Comp 4985 Computer Systems Technology February 2014

Data Communication Option

Assignment #3

Due Date: March 5, 0930 hrs. Work in groups of two.

Objective: To gain experience with Android application development.

Assignment:

You are required to design and implement an Android application that allows two devices to communicate with each other using the TCP/IP protocol suite. In addition you are required to implement location finding functionality into the application. Your program must implement the following **minimum** features:

a. One device will act as a client, and will acquire its current location (using any of the techniques we have discussed in lectures) and send the coordinates to a receiving (server) device.

b. The client machine will prompt the user to enter an IP address together with a port number for the remote receiver.

c. The server device will receive the location data and display the following information:

- The time the coordinates were received
- The IP address and name of the client device
- The latitude and longitude of the sending device

d. Optionally (for bonus marks) you can plot the coordinates of the client device on a map using the Google maps API.

For more bonus marks you may consider the following features:

- Using the Android location service to continuously track device location
- Using the Google Maps library to plot location data on a map
- Using broadcast receivers to track location in the background

Constraints:

- You must implement the communication channel(s) between the two devices using the TCP/IP protocol suite.

- There are no other technical constraints on the tools, utilities, and languages you use to design and implement this application, other than it must be done on Android.

To be submitted:

- Detailed design work showing all the implementation details of the program.
- All the components of your application (including a compiled package) in separate directory.
- A clear and concise **README** outlining all the different modules and components that you have submitted and how to build a functional package using them.
- A clear and concise user document on how to use your application.
- A detailed test document demonstrating the functionality of the application as per specifications.
- In addition you will be required to demonstrate the working of your program in the **SE 12-323 lab** on the day the assignment is due.

Evaluation

(1). **Design Work**:	/ 10
(2). **Code Quality**:	/ 5
(3). **Functionality**:	/ 60
(4). **Testing**:	/ 20
(5). **README:**	/ 5
Total:	/ 100