



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
**BELAGAVI-590014**



**Department of Electronics and Communication Engineering**  
**DAYANANDA SAGAR ACADEMY OF TECHNOLOGY AND MANAGEMENT**  
**Udayapura, Kanakapura Road, Bangalore-560082**

# **SMART HOME AND CROP MONITORING IMPLEMENTATION USING CISCO PACKET TRACERS**

Under the Guidance of

**Vishwanath M B**

(Asst. Professor, Dept. of ECE)

Submitted by

**Karthik G Nayak (1DT18EC040)**

**Mahesh G (1DT18EC048)**

**Bhavani Prasad R (1DT19EC402)**

**Kishor K (1DT19EC407)**

# OUTLINE

- *INTRODUCTION*
- *LITERATURE SURVEY*
- *PROBLEM STATEMENT*
- *OBJECTIVES*
- *BLOCK DIAGRAM*
- *SOFTWARE USED*
- *RESULTS AND DISCUSSIONS*
- *APPLICATIONS*
- *ADVANTAGES*
- *CONCLUSION*
- *REFERENCES*

# INTRODUCTION

- Smart home is a living home that include smart objects to improve home activities in advance
- A smart home is designed not only for the activities to be performed but additionally implemented with the security.
- Home automation states handling and monitoring home items using microcontroller or computer technology .
- Automation is common because it makes process simple productive and secure.
- Smart home reduces user's involvement in monitoring home settings and controlling home appliances by including different sensor in home automation

- Irrigation management is an important factor in agriculture that allows the farmers to improve the cultivation .
- Humidity control and soil control are major issues which affect growth of the crops
- IOT is a system which is equipped for interfacing everything to web through remote sensor network
- The present internet of things(IOT) has the capacity to depict the various sorts articles,gadgets and sensors to interface with the web
- It is implemented by using newly released cisco packet tracers ,thus feature include different sensor ,actuators and different smart drive for home automation

# LITERATURE SURVEY

SL NO	Title of the paper	Author	Year of publication	Overview of paper	
1.	Designing Smart Campus Using Internet of Things	Ahmed Abdi	2018	Ahmed Abdi initiated the proposal of smart university that uses technology in implementing a campus that can be simplified by replacing the campus components with the smart devices.	
2.	A Security Framework for IOT based Smart Home Automation System	Nazmul Hossain, Md. Alam Hossain , Rafia Sultana & Farzana Akter Lima	2018	A smart system was built in which system controls all the instruments of the house through mobile phones or computers. The system is much more secure that all information can accessed any where in this advanced life	

SL. NO	Title of the paper	Author	Year of publication	Overview of the paper
3.	IoT Based Low Cost and Intelligent Module for Smart Irrigation System	Tanushree Sonkar, Ashok Verma	2020	The proposed system provides real time information on the field irrigation. The automated system is a cost reduction and resource optimization.
4.	IoT Simulations with Cisco Packet Trace	Andrea Finardi	2018	The main objective of the thesis work was aiming to deliver practical IoT simulations using the Cisco Packet Tracer tool to support the Internet of Things
5.	Design and Analysis of Secure Smart Home for Elderly People	Mayada Elsaid, Sara Altuwaijri, Nouf Aljammaz and Anees Ara	2019	Internet of Things (IoT) technology is used to enhance the safety of the elderly living in smart home environments and to help their caregivers.

# **PROBLEM STATEMENT**

In these modern days , they are many people who give precious value to their time as well as to their business. So in day to day life , they are using so many home appliances to get their work done . So major problem comes when one of the appliances failed to load the work.

