Valentine's Cup

CSE 496 Graduation Project 2
2nd Presentation

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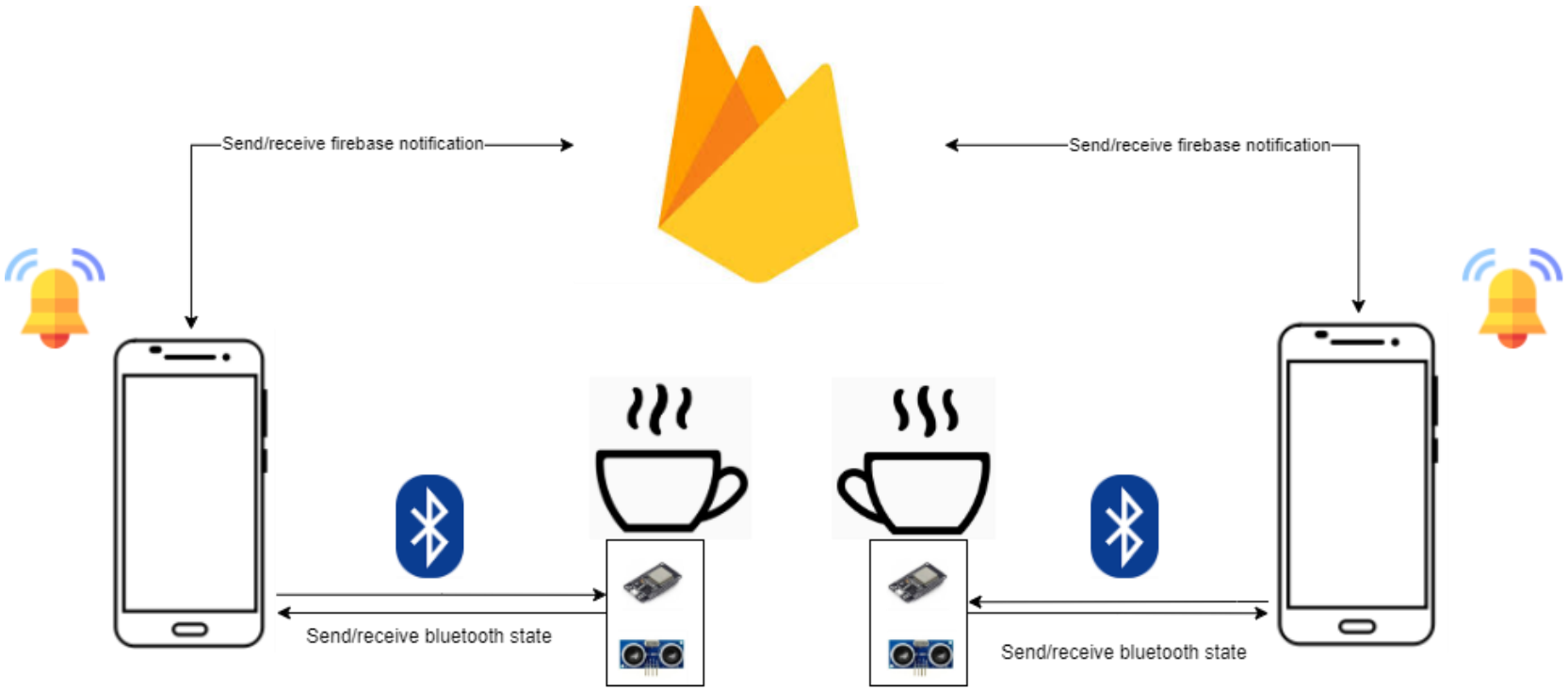
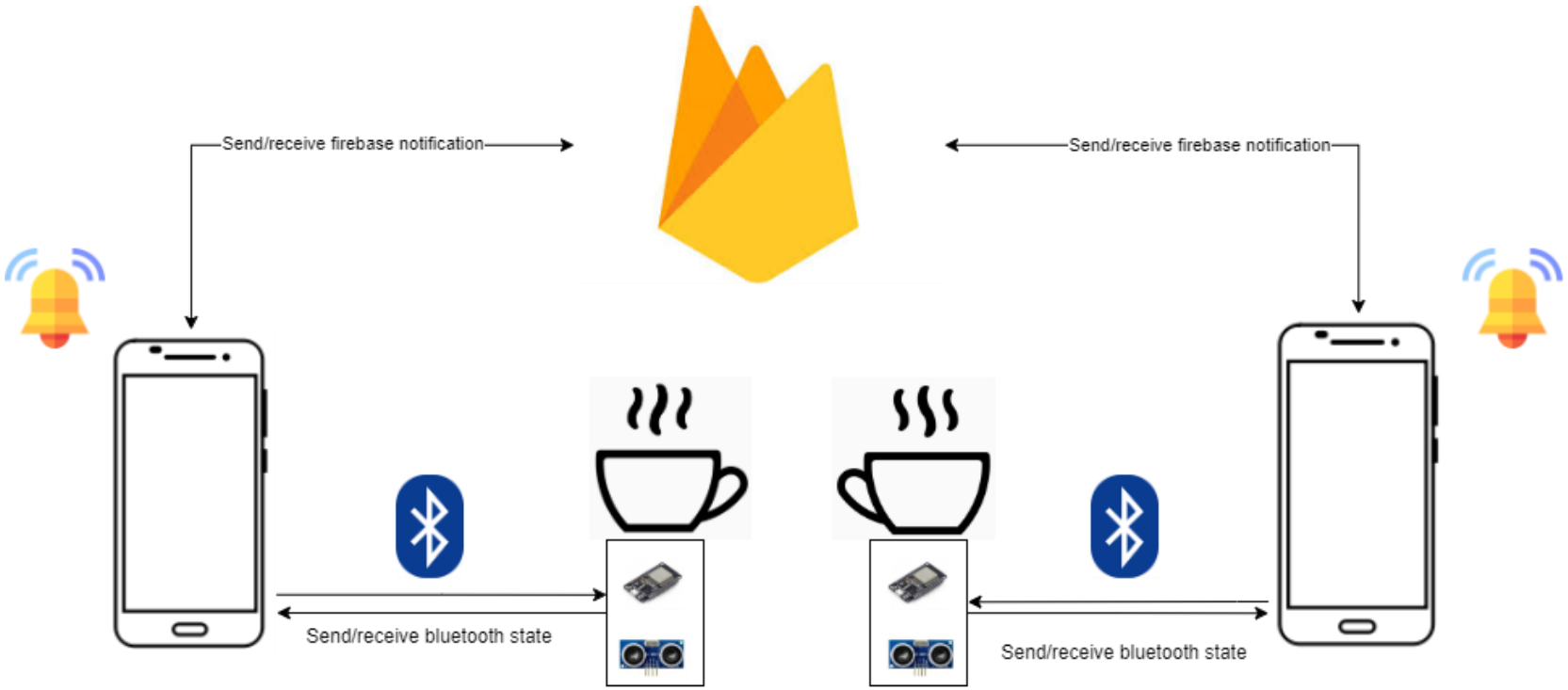
Project Definition



