Terran Blake Lab Section: 7:30 Wednesday // Lab 1 Report

Objective: To become familiar with the Arduino IDE and to start writing code. Prelab: Code was uploaded to the website.

Part 1) First program was debugged and executed in the lab. The lab instructor verified the pulsing

LED. The debugged code is included in Appendix A.

Part 2) The program was adapted to toggle a second pin every three seconds. This pin was monitored with a logic probe and shown to pulsing at the correct rate. The debugged code is included in Appendix B.

Appendix A: Code for Part 1

// Variables will change :

int LedTimer = LOW; // Intiger used to set up LED

unsigned long oldMillis = 0; // will store last time LED was updated

unsigned long olderMillis = 0; // will store last time LED was updated

int SuperTimer = LOW;

// constants won't change :

const long interval = 1000; // How often LED will blink

const long superinterval = 3000;

void setup() {

// Makes pin 13 as an OUTPUT

pinMode(13, OUTPUT); //Number of pin being used

pinMode(12, OUTPUT);

}

void loop()

{

// Will use the timer to find whether it is time to blink or not

unsigned long currentMillis = millis();

if(currentMillis - oldMillis >= interval) {

// save the last time you blinked the LED

oldMillis = currentMillis;

// if the LED is off turn it on and vice-versa:

if (LedTimer == LOW)

LedTimer = HIGH;

else

LedTimer = LOW;

// set the LED with the ledState of the variable:

digitalWrite(13, LedTimer);

Appendix B: Code for Part 2

// Variables will change :

int LedTimer = LOW; // Intiger used to set up LED

unsigned long oldMillis = 0; // will store last time LED was updated

unsigned long olderMillis = 0; // will store last time LED was updated

int SuperTimer = LOW;

// constants won't change :

const long interval = 1000; // How often LED will blink

const long superinterval = 3000;

void setup() {

// Makes pin 13 as an OUTPUT

pinMode(13, OUTPUT); //Number of pin being used

pinMode(12, OUTPUT);

}

void loop()

{

// Will use the timer to find whether it is time to blink or not

unsigned long currentMillis = millis();

if(currentMillis - oldMillis >= interval) {

// save the last time you blinked the LED

oldMillis = currentMillis;

// if the LED is off turn it on and vice-versa:

if (LedTimer == LOW)

LedTimer = HIGH;

else

LedTimer = LOW;

// set the LED with the ledState of the variable:

digitalWrite(13, LedTimer);

if(currentMillis - olderMillis >= superinterval) { //Same idea as

the last counter but on a much faster pace and must be tested with Logic

Probe

olderMillis = currentMillis;

if (SuperTimer == LOW)

SuperTimer = HIGH;

else

SuperTimer = LOW;

//Assigning Pin to timer

digitalWrite(12, SuperTimer);

} //end of loop

} //end of program

}