

Exercise 1A rory lange

Simulator time: 00:00:00.343

All changes saved

Code Stop Simulation

Text

```
1 int latch = 5;
2 int data = 4;
3 int clock = 6;
4
5 byte A = B00001111;
6
7 void setup()
8 {
9   pinMode(latch, OUTPUT);
10  pinMode(clock, OUTPUT);
11  pinMode(data, OUTPUT);
12 }
13
14 void loop()
15 {
16   digitalWrite(latch, LOW);
17   shiftOut(data, clock, LSBFIRST, A);
18   digitalWrite(latch, HIGH);
19 }
20
21 }
```

Exercise 1B

https://www.tinkercad.com/things/1UAGK0Ajn6-copy-of-141/edit#t=tenants-circuits

162

Simulator time: 00:00:00.666

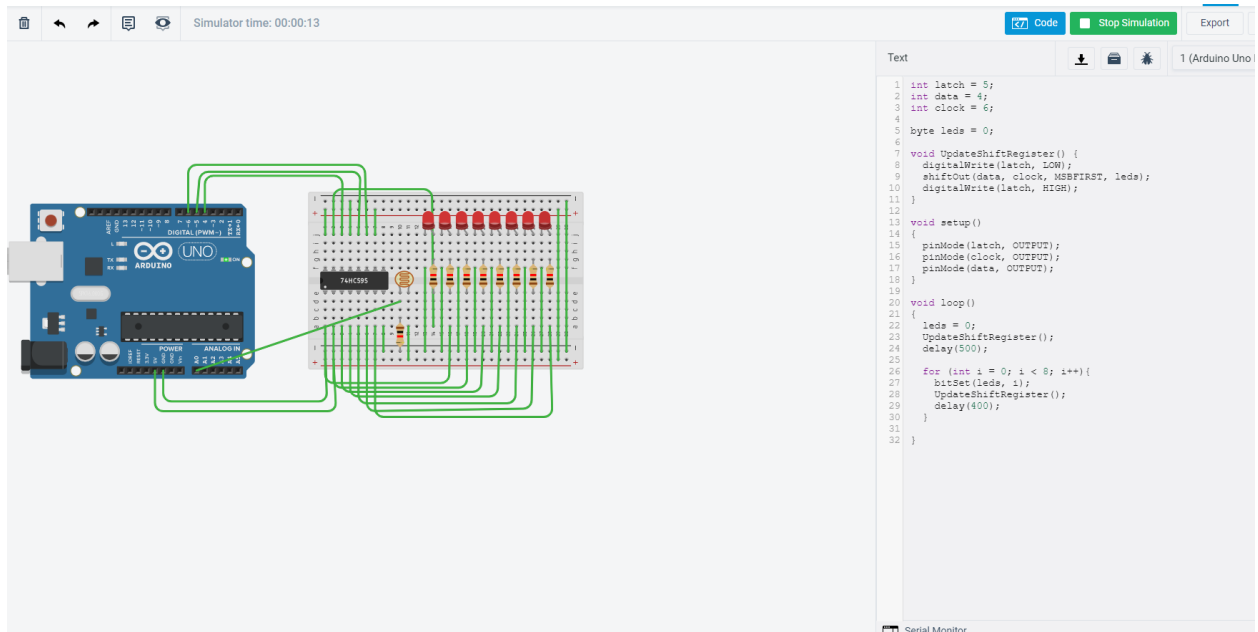
All changes saved

Code Stop Simulation Export Share

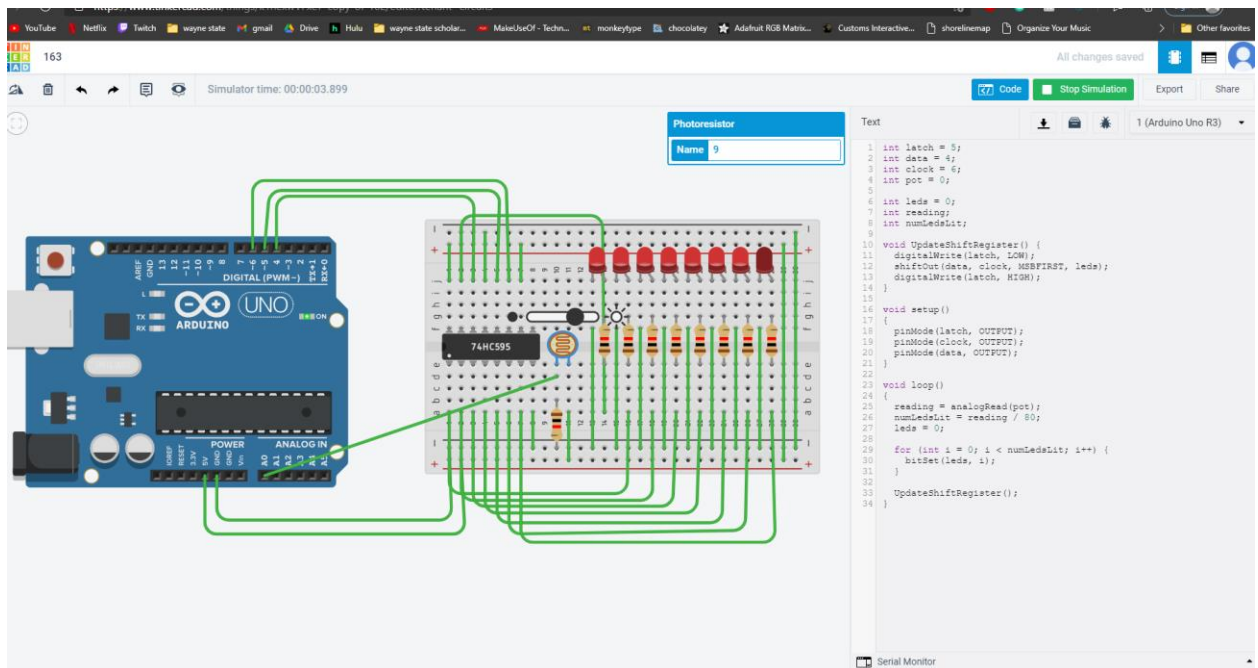
Text

```
1 int latch = 5;
2 int data = 4;
3 int clock = 6;
4
5 byte A = 255;
6
7 void setup()
8 {
9   pinMode(latch, OUTPUT);
10  pinMode(clock, OUTPUT);
11  pinMode(data, OUTPUT);
12 }
13
14 void loop()
15 {
16   digitalWrite(latch, LOW);
17   shiftOut(data, clock, LSBFIRST, A);
18   digitalWrite(latch, HIGH);
19 }
20
21 }
```