- In this Project, there are two valentines connected to their individual cups via bluetooth.
- When one drinks from their coffee, other Valentine's phone plays a song.

Project Design and Plan



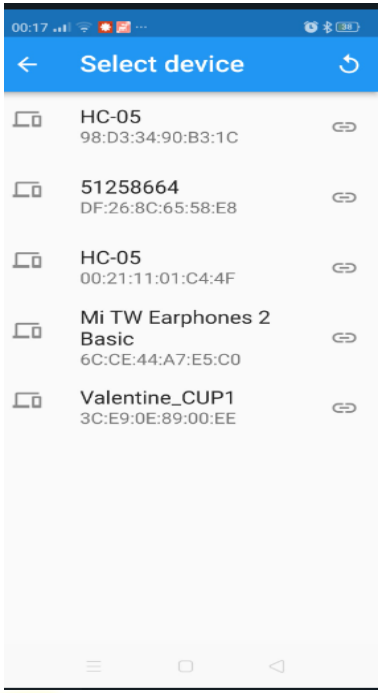
- Each cup has ESP32, ultrasonic distance sensor underneath. ESP32 will connect the each phone via bluetooth. ESP32 will send the current state of the cup periodically.

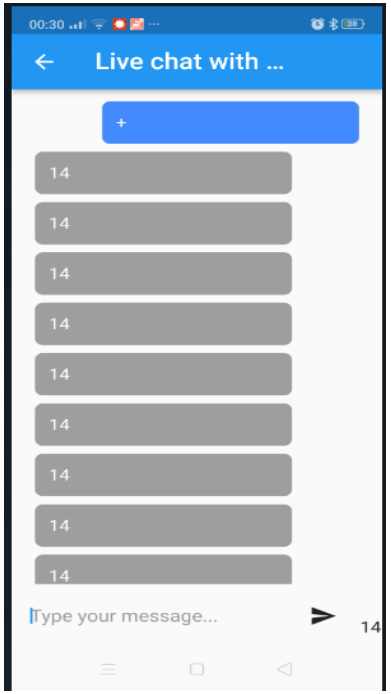
Timeline

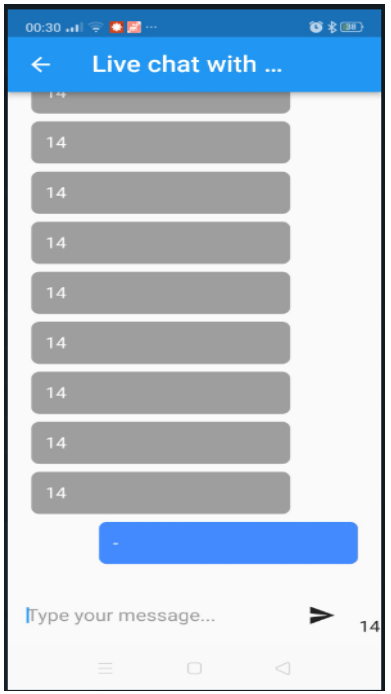
10.04-23.04	24.04-07.05	08.05-21.05	22.05-04.06	05.06-18.06
• Getting ready hardware • Creating mobile app project • Creating firebase database	• Making connection of app with database • Communicate sides between each other • Set up hardware without bluetooth	• Complete bluetooth communication between hardware and phones	• Run tests	• Talk with advisor, learn additional requirements /changes

What is done so far?

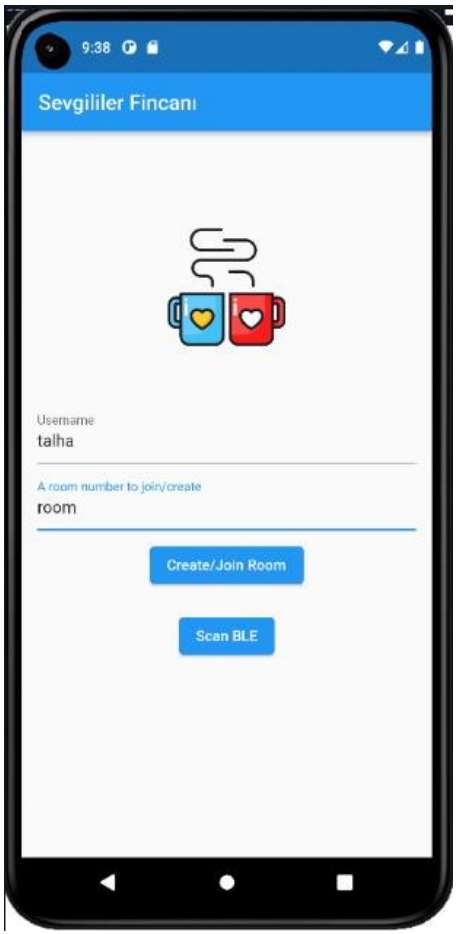
- I got two ESP32's, two ultransonic distance sensor and necesarry covers for two cups.
- In the software side, we can see the incoming data from the hardware.

