**Basic Challenge Requirements (Level 1 to Level 2)**

1. Write an Arduino program that contains the required “Setup” and “Loop” procedures.
2. Define an integer variable to hold the pin position for an external “red” LED
3. Define an integer variable to hold the pin position for an external “green” LED
4. Add code to blink the “red” LED for one second and then blink the “green” LED for one second.
5. Cut and copy your program code below this line and submit to your GitHub repository.

int greenled = 9;

int redled = 8;

void setup() {

pinMode(greenled, OUTPUT);

pinMode(redled, OUTPUT);

}

void loop() {

digitalWrite(redled, HIGH);

delay(1000);

digitalWrite(redled, LOW);

delay(1000);

digitalWrite(greenled, HIGH);

delay(1000);

digitalWrite(greenled, LOW);

delay(1000);

}

**Standard Challenge Requirements (Level 3)**

1. Modify your program to read and write character strings from the serial monitor.
2. If the user types “red” then run the code to turn on the “red” LED.
   1. Also print “Red LED is On” to the serial monitor.
   2. Also make sure the “green” LED is off.
3. If the user types “green” then run the code to turn on the “green” LED.
   1. Also print “Green LED is On” to the serial monitor.
   2. Also make sure the “red” LED is off.
4. If the user types something other than “red” or “green” then run the code to turn on both LEDs off.
   1. Also print “Both LEDs are Off” to the serial monitor.
5. Cut and copy your program code below this line and submit to your GitHub repository.

const int greenPin= 4; //the green led pin attact to

const int redPin= 7; //the red led pin attach to

String comdata = "";

int lastLength = 0;

void setup()

{

pinMode(greenPin,OUTPUT); //initialize the greenPin as output

pinMode(redPin, OUTPUT); //initialize the redPin as output

Serial.begin(9600); // start serial port at 9600 bps:

Serial.println("Please input any color of LED:"); //print message on serial monitor

}

void loop()

{

//read string from serial monitor

if(Serial.available()>0) // check if data has been sent from the computer

{

comdata = "";

while (Serial.available() > 0)

{

comdata += char(Serial.read());

delay(2);

}

Serial.println(comdata);

}

if(comdata == "red")

{

digitalWrite(redPin, HIGH);//turn the red led on

digitalWrite(greenPin, LOW);//turn the green led off

}

else if(comdata == "green")

{

digitalWrite(redPin, LOW);//turn the red led off

digitalWrite(greenPin, HIGH);//turn the green led on

}

else

{

digitalWrite(redPin, LOW);//turn the red led off

digitalWrite(greenPin, LOW);//turn the green led off

}

}

**Enhanced Challenge Requirements (Level 4)**

1. Modify your program to read numbers from the serial monitor.
2. If the number is even then blink the “green” LED the number of times.
3. If the number is odd then blink the “red” LED the number of times.
4. Cut and copy your program code below this line and submit to your GitHub repository.