LAB REPORT – 7

Name: Vanshita

Roll Number: 2021101102

Group: G6

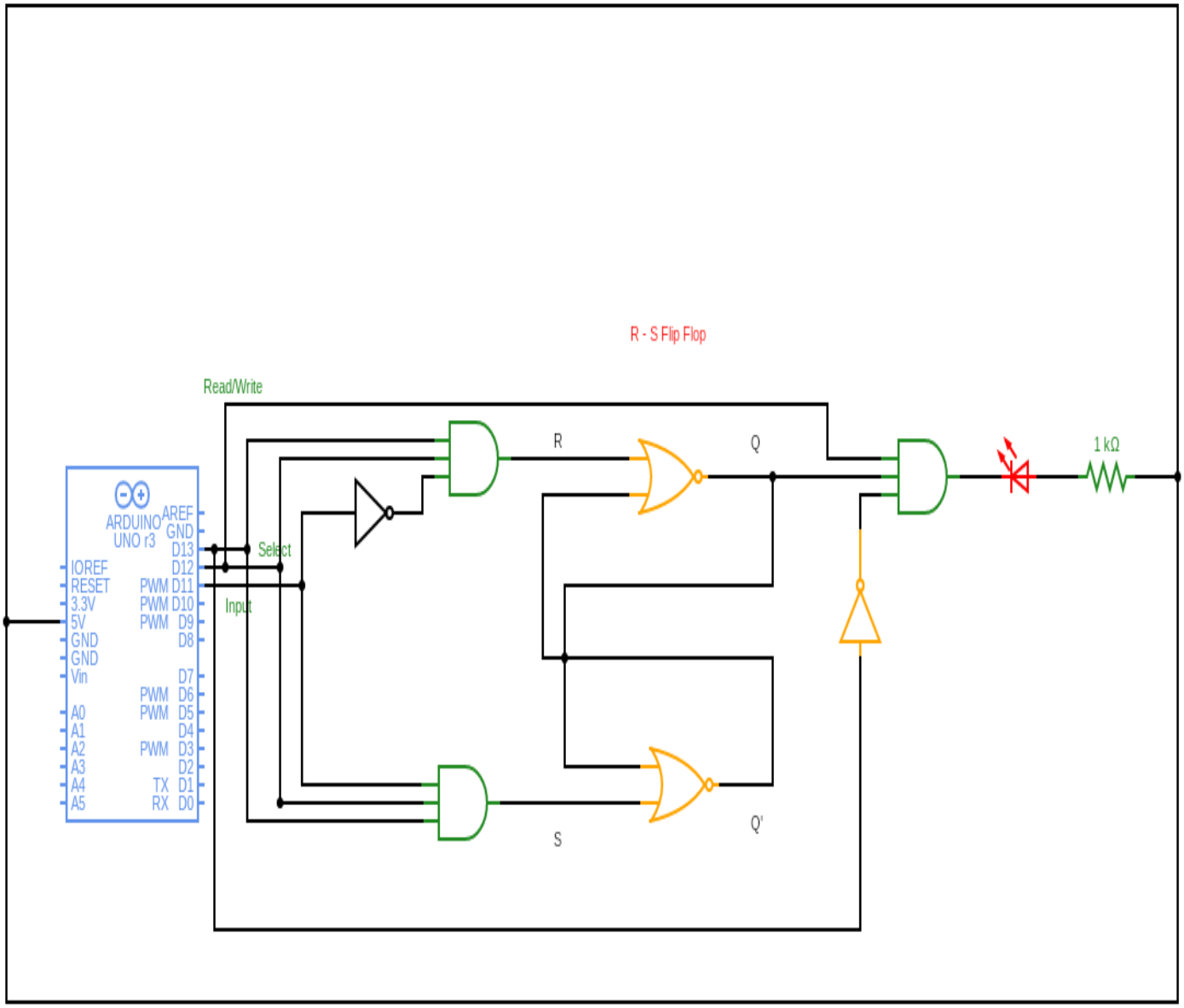
Aim of the experiment:

To implement and verify the operation of a Binary cell for RAM based on RS flipflop.

Electronic Components used:

1. Arduino UNO
2. Connecting wires
3. 74HC04 IC (2)
4. 74HC11 IC (2)
5. 74HC32 IC
6. LED
7. Resistor

Reference Circuit:



Procedure:

1. Drag all the electronic components mentioned above to Tinkercad working area.

2. Take 3 pins from the Arduino and assign them as input, select and Read/Write lines.
3. Construct the S-R latch as shown in the figure.
4. Write the appropriate code and click on start simulation.

Code:

```
int pin1 = 11;              //input line
int pin2 = 12;              //select line
int pin3 = 13;              //Read/Write line
int a,b,c,k;


void setup()
{
  pinMode(pin1, OUTPUT);
  pinMode(pin2, OUTPUT);
  pinMode(pin3, OUTPUT);
  Serial.begin(9600);
}
void loop()
{
  Serial.print("\nInput = ");
```

```
while(Serial.available() == 0){}
a = Serial.read();
a = a -'0';
Serial.println(a);

Serial.print("Select Line = ");
while(Serial.available() == 0){}
b = Serial.read();
b = b -'0';
Serial.println(b);

Serial.print("Read/Write = ");
while(Serial.available() == 0){}
c = Serial.read();
c = c -'0';
Serial.println(c);

digitalWrite(pin1, a);
digitalWrite(pin2, b);
digitalWrite(pin3, c);

Serial.print("Enter anything to go to read again");
```

```
  while(Serial.available()==0){}
  k=Serial.read();
}
```

Observation:

Select Line	Input	Read/Write	Q	Output
0	0	0	Previous state	0
0	0	1	Previous state	0
0	1	0	Previous state	0
0	1	1	Previous state	0
1	0	0	Previous state	0
1	0	1	0	0
1	1	0	Previous state	Q

1	1	1	1	0

First on inputting Input, Select, Read/Write as 111 the LED doesn't glow. This is the Write function. Now on 011, the output LED glows.

Link for Tinkercad simulation circuit