# JavaOne 2008 Hands-On Labs

# LAB-7430 Building Sun SPOT Sensor Network Devices

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# Goal of This Lab

Construct a complete Sun SPOT Sensor/ actuator network system including hardware and software development

We know that sounds like a lot, but it's possible, and you'll do it!

# How Hands-on Labs Work

- You will be doing both Hardware and Software development during this lab
  - The Hardware development is designed for software developers, and you will be able to construct a complex sensor device quickly and easily.
- Hardware development will be done using the hardware and tools provided
- Software development will be done via the browser documentation and NetBeans IDE

# Lab Format

- This lab is for 120 mins
- 7 Lab exercises
- 2 Hardware development exercises
  - 1: Construct a Bend Sensor
  - 2: Complete a Servo connection
- 5 Software exercises
  - 0: Configuration
  - 1: Simple application in the Emulator
  - 2: Bend Sensor Code
  - 3: Servo Movement Code
  - 4: Wireless Network Connection Code

# Lab Setup

1. Download and un-jar the Lab Materials from:

2. Install Sun SPOT SDK and NetBeans 6.0 Modules

3. Expand 7430_SPOTs.zip
   - Will create 7430_SPOTs directory  <lab_root>
   - It contains the following:
     - HTML document index.html
     - exercises directory
     - NetBeans Project Directories
     - Sun SPOT SDK Documentation Directory

# Agenda

- Install and configure the Sun SPOT SDK
- Build a Thin-Film Capacitor Bend Sensor
- Configure a Servo on a Sun SPOT
- Complete Software to read data from the Bend Sensor and to control the Servo
- Connect the Bend Sensor Application to the Servo Controlling application via the Sun SPOT Wireless Radio

# Demo

Configure and run Sun SPOT test

# Summary

- Wireless sensor network hardware development for the software engineer!

- Sun SPOT Code Development

- A complete hardware/software wireless sensor network application to sense input and effect change via a wireless network

# For More Information

- http://www.sunspotworld.com/
- http://spots.dev.java.net
- http://blogs.sun.com/davidgs

# Q&A

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