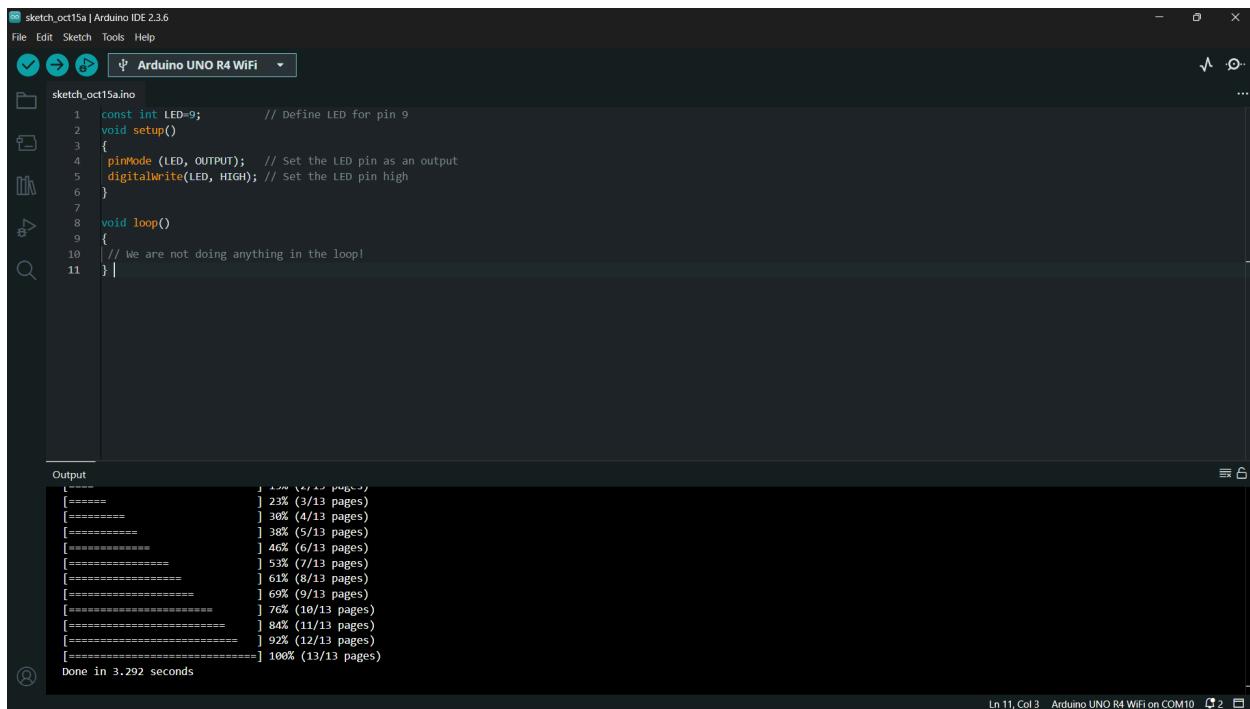


Arduino - Basic Digital Outputs - Physical Kit Version

LED



The screenshot shows the Arduino IDE interface with the following details:

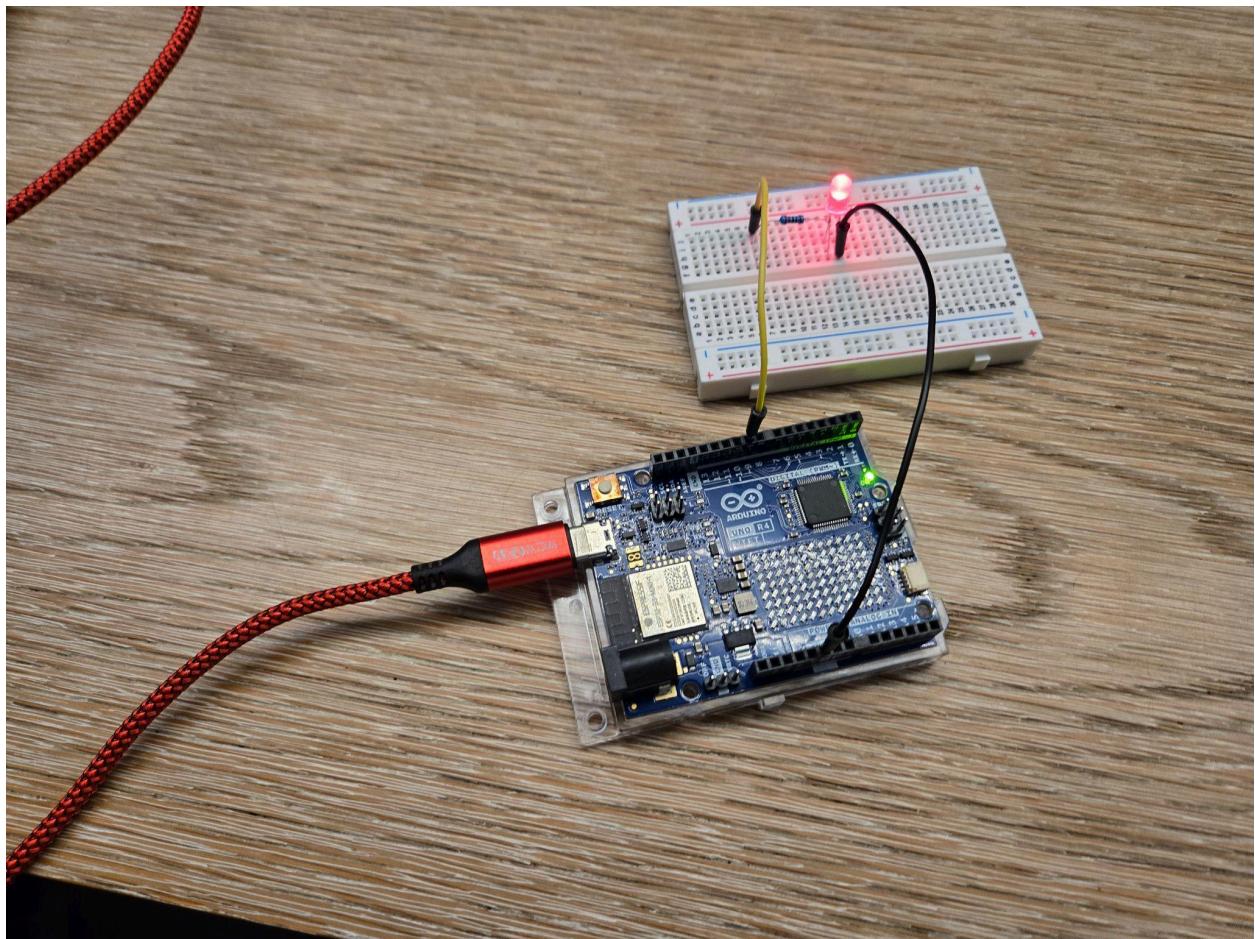
- Title Bar:** sketch_oct15a | Arduino IDE 2.3.6
- Toolbar:** File, Edit, Sketch, Tools, Help
- Sketch Selection:** sketch_oct15a.ino
- Sketch Content:** The code defines a pin for an LED and sets it to HIGH in the loop.

```
sketch_oct15a.ino
1 const int LED=9;           // Define LED for pin 9
2 void setup()
3 {
4   pinMode(LED, OUTPUT);    // Set the LED pin as an output
5   digitalWrite(LED, HIGH); // Set the LED pin high
6 }
7
8 void loop()
9 {
10 // We are not doing anything in the loop!
11 }
```

- Output Window:** Shows the progress of a build or upload process, indicating completion at 100%.

```
Output
[=====] 23% (3/13 pages)
[=====] 30% (4/13 pages)
[=====] 38% (5/13 pages)
[=====] 46% (6/13 pages)
[=====] 53% (7/13 pages)
[=====] 61% (8/13 pages)
[=====] 69% (9/13 pages)
[=====] 76% (10/13 pages)
[=====] 84% (11/13 pages)
[=====] 92% (12/13 pages)
[=====] 100% (13/13 pages)
Done in 3.292 seconds
```

