SRM UNIVERSITY
SMOKE DETECTOR AND FIRE PREVENTION

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ABSTRACT

Fire is the major cause of accidents claiming valuable lives and property. Smoke detectors play an important role in a fire prevention management program. Timely detection of the fireplace is vital for avoiding a serious accident. In this project, a Fire prevention and Smoke detection system is developed. It can sense smoke and the rise in temperature and alert the user by activating the siren and also send commands on the virtual terminal of the android phone through the wifi module. Fire hazards are not uncommon. To avoid injury from fire accidents, smoke detectors are put in high-security places. The hardware used is HomeGateway, Switches, Smoke detectors, Fire sprinklers, Smoke sensor, Wifi Module, and Siren. Software used HomeGateway for mobile applications. These smoke sensors detect smoke because the fire break associated invokes an early alarm. This way, before the fire spreads to different components of the building, people can be evacuated and countermeasures can be done immediately. The detection system operates as a fire detector and smoke detector sensor. In this, we discuss the design and implementation of a smoke detection system using the HomeGateway which operates the entire system.

Keywords: SMOKE DETECTOR AND FIRE PREVENTION, FIRE, SENSORS, DETECTORS, IoT, SOMKE SENSORS

INTRODUCTION

Home fire detection is a matter of great concern, and thus many efforts are devoted in most developed countries to the design of automatic detection systems. A fire prevention system should reliably and in a timely way notify building occupants about the presence of fire indicators, such as smoke or high temperatures. A fire detector is usually implemented as a smoke sensor due to its early fire detection capability, fast response time, and relatively low cost. Other options for fire detection are based on gas sensors or temperature sensors fire detectors that use a single sensor, generally a smoke sensor, and present high false-siren rates due to temperature changes.

LITERATURE REVIEWman-made. This paper is to design and implement an automatic fire and smoke detection and prevention system that can be produced at a low cost with effective and competitive usage. This System is designed to be more user-friendly and easy to operate at any level. The creation of faster evacuation technologies and safer living conditions at an affordable cost for everyone. This paper discusses the automatic fire detection system, composition, and working

principle. The overall structure of the fire detection system and control software in the design. Low-cost fire detection and control system based on smoke detection is proposed. It is a combination of electrical devices working together to detect the presence of fire and alert people. These sirens may be activated from smoke detectors which, when detected, smoke.

PROPOSED SYSTEM

These smoke & fire detection systems use automatic functions to detect the occurrence of an event that may result in a fire. They receive a sign from a fireplace sensing smoke and mechanically transmit it to the fireplace siren panel. The fire siren panel activates sprinklers and opens all windows and doors.
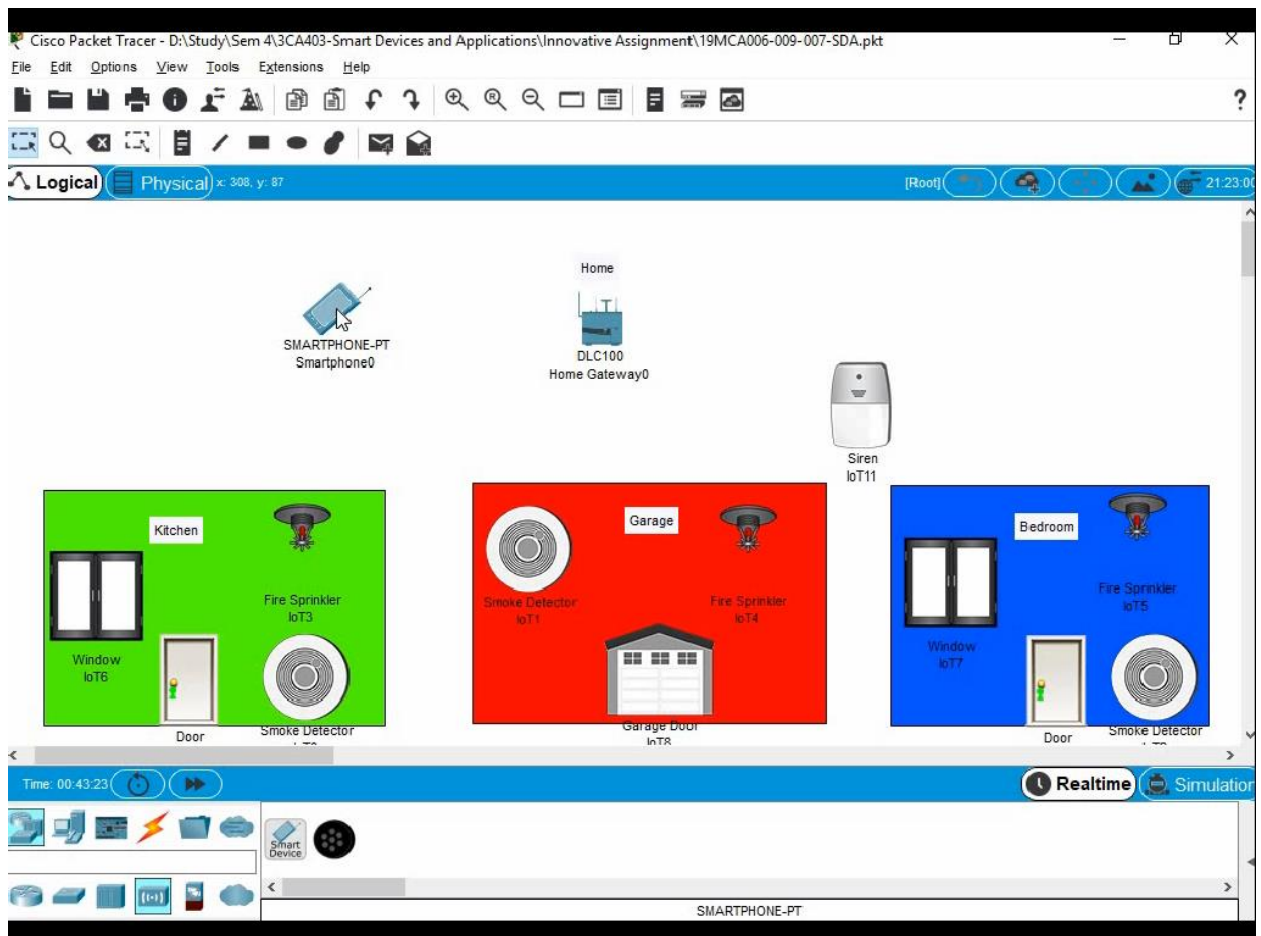
COMPONENTS NEED

