Lab 5 for CSE121, Spring'23

Due Date: 05/17/23

This lab is worth 20 Points. The overall objective of this task is to use the ESP32 as a weather station that post results in a Raspberry PI server (or phone if you want)

It is VERY important to submit the report.pdf. If this file is missing, you lose ½ of the points.

Lab 5.1: Get the weather (5 points)

This is mostly to reproduce the wttr.in example from class.

OPTION 1: PI
Similar to class, but you need to setup the PI as a hotspot server at the same time that it is connected to EDUROAM. You need this to allow access to wttr.in

OPTION 2: Phone
In this case, the setup is the same as in the class. But if you pick option 2, you must also do option 2 (phone) in parts 5.2 and 5.3

Lab 5.2: Post results (5 points)

You must read the humidity and temperature sensor and create an HTTP post against the IP that provided the hotspot (either phone or PI4) using port 1234.

The ESP32 should send a POST every second to port 1234. The PI (or phone) should display the information when the post is realized.

Lab 5.3: Integrate both (10 points)

The ESP32 should request the outdoors temperature from wttr.in. The location should come from the server in the phone (or PI4) using a http (not httpS)

wget http://SOME_IP/location

The ESP32 should query the wttr.in with the indicated location, and combine the information with the local sensors (temperature + humidity) and send it to the phone (or PI4).

What/How to submit

Same instructions as lab1. Upload the zip with the code and report.pdf to Canvas.