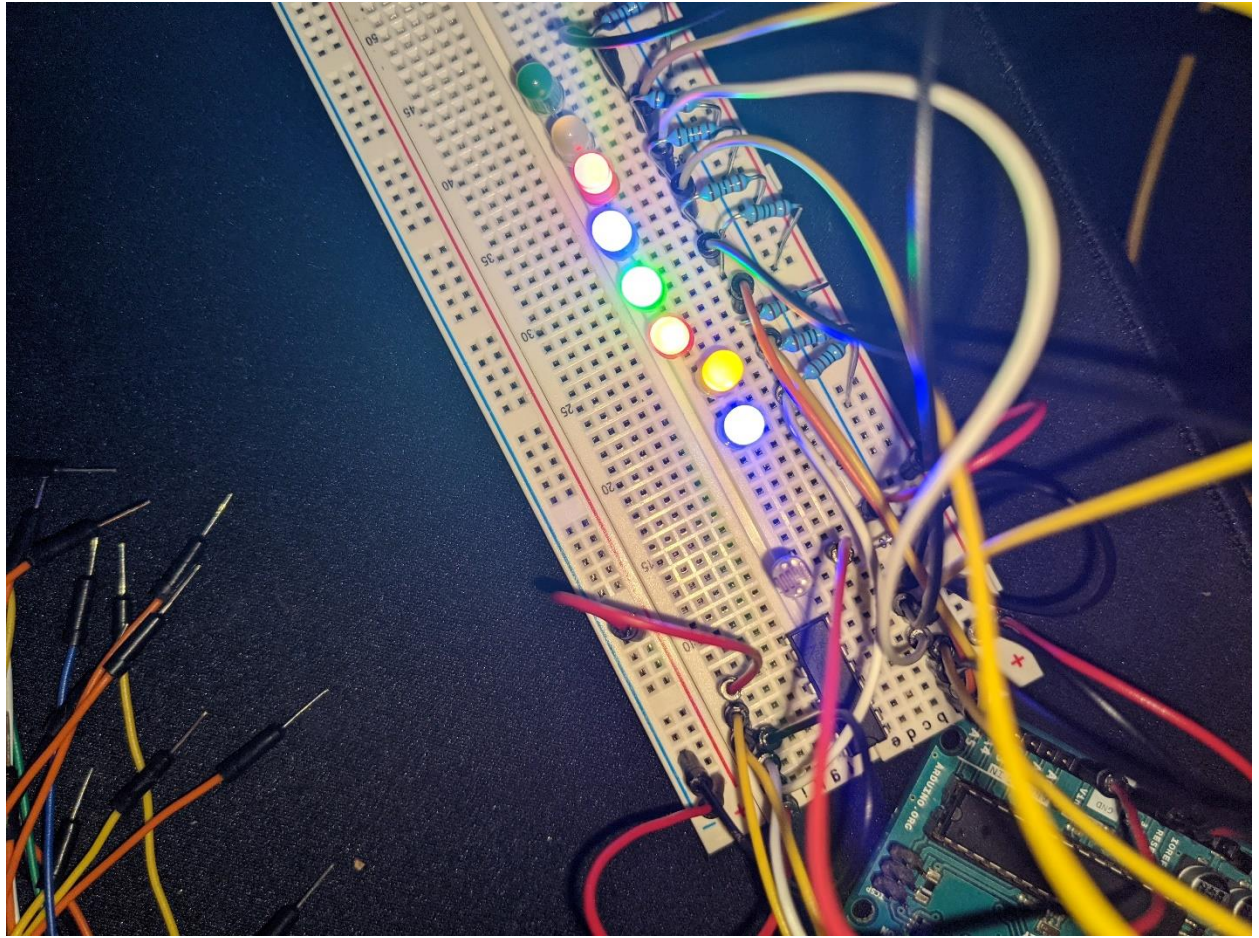
Exercise 2



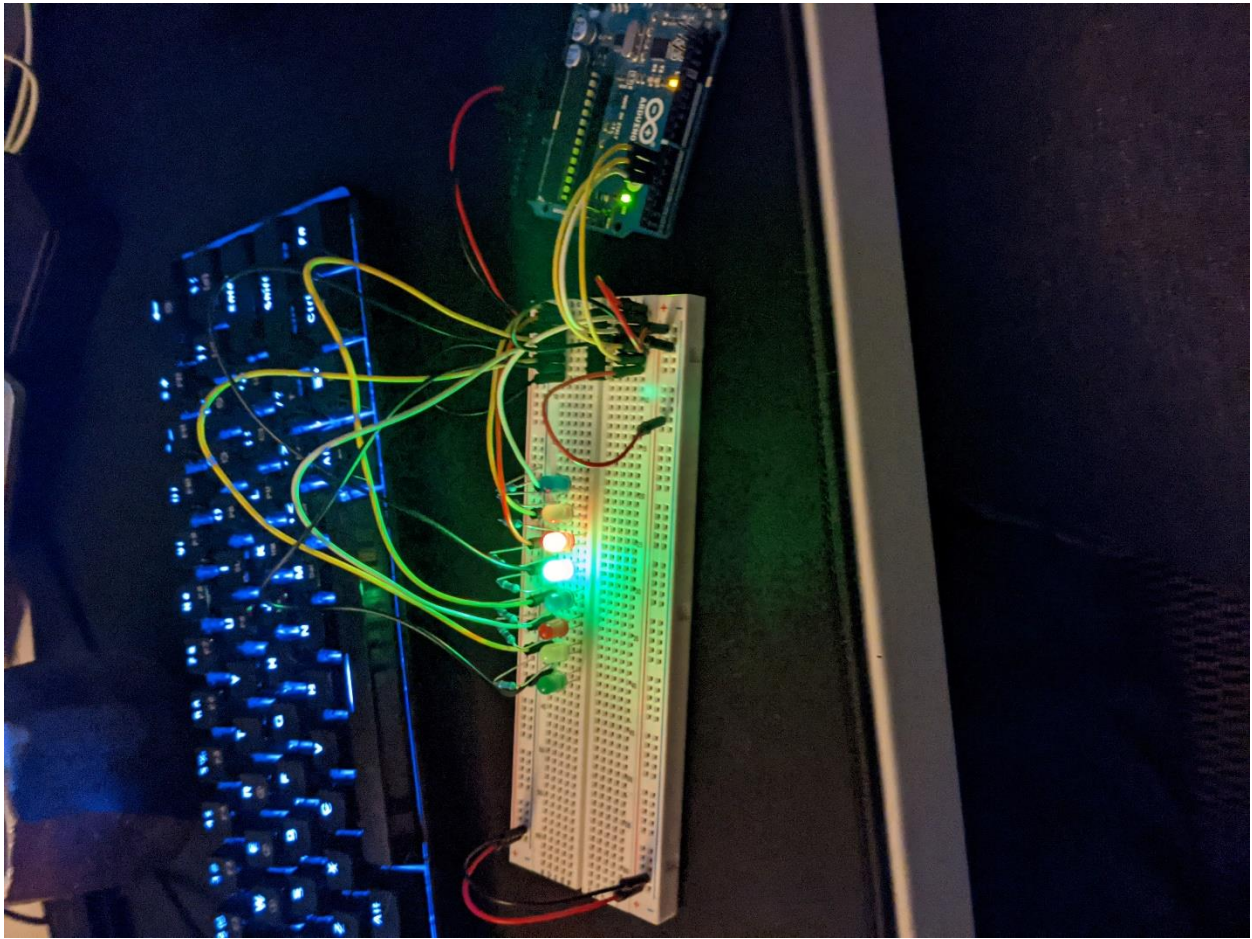
Exercise 3

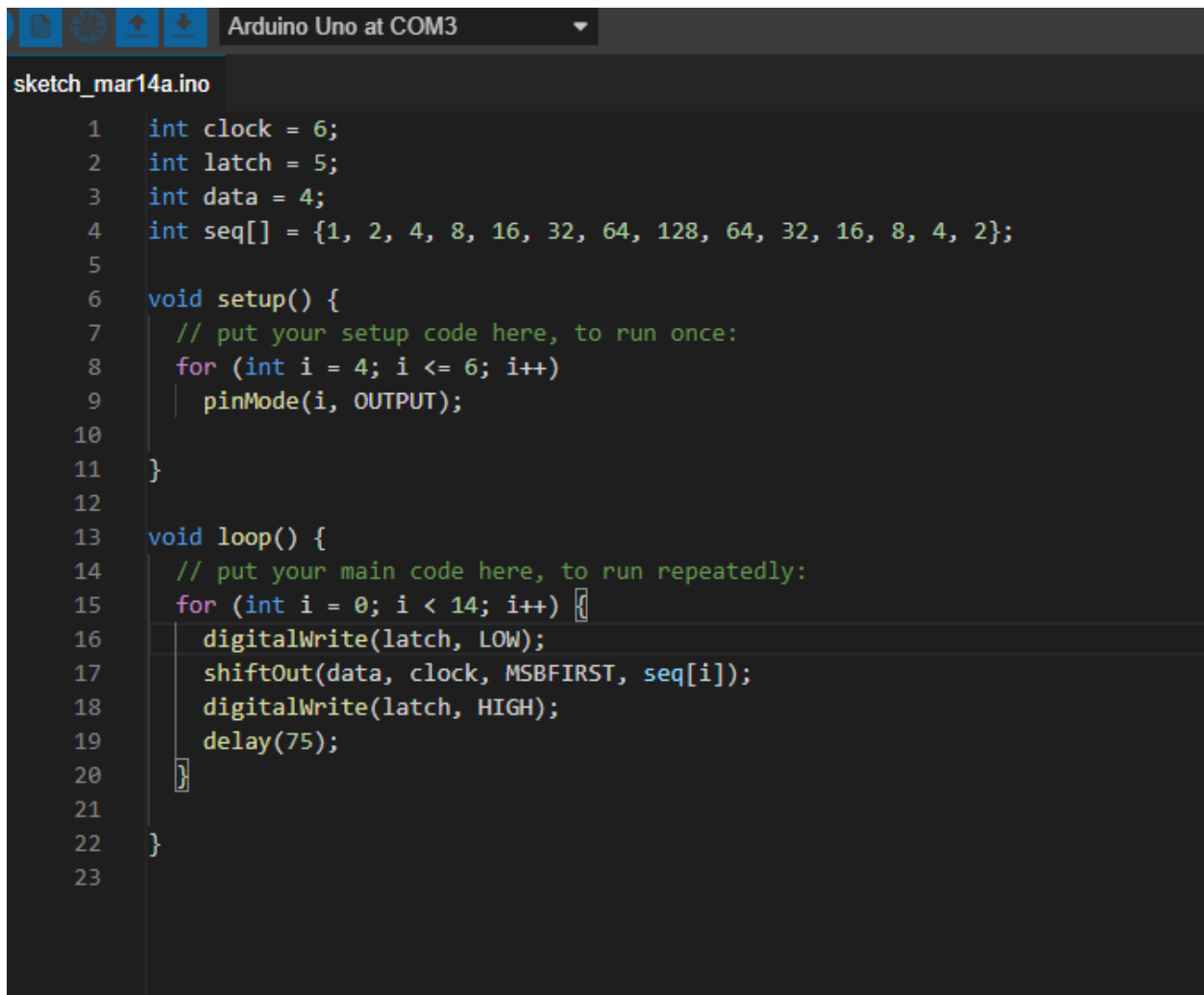


Used camera flash for irl image



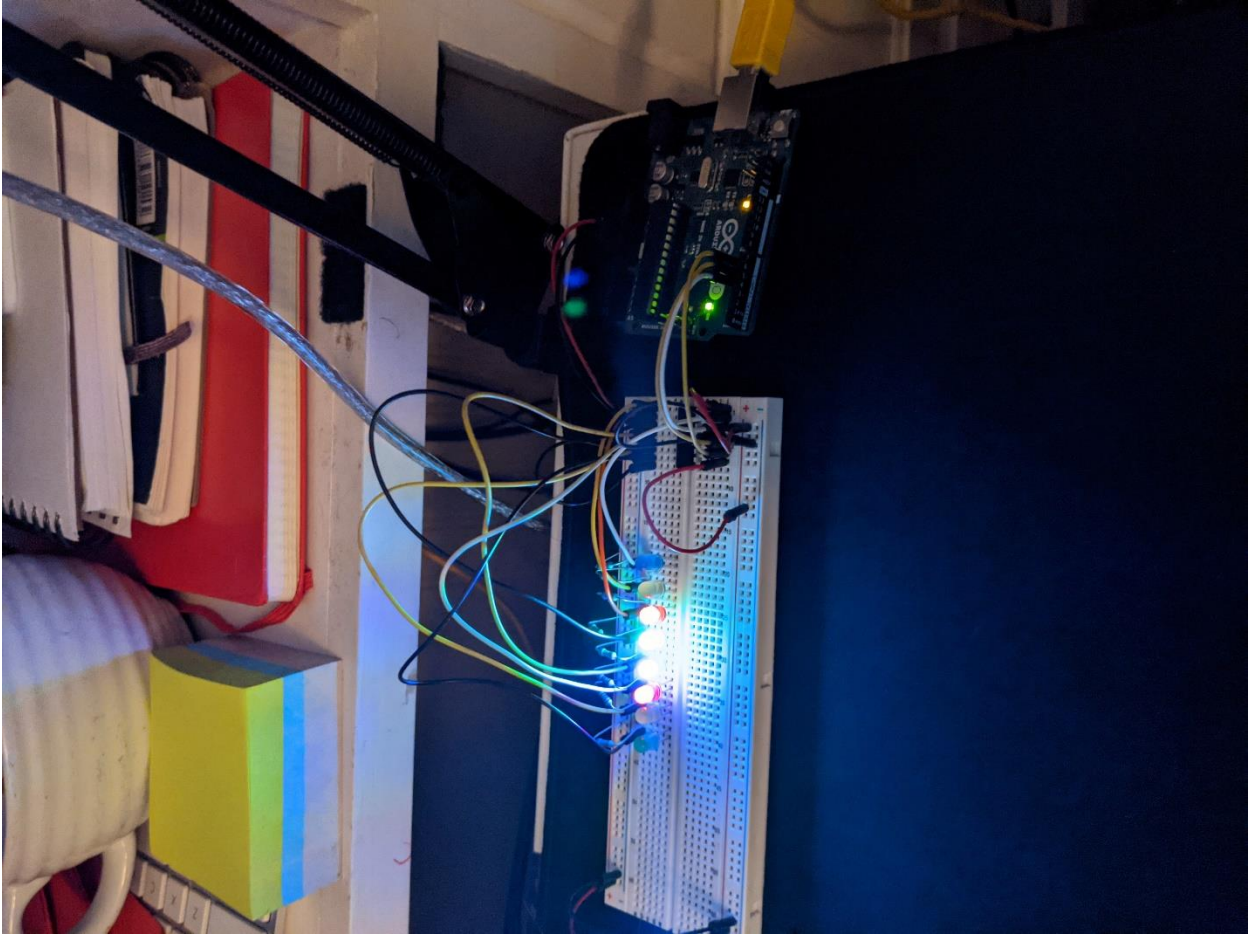
Exercise 4 only two are lit up in the image but program works correctly irl





```
1  int clock = 6;
2  int latch = 5;
3  int data = 4;
4  int seq[] = {1, 2, 4, 8, 16, 32, 64, 128, 64, 32, 16, 8, 4, 2};
5
6  void setup() {
7      // put your setup code here, to run once:
8      for (int i = 4; i <= 6; i++)
9          pinMode(i, OUTPUT);
10
11 }
12
13 void loop() {
14     // put your main code here, to run repeatedly:
15     for (int i = 0; i < 14; i++) {
16         digitalWrite(latch, LOW);
17         shiftOut(data, clock, MSBFIRST, seq[i]);
18         digitalWrite(latch, HIGH);
19         delay(75);
20     }
21
22 }
23
```