- Status Bar:** Ln 11, Col 3 Arduino Uno R4 WiFi on COM10 2



Blink

The screenshot shows the Arduino IDE interface with the title bar "sketch_oct15b | Arduino IDE 2.3.6". The toolbar includes icons for file operations, sketch management, and tools. The main window displays the code for "sketch_oct15b.ino". The code defines a LED on Pin 9, sets it as an output, and enters a loop where it alternates between HIGH and LOW states every 100ms. The code editor has syntax highlighting for C/C++ and Arduino-specific keywords. Below the code editor is the "Output" panel, which shows the progress of the upload process:

```
[=====] 23% (3/13 pages)
[=====] 30% (4/13 pages)
[=====] 38% (5/13 pages)
[=====] 46% (6/13 pages)
[=====] 53% (7/13 pages)
[=====] 61% (8/13 pages)
[=====] 69% (9/13 pages)
[=====] 76% (10/13 pages)
[=====] 84% (11/13 pages)
[=====] 92% (12/13 pages)
[=====] 100% (13/13 pages)
```

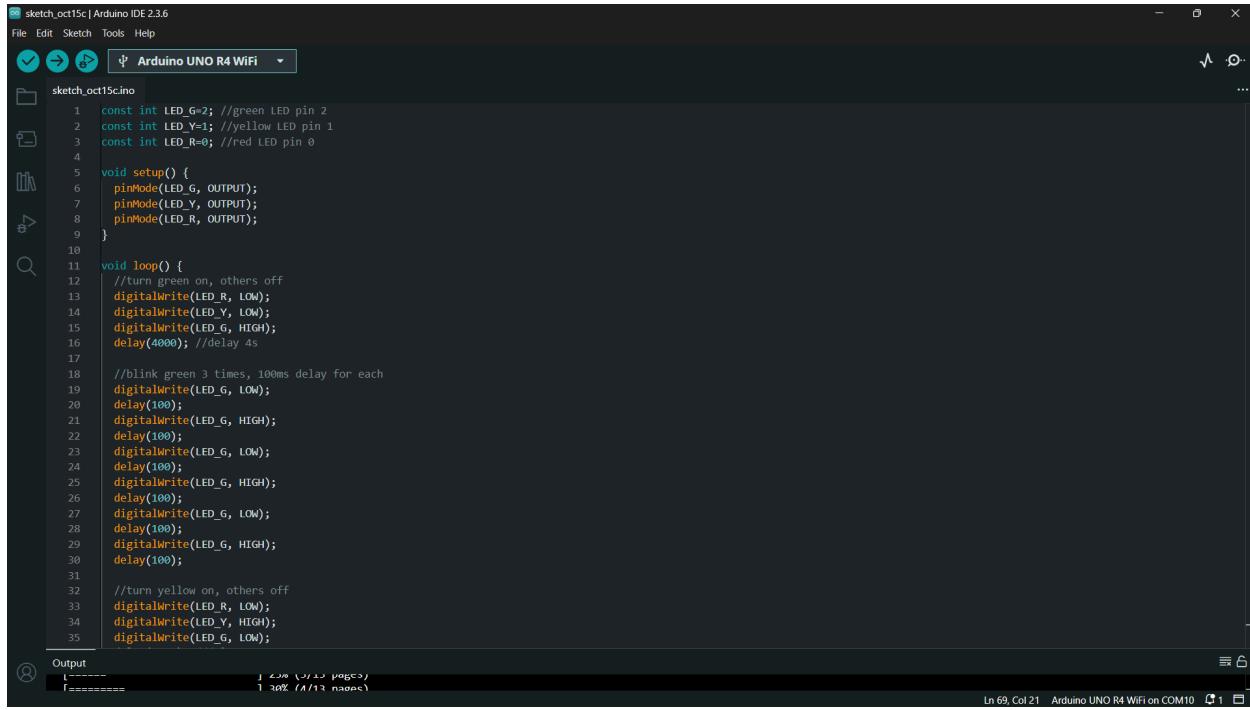
At the bottom of the output panel, it says "Done in 3.302 seconds". The status bar at the bottom right indicates "Ln 16, Col 3" and "Arduino Uno R4 WiFi on COM10".

