Internet of Things Course (420-521-VA)

Final Project

Phase 1

The final project of the IoT course at Vanier college is a group-based activity. This project consists of different phases and each phase should be delivered on a specific date. The integrated version should be completed at the last lab session.

Project description:

By utilizing sensors, actuators, motors, Single-board computers, and micro-controllers, students design and simulate a smart home. They capture environmental information and make a decision based on received data. They also develop access control and occupancy systems and transfer all data to the cloud or a local server. Finally, they design and develop a web-based IoT dashboard to control and monitor the system.

Phase 1 instruction:

In this phase of the final project, each group works on the IoT dashboard structure and data presentation.

The requirements of this phase are:

- LED
- Resistor
- Wires
- Breadboard
- Raspberry-Pi

This phase has the following steps:

- Data capture
- Data communication
- Data presentation

Data Capture:

Design a button on your dashboard to work as a switch. You must get data from this switch. The switch has two states, ON and OFF.

Data communication:

The captured data (Switch State) is transferred to an RPi

Data Presentation:

Students should create an IoT dashboard and present the captured data (A switch and LED Status) on the dashboard. The user should be able to change the switch status from ON to OFF (vice versa) and the light icon on the webpage should show the status of the LED.