Exercise 4B

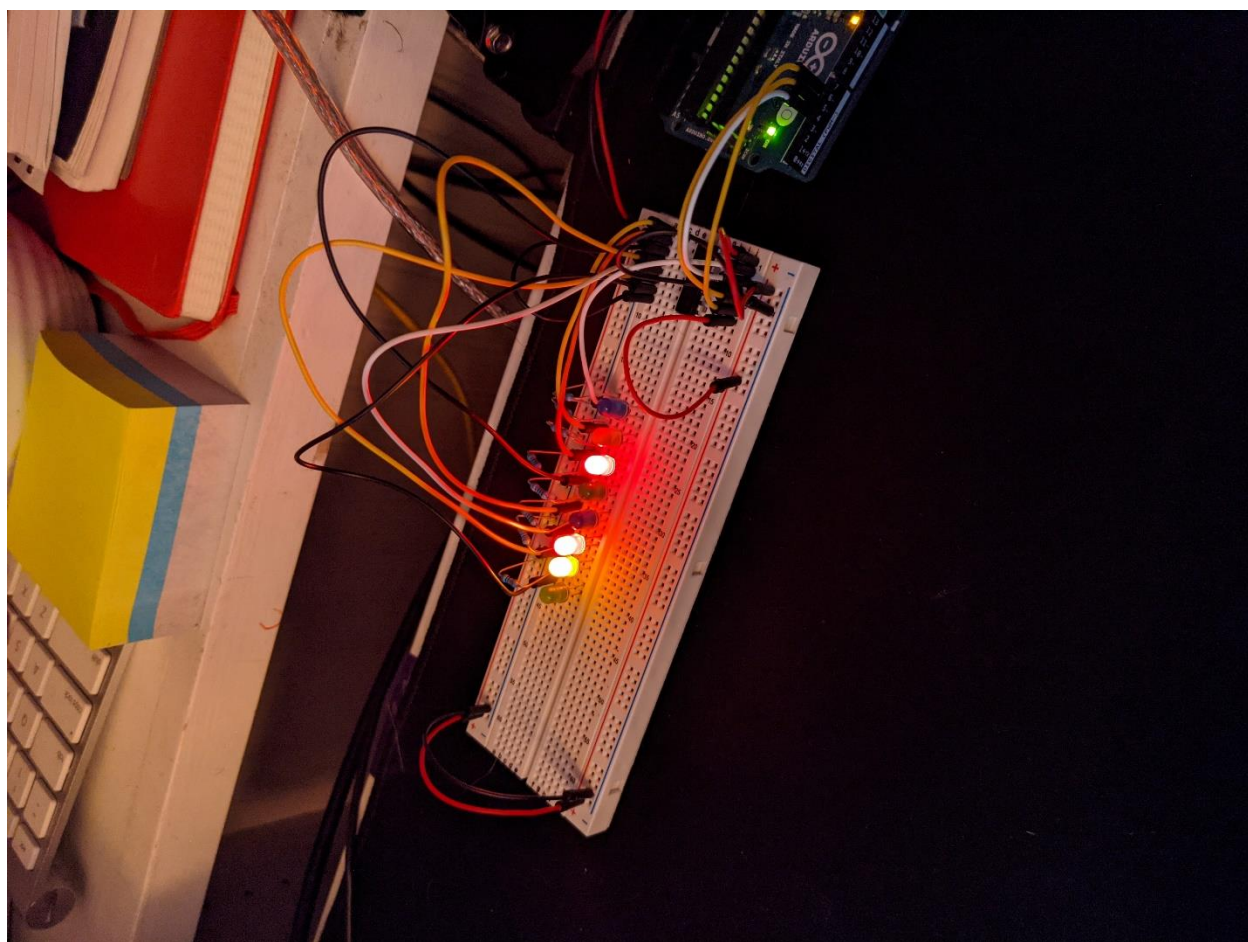


```
Arduino Uno at COM5
sketch_mar14a.ino
1  int clock = 6;
2  int latch = 5;
3  int data = 4;
4  int seq[] = {129, 66, 36, 24, 36, 66};
5
6  void setup() {
7      // put your setup code here, to run once:
8      for (int i = 4; i <= 6; i++)
9          pinMode(i, OUTPUT);
10
11 }
12
13 void loop() {
14     // put your main code here, to run repeatedly:
15     for (int i = 0; i < 6; i++) {
16         digitalWrite(latch, LOW);
17         shiftOut(data, clock, MSBFIRST, seq[i]);
18         digitalWrite(latch, HIGH);
19         delay(75);
20     }
21
22 }
23
```

