# Role: IoT Engineer

# Module: Real-Time Food Monitoring via IoT Sensors

import paho.mqtt.client as mqtt

import random

import time

# MQTT Broker Details

BROKER = "mqtt.eclipseprojects.io" # Public MQTT broker

TOPIC = "veriharvest/sensor"

# Simulated Sensor Data Function

def generate\_sensor\_data():

return {

"temperature": random.uniform(2, 10), # Simulating temperature values (°C)

"humidity": random.uniform(40, 70), # Simulating humidity values (%)

"gas\_level": random.uniform(0.1, 2.0) # Simulated gas contamination levels (PPM)

}

# MQTT Client Setup

def on\_connect(client, userdata, flags, rc):

print("Connected to MQTT Broker!")

def publish\_sensor\_data():

client = mqtt.Client()

client.on\_connect = on\_connect

client.connect(BROKER, 1883, 60)

while True:

sensor\_data = generate\_sensor\_data()

client.publish(TOPIC, str(sensor\_data))

print(f"Published: {sensor\_data}")

time.sleep(5) # Sends data every 5 seconds

if \_\_name\_\_ == "\_\_main\_\_":

publish\_sensor\_data()