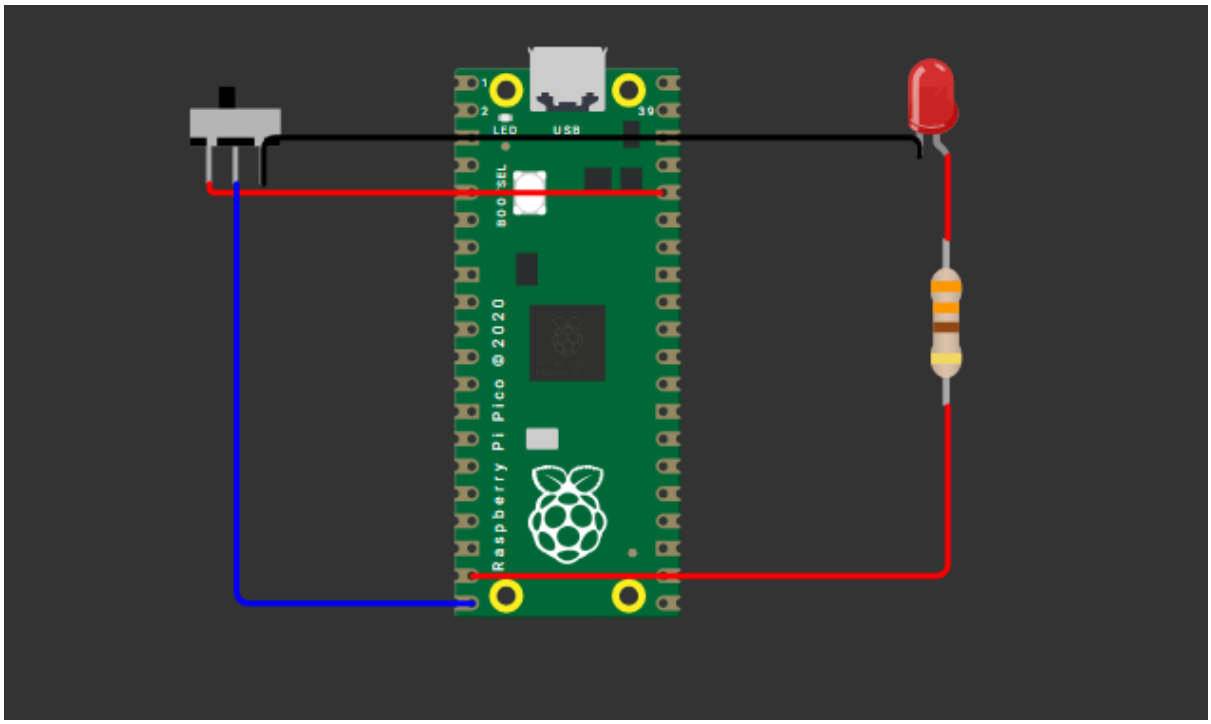
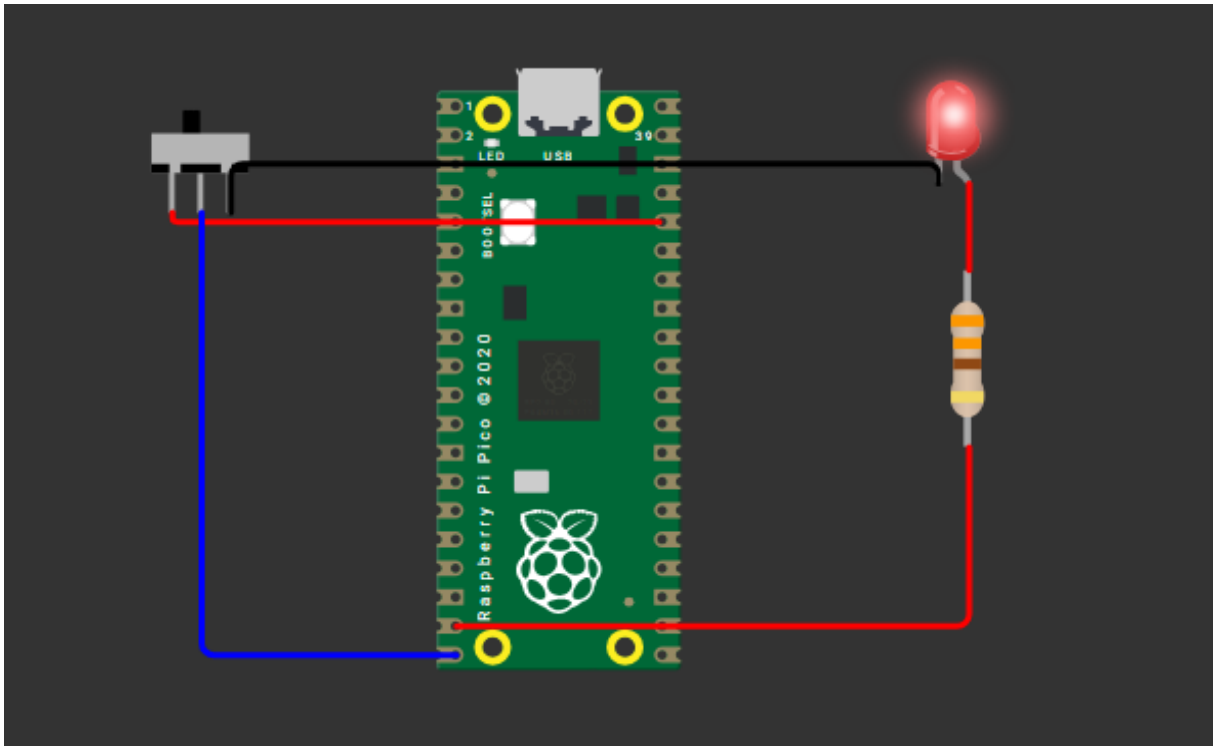
PRACTICAL 8

