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Professor Macias

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Lab 2

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A Blinking LED

In this lab 2, we mainly dealt with Raspberry pi and some device. The device was circuit which was consisted by wires and LED. We connected each of wires into 14 and 16 pins. Based on Java, we controlled LED blinking and the blinking pattern. There are the three of different experiments:

1. LED turns on and off in response to user input.
2. LED blinks on and off automatically.
3. LED blinks on and off at a user-selectable rate.

We inserted some codes into a file and we named it as “Lab2.java”

Experiment 1

- In experiment 1, when we typed “1” for the input, the LED turned on. If input was typed other numbers, the LED turned off.
- To compile this code, we used the following command.

javac -cp .:/opt/pi4j/lib/pi4j-core.jar Lab2.java

- To execute our code, we used the following command.

sudo java -cp .:/opt/pi4j/lib/pi4j-core.jar Lab2

- Below is the code what we did.

```
import com.pi4j.io.gpio.*;
import java.util.*;
public class Lab2
{
	public static void main(String[] args)
	{
	GpioController gpio=GpioFactory.getInstance();
	GpioPinDigitalOutput pin=gpio.provisionDigitalOutputPin(RaspiPin.GPIO_04);
	Scanner sc =  new Scanner( System.in);

		while(true)
```

```
            {
              if(sc.nextInt() == 1) pin.high();
              else
              {
              pin.low();
              }
            }
      }
}
```

Experiment 2

- In experiment 2, we implemented the LED to blink automatically. We set the blinking time pattern with inserting number. In this experiment, we set the number as 500.
- Based on the experiment 1, we modified the code.
- To compile this code, we used the following command.

javac -cp .:/opt/pi4j/lib/pi4j-core.jar Lab2.java

- To execute our code, we used the following command.

sudo java -cp .:/opt/pi4j/lib/pi4j-core.jar Lab2

```
import com.pi4j.io.gpio.*; import java.util.*;
public class Lab2
{

    static void mySleep(int t)
    {
       try
       {
         Thread.sleep(t);
        }catch(Exception e){
        }
    }
   public static void main(String[] args)
   {
   GpioController gpio=GpioFactory.getInstance();
   GpioPinDigitalOutput pin=gpio.provisionDigitalOutputPin(RaspiPin.GPIO_04);

            while(true)
            {
              pin.high();
              mySleep(500);//for EXp2/
              pin.low();
              mySleep(500); //for EXp2/
            }
```

```
    }
}
```

Experiment 3

- In experiment 3, it was also very similar to experiment 2. However, when executing this program, user is able to insert some number and this value would be a pattern of blinking. Once user inserts big number, it took a long time for one blinking rather than small number of input.
- Based on experiment 2, we modified the code.
- To compile this code, we used the following command.

javac -cp .:/opt/pi4j/lib/pi4j-core.jar Lab2.java

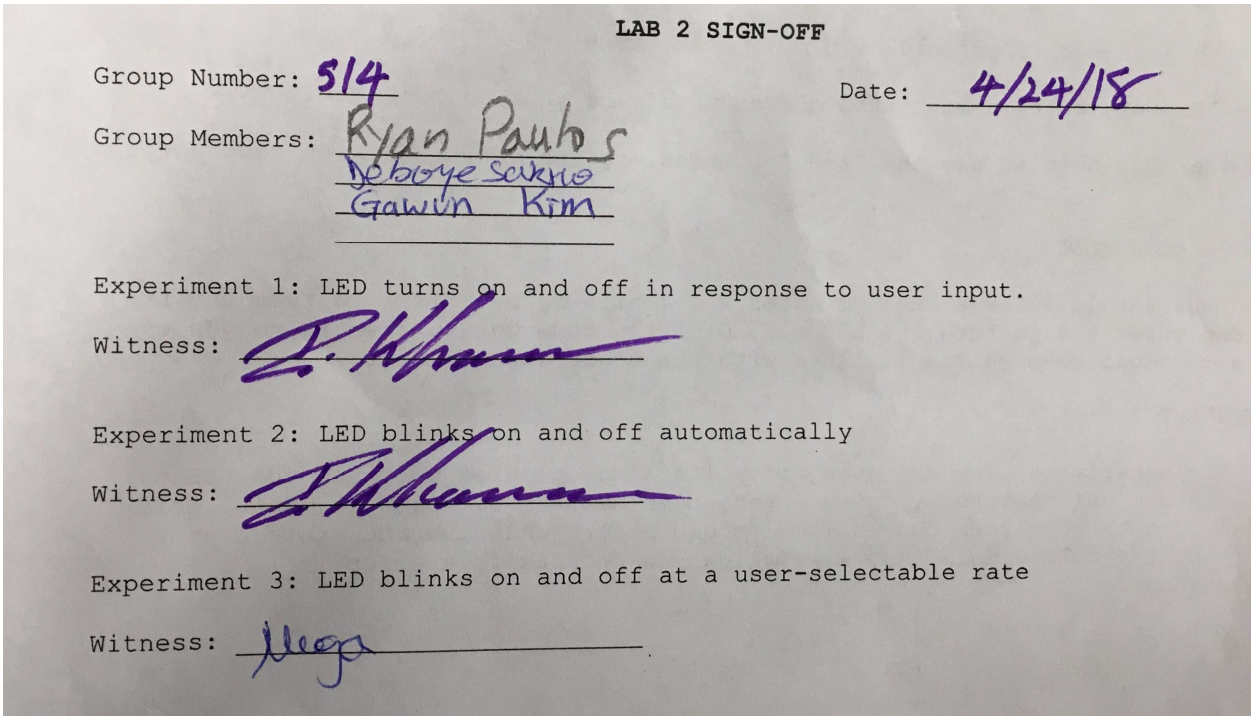
- To execute our code, we used the following command.

sudo java -cp .:/opt/pi4j/lib/pi4j-core.jar Lab2

```
import com.pi4j.io.gpio.*;
import java.util.*;
public class Lab2
{
       static void mySleep(int t)
       {
            try{
            Thread.sleep(t);
             } catch(Exception e){
             }
       }


       public static void main(String[] args)
       {

        GpioController gpio=GpioFactory.getInstance();
        GpioPinDigitalOutput pin=gpio.provisionDigitalOutputPin(RaspiPin.GPIO_04);

        Scanner sc =  new Scanner( System.in);
        int delay = sc.nextInt();

              while(true)
              {
                pin.high();
                mySleep(delay);//for EXp2/
                pin.low();
                mySleep(delay); //for EXp2/
              }
```

```
    }
}
```

Here is the proof of our work



LAB 2 SIGN-OFF

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Experiment 1: LED turns on and off in response to user input.

Witness: [signature]

Experiment 2: LED blinks on and off automatically

Witness: [signature]

Experiment 3: LED blinks on and off at a user-selectable rate

Witness: [signature]