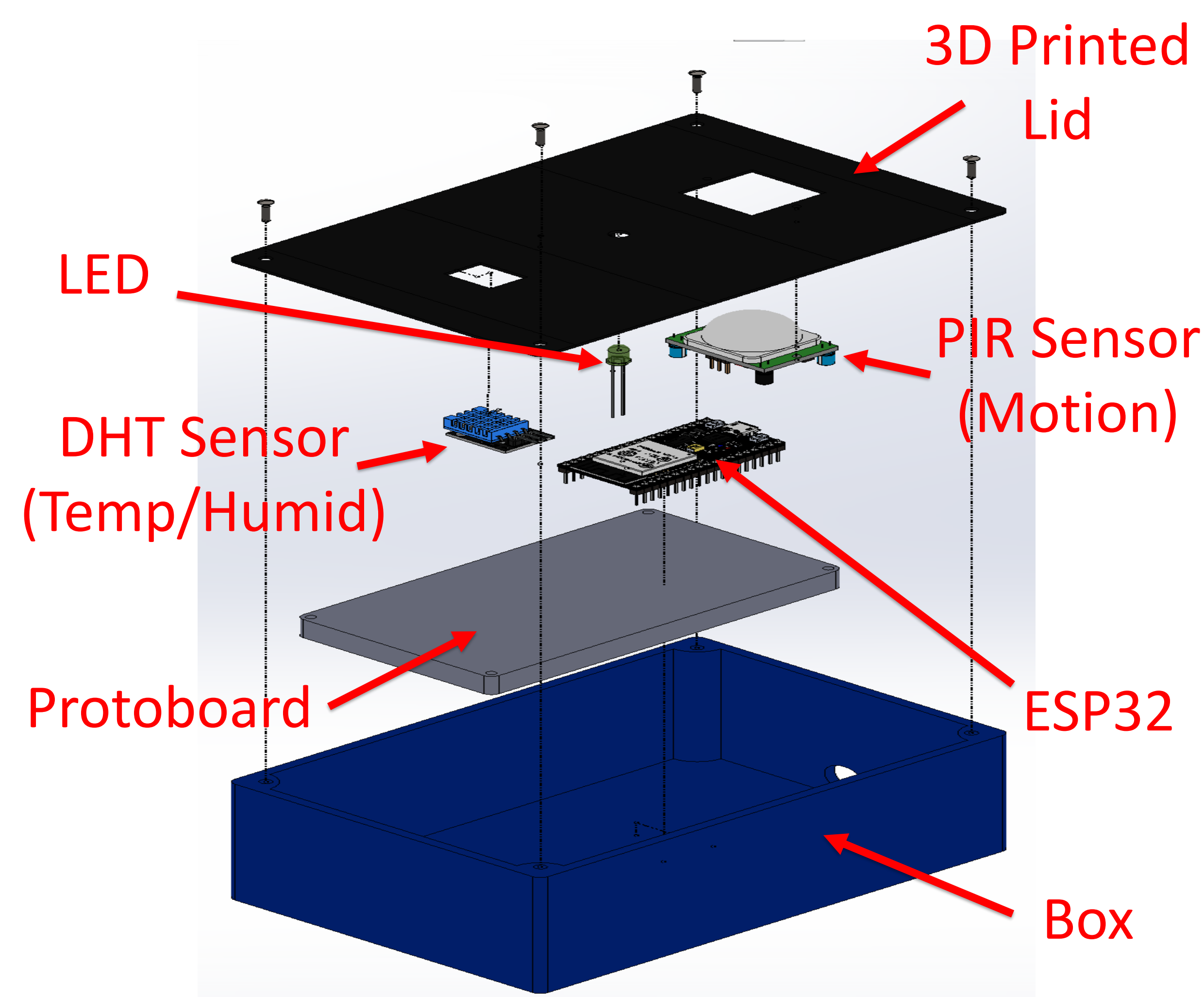


## Purpose

Develop an IoT network for a "Smart Dormitory" to improve energy efficiency, enhance building security, and optimize configuration for scalability

## Project History

- Developed device prototype
- Implemented MQTT communication protocol
- Created Node-RED user interface
- Assembled several devices with ESP32 and various sensors

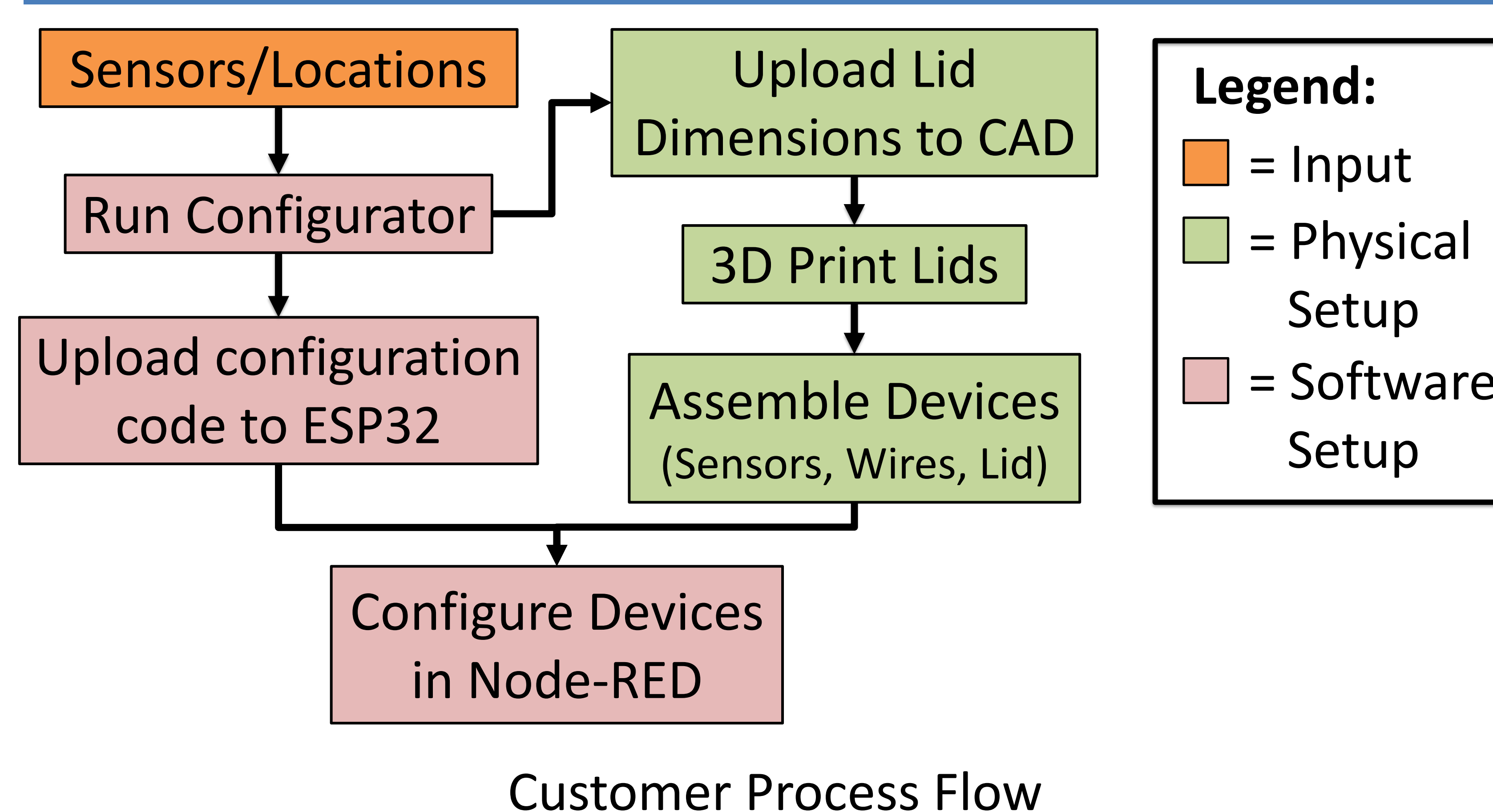
