EMG Sensor Data Recorder, Arduino

This code serves as a data logger for an Electromyography (EMG) sensor, recording EMG signal values at regular intervals and outputting them to the serial port. The code reads the EMG sensor values, timestamps them, and outputs the data to the serial port at fixed intervals.

Hardware Setup:
Connect an EMG sensor to analog pin A5 of the Arduino board.

Code Implementation:
Copy the provided code into a new Arduino sketch.
Upload the sketch to the Arduino board.
Open the serial monitor in the Arduino IDE to view the logged data.

About this Code:
emgPin: Specifies the analog pin connected to the EMG sensor (A5)
previousMillis: Stores the timestamp of the last data recording
interval: Specifies the time interval between consecutive data recordings (every 100 ms)

Serial communication is initialized at a 9600 baud rate.

In the loop the code reads the current time using the millis() function, then checks if the specified time interval has elapsed since the last data recording If the interval has elapsed previousMillis is updated with the current time. EMG sensor value is read using analogRead(emgPin). The current time (hours, minutes, seconds) is read and the EMG value to the serial port in the format: "hours:minutes:seconds,EMG_value".

Data Output:
The code outputs data to the serial port in the format: "hours:minutes:seconds,EMG_value".
Interpretation:

The timestamp indicates the time at which each EMG signal reading was taken.
The EMG value represents the strength of muscle contractions.

Revision History

Version 1.0:
Initial release of the EMG Sensor Data Recorder code.

Version 2.0:
Modified EMG Sensor Data Recorder code to use Arduino Uno, instead of the initial Arduino Nano

Version 2.1:
Added in functionality of using a RTC to print time and data

Version 2.2:
Removed conversions for emgValue (unneeded)
Changed record time to every 100 ms, instead of every 1s