



SNS COLLEGE OF TECHNOLOGY

**Coimbatore-35
An Autonomous Institution**

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



DEPARTMENT OF INFORMATION TECHNOLOGY

19ITT302 – Internet of Things

III YEAR VI SEM

UNIT I – IoT INTRODUCTION AND APPLICATIONS

TOPIC – HOME AUTOMATION



HOME AUTOMATION



Internet Of Things(IOT)

- The internet of things refers to a system of interrelated,inter connected objects that are able to collect and transfer data over a wireless network without human intervention.





NEEDS OF IOT

- It has the ability to track and monitor things
- Lighten the workloads with automation
- Leads to better quality of life
- Enhances the security systems etc.





SMART HOME

Smart home:

- Network interconnected
- Internet with high speed broadband
- Highly automated
- Light control
- Climate control
- Improves comfort
- Ensure security





HOME AUTOMATION COMPONENTS

- **IOT SENSORS:** Sensors enable the Internet of Things (IoT) by collecting the data for smarter decisions.
- **IOT GATEWAYS:** An Internet of Things (IoT) gateway is a physical device or software program that serves as the connection point between the cloud and controllers, sensors and intelligent devices.



- **IOT PROTOCOLS** : IoT communication protocols are modes of communication that protect and ensure optimum security to the data being exchanged between connected devices.
 - 1) IoT Network Protocols (used to connect devices over the network.)
 - 2) HTTP (Hypertext Transfer Protocol) (over web)
 - 3) Bluetooth
 - 4) ZigBee (It allows objects to work together with low rate data transfer between short distances.)



- **IOT CLOUD AND DATABASES:** During transfer of data the cloud and database stores the data in it.





HOME AUTOMATION APPLICATIONS

Lighting:

- Use to control light in our homes by turn on and off the lights without any human intervention
- Saves time and electricity
- We can also control intensity of light entering the rooms
- Thus called smart lighting systems.
- **GADGETS:** Light sensors, Google voice controller or Belkin WeMo smart light switch ,lux sensors etc.





HOME AUTOMATION APPLICATIONS



Temperature control:

- If we want to switch on AC before coming to home then it can be done by IOT devices.
- Smart thermostats is used.
- It also notifies if the AC has any repairs or moves out of control
- Energy efficient
- **GADGETS:** thermostats ,temperature sensors etc.





HOME AUTOMATION APPLICATIONS

Gardens:

- Use to measure the moisture content of plants
- Keeps the gardens fresh
- **GADGETS:** moisture sensor , smart garden monitoring systems(provides notification about plants health and needs).





HOME AUTOMATION APPLICATIONS

Security systems:

- Check whether the door is locked or not.
- The door gets automatically closes and locks once you step outside your house
- Suppose if someone makes force entry then alarm starts ringing and you can have video surveillance outside the house which is connected IOT devices
- **GADGETS** : voice or sound sensors, video cameras for surveillance



HOME AUTOMATION APPLICATIONS



Kitchen Appliances:

- Smart coffee maker, dishwasher, refrigerator.

Safety sensors:

- Helps to get notifications about gas leakage , fires , water leakage and weather conditions etc.

GADGETS: pressure sensor , humidity sensor , water level sensors etc.





PROGRAMMING LANGUAGES

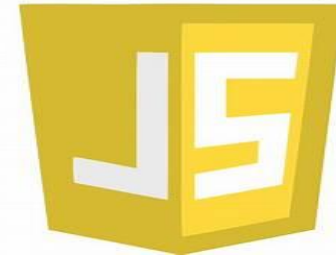


- Python
- Embedded C
- C shell
- Go and JavaScript

EMBEDDED



JavaScript





SUMMARY

- IOT
- NEEDS OF IOT
- SMART HOME
- HOME AUTOMATION COMPONENTS
- HOME AUTOMATION APPLICATIONS
- PROGRAMMING LANGUAGES

Assessment

List Some Smart home applications

- 1)
- 2)
- 3)
- 4)



THANK YOU