1) Smoke detectors
2) Fire sprinkler
3) Windows
4) Doors
5) Garage door
6) Siren
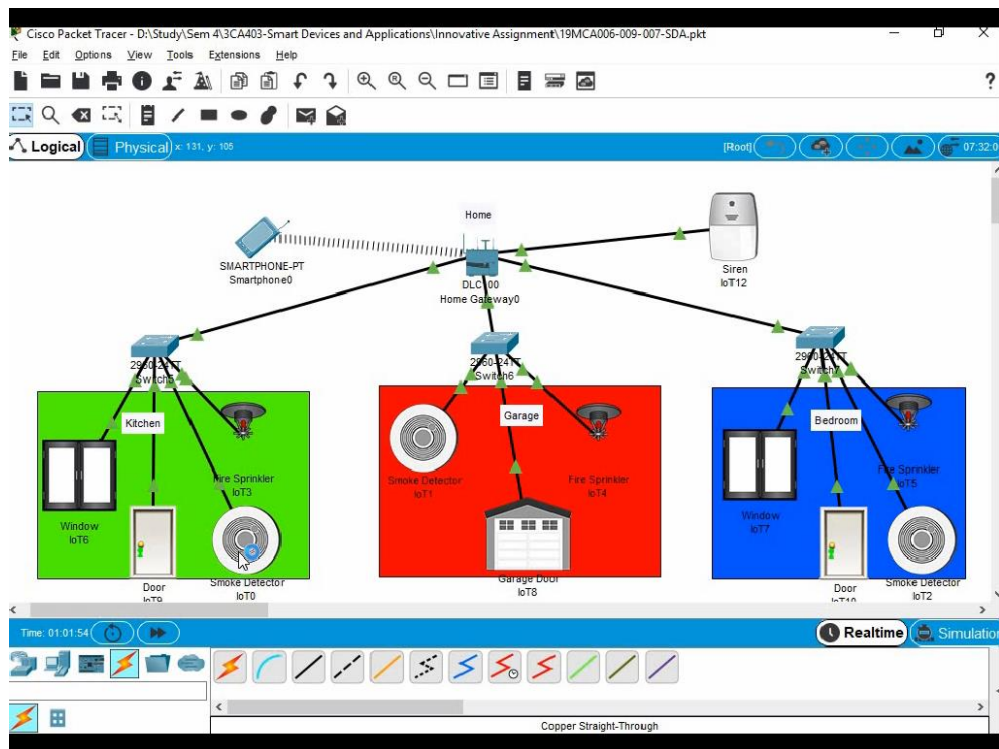7) Home Gateway
8) Switch
9) Smart device

IMPLEMENTATION

☐ Create a House
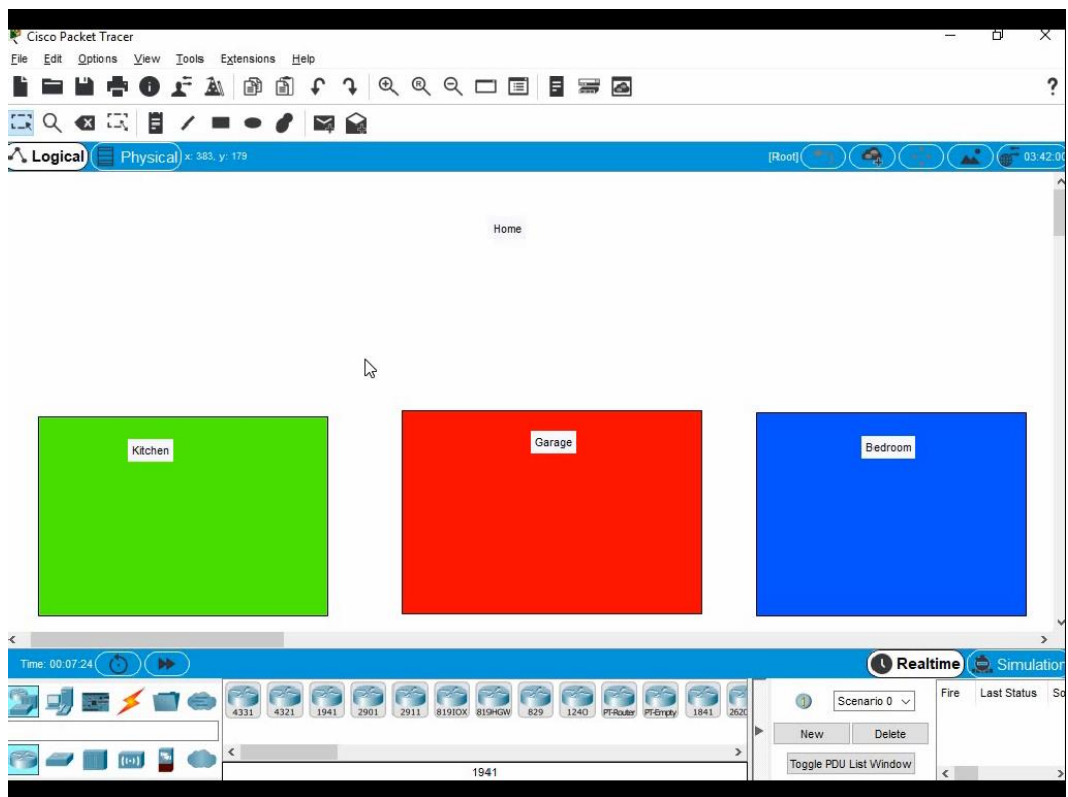
☐ Place the devices in the house

Connect/configure all components with the home gateway

 Write condition for automation of fire prevention

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

| Actions	Enabled	Name	Condition	Actions
Edit Remove	Yes	On	Match any: • G Sensor Level > 0 • K Senor Level > 0 • B Sensor Level > 0	Set G Door On to true Set G Sprinkler Status to true Set K Sprinkler Status to true Set K Window On to true Set K Door Lock to Unlock Set B Window On to true Set B Sprinkler Status to true Set B Door Lock to Unlock Set Siren On to true
Edit Remove	Yes	Off	Match all: • B Sensor Level <= 0 • K Senor Level <= 0 • G Sensor Level <= 0	Set Siren On to false Set B Sprinkler Status to false Set K Sprinkler Status to false Set G Sprinkler Status to false

