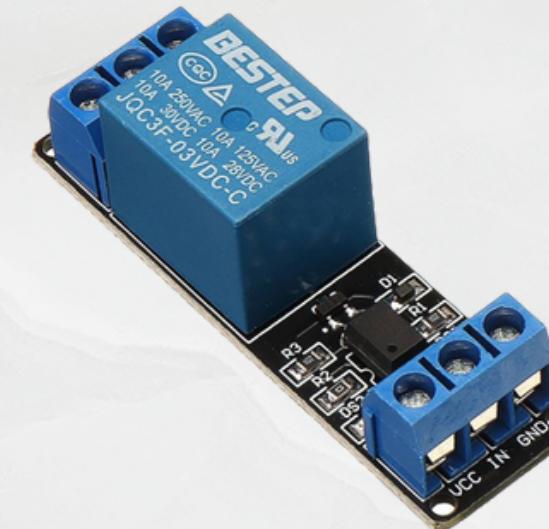
SOLUSI

Solusi dari produk KOENTJI adalah dengan membuat sistem kunci pintu yang terhubung pada *mobile app*, sehingga pintu dapat dipantau dalam keadaan terbuka atau tertutup. Selain itu pintu juga dapat diakses dengan menggunakan RFID Card untuk penggunaan secara fisik/manual. Melalui ini, sistem keamanan dapat lebih dipecaya, dan juga lebih modern dengan mendukung sistem IOT.

