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Lab3

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A some excuse of using threads :(

In this lab, we were required to set up the program. The program is reading user's inputs and the LED's blinking time is changing depends on the input. If the user inserts big number, then the time to turn on and off is long. If the user inserts small number, then the time to turn on and off is short. The user can insert multiple different numbers and the user can interact with the output by LED. All this program is based on thread and we divided the program as two of classes: "Lab3Main" and "Lab3Thread".

Two of boxes show the codes of the two classes

```
public class Lab3Main{
    public static void main(String []args){
        Lab3Thread t1 = new Lab3Thread(true);
        Lab3Thread t2 = new Lab3Thread(false);
        t1.start();
        t2.start();
    }
}
```

```
import com.pi4j.io.gpio.*; // this is necessary to use the classes below
import java.util.*;


    public class Lab3Thread extends Thread{
      static int delay = 500;
      boolean blinker = false;
```

```
        static void mySleep(int t){
          try{
            Thread.sleep(t);
            } catch(Exception e){
           }
     }
Lab3Thread(boolean blink){ // Constructor indicating state
this.blinker = blink;
}
public void run(){
if(blinker){
GpioController gpio=GpioFactory.getInstance()
GpioPinDigitalOutput pin=gpio.
while(true){
pin.high();
mySleep(delay);
pin.low();
mySleep(delay);
}
}
else{
Scanner sc = new Scanner(System.in);
while(true) delay = sc.nextInt();
}
}
}
```

CSE 223 Lab 3 - An Excuse to Use Threads :)

In this lab, you're going to modify what you did in Lab 2.

When you start your program, the LED should blink on and off every second (500 millisecond delay between each change). While the LED is blinking, you want the user to be able to enter a new number and change the blink rate. This can be repeated indefinitely: if the user does nothing, the LED continues to blink; but when the user enters another number, the blink rate is adjusted accordingly. **The LED should never stop blinking.**

Doing this will require a pair of threads: one for receiving input from the user, and the other for blinking the LED. When the first thread receives a new blink rate, it should inform the second thread, by calling a method in that thread.

Your lab write-up should describe this experiment, including an overall description; any wiring diagrams and code involved; a discussion of anything unusual that happened when you wrote the code/compiled/etc.; a discussion of how you tested the code, and details of what happened when you ran the code.

Include a flowchart of pseudocode describing the two thread, what each thread does, and how communication occurs between them.

Also include a signature from the lab assistant indicating that your code/circuit worked correctly. A sign-off area is included in this write-up. Print that out, have it signed, and include a copy of it in your submitted report.

LAB 3 SIGN-OFF

Group Number: 514 Date: _____

Group Members: Ryan Paulos
Gawun Kim
~~Deboye~~
Deboye

Experiment:

1. LED blinks on and off at a fixed rate.
2. While LED continues to blink, the rate can be changed at any time via user inputs.
3. This can be done repeatedly.
4. The blinking never stops.

Witness: Nega