Interfacing Raspberry Pi Pico 2 with IR Obstacle Sensor

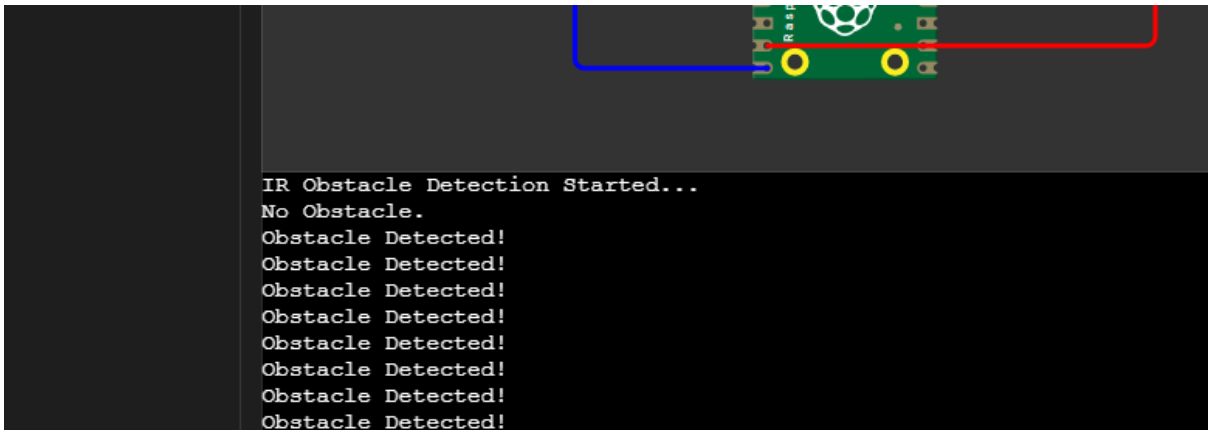




PROGRAM:

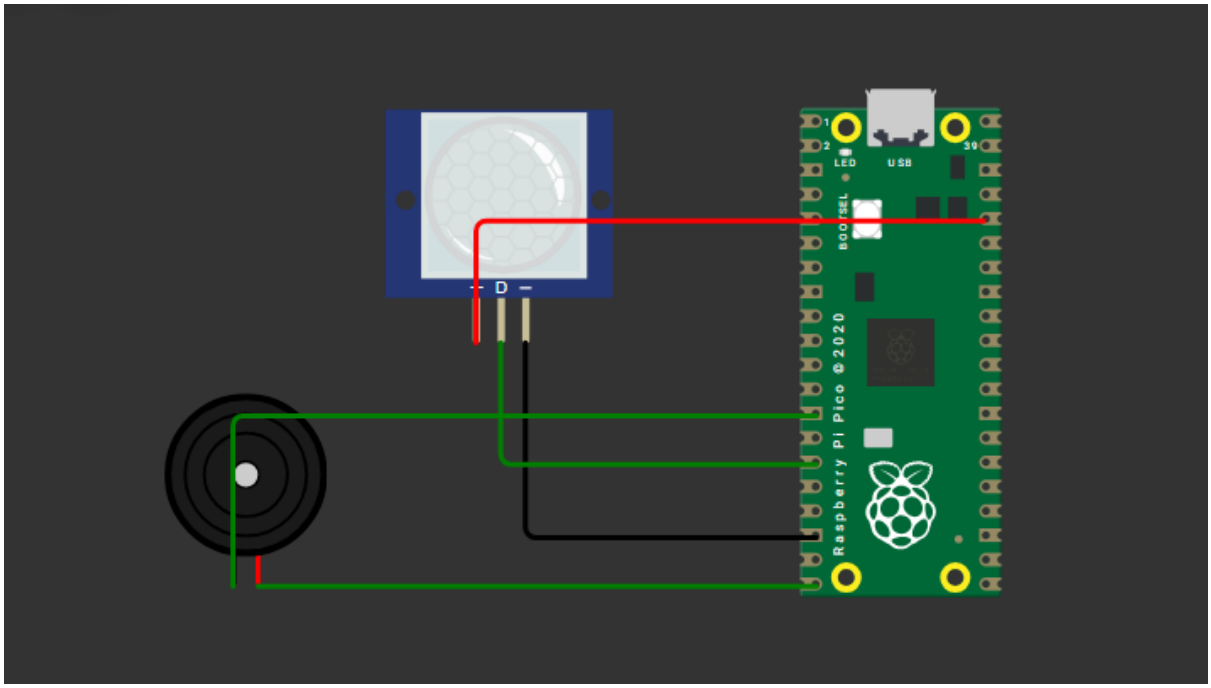
```
from machine import Pin
from time import sleep

ir_sensor = Pin(15, Pin.IN)
led = Pin(14, Pin.OUT)

print("IR Obstacle Detection Started...")

while True:
    if ir_sensor.value() == 0:
        print("Obstacle Detected!")
        led.value(1)
    else:
        print("No Obstacle.")
        led.value(0)
    sleep(0.3)
```

OUTPUT:



ASSIGNMENT 8

Modify the program to count number of obstacles detected in 60 seconds.



PROGRAM:

```
from machine import Pin
import time


# Pin setup
ir_sensor = Pin(17, Pin.IN)   # IR sensor OUT
buzzer = Pin(15, Pin.OUT)     # Buzzer output


# Variables
count = 0
start_time = time.time()


print("Counting obstacles for 60 seconds...")
```

```
while (time.time() - start_time) < 60:
    if ir_sensor.value() == 0:  # LOW means obstacle detected
        count += 1
        print("Obstacle detected! Count =", count)

        # Buzzer ON
        buzzer.value(1)
        time.sleep(0.3)
        buzzer.value(0)

        # Small delay to avoid multiple counts for one obstacle
        time.sleep(0.5)

print("\nTime's up!")
print("Total obstacles detected in 60 seconds:", count)
```

OUTPUT: