**Traffic Management Program**

import paho.mqtt.client as mqtt

import json

import random

import time

# MQTT broker information

mqtt\_broker = "your\_mqtt\_broker\_address"

mqtt\_port = 1883

mqtt\_topic = "traffic\_data"

# Simulated IoT device information

device\_id = "iot\_device\_1"

location = "Intersection A"

# Create an MQTT client

client = mqtt.Client(device\_id)

# Callback when the client successfully connects to the MQTT broker

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

if rc == 0:

print(f"Connected to MQTT broker at {mqtt\_broker}")

else:

print(f"Failed to connect to MQTT broker with code {rc}")

# Set the on\_connect callback

client.on\_connect = on\_connect

# Connect to the MQTT broker

client.connect(mqtt\_broker, mqtt\_port)

# Function to generate simulated traffic data

def generate\_traffic\_data():

timestamp = int(time.time())

vehicle\_count = random.randint(0, 50)

average\_speed = round(random.uniform(10, 60), 2)

status = "normal" if random.random() < 0.9 else "congested"

traffic\_data = {

"device\_id": device\_id,

"location": location,

"timestamp": timestamp,

"vehicle\_count": vehicle\_count,

"average\_speed": average\_speed,

"status": status,

}

return json.dumps(traffic\_data)

try:

# Loop to continuously send traffic data

while True:

traffic\_data = generate\_traffic\_data()

# Publish traffic data to the MQTT topic

client.publish(mqtt\_topic, traffic\_data)

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

time.sleep(5) # Simulate sending data every 5 seconds

except KeyboardInterrupt:

print("Script terminated by the user.")

client.disconnect()