

Due 2017.6.30

The purpose of this project is to practice several techniques which are commonly used in IoT applications.

You are given a set of required devices including an Arduino board, nine sensors, a WiFi card (ESP 8266) and a breadboard for the circuit connection. You have to use these devices and components to design a simple IoT system that fulfills the following requirements:

- (1) A device that is able to read the environment temperature (or other measurable data), and sends the reading to the database server (MongoDB) which will be provided.
- (2) The message of reading should be sent through an IoT protocol called CoAP (will be discussed in the class).
- (3) You also need to write an app on a mobile device (or a user interface on a notebook or PC), so that you could monitor the sensor reading anywhere and anytime.
- (4) Once the temperature (sensed data) exceeds a threshold, you should be able to receive a warning message, and you should be able to send a message to actuate the device which is represented by an LED light, that is, to turn on (or off) the LED light.
- (5) You also need to prepare a report to describe your work, including your system design and the circuit connection, as well as the difficulty you ever encountered.
- (6) You need to demonstrate your project result before the due date. There will be a penalty for the delay unless you have a reasonable cause, but you should inform the TAs beforehand.
- (7) Extra credit will be given to those who implemented their own system with higher complexity or more attractive applications.

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