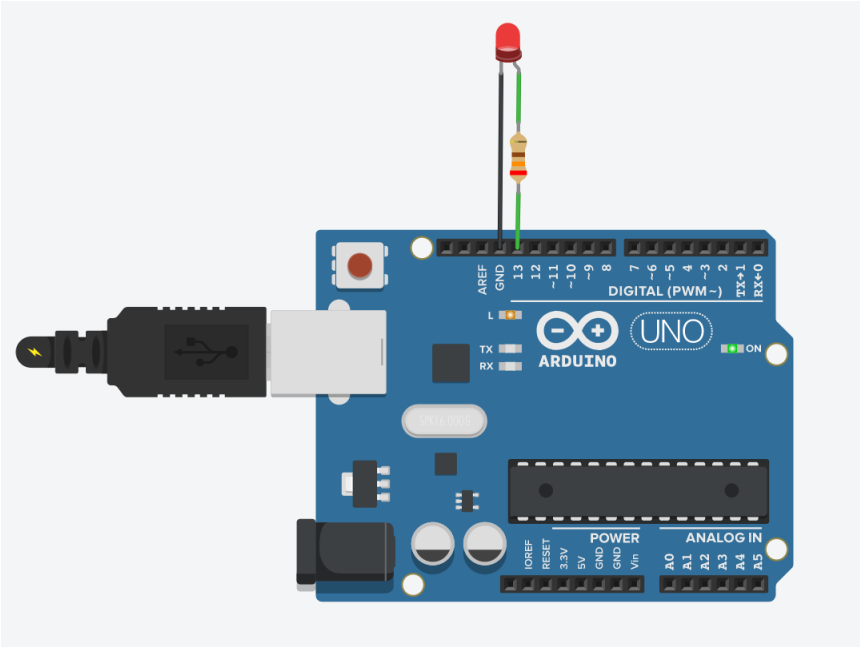
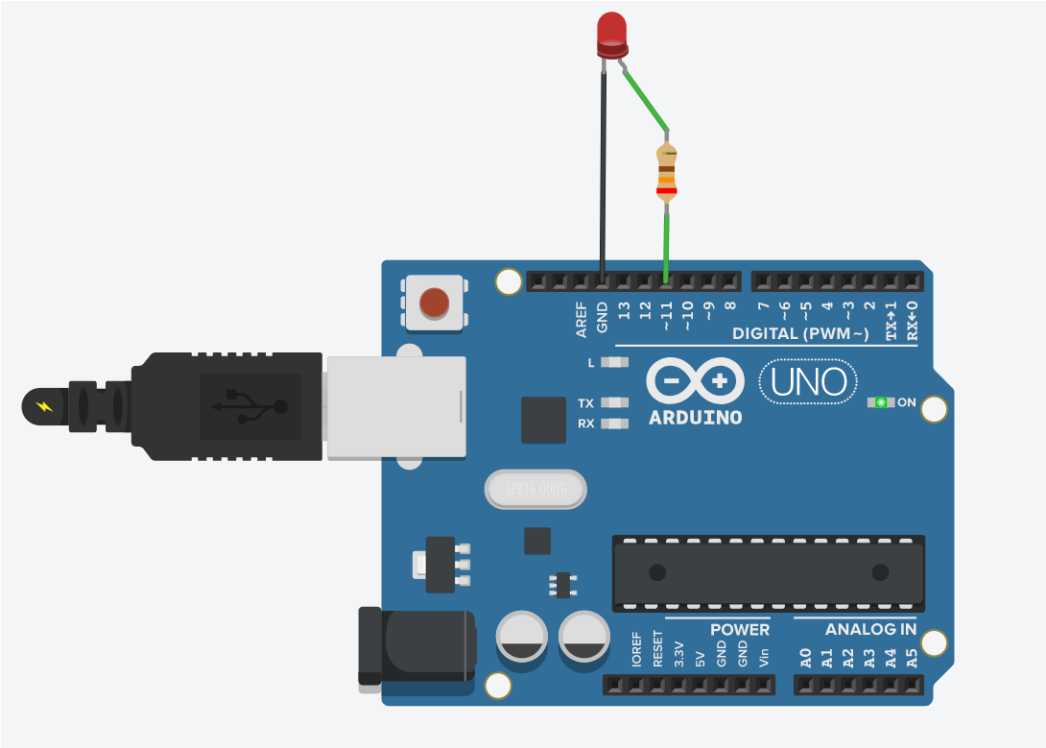
SCS2213 Electronics and Physical Computing
PC - Assignment 02

1.



