

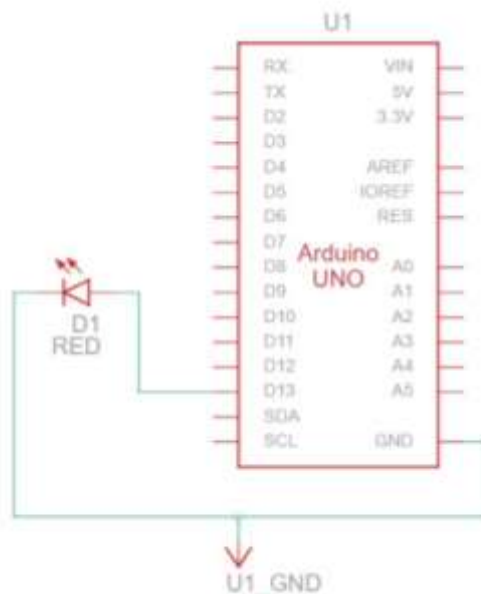
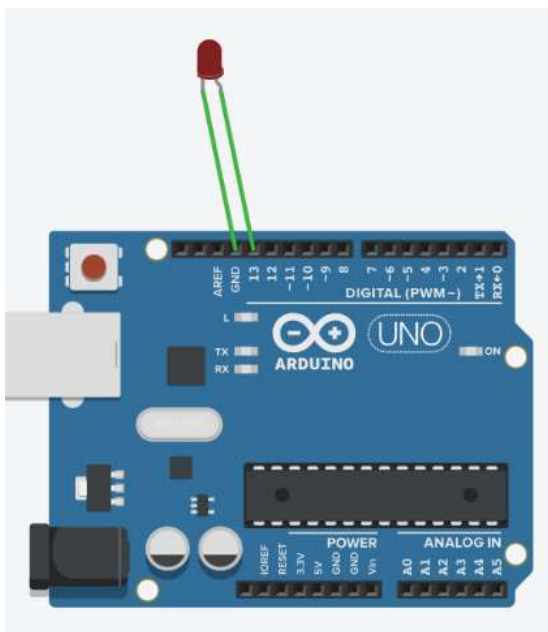
Practical 1

Study of Arduino board and Interfacing of LED (s) with Arduino.

LED Blink:

```
void setup() // initial setup executed only once
{
// initialize the digital pin as an output.
pinMode(LED_BUILTIN, OUTPUT); // LED_BUILTIN = default pin 13
}

void loop() //defines inbuilt loop
{
digitalWrite(LED_BUILTIN, HIGH); // turn LED on
delay(1000); // Wait for 1000 millisecond(s)
digitalWrite(LED_BUILTIN, LOW); // turn LED off
delay(1000); // Wait for 1000 millisecond(s)
}
```



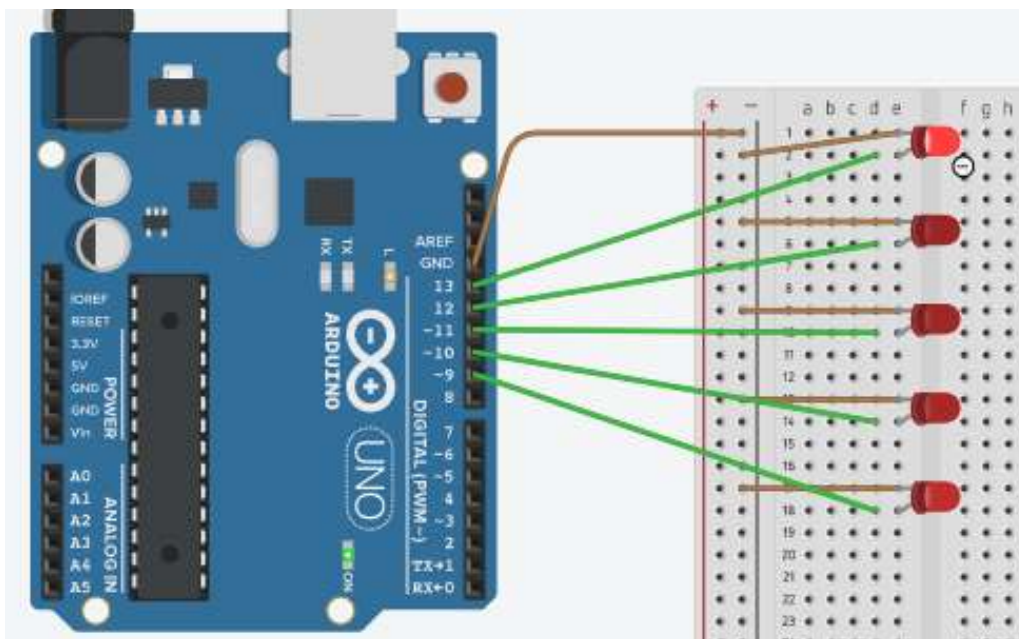
LED Series:

```
int pin[]={ 13,12,11,10,9}; //defines array of pins where LCD's are connected

void setup()
{
  for(int i=0;i<5;i++)
    {int y=pin[i];
      pinMode(y, OUTPUT);}
}

int x=0;

void loop()
{
  int y = pin[x%5]; //select pin number only from array with 0 to 4 as index value
  digitalWrite(y, HIGH);
  delay(50); // Wait for 1000 millisecond(s)
  digitalWrite(y, LOW);
  delay(50); // Wait for 1000 millisecond(s)
  x++;
}
```



LED Binary Counter:

```
const byte ledPins[] = {6, 7, 8, 9, 10, 11, 12, 13}; // Define pins, corresponding to the 8 bits
```

```
void setup()
```

```
{
```

```
  for (byte i = 0; i < 8; i++)
```

```
    pinMode(ledPins[i], OUTPUT);
```

```
}
```

```
byte count = 0; // Initialize a byte variable to store the count
```

```
void loop()
```

```
{
```

```
  for (byte i = 0; i < 8; i++)
```

```
    digitalWrite(ledPins[i], bitRead(count, i));
```

```
  count++;
```

```
  delay(1000);
```

```
}
```

/* bitRead(variable, bitPosition) is a function in Arduino that reads the value of a specific bit in a byte or an integer. It returns 0 or 1 depending on the value of the bit at the specified position. */

