LAB REPORT- 1

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Aim of the Experiment:

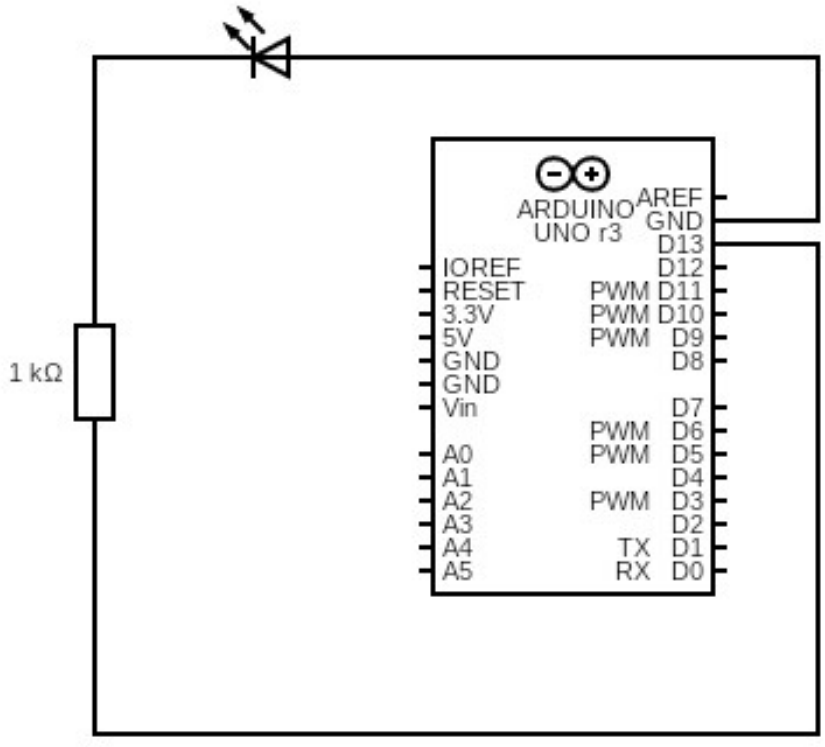
1) To get familiarised with Ardunio and Tinkercad simulation software.

2) To turn ON and turn OFF a LED using Ardunio.

Electronic Components Used:

1) Arduino Uno R3
2) Breadboard small
3) Resistor(1k ohm)
4) LED
5) Connecting Wires

Reference Circuit:



Procedure:

1) Take the essential electronic components mentioned above from the tinkercad simulation software.

2) First, make sure to power off our Ardunio-remove any USB cable.

3) Now take a black wire connect one end to the gnd in Ardunio and connect other end of black wire to the 15th pin(jth column) of breadboard.

4) Now take another black wire connect one end to the 13th pin of Ardunio and connect other end of black wire to the 20th row pin(ith column) of the breadboard.

5) Select the resistor of desired value(here 1kilo ohm).

6) FIx the ressistor at the 16th and 19th hole in the jth line.That resistor must between the two wire ends of breadboard.

7) Now take the LED and connect its negative terminal(short leg) to the column after ground pin and positive terminal(long leg) to the column where the another end of the resister is connected, which is near to the gnd connecting wire.

8) Now in the code section we need to enter our code in order to make the Ardunio work.

9) **CODE**:

```
void setup()
{
  pinMode(LED_BUILTIN, OUTPUT);
}

void loop()
{
  digitalWrite(13, HIGH);
  delay(1000);       // Wait for 1000 millisecond(s)
  digitalWrite(13, LOW);
  delay(1000);      // Wait for 1000 millisecond(s)
}
```

10) Now we need to start the simulation, it shall be done.

11) Now let's change the ON-OFF duration and observe the output and also try by changing the color of the wires and observe the output.

12)**Code after changing duration:**

```
void setup()
{
  pinMode(LED_BUILTIN, OUTPUT);
}

void loop()
{
  digitalWrite(13, HIGH);
  delay(5000);      // Wait for 1000 millisecond(s)
  digitalWrite(13, LOW);
  delay(1000);     // Wait for 1000 millisecond(s)
}
```

Conclusion:

1) In this experiement, I leant how to build an Andruino circuit, turn ON and OFF a LED using Ardunio.

2) If we changing the ON-OFF duration and noticed that LED turns ON- OFF according to our given time.

3) Get familarised with Ardunio and Tinkercad simulation..

Link of the Tinkarcad simulation:

https://www.tinkercad.com/things/l5hEt5AaW7d-lab1/editel?sharecode=tnw5YhEhjcDCyDTEh5cvDt_izmWtEWnvI7HOVHYFSxc