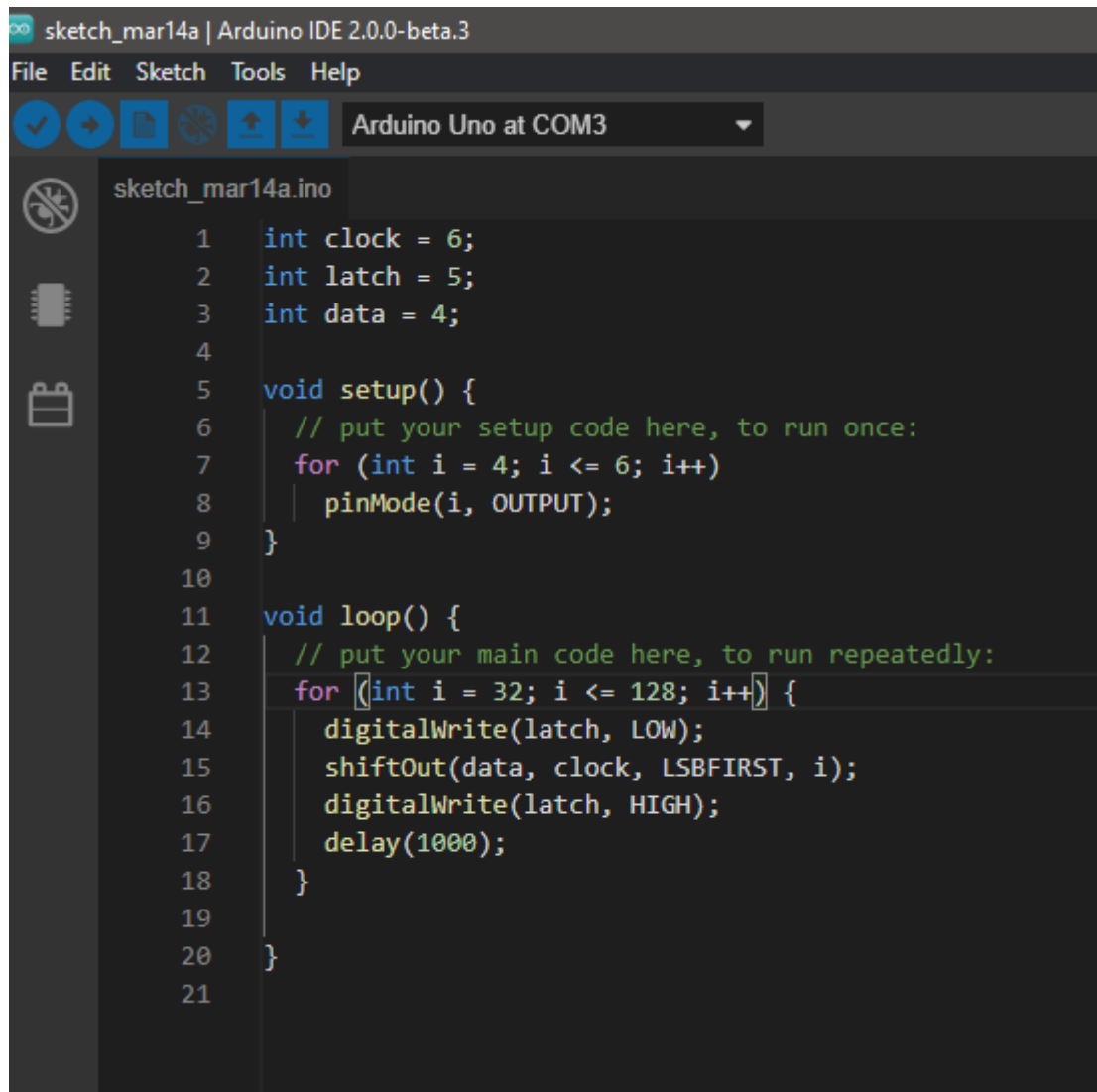
Exercise 5


```
sketch_mar14a | Arduino IDE 2.0.0-beta.3
File Edit Sketch Tools Help
Arduino Uno at COM3

sketch_mar14a.ino
1  int clock = 6;
2  int latch = 5;
3  int data = 4;
4
5  void setup() {
6    // put your setup code here, to run once:
7    for (int i = 4; i <= 6; i++)
8      pinMode(i, OUTPUT);
9  }
10
11 void loop() {
12   // put your main code here, to run repeatedly:
13   for (int i = 0; i <= 255; i++) {
14     digitalWrite(latch, LOW);
15     shiftOut(data, clock, LSBFIRST, i);
16     digitalWrite(latch, HIGH);
17     delay(1000);
18   }
19 }
20
21
```



Exercise 5B



```
sketch_mar14a | Arduino IDE 2.0.0-beta.3
File Edit Sketch Tools Help
[Icons] Arduino Uno at COM3
sketch_mar14a.ino
1  int clock = 6;
2  int latch = 5;
3  int data = 4;
4
5  void setup() {
6    // put your setup code here, to run once:
7    for (int i = 4; i <= 6; i++)
8      pinMode(i, OUTPUT);
9  }
10
11 void loop() {
12   // put your main code here, to run repeatedly:
13   for (int i = 32; i <= 128; i++) {
14     digitalWrite(latch, LOW);
15     shiftOut(data, clock, LSBFIRST, i);
16     digitalWrite(latch, HIGH);
17     delay(1000);
18   }
19
20 }
21
```