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1  /**
2    Gas Expansion Action - Mission Possible MK2
3    Ward Melville HS Science Olympiad - Team A - 2017-2018
4    expTiny.ino
5    Purpose: Turns on a MOSFET when the input is recieved. Turns off the output after 9.5 seconds.
6
7    @author David Cutting
8    @version 1.0 1/22/2018
9  */
10
11 // Definitions for microcontroller pin numbers
12 const int IN_PIN = 3;
13 const int OUT_PIN = 0;
14
15 // Variables for states of the pins
16 bool inState = LOW;
17 bool outState = LOW;
18
19 // Variables and constants for the debounce code
20 unsigned int counter = 0;
21 const int DEBOUNCE_COUNT = 50;
22 long time = 0;
23
24 void setup() {
25   // Set the microcontroller pins as either inputs or outputs
26   pinMode(IN_PIN, INPUT);
27   pinMode(OUT_PIN, OUTPUT);
28
29   // Write the output pin low (off)
30   digitalWrite(OUT_PIN, LOW);
31 }
32
33 void loop() {
34
35
36   if(millis() != time && outState == LOW) { // If more than one millisecond has elapsed
     since the last loop...
37     inState = digitalRead(IN_PIN); // Read the current state of the input and store it
38
39     if(inState == HIGH) { // If the state of the input is high
40       counter++; // Increment the counter
41     }
42     else { // Otherwise...
43       counter = 0; // Reset the counter
44     }
45     if(counter >= DEBOUNCE_COUNT) { //  If the counter is greater than the debounce
     threshold...
46       counter = 0; // Reset the counter
47       outState = HIGH; // Set the trigger state to high
48       digitalWrite(OUT_PIN, outState); // Set the output pin to the trigger state
49       delay(9500); // Wait 9.5 seconds to ensure that the heater has time to expand the gas.
50       digitalWrite(OUT_PIN, LOW); // Set the output pin to low to turn off the heater and
     prevent overheating.
51     }
```

```
52      time = millis(); // Record the current time in milliseconds
53    }
54
55  }
56
```