Study Guide for Week #11

Module 11: Cloud Integration with physical systems. Sensors Data Collection and Cloud Communication

Material Outline

(1) Sensors and Sensor Types
(2) Features of Sensors
(3) Sensors in ubiquitous environments
(4) Object Sensors
(5) Data from devices
(6) Cloud for gathering sensor data
      (a) Example with InfluxDB
      (b) Example Grafana

Provided Documents

Documents	Description
Week11-WatchMEfirst	Video explaining the goals of this week
Week11-StudyGuide.pdf	The guiding documents for the materials covered in this week, student work, and learning outcomes of this week.
Week11-Slides.ppt	PowerPoint slides regarding cloud integration with physical systems / Sensor Data Collection and Cloud Communication
Week11-Lecture	Video Lecture
Week11-PaperReading	Paper about "Realtime Greenhouse Environment Monitoring based on LoRaWAN Protocol using Grafana"

Documents	Description
Week11-Resources: Video -> Learn about InfluxDB Cloud	A 2:15 minutes video to show how InfluxDB works with IoT data
Week11-Resources: Video -> Home Automation dashboard tutorial using Home Assistant, InfluxDB	An interesting video that shows how to create dashboards using data from Home Assistants
Week11-Resources: Reading -> Data Collection from IoT Sensors	A reading explaining how to collect data from a sensor, how to store and transmit it to the Cloud
Week11-Checklist	A checklist for your reference

Student Assignments

- Digest PowerPoint slides
- Watch the Lecture (or attend the in-person lecture)
- Read the Week 11 Material (All readings and papers provided)
- Watch explicative videos
- Complete Lab #4

Learning Goals

This module is part of the learning outcomes

(1) Understand terminology related with Cloud-based IoT
(2) Perform sensor data gathering and visualization in the Cloud