CPT211 Programming Language Concepts & Paradigms
Semester 2, 2014/2015

ASSIGNMENT 2 – Galileo Internet of Things and Mobile Apps
Group Work (Group of 3 or 4)

Objectives:

- To introduce Galileo Internet of Things (IoT) concept to the 2nd year students.
- To apply and augment the basic concept through using sensors and mobile apps.

Outcome:

- Since IoT concept is huge, there are plenty of opportunities for students to explore. As for this assignment, students should be able to explore basic network computing knowledge and simple playground provided by Intel Galileo and Android programming environment.

The purpose of this assignment is to explore basic features of Intel Galileo and mobile apps.

Assignment: Accessing Galileo Web Server via Mobile Apps

The idea: to read raw data from the temperature sensor through Intel Galileo web server in real time. Create a simple mobile application that reads and computes the data from the web server in real time. Also, the system should be able to demonstrate the following:

- Read the temperature and convert in Celcius.
- Compute minimum (min), maximum (max) and average (avg) temperature for every minute.
- Create a mobile apps (Android) that communicate with the web server to retrieve the temperature info. (min, max and avg)

Checklists:

- Implement Intel Galileo board as web server.
- Gather and store temperature in the web server (real time).
- Compute minimum (min), maximum (max) and average (avg) temperature every minute.
- Create a mobile apps that can retrieve the current min, max and avg temperature.

Deliverables:

(Team leader submission to ***hadri.hilmi@gmail.com*** **and e-learning portal** by 18-19/5/2015, 2:00PM**)**
[E-mail message subject title **– CPT 211 Assignment 2 (team name)]**

1. Team assignment demo during lab session on 18/5/2015 (Monday) and 19/5/2015 (Tuesday)
2. Source code submission
    - Inside the code: indicate the team name and members inside the comments
    - Include appropriate comments for code readability
3. Presentation slides submission
    - Indicate the team name and members on the slide cover
    - Slides page limit: 6 pages including the slide cover.
    - Slide contents should include the followings:
        i. Web server setup
        ii. Mobile apps implementation
        iii. Lesson learned

Note:

You must produce the codes and slides by yourself and do not copy from others. ***In the event that a report is found to be directly copied from others, F grade is given for the assignment.***

Deadline for submission is 18/19 May 2015, by 2:00 pm. (Source code & Slides)
1. E-mail to *hadri.hilmi@gmail.com* and *khairolnadzrinsaufi@gmail.com*
2. CPT 211 E-learning Portal via link provided

Group formation for Assignment 2:

1. **The group members should belong to the same lab session (1, 2, 3, 4)**
2. **Minimum members per group is 3 and maximum is 4.**
3. **Once the group is formed, please register your group name and members according to your lab session in the following web links -** https://docs.google.com/spreadsheets/d/1nCqDpez_hd32-hHyhvYmoaVMu1XdIxWh3cHeu8yz8dE/edit?usp=sharing

Lab Sessions/Demo: Recommendation and Lab Schedule / Agenda

Highly recommended to bring your own laptop and every group should have an SD card (memory)

Date	Time	Agenda
20/4/2015 21/4/2015	As scheduled	Assignment 2 Group Formation Programming env. setup
27/4/2015 28/4/2015	As scheduled	IDE/API Web server
5/5/2015 + Replacement for Monday lab at night 4/5/2015 (Holiday) – no lab	As scheduled for Tuesday group Replacement for Monday group 8:00-8:50pm & 9:00-9:50pm on Tuesday night	Milestone – Web server Mobile Apps
11/5/2015 12/5/2015	As scheduled	Mobile apps and complete the assignment
18/5/2015 19/5/2015	As scheduled	Group Demo and Assignment Submission by Group Leaders