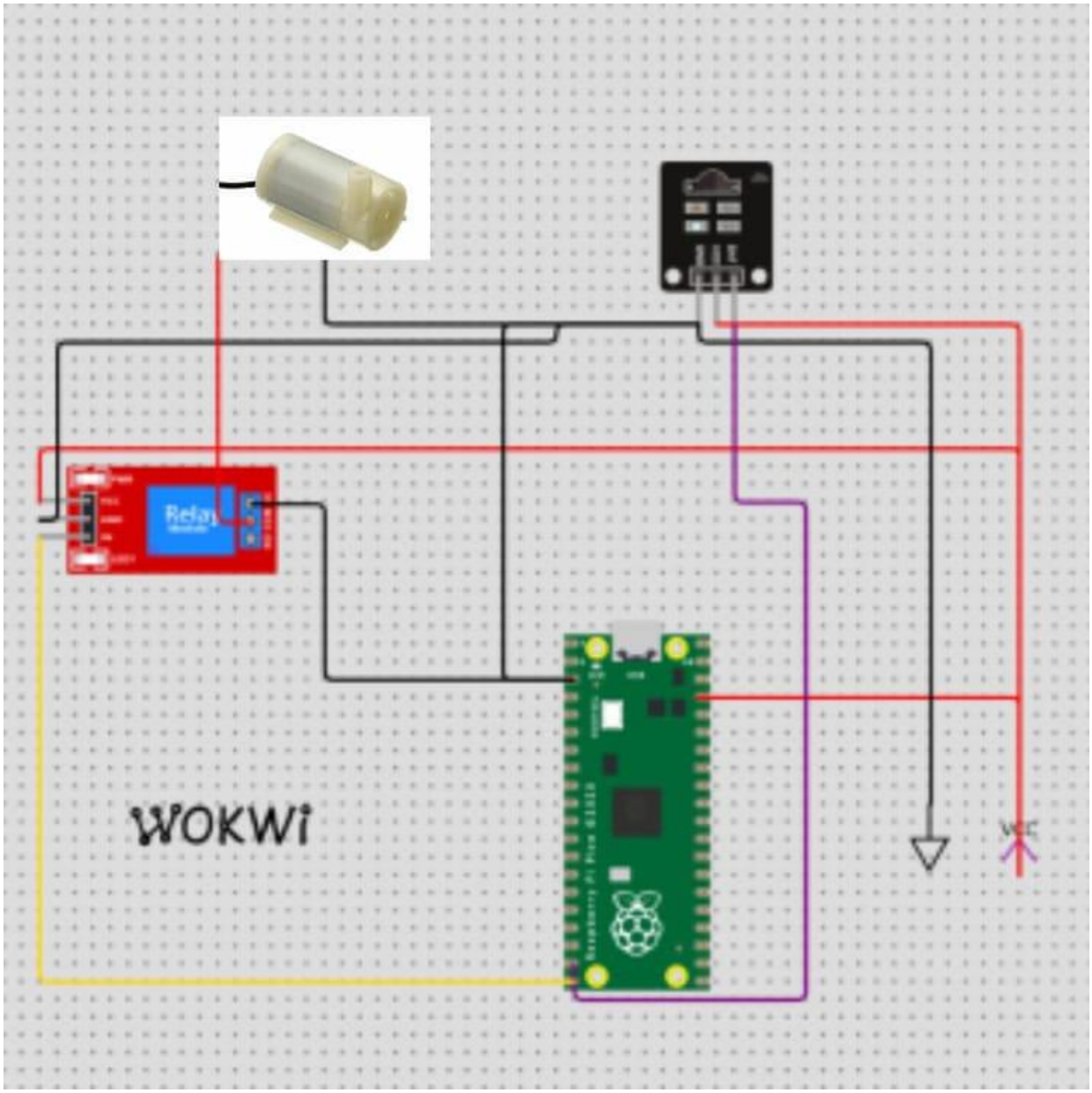
Project Title

Smart Water Fountain

PHASE-3: simulation

CIRCUIT CONNECTION:



COMPONENTS USED

- **Raspberry Pi Pico**
- **IR Sensor (Infrared Sensor)**
- **Relay Module**
- **Water Pump**
- **Wires & power supply ect....**

CODING:

```
import time
import machine
ir_sensor_pin = 14
relay_pin = 15
ir_sensor = machine.Pin(ir_sensor_pin, machine.Pin.IN)
relay = machine.Pin(relay_pin, machine.Pin.OUT)
def turn_on_pump():
    relay.value(1)
def turn_off_pump():
    relay.value(0)
try:
    while True:
        ir_sensor_value = ir_sensor.value()
        if ir_sensor_value == 0:
            print("IR sensor detected an obstacle. Turning on the pump.")
```

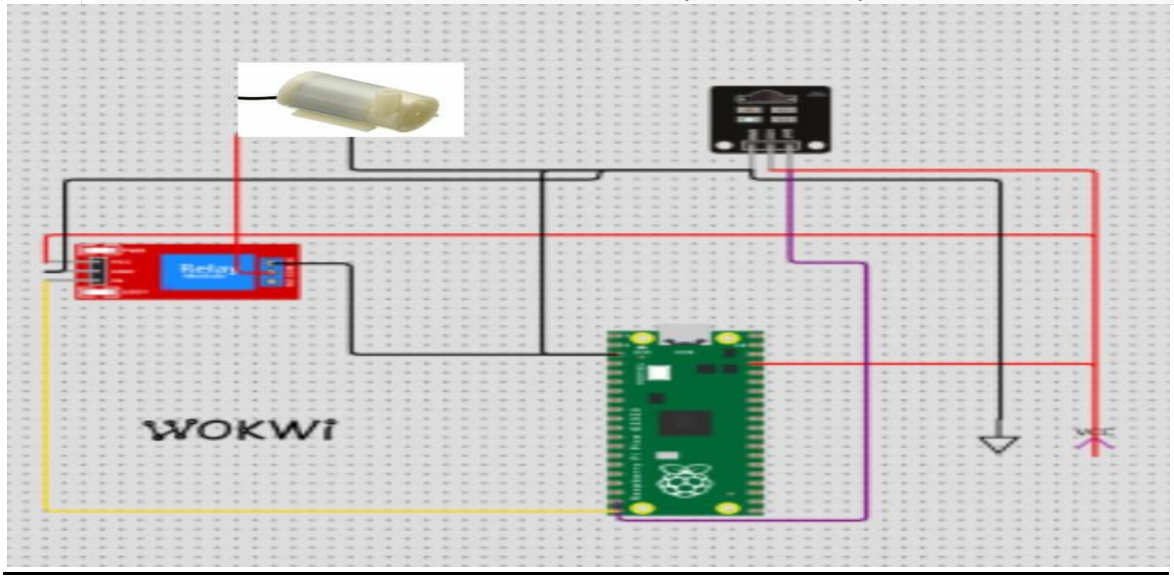
```
            turn_on_pump()
        else:
            print("No obstacle detected. Turning off the pump.")
            turn_off_pump()
            time.sleep(0.1)
except KeyboardInterrupt:
    turn_off_pump()
    print("Program terminated. Pump turned off.")
```

HOW IT WORKS?

it works under two conditions:

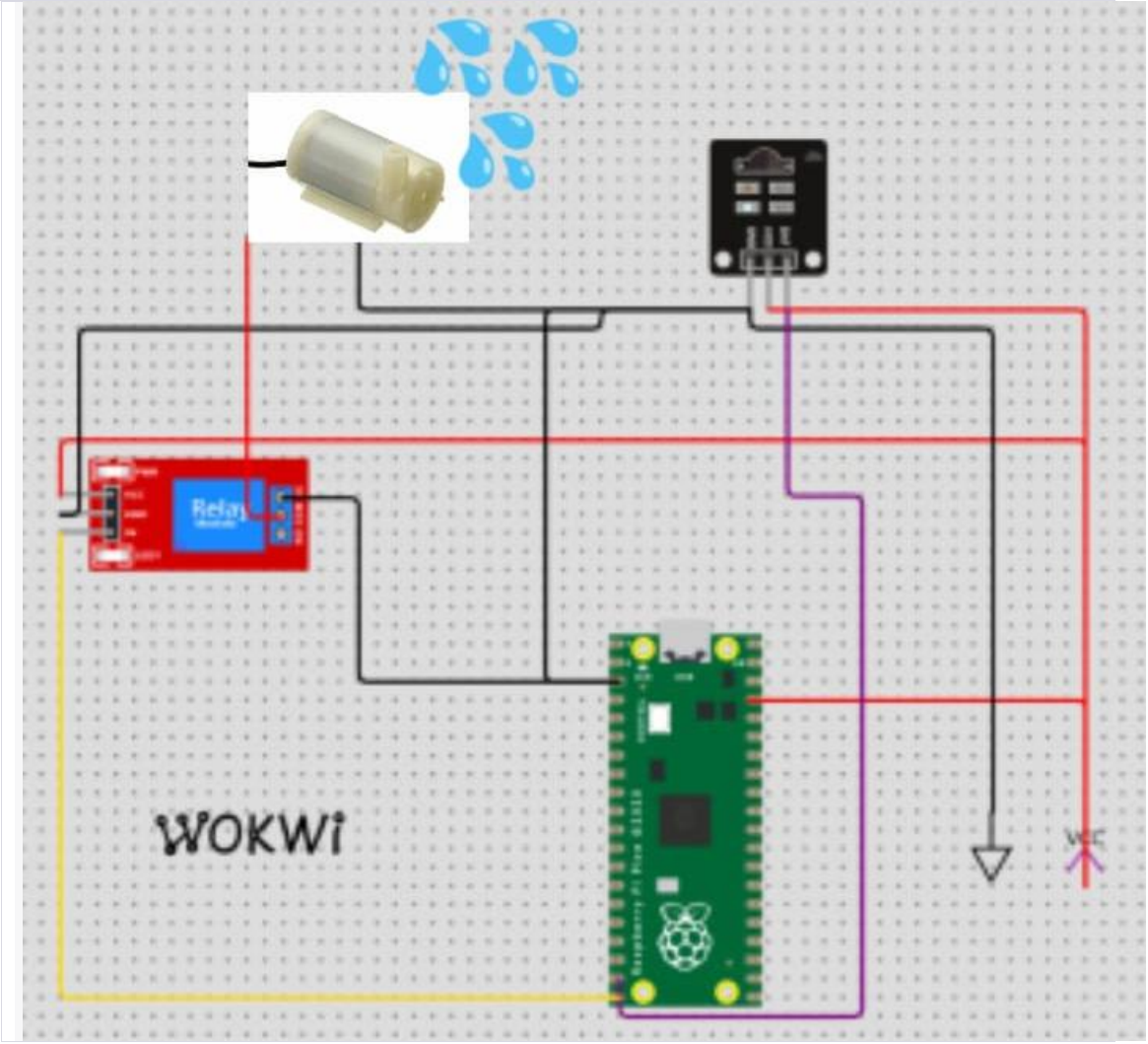
Normal State (No Obstacle): In the absence of an obstacle, the IR sensor does not detect any object in its vicinity and outputs a specific value (usually HIGH or 1).

The Raspberry Pi Pico reads the output from the IR sensor and determines that there is no obstacle.(PUMP OFF)



Obstacle Detected:

- When an obstacle (e.g., a hand) is placed in front of the IR sensor, it reflects infrared radiation back to the sensor.
- The IR sensor detects this reflected infrared radiation and outputs a different value (usually LOW or 0).(PUMP ON)



LINK: https://wokwi.com/projects/297322571959894536