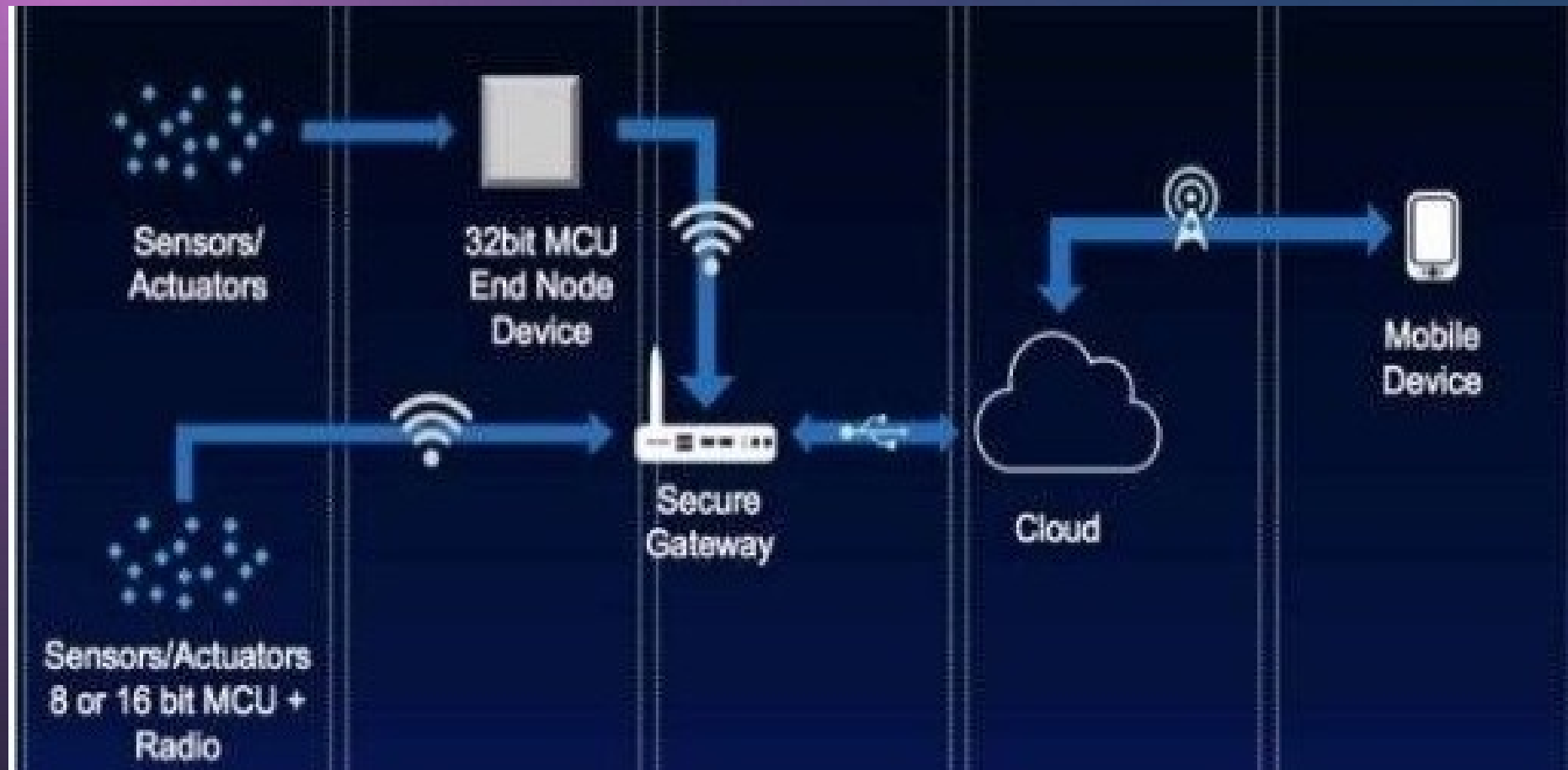
In these time home automation comes to solve the real world problems. This will help us to monitor, control and it collects all the information and used to detect problem before the actual problem arise from device. So it can be used remotely .

# OBJECTIVES

- The project aims at designing an advanced home automation system using cisco packet tracers
- The main objective of the functions is to improve the quality of life.
- The proposed system develops a smart home system that gives the user complete control over all remotely controllable aspects of the system.
- The objective of the system is to control home appliance anytime from anywhere in the world and efficiently utilize power by controlling appliances properly
- Another main objective is to work for farming where various new technology to yield higher growth of the crops and their water supply



# BLOCK DIAGRAM



# ● **BLOCK DIAGRAM EXPLANATION**

- As per above block diagram add the components required for home automation and monitoring the crop.
- To work smart devices remotely ,they should follow certain configuration of router and network devices.
- Connect the routers and network devices(DNS server,IOE server ,central office server,..etc) by giving the command prompt in CLI.
- Check whether the routers and servers are working properly or not, else reconfigure them.
- Connect all the smart devices to the Home gateway
- Finally add end user to access and control smart devices such as smart phone or laptop .

# SOFTWARE USED

- Cisco packet tracer is a cisco proprietary multiplatform tool that enables possibility to create networks and IOT simulation without need of a hardware or pre – existing network
- The tool is free of charge ,runs on the major operating system and it is downloadable from cisco NetAcad page for all the users who are having a valid NetAcad account
- The tool was built in order to allow users to experiment networking without having a need of costly network infrastructure and lengthy hardware setup procedures.