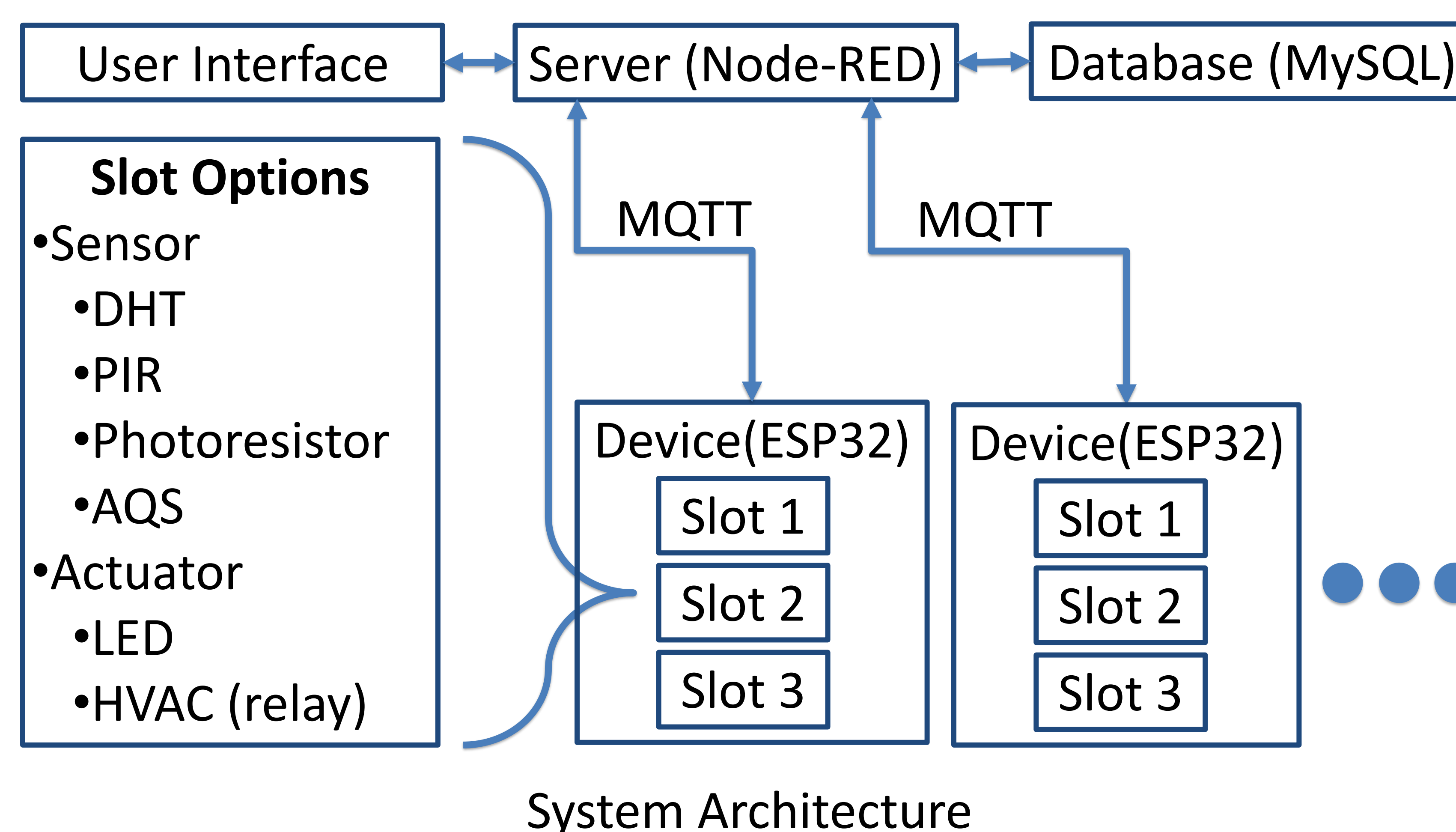


