COSC 4301-01/5340-01: Wireless Sensor Networks

Homework 1
Posted: July 16, Due: Class Time, July 22 2008

Name: ______________________
LUID: ______________________
Date: ______________________
This is **individual** assignment.

**Question 1 (85 points):** The purpose of this programming assignment is to familiarize yourself with TinyOS programming based on XubunTOS and various concepts in developing a simple application.

Please follow TinyOS 2.x tutorial Lesson 3 **“Mote-mote radio communication”**

http://docs.tinyos.net/index.php/Mote-mote_radio_communication

its section **“Sending a Message over the Radio”**

and Lesson 4 **“Mote-PC serial communication and SerialForwarder”**

http://docs.tinyos.net/index.php/Mote-PC_serial_communication_and_SerialForwarder

to create the *BlinkToRadio* application. This application requires at least two motes.

The following figure gives the details about how to run this simple application.

**Hints:**

```
Terminal 1 of PC A# java
net.tinyos.tools.Listen -comm serial@/dev/ttyUSB1:micaz

Option 1: Listen connects to local serial ports
```

```
MIB520 + MicaZ

Run BlinkToRadio

BaseStation

Terminal 2 of PC A# java
net.tinyos.sf.SerialForwarder -comm serial@/dev/ttyUSB1:micaz

Terminal 3 of PC A# java
net.tinyos.tools.Listen -comm sf=localhost:9002

Option 2: Listen connects to SerialForwarder running on a local machine
```
To upload a program image to Mica2 motes through USB:

```sh
make mica2 install mib510,/dev/ttyUSB0
```

**Question 2 (15 points):** What is a *packet source*?

**How to Turn In:**

Both hardcopy and softcopy are required.

1. **Hardcopy:** Please turn in a hardcopy of all the solutions on the due date;
2. **Softcopy:** Please email your solutions to all the questions to
   
   `wsnsummer2008@gmail.com` in one email.
   
   Please use a. *your name*; b. *WSN – Homework1*; as the subject of the email.
3. For programming questions, please do NOT use MS WORD. Please send all the source files in .nc format.