Concept Development

Problem Statement

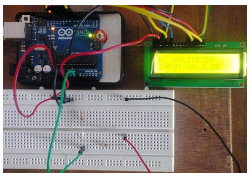
Measuring the battery life and performance of a device is difficult without sophisticated and expensive software and hardware.

Proposed Idea

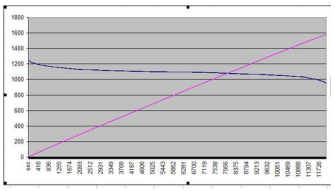
The HackBerry Lab Battery Meter is a multi-function handheld device that allows students and instructors at HackBerry Lab to measure the overall power performance of their devices and measure instantaneous voltage as well as battery life and duration. It features configurable voltage levels as well as adjustable sampling when dealing with long-life LiPo batteries.

Influences

Benchtop Multimeter - Standard multimeters are useful workbench tools that can help diagnose issues with circuits. Often times, these are used to test for various voltages around a circuit to ensure connections have been made properly. *Source*: https://en.wikipedia.org/wiki/Multimeter



Arduino Digital Voltmeter - This project proposes a simple Arduino-based voltmeter that shows instantaneous voltages on an LCD screen. It uses a simple voltage divider that allows an analog pin to accurately read the voltage of an external power source. *Source*: http://www.electroschematics.com/9351/arduino-digital-voltmeter/



Battery Capacity Tester - This project uses graphing software to chart the lifespan of a battery through an Arduino and serial port. It makes inferences about the discharge rates of batteries, as well as low voltage levels at which circuits become unstable. *Source*:

http://www.instructables.com/id/Arduino-True-Battery-Capacity-Tester-Li-IonNiMH/