

Lab Report: 1

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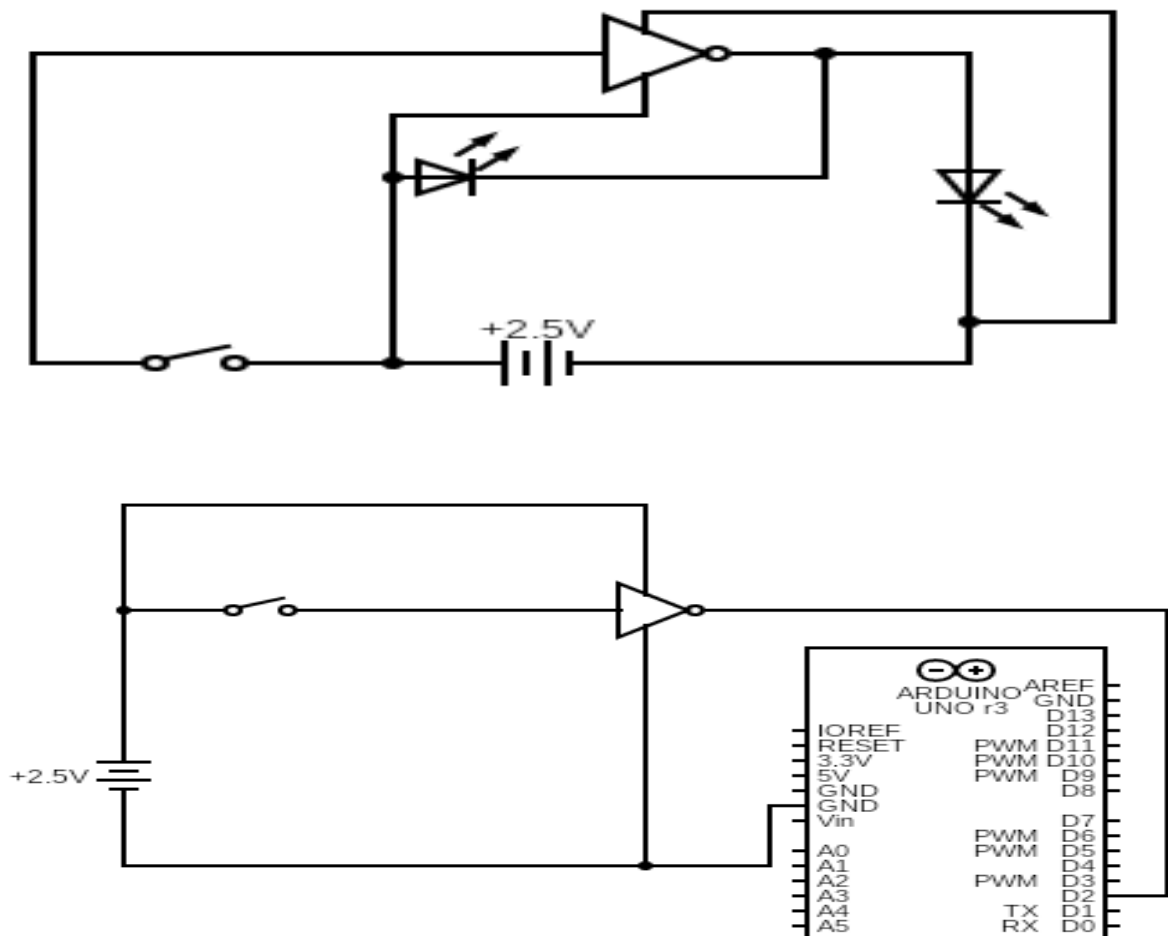
Roll number: 2023114001

Group number: 9

Objective: To Verify Working of Bulbs and Not Gate.

Electronic components used: Inverting Scheme, Red LED, Green LED, DIP Switch, Power Supply, Arduino.

The reference circuit:



Procedure:

A. Check the Circuit-

- 1.Connect VCC and GND wire to Bredboard.
- 2.Connect Inverter 14th terminal with positive and 7th terminal with negative wire.
- 3.Connect Switch to I/P terminal of Inverter Gate through Wire.
- 4.Connect LED Pair to O/P terminal of Inverter Gate through Wire.
- 5.On the Power Supply.
- 6.ON/OFF the Switch and Observe Colour of Bulb.

B. Arduino Connect-

- 1.Repeat 1 to 3 Procedure of above mentioned Procedure.
- 2.Connect O/P terminal of Inverter Gate to port of Arduino,which is mentioned in code.
(For my case, It was 2nd port)
- 3.Connect Ground Wire to Arduino.
- 4.Compile the prescribed Code in Arduino.
- 5.Observe the O/P on Serial Monitor when Switch turns to ON and OFF.

CODE:

```
const int ngateop=2;
```

```
void setup(){  
  pinMode(ngateop,INPUT);  
  Serial.begin(9600);  
}
```

```
void loop(){  
  int ngateval=digitalRead(ngateop);
```

```
if(ngateval==HIGH){  
  Serial.println("Hello World");  
}  
else{  
  Serial.println("0");  
}  
  
delay(1000);
```

Conclusion:

A. LED turns to RED when Switch is Off (LOW VOLTAGE), and to GREEN when it is ON(HIGH VOLTAGE), signifying HIGH and LOW voltage respectively.

B. Serial Monitor prints “HELLO WORLD” when Switch was Off, signifying O/P was HIGH, whereas ‘0’ when Switch was Off, signifying O/P was LOW.

Link for the Tinkercad simulation:

EXP1:https://www.tinkercad.com/things/eYusek0af0a-exp11/editel?sharecode=Dt3ChpaclTK2rLH3_qSUiK3vAKV--Ivmd85Rg_3vCoo

EXP2:https://www.tinkercad.com/things/0MfT844tUzV-exp12/editel?sharecode=3Fa6nrSyuB4LkFPNsokhHi4EkA7u7_jcLab8MC5-ms0

