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1  // For 2x4 button pad. Prints message and toggles door lock on each press.
2  // Set your serial console to 19200
3  // Written by Will O'Brien, Modified by Braden Licastro, based on various others works.
4
5  // Define the number of buttons in their respective locations.
6  #define ROWS 2
7  #define COLS 4
8
9  // Pins for the Vin of the buttons.
10 const byte buttonWrite[2] = {
11   2, 3};
12 // Pins for reading the state of the buttons.
13 const byte buttonRead[4] = {
14   6, 7, 8, 9};
15
16 boolean pressed[ROWS][COLS] = {
17   0};
18
19 // Set up the lock.
20 const byte lock_pin = 4;
21 boolean lockState = 0;
22
23 //Set up the code.
24 void setup(){
25   //Initialize output
26   Serial.begin(19200);
27   pinMode(lock_pin, OUTPUT);
28   digitalWrite(lock_pin, LOW);
29
30 // Setup the button inputs and outputs
31   for(int i = 0; i < ROWS; ++i){
32     pinMode(buttonWrite[i], OUTPUT);
33     digitalWrite(buttonWrite[i],LOW);
34   }
35   for(int j = 0; j<COLS; ++j) {
36     pinMode(buttonRead[j], INPUT);
37   }
38 }
39
40 // Main program loop.
41 void loop(){
42   Serial.print(".");
43
44   // Read button presses.
45   for(byte r = 0; r < ROWS; ++r){
46     digitalWrite(buttonWrite[r], HIGH);
47     for(byte c = 0; c < COLS; ++c){
48       if(pressed[r][c] != digitalRead(buttonRead[c])){
49         pressed[r][c] = digitalRead(buttonRead[c]);
50         if(pressed[r][c]){
51           on_press(r, c);
52         }
53       }
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54        }
55        delay(5);
56        digitalWrite(buttonWrite[r], LOW);
57      }
58      delay(10);
59    }
60
61    // Button pressed.
62    void on_press(byte r, byte c){
63      Serial.print(r, DEC);
64      Serial.print(", ");
65      Serial.println(c, DEC);
66      set_lock();
67    }
68
69    // Trigger the lock.
70    void set_lock(){
71     if(lockState){
72       unlock();
73     }
74      else
75       lock();
76    }
77    void unlock(){
78      Serial.print("Unlock door");
79      digitalWrite(lock_pin, HIGH);
80      lockState = !lockState;
81    }
82    void lock(){
83      Serial.print("Lock door");
84      digitalWrite(lock_pin, LOW);
85      lockState = !lockState;
86    }
87
```