

## Laboratory Report Cover Sheet

**SRM Institute of Science and Technology  
College of Engineering and Technology  
Department of Electronics and Communication  
Engineering**

**18ECE231J IOT SYSTEM DESIGN Fourth  
Semester, 2020-21 (Even semester)**

**Name : S. Lalith Kishore**

**Register No. : RA1911043010014**

**Day / Session : 1**

**Venue : Virtual**

**Title of Experiment: SMOKE DETECTOR (MINI PROJECT)**

**Date of Submission : 14/05/2021**

Particulars	Max. Marks	Marks Obtained
Pre lab and Post lab	10	
Lab Performance	10	
Simulation and results	10	
Total	30	

### REPORT VERIFICATION

**Staff Name : Dr.P.Eswaran Signature**

**:**

## **Experiment 9(Mini Project)** **SMOKE DETECTOR**

**GROUP MEMBERS:**

**RA1911043010013 – Shailendra Sudakar**

**RA1911043010014 – Lalith Kishore**

## **9.1 INTRODUCTION**

The purpose of this experiment is to design a smoke detector, which detects smoke in the environment and triggers the alarm. In this experiment the alarm goes off when the smoke detector level reaches 40%

## **9.2 Hardware Requirement**

SL no	Description	Qty
1.	Cisco Packet Tracer (Software Installed in PC)	7.2 or above
2.	Smoke detector	1
3.	Switch	1
4.	PC	1
5.	Server	1
6.	Old Car	1
7.	Copper straight through cable	3

## **9.3 Background and Architecture:**

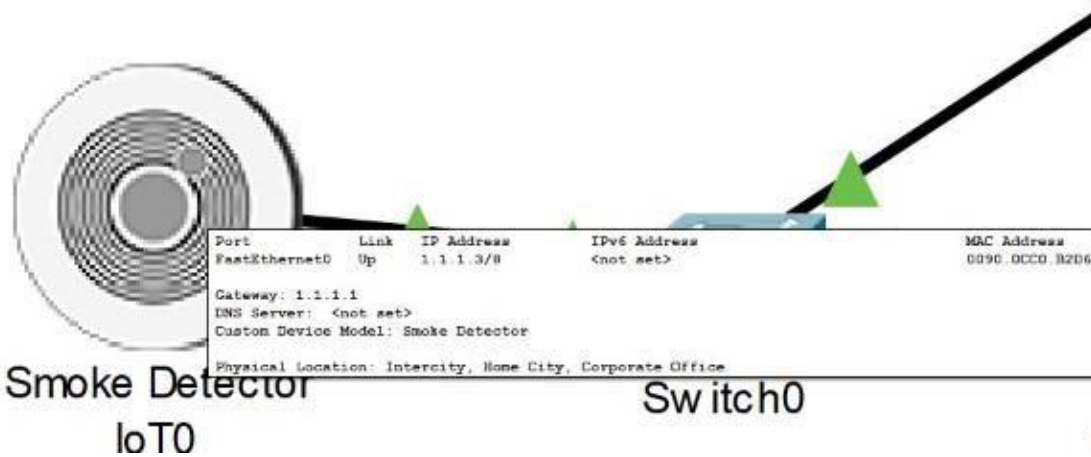
### **Theory:**

A smoke detector is an electronic fire-protection device that automatically senses the presence of smoke, as a key indication of fire, and sounds a warning to building occupants.

Commercial and industrial smoke detectors issue a signal to a fire alarm control panel as part of a building's central fire alarm system. By law all workplaces must have a smoke detection system.

Household smoke detectors, or smoke alarms, issue an audible and/or visual alarm locally from the detector itself. They can be battery-powered single units or several interlinked hardwired (mains-powered) devices backed up by batteries. The latter must be installed in all new buildings and after major refurbishments.

