**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 ledred = 13; // red LED connected to digital pin 13

int ledgreen = 12;

void setup() // run once, when the sketch starts

{

pinMode(ledred, OUTPUT); // sets the digital pin as output

pinMode(ledgreen, OUTPUT);

}

void loop() // run over and over again

{

digitalWrite(ledred, HIGH); // sets the red LED on

digitalWrite(ledgreen, LOW);

delay(1000); // waits for a second

digitalWrite(ledred, LOW); // sets the red LED off

digitalWrite(ledgreen, HIGH);

delay(1000); // waits for a second

}

**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.

int ledred = "13";

int ledgreen = "12";

void setup()

{

pinMode(13, OUTPUT);

pinMode(12, OUTPUT);

Serial.begin(9600);

Serial.println("Input 2 to Turn on 13 and 3 to on 12 and Input 4 to Turn off 13 and 5 to turn off 12 and Input 6 to turn both led off ");

}

void loop() {

if (Serial.available())

{

int state = Serial.parseInt();

if (state == 1)

{

pinMode(LED\_BUILTIN, HIGH);

Serial.println("Command completed LED turned ON");

}

if (state == 2)

{

pinMode(LED\_BUILTIN, LOW);

Serial.println("Command completed LED turned 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.