1.00 Lecture 27

Design Lab III

Reading for next time: Big Java 21.2-21.3

Design Lab

- **Focus is on design and building application with sensors and a GUI**
- **No solutions will be given in class**
  - **An example solution will be posted at 8pm tonight on the Web site**
- **Ask a lot of questions as you work through the lab**
  - **We encourage you to work with someone else**
- **You do not have to finish the entire program**
  - **The emphasis is on the design choices and learning to use sensors and Swing, not on all the details.**
  - **One detail: ignore that the light sensor is not ratiometric**
- **Put light sensor on port 3, slider on port 4**
- **Put LEDs on digital ports 1 and 2**

Exercise

- **Write lighting application with Phidgets and Swing:**
  - **Light sensor records the ambient light and provides input to the algorithm described below that decides whether to light 1 or 2 LEDs.**
  - **Slider sensor (simulating an intelligent dimmer switch):**
    - **When slider level < 100, both LEDs are off.**
    - **When 100 <= slider level < 500, 1 LED is on.**
    - **When 500 <= slider level < 800, the number of LEDs turned on depends on the light level reported by the light sensor.**
      - **Light level > 500 => 1 LED lit;**
      - **Otherwise both LEDs lit.**
    - **When slider level >= 800, both LEDs lit.**
  - **Swing GUI shows:**
    - **Current light sensor and slider sensor readings**
    - **Status of each LED: is it turned on or off?**
    - **Use g2.drawString() within paintComponent()**

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Spring 2012