- **Smoke detector**



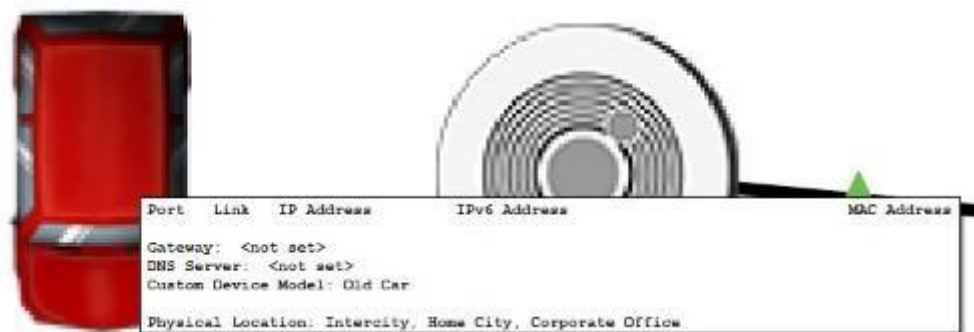
## SWITCH

2960-2 Switch	Port	Link	VLAN	IP Address	MAC Address
	FastEthernet0/1	Down	1	--	0007.EC85.C601
	FastEthernet0/2	Down	1	--	0007.EC85.C602
	FastEthernet0/3	Down	1	--	0007.EC85.C603
	FastEthernet0/4	Down	1	--	0007.EC85.C604
	FastEthernet0/5	Down	1	--	0007.EC85.C605
	FastEthernet0/6	Down	1	--	0007.EC85.C606
	FastEthernet0/7	Down	1	--	0007.EC85.C607
	FastEthernet0/8	Down	1	--	0007.EC85.C608
	FastEthernet0/9	Down	1	--	0007.EC85.C609
	FastEthernet0/10	Down	1	--	0007.EC85.C60A
	FastEthernet0/11	Down	1	--	0007.EC85.C60B
	FastEthernet0/12	Down	1	--	0007.EC85.C60C
	FastEthernet0/13	Down	1	--	0007.EC85.C60D
	FastEthernet0/14	Down	1	--	0007.EC85.C60E
	FastEthernet0/15	Down	1	--	0007.EC85.C60F
	FastEthernet0/16	Down	1	--	0007.EC85.C610
	FastEthernet0/17	Down	1	--	0007.EC85.C611
	FastEthernet0/18	Down	1	--	0007.EC85.C612
	FastEthernet0/19	Down	1	--	0007.EC85.C613
	FastEthernet0/20	Down	1	--	0007.EC85.C614
	FastEthernet0/21	Down	1	--	0007.EC85.C615
	FastEthernet0/22	Down	1	--	0007.EC85.C616
	FastEthernet0/23	Down	1	--	0007.EC85.C617
	FastEthernet0/24	Down	1	--	0007.EC85.C618
	GigabitEthernet0/1	Down	1	--	0007.EC85.C619
	GigabitEthernet0/2	Down	1	--	0007.EC85.C61A
	Vlan1	Down	1	<not set>	0002.4A53.5846
	Hostname: Switch				
	Physical Location: Intercity, Home City, Corporate Office, Main Wiring Closet				

## • PC

PC-PT	Port	Link	IP Address	IPv6 Address	MAC Address
	FastEthernet0	Down	192.168.25.101/24	<not set>	0040.0B10.BBB8
	Bluetooth	Down	<not set>	<not set>	000A.41EB.4DE4
	Gateway: 192.168.25.1				
	DNS Server: 0.0.0.0				
	Line Number: <not set>				
	Physical Location: Intercity, Home City, Corporate Office				