Add

 Top

Running (On)
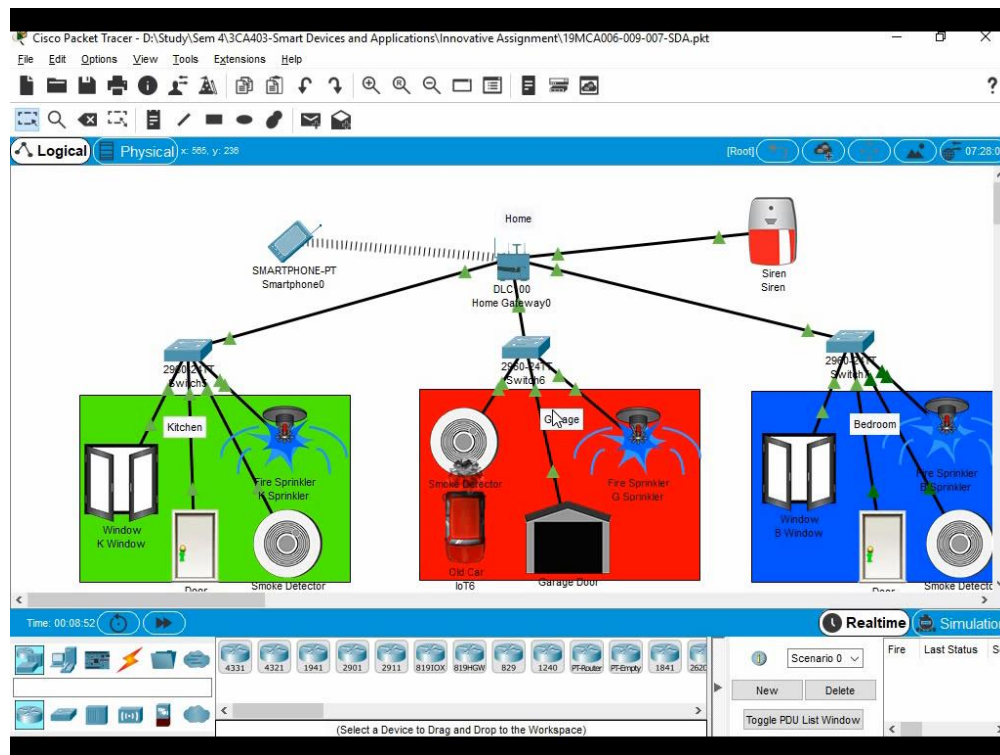
 Running (Off)
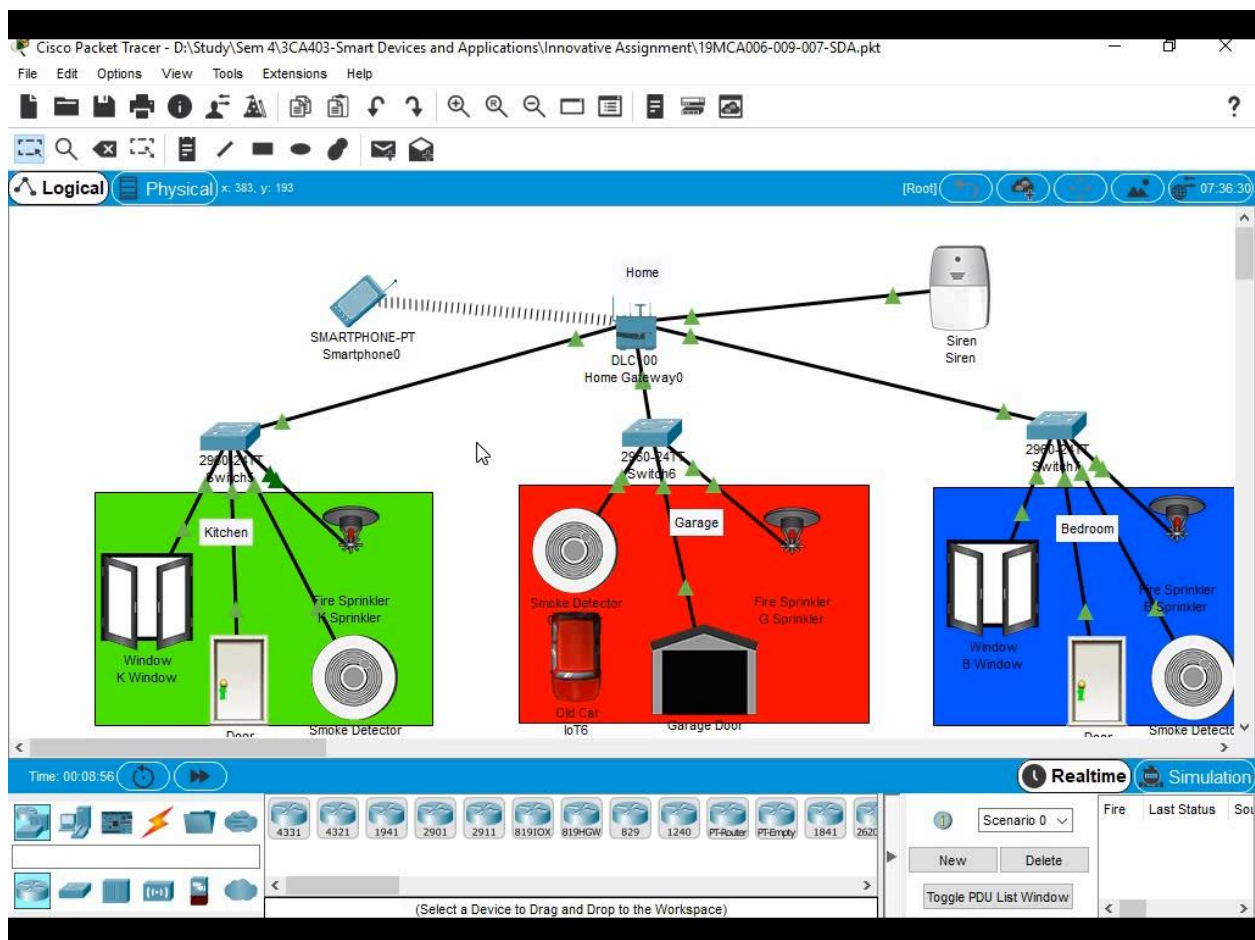
CONCLUSION

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.

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