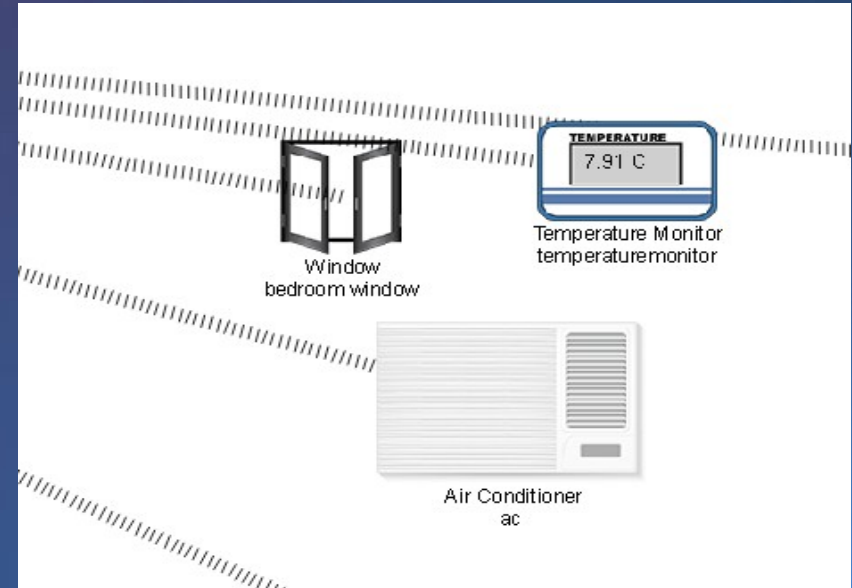
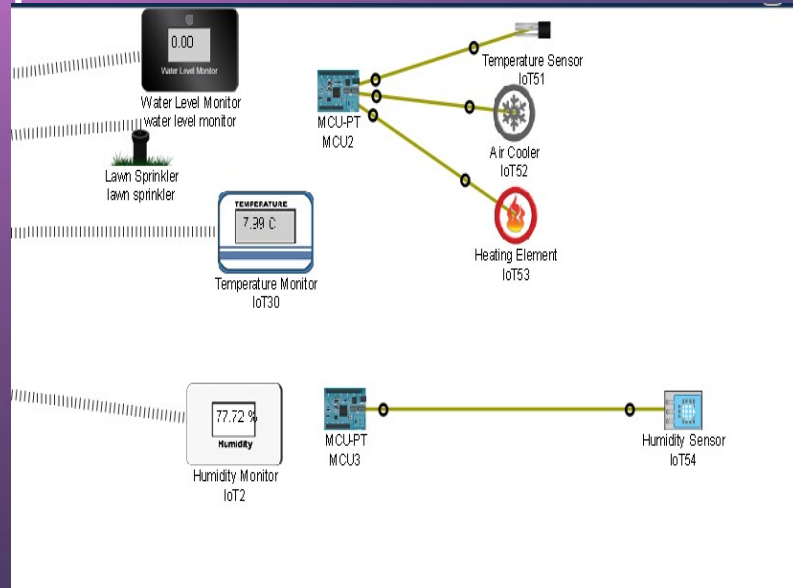


# RESULTS AND DISCUSSIONS

The smart home irrigation management environment offers automation along with smart control and monitoring of smart devices.

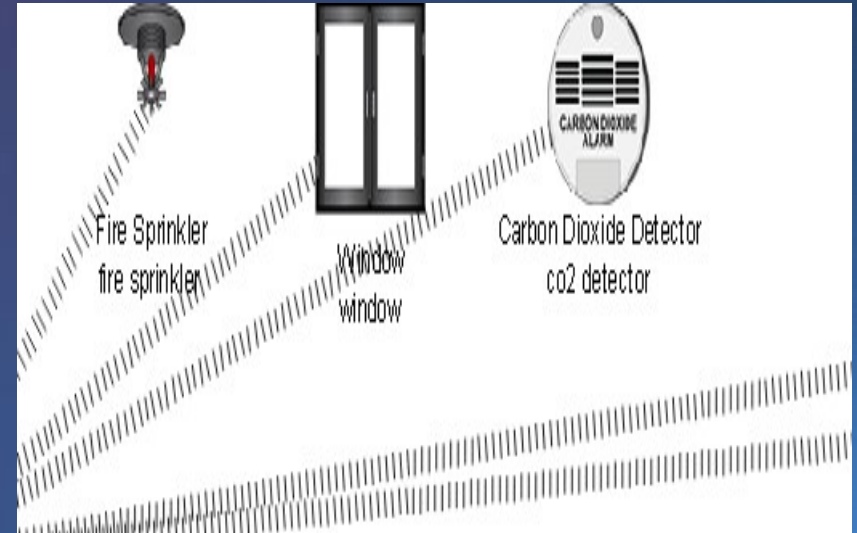
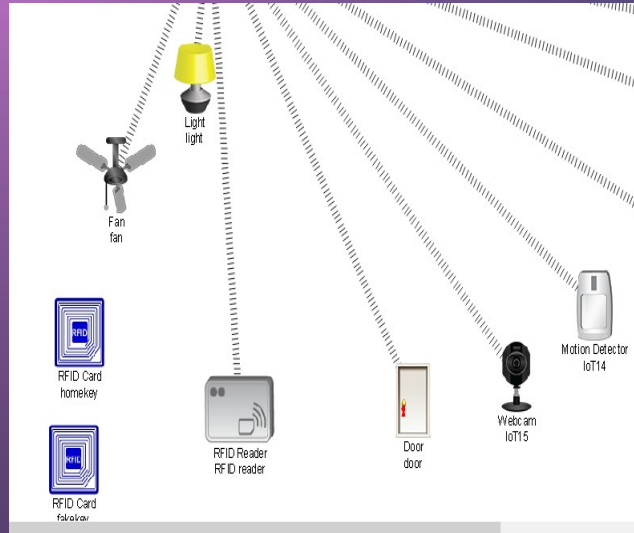


- Lawn sprinklers automation which is used for irrigation management when water level is low and when humidity is high



- Air Conditioner and Furnace are automated based on the temperature

- Security is increased by using Radio Frequency Identifier(RFID) smart cards and webcam recording is automated based on motion sensor.



- Kitchen window opens automatically when carbondioxide level is high in kitchen

# APPLICATIONS

- Home automation technology is growing drastically and its demand is increasing in a wide range of sectors which results in: - Increase in enhanced performance, it enhances human comfort, it improves energy efficiency of the room.
- It is used to assist in growing of agricultural crops, maintenance of landscapes, and revegetation of disturbed soils in dry areas and during periods of inadequate rainfall.
- By using cisco packet tracers in home automation and crop monitoring it benefits in a realistic simulation and visualization of IOT device.
- Permits users to design, build, configure smart home, smart city by providing different smart object used for them.

# ADVANTAGES

- Intelligent home automation system based on android application to control appliances
- Optimum mode for saving consumption of power and also let the appliances run on it's own intelligence
- Home appliances can be controlled from any remote places
- Water is supplied to crop based on actual needs
- Through cisco packet tracers students can explore IOT concepts
- It also offers a realistic simulation and visualization of IOT devices.



# CONCLUSION

- A smart home system irrigation for crops was designed and implemented using cisco packet tracers using node MCU microcontroller enables with WI-FI as a method of monitoring and controlling home appliances
- This process preferable for real time home security controlled and maintaining from fire accidents with quick solutions.
- In help of this system , we have build a new technology to create a excellent automated home system which is more useful and more secure in our regular advanced life.

# REFERENCES

- “Design and Analysis of Secure Smart Home for Elderly People” Mayada Elsaid, Sara Altuwaijri, Nouf Aljammaz and Anees Ara Computer Science Department, College of Computer & Information Sciences, Prince Sultan University, Riyadh, Saudi Arabia.
- “Designing Smart Campus Using Internet of Things” Ahmed Abdi Department of Computer Engineering, Punjabi University Patiala, India
- Tanishka and Prof. Shikha Gupta, “Designing Smart Home (IOT) Using Cisco Packet Tracer 7.2 Simulator”, International Journal for Modern Trends in Science and Technology, 6(12): 208-218, 2020.
- “IMPLEMENTING SMART HOME USING CISCO PACKET TRACER SIMULATOR” by Isa Shemsi CSE Department, SIT, Symbiosis International University, Pune, India.
- “Designing Smart Home Using Cisco Packet Tracer 7.2 Simulator” by Pitcheri Praveen Kumar, Murali Krishna, MR Ramprakash, Assistant Professor Department of Electronics and Communication Engineering Anurag Group of Institutions.

**THANK YOU**