HARDWARE



ESP-32



Relay Module



**RC522 RFID
Module**



**Solenoid Door
Lock**

SOFTWARE



Arduino IDE



Firebase

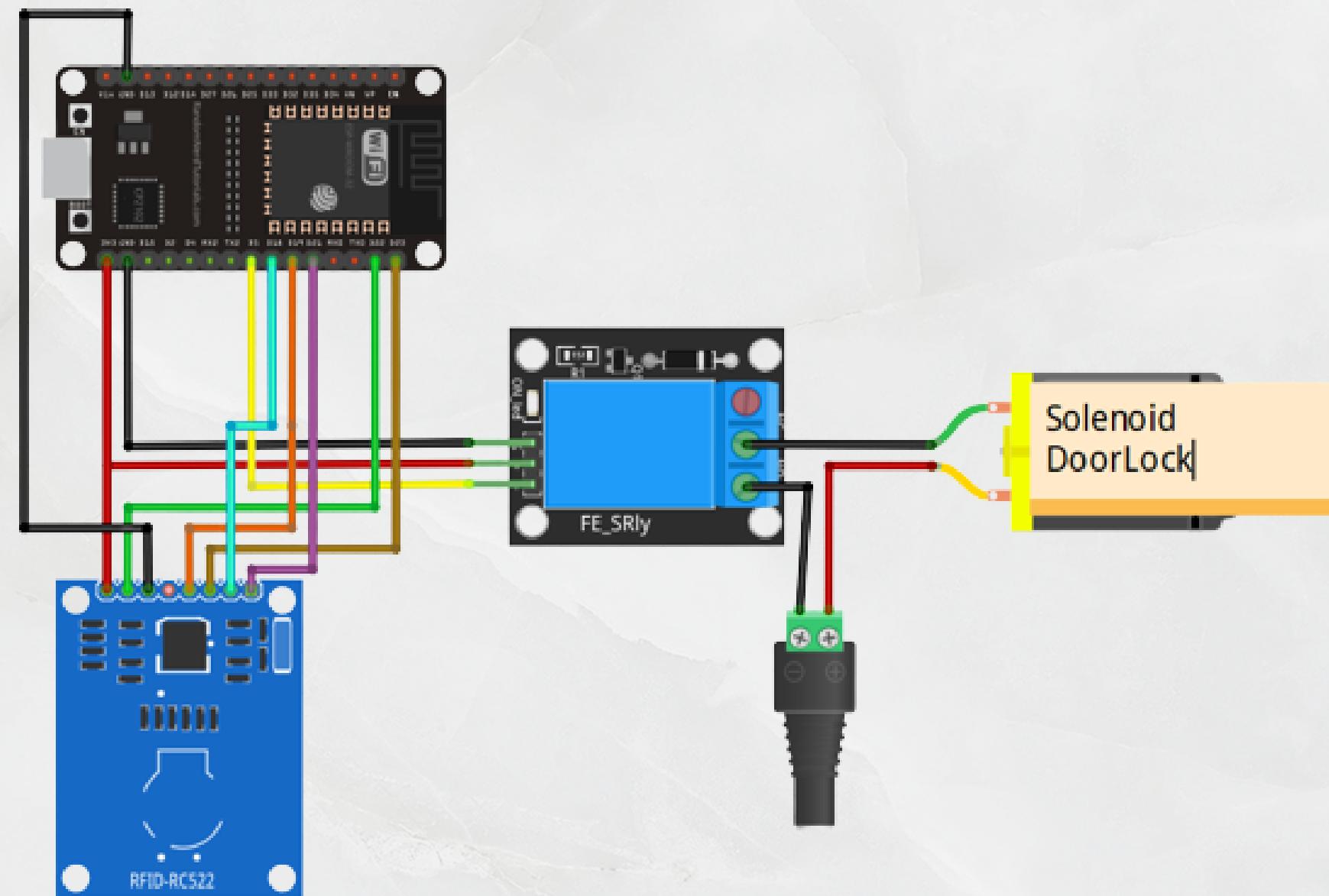


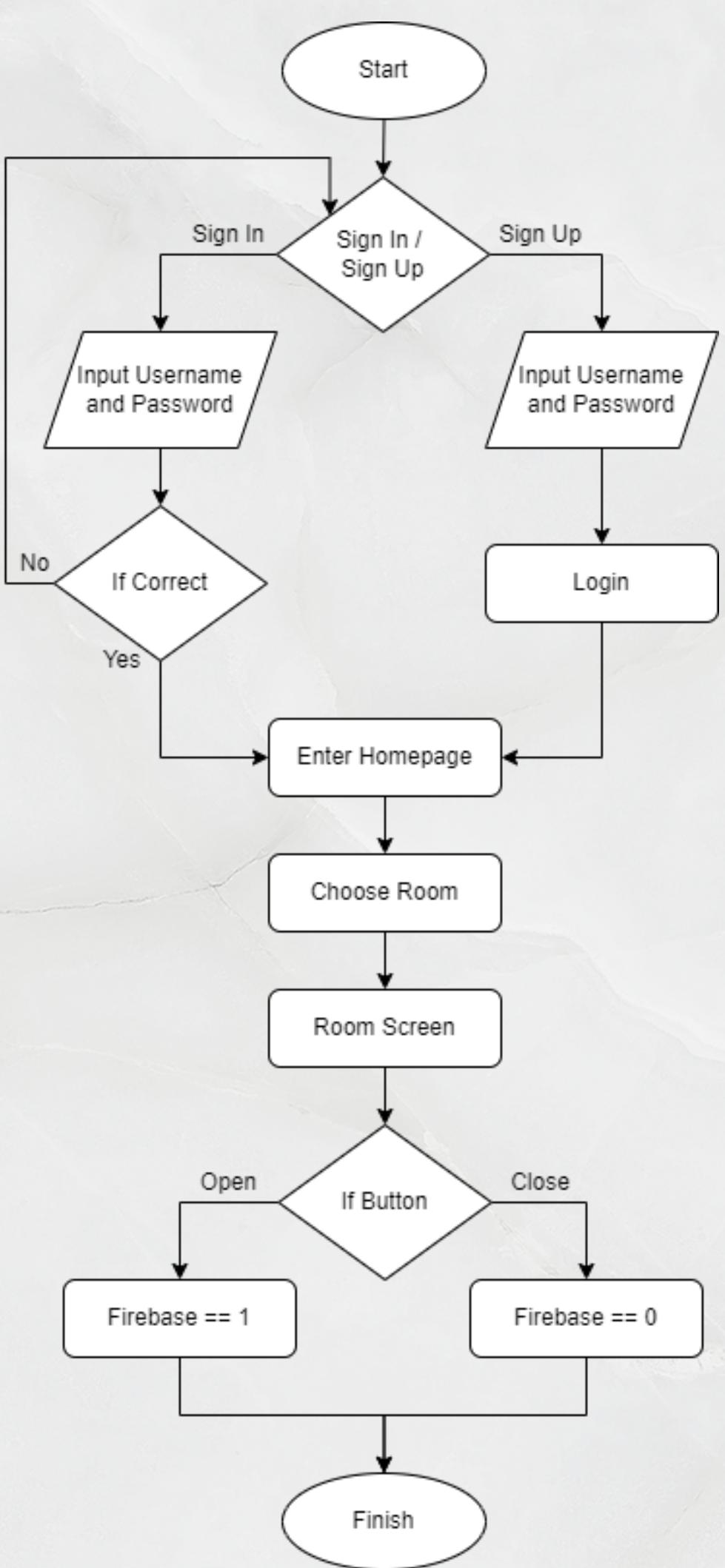
Kodular