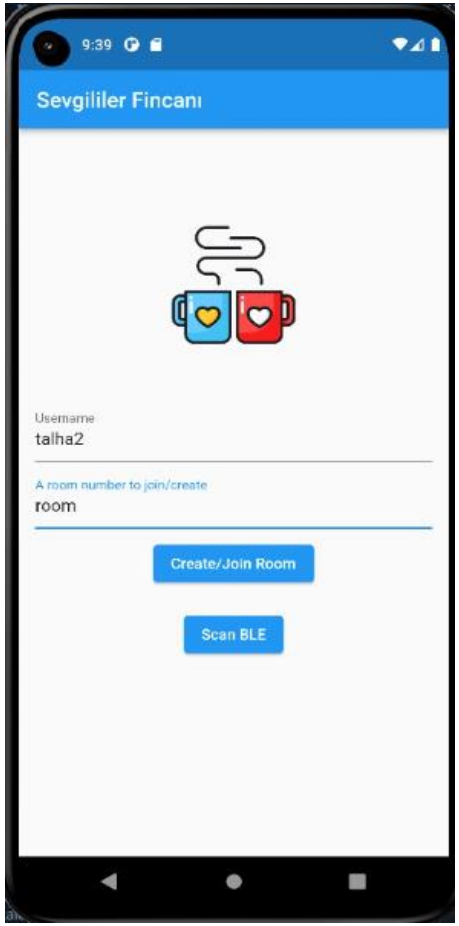




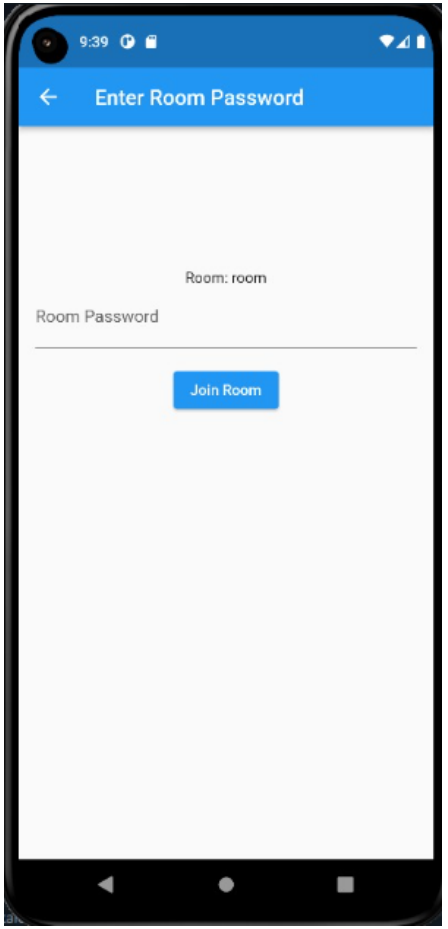


Screens

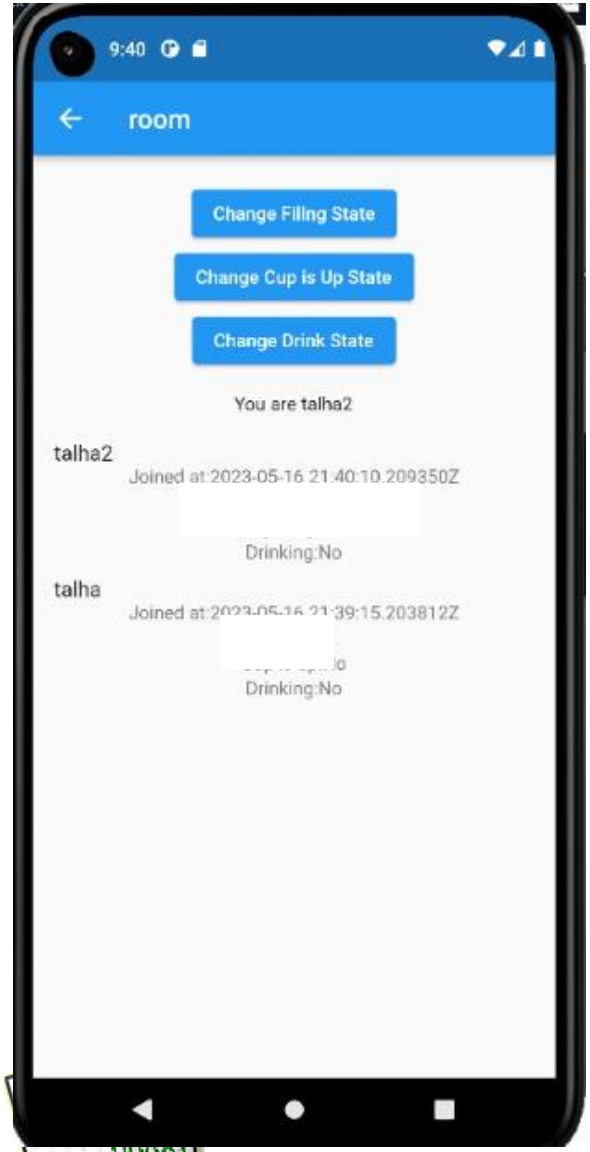

9:38
Sevgililer Fincanı
Username
talha
A room number to join/create
room
Create/Join Room
Scan BLE


9:39
Sevgililer Fincanı
Username
talha2
A room number to join/create
room
Create/Join Room
Scan BLE


9:39
room
You are talha
talha
Joined at:2023-05-16 21:39:15.203812Z
Room password:123456
Drinking:No


9:39
Enter Room Password
Room: room
Room Password
Join Room

Screens – contd.



https://flutter-fcm-6946b-default-rtdb.europe-west1.firebasedatabase.app/

- rooms
  - room
    - createdAt: "2023-05-16 21:39:15.195895Z"
    - isLocked: false
    - password: "846263"
    - users
      - talha
        - Cup is up: "No"
        - Drinking: "No"
        - Filling: "No"
        - joinedAt: "2023-05-16 21:39:15.203812Z"
        - name: "talha"

- isLocked: true
- password: "846263"
- users
  - talha
    - Cup is up: "No"
    - Drinking: "No"
    - Filling: "No"
    - joinedAt: "2023-05-16 21:39:15.203812Z"
    - name: "talha"
  - talha2
    - Cup is up: "No"
    - Drinking: "No"
    - Filling: "No"
    - joinedAt: "2023-05-16 21:40:10.209350Z"
    - name: "talha2"

What will I do from now on?

- I will get stick with cup and the hardware
- I will complete the notification sending and playing song tasks.
- I will redesign user interface and I will run tests

Success Criterias

- Sensor accuracy
  - Ultrasonic distance sensor must be accurate and provide reliable data to the ESP32, ensuring that the distance measurement is precise and consistent.

- Bluetooth connectivity
  - The ESP32 must establish a stable Bluetooth connection with the phone and ensure that sensor data is transmitted accurately and in real-time.

- Cloud messaging
  - The system must be able to send and receive notifications via Firebase Cloud Messaging.

Resources

1. https://www.robotistan.com/esp32-esp-32s-wifi-bluetooth-dual-mode-gelistirme-karti
2. https://www.robotistan.com/hc-sr04-ultrasonik-mesafe-sensoru
3. ESP32 – Ulrasonic distance sensor connection video
4. ESP32 – Bluetooth library video
5. Flutter_blue library for bluetooth connection
6. https://cdn4.iconfinder.com/data/icons/google-i-o-2016/512/google_firebase-2-512.png
7. https://upload.wikimedia.org/wikipedia/commons/thumb/d/da/Bluetooth.svg/1342px-Bluetooth.svg.png
8. Draw.io for designs