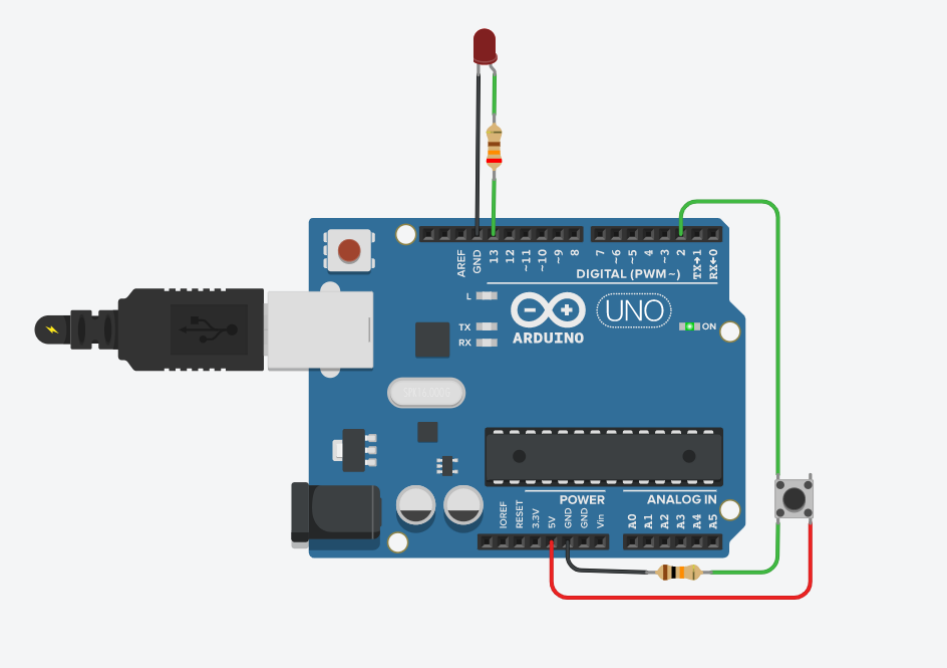

```
int LED = 13;
void setup()
{
  pinMode(LED, OUTPUT);
}

void loop()
{
  digitalWrite(LED, HIGH);
  delay(500);
  digitalWrite(LED, LOW);
  delay(500);
}

```

2.



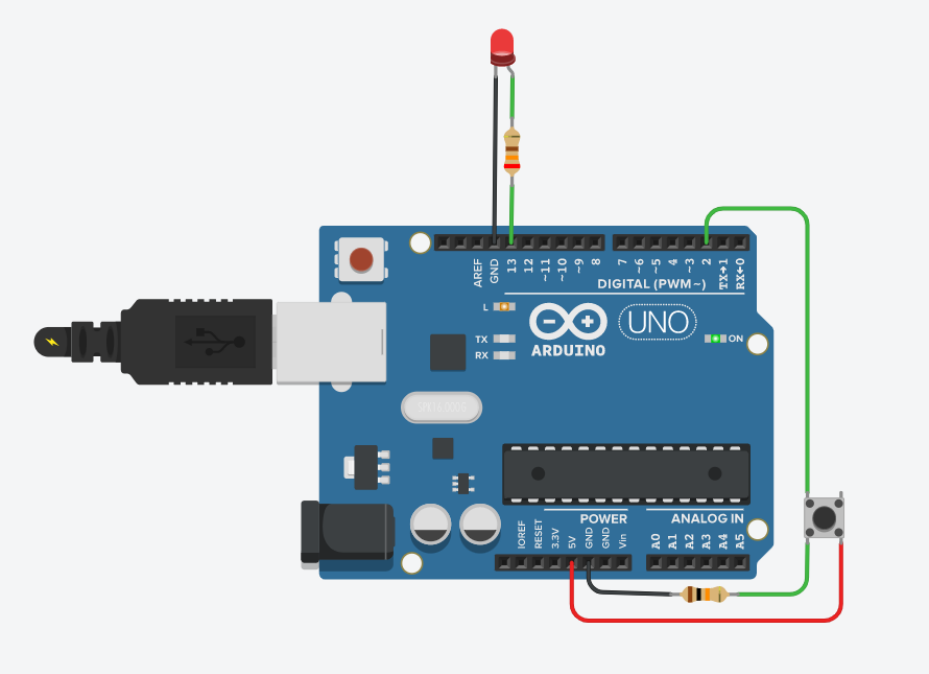

```
int LED = 11;
int WAITINGTIME = 500;

void setup()
{
  pinMode(LED, OUTPUT);
}

void loop()
{
  for(int i = 0; i<256; i++){
    analogWrite(LED, i);
    delay(WAITINGTIME);
  }

  for(int i = 255; i>=0; i--){
    analogWrite(LED, i);
    delay(WAITINGTIME);
  }
}
```

3.



