SERIAL COMMUNICATION VIA BLUETOOTH

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PROJECT OVERVIEW

Problem
Functional Specification
System Layout
THE PROBLEM

Create a lab for ECET434 class that will emphasize the students learning of the Android and .Netduino environments while introducing the students to serial communication between devices utilizing Bluetooth.
FUNCTIONAL SPECIFICATIONS - ANDROID

Provide a communication application tool on the Android smartphone that via Bluetooth, sends commands to the .Netduino to enable/disable LED's on Bluetooth shield that have been soldered to the board, as well as request weather data from a sensor on the shield.

- The application tool will have a button for each LED color, a stop light button to change the LEDs on a timer, and a get weather button.
- The application tool will utilize the Bluetooth connection, send and receive functions built into the Android OS.
FUNCTIONAL SPECIFICATIONS
- .NETDUINO

Provide a .Netduino application that enables the Bluetooth shield to be able to communicate with the smartphone and respond to the requests to enable/disable LED’s, as well as update weather information via BMP180 sensor.
The Bluetooth shield will be on top of the microcontroller.

The shield will have 3 LEDs and the BMP 180 sensor.

The smartphone will communicate with the microcontroller via Bluetooth.

Depending on the button pressed, a command will be sent wirelessly to the microcontroller.