## • OLD CAR



- **SERVER**

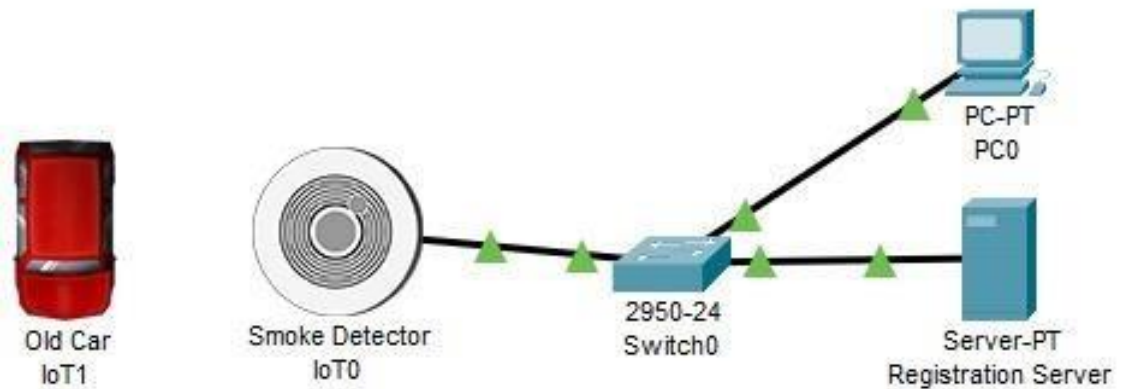


## 9.4 Procedure

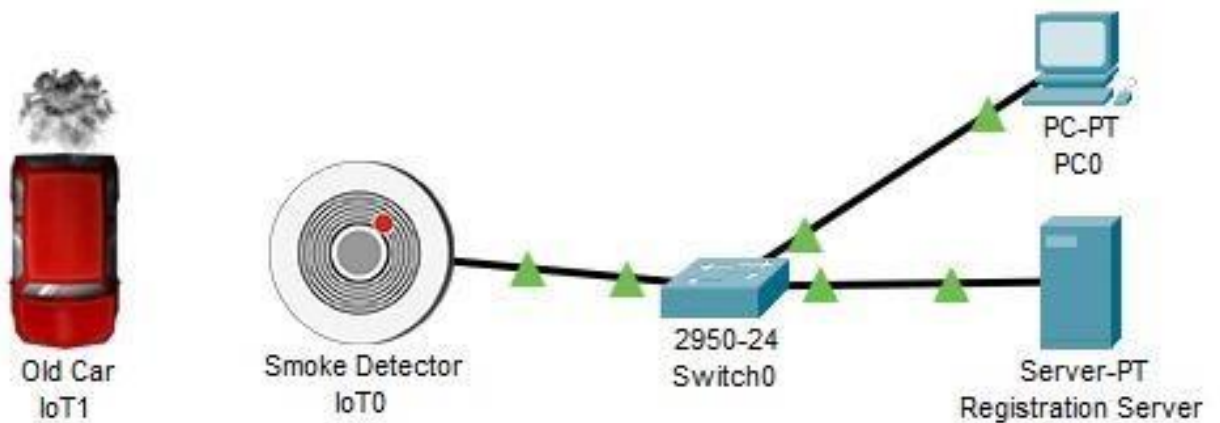
1. Launch Cisco packet tracer from the start menu/shortcut icon in desktop.
2. From file menu select New file.
3. Work in logical window in packet tracer.
4. Add the required devices from the network components space.
5. Select components required for building the logical network, by simple drag and drop.
6. Connect the server, switch, smoke detector and PC using copper straight wires.
7. Configure the smoke detector and connect the server.
8. Select the server, go to desktop and select web browser.
9. Enter the IP address in the URL of the web browser.
10. Create the credentials and sign in.
11. Now we can check the status of the alarm and the level of smoke in the web browser.
12. To check whether the smoke detector is working, we place an old car and turn ON so that it emits smoke.