This screenshot shows the Arduino IDE after modifications have been made to the sketch. The code editor now contains a reversed loop, where the LED state is toggled from HIGH to LOW every 100ms. The code editor has syntax highlighting for C/C++ and Arduino-specific keywords. Below the code editor is the "Output" panel, which shows the progress of the upload process:

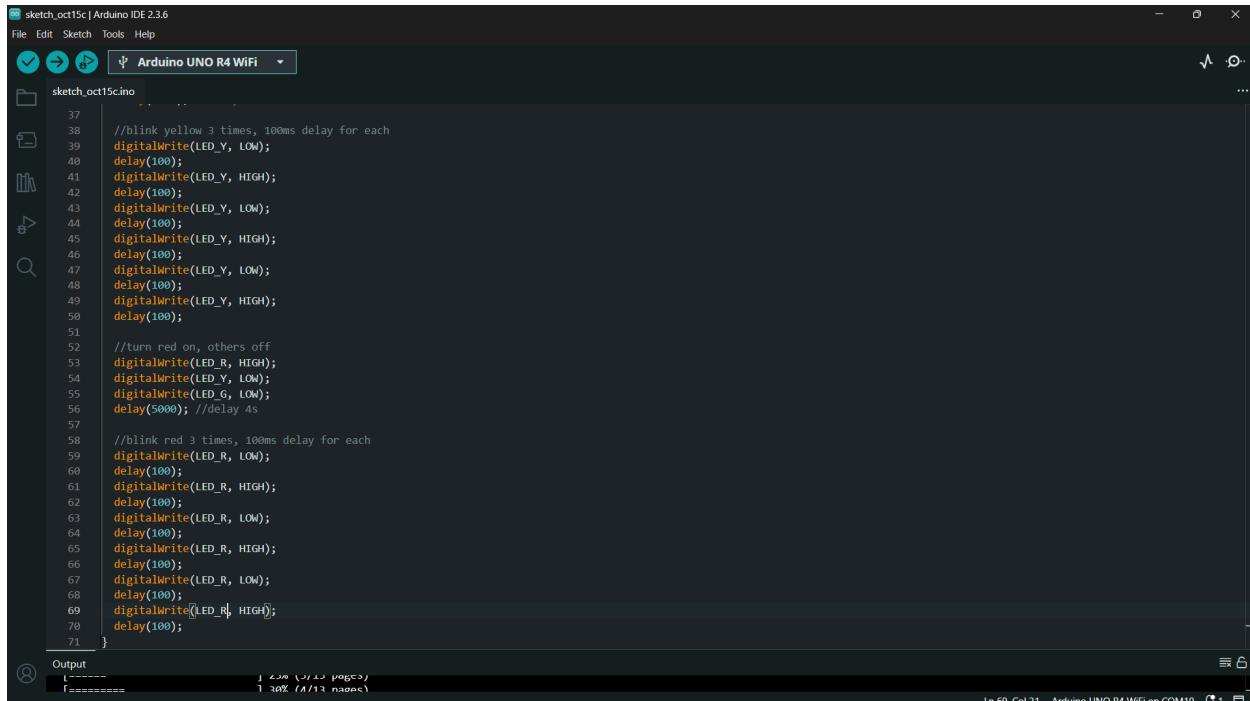
```
[=====] 23% (3/13 pages)
[=====] 30% (4/13 pages)
[=====] 38% (5/13 pages)
[=====] 46% (6/13 pages)
[=====] 53% (7/13 pages)
[=====] 61% (8/13 pages)
[=====] 69% (9/13 pages)
[=====] 76% (10/13 pages)
[=====] 84% (11/13 pages)
[=====] 92% (12/13 pages)
[=====] 100% (13/13 pages)
```

At the bottom of the output panel, it says "Done in 3.302 seconds". The status bar at the bottom right indicates "Ln 16, Col 3" and "Arduino Uno R4 WiFi on COM10".

