



Figure 4: System connecting to the WiFi

**WiFi Connection:** Attempts to connect to a WiFi network using the provided SSID and password. It continuously checks the connection status and prints "Connecting to WiFi..." every second until connected. Once connected, it updates the LCD to display "WiFi Connected!" and waits for 2 seconds. This ensures the device is connected to the internet, which is essential for the rest of the project.



Figure 5: System connected to the WiFi

**Button Initialization:** Sets the button pin as an input with an internal pull-up resistor, waits for 100 milliseconds to stabilize, and reads the initial state of the button. This ensures the button state is read correctly and avoids false readings due to bouncing. As seen in class and with [this example](#), INPUT\_PULLUP simplifies the circuit by not requiring an external pull-up resistor.