## 9.5 Observations

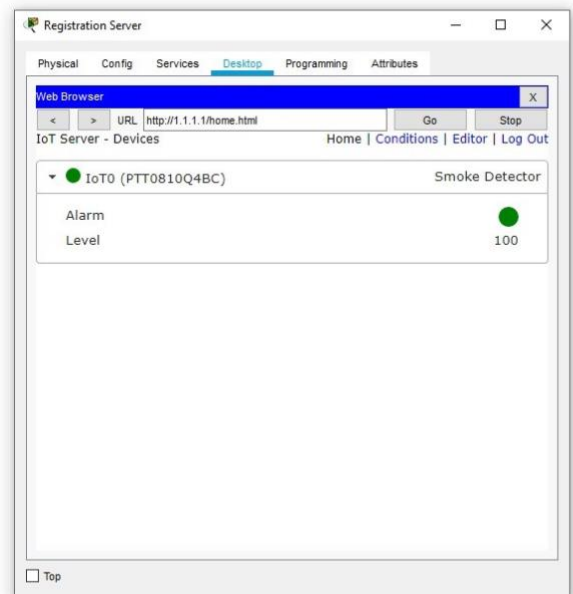
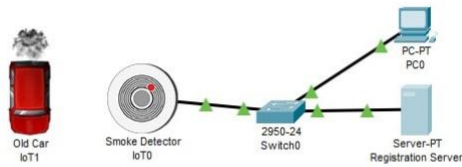
- Circuit Diagram
- Circuit when there is no smoke.



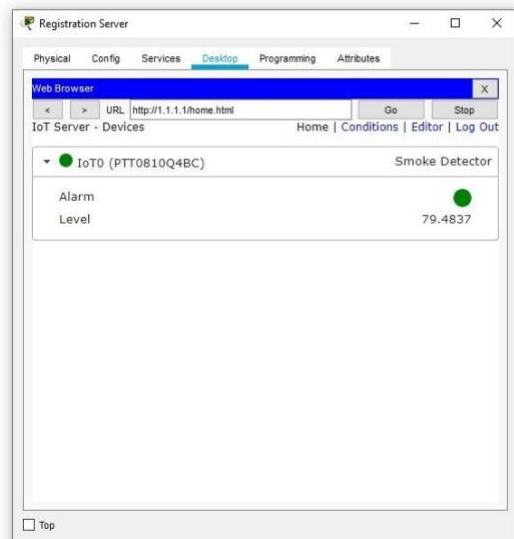
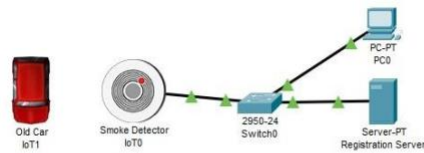
- Circuit when there is smoke.



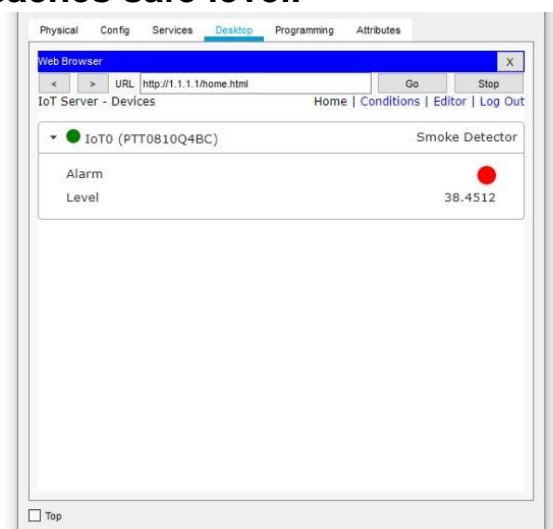
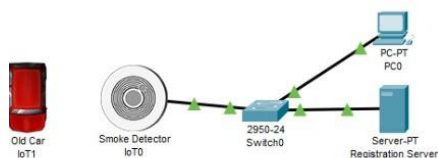
- Level of smoke detected by sensor.



- Level of smoke decreases when the car is turned off.



- Alarm is turned off when the smoke reaches safe level.



## **9.6 RESULT**

The circuit has successfully detected the amount of smoke when the car is turned on.