Module B.4 Level 2: Simple Procedure

Javon

**Outline**

Write a program to blink the on-board LED based on user commands from the serial monitor. Parse commands to turn on and off the LED as well as blink it a specified number of times.

**Objectives**

**Prerequisites**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Prerequisite Module(s)** | **Level** | **Student Initial** | **Teacher Initial** | **Date** |
| None |  |  |  |  |

**Materials**

* Arduino Development Environment (IDE)
* Arduino proto board

**Level 2: Adding Colored LEDs**

1. Extend your proto-board to add two colored LEDs.
2. Modify your procedure definition on line #23 to look like the following:  
   “int blink(int value, int led) {“  
   Done
3. Modify the code in your procedure to light up the LED indicated in the procedure parameter.
4. Modify your main loop to correctly use your new procedure definition.

// global variable for a number of times to blink the LED

int times = 5;

int YellowLED = 12;

int RedLed = 11;

// the setup function runs once when you press reset or power the board

void setup() {

 // initialize digital pin LED\_BUILTIN as an output.

 pinMode(LED\_BUILTIN, OUTPUT);

 Serial.begin(9600);

}

// the loop function runs over and over again forever

void loop() {

 int timesBlinked = blink(4,LED\_BUILTIN);

 Serial.print("The LED was SUPPOSED to blink ");

 Serial.print(times);

 Serial.print(" times BUT only blinked ");

 Serial.println(timesBlinked);

 delay(1000);

}

// a new procedure defined by you to blink the LED

“int blink(int value, int led) {“

 for (int i = 0; i < times; i++) {

   digitalWrite(LED\_BUILTIN, HIGH);   // turn the LED on (HIGH is the voltage level)

   delay(500);                       // wait for a second

   digitalWrite(LED\_BUILTIN, LOW);    // turn the LED off by making the voltage LOW

   delay(500);                       // wait for a second

 }

 Serial.print("The LED blinked ");

 Serial.print(times);

 Serial.println(" times.");

 return times;

}