Stoplight



```
sketch_oct15c | Arduino IDE 2.3.6
File Edit Sketch Tools Help
Arduino UNO R4 WiFi
sketch_oct15c.ino
1 const int LED_G=2; //green LED pin 2
2 const int LED_Y=3; //yellow LED pin 1
3 const int LED_R=0; //red LED pin 0
4
5 void setup() {
6     pinMode(LED_G, OUTPUT);
7     pinMode(LED_Y, OUTPUT);
8     pinMode(LED_R, OUTPUT);
9 }
10
11 void loop() {
12     //turn green on, others off
13     digitalWrite(LED_R, LOW);
14     digitalWrite(LED_Y, LOW);
15     digitalWrite(LED_G, HIGH);
16     delay(4000); //delay as
17
18     //blink green 3 times, 100ms delay for each
19     digitalWrite(LED_G, LOW);
20     delay(100);
21     digitalWrite(LED_G, HIGH);
22     delay(100);
23     digitalWrite(LED_G, LOW);
24     delay(100);
25     digitalWrite(LED_G, HIGH);
26     delay(100);
27     digitalWrite(LED_G, LOW);
28     delay(100);
29     digitalWrite(LED_G, HIGH);
30     delay(100);
31
32     //turn yellow on, others off
33     digitalWrite(LED_R, LOW);
34     digitalWrite(LED_Y, HIGH);
35     digitalWrite(LED_G, LOW);
36
37     //blink yellow 3 times, 100ms delay for each
38     digitalWrite(LED_Y, LOW);
39     delay(100);
40     digitalWrite(LED_Y, HIGH);
41     delay(100);
42     digitalWrite(LED_Y, LOW);
43     delay(100);
44     digitalWrite(LED_Y, HIGH);
45     delay(100);
46     digitalWrite(LED_Y, LOW);
47     delay(100);
48     digitalWrite(LED_Y, HIGH);
49     delay(100);
50
51     //turn red on, others off
52     digitalWrite(LED_R, HIGH);
53     digitalWrite(LED_Y, LOW);
54     digitalWrite(LED_G, LOW);
55     delay(5000); //delay as
56
57     //blink red 3 times, 100ms delay for each
58     digitalWrite(LED_R, LOW);
59     delay(100);
60     digitalWrite(LED_R, HIGH);
61     delay(100);
62     digitalWrite(LED_R, LOW);
63     delay(100);
64     digitalWrite(LED_R, HIGH);
65     delay(100);
66     digitalWrite(LED_R, LOW);
67     delay(100);
68     digitalWrite(LED_R, HIGH);
69     delay(100);
70 }
71
Output
Ln 69, Col 21 Arduino UNO R4 WiFi on COM10 1
```



```
sketch_oct15c | Arduino IDE 2.3.6
File Edit Sketch Tools Help
Arduino UNO R4 WiFi
sketch_oct15c.ino
37
38     //turn off all LEDs
39     digitalWrite(LED_R, LOW);
40     digitalWrite(LED_Y, LOW);
41     digitalWrite(LED_G, LOW);
42
43     //blink red 3 times, 100ms delay for each
44     digitalWrite(LED_R, HIGH);
45     delay(100);
46     digitalWrite(LED_R, LOW);
47     delay(100);
48     digitalWrite(LED_R, HIGH);
49     delay(100);
50     digitalWrite(LED_R, LOW);
51     delay(100);
52     digitalWrite(LED_R, HIGH);
53     delay(100);
54     digitalWrite(LED_R, LOW);
55     delay(100);
56     digitalWrite(LED_R, HIGH);
57     delay(100);
58     digitalWrite(LED_R, LOW);
59     delay(100);
60     digitalWrite(LED_R, HIGH);
61     delay(100);
62     digitalWrite(LED_R, LOW);
63     delay(100);
64     digitalWrite(LED_R, HIGH);
65     delay(100);
66     digitalWrite(LED_R, LOW);
67     delay(100);
68     digitalWrite(LED_R, HIGH);
69     delay(100);
70 }
71
Output
Ln 69, Col 21 Arduino UNO R4 WiFi on COM10 1
```

