SMART WATER MANAGEMNT

CODING (PYTHON):

import machine

import time

# Pin assignments for the ultrasonic sensor

TRIGGER\_PIN = 23 # GPIO23 for trigger

ECHO\_PIN = 22 # GPIO22 for echo

# Pin assignment for the LED

LEAK\_LED\_PIN = 19 # GPIO19 for the LED

# Set the pin modes

trigger = machine.Pin(TRIGGER\_PIN, machine.Pin.OUT)

echo = machine.Pin(ECHO\_PIN, machine.Pin.IN)

leak\_led = machine.Pin(LEAK\_LED\_PIN, machine.Pin.OUT)

# Function to measure distance using the ultrasonic sensor

def measure\_distance():

# Generate a short trigger pulse

trigger.value(0)

time.sleep\_us(5)

trigger.value(1)

time.sleep\_us(10)

trigger.value(0)

# Measure the echo pulse duration to calculate distance

pulse\_start = pulse\_end = 0

while echo.value() == 0:

pulse\_start = time.ticks\_us()

while echo.value() == 1:

pulse\_end = time.ticks\_us()

pulse\_duration = pulse\_end - pulse\_start

# Calculate distance in centimeters (assuming the speed of sound is 343 m/s)

distance = (pulse\_duration \* 0.0343) / 2 # Divide by 2 for one-way travel

return distance

OUTPUT:



