Name: SREENIVASAN S

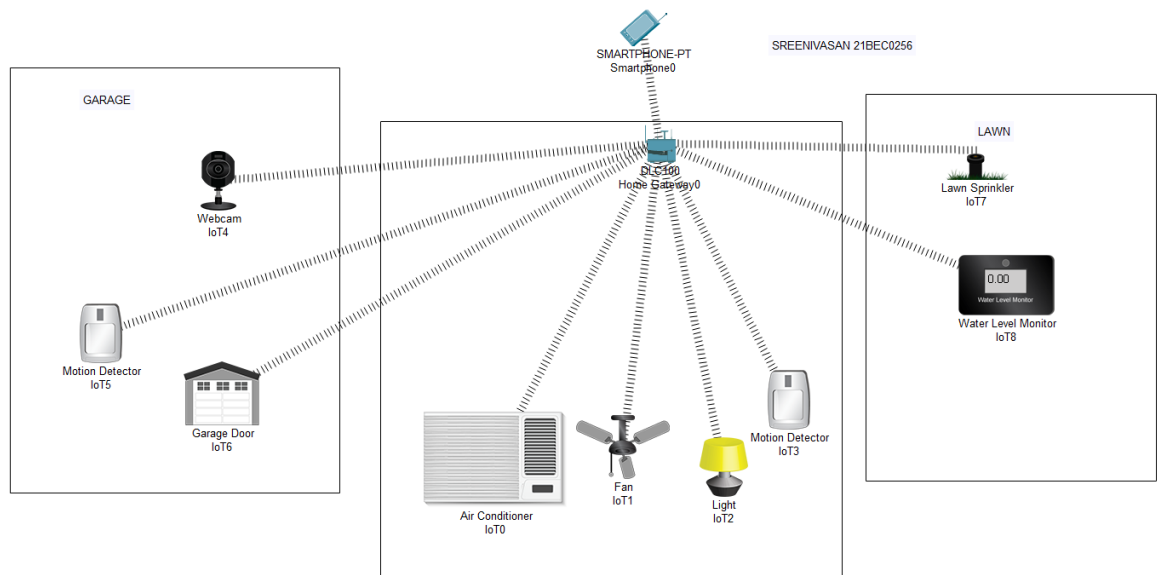**REG: 21BEC0256**

SLOT: L3+L4

IOT DOMAIN ANALYST LAB

TASK 2

Aim: Create a smart home with suitable edge devices for the living room, garage and lawn using IoT gateway. Perform remote monitoring using smart phone.

Procedure:

➢ Select appropriate edge devices such as lamp, fan , AC ,doors, motion sensors, and irrigation controllers for each area.

➢ Place an IoT gateway device in a central location within the home to manage communication between edge devices and the remote monitoring system.

➢ Use Ethernet cables to connect edge devices from the living room, garage, and lawn to the IoT gateway.

➢ Configure each edge device with appropriate settings such as device names, IP addresses, and communication protocols.

➢ Add a smartphone device to the network to serve as the remote monitoring interface.

➢ Configure the smartphone to connect to the IoT gateway through Wireless.

➢ Use the smartphone app to remotely monitor and control edge devices in the living room, garage, and lawn.

➢ Verify the functionality of each device and ensure seamless communication between the smartphone and the IoT gateway.

SREENIVASAN 21BEC0256

GARAGE

Webcam
IoT4

Motion Detector
IoT5

Garage Door
IoT6

SMARTPHONE-PT
Smartphone0

DLC100
Home Gateway0

Air Conditioner
IoT0

Fan
IoT1

Light
IoT2

Motion Detector
IoT3

LAWN

Lawn Sprinkler
IoT7

Water Level Monitor
IoT8

Smartphone0

Physical | Config | **Desktop** | Programming | Attributes

Web Browser   X

< | > | URL | http://192.168.25.1/home.html   Go   Stop

IoT Server - Devices   Home | Conditions | Editor | Log Out

IoT0 (PTT08101LNC-)   AC

IoT1 (PTT08106M38-)   Ceiling Fan

IoT2 (PTT0810XU9F-)   Light

IoT3 (PTT081021T6-)   Motion Detector

IoT4 (PTT0810MU5L-)   Webcam

IoT5 (PTT0810Y646-)   Motion Detector

IoT6 (PTT0810RQR1-)   Garage Door

IoT7 (PTT081062BB-)   Lawn Sprinkler

IoT8 (PTT0810S261-)   Water Level Monitor

Conditions:

Smartphone0   — ☐ ✕

Physical   Config   Desktop   Programming   Attributes

Web Browser   X

| < | > | URL | http://192.168.25.1/conditions.html | | Go | Stop |

IoT Server - Device Conditions   Home | Conditions | Editor | Log Out

Actions	Enabled	Name	Condition	Actions
Edit Remove	Yes	garage	Match all: • IoT4 On is true • IoT5 On is true	Set IoT6 On to true
Edit Remove	Yes	Living room	IoT3 On is true	Set IoT2 Status to On Set IoT1 Status to High Set IoT0 On to true
Edit Remove	Yes	Lawn	IoT8 Water Level <= 3.8 cm	Set IoT7 Status to true

Add

Result:

1. When the camera is on and the motion detector detects something it the door is automatically opened
2. When the motion detector detects detects something, fan , ac, and light is switched on
3. If the water level is below 3.8cm then the water sprinkler will start sprinkling water

Verification

Smartphone

SREENIVASANS
21BEC0256

Home Gateway

Lawn Sprinkler

Water level monitor

Garage

Motion Detector

Garage Door

AC   FAN   LIGHT
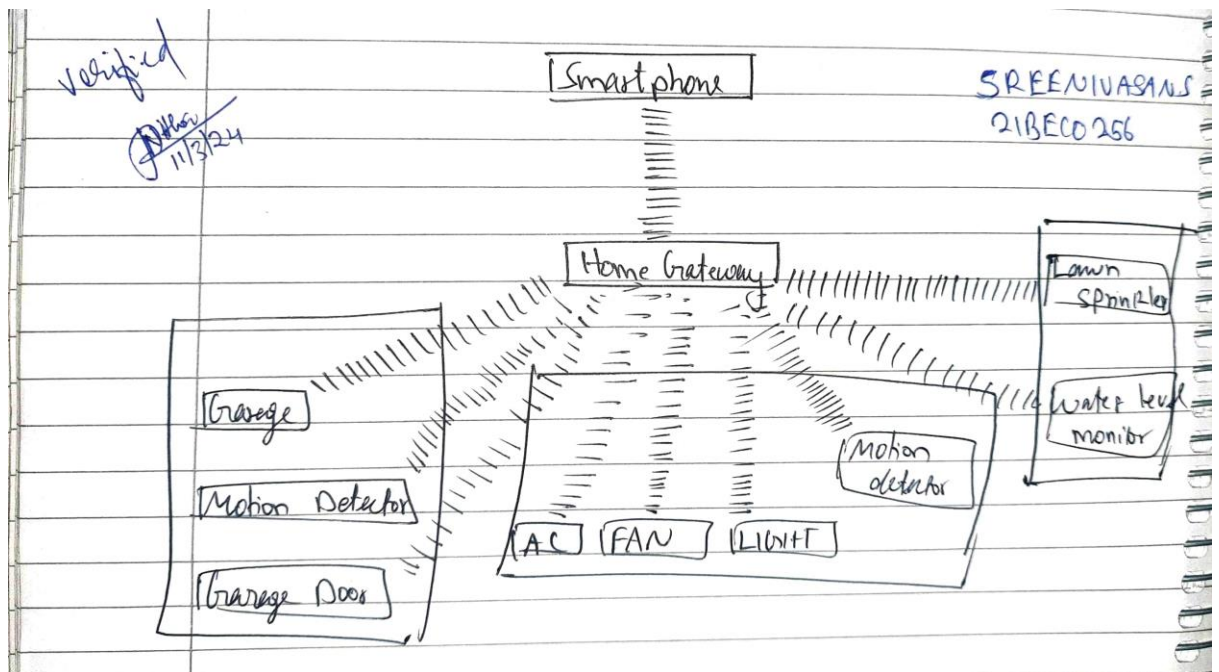
Motion detector

Aim:

Connect few living room end devices in a wired manner and list the differences in using a registration server and an IoT gateway for the given use case

Procedure:

➢ Choose suitable end devices such as lamp, switches, motion detector, fan and AC for the living room.
➢ Use Ethernet cables to connect the selected devices in the living room to either a registration server or an IoT gateway.
➢ Access the configuration settings of each device.
➢ Configure the devices to register with the registration server.
➢ Set up user accounts and permissions as per requirements
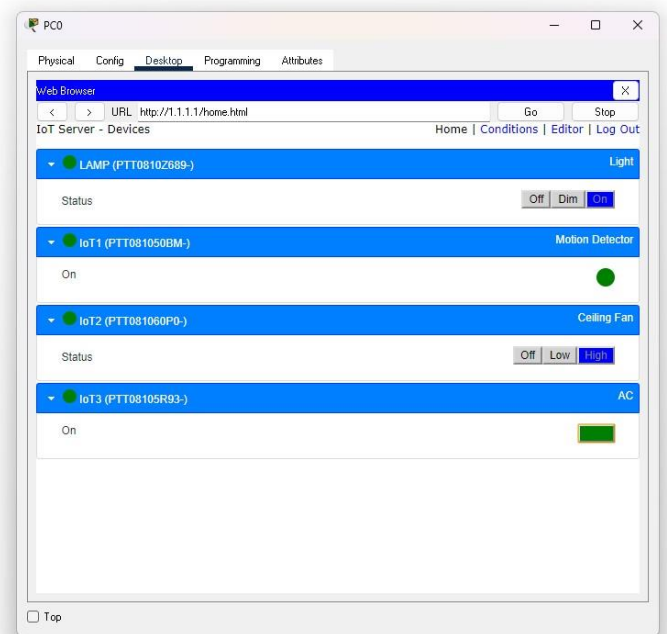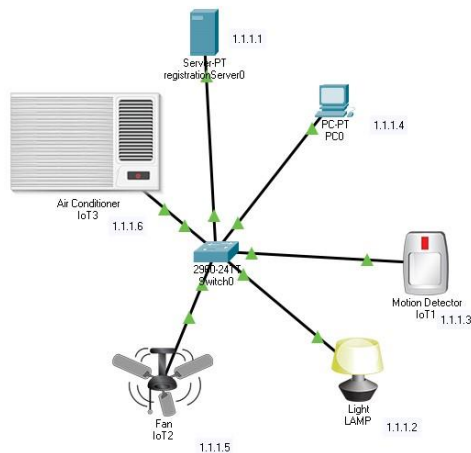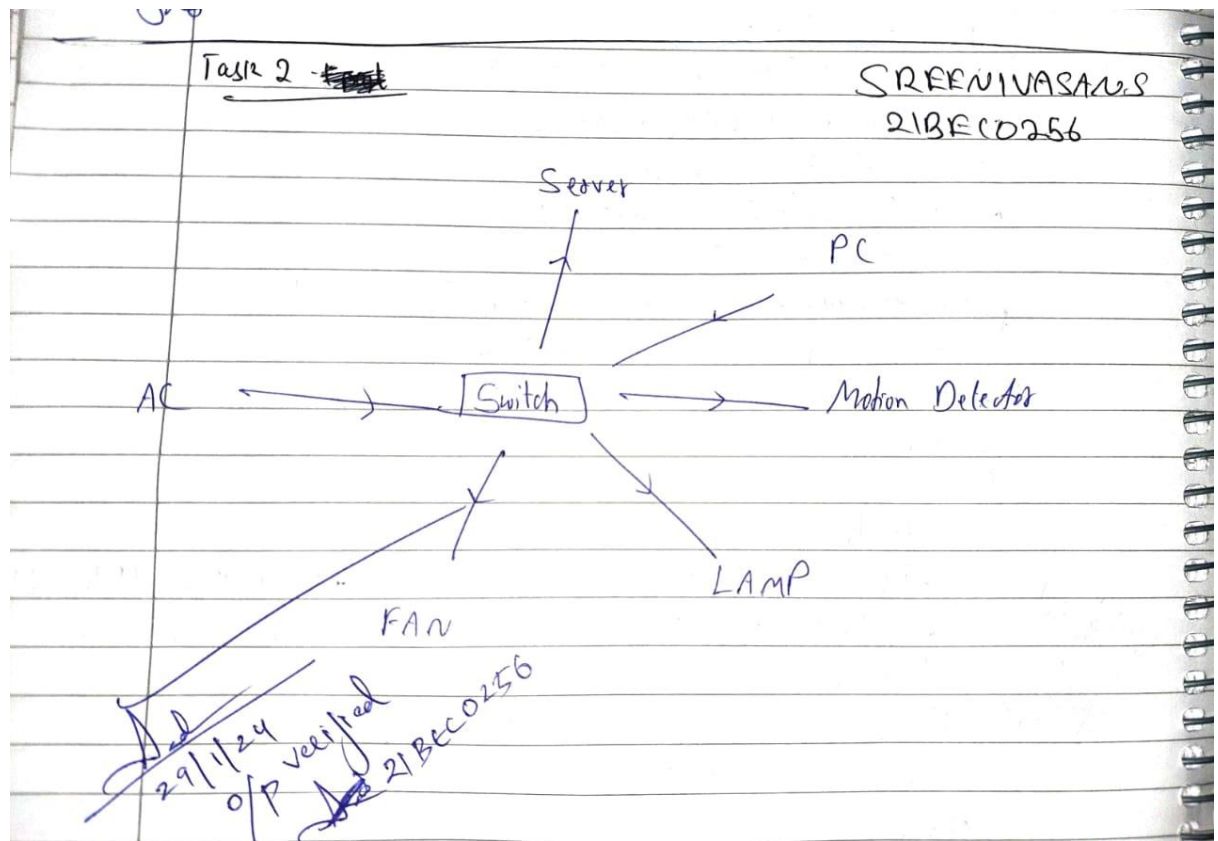
Difference:

Registration Server:

➤ Centralized device registration and management.
➤ Requires user authentication and access control.
➤ May provide additional services like firmware updates and device monitoring. IoT

Gateway:

➤ Acts as a central hub for device communication.
➤ Handles data processing and routing.
➤ Provides integration with cloud services and remote monitoring platforms