We were tasked with coding the readings of an IR sensor from 0 to 4095. These readings need to be mapped to human-readable distances in centimeters, and then both values should be sent to Firebase. Additionally, the two values should be displayed on an LCD screen connected to the ESP32, but only when the user is authenticated.

To authenticate, we're using a password method with a keypad module on the ESP32. If the password is incorrect, the LCD will display "Please enter another password." If the password is correct, it will display "Welcome to your account."

On the other side, we have a Flutter-based mobile application with five screens:

- Register screen
- Welcome screen
- Sign-in screen
- Servo slider screen
- Text and graph to view IR Firebase data

Regarding the setup:

- The LCD is connected to specific pins, with the potentiometer's right side connected to the negative and the left side to the positive. The output is connected to the LCD pin (V0).
- The servo's red wire is connected to the positive, the brown wire to the negative, and the output to a pin on the ESP32.
- The IR sensor's VCC is connected to the positive, GND to the negative, and A0 to a pin on the ESP32.

- The positive side of the breadboard is connected to 3V3 on the ESP32, and the negative side to GND on the ESP32.

- The keypad is connected to various pins on the ESP32.