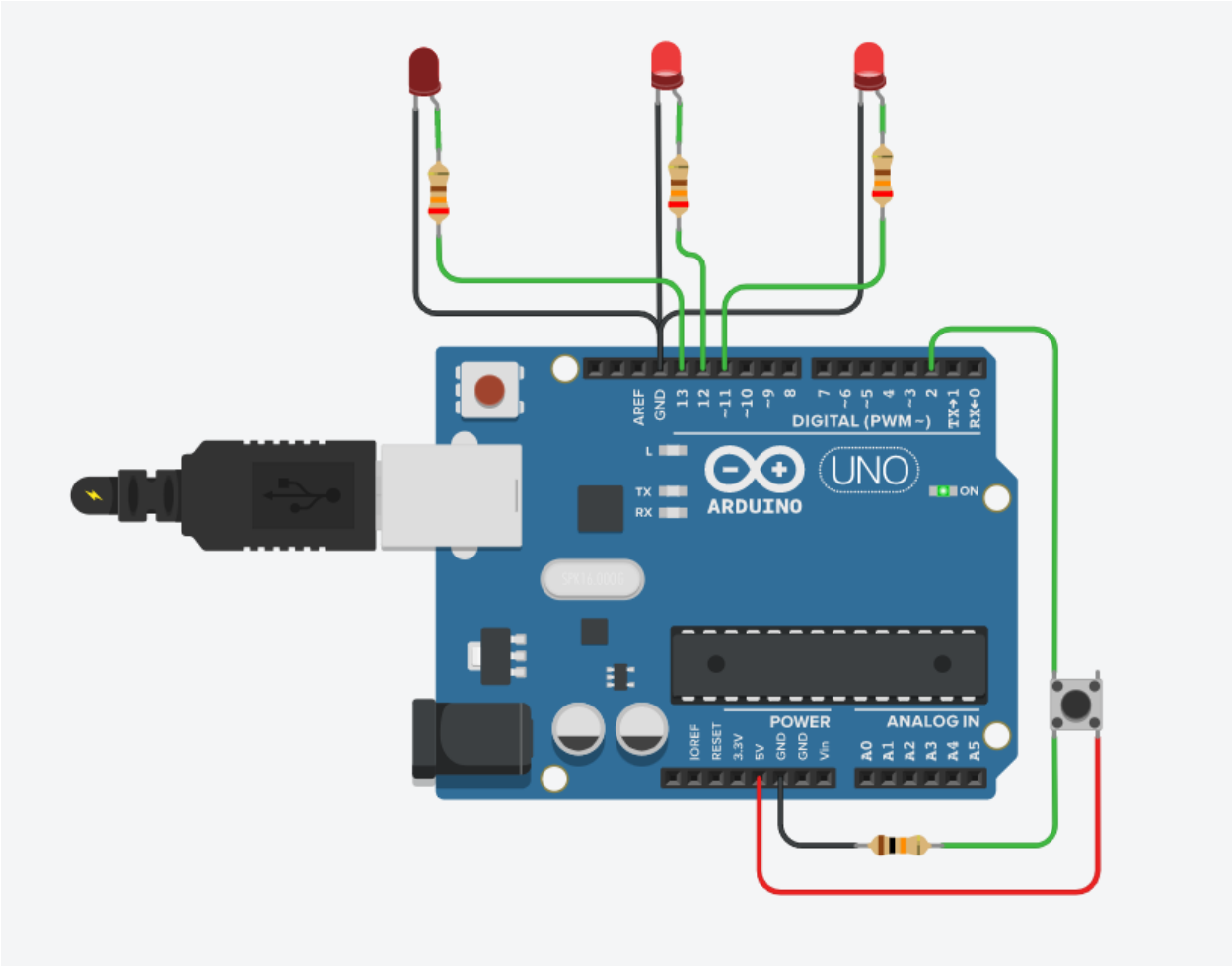

```
int LED = 13;
int STATE = 0;

void setup()
{
  pinMode(LED, OUTPUT);
  pinMode(2, INPUT);
}

void loop()
{
  STATE = digitalRead(2);

  if(STATE == HIGH){
    digitalWrite(LED, HIGH);
  }

  else{
    digitalWrite(LED, LOW);
  }
  delay(10);
}

```

4.



