DAYANANDA SAGAR COLLEGE OF ENGINEERING
COMPUTER SCIENCE & ENGINEERING

Bachelor of Engineering

In

Computer Science & Engineering

Vishveshwaraya Technological University, Belgaum

Dayananda Sagar College of Engineering

Department of Computer Science Engineering

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Submitted by:

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DAYANANDA SAGAR COLLEGE OF ENGINEERING
COMPUTER SCIENCE & ENGINEERING

Minor Project- Report
Aug-2021-2022

Course Faculty: Professor Ramya K N
Course Name & code: Computer Networks & 19CS5DCCNW

Semester:5 Semester Date:16/12/2021

TITLE OF THE PROJECT	Smoke Detection and Fire Prevention			
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USN	1DS19CS093	1DS19CS094	1DS19CS095	1DS19CSC096
INDIVIDUAL CONTRIBUTION	Design of project	Project plan	Conditions	Configuration
GUIDE	Deepak G & Akshatha			
PROJECT ABSTRACT:	**Smoke detector, device used to warn occupants of a building of the presence of a fire before it reaches a rapidly spreading stage and inhibits escape or attempts to extinguish it.** A smoke detector alarm is a fire protection device that automatically detects smoke and also gives us warning. In the proposed system, a smoke detector upon senses smoke activates its alarm, sends a low voltage signal to all other smoke detectors in the vicinity. This low voltage signal activates the individual relays in the other smoke detectors causing them to emit a tone that alerts residents that one of the smoke detectors senses smoke. As Along with alerting the Residents with Siren (Alarm). It automatically Opens the unlocks the Doors, Windows and Sends the Signal to the Fire Sprinkler. A fire sprinkler or sprinkler head is the component of a fire sprinkler system that discharges water when the effects of a fire have been detected. **Universal Smart Home Gateway is a platform and an interface**, through which devices are compatible with one another. Gateway is also a frontend for the user, so that it can			

	perform intelligent integration of multiple devices in one network. Safe and versatile. **Properly installed and maintained smoke alarms are considered to be one of the best and least expensive means of providing an early warning of a potentially deadly fire and could reduce by almost half the risk of dying from a fire in your home.**
INTRODUCTION	**A smoke detector is a device that detects smoke, typically as an indicator of fire. Commercial, Industrial, and mass residential devices issue a signal to a fire alarm system, while household detectors, known as smoke alarms, generally issue a local audible or visual alarm from the detector itself.** A smoke detector's purpose is a simple one, to give you ample notification in case of a fire in your house. Without a smoke detector, by the time you realize that there is a fire, your house could be so badly engulfed that you cannot find a safe exit or the smoke can be so overwhelming that you suffocate trying to get out. The National Fire Protection Association reports that while 75 percent of homes have at least one working smoke alarm, between 2003 and 2006, 66 percent of fire deaths happened in homes with no working smoke alarm.

DESIGN	• In the above Project that is implemented has three Scenarios where the Smoke Detectors and Fire Sprinklers are being placed. KITCHEN, GARAGE & BEDROOM are the three locations where the smoke detectors have been placed. • The Kitchen consists of window, Door & Fire Sprinkler. • The Garage Consists of a Vehicle (Car), Garage Door & Fire Sprinkler. • The Bedroom Consists of Window, Door & Fire Sprinkler. • All the Above Smart IOT devices are Connected to the Smart Phone through the Home Gateway. • In the Web Browser of the Smart Phone the IOT devices are Detected when logged in to the smartphone using the IP address of the home gateway through the Credentials in this Project Credentials are **USER: admin** and **Password: admin.** Now open the Conditions in the Web browser and Set Conditions According to the Needs. For instance When there is smoke in the Garage then Smoke detects detects the smoke which the values is set so that only the Garage Door and Sprinkler ,Siren Will Turn ON 1) G_sensor Level is between 0.15 and 0.3 Then : • Set G_ddor On to true • Set G_sprinkler Status to true • Set Siren On to true 2)When There is No Smoke in the Garage then its Turned OFF • Set G_ddor On to fasle • Set G_sprinkler Status to false • Set Siren On to false 3) When There is More Smoke in the Garage i.e >0.3Then These conditions are met: • Set G_ddor On to true • Set G_sprinkler Status to true

	• Set K_sprinkler Status to true • Set K_ddor Lock to Unlock • Set K_window On to true • Set B_window On to true • Set B_door Lock to Unlock • Set B_sprinkler Status to true • Set Siren On to true 4) When There is No Smoke in the Garage these conditions are set: • Set G_sprinkler Status to false • Set G_ddor On to false • Set K_sprinkler Status to false • Set K_window On to false • Set K_ddor Lock to Lock • Set B_sprinkler Status to false • Set B_door Lock to Lock • Set B_window On to false • Set Siren On to false
PLATFORM USED (H/W & S/W TOOLS TO BE USED	CISCO PACKET TRACER
PROJECT SOURCE CODE LINK (GITHUB/ GOOGLE DRIVE)	https://github.com/varadmundra/CN_miniproject
CONCLUSION /FUTURE ENHANCEMENT	Smoke detectors are great because they save lives. There are smoke detectors formed as noses, to smell for smoke. There should be a minimum of two or three smoke detectors in your home. You should install a smoke detector on each floor of a house. Always have a smoke detector and fire prevention system in your home for your safety.

UI SCREENSHOTS

- When There is NO Smoke it is in **OFF** state

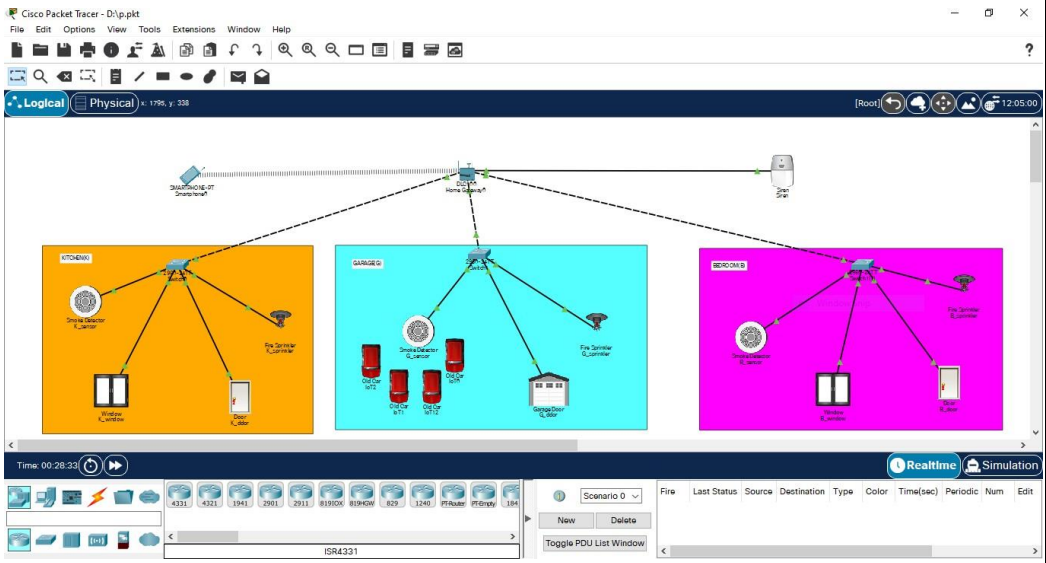

Fig.1 **OFF STATE**

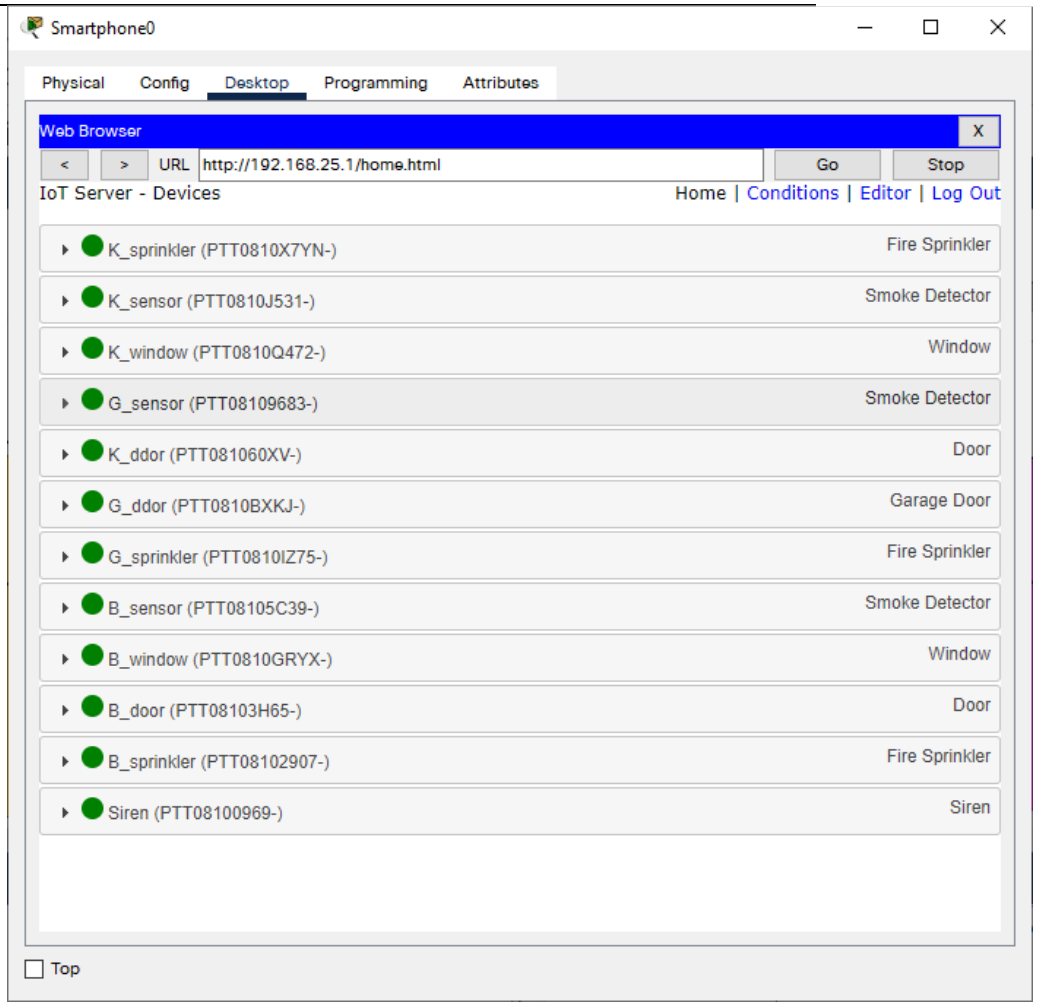

Fig.2 **IOT devices Detected**

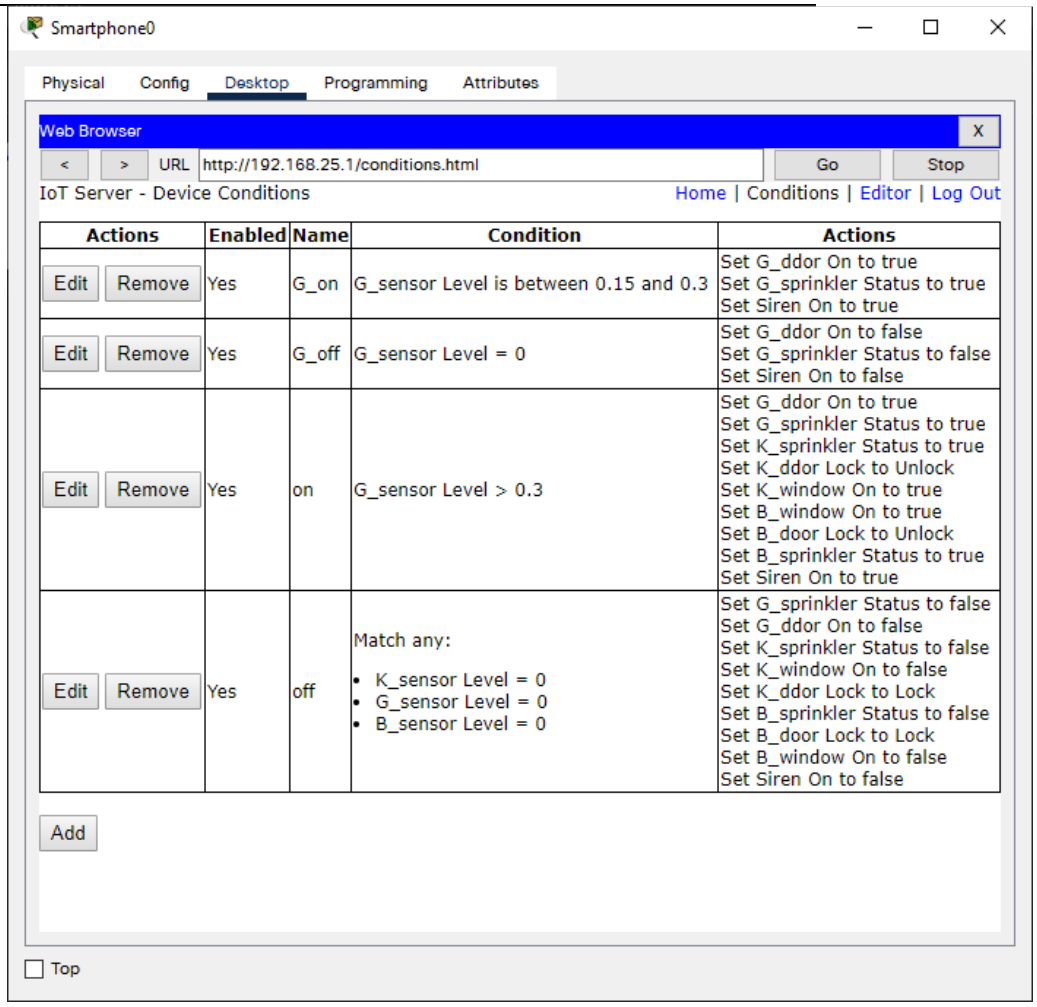

Fig.3 **Conditions and Actions Applied**

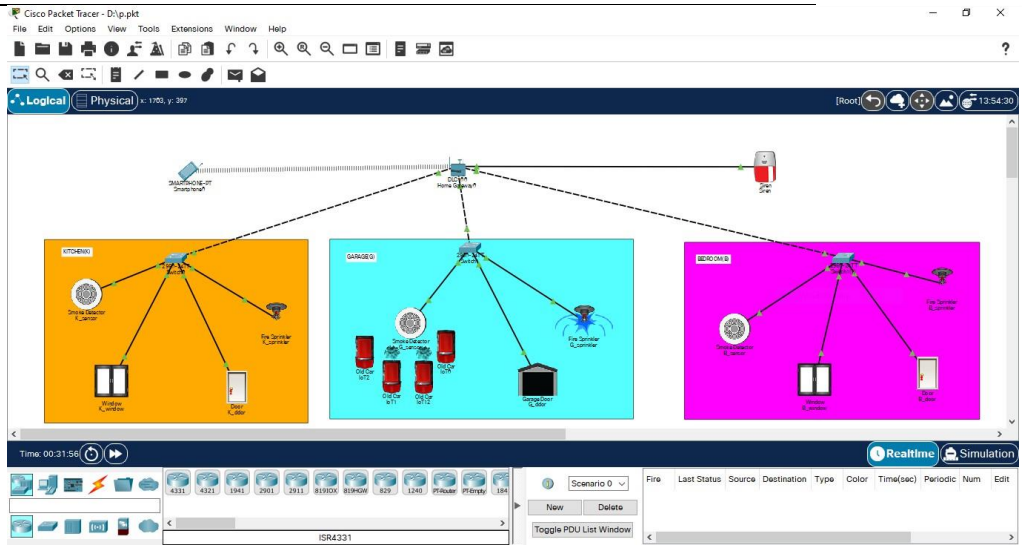

Fig.4 **Actions Performed when there is less smoke in Garage**

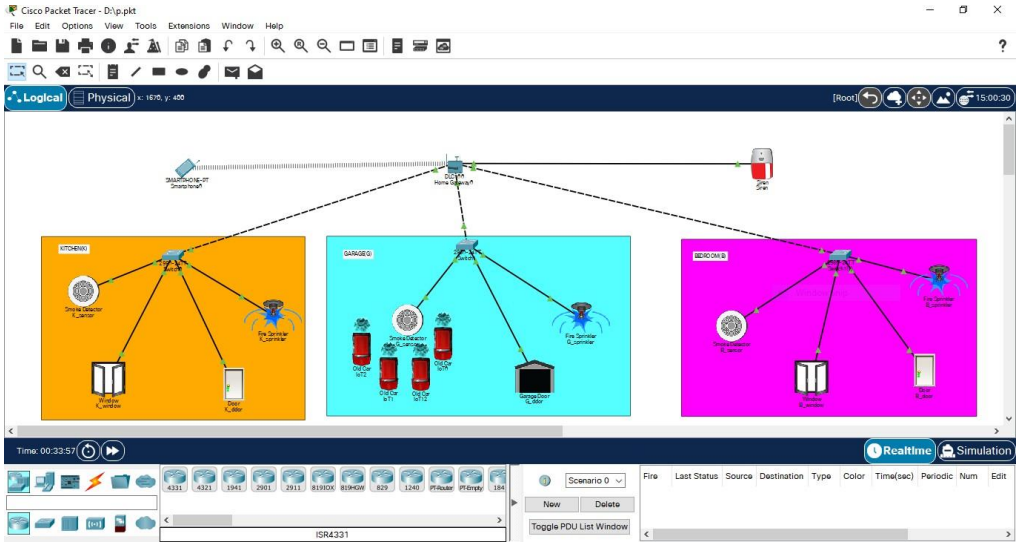

Fig.5 **Actions Performed when there is More smoke in Garage**

Fig.6 **Window Opened**

Fig.7**. Door Opened [Green light on]**

Fig. 8. **Fire water Sprinkler is ON**

Fig.9. **Siren is ON**

Fig.10 **Garage Door is open**
