**Adafruit Metro M4 AirLift Lite & ESP32 Servo Control**

**Overview**

This script connects an Adafruit Metro M4 AirLift Lite microcontroller to an ESP32 via Wi-Fi. Using the MQTT protocol, it sends commands to control two servos on a robot.

**Modules**

* **board**: Defines board-specific pin constants.
* **time**: Implements time delays.
* **digitalio**: Handles digital input/output pin operations.
* **pulseio**: Manages PWM (Pulse Width Modulation) signal generation.
* **adafruit\_motor.servo**: Controls servo motors.
* **adafruit\_esp32spi**: Interfaces with the ESP32 Wi-Fi module.
* **busio**: Handles SPI (Serial Peripheral Interface) communication.
* **secrets**: Stores sensitive information like Wi-Fi and MQTT credentials.
* **adafruit\_minimqtt**: Manages MQTT communication.

**Hardware Setup**

1. Connect the ESP32 to the microcontroller using SPI.
2. Define PWM pins for controlling servos.
3. Configure two servos connected to PWM pins.

**Functions**

* **move\_both()**: Moves both servos in a predefined pattern.
  + Moves servo1 to 90 degrees and servo2 to 0 degrees, then pauses.
  + Moves servo1 to 0 degrees and servo2 to 90 degrees, then pauses.
  + Repeats the above movements 2 times.
* **move\_left()**: Moves only the left servo.
  + Sets servo1 to 90 degrees and pauses.
  + Repeats the movement 2 times.
* **move\_right()**: Moves only the right servo.
  + Sets servo2 to 90 degrees and pauses.
  + Repeats the movement 2 times.
* **connected(client, userdata, flags, rc)**: Callback function for MQTT connection events.
  + Prints "connected!" and subscribes to the MQTT topic.
* **disconnected(client, userdata, rc)**: Callback function for MQTT disconnection events.
  + Prints "disconnected :(" when the client disconnects.
* **message(client, topic, message)**: Callback function for handling incoming MQTT messages.
  + Prints the message received and executes functions based on the message content:
    - Calls move\_left() if the message contains "left".
    - Calls move\_right() if the message contains "right".
    - Calls move\_both() for any other message.

**Usage**

1. **Initialize** SPI communication and ESP32 Wi-Fi module.
2. **Configure** PWM for servos.
3. **Connect** to Wi-Fi using credentials from the secrets module.
4. **Set up** the MQTT client with the Adafruit IO broker and configure callback functions.
5. **Enter** a loop to continuously process MQTT messages and control servos based on received commands.

**Example MQTT Messages**

* "left": Commands the robot to move the left servo.
* "right": Commands the robot to move the right servo.
* Any other message: Commands the robot to move both servos.

**Dependencies**

* Adafruit CircuitPython libraries for ESP32, PWM, Servo, and MQTT.
* Network credentials and Adafruit IO credentials stored in the secrets module.