CSE 4340 **Lab 3 – IoTivity** **Fall 2018**

Objective:

1. Familiarization with IoTivity.
2. Introduction to the Internet of Things (IoT).

Due: Wednesday, November 28, 11:59pm, via Blackboard

Project Specification:

The first two labs in this course were intended to introduce students to the challenges of locating and connecting to devices over a network. Issues introduced by working over network frequently frustrate attempts to develop network-enabled devices, such as those constituting the Internet of Things (IoT).

IoTivity is an open source framework intended to facilitate networked devices connecting to the Internet and one another. IoTivity is sponsored by the Open Connectivity Foundation, an industrial consortium dedicated to standardizing protocols for use within the Internet of Things.

IoTivity is platform- and transport-agnostic, meaning it can work between different operating systems and different types of networks. For this lab, I strongly recommend using Windows and WiFi, but other operating systems are supported as well.

The framework will handle locating and connecting to devices, and provides a robust API for building full-featured applications. For this lab however, you will only be required to install IoTivity and demonstrate that one of the provided sample applications (specifically `SimpleServer` and `SimpleClient`) are running correctly.

I recommend getting started at the following link: https://wiki.iotivity.org/windows.

Grading:

20 – Components for the IoTivity framework are downloaded and installed.
20 – The IoTivity framework is installed correctly.
20 – Two test devices can successfully run `SimpleClient` and `SimpleServer`.
20 – Create a resource at the server and notify the available Observers (clients).
20 – Show the Observation result at the client.

Write-up:

Your write-up should include instructions on how to compile and run your program. Ideally it should be complete enough that the TA can test your program without your being there. Your write-up should include any known bugs and limitations in your programs. If you made any assumptions you should document what you decided and why. This write-up should be in text format and should be submitted along with your code

Submission Guidelines:

Submit your code by the due date via Blackboard. You should zip your source files and other necessary items like project definitions, classes, special controls, DLLs, etc. and your write-up into a single file and include it with your Blackboard submission. The name of this file should be your last name and the last four digits of a student ID number in the form name_number.zip. If you are working as a pair, each student is responsible for submitting the same .zip file. Be sure that you include everything necessary to unzip this file on another machine and compile and run it. This might include forms, modules, classes, configuration files, etc.

Make sure your name and your student ID are listed in your write-up, and in comments in your source code. You may resubmit the project at any time. Late submissions will be accepted at a penalty of 10 points per day. This penalty will apply regardless of whether you have other excuses. In other words, it may pay you to submit this project early. If the TA cannot run your program based on the information in your write-up then he will email you to schedule a demo. The TA may optionally decide to require all students to demonstrate their labs. In that case we will announce it to the class.

If your program is not working by the deadline, send it anyway and review it with the TA for partial credit. Do not take a zero or excessive late penalties just because it isn't working yet. We will make an effort to grade you on the work you have done.

DO NOT POST YOUR CODE ON PUBLICLY ACCESSIBLE WEBSITES UNTIL AFTER THE DEADLINE. SHOULD YOU DO SO, THIS WILL BE CONSIDERED COLLUSION, AND YOU WILL BE REFERRED TO THE OFFICE OF STUDENT CONDUCT AND YOU WILL RECEIVE AN F IN THE COURSE