

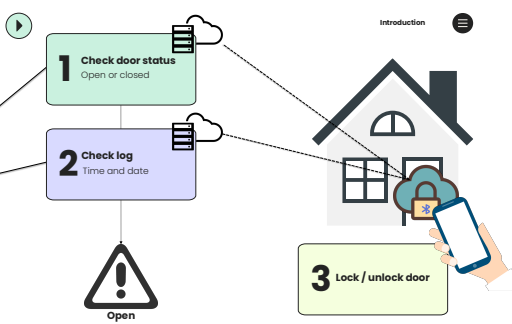
Bluetooth Smart Door System



Introduction



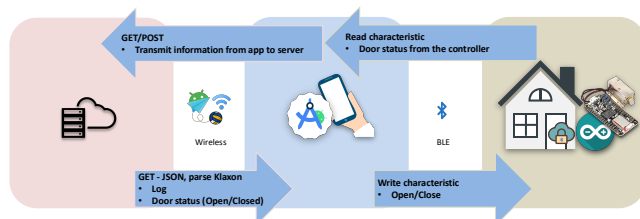
Use Case



Software Architecture



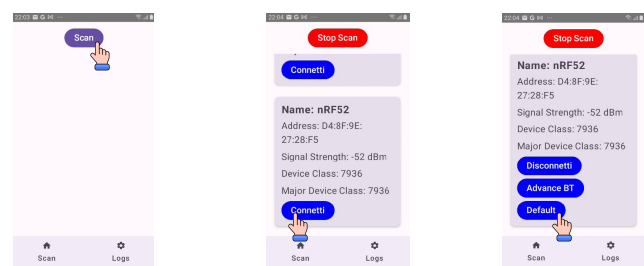
Software Architecture



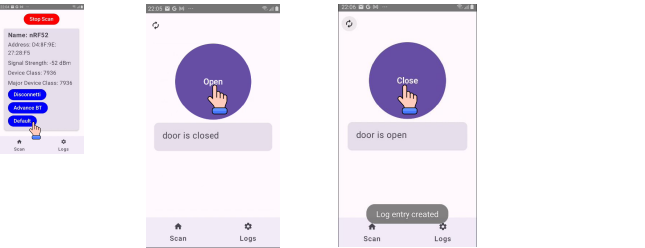
User Interface



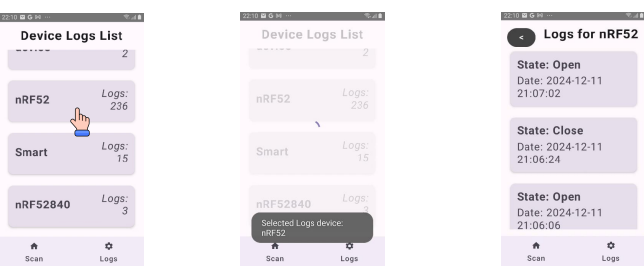
User Interface



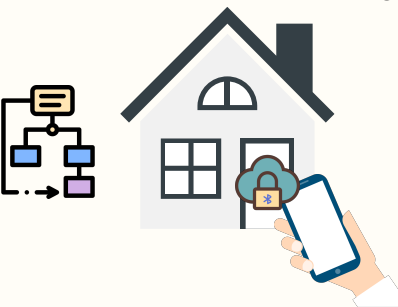
User Interface



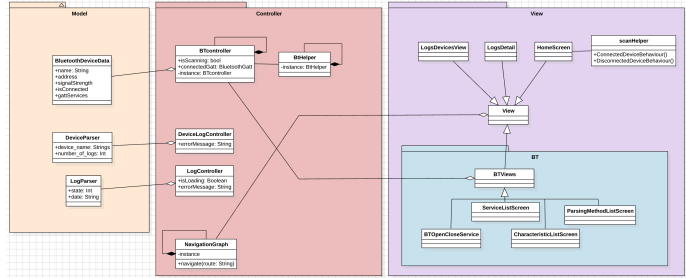
User Interface



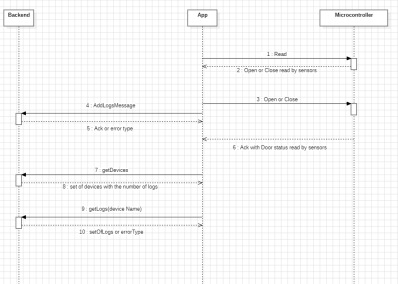
Software Design



Class Diagram



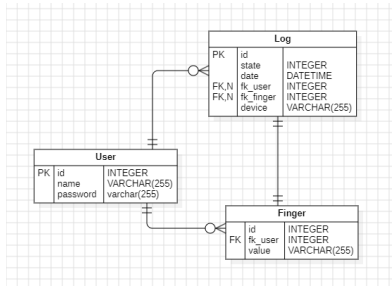
Sequence Diagram



Data Base Diagram



Software Design



Bluetooth Smart Door System

13

Discussion



Discussion



Bluetooth Smart Door System

14

Discussion



Discussion



- Bluetooth communication issues
 - To find the right service and characteristic
- Sync compose with dynamic page
 - Volley
 - Handle errors
- Hardware issues



- Creating a debug feature on the app
- Clicking twice on refresh because BLE takes time to read the data
- Custom connection



- Apply learnings from lectures
- Created custom services and characteristics
 - Lock/unlock via BLE
 - Read state via BLE
 - Create log with remote DB
 - Retrieve logs and device data, and parse JSON response
 - Connect to nearby devices



- Integrate fingerprint sensor
- Implement User tracking
- Enable remote locking/unlocking via built in WIFI
- Read from BLE with separated thread

Bluetooth Smart Door System

15

Backups



Introduction



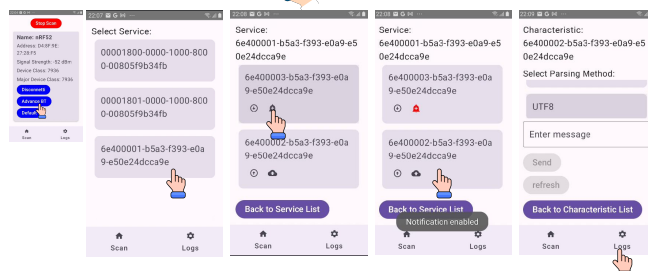
Bluetooth Smart Door System

16

User Interface



User Interface



Bluetooth Smart Door System

Serial Monitor

Software Architecture



```

Advertising ...
0: connected to Galaxy XCover 4
rx: Open
Open door in progress
lock open
rx: Close
strcmp Close true
lock closed
rx: Open
Open door in progress
lock open
UART 'Motify', enabled
UART 'Motify', enabled
0 disconnected, reason = 19
Advertising ...
    
```



Bluetooth Smart Door System