Command Centre for Data Acquisition and Visualization
Software Project - Autumn 2022
University of Tartu, Estonia

About

This project requires the students to develop a command center application that acts as a bi-directional data-transfer interface between a Microcontroller (ESP32) and a computer over Wi-Fi.

What needs to be done?

Build and implement the Command Centre with the following:
- To be able to securely connect to the microcontroller (with sensors) over Wi-Fi
- Control buttons to initiate and terminate the reception of data-stream
- Dashboard *(to visualize received data over time (real-time preferred))*
- Offline database to store incoming data stream
- Ability to load and visualize previously stored data streams.

Micro-controller specific tasks
- Develop code (arduino/python based) to transmit data-stream over Wi-Fi.
- Data-stream to be transmitted and terminated based on requests from Command Centre

Notes
- Project proposal for a 3-4 member team.
- A NodeMCU (ESP32 based microcontroller based on arduino programming) can be provided to the student-team for development purposes.

Contact
Aditya Savio Paul  
aditya.savio.paul@ut.ee
(Junior Research Fellow, Tartu Observatory, UT)

References
Facebook  
Cuby Space Camp