Device Prototype

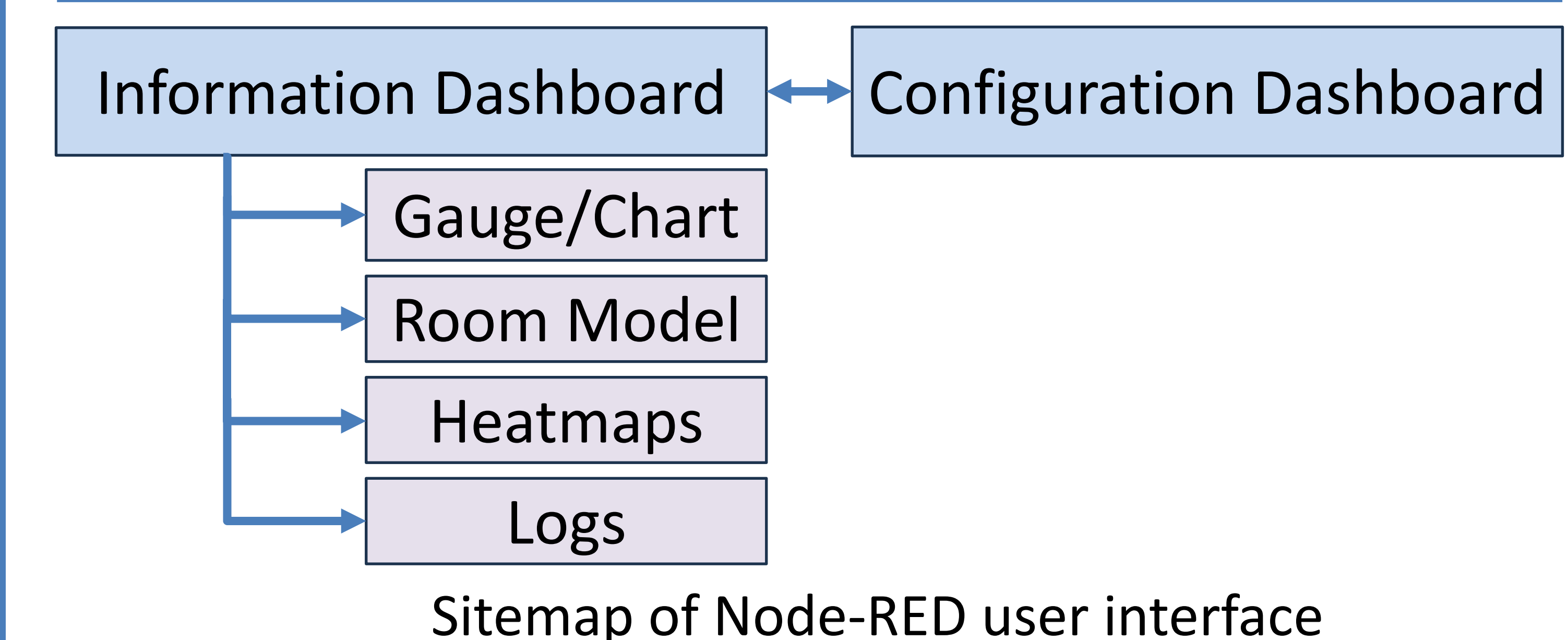
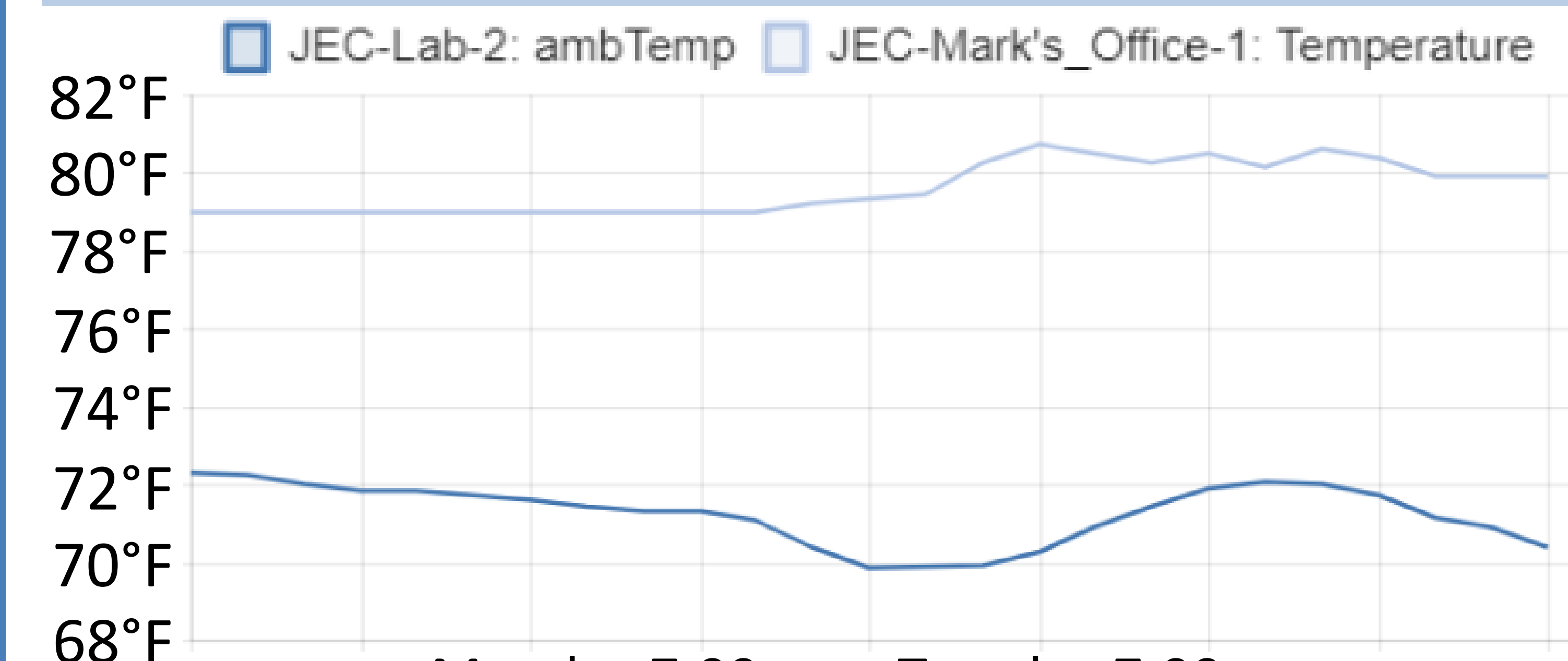
## Semester Objectives

- Improve Node-RED user interface with visualizations of historical data
- Install devices in target locations in the JEC
- Update user documentation for operating and maintaining devices/user interface

## Technical Approach



## Accomplishments



- Configure all devices using a table
- Configurable individual sensor polling rate to decrease network load
- Documentation for developers and users

## Future Work

- Overlay spatial heatmaps on building floor plans to compare sensor readings in a building
- Package Node-RED code into libraries