SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECE306-SMART IOT APPLICATIONS
III YEAR/ V SEMESTER

UNIT 2 –SMART HOME AND ENVIRONMENT APPLICATIONS

TOPIC-1 HOME AUTOMATION: ENERGY AND WATER USE, INTRUSION DETECTION SYSTEMS

Home Automation: Energy, Water, and Security

Unlock the power of home automation to enhance efficiency, conserve resources, and bolster your home's security. Discover how cutting-edge technologies can transform the way you live, work, and protect your most valuable asset - your home.

Intelligent Energy Management

1 Smart Lighting

Automate your lighting with motion sensors and scheduling to optimize energy usage and convenience.

2 Smart Thermostats

Precisely control your home's temperature, delivering energy savings and year-round comfort.

3 Renewable Integration

Seamlessly integrate renewable energy sources, such as solar panels, for sustainable power.

Efficient Water Usage

Smart Irrigation

Weather-based watering and soil moisture sensors ensure your lawn and garden stay lush while conserving precious water resources.

Leak Detection

Intelligent leak detection systems monitor water usage, alerting you to any potential issues and preventing costly water damage.

Water Recycling

Integrated greywater systems recycle water from sinks, showers, and washing machines for landscape irrigation, reducing your overall water footprint.

Comprehensive Security

1 **Smart Cameras**

High-definition cameras with motion detection and real-time monitoring provide constant vigilance over your property.

2 **Smart Locks**

Keyless entry and remote access give you complete control over who enters your home, even when you're away.

3 **Integrated Alarms**

Security alarms seamlessly integrate with your home automation system, triggering immediate alerts and deterring potential intruders.

Benefits of Home Automation

Energy Efficiency

Reduce your energy bills and carbon footprint through smart energy management.

Water Conservation

Maintain a lush, healthy landscape while conserving precious water resources.

Enhanced Security

Enjoy peace of mind and deter intruders with comprehensive security systems.

Convenience

Streamline your daily routines and have complete control over your home from anywhere.

Assessing Home Automation

A Complete Guide To Home Automation

SMART HOME

www.getsecurityaustin.com

The technology of **smart home automation**, just a few decades ago, is now a reality in an increasing number of homes. With a voice

1 **Energy Savings**

How do smart thermostats help reduce energy consumption and costs?

2 **Water Conservation**

Explain the benefits of a smart irrigation system and its water-saving features.

3 **Security Enhancements**

Describe how smart cameras and integrated alarms improve home security.

Securing Your Smart Home

Potential Drawbacks

Consider the privacy and cybersecurity risks associated with connected devices, and how to mitigate them.

Best Practices

Implement strong passwords, regular software updates, and network security measures to protect your smart home ecosystem.

Professional Guidance

Consult with home automation experts to ensure your system is designed and installed with security in mind.

Designing Your Smart Home

1

Energy Efficiency

Incorporate smart lighting, thermostats, and renewable energy sources to minimize your carbon footprint.

2

Water Conservation

Implement smart irrigation and water recycling systems to reduce water usage and prevent waste.

3

Security Measures

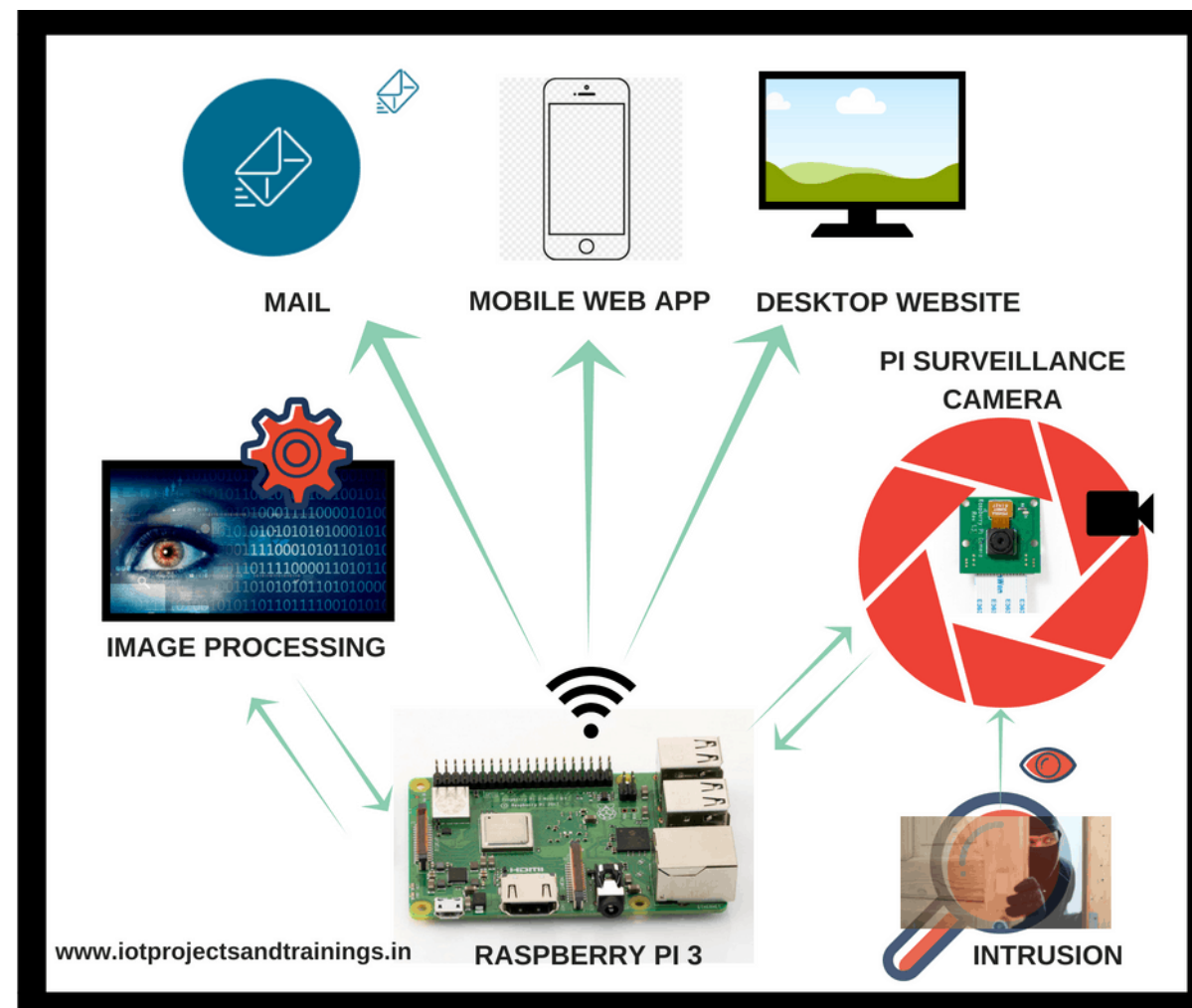Integrate smart cameras, locks, and alarms to create a comprehensive home security system.