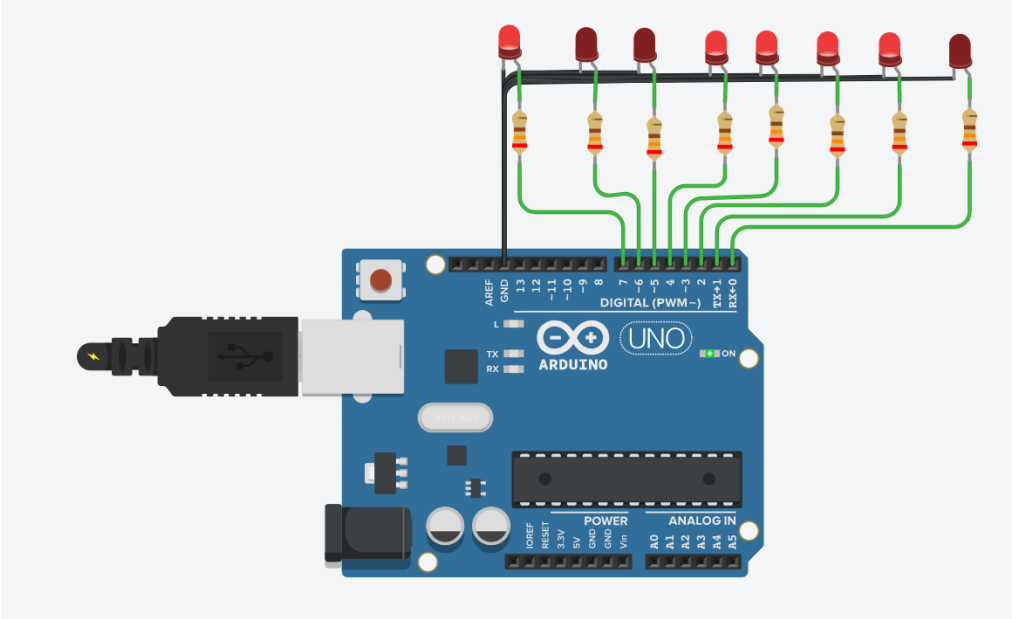

```
int LED = 13;
int SWITCH = 2;
int STATE = 0;

void setup()
{
  pinMode(LED, OUTPUT);
  pinMode(SWITCH, INPUT);
}

void loop()
{
  STATE = digitalRead(SWITCH);
  if(STATE == LOW){
    STATE = HIGH;
  }
  else{
    STATE = LOW;
  }
  digitalWrite(LED, STATE);
  delay(10);

```

5.


AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX→1
RX←0
DIGITAL (PWM~)
L
TX
RX
ARDUINO
UNO
ON
POWER
ANALOG IN
IOREF
RESET
3.3V
5V
GND
GND
Vin
A0
A1
A2
A3
A4
A5

```
int LEDPIN_1 = 11;
int LEDPIN_2 = 12;
int LEDPIN_3 = 13;
int SWITCH = 2;
int LEDcount = 0;

void setup()
{
  pinMode(LEDPIN_1, OUTPUT);
  pinMode(LEDPIN_2, OUTPUT);
  pinMode(LEDPIN_3, OUTPUT);
  pinMode(SWITCH, INPUT);
}

void loop()
{
  if(digitalRead(SWITCH)== HIGH){
     if(LEDcount > 7){
      LEDcount = 0;
    }

    if(LEDcount == 1 || LEDcount == 3 || LEDcount == 5 || LEDcount == 7){
      digitalWrite(LEDPIN_1, HIGH);
    }
    else{
      digitalWrite(LEDPIN_1, LOW);
    }

    if(LEDcount == 2 || LEDcount == 3 || LEDcount == 6 || LEDcount == 7){
      digitalWrite(LEDPIN_2, HIGH);
    }
    else{
      digitalWrite(LEDPIN_2, LOW);
    }

    if(LEDcount == 4 || LEDcount == 5 || LEDcount == 6 || LEDcount == 7){
      digitalWrite(LEDPIN_3, HIGH);
    }
    else{
      digitalWrite(LEDPIN_3, LOW);
    }

    LEDcount = LEDcount + 1;
    delay(200);
  }
}
```

6.




```
1  void setup()
2  {
3    for(int i = 0; i<8; i++){
4      pinMode(i, OUTPUT);
5    }
6  }
7
8  void loop()
9  {
10   int binNumber = 158;
11   for(int i = 0; i<8; i++){
12     if((binNumber >> i) & 1){
13       digitalWrite(i, HIGH);
14     }
15   }
16 }
```