CARA KERJA ALAT



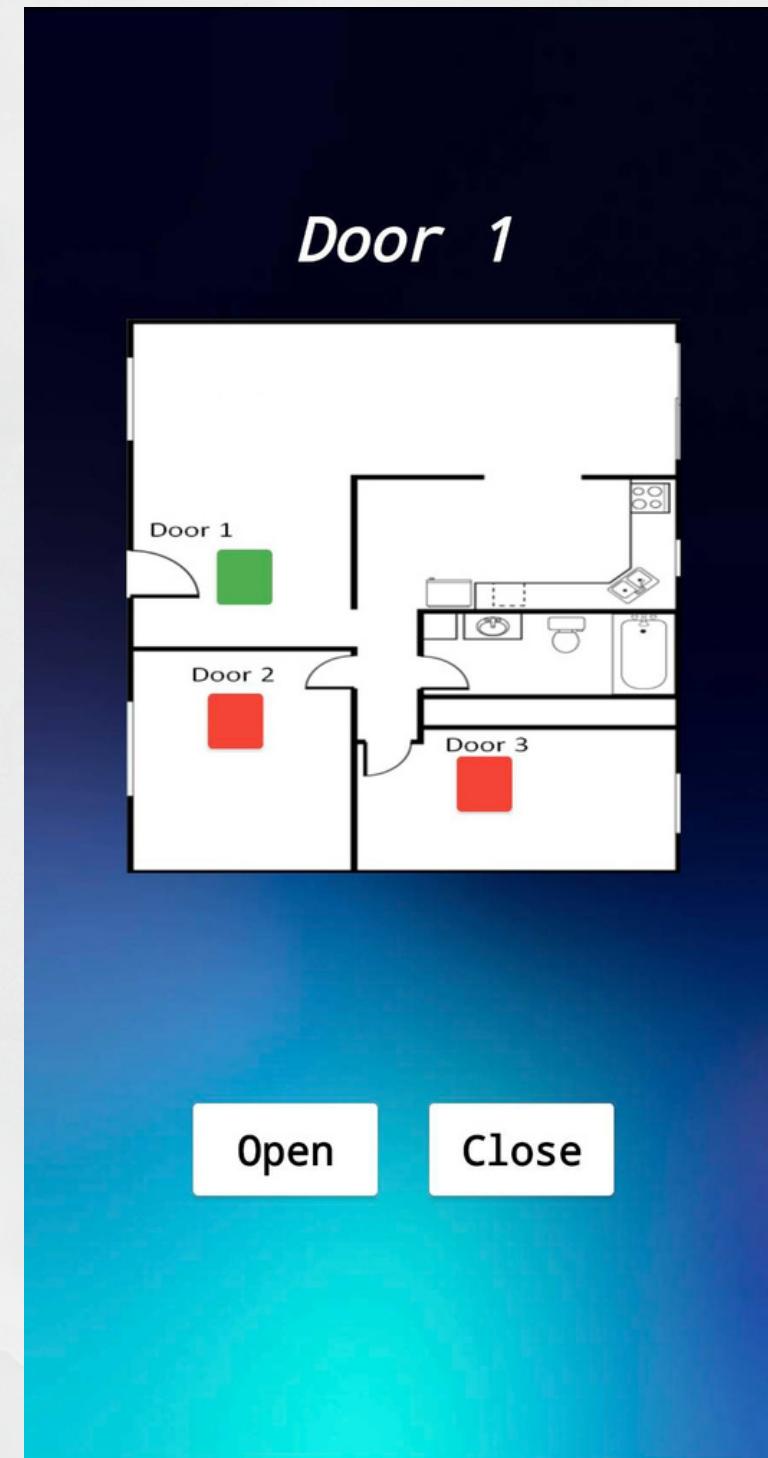
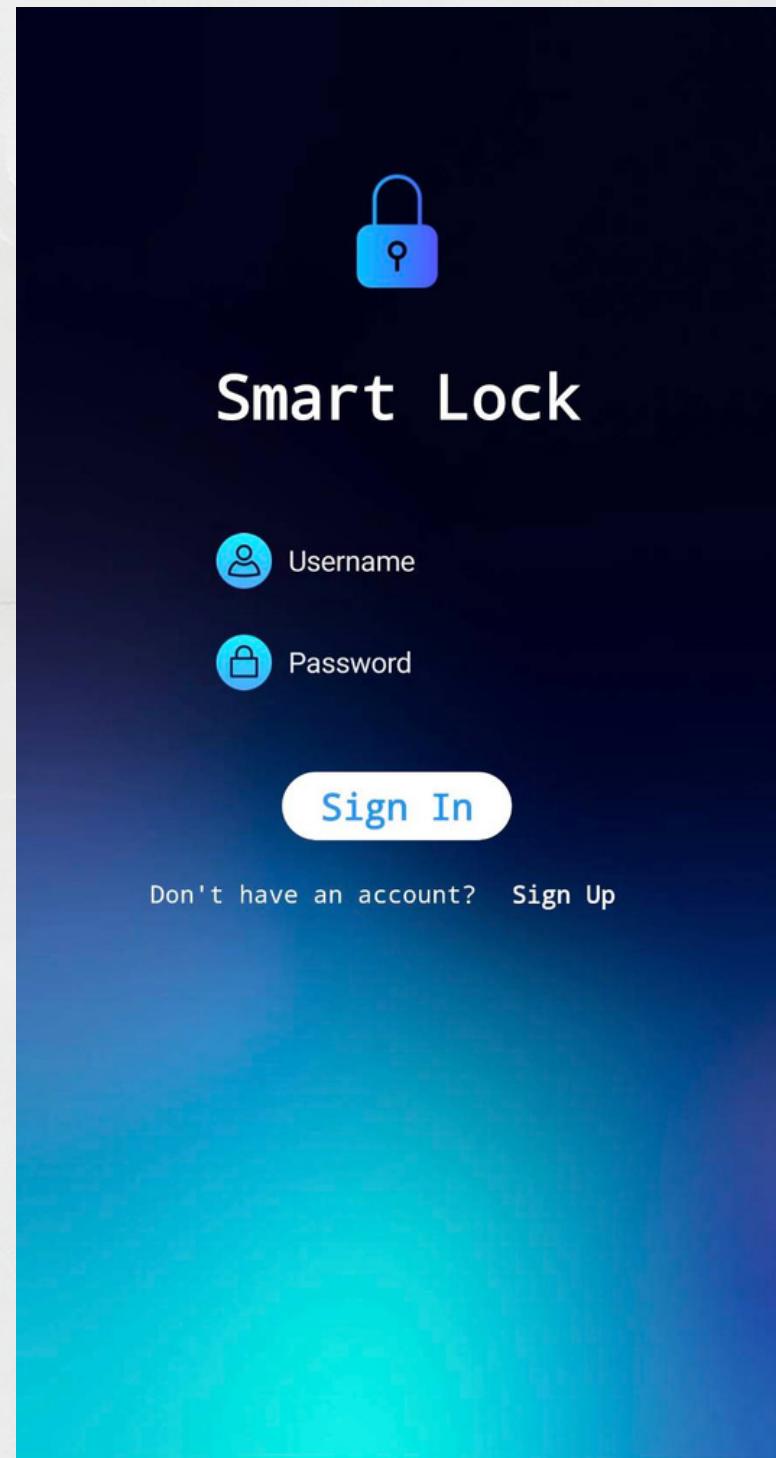
SCHEMATIC