ACTIVITY

Create a project plan for setting up an IoT-based intrusion detection system.

1.

The Future of Home Automation

Voice Control

Seamless voice commands to manage your home's systems and appliances.

AI Integration

Intelligent algorithms that learn your preferences and optimize home automation.

Interconnected Devices

A cohesive network of smart devices that communicate and work together.
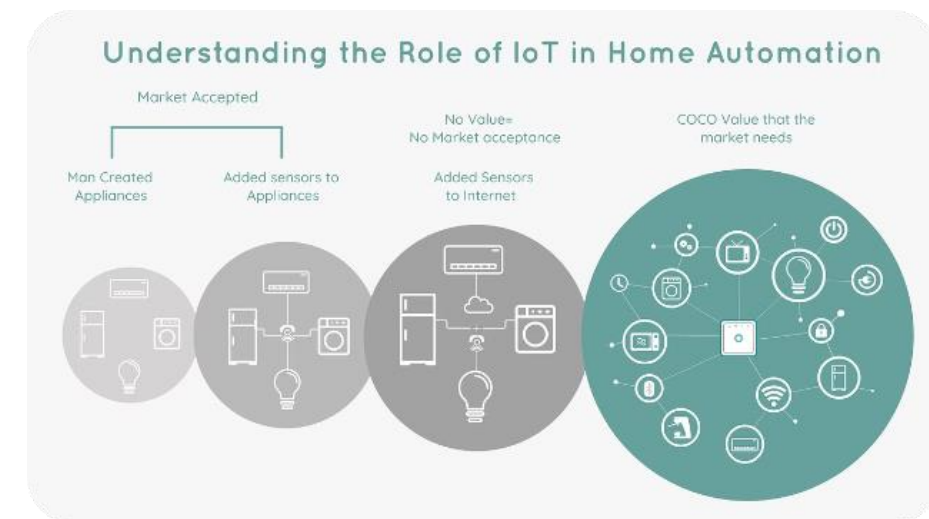
Renewable Integration

Seamless integration of renewable energy sources, such as solar and wind power.

Conclusion

Home automation presents a transformative opportunity to enhance your home's energy efficiency, water conservation, and security. By leveraging cutting-edge technologies, you can create a smart home ecosystem that revolutionizes the way you live, work, and play. Embrace the future of home automation and unlock a world of endless possibilities.

Understanding the Role of IoT in Home Automation

Assessment

1.What are the applications of home automation using IOT ?

2.How to design smart home ?

3.What is the future of home automation ?

REFERENCES

1. Aburukba, R., Al-Ali, A. R., Kandil, N., & AbuDamis, D. (2016). Configurable ZigBee-based control system for people with multiple disabilities in smart homes [Paper presentation]. In 2016 International Conference on Industrial Informatics and Computer Systems (CIICS) (pp. 1–5).

2. Adiono, T., Harimurti, S., Manangkalangi, B. A., & Adijarto, W. (2018). Design of smart home mobile application with high security and automatic features [Paper presentation]. In 2018 3rd International Conference on Intelligent Green Building and Smart Grid (IGBSG) (pp. 1–4).

THANK YOU