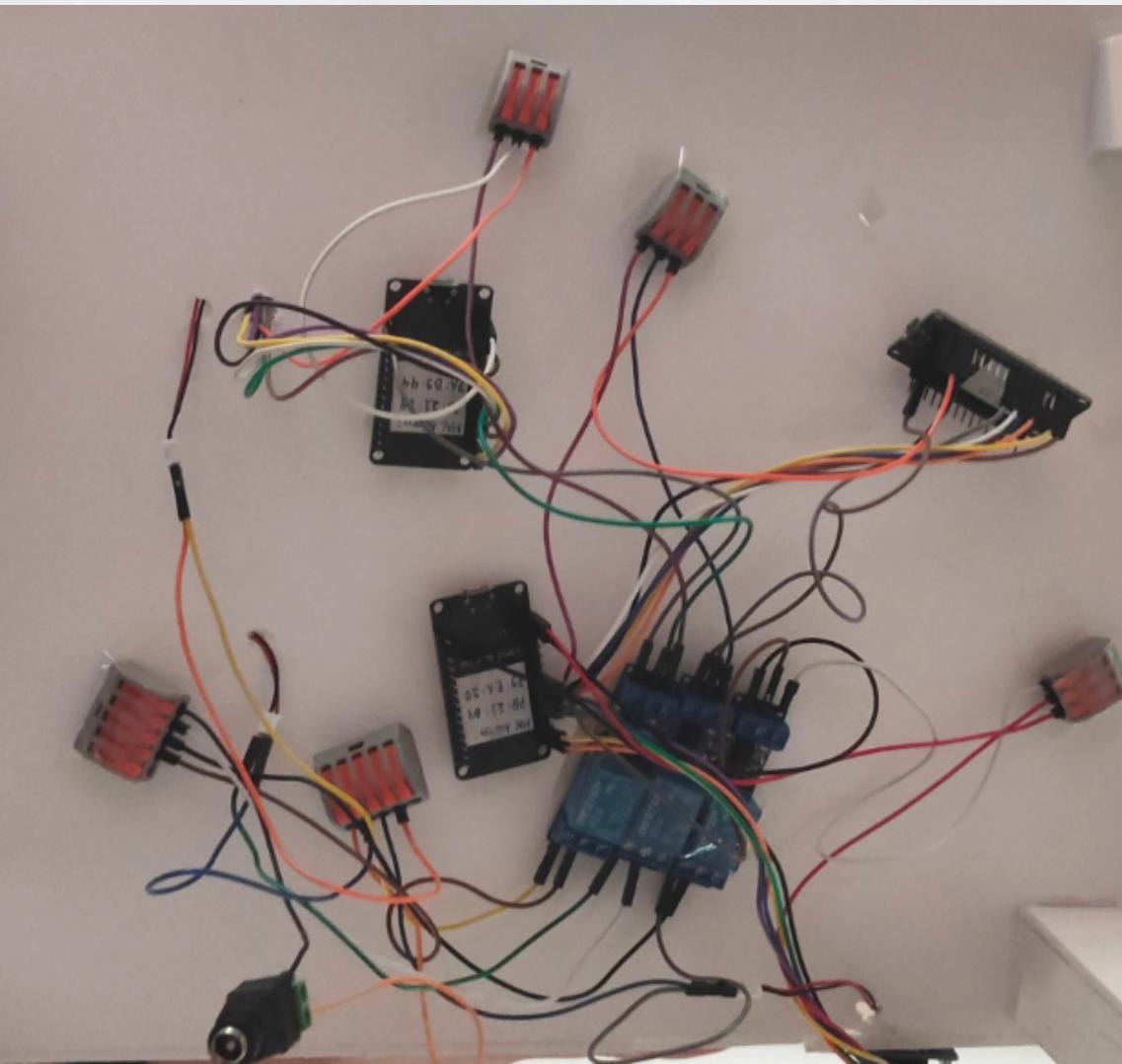


CARA KERJA MOBILE APP

FRONT-END DESIGN



PROTOTYPE

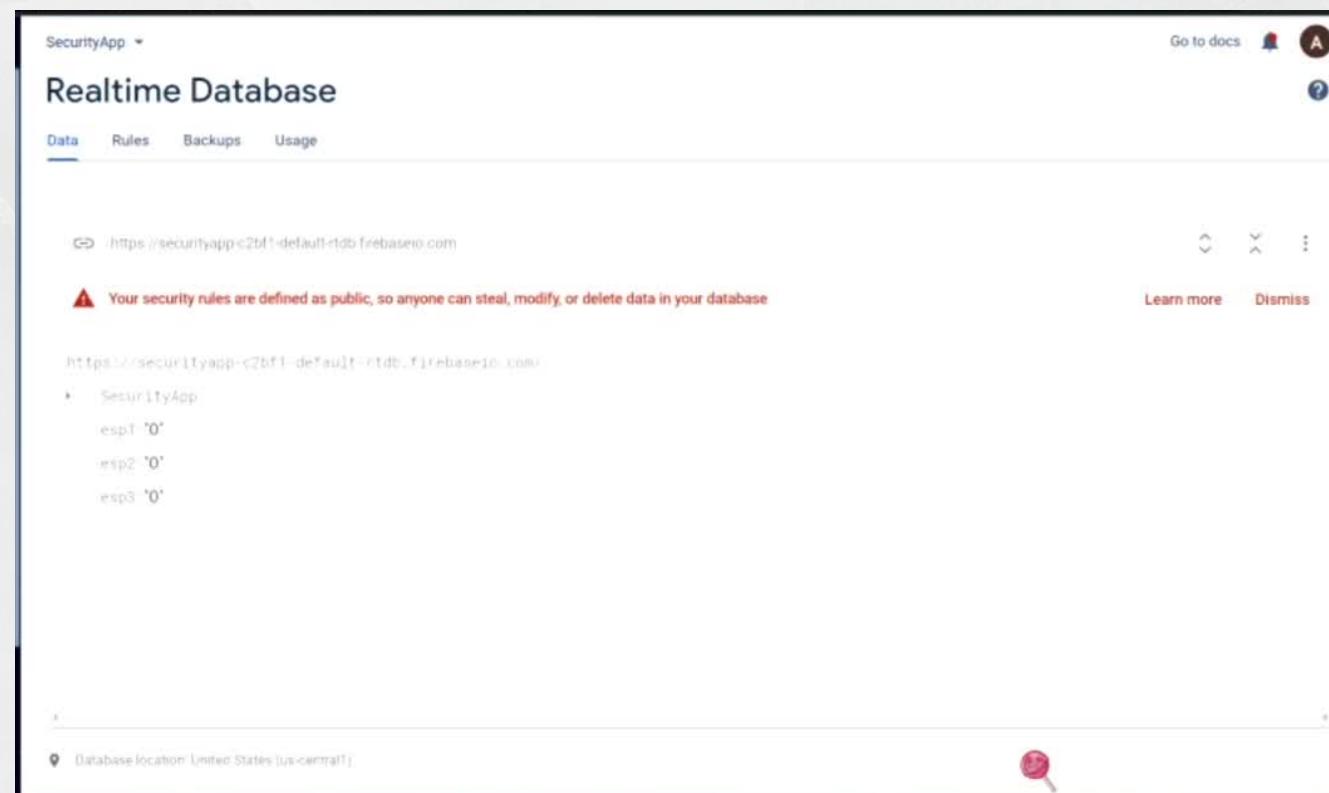


DEMO VIDEO



With Mobile Apps

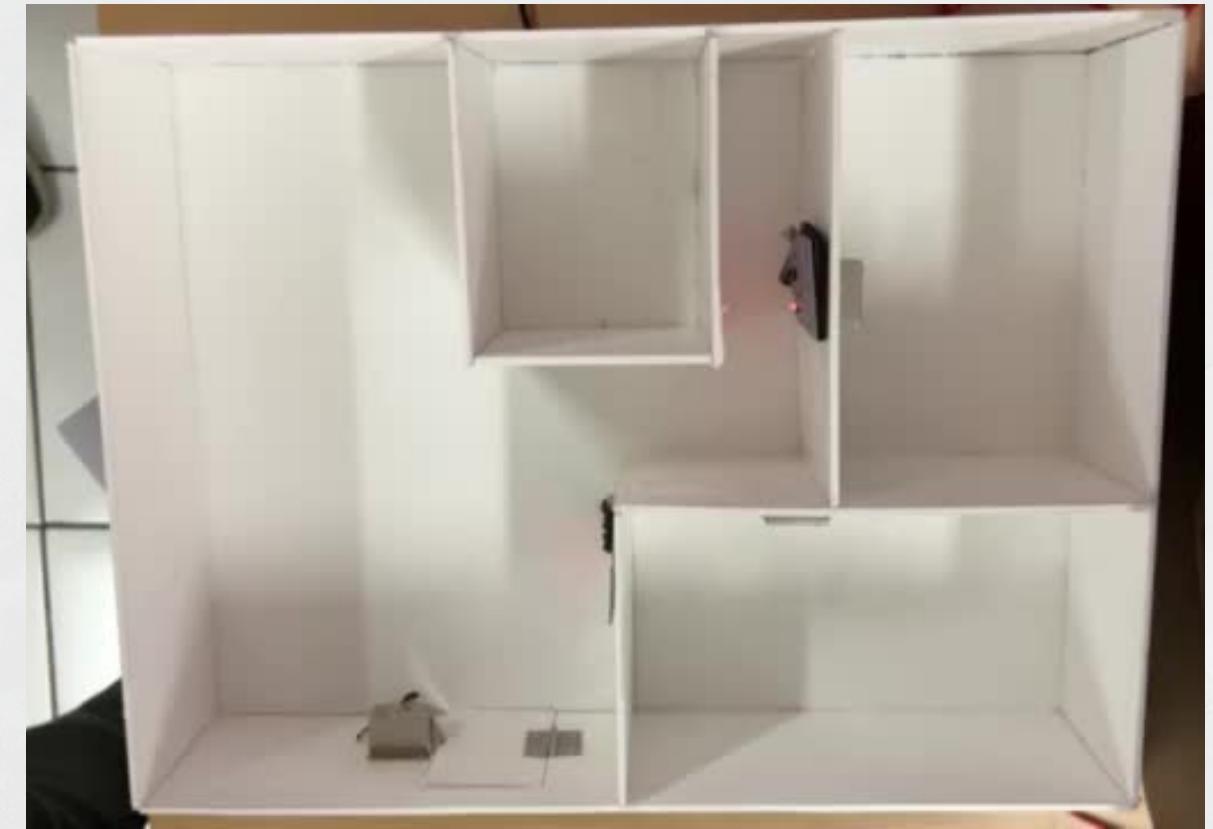
Firebase



A screenshot of the Firebase Realtime Database console. The title bar says "SecurityApp *". Below it, "Realtime Database" is displayed. There are tabs for "Data", "Rules", "Backups", and "Usage". The main area shows a tree structure with a single node at the root level:

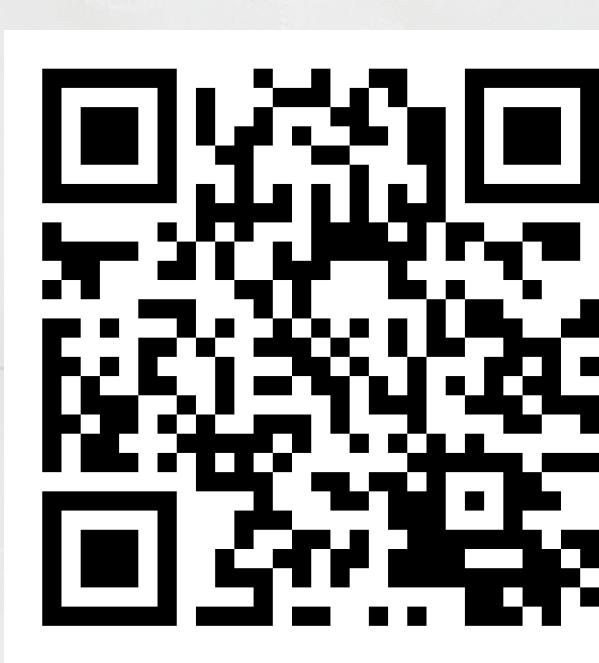
```
https://securityapp-c2bfa.firebaseio.com/.json
  +-- SecurityApp
      +-- esp1 "0"
      +-- esp2 "0"
      +-- esp3 "0"
```

At the bottom, there is a note: "Your security rules are defined as public, so anyone can steal, modify, or delete data in your database." with "Learn more" and "Dismiss" buttons. The footer indicates "Database location: United States (us-central1)".



With RFID Card

QR CODE



**Prototype Source
Code**



Demo Video



**Mobile
Application File**

PIC

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Bonifacius Christopher
Cedricco Anthony
Jonathan Halim
Reinard Karolus**

**Mobile Application
Documentation
Prototyping
Programming
Prototype Design**

REFERENSI

- <https://randomnerdtutorials.com/esp32-firebase-realtime-database/>
- <https://esp32io.com/tutorials/esp32-rfid-nfc-door-lock-system>

THANK YOU!

